Strategic Board Leadership in the Multinational Firm

DISSERTATION
of the University of St.Gallen,
School of Management,
Economics, Law, Social Sciences
and International Affairs
to obtain the title of
Doctor of Philosophy in Management

submitted by

Georg Guttmann

from

Germany

Approved on the application of

Prof. Winfried Ruigrok, PhD

and

Prof. Toru Yoshikawa, PhD

Dissertation no. 4833

Gutenberg, Schaan 2019

The University of St.Gallen, School of Management, Economics, Law, Social Sciences and International Affairs hereby consents to the printing of the present dissertation, without hereby expressing any opinion on the views herein expressed.

St.Gallen, October 23, 2018

The President:

Prof. Dr. Thomas Bieger

Acknowledgements

It would not have been possible to complete this dissertation without the support from a number of people. In particular, I would like to thank my supervisor Professor Winfried Ruigrok for his valuable and highly appreciated guidance and support throughout my doctoral studies. I would also like to thank my co-supervisor Professor Toru Yoshikawa for sharing his experience and advice.

I wish to acknowledge scholarships and grants from the Swiss National Science Foundation, the Swiss Academy of Humanities and Social Sciences, the European Consortium for Political Research and the Strategic Management Society. Likewise, I thank my co-supervisor and the Singapore Management University for generously hosting my research stay in Asia. I would like to acknowledge the great collaboration with Dr. Thomas Allgäuer and his colleagues at Egon Zehnder International which provided much inspiration and reflection.

A particular appreciation goes to my colleagues in the ZIG building at the University of St.Gallen. Foremost, I thank my friends and family in Germany, Switzerland, the United States and Singapore.

Georg Guttmann
St.Gallen, November 2018

Summary

How do experiences of outside directors affect organizational outcomes of the multinational firm, such as firm performance, acquisition processes and strategic resource allocation? The nascent body of research on the implications of outside directors' prior experiences, and resulting expertise, has produced inconsistent findings based on fragmented theoretical assumptions. Contributing to the strategic leadership literature, this dissertation draws on 25,912 director-firm-year observations of European firms and a variety of analytical models, such as generalized method of moments regression, conditional logit regression and fixed-effects panel regression, to disentangle how knowledge structures, strategic preferences and social relationships reflected in board expertise manifest in key outcomes. Study 1 synthesizes the accumulated findings in board expertise research and integrates important mechanisms and contingencies that shape how different sources of board expertise influence firm performance, strategic choices and board-related outcomes. Study 2 develops a novel type of board expertise that captures how the exposure to dissimilar institutional contexts influences firm performance. This study shows that institutional experience is a previously overlooked source of expertise which strengthens boards' ability to mitigate uncertainty and dependency with the firm's external environment. Study 3 reveals behavioral bias in how boards select acquisition targets. Analyzing a comprehensive dataset of over 440,000 globally dispersed acquisition opportunities, this study finds that outside directors' prior geographic exposure serves as a filtering mechanism that channels attention to familiar locations and subsequently affects target selection. Study 4 explores how different types of intra-industry expertise promote unique strategic preferences of outside directors. It challenges the monolithic understanding of outside directors' industry expertise by showing that its geographic origin determines strategic resource allocation patterns of the firm.

Zusammenfassung

Welchen Einfluss haben Erfahrungen von Verwaltungs- bzw. Aufsichtsräten multinationaler Unternehmen auf Firmenperformance, Akquisitionsprozesse und Ressourcenallokation? In der Managementliteratur hat eine wachsende Anzahl an Studien zu den Erfahrungen und der daraus resultierenden Expertise von Verwaltungsräten inkonsistente Ergebnisse hervorgebracht, welche auf fragmentierten theoretischen Erklärungsmodellen beruhen. Diese Dissertation baut auf 25'912 Beobachtungen europäischer Verwaltungsratsmitglieder und leistet einen Beitrag zur Strategic Leadership Literatur, indem sie durch unterschiedliche Analyseverfahren (z.B. *generalized method of moments*, *conditional logit* und *fixed-effects regression*) aufzeigt, wie sich die in Erfahrung reflektierten Wissensstrukturen, strategischen Präferenzen und sozialen Beziehungen in Unternehmensergebnissen manifestieren. Die erste Studie integriert die bisherigen Forschungsergebnisse und theoretischen Erklärungsansätze und leitet daraus eine Forschungsagenda ab. Die zweite Studie entwickelt das Konzept der institutionellen Expertise, welche die Erfahrungen von Verwaltungsratsmitgliedern mit unterschiedlichen institutionellen Kontexten reflektiert. Diese Studie zeigt, dass institutionelle Erfahrung eine bisher übersehene Form von Expertise ist, durch die Unsicherheiten und Abhängigkeiten im externen Firmenumfeld reduziert und das Firmenergebnis gesteigert werden können. Die dritte Studie untersucht den Einfluss kognitiver Verzerrungseffekte auf die Selektion von potentiellen Übernahme-kandidaten. Eine Analyse von über 440'000 potentiellen Akquisitionen zeigt, dass geografische Erfahrungen als Filtermechanismus fungieren, der die Aufmerksamkeit von Verwaltungsräten auf bekannte Länder richtet und so die Auswahl von Übernahmekandidaten beeinflusst. Die vierte Studie untersucht den Zusammenhang zwischen branchenspezifischer Expertise von Verwaltungsratsmitgliedern und ihren strategischen Präferenzen. Dieser Artikel hinterfragt das bisher monolithische Verständnis von Branchenexpertise und zeigt auf, dass ihr geografischer Ursprung die strategische Ressourcenallokation des Unternehmens beeinflusst.

Table of Contents

List of Figures

List of Tables

1 Introduction

1.1 Background and Relevance

In the modern corporation, the board of directors represents the highest legal authority in the organization. The board assumes externally focused tasks by connecting the firm to key stakeholders in its environment and, as the strategic apex of the firm, the board appoints and dismisses senior executives, sets their incentives, and reviews, approves, and evaluates the strategy of the firm. More generally, the board oversees and guides the company business. Understanding the functioning of the board therefore is a key concern for scholars, practitioners, and policy makers.

Despite decades of research aimed at understanding and predicting board behavior, there is limited prescriptive knowledge about what constitutes an effective board (Boivie, Bednar, Aguilera, & Andrus, 2016). That dearth of knowledge is perhaps most visibly reflected in the persistent emergence of high profile corporate governance scandals (Withers, Hillman, & Cannella, 2012). While earlier studies have centered their efforts around structural attributes (e.g., board size, independence, CEO/chair duality) to understand how the board operates, subsequent research has focused on board composition by examining the individual demographic backgrounds of directors. At its core, this research stands in the tradition of upper echelons theory (Hambrick, 2007; Hambrick & Mason, 1984), which posits that characteristics of key decision makers reflect their values, beliefs, cognition, knowledge and skills, which eventually shape firm outcomes. That view has subsequently been related specifically to boards within the strategic leadership literature (Finkelstein, Hambrick, & Cannella, 2009).

Recently, scholars have intensified their efforts to capture the specific experiences and expertise of outside directors as a proxy for the board's ability to execute its primary functions (Haynes & Hillman, 2010; Hillman & Dalziel, 2003). Despite the seemingly straightforward assumption that a wealth of experience and expertise may strengthen the ability of the board to carry out its responsibilities, researchers have highlighted several barriers that may prevent board expertise from materializing in superior strategic decision making. For example, directors may lack the capacity (Khanna, Jones, & Boivie, 2014) or motivation (Veltrop, Molleman, Hooghiemstra, & van Ees, 2017) to demonstrate their competence, they may succumb to overconfidence and complacency (Almandoz & Tilcsik, 2016), the effects of one type of expertise may be offset by the presence of other types of expertise (Tuggle, Schnatterly, & Johnson, 2010), a specific expertise may not fit the strategic needs of the

firm (Hillman, Cannella, & Paetzold, 2000), or board expertise may be actively undermined by the behavior of the CEO and top management (Garg & Eisenhardt, 2017; Zhu & Chen, 2015).

A large portion of prior research has used the board as a research context to study discrete theories which has brought forward various conceptual angles on the effects of board expertise. Findings have rarely been discussed and linked across theoretical domains, and thus largely failed to corroborate generalizable conclusions on how board expertise influences strategic choices and firm performance. To shed more light on board expertise as a research phenomenon, this dissertation draws on resource dependence and behavioral theory to introduce previously overlooked forms of expertise, refine existing forms of expertise, and account for behavioral contingencies and the influence of the external (i.e., institutional) and the internal (i.e., CEO; corporate strategy) environment of the firm.

1.2 Objectives and Research Questions

The aim of this dissertation is to contribute to the strategic leadership literature by expanding our understanding of how board expertise influences firm outcomes. Notably, despite the recent proliferation of studies that capture effects of board expertise, the review in Chapter 2 reveals that more than half of the accumulated body of knowledge has only emerged in the current decade. Thus, the overall objective of this dissertation is to expand this relatively nascent substream within the mature board literature. Specifically, this dissertation pursues three objectives: (1) identify conditions under which a focal form of board expertise manifests in firm outcomes, and, if it does, (2) examine whether expertise reflects advantages that *improve* firm outcomes, or (3) informs preferences that *shape* strategic choices. In doing so, this dissertation aims at reconciling previously inconsistent findings, introducing new theoretical mechanisms that help explain the relationship between board expertise and firm outcomes, and offering suggestions to further advance research on board expertise. The individual research questions of the four cumulative papers of this dissertation can be summarized as follows:

> *Research question 1:* What is the current state of the literature on the relationship between board expertise and firm outcomes? How can we integrate board expertise research, fill critical gaps and develop new research frontiers?

Research question 2: How does board institutional expertise affect firm performance and how does the temporal, attentive, and cognitive capacity of outside directors influence this relationship?

Research question 3: How does board geographic exposure affect target selection? How do sources of target country salience internal and external to the organization moderate this relationship?

Research question 4: How does board industry expertise origin affect strategic resource allocation? What impact does the co-working experience among outside directors and the CEO have on the relationship between board industry expertise and firm strategy?

While each of the following papers address a specific gap in the literature, the overall objective of this dissertation is to advance our understanding of how the corporate board influences firm outcomes based on the specific expertise of its members. The overarching research question of this dissertation can thus be summarized as follows: *"How is board expertise linked to strategic and performance outcomes of the firm and what are boundary conditions under which expertise has stronger or weaker effects on outcomes?"*

1.3 Theoretical Foundations

In theorizing the effects of board expertise on firm outcomes we primarily draw on the notion of board capital (Haynes & Hillman, 2010; Hillman & Dalziel, 2003) which researchers have increasingly referred to as the "resource-based view of the board" (e.g., Krause, Semadeni, & Withers, 2016; Oehmichen, Schrapp, & Wolff, 2017). Contrary to agency theory (Berle & Means, 1932; Fama & Jensen, 1983; Jensen & Meckling, 1976), this view emphasizes the board's *ability* to exercise its main functions of monitoring and resource provision over agentic *incentives* that facilitate its execution (Hillman & Dalziel, 2003). Rooted in resource dependence theory (Pfeffer & Salancik, 1978), the concept of board capital was introduced as the sum of the human and social capital of outside directors which they use to perform their roles of monitoring and resource provision (Haynes & Hillman, 2010). Drawing on this notion, researchers have conceptualized the board as a repository of resources and information (Diestre, Rajagopalan, & Dutta, 2015; Haynes & Hillman, 2010; McDonald, Westphal, & Graebner, 2008; Oehmichen et al., 2017), advocating that experienced boards "may be

better at both providing resources and monitoring" (Hillman & Dalziel, 2003: 384), which eventually improves firm performance (Westphal, 1999).

In approximating the ability of the board, scholars have thus relied on measuring outside directors' human capital (Becker, 1964), defined as resources in the form of a "set or bundle of skills, knowledge, and perspectives that outside directors collectively bring to the board" (Kor & Sundaramurthy, 2009: 984), and social capital, defined as "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit" (Nahapiet & Ghoshal, 1998: 243). Recognizing the interdependent nature of human and social capital (Coleman, 1988; Nahapiet & Ghoshal, 1998), and that both are conducive to boards' ability to provide resources to the firm (Carpenter & Westphal, 2001; Geletkanycz & Hambrick, 1997; Zhu & Yoshikawa, 2016), researchers have typically integrated their theorizing on how human and social capital strengthen director expertise.

Hillman & Dalziel's (2003) emphasis on a resource dependence logic in studying how boards execute their primary two functions has substantially facilitated the theorizing about outside directors' experiences and expertise. However, this view remains silent about factors that may influence how outside directors apply the abilities they may possess. Board decision making is associated with high levels of complexity and ambiguity (Boivie et al., 2016; Forbes & Milliken, 1999; Zajac & Westphal, 1996) which imposes substantial information-processing demands on outside directors (Galbraith, 1974; Tushman & Nadler, 1978). Behavioral theorists have argued that decision making under those challenging conditions is primarily the outcome of behavioral factors rather than conscious deliberation (Cyert & March, 1963; March & Simon, 1958). Conceptualizing the board as "a faceless abstraction" (Bettis & Prahalad, 1995: 6) that can readily translate idiosyncratic experiences and expertise to the specific needs of the firm may therefore ignore important mechanisms. Building on research that has echoed behavioral concerns in the context of boards (Carpenter, Geletkancz, & Sanders, 2004; Hambrick & Mason, 1984; Khanna et al., 2014; Kor & Sundaramurthy, 2009; Ocasio, 1997; Starbuck & Milliken, 1988; Westphal & Bednar, 2005), this dissertation therefore lends from behavioral theory to further unpack the relationship between board expertise and firm outcomes.

Specifically, this dissertation explores how bounded rationality (Cyert & March, 1963) may affect how outside directors utilize their experiences and expertise when they are confronted with large amounts of complex, unstructured and ambiguous information about the firm's internal and external environment (Walsh, 1995). In those situations,

familiar attributes may act as a scaffold for decision making (Elsbach, Barr, & Hargadon, 2005; Tversky & Kahnemann, 1974) which may affect the extent to which outside directors make the necessary adjustments for firm-specific contingencies when contributing their expertise to the firm.

Despite its long tradition, the integration of behavioral theory in strategy research remains a broad "patchwork of theories and findings", encompassing concepts such as mental maps, heuristics, biases, attribution, dominant logic, cognition, emotion, attention, interpretation, sense-making, learning, escalation, aspirations, and hubris (Powell, Lovallo, & Fox, 2011: 1370). Since research on board expertise has shown that expertise may promote a continuum of behaviors that determine its usefulness for the organization, this dissertation draws on behavioral theory where it allows to refine the theorizing on whether high-expertise outside directors (1) may have an objective information advantage that consistently increases decision-making quality, (2) may rely on heuristics and simplifying strategies, or (3) may disregard situational demands and simply repeat past behaviors they are most familiar with.

1.4 Structure of the Dissertation

This dissertation comprises an introduction, four self-contained studies, and an overall discussion. Table 1.1 presents an overview of the key study characteristics. In the first study (Chapter 2), we review prior literature to organize the sources, contingencies and outcomes of board expertise, and to integrate fragmented theoretical mechanisms and empirical findings of prior studies. Although the benefits of greater expertise are fairly straightforward from a human and social capital perspective, research adopting other conceptual lenses, such as behavioral, institutional, or group decision-making, highlight various alternative mechanisms that may shape the outcomes of board expertise. We conclude that the tradeoff between a parsimonious use of theory and an accurate reflection of the mechanisms that connect board expertise to firm outcomes continues to exacerbate research aimed at developing generalizable insight about how the board shapes the firm. Our comprehensive synthesis of the prior literature supports researchers in finding the appropriate research design to study board expertise and draws attention to important boundary conditions when interpreting and contextualizing board expertise findings.

In the second study, we introduce a novel type of board expertise, institutional expertise, and demonstrate its effects on firm performance. Building on a resource dependence logic, we argue that outside directors' exposure to institutionally dissimilar contexts

Table 1.1 Overview of the Dissertation

	Chapter 2 / Study 1	Chapter 3 / Study 2	Chapter 4 / Study 3	Chapter 5 / Study 4
Title	A review of the board expertise literature and a future research agenda	The influence of board institutional expertise on firm performance	How boards shape global M&A patterns	How board industry expertise origin affects strategic resource allocation
Research question	How can we integrate board expertise research, fill critical gaps and develop new research frontiers?	How does board institutional expertise affect firm performance?	How does board geographic exposure affect target selection?	How does the origin of board industry expertise affect the redeployment of strategic resources?
Dependent variable	-	Firm performance (ROA)	Acquisition match *(binary)*	Strategic resource allocation
Main theory	-	Resource dependence theory	Behavioral theory	Resource dependence theory
Method	Review and conceptual integration	Generalized method of moments (GMM) regression	Conditional logit regression	Fixed-effects panel regression
Main empirical finding	-	Board institutional expertise is associated with a 57.8% increase in return on assets.	Outside directors' exposure to a focal target country increases the probability that the firm will acquire in that country by 31.4%.	Industry expertise origin explains the directionality of changes in resource allocation ratios.
Primary theoretical contribution	This article offers a multitheoretic integration of the various mechanisms that have been shown to affect the board expertise-firm outcome relationship. It alerts researchers of important boundary conditions when designing, interpreting and contextualizing board expertise research.	This article extends resource dependence theory by offering a supplementary mechanism for how boards reduce uncertainty and manage dependencies with the external environment. It also adds to the understanding of the board expertise-performance link by introducing behavioral contingency.	This article contributes to the M&A and strategic leadership literatures by providing a behavioral view on the emergence of global M&A patterns and by elucidating outside director's behavioral biases in strategic decision making.	This article reconciles previously inconclusive results on the link between industry expertise and strategic change by showing that the context in which outside directors have acquired expertise informs subsequent strategic behavior.

strengthens their ability to connect the firm to external factors that generate uncertainty and dependency. In particular, we predict that exposure to the shared frameworks held by individuals within institutionally dissimilar contexts is a previously overlooked source of information, skills and networks that improve outside directors' capacity to act as bridge-builders between the firm and its stakeholders. Consistent with our theoretical argument, we find institutional expertise to be the strongest board-level predictor of firm performance, indicating its potential value as a novel resource dependency-reducing strategy that has thus far not been captured by resource dependence scholars.

In the third study, we examine how outside directors' experiences may lead to biased decision making. Specifically, we examine how target country exposure informs the selection of acquisition targets. We theorize that geographic exposure may channel attention to familiar locations and promote more favorable risk assessments of strategic opportunities within that spatial context. Our analyses of over 440,000 globally dispersed acquisition opportunities lend strong support to our predictions which challenges quasi-rational decision-making models in target selection processes and suggest that outside directors' experiences may introduce behavioral bias to strategic decision making.

In the fourth study, we investigate how different origins of industry expertise may shape outside directors' strategic preferences. Because the decision context of a country shapes strategic responses of the firm, we expect that international industry expertise conveys more comprehensive and diverse experiences with how different strategic actions may be linked to organizational outcomes than does domestic industry expertise. We find that industry expertise origin predicts distinct strategic reconfigurations: While boards with more domestic industry expertise are associated with strategic resource reallocations that emphasize the primary need of change (*"top-line focus"*), boards with more international expertise simultaneously reconfigure other resources to avoid losing strengths along with weaknesses (*"bottom-line focus"*). Our study therefore challenges the monolithic understanding of outside directors' industry expertise and shows that the context in which outside directors have acquired expertise informs subsequent strategic behavior.

1.5 Data and Methods

A pervasive challenge in conducting board research is the possibility that board composition may be endogenous to characteristics of the organization or its environment

(Hambrick, 2007; Johnson, Schnatterly, & Hill, 2013). The appointment of outside directors with specific profiles and backgrounds is typically not exogenously determined but rather the result of prior decisions made by organizational actors. Thus, it is critical to statistically account for whether firm outcomes are uniquely driven by certain characteristics of the board or if both board composition and firm outcomes are actually caused by unobserved factors. In developing the empirical papers (Chapters 3-5), this dissertation accounts for these important concerns by building a rich empirical context against which the predictions can be tested and by applying analytical models capable of mitigating endogeneity concerns.

This dissertation draws on a sample of the 400 largest listed firms in four Western European countries (Germany, Netherlands, Switzerland, United Kingdom). Three reasons motivated the country focus: (a) corporate boards in the sample countries are highly international in terms of outside directors' backgrounds and experiences, (b) firms in the sample countries account for a considerable proportion of global economic output and accrue revenues mostly from global operations, and (c) the sample countries represent a plurality of institutional contexts and national governance regimes. First, the choice of a Western European sample was fundamentally driven by the nature of the research questions this dissertation sets out to examine: The main independent variables of this dissertation emphasize international dimensions in outside directors' experiences, skills and preferences (i.e., experience in institutionally dissimilar countries, experience in different national contexts, international intra-industry experience). In the global comparison, Western European boardrooms tend to be considerably more international than those in the U.S. or other world regions (Spencer Stuart, 2017), allowing for more variance in the variables of interest. The sample countries thus reflect a rich empirical setting to explore how various configurations in the collective preferences, experiences and skills held by corporate boards affect key outcomes such as firm performance, acquisition behavior or the strategic orientation of the firm. Second, the four sample countries jointly constitute an economically viable context. Over the key study period from 2009-2014, firms from these countries on average accounted for 22.4% of the world's largest companies outside the U.S. as measured by total revenues in the Fortune Global 500 ranking. Due to the relatively small size of their domestic markets, most sample firms generated the majority of revenues outside their respective home markets (the median foreign sales to total sales ratio in the full sample was 74.5%). The international posture of the sample firms offers a broad empirical context to study how corporate governance characteristics and outside directors' backgrounds interact with economic, political and institutional dimensions in the firm's country of domicile and

across its host countries. Finally, the four sample countries represent diverse corporate governance contexts with implications for the specific roles and responsibilities of corporate boards. For example, across the four sample countries there is variance in the legal system (e.g., common law in the U.K.; civil law in Germany), the type of prevalent board structure (e.g., two tier board structure in the Netherlands; one tier board structure in the U.K.), mandated co-determination (mandatory in Germany but not in the other sample countries) or the strength of minority investor protection (e.g., relatively weak in Switzerland; relatively strong in the U.K.). Testing the hypotheses against these diverse national contexts may therefore strengthen the confidence in the generalizability of results.

The sample companies were identified based on their market capitalization at 2009 year-end. Firms had to meet the following three criteria to be included in the final sample: First, they were classified as large firms based on the European Commission's definition throughout the study period (i.e., they had more than 250 persons employed and an annual revenue of over €50 million) (European Commission Recommendation 2003/361/EC). Second, they had continuous operations throughout the study period and did not become target of an M&A transaction. Third, they were not subsidiaries of another company. The application of the inclusion criteria resulted in a sample of 300 companies. In total, 85 companies were listed in Switzerland, 77 in the United Kingdom, 77 in Germany and 61 in the Netherlands. These firms were active in 58 industries based on their two-digit SIC industry classification.

Data on the sample companies were collected for the individual, group, firm, industry and country level. Table 1.2 presents a summary of the dataset that specifies analytical levels, time periods, data sources, and numbers of observations collected for different categories of variables. The main study period of this dissertation spans a six-year time window from 2009 to 2014. To facilitate robustness checks and allow for lagged research designs, data for most variables were collected for the period of 2007-2015. At the core of this dissertation are detailed records of 25,912 director-firm-year observations with extensive data on directors' demographic background (e.g., age, gender, nationality, education), career experience (e.g., function, tenure, industry and geography of prior board and non-board roles) and social networks (e.g., interlocks, interorganizational relationships). When full information on each director was available, individual-level data were aggregated using compilation models (e.g., Blau's index, mean Euclidian distance), composition models (e.g., sum, average), or matching models (e.g., match between a focal director and organizational attribute) to develop indicators

Table 1.2 Empirical Scope of the Dissertation

Level	Category	Explanation	Period	Observations	Main sources	Ch. 3	Ch. 4	Ch. 5
Individual	Director demography	Demographic background data (e.g., age, gender, nationality)	2007-14	25,912	Annual reports; BoardEx; corporate investor relations offices	X	X	X
	Director career experience	Functional, occupational and professional career experience (e.g., roles, industries, countries of prior occupations)	1961-2014	125,420	Annual reports; BoardEx	X	X	X
	Director networks	Global interlock data (e.g., heterogeneity of interorganizational linkages)	1962-2014	920,254	BoardEx	X	X	X
Group	Board of Directors	Aggregation of individual-level director data using compilation, composition and matching models	2007-14	2,104[a]	Individual director data	X	X	X
Firm	Basic firm characteristics	Financial ratios, structural, and governance-related indicators	2007-15	2,700[a]	Orbis; Thomson Reuters Eikon	X		X
	Ownership	Individual investor profiles (e.g., investor type, nationality, percentage of outstanding shares held)	2007-15	634,216	Thomson Reuters Ownership Module	X		
	Foreign undertakings	Number of undertakings (e.g., consolidated group companies, affiliated companies, joint ventures) across 207 countries	2008-13	213,475	Annual reports; chambers of commerce; registrar of companies; corporate investor relations offices		X	X
	M&A	All global mergers and acquisitions with a value above $1m	2007-15	83,475	Thomson Reuters Deal Module		X	
	Performance	Accounting-based (e.g., return on assets) and market-based (e.g., market-to-book value) performance indicators	2007-15	2,700[a]	Thomson Reuters Eikon Annual reports	X		X
Industry	Industry characteristics	Environmental munificence, dynamism and complexity	2008-13	5,400	Orbis; Thomson Reuters Eikon	X		X
Country	Institutional data	30 institutional indicators for 250 countries	2007-14	40,604	World Bank; Heritage Foundation; Freedom House; Political Constraint Index	X	X	X

Notes. [a] Indicates maximum number of firm-year observations per variable within the respective category. Number of observations may be less for individual variables within category due to missing data.

reflective of the board's experiential profile. In addition, individual- and group-level data were complemented by an exhaustive set of firm-specific data which, amongst others, included a broad range of variables reflecting the firm's financial, structural, and strategic positioning, comprehensive details on all investors with disclosed stock ownership, and all disclosed investments made in domestic or foreign undertakings. Furthermore, this dissertation captures data on the full population of all global deal announcements during the study period. Moreover, data on environmental dimensions such as dynamism, munificence and complexity were collected as those were identified by prior corporate governance research to influence board functioning (e.g., Withers & Fitza, 2017). Finally, the dissertation includes data on a broad range of institutional indicators that could potentially influence strategic decisions of the firm.

In terms of data sources and appropriate data collection processes, we faced several constraints as a result of our country focus. Using a non-U.S., cross-country sample poses substantial challenges in the data collection process because director- and firm-level disclosure requirements are typically less stringent outside the U.S. and less consistent due to diverse disclosure provisions imposed by different jurisdictions across our sample countries. To address these challenges, we consulted multiple data sources to build and cross-check the dataset of this dissertation. We manually extracted individual- and firm-level data from corporate archival sources (e.g., annual reports, financial reports, investor presentations, corporate websites), obtained data from commercial data suppliers (e.g., BoardEx, Thomson Reuters Eikon, Thomson Reuters Datastream, Orbis) as well as federal sources (e.g., chambers of commerce; registrar of companies) and contacted investor relations offices when director- or firm-level information were missing or inconsistent. Our multi-stage data collection procedure allowed us to alleviate the problem of notoriously low data completion rates in research that relies on individual-level experiential data. That point was critical as our focal board-level variables could only be constructed when complete individual-level information was available for all directors. In addition, our data collection strategy also enabled us to collect data that are typically not available for European firms through commercial databases (e.g., historic subsidiary-level data). Industry-specific variables were mainly constructed from firm-level sales data. We collected country-level data from organizations such as the World Bank, the Heritage Foundation or Freedom House.

In fitting our statistical models, we were driven by mitigating pervasive endogeneity concerns inherent to board research. Although the different dependent variables in our empirical papers (i.e., dynamic panel variable, dichotomous variable, static panel variable) require the use of different analytical techniques, all our statistical

models control for firm characteristics using fixed-effects at the firm level. In combination with extensive industry and national institutional controls, we accounted for a broad set of alternative factors that could explain variation in our focal variables.

For the first empirical study (Chapter 3), we developed a novel form of board expertise, institutional expertise, and studied its effect on firm performance. To do so, we used principal components analysis and oblique rotation to reduce a comprehensive set of institutional indicators to country-specific institutional factor scores. We then applied a weighted mean Euclidean distance formula to compute a board-level variable that reflects outside directors' experiential diversity with dissimilar institutional contexts. Finally, we employed the Arellano-bond estimator, a dynamic panel generalized method of moments (GMM) estimator, to study the effect of board institutional expertise on firm performance. GMM regression includes lags of the dependent variable as instruments while accounting for unobserved heterogeneity using firm fixed-effects. GMM regression is an appropriate technique when endogeneity is a potential problem in a dynamic panel model (Certo, Withers, & Semadeni, 2017).

For the second empirical study (Chapter 4), we developed a deal-level dataset of the acquisitions announced by our sample firms and then used outside directors' collective geographic exposure to predict acquisition behavior. After modelling a choice set of over 440,000 global acquisition opportunities available to our sample firms, we used conditional logistic analysis to estimate the effect of boards' target country exposure on the probability that an acquirer will purchase a firm from the focal target country. Since our logit model conditioned acquisition choice on the attributes of the acquiring firm, firm-level characteristics were controlled for. Given the nonlinearity of the model, we also computed odds ratios and implied coefficients associated with meaningful values of key variables to provide a better understanding of the magnitude and substantive importance of the main and interaction effects.

For the third empirical study (Chapter 5), we used fixed-effects panel regression to examine how outside directors' domestic and international industry expertise shape firm-level resource allocation patterns. The fixed-effects model uses within-firm variation in the dependent and independent variables and separates the panel-level error term from normal disturbance. In doing so, the model either removes the fixed effects or controls for them by including a dummy variable for each unit (Certo & Semadeni, 2006). This feature of the fixed-effects method is particularly important given the inherent challenges of board research outlined above.

1.6 References

Almandoz, J. & Tilcsik, A. 2016. When experts become liabilities: Domain experts on boards and organizational failure. ***Academy of Management Journal***, 59(4): 1124-1149.

Becker, G. 1964. ***Human capital***. New York: National Bureau of Economic Research.

Berle, A. A. & Means, G. C. 1932. ***The modern corporation and private property***. New York: MacMillan.

Bettis, R. A. & Prahalad, C. K. 1995. The dominant logic: Retrospective and extension. ***Strategic Management Journal***, 16(1): 5-14.

Boivie, S., Bednar, M. K., Aguilera, R. V., & Andrus, J. L. 2016. Are boards designed to fail? The implausibility of effective board monitoring. ***Academy of Management Annals***, 10(1): 319-407.

Carpenter, M. A. & Westphal, J. D. 2001. The strategic context of external network ties: Examining the impact of director appointments on board involvement in strategic decision making. ***Academy of Management Journal***, 44(4): 639-660.

Carpenter, M. A., Geletkancz, M. A., & Sanders, G. 2004. Upper echelons research revisited: Antecedents, elements, and consequences of top management team composition. ***Journal of Management***, 30(6): 749-778.

Certo, S. T. & Semadeni, M. 2006. Strategy research and panel data: Evidence and implications. ***Journal of Management***, 32(3): 449-471.

Certo, S. T., Withers, M. C., & Semadeni, M. 2017. A tale of two effects: Using longitudinal data to compare within- and between-firm effects. ***Strategic Management Journal***, 38(7): 1536-1556.

Coleman, J. S. 1988. Social capital in the creation of human capital. ***American Journal of Sociology***, 94: S95-S120.

Cyert, R. M. & March, J. G. 1963. ***A behavioral theory of the firm***. Englewood Cliffs, NJ: Prentice-Hall.

Diestre, L., Rajagopalan, N., & Dutta, S. 2015. Constraints in acquiring and utilizing directors' experience: An empirical study of new-market entry in the pharmaceutical industry. ***Strategic Management Journal***, 36(3): 339-359.

Elsbach, K. D., Barr, P. S., & Hargadon, A. B. 2005. Identifying situated cognition in organizations. ***Organization Science***, 16(4): 422-433.

Fama, E. F. & Jensen, M. C. 1983. Separation of ownership and control. ***Journal of Law & Economics***, 26(2): 301-325.

Finkelstein, S., Hambrick, D. C., & Cannella, A. A. 2009. ***Strategic leadership: Theory and research on executives, top management teams, and boards***. New York: Oxford University Press.

Forbes, D. P. & Milliken, F. J. 1999. Cognition and corporate governance: Understanding boards of directors as strategic decision-making groups. ***Academy of Management Review***, 24(3): 489-505.

Galbraith, J. R. 1974. Organization design: An information processing view. ***Interfaces***, 4(3): 28-36.

Garg, S. & Eisenhardt, K. M. 2017. Unpacking the ceo–board relationship: How strategy making happens in entrepreneurial firms. ***Academy of Management Journal***, 60(5): 1828-1858.

Geletkanycz, M. A. & Hambrick, D. C. 1997. The external ties of top executives: Implications for strategic choice and performance. ***Administrative Science Quarterly***, 42(4): 654-681.

Hambrick, D. C. & Mason, P. A. 1984. Upper echelons: The organization as a reflection of its top managers. ***Academy of Management Review***, 9(2): 193-206.

Hambrick, D. C. 2007. Upper echelons theory: An update. ***The Academy of Management Review***, 32(2): 334-343.

Haynes, K. T. & Hillman, A. J. 2010. The effect of board capital and ceo power on strategic change. ***Strategic Management Journal***, 31(11): 1145-1163.

Hillman, A. J., Cannella, A. A., & Paetzold, R. L. 2000. The resource dependence role of corporate directors: Strategic adaptation of board composition in response to environmental change. ***Journal of Management Studies***, 37(2): 235-255.

Hillman, A. J. & Dalziel, T. 2003. Boards of directors and firm performance: Integrating agency and resource dependence perspectives. ***Academy of Management Review***, 28(3): 383-396.

Jensen, M. C. & Meckling, W. H. 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. ***Journal of Financial Economics***, 3(4): 305-360.

Johnson, S. G., Schnatterly, K., & Hill, A. D. 2013. Board composition beyond independence: Social capital, human capital, and demographics. ***Journal of Management***, 39(1): 232-262.

Khanna, P., Jones, C. D., & Boivie, S. 2014. Director human capital, information processing demands, and board effectiveness. ***Journal of Management***, 40(2): 557-585.

Kor, Y. Y. & Sundaramurthy, C. 2009. Experience-based human capital and social capital of outside directors. ***Journal of Management***, 35(4): 981-1006.

Krause, R., Semadeni, M., & Withers, M. C. 2016. That special someone: When the board views its chair as a resource. ***Strategic Management Journal***, 37(9): 1990-2002.

March, J. G. & Simon, H. 1958. ***Organizations***. New York: Wiley.

McDonald, M. L., Westphal, J. D., & Graebner, M. E. 2008. What do they know? The effects of outside director acquisition experience on firm acquisition performance. ***Strategic Management Journal***, 29(11): 1155-1177.

Nahapiet, J. & Ghoshal, S. 1998. Social capital, intellectual capital, and the organizational advantage. ***Academy of Management Review***, 23(2): 242-266.

Ocasio, W. 1997. Towards an attention-based view of the firm. ***Strategic Management Journal***, 18(Summer Special Issue): 187-206.

Oehmichen, J., Schrapp, S., & Wolff, M. 2017. Who needs experts most? Board industry expertise and strategic change-a contingency perspective. ***Strategic Management Journal***, 38(3): 645-656.

Pfeffer, J. & Salancik, G. R. 1978. ***The external control of organizations: A resource dependence perspective***. New York: Harper & Row.

Powell, T. C., Lovallo, D., & Fox, C. R. 2011. Behavioral strategy. ***Strategic Management Journal***, 32(13): 1369-1386.

Spencer Stuart. 2017. Spencer stuart board index. Chicago, IL.

Starbuck, H. & Milliken, F. J. 1988. Executives' perceptual filters: What they notice and how they make sense. In D. C. Hambrick (Ed.), ***The executive effect: Concepts and methods for studying top managers***: 35-65. Greenwich: JAI Press.

Tuggle, C. S., Schnatterly, K., & Johnson, R. A. 2010. Attention patterns in the boardroom : How board composition and processes affect discussion of entrepreneurial issues. ***Academy of Management Journal***, 53(3): 550-571.

Tushman, M. L. & Nadler, D. A. 1978. Information processing as an integrating concept in organizational design. ***Academy of Management Review***, 3(3): 613-624.

Tversky, A. & Kahnemann, D. 1974. Judgment under uncertainty: Heuristics and biases. ***Science***, 185: 1121-1131.

Veltrop, D. B., Molleman, E., Hooghiemstra, R. B. H., & van Ees, H. 2017. Who's the boss at the top? A micro-level analysis of director expertise, status and conformity within boards. ***Journal of Management Studies***, 54(7): 1079-1110.

Walsh, J. P. 1995. Managerial and organizational cognition: Notes from a trip down memory lane. ***Organization Science***, 6(3): 280-321.

Westphal, J. D. 1999. Collaboration in the boardroom: Behavioral and performance consequences of ceo-board social ties. ***Academy of Management Journal***, 42(1): 7-24.

Westphal, J. D. & Bednar, M. K. 2005. Pluralistic ignorance in corporate boards and firms' strategic persistence in response to low firm performance. ***Administrative Science Quarterly***, 50(2): 262-298.

Withers, M. C., Hillman, A. J., & Cannella, A. A. 2012. A multidisciplinary review of the director selection literature. ***Journal of Management***, 38(1): 243-277.

Withers, M. C. & Fitza, M. A. 2017. Do board chairs matter? The influence of board chairs on firm performance. ***Strategic Management Journal***, 38(6): 1343-1355.

Zajac, E. J. & Westphal, J. D. 1996. Director reputation, ceo-board power, and the dynamics of board interlocks. ***Administrative Science Quarterly***, 41(3): 507-529.

Zhu, D. H. & Chen, G. 2015. Ceo narcissism and the impact of prior board experience on corporate strategy. ***Administrative Science Quarterly***, 60(1): 31-65.

Zhu, H. & Yoshikawa, T. 2016. Contingent value of director identification: The role of government directors in monitoring and resource provision in an emerging economy. ***Strategic Management Journal***, 37(8): 1787-1807.

2 A Review of the Board Expertise Literature and a Future Research Agenda

Abstract

Management literature offers substantial insight about corporate boards and their impact on firm outcomes. While much of this research has focused on board structure and surface-level demographics, a growing body of literature is investigating outside directors' prior experiences and resulting expertise. Despite the proliferation of research, scholars have often used board expertise as a context to test discrete theory, and conclusions have rarely been discussed and linked across domains. Consequently, the literature offers fragmented theoretical mechanisms and inconsistent empirical findings on the basic question of how outside directors' expertise impacts the firm. We synthesize strategic management, corporate governance, strategic leadership and organizational behavior research to delineate the sources, contingencies and outcomes of board expertise. We then develop an integrative model to identify potential frictions that affect board expertise outcomes and offer a future research agenda to advance our understanding of how board expertise influences boardroom processes and firm outcomes.

Note: A version of this manuscript is available at https://www.alexandria.unisg.ch/255542/.

2.1 Introduction

How is the experience, and resulting expertise, of outside directors linked to firm outcomes? Various disciplines have used corporate boards as their subject of research; however, conclusive answers to this question remain elusive. Since the separation of ownership and control (Berle & Means, 1932), much of the initial research has focused on director independence (Jensen & Meckling, 1976), which has been to shown to be an unreliable predictor of key outcomes such as firm performance (Dalton, Daily, Ellstrand, & Johnson, 1998). Building on resource dependence theory (Pfeffer & Salancik, 1978), scholars have subsequently examined director ability with respect to advice-giving, conveying legitimacy or providing resources and found more consistent evidence in support of their effects on firm outcomes (Dalton, Daily, Johnson, & Ellstrand, 1999). Fueled by influential articles that integrated agency and resource dependence theories to develop the notion of board capital (Hillman & Dalziel, 2003), researchers have intensified their efforts to understand the influence of experiential attributes on how boards exercise their two primary functions of monitoring and resource provision. Although empirical evidence has lent support to investigating director- and board-specific attributes more thoroughly, director expertise, broadly defined as "knowledge about a certain domain, awareness of the main problems in it, and skills at solving those problems" (Rindova, 1999: 962; Sullivan, 1990), has remained a double-edged sword that is associated with both beneficial and detrimental outcomes.

Perhaps most obviously, research has emphasized that more experiences imply human and social capital gains because of the exposure to more diverse practices, perspectives and thoughts, and broader social networks. Relevant experience therefore improves outside directors' ability to question, assess, inform, and influence managerial action (e.g., Beckman, Schoonhoven, Kim, & Rottner, 2014; Carpenter & Westphal, 2001; Haynes & Hillman, 2010; Kor & Sundaramurthy, 2009; Tian, Haleblian, & Rajagopalan, 2011). Conversely, there is evidence that greater expertise may promote complacency and overconfidence (Almandoz & Tilcsik, 2016) and that directors may possess expertise but fail to contribute it to the firm because they misjudge fellow board members' receptivity to their inputs (Westphal & Bednar, 2005), lack motivation to demonstrate competence (Veltrop, Molleman, Hooghiemstra, & van Ees, 2017) or face external demands that strain their capacity to effectively exercise board service (Khanna, Jones, & Boivie, 2014). Even capable directors who are highly motivated and serve on well-functioning boards may be subject to bounded rationality (Cyert & March, 1963) and rely on heuristics or simplifying strategies (Tversky & Kahnemann, 1974). For example, outside directors appear to develop preferences based on their experiences,

which lead them to mimic familiar strategic actions rather than utilize their capabilities to tailor responses to the focal firm (e.g., Zhang & Greve, 2018). Additionally, the effectiveness of outside director expertise may be contingent upon the firm environment (Hillman, Cannella, & Paetzold, 2000). Finally, executive behavior may undermine board expertise because CEOs and top managers may avoid interactions with high-expertise directors when they anticipate an unfavorable power balance (Garg & Eisenhardt, 2017) or seek to demonstrate dominance and superiority by deliberately pursuing strategies that contradict the domain expertise of outside directors (Zhu & Chen, 2015). Consequently, outside director expertise has been associated with a variety of outcomes ranging from firm growth (Kor & Sundaramurthy, 2009) to firm failure (Almandoz & Tilcsik, 2016), from strategic change (Haynes & Hillman, 2010) to strategic persistence (Westphal & Bednar, 2005) and from more interactions between the board and CEO (Westphal, 1999) to fewer interactions (Garg & Eisenhardt, 2017).

This short synopsis illustrates the various consequences and interdependencies that must be explained when studying board expertise. Therefore, we seek to organize this body of work and advance our understanding of board expertise as a research phenomenon. In contrast to other aspects of board composition, such as demography, the influence of outside director expertise has received little attention in earlier reviews. In addition, those that did capture experience- or expertise-related aspects have framed it along a human and social capital logic, which, as the above summary indicates, may be an important yet by no means comprehensive perspective to integrate the cumulative knowledge on board expertise. Specifically, with our work, we seek to extend the influential review by Johnson, Schnatterly, and Hill (2013) on "board composition beyond independence". While their review provided a much-needed systemization of the board literature, the authors foregrounded issues of demographics, human and social capital while backgrounding the specific notions of experience and expertise. One explanation is illustrated in Figure 2.1; the research on outside director expertise has only recently surged, nearly doubling since the publication of Johnson and colleagues' study. At the time of its publication in 2013, Krause, Semadeni, and Cannella (2013: 1629) noted that "to date, little research has explored how directors' expertise impacts the firms on whose boards they serve". This statement complements the succinct summary of board expertise research offered earlier by McDonald, Westphal, and Graebner (2008: 1156), which we believe continues to hold today:

> There has been relatively little recent systematic consideration of specific board member characteristics that would render directors best able to effectively execute their advice and counsel functions. […] There have been few, if any, systematic efforts to conceptually elaborate

> this basic notion by delineating the nature and sources of directors' expertise, and by describing how that expertise might be linked to the relative success of specific firm strategic actions. There have been still fewer *empirical* studies of these issues. By extension, little attention has been given to the boundary conditions under which director expertise might have stronger or weaker effects on performance outcomes.

Given the recent advances in the field, we address this gap by comprehensively synthesizing the prior work that has explored experience- and expertise-related attributes of boards. We are, to the best of our knowledge, the first to develop an integration that delineates the sources of outside directors' experience and expertise and explore key contingencies and implications. Our multitheoretic integration combines accumulated research based on more traditional human and social capital arguments in addition to those from psychological and behavioral literatures and, to a lesser extent, organizational learning and institutional perspectives. In doing so, we aim at providing a more complete understanding of how outside directors' experiences, and subsequent expertise, shape board processes and outcomes.

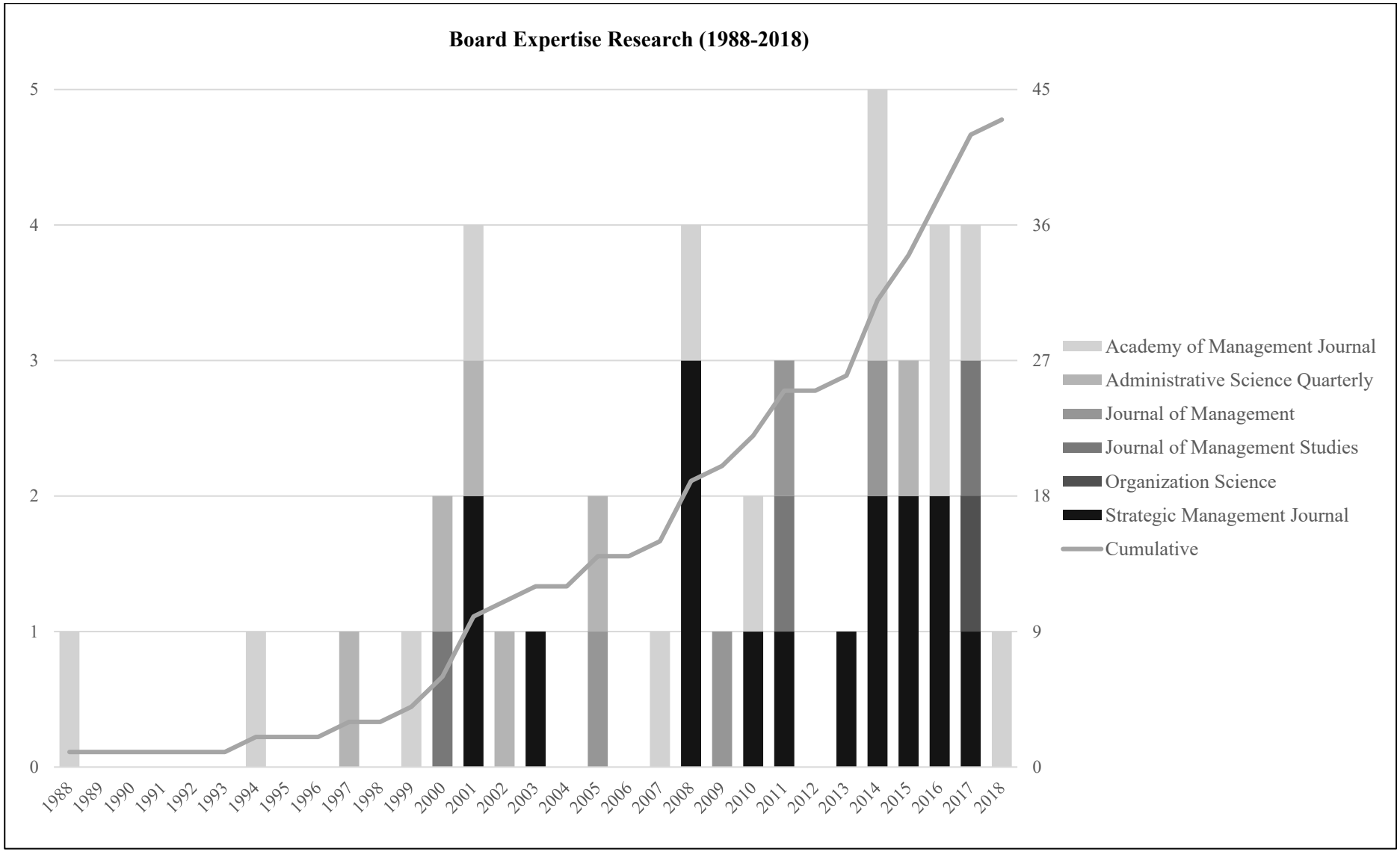
With this review, we make several contributions to the literature. First, we systematically categorize the sources of board expertise and the multilevel contingencies that influence firm performance, strategic choices, and board-related outcomes. Second, we reconcile conflicting findings in the growing literature on board expertise by offering new interpretations and combinations of prior research findings. Third, we build an integrative model that alerts researchers of potential frictions and interdependencies and allows us to reveal which areas have been studied adequately and where important gaps remain. Fourth, we develop an agenda for future research designed to fill critical gaps, connect the dots, and address new areas that need additional research focus.

2.2 What Do We Know About Board Expertise?

We conducted a comprehensive and systematic search of leading management journals used in prior reviews (Johnson et al., 2013; Short, 2009) and performed a keyword search with terms related to board experience and expertise.[1] We then extended our

[1] Consistent with prior research, we searched for eligible articles in the highest ranked management journals: *Academy of Management Journal (AMJ), Academy of Management Review (AMR), Administrative Science Quarterly (ASQ), Journal of Management (JOM), Journal of Management Studies (JMS), Organization Science (OS),* and the *Strategic Management Journal (SMJ)*. The keywords we used were different combinations and variations of *board, board of directors, boardroom, chair, outside director, governance, capital, composition, characteristics, resources, experience, expertise, expert, skills,* and *knowledge.* Full study details are reported in the Appendix (Chapter 2.5).

Figure 2.1 Board Expertise Publications in Key Management Journals

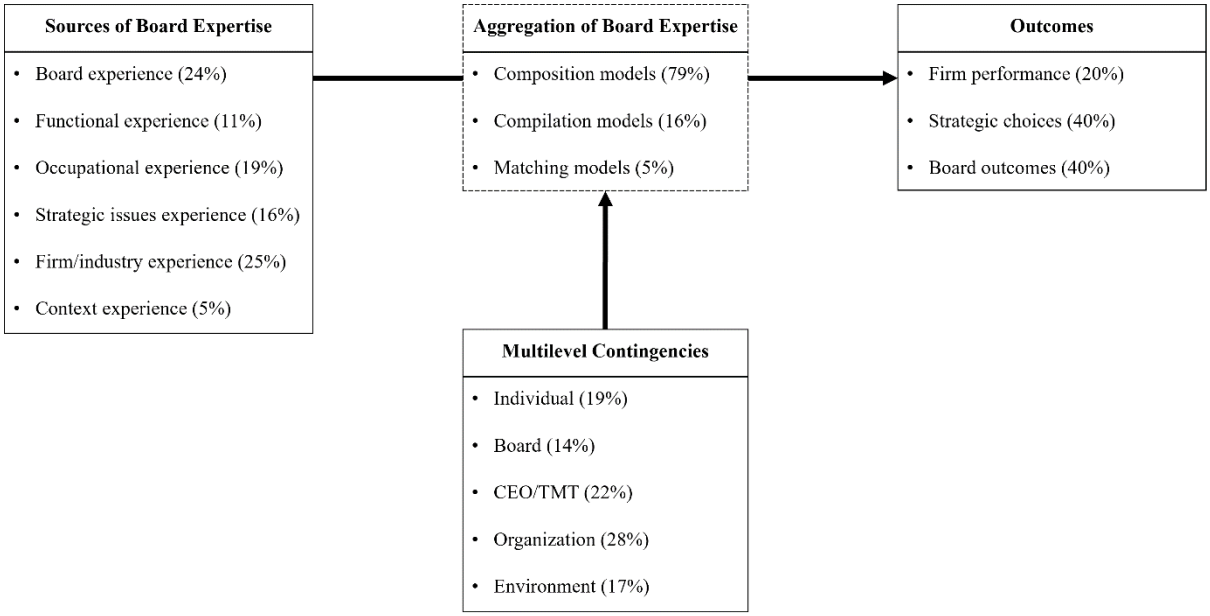


review by identifying relevant references in the articles returned in our initial search. We retained all articles that have tested how outside directors' experiences and capabilities manifest in firm- and board-level outcomes. Since prior research typically has not considered board expertise as a distinct research phenomenon, we needed to make several decisions in determining each article's eligibility for inclusion and the category to which we assign it. First, since we aim at unpacking specific sources, mechanisms and outcomes of outside director expertise, we focus on quantitative empirical studies in our review. Therefore, conceptual (e.g., Hambrick, Misangyi, & Park, 2015) and qualitative (e.g., Garg & Eisenhardt, 2017) articles were not included in our primary review sample; however, key conclusions from those works were integrated in the general discussion. The same holds for articles that were published outside our focal domains but contribute to our understanding of board expertise. Second, we only included studies in which the board of directors was a central subject of analysis. For example, board interlock studies that primarily focused on organizational and environmental factors without explicitly discussing the role of the board were excluded (e.g., Haunschild, 1993, 1994; Mizruchi & Stearns, 1988, 1994; Stearns & Mizruchi, 1993). In turn, studies on interlocks that considered implications of directors' experience on other boards and discussed how external board memberships may inform outside directors' strategic preferences, knowledge or expertise were included (e.g., Kor & Sundaramurthy, 2009; Krause et al., 2013; Westphal & Zajac, 1997). Third, in allocating a focal experience to a specific source of expertise, we relied on the respective article's arguments. For example, some studies have operationalized financial expertise as a result of bank employment (e.g., Almandoz & Tilcsik, 2016), while others have considered financial expertise from a more managerial perspective (Veltrop et al., 2017). In the former case, we assigned the source of expertise to occupational experience and in the latter case to functional experience. Similarly, several studies have examined firm or board tenure. Here, some scholars have emphasized that tenure enhances firm- or industry-specific expertise (e.g., Brown, Anderson, Salas, & Ward, 2017; Kesner, 1988; Krause, Semadeni, & Withers, 2016), and others have highlighted that co-working experience with fellow board members influences board members' mutual interactions and have explored the subsequent effects on board decision making (e.g., Sauerwald, Zhiang, & Peng, 2016; Tian et al., 2011; Tuggle, Schnatterly, & Johnson, 2010a). In these cases, the sources of expertise were assigned to firm/industry experience and board-related experience, respectively.

During our analysis of the board expertise literature, we identified four key areas along which we organize our review of the prior research: (1) sources of outside

directors' expertise; (2) modes of aggregating board expertise; (3) performance, strategic and board-related outcomes of expertise; and (4) multilevel contingencies that affect the relationship between board expertise and outcomes. Figure 2.2 summarizes the state of the research on board expertise in a comprehensive framework. Below, we synthesize the accumulated findings within each of the four areas.

Figure 2.2 Categorization of Board Expertise Research



Notes. Percentages indicate the prevalence relative to all relationships tested within each of the four depicted areas across all studies.

Sources of Outside Director Expertise

Scholars have focused on several experience-based attributes and their effects on board- and firm-level outcomes. Below, we categorize the research along six sources of experience that may be related to the board, function, occupation, strategic issues, firm or industry and broader context.

Board experience. This first category consists of role-specific experiences of outside directors in executive or nonexecutive capacities as well as experiences made with specific intra-board events or dynamics. For example, scholars have studied outside directors who are active CEOs (De Villiers, Naiker, & van Staden, 2011), who are either active or previous CEOs (Marcel & Cowen, 2014; Tian et al., 2011), who have been CEOs and experienced specific incidents such as board reforms during their CEO tenure (Westphal & Zajac, 1997), or who have never been CEO (Feldman & Montgomery, 2015). CEO-directors have not only garnered focus because of the unique perspectives they bring to the organization but also because they tangibly illustrate the conflicting

provisions made by agency and resource dependence theories. On the one hand, CEO-directors can arguably offer rich advice and guidance to the incumbent CEO and management team, which emphasizes their resource provision role; on the other hand, they may identify more with executive roles than portfolio directors, which raises essential agency concerns. The chair, as the CEO's counterpart or even "boss" (Krause, 2017), has received considerably less attention; only one study in our sample has incorporated a specific measure referring to chair experience, or more precisely, the lack thereof (Feldman & Montgomery, 2015). More commonly, scholars have examined outside directors' senior leadership and top management experience, typically under the assumption that it reflects business expertise and proficiency in shaping strategic outcomes (Golden & Zajac, 2001; Hillman et al., 2000; Khanna et al., 2014; Kroll, Walters, & Le, 2007), reaction to crises (Marcel & Cowen, 2014), board involvement (Kesner, 1988) or the relationship with the CEO (Westphal, 1999). Similarly, experience in serving as outside director, both outside the focal company or within the focal company, has received scholarly scrutiny. Researchers have used this category of experience to infer the ability to serve as outside director (De Villiers et al., 2011; Johnson, Schnatterly, Bolton, & Tuggle, 2011; Krause et al., 2016; Sundaramurthy, Pukthuanthong, & Kor, 2014), make conclusions about the quality of relationships among directors inside the boardroom (Sauerwald et al., 2016; Tian et al., 2011) as well as the diversity of thought and perspectives they can contribute to board decision making (Tuggle et al., 2010a) or the depth of connections to board members outside the focal company (Beckman et al., 2014; Marcel & Cowen, 2014). A related line of inquiry has focused on specific characteristics of the mandate; for example by isolating the effects of experience serving as a demographic minority on a board (Westphal & Milton, 2000) or experience in supervising a CEO who is demographically similar to the CEO of the outside director's current mandate (Zhu & Westphal, 2014).

Functional experience. A smaller subset of studies has examined outside directors' specific functional background. For example, operational expertise (Krause et al., 2013), financial expertise (Veltrop et al., 2017) or experience in output-oriented functions (Tuggle et al., 2010a) have been shown to benefit the firm. Interestingly, despite these positive implications of functional backgrounds in marketing and sales, research and development or engineering, Tuggle et al. (2010a) do not find effects for heterogeneity in outside directors' functional backgrounds, concluding that some experience backgrounds may stimulate effective boardroom discussions while others hinder it. This observation is also mirrored in the finding that outside directors' functional expertise heterogeneity may induce skepticism about the extent to which

directors share each other's concerns, which may lead to less candid discussions and strategic persistence (Westphal & Bednar, 2005). However, most scholars examining functional heterogeneity found that the diverse experiences, preferences and views it reflects is associated with better strategic decision making (Haynes & Hillman, 2010), higher legitimacy (Marcel & Cowen, 2014) and closer interactions with the CEO (Westphal, 1999).

Occupational experience. Studies attending to this category of expertise have nearly exclusively utilized a resource dependence logic, hypothesizing that specific occupations or occupational heterogeneity convey valuable insight and resources that lead to beneficial firm outcomes. For example, researchers have focused on experience acquired in public or governmental agencies emphasizing the knowledge, legitimacy and resource access that political linkages may accord to the firm (Hillman, 2005; Lester, Hillman, Zardkoohi, & Cannella, 2008; Sun, Hu, & Hillman, 2016). Additionally, experience as a founder appears to be indicative of important capabilities in evaluating and advising top management teams (Feldman & Montgomery, 2015; Kor & Sundaramurthy, 2009). Similarly, lawyers on the board may provide valuable analytical skills that may help to assess and comply with regulatory policies (De Villiers et al., 2011; Hillman et al., 2000; Marcel & Cowen, 2014). Hillman et al. (2000) provide a general taxonomy of occupational backgrounds and show that different types of occupations appear to be associated with unique resources that may be more or less useful to the firm depending on its regulatory and competitive environment. Finally, conflicting evidence exists in terms of the optimal mix of occupational backgrounds at the board. While Haynes and Hillman (2010) find that more occupational heterogeneity benefits the firm through greater breadth of knowledge, experiences and social ties, Golden and Zajac (2001) caution that moderate heterogeneity in occupational experiences may be more favorable because excessive occupational variety may impair the development of a shared understanding of the focal firm's industry dynamics.

Strategic issue experience. The most influential body of work on board expertise pertains to the analysis of outside directors' experiences with specific strategic issues. Studies that captured this category of expertise have, on average, approximately 58% higher citation numbers and 26% higher citation numbers when controlling for the fact that this substream has the longest tradition among our six categories of expertise[2]. The largest segment within this line of research analyzes outside directors' merger and

[2] The average publication year in our sample is 2009. Studies on board-level expertise relating to strategic issues have, on average, been published in 2007. The average number of citations per study across the entire sample was 102 as of July 2018, which separates into 141 citations for studies on strategic issue experience versus 89 citations for others. When accounting for average citations per year since the study has been published, the corrected citation numbers are 8.1 versus 10.2 citations per study and year since publication.

acquisition (M&A) experience (Beckman & Haunschild, 2002; Kroll, Walters, & Wright, 2008; McDonald et al., 2008; Zhu & Chen, 2015). The research interest in boards' role in M&A-related processes is not surprising given (1) that acquisition decisions are among the most consequential decisions a board can take; (2) the substantial challenges that are endemic to acquisition decisions such as information overload or time constraints; and (3) that acquisitions require particularly high levels of foresight and strategic vision. Consequently, various aspects of outside directors' acquisition expertise have been studied, such as experience with certain deal volumes, values, premia, relatedness or the product market in which acquisitions occurred. The majority of these studies suggest that outside directors' acquisition experience is associated with a wide array of information to make better causal inferences, which subsequently improves the firm's M&A success (Beckman & Haunschild, 2002; Kroll et al., 2008; McDonald et al., 2008).[3] A similar congruence between outside directors' strategic issue experience and the strategic orientation of the firm has been found for new product market entry (Diestre, Rajagopalan, & Dutta, 2015), overall corporate diversification (Westphal & Zajac, 1997), and the propensity to engage in mimetic decision making (Westphal, Seidel, & Stewart, 2001). Carpenter and Westphal (2001) elucidate a key mechanism beyond the findings by showing that outside directors' experience in companies with similar strategy may be positively associated with their ability to contribute to boardroom discussions, monitor management and provide advice. However, Zhu and Chen (2015) point to an interesting nuance with their finding that firms may in fact pursue the opposite strategy from what one could infer from outside director's strategic issue experience. Using acquisition propensity and international diversification as two key manifestations of firm strategy, the researchers find initial support that outside directors' experiences shape strategic outcomes in the expected direction. However, the effect reverses in the presence of narcissist CEOs who may not only be unreceptive to outside directors' expertise but instead seek to demonstrate superiority by doing just the opposite from what outside directors have extensive experience in. The introduction of CEO personality complements Westphal and Fredrickson (2001), who provide evidence that outside directors appoint CEOs who they believe will align corporate strategy with their strategic preferences. These findings

[3] Goranova, Priem, Ndofor, and Trahms' (2017) provide interesting further insight. The researchers' findings indicate that, through their monitoring ability, outside directors may constrain the CEO's discretion to pursue value-destroying M&A deals; however, at the same time, they may fail to enable the CEO to pursue value-creating deals. Thus, Goranova and colleagues find board monitoring to be associated with both lower M&A losses and lower M&A gains (i.e., lower M&A performance extremeness). The study also captures the effect of outside directors' prior M&A experience but then aggregates it into a composite measure with several board structural variables; this is why the isolated effect of experience could not be assessed and why the study was not included in the review sample.

emphasize that executive and board effects on strategy may not only mask each other but may also be contingent upon key actors' personalities; this illustrates that disentangling the specific influence of corporate elites remains a pervasive challenge in the strategic leadership and upper echelons literatures.

Firm/industry experience. Perhaps the most straightforward link between any category of outside director expertise and the quality with which boards exercise their primary responsibilities stems from firm or industry experience. As outside directors spend more time serving in a focal firm or industry, their domain-specific knowledge and social relationships with relevant stakeholders increase. Consistent with its intuitive relevance, firm and industry expertise is also the category of expertise that has most often been investigated by the studies captured in our sample (25%). Overall, studies finds that outside directors' industry expertise may improve boards' understanding of the strategic context, which may offset the lack of top management industry expertise (Kor & Misangyi, 2008) and enhance the capacity and openness for strategic actions (Beckman et al., 2014; Golden & Zajac, 2001; Oehmichen, Schrapp, & Wolff, 2017; Tuggle et al., 2010a). Several scholars also find positive performance implications of board industry expertise such as firm growth (Kor & Sundaramurthy, 2009) and better stock market performance (Sundaramurthy et al., 2014). However, there is also evidence that excessive industry expertise may promote complacency (Almandoz & Tilcsik, 2016; Sundaramurthy et al., 2014) and conformance with historical norms and industry central tendencies which restrict strategic change (Haynes & Hillman, 2010). In terms of the individual role of industry experts at the board, there is support that outside directors assess fellow board members with industry expertise more favorably (Krause et al., 2016) and are more likely to be appointed to board committees (Kesner, 1988), although the latter may not hold to the same extent for female directors (Bilimoria & Piderit, 1994). In contrast to other types of expertise, industry experience may not necessarily lead to a higher status at the board (Veltrop et al., 2017). A possible reconciliation may be that the more favorable assessment refers to chairs who may be assessed with more goodwill and possess greater general human and social capital as well as that the overall assessment of director capabilities appears to be time-variant (Brown et al., 2017). In terms of group-level implications, Westphal and Bednar (2005) show that heterogeneity in industry expertise, in contrast to other categories of expertise, is unlikely to result in inertial board dynamics; this is supported by Tuggle et al. (2010a), who conclude that slight faultlines resulting from heterogeneity in firm or industry expertise may promote the dialectical inquiry, and only very strong faultlines trigger conflict and disagreement on the board. Firm expertise has been shown to not

automatically result in benefits to firm (De Villiers et al., 2011), which may be explained by the finding that the productive potential of firm expertise appears to be contingent upon the environmental context (Hillman et al., 2000).

Context experience. The most nascent stream of expertise-related research on outside directors pertains to contextual experience, which refers to outside directors' exposure to any dominant characteristic of the external environment such as nations, regions, cultures, political or institutional regimes. Our search returned only a few studies that explicitly examined outside directors' context-specific experience. Notably, Carpenter, Pollock, and Leary (2003) develop a reasoned risk-taking view by showing that board international experience may mitigate the risk assessment of internationalization activities and therefore affect the firm's consequent strategic behavior.[4] Beckman and colleagues (2014) also consider the geographical exposure of outside directors, although they restrict their consideration to a domestic context (i.e., U.S. states) and aggregate it with other experiential characteristics. Overall, the researchers' findings suggest that context-specific experiential heterogeneity is associated with more and deeper knowledge and relationships held by outside directors which manifests in the emergence of diverse alliance portfolios. Finally, Zhang and Greve (2018) show that boards' problemistic search and opportunity exploration is influenced by outside directors' experience-based preferences acquired through exposure to Anglo-Saxon environments.

Aggregation of Board Expertise

We identified three main approaches scholars have used to aggregate different forms of expertise. Those approaches include additive measurements of outside directors' expertise, the measurement of board expertise heterogeneity and matching-based approaches. Consistent with prior research, we refer to the former two approaches as composition and compilation models, respectively (Haynes & Hillman, 2010; Kozlowski & Klein, 2000). The aggregation of different forms of expertise has not only methodological but also conceptual implications that we discuss below.

Composition models. A staggering 79% of studies investigating experience- and expertise-related effects rely on composition models. Composition models measure similar unit-level contributions, which, in the studies we surveyed, has most often been done by calculating the sum, means or proportions of outside directors who possess a

[4] Although beyond the scope of this review, it should be noted that the international business literature also has evinced insights on antecedents (Oxelheim, Gregorič, Randøy, & Thomsen, 2013) and outcomes (Miletkov, Poulsen, & Wintoki, 2017) of director foreignness and international experience. This line of research generally finds that more international firms both attract and benefit more from board members, although the performance effect may be contingent on the supply of qualified domestic directors.

specific type of expertise. Certain scholars have also examined the proportion of directors who possess combinations of different types of expertise. For example, in one intermediate step of their analysis, Tuggle et al. (2010a) construct a measure that creates four groups of directors based on their firm *and* industry experience (i.e., insider–intraindustry experience, insider–interindustry experience, outsider–intraindustry experience, and outsider–interindustry experience). Similarly, Westphal and Zajac (1997) examine the implications of outside directors who are active CEOs *and* have experienced specific forms of change either in the company where they serve as CEO or at other companies where they have served as outside directors. The prevalent theoretical reasoning beyond composition models roots in resource dependence theory (Pfeffer & Salancik, 1978), and scholars have hypothesized that a larger quantity of a focal type of expertise enhances the board's resource and capability base. However, as the above summary has shown, examining the proportion of directors who share the same type of expertise within a focal expertise category may yield different, sometimes opposing, outcomes compared with an analysis of the collective dispersion of various types of expertise within a respective category (e.g., Tuggle et al., 2010a). For example, the beneficial outcomes associated with a specific type of expertise may be offset by the presence of another type of expertise within the same category, which is difficult to capture with composition models. In other words, outcomes may vary for the same type of expertise and under the same boundary conditions confronting the board and firm, depending on the operationalization of the variable (e.g., proportion of outside directors with financial expertise versus collective functional background diversity).

Compilation models. Compilation models are used to approximate the heterogeneity of outside directors' expertise. Contrary to composition models, this aggregation does not build on resource dependence arguments; instead, it explores implications for the process of shared decision making in diverse groups. Consistent with diversity research, the accumulated findings from board expertise research reveal that two competing forces may be at work. On the one hand, more heterogenous groups may process ambiguous and diverse information better, particularly when confronting the highly complex tasks that boards routinely do (Bantel & Jackson, 1989; Eisenhardt & Schoonhoven, 1990; Tushman & Nadler, 1978). Additionally, heterogeneous groups may possess superior competitive and adaptive capabilities (Hambrick, Cho, & Chen, 1996) as well as broader networks (Nahapiet & Ghoshal, 1998). On the other hand, social identity theorists have proposed that dissimilar individuals may be inclined to view each other negatively, which impedes cohesion and creates conflict, disagreement and the emergence of subgroups (Lau & Murnighan, 1998; Tajfel, 1978; Turner, 1987).

Although experience- and expertise-related attributes are less easily observable than demographic characteristics, studies have shown that they may yet provide a salient basis for in-group categorization (e.g., Westphal & Bednar, 2005). Collectively, the above observations may explain why composition and compilation models have produced partly contradictory results in the context of board expertise research.

Matching models. Only a few studies (5%) have adopted a matching model in studying outside director expertise. Those models consider the prior expertise of outside directors in conjunction with specific characteristics of the focal firm. For example, Zhu and Westphal (2014) investigate the similarity between the firm's incumbent CEO and CEOs who newly appointed outside directors have been exposed to while serving at other boards. The authors consider seven major demographic characteristics and use factor analysis to reduce the data into a similarity index. Creative research designs like the above promise significant contributions and may alleviate some of the concerns associated with composition and compilation models. However, an obvious but important difficulty lies in identifying a relevant criterion against which outside director expertise is matched and in developing a plausible theoretical reasoning for the hypothesized relationship.

Outcomes of Board Expertise

Scholars have examined various outcomes of outside director expertise. Approximately 20% of the surveyed studies used various measures of firm performance, and approximately 40% have adopted dependent variables referring to strategic firm outcomes or board-level outcomes, respectively.

Firm performance. The earlier research examining the performance implications has often relied on structural variables (e.g., proportion of outside directors, independence, and CEO duality), which produced inconclusive results (Dalton et al., 1998). Studies more deeply examining the actual ability that outside directors can contribute to the firm through their expertise often found specific performance implications, albeit mixed ones. For example, political expertise has been shown to convey access to information, resources and legitimacy, which improves the firm's links to its external environment in a U.S. context and strengthens accounting-based firm performance (Hillman, 2005). A subsequent study examining political expertise in the Chinese context finds a negative effect on accounting-based firm performance because board-political linkages may shield blockholders against market-based and regulatory disciplinary forces, which encourages rent appropriation (Sun et al., 2016). Other studies have analyzed the human and social capital-enhancing effects of board expertise and

found positive effects on accounting-based performance measures (Khanna et al., 2014; Krause et al., 2013). In one post hoc analysis, Khanna et al. (2014: 566) find that their effects do not hold with market-based measures, reasoning that "because the concept of director capabilities is relatively new, it is less likely that the market is cognizant of the board's capabilities or incorporates those capabilities into its valuation". However, both Hillman (2005) and Feldman and Montgomery (2015) show that higher board expertise may be associated with increases in Tobin's Q, which they attribute to the increased resource provision capabilities. A subset of studies focuses on young entrepreneurial firms launching an IPO (Kroll et al., 2008; Sundaramurthy et al., 2014). These studies show that board expertise improves IPO performance. Other studies show that CEO and legal experience may alert outside directors to threats and opportunities in the domain of sustainability, which subsequently improves firm environmental performance (De Villiers et al., 2011). Finally, Almandoz and Tilcsik (2016) find that expertise may also become a liability by demonstrating that banking expertise may promote cognitive entrenchment and overconfidence, which increases the probability of bank failure. Collectively, studies exploring the performance effects of outside director expertise do not suggest that there is a universalistic relation between board expertise and firm financial performance; instead, they point to its inherently context-dependent nature.

Strategic choices. Scholars who have examined strategic firm outcomes have examined corporate growth, diversification and strategic resource allocation. The first set of studies hypothesize and find that acquisition-related experiences lead to specific strategic preferences, which manifest in focal firms' acquisition behaviors (Greve & Zhang, 2017; Zhang & Greve, 2018; Zhu & Chen, 2015). Relatedly, Beckman and colleagues (2013) suggest that, in the context of alliance formation, not only strategic issue experience (i.e., experiences related to alliances) but also outside directors' heterogeneity in experiences may predict alliance patterns. Others have explored acquisition performance implications and concluded that outside directors can capitalize on their accumulated knowledge and are more engaged in acquisition processes, which leads to lower premiums paid for acquisition targets (Beckman & Haunschild, 2002) and more beneficial stock market reactions to acquisition announcements (Kroll et al., 2008; McDonald et al., 2008). More generally, Kor and Sundaramurthy (2009) find that outside directors' firm- and industry-specific experience improve their ability to scrutinize managerial action and lead to higher firm growth. The second set of studies focus on the effects of outside director expertise on the corporate diversification of the firm. In this context, expertise may reflect prior learning and better knowledge of unfamiliar markets (Diestre et al., 2015) or reduce the perceived riskiness of new

ventures (Carpenter et al., 2003), both of which generally enhances firms' propensity to diversify. However, using social exchange arguments, Westphal and Zajac (1997) demonstrate that outside directors may also be effective at limiting top management's preference for unrelated diversification. The third set of studies show that board expertise also affects other elements in the firm's strategic orientation. Notably, several scholars found that multiple forms of board expertise improve director ability to identify and prioritize potential industry-specific threats and opportunities, which translates into a higher propensity to initiate strategic change (Golden & Zajac, 2001; Haynes & Hillman, 2010; Oehmichen et al., 2017; Westphal & Fredrickson, 2001). Westphal and colleagues (2001) add that expertise may not only shape the content of strategic decisions but that outside directors may subconsciously re-enact previously experienced strategic decision-making processes, which affects the final outcomes. Drawing on behavioral and social categorization theories, scholars have also cautioned that expertise heterogeneity may impede outside directors' ability to formulate a shared understanding of the firm's strategic direction (Westphal & Fredrickson, 2001) and that it may trigger pluralistic ignorance that results in strategic persistence (Westphal & Bednar, 2005).

Board outcomes. At the board level, a portion of the existing knowledge is linked to the director selection literature (Withers, Hillman, & Cannella, 2012). For example, Lester et al. (2008) predict and find that political expertise increases the probability of board appointments, although the effect is mitigated by a deterioration of the underlying human and social capital over time. The deterioration of expertise is also reflected in negative investor reactions to unexpected director deaths, which, after a prime period, decrease with increasing director tenure (Brown et al., 2017). Others find that outside directors' experiences with a specific CEO improve their social acceptability among demographically similar CEOs, which increases the likelihood of a board appointment (Zhu & Westphal, 2014). Additionally, social capital-enhancing experiences (e.g., multiple board memberships) make outside directors more attractive to complex firms with high-status board members (Johnson et al., 2011) and, once on the board, business and firm-specific expertise predict committee membership (Bilimoria & Piderit, 1994; Kesner, 1988). Kor and Misangyi (2008) add that top management team and board-level expertise may be complementary by showing that a lack in top management industry experience can be offset by the presence of outside directors with significant managerial industry experience. Related research finds that the specific type of expertise that firms seek when appointing new outside directors may be contingent on whether the firm operates in a regulated or deregulated environment (Hillman et al., 2000). Marcel and Cowen (2014) examine the opposite phenomenon, director exit, and find that firms

appear to particularly value the human and social capital embedded in higher expertise during times of crisis. That finding is also supported by empirical evidence that shows how director expertise is associated with improved monitoring and advice-giving (Carpenter & Westphal, 2001; Westphal, 1999), more board-level attention devoted to discussions about crucial strategic issues (Tuggle et al., 2010a) as well as higher board involvement (Westphal & Milton, 2000) and conformity (Veltrop et al., 2017). At the individual level, greater expertise is also associated with a more positive perception by board colleagues, as Krause et al. (2016) show exemplarily for the chair position. However, this finding may not necessarily hold for other board members (Veltrop et al., 2017). Finally, outside directors' expertise has also been shown to affect CEO-related issues. For example, board decisions on CEO appointments are perceived more favorably by investors when outside directors have greater human and social capital (Tian et al., 2011), and CEO compensation may be more sensitive to current (Brown et al., 2017) and future (Westphal & Zajac, 1997) firm performance, although the former appears to diminish with increasing tenure of outside directors. Others find that more board-level experience in non-focal firms leads outside directors to adhere to normative pressures of the corporate elite rather than shareholder preferences, which manifest in higher excess CEO returns. Conversely, outside directors serving longer on a focal board may have a stronger interest in satisfying the stakeholder expectations of the focal firm, which leads to lower excess CEO returns (Sauerwald et al., 2016). Still others show that outside directors who have experience with demographically similar CEOs tend to be more sympathetic with the incumbent CEO and favor higher compensation (Zhu & Westphal, 2014).

Multilevel contingencies

Most studies have examined various contingencies that may affect the relationship between types of board expertise and outcomes. However, 30% of the studies we surveyed do not hypothesize interactions effects.[5]

Individual-level contingencies. Studies that have investigated the moderating effects of individual director attributes provide a nuanced view on important mechanisms underlying the relationship between outside director expertise and firm

[5] We only considered moderating hypotheses when one of the interaction terms referred to a specific type of board expertise. Studies that only included interaction effects on non-board related hypotheses were not considered (e.g., Kroll et al., 2007). We also explored whether there are temporal trends but found the proportion of studies that do not include interaction hypotheses to be relatively stable over time; 27% of studies published before 2008 do not hypothesize interaction effects, compared to 32% of studies published since.

outcomes.[6] Counter-intuitively, scholars have shown that expertise does not necessarily breed influence over board decisions (Veltrop et al., 2017), and more involved directors may become entrenched more quickly due to more frequent interactions and deeper relationships built through their involvement (Brown et al., 2017). Veltrop and colleagues (2017) find that outside directors' individual performance orientation matters in that directors with low performance orientation are unlikely to be influential during board deliberations. Zhu and Yoshikawa (2016) add that identification with the focal firm may be an important contingency that improves outside directors' engagement in managerial monitoring and resource provision. However, if outside directors perceive that fellow board members are not concerned about strategic issues, they are less likely to contribute their own expertise to the firm (Westphal & Bednar, 2005). Furthermore, outside directors who also serve as executives at another firm tend to favor outside CEO succession more to the extent that their home company is strategically different from the focal company on which board they serve (Westphal & Fredrickson, 2001). This effect is more pronounced for longer manager-directors' home company tenure. Thus, it appears that those outside directors attempt to initiate strategic change through CEO succession to match the strategic orientation they are more familiar with. Tian and colleagues (2011) complement these findings and show that the individual social capital of outside directors is associated with CEO appointments in that outside directors with stronger internal social capital tend to promote CEOs internally, whereas outside directors with more external social capital instead hire CEOs externally. There is further evidence that directors who are demographically different from the incumbent CEO are more sympathetic with him or her to the extent that they have previously served as an outside director in a company with a CEO who is demographically similar to the incumbent CEO (Zhu & Westphal, 2014). Relatedly, directors who are a demographic minority on their board may benefit from prior experience serving as a demographic minority (Westphal & Milton, 2000), which may be particularly important for female directors who appear to experience lower recognition, including when possessing high levels of expertise (Bilimoria & Piderit, 1994).

Board-level contingencies. In addition to individual factors, scholars have also explored how aggregate board-level contingencies affect the relationship between director expertise and firm outcomes. In the presence of expertise heterogeneity, board meeting informality (i.e., more off-site meetings, higher agenda openness, and greater frequency of meetings) either has no or a negative effect on boardroom discussions;

[6] We classified moderators as related to the individual level when the primary theoretical reasoning was based on director-specific behavior although, in certain cases, scholars have subsequently relied on group-level operationalizations to test their assertions.

however, it can mitigate the negative effects of strong expertise-related faultlines by fostering acceptance between the different subgroups (Tuggle et al., 2010a). Based on the notion that ownership increases the likelihood that director-owners will be more vigilant and devote more time and attention to a focal mandate, Kroll et al. (2008) show that board expertise may complement agency issues in that board expertise manifests most strongly in firm outcomes when directors have high expertise *and* hold equity in the firm. However, this finding should be interpreted with caution because there is also evidence for a positive moderating effect of board independence (McDonald et al., 2008), lending support to a more traditional agency theoretic argumentation.[7] Finally, there is evidence that board busyness is neutralizing the beneficial effects of board expertise (Khanna et al., 2014; Kor & Sundaramurthy, 2009). These findings imply that the increased information processing demands reflected in an excessive number of other board memberships strain outside directors' capacity to contribute their expertise to the focal firm.

CEO- and top management team-level contingencies. Not surprisingly, many scholars have shown that the characteristics of the CEO and top management interact with the effectiveness of outside director expertise. Most importantly, the relative power between the CEO and the board reduces (Golden & Zajac, 2001; Haynes & Hillman, 2010; Sauerwald et al., 2016) or even reverses (Zhu & Chen, 2015) the extent to which outside directors' expertise-related inclinations manifest in firm outcomes. The same is true when CEOs have previously been associated with high-status firms (Zhu & Chen, 2015). However, there is also evidence for a more symbiotic relationship between board expertise and the top management team: Carpenter and colleagues (2003) show that the effect on strategic outcomes is greatest when both outside and inside directors have high levels of expertise. Relatedly, Kor and Misangyi (2008) find evidence of *experience supplementing* where a lack of top management team expertise can be substituted by outside directors' expertise. Furthermore, and consistent with agency theory, scholars have found a significant and positive interaction between outside director expertise and both the top management (Carpenter et al., 2003) and CEO (Westphal, 1999) ownership, indicating that managerial incentives may diminish the need for high board expertise.

Organizational contingencies. Perhaps the most important organizational contingency refers to firm performance. Studies produce consistent support that low performance (Sundaramurthy et al., 2014; Westphal & Fredrickson, 2001), performance below aspiration (Westphal & Bednar, 2005) or declining operational efficiency (Krause

[7] It should be noted that the studies by Kroll and colleagues (2008) and McDonald and colleagues (2008) are particularly well comparable because they examine the effect of a similar type of outside director expertise (acquisition expertise) on a similar dependent variable (acquisition performance).

et al., 2013) emphasize the relationship between outside directors' experiences and firm outcomes. It appears that boards can shift from a regular to a 'crisis mode' and become more involved when facing stakeholder discontent which, in turn, emphasizes the impact of their expertise. At the same time, it becomes more difficult for firms to attract high-expertise outside directors when the organization is facing irregularities, such as financial restatements, or when it is being perceived as a low-status firm (Diestre et al., 2015). In addition, it appears that board expertise is more consequential in firms that are younger (Kor & Misangyi, 2008; Sundaramurthy et al., 2014) and rapidly growing (Almandoz & Tilcsik, 2016). Moreover, board experience interacts with organizational experience in the sense that an organization is less likely to pursue a specific strategic action that is consistent with outside directors' expertise if organizational members have no prior experience with it (Diestre et al., 2015) and more likely if the opposite case (Beckman & Haunschild, 2002; Diestre et al., 2015). Finally, powerful investors have been shown to be effective at enforcing their values and preferences *vis-à-vis* board members; this may affect how board expertise manifests in firm outcomes. Specifically, the presence of institutional investors positively moderates the relationship between board expertise and financial alignment of CEO compensation, indicating that institutional investors encourage more shareholder-friendly actions (Sauerwald et al., 2016). Conversely, in the presence of blockholders, higher board expertise reflected in political linkages may lead to wealth appropriation of minority shareholders (Sun et al., 2016), showing that board expertise cannot only mitigate but also aggravate agency problems.

Environmental contingencies. A key role of the board is to connect the firm to external factors that generate uncertainty and external dependencies (Pfeffer, 1972). Several studies in our sample have studied boards' role as rejoinder to the firm environment by focusing on different sources of environmental uncertainty and dependency. For example, scholars have distinguished regulated from unregulated environments (Hillman, 2005; Hillman et al., 2000; Sun et al., 2016). In the former scenario, the firm's major dependency is with the regulatory body, whereas in the latter case, uncertainty primarily emanates from market-specific sources such as competitors, suppliers or consumers. Consequently, researchers find that these different contexts also require different knowledge, skills and networks from outside directors to effectively navigate the firm's external environment. A second set of studies explores complexity and uncertainty arising from stable versus turbulent economic contexts. For example, Carpenter and Westphal (2001) find that the specific knowledge structure associated with outside directors' strategically heterogenous experiences is beneficial under

conditions of turbulence, whereas outside directors' expertise with the current firm strategy is particularly important in stable environments. Almandoz and Tilcsik (2016) find that, for high-expertise boards that succumb to entrenchment and overconfidence, decision uncertainty resulting from unpredictable markets amplifies the negative effects, indicating that turbulence may increase the liability of high-expertise boards. A third set of studies explore implications of the home-country (Oehmichen et al., 2017) and local (Sun et al., 2016) institutional environments. These scholars find that more developed institutions provide means of safeguards and additional information that reduces the relative effect of outside director expertise. Although the collective findings on the interaction effects between board expertise and environmental contingencies provide support to the notion that environmental factors render specific types of expertise more or less useful, notably, only one study has explicitly investigated how boards actually adapt in response to changing environmental needs (Hillman et al., 2000). That finding directly speaks to the observation made by Hillman et al. (2009, p. 1141) who note that "the dynamic nature of boards (i.e., changing composition as environmental needs change) appears to be a nearly normative convention, although this has received little empirical testing".

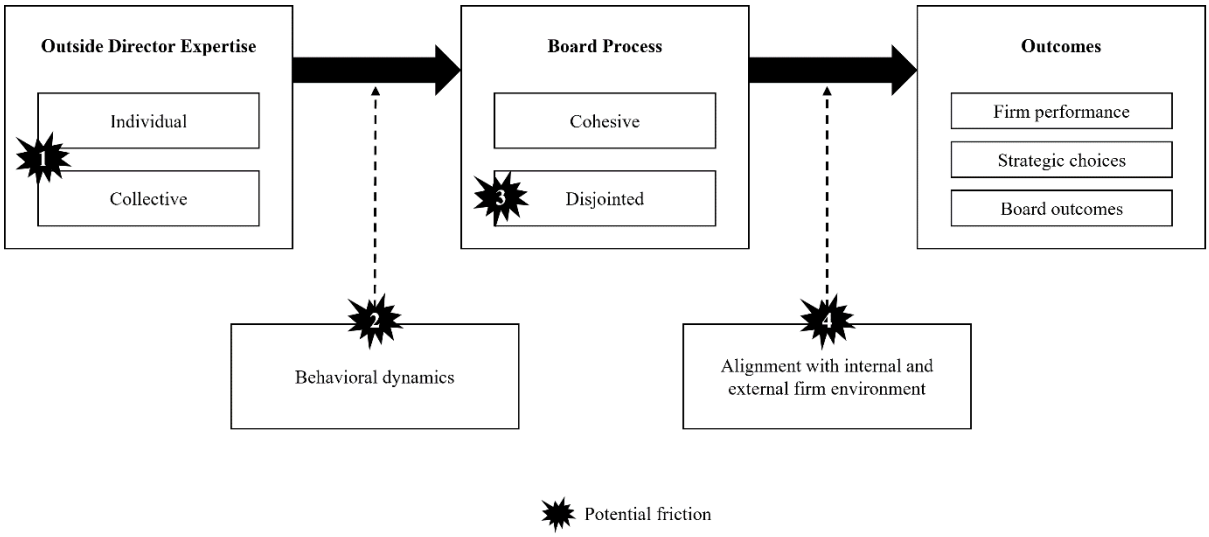
2.3 A Future Research Agenda on Board Expertise

Our literature review shows that research on board expertise has recently made substantial advances. However, our review also suggests that multiple mechanisms may influence the magnitude and direction of the relationship between board expertise and outcomes. Pockets of research pertaining to different theoretical traditions have evinced several convincing yet partly contradictory explanations of how expertise may shape board processes and decision making. These findings should caution researchers to revert to universalistic assumptions, such as 'more expertise is generally better', when crafting arguments and developing appropriate research designs to study board expertise. In integrating the collective insights of the prior literature, we intend to offer to researchers a model that concisely illustrates key factors that may determine how board expertise is linked to firm outcomes. Our objective is to alert researchers of potential frictions in this link and to provide a cause for thought regarding the theoretical specificity of future board expertise studies.

Figure 2.3 depicts our integrative model of the accumulated review findings. In short, we submit that the implications of board expertise will depend on the following: (1) the type of expertise and mode of its aggregation; (2) the influence of behavioral attributes and dynamics; (3) the resulting board processes; and (4) the alignment

between the board and its internal and external environment. Our integrative model makes visible the key challenge in board expertise research. The collective body of research suggests that the four frictions we have identified are additive; that is, if only one friction emerges, it is likely to affect the relationship between board expertise and outcomes decisively. In addition, the four frictions have distinct theoretical underpinnings, and a comprehensive view on them requires developing a multitheoretic understanding of board expertise as a research phenomenon. In the following, we offer first steps in that direction by elaborating for each of the four potential frictions the key conclusions for researchers and by illustrating where potential for future research lies.

Figure 2.3 Board Expertise: An Integrative Model



Outside Director Expertise

Most researchers have built on the premise that outside directors' experiences and the resulting expertise provide idiosyncratic knowledge, skills and networks that influence board processes and firm outcomes. At its core, this research stands in the tradition of upper echelons theory (Hambrick, 2007; Hambrick & Mason, 1984), which posits that top management team characteristics reflect executives' values, beliefs, cognition, knowledge and skills; a view that has subsequently been extended to outside directors within the strategic leadership literature (Finkelstein, Hambrick, & Cannella, 2009).

One key conclusion from our review is that the choice of a specific type of expertise and the mode of aggregating outside director expertise to a board-level construct are associated with distinct challenges that researchers should be aware of. For example, the effects of a focal type of expertise may be offset by the presence of another type of expertise, including within the same category of expertise (e.g., Tuggle et al.,

2010a). This finding reflects the first potential friction that may critically affect the link between board expertise and outcomes. When choosing the type and aggregation of experience- or expertise-related measures, we encourage researchers to explicitly theorize and test the interplay of different types of expertise within a specific category of expertise, particularly when relying on composition models. Ambiguity may also reside within a focal type of expertise. We advocate a finer-grained conceptualization of outside director expertise to explain differences among apparently similar types of expertise. For example, several studies have investigated the implications of industry expertise and produced partly contradictory findings (e.g., Almandoz & Tilcsik, 2016; Haynes & Hillman, 2010; Oehmichen et al., 2017; Sundaramurthy et al., 2014). One explanation may be that the construct has often been modeled in a relatively monolithic manner. It may be conceivable that boards whose collective industry expertise primarily originates from the home country of the focal firm may have a different level of industry embeddedness than boards whose outside directors have acquired industry expertise across a variety of geographical and institutional contexts. Thus, it may be worthwhile to study how such differences affect the overall knowledge structure, skills and networks of boards and to investigate the implications for the strategic behavior of the firm.

Furthermore, most research has explicitly or implicitly assumed that outside directors individually may not possess a comprehensive set of knowledge, skills and networks but rather benefit from the complementary expertise they possess as a group (e.g., Hambrick et al., 2015; Kor & Sundaramurthy, 2009). While this notion of specialization is intuitively appealing as a logical consequence of the high task complexity confronting modern boards, it may be worthwhile to scrutinize this assumption more thoroughly. For example, the recent advances in the research on intrapersonal career variety of CEOs (Crossland, Zyung, Hiller, & Hambrick, 2014) could motivate research that examines more closely the specific types and combinations of expertise held by a focal outside director. Respective research efforts could make important contributions to our understanding of board expertise by delineating the interplay between directors' intrapersonal expertise variety and the expertise held by the board as a whole.[8]

Moreover, Figure 2.2 reveals that two aspects appear to be particularly under-researched. First, few researchers have explicitly conceptualized the contextual experience of outside directors and we believe that this dearth of studies promises

[8] Anecdotal accounts from interviews we conducted with a global board search consultancy and several chairs from Fortune Global 500 firms appear to support the notion of intrapersonal expertise variety. Our interview partners repeatedly emphasized that directors need to "fill the whole board seat". According to this logic, being an expert in one domain is necessary but not sufficient to effectively executing board service.

interesting further research avenues. Adding to the proposition regarding international industry expertise noted above, we suggest that investigating the main effects of contextual expertise may produce equally insightful findings. For example, exposure to different institutional regimes may be a previously overlooked source of expertise. Building on the premise that external actors confronting the firm are situated within institutional contexts that shape their shared normative and cognitive frameworks, outside directors who have been exposed to these shared frameworks may be better able to appreciate the interests, values, motivations and behaviors of different institutional constituents, such as suppliers of capital, consumers, or regulatory agencies. Hence, expertise, and not only cooptation, may help boards to manage the firm's external dependencies. Second, only a few studies have adopted matching models. We believe that this approach may be particularly fruitful in studying specific strategic choices of the firm. For example, matching models may enable researchers to extend beyond the examination of more generic relationships between outside directors' quantity of acquisition expertise and acquisition performance by linking their experiential attributes with characteristics of potential acquisition targets to better understand target selection choices. Those and similar research designs may prove helpful in further unpacking the subtle role of board expertise in explaining how organizations evolve and transform.

In sum, we do not question the principal assumption that outside directors' experiences are reflective of human and social capital gains. However, we believe that research can be advanced by providing explicit theoretical justification for the choice of specific types, combinations, and aggregation of board expertise because it appears that these choices and the corresponding research design may have non-trivial implications for the results that researchers will obtain.

Behavioral Dynamics

A second potential friction that only few studies have accounted for results from varying levels of outside directors' capacity or motivation to contribute their capabilities to the firm. In fact, one of the most central questions pertaining to board expertise research is how individual directors act on their expertise. Thus far, it appears that expertise promotes a continuum of behaviors that determine its usefulness for the organization. Specifically, high-expertise outside directors (1) may have an objective information advantage that consistently increases decision-making quality, (2) may rely on heuristics and simplifying strategies that may occasionally lead to superior or inferior decisions, or (3) may disregard situational demands and simply repeat past actions and behaviors

they are most familiar with. Thus, it is not always clear how outside directors use their personal experiences as a reference point in monitoring and supporting management.

Behavioral theory (Cyert & March, 1963; March & Simon, 1958) provides useful insights that may help to approximate behavioral tendencies. For example, the notion that bounded rationality has a higher likelihood of manifesting under conditions of high information processing demands has been captured by certain researchers based on the concept of board busyness (Khanna et al., 2014; Kor & Sundaramurthy, 2009). Board-level judgments and decision making are routinely associated with high levels of complexity and ambiguity (Boivie, Bednar, Aguilera, & Andrus, 2016; Forbes & Milliken, 1999; Zajac & Westphal, 1996) and impose substantial information processing demands on outside directors (Galbraith, 1974; Tushman & Nadler, 1978). Therefore, it appears important to consider the temporal, attentive and cognitive capacity of outside directors before making conclusions regarding how a given level of expertise will eventually translate into outcomes. However, it should be noted that the concept of board busyness as a potential capacity-straining source is somewhat contested in the literature because it may not only reflect costs but also benefits in the form of larger networks that outside directors can rely on (Ferris, Jagannathan, & Pritchard, 2003; Fich & Shivdasani, 2006; Harris & Shimizu, 2004). Future research that uses related constructs as interaction terms may attempt to capture the ex-ante capacity of outside directors; for example, by inferring overall capacity from the degree of task complexity they had previously been exposed to and discount the negative effects of information processing demands relative to directors' overall capacity. Relatedly, we also encourage scholars to build on Brown and colleagues' (2017) finding that more involvement of individual directors is associated with sooner entrenchment and therefore decreased decision-making quality, which is somewhat contradictory to the busyness argument. It appears that unlocking the full potential of outside directors' expertise requires a fine-tuned configuration of specific behavioral attributes. Therefore, we believe that new prescriptive knowledge about more versus less optimal levels of director capacity or involvement would help to resolve inconsistencies in the extant board expertise literature.

A separate approach to address potential behavioral contingency may be to test whether outside directors have acted based on preferences or on superior information. For example, researchers investigating strategic outcomes based on board expertise may also explore the performance implications of the particular strategic action. While a focal study may in both cases generate important contributions, either by revealing behavioral biases that inform strategic actions or by showing that certain experiences

indeed lead to better decisions, such an approach will help gain clarity regarding the adequate theoretical reasoning. A further aspect that warrants researchers' focus is that individuals may also vary based on motivational dispositions to demonstrate their expertise (Veltrop et al., 2017). Researchers may be well-advised to include this possibility in their considerations. Arguably, it is difficult to assess individual capacity and motivation from archival data, and the most thorough approach may require qualitative research designs. However, the fact that most studies have been silent on the possibility that high-expertise outside directors may lack the necessary capacity or motivation to contribute their expertise to the firm may explain some of the contradictory findings. Therefore, we believe that there are suitable reasons to account more systematically for individual behavioral contingency in board expertise research.

Board Process

The third potential friction may emerge within the boardroom. Extant evidence suggests that the presence of high-expertise outside directors may trigger group processes that crucially affect outcomes. Initially, there are many rational arguments why groups with more experts would be more likely to arrive at superior decisions (for an overview see: McDonald et al., 2008). However, those arguments implicitly assume that the board functions as a social group, a state that we refer to as *cohesive* in Figure 2.3. Scholars have noted a variety of arguments that challenge this optimistic assumption, ranging from social categorization (Westphal & Bednar, 2005; Zhu & Westphal, 2014), status characteristics (Veltrop et al., 2017) and social exchange arguments (Westphal & Zajac, 1997) to the emergence of group faultlines (Tuggle et al., 2010a), dysfunctional group decision-making processes (Almandoz & Tilcsik, 2016), and power relations within the board (Ocasio, 1994). Overall, this research cautions that expertise may lead to differentials in status, influence, or mutual assessment that pose barriers to group functioning, a state we refer to as *disjointed* in Figure 2.3. On disjointed boards, members may be much less likely to apply their expertise in defining and solving complex problems.

Future board expertise research may account for factors that determine the group functioning of the board. One promising research direction pertains to the role of the chair. Although recent research has demonstrated that chairs, and not only CEOs, are key determinants of firm success (Withers & Fitza, 2017)[9], the research on this key actor remains in its infancy (Krause, 2017; Krause et al., 2016). Exploring the chair-board

[9] Withers and Fitza (2017) find that chairs explain 9.2% of variance in firm performance, which compares to 14.1% for the CEO.

interface more thoroughly may help to predict whether boards will become cohesive or disjointed (Garg & Eisenhardt, 2017). Upper echelons scholars have previously made important advances in unpacking a similarly important interface between the CEO and top management (e.g., Buyl, Boone, Hendriks, & Matthyssens, 2011; Georgakakis, Ruigrok, & Greve, 2017). We argue that insights from this literature may be helpful in examining how the chair shapes board processes. Specifically, we encourage researchers to explore how chairs may facilitate the integration of varying levels of expertise held by outside directors, which is a notion similar to that of the "CEO as an integrator" in the CEO-top management interface literature.

Relatedly, recent findings show that an additional means of shaping the board process and interactions may lie in establishing the right location and frequency of board meetings (Tuggle et al., 2010a). The influence of board meeting formats has otherwise garnered minimal scholarly focus in the context of board expertise research; thus, we advocate that future studies more closely examine how different formats may shape boardroom interactions and subsequent cohesion and eventually affect the propensity with which outside directors contribute their expertise to the board. Specifically, future research may more systematically capture how the context and timing of board discussion channels attention, shapes cognitive frames and eventually affect firm outcomes (Ocasio, 1997; Tuggle et al., 2010a; Tuggle, Sirmon, Reutzel, & Bierman, 2010b).[10]

Given the minimal time that outside directors spend with each other, it would appear particularly crucial that chairs actively foster group cohesion, design board meetings mindfully and anticipate and resolve potential sources of conflict, disagreement or complacency. We submit these aspects may be crucial pieces in understanding how board expertise translates into firm outcomes. More generally, research in this vein could also contribute to a more nuanced view of how information flows within the boardroom, a question that to date has remained relatively obscure.

Alignment with the Internal and External Environment

The fourth potential friction refers to the alignment between the board and the internal or external environment of the organization. Whereas the previous three frictions could

[10] We obtained anecdotal support for the importance of these contextual factors during a recent interview with the chair of a multinational company with a market capitalization of $50 billion. Specifically, this chair noted that scheduling board meetings immediately prior to quarterly earnings announcements inevitably directs attention to more monitoring- and compliance-related topics, whereas later meetings typically promote discussions regarding more strategic issues. Consequently, an outside director with substantial strategic issue expertise may be less able to fully utilize his or her expertise in the former scenario and more so in the latter. Thus, it appears that simple indicators such as the date of a board meeting will render specific forms of expertise more or less important.

each be illustrated along a related theoretical logic, the fourth friction may be shaped by multiple mechanisms pertaining to different theoretical lenses. First, similar to the detrimental outcomes of disjointed boards, the effect of board expertise will also be shaped by the relationship between the board and top management. For example, our review has emphasized the role of agency theoretic concerns such as the top management's relative power over the board (e.g., Golden & Zajac, 2001; Haynes & Hillman, 2010; Sauerwald et al., 2016) or the financial incentivization of executives (e.g., Carpenter et al., 2003; Westphal, 1999). An increase in both constructs has been shown to attenuate the impact of board expertise. Zhu and Chen (2015) have integrated political and personality theories to show how CEO personality characteristics may affect the magnitude and direction with which board expertise manifests in firm outcomes. Additionally, drawing on the original conception of resource dependence as an exchange theory, scholars have recently argued that managers may actively avoid interactions with high-expertise boards which may hinder them in exercising their service role (Garg & Eisenhardt, 2017).

Collectively, these findings reveal that even boards that possess the right expertise, are not subject to unfavorable behavioral contingency, and act cohesively as a group may continue to confront important barriers in contributing their expertise to the firm. Therefore, we recommend that the future research on board expertise may explicitly investigate the interaction between the board and top management to explore tendencies that may affect the relationship between board expertise and firm outcomes. Prior research has shown that top management seeks to influence boards in multiple ways (Westphal & Bednar, 2008); however, we believe that potential remains for sufficiently disentangling the continuum of relationships between the board and top management. At the extreme ends, the top management may either maintain a symbiotic relationship with the board or actively undermine it. Between those two extremes lie many different orientations that top management teams may adopt *vis-á-vis* its board, and this specific orientation may play an essential role in understanding how the experiences and expertise of the board are being implemented in strategic decision making. Although this orientation may also be influenced by power or firm performance (Krause et al., 2013; Sundaramurthy et al., 2014; Westphal & Bednar, 2005; Westphal & Fredrickson, 2001), it appears that there is variation in how key decision makers make sense of the role of the board which, in turn, is likely to affect how board expertise is utilized within the firm. In this context, research has made recent advances by inferring from proxy statements different orientations of how chairs view their role (Krause, 2017) and how fellow board members view the chair (Krause et al., 2016). We propose

that researchers devote additional attention to the board-top management relationship, ideally by gathering first-hand information about how the CEO and other executives view the board and its implications on the extent to which board expertise affects outcomes. This stream of research could subsequently be extended to capture the orientation of powerful external stakeholders (e.g., lenders and influential investors) towards the board.

Furthermore, the alignment between boards and the external environment is a second important contingency. The accumulated findings presented in this review lend strong support to the context-dependent nature of board expertise. Based on institutional and resource dependence arguments, the research on board interlocks has helped to explain why specific board compositions may promote mimetic behavior (e.g., Westphal et al., 2001) and how board cooptation may alleviate dependencies with the external environment (e.g., Mizruchi & Stearns, 1988, 1994; Stearns & Mizruchi, 1993). Additionally, the institutional (e.g., Oehmichen et al., 2017; Sun et al., 2016), regulatory (e.g., Hillman, 2005; Hillman et al., 2000) and industry (e.g., Carpenter & Westphal, 2001) environment appear to pose distinct contextual demands that shape the effectiveness of different types of board expertise.

However, much of the existing knowledge presented in this review refers to U.S. public companies; only 12% of the studies we surveyed used non-U.S. samples. This should motivate researchers to broaden their focus and extend analytical efforts to other countries shaping the world economy. Notwithstanding the increased data collection efforts for non-U.S. environments, such approaches may lead to greater generalizability of the cumulative body of knowledge on board expertise. Since the role and responsibilities of boards differ across jurisdictions (OECD, 2017), broader sampling may also elucidate important country-specific idiosyncrasies that influence the effects of board expertise. Relatedly, although most of U.S. companies included in prior studies were large organizations with multinational operations, scholars who did investigate environmental aspects typically restricted their focus to the domestic context. Here, new contributions may be possible, for example by considering how host-country institutional environments may interact with board expertise, which may lead to the identification of new forms of expertise that help companies navigate the diverse international environments they are exposed to.

Finally, in analyzing the existing board expertise research that also captured aspects of the firm and its environment, we noted that only 23% of studies had incorporated dedicated reflections on endogeneity concerns. An endemic challenge to the research on any form of board composition is that specific characteristics of the

board may be endogenous to non-board-related factors. For example, research designs that do not account for the dynamic relationship between current governance and past firm performance may be biased (Wintoki, Linck, & Netter, 2012). Considering the contradictory and inconclusive prior findings in board expertise research, we encourage scholars seeking to study board expertise to adopt endogeneity-robust research methods (e.g., Beckman et al., 2014; Krause et al., 2013; Oehmichen et al., 2017) to increase our confidence in the causality of the effects and alleviate concerns regarding artifacts and spurious findings. Alternatively, although it does not mitigate endogeneity concerns to the same extent, the board expertise research may also borrow from comparative corporate governance research to study how different combinations of board expertise types may substitute or complement each other under different contextual conditions using qualitative comparative analysis (e.g., Misangyi & Acharya, 2014).

Implications and Conclusion

Perhaps the greatest challenge that our multitheoretic integration of the board expertise literature revealed is the apparent tradeoff between a parsimonious use of theory and an accurate reflection of the key mechanisms underlying the link between board expertise and key outcomes at the firm and board level. While there is little doubt that outside directors differ based on their individual experiences in how they interpret, assess, and act on the specific issues and challenges they confront, we seem to be far away from being able to make unequivocal and generalizable predictions about how these differences manifest in outcomes. While we contend that it is not feasible for future research to theoretically and empirically capture all eventualities, we do advocate for more comprehensive reflections on the possible contingencies shaping this multifaceted relationship, particularly when interpreting empirical findings. With our review, we have sought to extend beyond the generic observation that the expertise of outside directors should mirror the demands of the firm to also elucidate the subtle interdependencies that shape the magnitude and direction of board expertise outcomes. In that context, we have highlighted new research questions and methodological suggestions that promise important new contributions. Ultimately, the effects of board expertise may perhaps be best understood by studying it as a process. Scholars who seek to comprehensively study board expertise as a research phenomenon are encouraged to adopt qualitative methodologies to capture how and when potential frictions may emerge, which strategies boards may use to alleviate them and what the eventual outcomes are. With boards being increasingly under the public spotlight, we believe that future studies of board expertise will not only yield significant theoretical insights about

boards' roles in effectively governing the firm but generate equally important contributions on board practices that are relevant for chairs, board members, investors, and policy-makers.

2.4 References

Almandoz, J. & Tilcsik, A. 2016. When experts become liabilities: Domain experts on boards and organizational failure. ***Academy of Management Journal***, 59(4): 1124-1149.

Bantel, K. A. & Jackson, S. E. 1989. Top management and innovations in banking: Does the composition of the top team make a difference? ***Strategic Management Journal***, 10(1): 107-124.

Beckman, C. M. & Haunschild, P. R. 2002. Network learning: The effects of partners' heterogeneity of experience on corporate acquisitions. ***Administrative Science Quarterly***, 47(1): 92-124.

Beckman, C. M., Schoonhoven, C. B., Kim, S. J., & Rottner, R. M. 2014. Relational pluralism in de novo organizations: Boards of directors as bridges or barriers to diverse alliance portfolios? ***Academy of Management Journal***, 57(2): 460-483.

Berle, A. A. & Means, G. C. 1932. ***The modern corporation and private property***. New York: MacMillan.

Bilimoria, D. & Piderit, S. K. 1994. Board committee membership: Effects of sex-based bias. ***Academy of Management Journal***, 37(6): 1453-1477.

Boivie, S., Bednar, M. K., Aguilera, R. V., & Andrus, J. L. 2016. Are boards designed to fail? The implausibility of effective board monitoring. ***Academy of Management Annals***, 10(1): 319-407.

Brown, J. A., Anderson, A., Salas, J. M., & Ward, A. J. 2017. Do investors care about director tenure? Insights from executive cognition and social capital theories. ***Organization Science***, 28(3): 471-494.

Buyl, T., Boone, C., Hendriks, W., & Matthyssens, P. 2011. Top management team functional diversity and firm performance: The moderating role of ceo characteristics. ***Journal of Management Studies***, 48(1): 151-177.

Carpenter, M. A. & Westphal, J. D. 2001. The strategic context of external network ties: Examining the impact of director appointments on board involvement in strategic decision making. ***Academy of Management Journal***, 44(4): 639-660.

Carpenter, M. A., Pollock, T. G., & Leary, M. M. 2003. Testing a model of reasoned risk-taking: Governance, the experience of principals and agents, and global

strategy in high-technology ipos firms. ***Strategic Management Journal***, 24(9): 803-820.

Crossland, C., Zyung, J., Hiller, N. J., & Hambrick, D. C. 2014. Ceo career variety: Effects on firm-level strategic and social novelty. ***Academy of Management Journal***, 57(3): 652-674.

Cyert, R. M. & March, J. G. 1963. ***A behavioral theory of the firm***. Englewood Cliffs, NJ: Prentice-Hall.

Dalton, D. R., Daily, C. M., Ellstrand, A. E., & Johnson, J. L. 1998. Meta-analytic reviews of board composition, leadership structure, and financial performance. ***Strategic Management Journal***, 19(3): 269-290.

Dalton, D. R., Daily, C. M., Johnson, J. L., & Ellstrand, A. E. 1999. Number of directors and financial performance: A meta-analysis. ***Academy of Management Journal***, 42(6): 674-686.

De Villiers, C., Naiker, V., & van Staden, C. J. 2011. The effect of board characteristics on firm environmental performance. ***Journal of Management***, 37(6): 1636-1663.

Diestre, L., Rajagopalan, N., & Dutta, S. 2015. Constraints in acquiring and utilizing directors' experience: An empirical study of new-market entry in the pharmaceutical industry. ***Strategic Management Journal***, 36(3): 339-359.

Eisenhardt, K. M. & Schoonhoven, C. B. 1990. Organizational growth: Linking founding team, strategy, environment, and growth among u.S. Semiconductor ventures, 1978-1988. ***Administrative Science Quarterly***, 35(3): 504-529.

Feldman, E. R. & Montgomery, C. A. 2015. Are incentives without expertise sufficient? Evidence from fortune 500 firms. ***Strategic Management Journal***, 36(1): 113-122.

Ferris, S. P., Jagannathan, M., & Pritchard, A. C. 2003. Too busy to mind the business? Monitoring by directors with multiple board appointments. ***Journal of Finance***, 59(3): 1087-1111.

Fich, E. M. & Shivdasani, A. 2006. Are busy boards effective monitors? ***Journal of Finance***, 61(2): 689-724.

Finkelstein, S., Hambrick, D. C., & Cannella, A. A. 2009. ***Strategic leadership: Theory and research on executives, top management teams, and boards***. New York: Oxford University Press.

Forbes, D. P. & Milliken, F. J. 1999. Cognition and corporate governance: Understanding boards of directors as strategic decision-making groups. ***Academy of Management Review***, 24(3): 489-505.

Galbraith, J. R. 1974. Organization design: An information processing view. ***Interfaces***, 4(3): 28-36.

Garg, S. & Eisenhardt, K. M. 2017. Unpacking the ceo–board relationship: How strategy making happens in entrepreneurial firms. ***Academy of Management Journal***, 60(5): 1828-1858.

Georgakakis, D., Ruigrok, W., & Greve, P. 2017. Top management team faultlines and firm performance: Examining the ceo-tmt interface. ***Leadership Quarterly***, 28(6): 741-758.

Golden, B. R. & Zajac, E. J. 2001. When will boards influence strategy? Inclination x power = strategic change. ***Strategic Management Journal***, 22(12): 1087-1111.

Greve, H. R. & Zhang, C. M. 2017. Institutional logics and power sources: Merger and acquisition decisions. ***Academy of Management Journal***, 60(2): 671-694.

Hambrick, D. C. & Mason, P. A. 1984. Upper echelons: The organization as a reflection of its top managers. ***Academy of Management Review***, 9(2): 193-206.

Hambrick, D. C., Cho, T. S., & Chen, M.-J. 1996. The influence of top management team heterogeneity on firms' competitive moves. ***Administrative Science Quarterly***, 41(4): 659-684.

Hambrick, D. C. 2007. Upper echelons theory: An update. ***The Academy of Management Review***, 32(2): 334-343.

Hambrick, D. C., Misangyi, V. F., & Park, C. A. 2015. The quad model for identifying a corporate director's potential for effective monitoring: Toward a new theory of board sufficiency. ***Academy of Management Review***, 40(3): 323-344.

Harris, I. C. & Shimizu, K. 2004. Too busy to serve? An examination of the influence of overboarded directors. ***Journal of Management Studies***, 41(5): 775-798.

Haunschild, P. R. 1993. Interorganizational imitation: The impact of interlocks on corporate acquisition activity. ***Administrative Science Quarterly***, 38(4): 564-592.

Haunschild, P. R. 1994. How much is that company worth?: Interorganizational relationships, uncertainty, and acquisition premiums. ***Administrative Science Quarterly***, 39(3): 391-411.

Haynes, K. T. & Hillman, A. J. 2010. The effect of board capital and ceo power on strategic change. ***Strategic Management Journal***, 31(11): 1145-1163.

Hillman, A. J., Cannella, A. A., & Paetzold, R. L. 2000. The resource dependence role of corporate directors: Strategic adaptation of board composition in response to environmental change. ***Journal of Management Studies***, 37(2): 235-255.

Hillman, A. J. & Dalziel, T. 2003. Boards of directors and firm performance: Integrating agency and resource dependence perspectives. ***Academy of Management Review***, 28(3): 383-396.

Hillman, A. J. 2005. Politicians on the board of directors: Do connections affect the bottom line? ***Journal of Management***, 31(3): 464-481.

Jensen, M. C. & Meckling, W. H. 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. ***Journal of Financial Economics***, 3(4): 305-360.

Johnson, S. G., Schnatterly, K., Bolton, J. F., & Tuggle, C. 2011. Antecedents of new director social capital. ***Journal of Management Studies***, 48(8): 1782-1803.

Johnson, S. G., Schnatterly, K., & Hill, A. D. 2013. Board composition beyond independence: Social capital, human capital, and demographics. ***Journal of Management***, 39(1): 232-262.

Kesner, I. F. 1988. Directors' characteristics and committee membership: An investigation of type, occupation, tenure, and gender. ***Academy of Management Journal***, 31(1): 66-84.

Khanna, P., Jones, C. D., & Boivie, S. 2014. Director human capital, information processing demands, and board effectiveness. ***Journal of Management***, 40(2): 557-585.

Kor, Y. Y. & Misangyi, V. F. 2008. Outside directors' industry-specific experience and firms' liability of newness. ***Strategic Management Journal***, 29(12): 1345-1355.

Kor, Y. Y. & Sundaramurthy, C. 2009. Experience-based human capital and social capital of outside directors. ***Journal of Management***, 35(4): 981-1006.

Kozlowski, S. W. J. & Klein, K. J. 2000. A multilevel approach to theory and research in organizations: Contextual temporal and emergent processes. In K. J. Klein & S. W. J. Kozlowski (Eds.), ***Multilevel theory, research and methods in organizations: Foundations, extensions, and new directions***: 3-90. San Francisco, CA: Jossey-Bass.

Krause, R., Semadeni, M., & Cannella, A. A. 2013. External coo/presidents as expert directors: A new look at the service role of boards. ***Strategic Management Journal***, 34(13): 1628-1641.

Krause, R., Semadeni, M., & Withers, M. C. 2016. That special someone: When the board views its chair as a resource. ***Strategic Management Journal***, 37(9): 1990-2002.

Krause, R. 2017. Being the ceo's boss: An examination of board chair orientations. ***Strategic Management Journal***, 38(3): 697-713.

Kroll, M., Walters, B. A., & Le, S. A. 2007. The impact of board composition and top management team ownership structure on post-ipo performance in young entrepreneurial firms. ***Academy of Management Journal***, 50(5): 1198-1216.

Kroll, M., Walters, B. A., & Wright, P. 2008. Board vigilance, director experience, and corporate outcomes. ***Strategic Management Journal***, 29(4): 363-382.

Lau, D. C. & Murnighan, J. K. 1998. Demographic diversity and faultlines: The compositional dynamics of organizational groups. ***The Academy of Management Review***, 23(2): 325-340.

Lester, R. H., Hillman, A. J., Zardkoohi, A., & Cannella, A. A. 2008. Former government officials as outside directors: The role of human and social capital. ***Academy of Management Journal***, 51(5): 999-1013.

Marcel, J. J. & Cowen, A. P. 2014. Cleaning house or jumping ship? Understanding board upheaval following financial fraud. ***Strategic Management Journal***, 35(6): 926-937.

March, J. G. & Simon, H. 1958. ***Organizations***. New York: Wiley.

McDonald, M. L., Westphal, J. D., & Graebner, M. E. 2008. What do they know? The effects of outside director acquisition experience on firm acquisition performance. ***Strategic Management Journal***, 29(11): 1155-1177.

Misangyi, V. F. & Acharya, A. G. 2014. Substitutes or complements? A configurational examination of corporate governance mechanisms. ***Academy of Management Journal***, 57(6): 1681-1705.

Mizruchi, M. S. & Stearns, L. B. 1988. A longitudinal study of the formation of interlocking directorates. ***Administrative Science Quarterly***, 33(2): 194-210.

Mizruchi, M. S. & Stearns, L. B. 1994. A longitudinal study of borrowing by large american corporations. ***Administrative Science Quarterly***, 39(1): 118-140.

Nahapiet, J. & Ghoshal, S. 1998. Social capital, intellectual capital, and the organizational advantage. ***Academy of Management Review***, 23(2): 242-266.

Ocasio, W. 1994. Political dynamics and the circulation of power: Ceo succession in u.S. Industrial corporations, 1960-1990. ***Administrative Science Quarterly***, 39(2): 285-312.

Ocasio, W. 1997. Towards an attention-based view of the firm. ***Strategic Management Journal***, 18(Summer Special Issue): 187-206.

OECD. 2017. Oecd corporate governance factbook 2017.

Oehmichen, J., Schrapp, S., & Wolff, M. 2017. Who needs experts most? Board industry expertise and strategic change-a contingency perspective. ***Strategic Management Journal***, 38(3): 645-656.

Pfeffer, J. 1972. Size and composition of corporate boards of directors: The organization and its environment. ***Administrative Science Quarterly***, 17(2): 218-228.

Pfeffer, J. & Salancik, G. R. 1978. ***The external control of organizations: A resource dependence perspective***. New York: Harper & Row.

Rindova, V. P. 1999. What corporate boards have to do with strategy: A cognitive perspective. ***Journal of Management Studies***, 36(7): 953-975.

Sauerwald, S., Zhiang, L. I. N., & Peng, M. W. 2016. Board social capital and excess ceo returns. ***Strategic Management Journal***, 37(3): 498-520.

Short, J. 2009. The art of writing a review. ***Journal of Management***, 35(6): 1312-1317.

Stearns, L. B. & Mizruchi, M. S. 1993. Board composition and corporate financing: The impact of financial institution representation on borrowing. ***Academy of Management Journal***, 36(3): 603-618.

Sullivan, J. 1990. Experts, expert systems, and organizations. In M. Masuch (Ed.), ***Organization, management and expert systems***. New York: Walter de Gruyter.

Sun, P., Hu, H. W., & Hillman, A. J. 2016. The dark side of board political capital: Enabling blockholder rent appropriation. ***Academy of Management Journal***, 59(5): 1801-1822.

Sundaramurthy, C., Pukthuanthong, K., & Kor, Y. 2014. Positive and negative synergies between the ceo's and the corporate board's human and social capital: A study of biotechnology firms. ***Strategic Management Journal***, 35(6): 845-868.

Tajfel, H. 1978. The achievement of group differentiation. In H. Tajfel (Ed.), ***Differentiation between social groups: Studies in the social psychology of intergroup relations***: 483-507. London: Academic Press.

Tian, J. J., Haleblian, J. J., & Rajagopalan, N. 2011. The effects of board human and social capital on investor reactions to new ceo selection. ***Strategic Management Journal***, 32(7): 731-747.

Tuggle, C. S., Schnatterly, K., & Johnson, R. A. 2010a. Attention patterns in the boardroom : How board composition and processes affect discussion of entrepreneurial issues. ***Academy of Management Journal***, 53(3): 550-571.

Tuggle, C. S., Sirmon, D. G., Reutzel, C. R., & Bierman, L. 2010b. Commanding board of director attention: Investigating how organizational performance and ceo duality affect board members' attention to monitoring. ***Strategic Management Journal***, 31(9): 946-968.

Turner, J. C. 1987. ***Rediscovering the social group: A social categorization theory***. Oxford: Blackwell.

Tushman, M. L. & Nadler, D. A. 1978. Information processing as an integrating concept in organizational design. ***Academy of Management Review***, 3(3): 613-624.

Tversky, A. & Kahnemann, D. 1974. Judgment under uncertainty: Heuristics and biases. ***Science***, 185: 1121-1131.

Veltrop, D. B., Molleman, E., Hooghiemstra, R. B. H., & van Ees, H. 2017. Who's the boss at the top? A micro-level analysis of director expertise, status and conformity within boards. ***Journal of Management Studies***, 54(7): 1079-1110.

Westphal, J. D. & Zajac, E. J. 1997. Defections from the inner circle: Social exchange, reciprocity, and the diffusion of board independence in u.S. Corporations. ***Administrative Science Quarterly***, 42(1): 161-183.

Westphal, J. D. 1999. Collaboration in the boardroom: Behavioral and performance consequences of ceo-board social ties. ***Academy of Management Journal***, 42(1): 7-24.

Westphal, J. D. & Milton, L. P. 2000. How experience and network ties affect the influence of demographic minorities on corporate boards. ***Administrative Science Quarterly***, 45(2): 366-398.

Westphal, J. D. & Fredrickson, J. W. 2001. Who directs strategic change? Director experience, the selection of new ceos, and change in corporate strategy. ***Strategic Management Journal***, 22(12): 1113-1137.

Westphal, J. D., Seidel, M.-D. L., & Stewart, K. J. 2001. Second-order imitation: Uncovering latent effects of board network ties. ***Administrative Science Quarterly***, 46(4): 717-747.

Westphal, J. D. & Bednar, M. K. 2005. Pluralistic ignorance in corporate boards and firms' strategic persistence in response to low firm performance. ***Administrative Science Quarterly***, 50(2): 262-298.

Westphal, J. D. & Bednar, M. K. 2008. The pacification of institutional investors. ***Administrative Science Quarterly***, 53(1): 29-72.

Wintoki, M. B., Linck, J. S., & Netter, J. M. 2012. Endogeneity and the dynamics of internal corporate governance. ***Journal of Financial Economics***, 105(3): 581-606.

Withers, M. C., Hillman, A. J., & Cannella, A. A. 2012. A multidisciplinary review of the director selection literature. ***Journal of Management***, 38(1): 243-277.

Withers, M. C. & Fitza, M. A. 2017. Do board chairs matter? The influence of board chairs on firm performance. ***Strategic Management Journal***, 38(6): 1343-1355.

Zajac, E. J. & Westphal, J. D. 1996. Director reputation, ceo-board power, and the dynamics of board interlocks. ***Administrative Science Quarterly***, 41(3): 507-529.

Zhang, C. M. & Greve, H. R. 2018. Dominant coalitions directing acquisitions: Different decision makers, different decisions. ***Academy of Management Journal***: Forthcoming.

Zhu, D. H. & Westphal, J. D. 2014. How directors' prior experience with other demographically similar ceos affects their appointments onto corporate boards and the consequences for ceo compensation. ***Academy of Management Journal***, 57(3): 791-813.

Zhu, D. H. & Chen, G. 2015. Ceo narcissism and the impact of prior board experience on corporate strategy. ***Administrative Science Quarterly***, 60(1): 31-65.

Zhu, H. & Yoshikawa, T. 2016. Contingent value of director identification: The role of government directors in monitoring and resource provision in an emerging economy. ***Strategic Management Journal***, 37(8): 1787-1807.

2.5 Appendix

Table 2.1 Empirical Research on Director-/Board-level Expertise and Experience

Authors	Method	Research Context	Perspective	Key Findings	Expertise	Measure	Outcome
Almandoz & Tilcsik AMJ 2016	Competing-risks regression; Inverse-probability-of-treatment-weighted method	1,307 firm-year observations of domestic U.S. banks from 1996–2012	Cognitive entrenchment; Group overconfidence; Task conflict	Banking expertise promotes cognitive entrenchment and overconfidence which increases the probability of bank failure under conditions of high decision uncertainty	Domain (industry) expertise	Proportion of outside directors who have served as Executive Vice President or higher in a bank	Organizational failure
Beckman & Haunschild ASQ 2002	GLS regression	458 acquisitions by large U.S. service and manufacturing firms between 1986–1997	Learning	Heterogeneous acquisition expertise is associated with lower acquisition premia because it provides a wide array of information to make better causal inferences; Results do not hold for diversity in industry expertise as boards may discount industry differences in acquisition experience more easily instead of reflecting more deeply on them	Acquisition expertise	Heterogeneity in experience with acquisition premiums, sizes and industries	Acquisition premium
Beckman, Schoonhoven, Rottner & Kim AMJ 2014	Semiparametric Cox event history model	4,741 firm-month observations of U.S. semiconductor firm founded between 1978–1985	Relational pluralism	Outside directors' heterogeneity in expertise promotes the emergence of diverse alliance portfolios because they have more knowledge of and relationships to broader range of alliance partners; The effect is negatively moderated by power asymmetry at the board which creates focus on a subset of board members that hinders the development of broad range of alliances	Geographic experience; Industry experience; Relational experience	Heterogeneity in geographic experience, industry experience and affiliation with organizational types	Diverse alliance portfolio
Bilimoria & Piderit AMJ 1994	Logistic regression	2,115 outside directors from 133 Fortune 500 firms in 1984	Experience-based-bias view	Experience-based characteristics do not predict board committee membership for females, indicating the presence of sex-based direct or interactive effects on the membership of board committees	Board-specific experience, Business experience	Tenure; Dummy for business vs. non-business occupation; Number of board memberships	Director appointment to board committee

Table 2.1 Empirical Research on Director-/Board-level Expertise and Experience (continued)

Authors	Method	Research Context	Perspective	Key Findings	Expertise	Measure	Outcome
Brown, Anderson, Salas & Ward OS 2017	Event study; Regression	274 unexpected director deaths and 11,807 firm-year observations of S&P 1,500 firms (cross-industry) from 2000–2012	Cognition; Social capital	Outside directors' firm-specific and industry knowledge increases with tenure but their independence and ability to provide new advice and monitoring may be offset as they assimilate and become socially influenced by top management, indicating that there is an inverted U-shaped relationship between outside directors' ability to perform their two key functions and tenure	Firm- and industry-specific expertise	Board tenure; Proportion of directors in prime tenure period	Stock market reaction to unexpected director death; CEO pay-for-performance sensitivity
Carpenter & Westphal AMJ 2001	Survey; Multiple regression	228 CEO and 492 outside director responses serving in U.S. industrial and service firms in 1995	Sociocognitive perspective	Directors who have experience with related strategies are more capable of contributing insight on a firm's current strategy because their direct strategic experience and access to strategic information through social networks informs their knowledge of structures used to monitor decisions or give advice on a focal board; Directors who have experience with different strategies are more capable of contributing insight on the implementation of alternative strategies in turbulent environments	Board experience at strategically related companies	Proportion of directors in firms related by product market, primary foreign market, product diversification or international diversification	Directors' perceived ability to contribute to board discussions; Board monitoring; Board advice interactions
Carpenter, Pollock & Leary SMJ 2003	OLS regression	97 young electrical and electronic equipment industry that completed IPO between 1990–1999	Agency; Behavioral	Board international experience enhances the positive association between top management ownership and post-IPO internationalization, reflecting that board international experience may alter the board's perceptions regarding the riskiness of activities and its ability to monitor those risk-taking activities which consequently affects firms' strategic behavior	International experience	Number of outside directors with international work experience or education	International diversification

Table 2.1 Empirical Research on Director-/Board-level Expertise and Experience (continued)

Authors	Method	Research Context	Perspective	Key Findings	Expertise	Measure	Outcome
De Villiers, Naiker & van Staden JOM 2011	Ordered logistic regression	2,151 firm-year observations of U.S. publicly traded firms from 2003–2004	Agency; Resource dependence	Directors with experience as active CEO and those with legal expertise are associated with stronger environmental performance because they may alert executives to new business opportunities that are in the domain of sustainable products, provide advice and direction with regard to environmental impacts of operational choices, and provide access to their human capital and their social networks where environmental expertise reside; Multiple directorships and board tenure are not associated with stronger environmental performance	Multiple directorships; Active CEO; Law experts; Firm-specific experience	Average number of boards on which directors serve; Proportion of board members who are active CEOs in other firms; Number of law experts; Board tenure	Environmental performance
Diestre, Rajagopalan & Dutta SMJ 2015	Event history analysis	8,876 firm-year observations of pharmaceutical companies from 2000–2006	Learning	Product market-specific experience of outside directors increases the likelihood of new product market entry because those directors have better access to market-specific information about consumers' preferences, expected trends, and the characteristics and behaviors of competitors in that market and, thus reduce uncertainty associated with new-market entry strategies; The effect is less pronounced for lower-status firms and those who recently had financial restatements	Board experience in firms entering new product markets	Scores for directors' overall experience with new-drug-introduction activities per product market	New product market entry
Feldman & Montgomery SMJ 2015	Regression	2,798 firm-year observations of Fortune 500 firms from 2004–2010	Agency; Resource dependence	Presence of directors who have large shareholdings, but lack business expertise reduces firm value, indicating that share ownership does not maximize shareholder value (as agency theory would predict) because it may be undermined by directors' lack of expertise	Lack of experience as CEO, Chair, board member or founder of a Fortune 500 firm	Number of directors who own >0.1% of outstanding shares but do not have experience as CEO, Chair, board member or founder of a Fortune 500 firm	Firm performance (Tobin's Q)

Table 2.1 Empirical Research on Director-/Board-level Expertise and Experience (continued)

Authors	Method	Research Context	Perspective	Key Findings	Expertise	Measure	Outcome
Golden & Zajac SMJ 2001	OLS regression	2,624 firm-year observations of U.S. hospitals from 1985–1990	Diversity / group decision making	Moderate heterogeneity in occupational experiences promotes more awareness and boardroom discussions about strategic change, yet high variety of occupations impedes the development of a shared understanding of industry change which decreases the inclination towards strategic change; Boards with more members from business-oriented professions are more likely to initiate strategic change	Occupational experience; Industry experience; Managerial experience	Squared sum of the proportion of board members serving in one of 14 occupations; Proportion of board members whose primary occupation were of a business or legal nature	Strategic change
Greve & Zhang AMJ 2017	Continuous-time event history analysis	24,151 acquisitions by Chinese listed firms between 2000–2012	Institutional; Coalitions	Outside directors' experience with specific institutional logics (old state socialism vs. new market capitalism) influences coalition building at the board which determines the initiation of market-oriented M&A strategies; Specifically, the more outside directors have state experience, the less likely it is for the firm to engage in market-oriented M&As	Experience with specific institutional logic (old state socialism vs. new market capitalism)	Proportion of board members with experience in state positions; Proportion of board members owning stock in the focal firm	Number of M&A activities; Acquisition performance
Haynes & Hillman SMJ 2010	OLS regression	236 observations of S&P 500 firms	Board capital	Heterogeneity in outside directors' expertise reflects greater breadth of knowledge, experiences, and social ties which provides the opportunity for firms to deviate both from previous strategies and from industry strategic norms (negatively moderated by CEO power); Industry expertise limits the degree of variation from previous resource allocation decisions and deviation from industry central tendencies	Functional expertise; Occupational expertise; Inter-industry expertise; Intra-industry expertise	Heterogeneity in functional, occupational, relational experiences; Proportion of industry ties	Strategic change

Table 2.1 Empirical Research on Director-/Board-level Expertise and Experience (continued)

Authors	Method	Research Context	Perspective	Key Findings	Expertise	Measure	Outcome
Hillman JOM 2005	OLS regression	300 U.S. firms from heavily regulated and less regulated industries in 2000	Resource dependence	Experience as politician is associated with improved market-based performance because it creates linkages to the political environment which helps the firm to reduce uncertainty and gain access to information, legitimacy, and/or resources; The effect is more pronounced within heavily regulated industries and it is not significant for accounting-based performance indicators	Political experience	Number of directors with political experience	Firm performance (Market capitalization; Tobin's Q; Return on sales; return on assets)
Hillman, Cannella & Paetzold JMS 2000	Loglinear analysis	240 firm-year observations of the U.S. airline industry from 1968–1988	Resource dependence	Firm-specific expertise and supporting expertise (e.g., expertise in law, banking, insurance, public relations) are more sought after at boards during regulation, and business expertise and expertise as *community influential* (e.g., expertise as politician, university faculty, member of clergy, leader of social or community organization) during deregulation, indicating that boards adapt to shifts in resource needs to maintain their function as link to the external environment	*Insider* (firm-specific expertise); *Business expert* (business expertise); *Support specialist; Community influential*	Dummies for: New director is insider; New director is business expert; New director is support specialist; New director is community influential	Change in board composition
Johnson, Schnatterly, Bolton & Tuggle JMS 2011	Three-stage least squares regression; Negative binominal regression; Logit regression	336 outside director appointments in the U.S. semiconductor industry from 1993–2007	Resource dependence; Status	Outside directors with high status/expertise attract new directors with higher social capital, indicating that individuals from high-status groups tend to seek proximity to people with similar social characteristics which leads social advantages to perpetuate over time	Experience as leading figure in one of five arenas (education, military, business, political, or community)	Number of current board members who have achieved high status in any of the five status arenas (education, military, business, political, or community) the existing directors sit	Board ties and status of newly appointed directors

Table 2.1 Empirical Research on Director-/Board-level Expertise and Experience (continued)

Authors	Method	Research Context	Perspective	Key Findings	Expertise	Measure	Outcome
Kesner AMJ 1988	Chi-square analysis; hierarchical log-linear modelling	250 observations of Fortune 500 firms in 1983	Resource dependence	Business experience and long tenure are associated with membership in key board committees because respective directors are better equipped to deal with complicated committee proceedings	Business expertise; Firm-specific expertise	Dummy for business vs non-business expert; Tenure	Director appointment to board committee
Khanna, Jones & Boivie JOM 2014	GLS regression	1,754 firm-year observations of U.S. industrial and service firms from 2001–2003	Human capital theory; Information processing theory	Experience as executive makes board members more valuable to the extent that they have more relevant skills, and are able to generate abstract principles from specific situations, thereby improving firm performance; The effect is negatively moderated when board members hold multiple board memberships	Experience as member of the top management team	Number of years each director has spent in roles as top executive	Firm performance (Return on equity)
Kor & Misangyi SMJ 2008	Fixed-effects regression	394 observations of post-IPO U.S. entrepreneurial technology firms from 1990–1999	Resource dependence	Top management team industry experience supplements outside directors' industry experience at younger firms	Board industry expertise	Average number of managerial, intra-industry positions held by outside directors	Outside director industry experience
Kor & Sundaramurthy JOM 2009	Fixed-effects regression	326 observations of post-IPO U.S. entrepreneurial technology firms from 1990–1999	Board capital	Firm- and industry experience strengthen human and social capital which improves outside directors' ability to question, assess, inform, and influence managerial action	Board industry expertise; Experience as founder	Average number of managerial, intra-industry positions held; Number of founder-directors	Sales growth
Krause, Semadeni & Cannella SMJ 2013	GLS regression	1,903 firm-year observations of U.S. heavy manufacturing firms from 1998–2006	Board capital	Expertise as external COO or president impacts performance positively when the firm's efficiency is declining, indicating that functional expertise in non-operational fields will divert attention from the immediate needs of the firm; The effect becomes negative when the firm's efficiency is improving, indicating that when operations are not a concern, the assorted skills of other types of external executives can gain salience for the firm	Operational experience	Number of independent directors who serve as COO or president at their primary company	Firm performance (Return on assets)

Table 2.1 Empirical Research on Director-/Board-level Expertise and Experience (continued)

Authors	Method	Research Context	Perspective	Key Findings	Expertise	Measure	Outcome
Krause, Semadeni & Withers SMJ 2016	GEE regression; Content analysis	1,394 firm-year observations of S&P 500 firms from 2010–2012	Resource-based view	Chair human capital is associated with the board viewing the chair as a resource; Chair social capital is associated with an increased probability that an independent board chair is viewed as a resource, but it decreases the probability that a non-independent board chair is viewed as a resource	Firm-specific experience; Board-specific-experience; Experience as outside director; Industry expertise	Factor scores for human capital (firm tenure, tenure, industry expertise); Factors scores for social capital (board memberships, industry expertise)	Boards viewing their chair as a resource
Kroll, Walters & Le AMJ 2007	OLS hierarchical regression	524 IPOs of U.S. entrepreneurial firms between 1996–1997	Agency; resource dependence	Contrary to agency theoretic expectations, a majority of original executives at the board of an IPO firm improves performance, indicating they may be better in maintaining control and entrepreneurial momentum and that the value of tacit knowledge is more crucial than agency concerns in younger firms	Top management experience within the focal firm	Proportion of outside directors with top management experience in the focal company	Post-IPO performance
Kroll, Walters & Wright SMJ 2008	OLS hierarchical regression	500 acquisitions of public targets made by public acquirers between 1997–2001	Agency; Learning	Boards with directors who have acquisition or target industry experience can capitalize on their accumulated knowledge and are more engaged in tasks related to controlling and guiding managerial decision making which manifests in significantly higher returns from acquisitions	Acquisition expertise; Target industry expertise	Number of outside directors with target industry experience, board experience at other acquirers; Dummy for CEO experience at an acquiring firm	Stock market reactions to acquisitions
Lester, Hillman, Zardkoohi & Cannella AMJ 2008	Maximum-likelihood survival time regression analysis	U.S. government officials who left office and were appointed to corporate boards between 1988–2003	Resource dependence	Political expertise predicts appointment to boards because firms expect it to alleviate threats and uncertainty (e.g., mitigate competition from abroad, avoid costly regulatory compliance, circumvent taxes); Time negatively moderates this relationship, indicating that both human and social capital resources can deteriorate over time	Political experience	Depth (political service tenure); Breadth (position in cabinet, Senate, or House)	Director appointment to board

Table 2.1 Empirical Research on Director-/Board-level Expertise and Experience (continued)

Authors	Method	Research Context	Perspective	Key Findings	Expertise	Measure	Outcome
Marcel & Cowen SMJ 2014	Logistic regression	412 director exits following 63 fraud events at NYSE and NASDAQ-listed companies between 2001–2004	Resource dependence	Outside directors' cumulative expertise is negatively associated with post-fraud director turnover, indicating that boards initiate director departures to repair organizational legitimacy by signaling a willingness to remedy governance weaknesses	Relational capital; *Business expert* (CEO experience); *Professional specialist* (Expertise as accountant, CFO; banker, lawyer, public relations or industry-specific professional)	Normalized eigenvector centrality within the director network; Dummies for: business expert and/or professional specialist	Director exit
McDonald, Westphal & Graebner SMJ 2008	Cochrane-Orcutt regression	1,916 acquisitions made by 489 large and mid-sized U.S. industrial and service firms from 1989–1998	Psychological theory; Group decision making	Director acquisition experience in the same industry or product market or with same type of relatedness as a focal acquisition leads to increased excess stock returns; The effect is positively moderated when board members with acquisition experience are independent	Board experience in firms engaging in acquisitions	Director experience with the same type of acquisition as the focal acquisition	Stock market reactions to acquisitions
Oehmichen, Schrapp & Wolff SMJ 2016	GMM regression	2,944 firm-year observations across industries from 16 European countries and the U.S. from 2005–2010	Board capital	Industry expertise enables directors to better identify and prioritize potential threats and opportunities, and initiate strategic change; Home country institutional quality negatively moderates the effect	Board industry expertise	Proportion of outside directors with board experience in the focal industry	Strategic change
Sauerwald, Lin & Peng SMJ 2106	GEE regression	8,197 firm-year observations of S&P 1,500 firms (cross-industry) from 1999–2010	Agency; Social networks	Experience serving on the same board improves monitoring because it allows directors to identify and sanction free riders at the board and provide social support to fellow independent directors; The effect is less pronounced when boards are faced with powerful CEOs and more pronounced when institutional ownership is higher	Shared networking experience among independent directors	Tenure overlap of independent directors	Excess CEO returns

Table 2.1 Empirical Research on Director-/Board-level Expertise and Experience (continued)

Authors	Method	Research Context	Perspective	Key Findings	Expertise	Measure	Outcome
Sun, Hu & Hillman AMJ 2016	Fixed-effects regression	2,854 firm-year observations of Chinese manufacturing firms from 2008–2011	Resource dependence; Agency	Political expertise is associated with blockholder rent appropriation and poor firm performance because board-political linkages shield blockholders against disciplinary forces of legal, regulatory market mechanisms; The effect is more salient in firms whose controlling blockholders are private, in firms operating in heavily regulated industries, and in those located in institutionally less-developed provinces	Political experience	Proportion of board members with political experience	Blockholder appropriation of corporate wealth; Firm performance (return on assets, profitability)
Sundaramurthy, Pukthuanthong & Kor SMJ 2014	OLS regression	Cross-sectional data from 360 biotechnology firms that completed an IPO between 1995–2010	Board capital	Board members' and CEOs' experience in serving on public company boards reduces IPO underpricing because it is a synergistic asset that improves communication between the board and CEO as well as the ability to act upon the needed changes and requirements to succeed in the post-IPO environment; Industry expertise held by board members and CEO is a synergistic signal for poorly performing firms to indicate IPO readiness, yet more board industry expertise at successful and older firms may promote complacency, inertia, and strategic persistence, hence increasing IPO underpricing	Board experience in serving on public companies; Industry expertise	Average number of public company boards directors served on; Average years of industry experience	IPO underpricing
Tian, Haleblian & Rajagopalan, SMJ 2011	OLS regression	208 CEO appointments in U.S. manufacturing firms from 1999–2003	Board capital	Experience implies access to better-quality information and more effective information-processing capabilities which leads to stock markets reacting favorably to new CEO appointments	Experience as CEO; Board industry expertise; Board co-working experience	Proportion of independent directors with CEO experience; Dummy for one or more director with industry experience; Tenure overlap	Stock market reaction to new CEO appointments

Table 2.1 Empirical Research on Director-/Board-level Expertise and Experience (continued)

Authors	Method	Research Context	Perspective	Key Findings	Expertise	Measure	Outcome
Tuggle, Schnatterly & Johnson AMJ 2010	Fixed-effects regression	1,067 firm-year observations of listed U.S. firms from 18 industries between 1994–2000	Upper echelons; Faultlines	Heterogeneity in tenure and firm/industry background leads to diversity in experiences and opinions which stimulate changes in strategy; Functional output experience predicts board discussion of entrepreneurial issues but heterogeneity in functional background does not, implying that some experience backgrounds facilitate board discussions, while others hinder it; Slight faultlines between expertise subgroups increase dialectical inquiry, whereas strong faultlines introduce conflict and disagreement over how to proceed	Board co-working experience; Functional expertise; Industry expertise	Tenure variance; Functional background heterogeneity; Firm/industry heterogeneity	Boards' attention to entrepreneurial issues
Veltrop, Molleman, Hooghiemstra & van Ees JOMS 2017	GLS regression	Survey among 154 directors of Dutch housing corporations; Interviews with 57 directors of 10 cross-industry firms	Board capital	Financial expertise increases directors' status and conformity within boards whereas industry expertise does not, indicating that expertise does not always breed influence; The relationship between financial expertise and status is positively moderated by directors' motivation to demonstrate competence	Financial expertise; Board industry expertise	Self-reported expertise on a seven-point Likert scale	Status and conformity at the board
Westphal AMJ 1999	OLS regression; Two-stage least squares regression	243 CEO and 564 outside director responses from U.S. industrial and service firms in 1995	Agency; Resource dependence	Director expertise is associated with more advice and counsel interactions (and subsequent firm performance) when board members and CEOs maintain strong relationships	Director expertise	Number of board positions held, functional areas worked in; Years spent as executive	Advice and counsel interactions between the CEO and board
Westphal & Bednar ASQ 2005	Heckman selection model; Instrument variable regression	456 observations of mid-sized U.S. industrial and service firms	Social categorization	Heterogeneity in outside directors' functional expertise reduces their willingness to express concerns following the assumption that other directors will not share them which eventually leads to strategic persistence under conditions of poor firm performance; The effects do not hold for industry expertise, because it may be less salient to outside directors	Functional expertise; Industry expertise	Heterogeneity in functional expertise; Heterogeneity in industry expertise	Strategic persistence

Table 2.1 Empirical Research on Director-/Board-level Expertise and Experience (continued)

Authors	Method	Research Context	Perspective	Key Findings	Expertise	Measure	Outcome
Westphal & Fredrickson SMJ 2001	Discrete-time event history analysis; Heckman selection model	5,278 firm-year observations of large and mid-sized U.S. industrial and service firms from 1984–1996	Cognitive / behavioral perspective	Boards members use CEO successions to initiate change that aligns corporate strategy with their preferences (i.e. they select new CEOs who have prior experience with board members' preferred strategy); Strategic change may not be driven by executives (as upper echelons theory suggests) but may reflect board members personal experiences	Strategic orientation of manager-directors' home firms	Difference between product market / geographic diversification at the focal firm and diversification of director home companies	Strategic change
Westphal & Milton ASQ 2000	Survey; OLS regression	526 outside director responses from U.S. industrial and service firms in 1995	Self-categorization	Minority role experience of outside directors may increase their influence over board decisions because they are able to create the perception of similarity to the demographic majority	Board experience serving as demographic minority	Aggregate number of years a director had demographic minority status serving at a board	Director influence over board decision making
Westphal & Zajac ASQ 1997	Event history analysis	3,170 firm-year observations of large U.S. industrial and service firms from 1982–1992	Social exchange	Outside directors who are CEO perceive a generalized obligation to support other CEOs and hence resist change; CEO-directors who have experienced board reforms at their home company are more positive towards board reforms, indicating that they seek to restore balance to social exchange relationships with fellow corporate leaders that have been disturbed by the CEO's prior loss of control over their own boards	CEO-directors experience with control-enhancing changes in board structure, compensation contingency or diversification	Proportion of outside directors who currently serve as CEO and have experienced changes in board structure, compensation contingency or diversification	Board structure (CEO duality, independence, CEO-board demographic similarity); CEO compensation contingency; Diversification
Westphal, Seidel & Stewart ASQ 2001	GLS regression	2,165 firm-year observations from the Fortune 500 from 1990–1994	Institutional	Board-level experience at firms that engage in mimetic isomorphism increases the propensity that the focal firm imitates industry competitors, indicating that direct observation of mimetic practices leads board members to accept them as normatively appropriate and support or initiate process imitation	Experience with mimetic decision making	Strategic similarity adopted by interlocks firms in terms of business strategy, acquisition activity and CEO compensation	Imitation of competitors' strategy

Table 2.1 Empirical Research on Director-/Board-level Expertise and Experience (continued)

Authors	Method	Research Context	Perspective	Key Findings	Expertise	Measure	Outcome
Zhang & Greve AMJ forthcoming	Ordered logistic regression	28,847 M&A and loan applications by Chinese listed firms between 2000–2012	Behavioral; Upper echelon; Dominant coalition;	Board members' past experiences with market competition and state control inform preferred acquisition choices and subsequent coalition formation, indicating that boards have multiple experience-based preferences along which they align when engaging in problemistic search or opportunity exploration	Market vs. state experience	Proportion of board members with market experience (stock ownership, work or education experience in Anglo-Saxon nation) versus state experience (state-agency or state-owned bank)	Acquisition type (internal, state-bridged, market-oriented); Acquisition nature (level of equity stake); State-bank loan
Zhu & Chen ASQ 2015	Heckman selection model	988 firm-year observations from the Fortune 500 from 1997–2006	Personality	Outside director experience predicts a focal firm's acquisition emphasis (marginally significant) and international diversification, yet the presence of CEO narcissism reverses the effects, indicating that narcissist CEOs tend to be unreceptive to the influence of other directors' prior experience and instead do the opposite to demonstrate his or her superiority; The effect is more pronounced when the CEO is powerful and has interlock ties to high status firms	Acquisition experience; International diversification experience	Average value of prior acquisitions or international diversification decisions experienced by outside directors	Acquisition emphasis; International diversification
Zhu & Westphal AMJ 2014	Feasible general least square regression	1,114 new director appointments and 613 subsequent CEO compensation decisions in 275 large U.S. industrial and service firms from 1995–2006	Social comparison	Directors are more likely to get appointed by a CEO to a board when they have experience with demographically similar CEOs because the appointing CEO relies on the judgment of similar CEOs in assessing whether the new director will be socially acceptable and support his/her leadership; Those directors support higher CEO compensation than demographically dissimilar directors without prior experience with demographically similar CEOs	Board experience with demographically similar CEOs	Factor scores reflecting similarity between focal CEO and other CEOs that new directors had prior experience with	Director appointment to board; CEO compensation

3 The Influence of Board Institutional Expertise on Firm Performance

Abstract

Boards are an organizational rejoinder to the firm's external environment. However, relatively little attention has been paid to the role of boards in managing pressures emanating from the diverse institutional environments facing the multinational firm. We predict that outside directors' exposure to institutionally dissimilar contexts represents a previously overlooked source of information, skills and networks that improves their collective ability to exercise board service. In our longitudinal, cross-industry sample of European firms, we find board institutional expertise to be the strongest board-level predictor of firm performance. This effect is weaker when outside directors serve on multiple boards, lending support to our prediction that busyness strains the capacity required to fully utilize board expertise in shaping organizational outcomes. Overall, our work suggests that the versatility of institutional perspectives and experiences represented on the board may be a thus far understudied concept to mitigate uncertainty and dependency with the firm's external environment.

Note. A version of this manuscript has been presented at the doctoral workshop of the 2016 Strategic Management Society Annual Conference in Berlin, Germany.

3.1 Introduction

Research on outside directors' expertise has recently proliferated in the strategic management literature (e.g., Almandoz & Tilcsik, 2016; Haynes & Hillman, 2010; Oehmichen, Schrapp, & Wolff, 2017b). Scholars have argued that outside directors' expertise is crucial in predicting organizational outcomes (Hillman & Dalziel, 2003; Johnson, Schnatterly, & Hill, 2013). Different types of board-level expertise have been studied, including domain (Almandoz & Tilcsik, 2016) or industry expertise (Chen, Kor, Mahoney, & Tan, 2017; Haynes & Hillman, 2010; Kor & Misangyi, 2008; Kor & Sundaramurthy, 2009; Oehmichen et al., 2017b), acquisition experience (Kroll, Walters, & Wright, 2008; McDonald, Westphal, & Graebner, 2008), market-specific experience (Diestre, Rajagopalan, & Dutta, 2015; Tuschke, Sanders, & Hernandez, 2014), and the experiential implications of outside directors' co-working experience (Brown, Anderson, Salas, & Ward, 2017; Tian, Haleblian, & Rajagopalan, 2011). This body of research generally builds on the assumption that outside directors' collective breadth and depth of information, skills, and networks shape the ability of boards to perform the primary functions of monitoring and resource provision (Haynes & Hillman, 2010; Hillman & Dalziel, 2003), which ultimately affects firm performance (Westphal, 1999). While prior studies have significantly advanced our understanding of boards' contribution to firm-level outcomes, scholarly attention has usually focused on board-level expertise in relation to the firm's competitive or industry context. Although the firm environment is arguably also shaped by various national and international institutional actors, the role of boards in connecting the firm to its wider institutional environment has remained relatively obscure.

Our article addresses this gap by examining how outside directors' institutional expertise may improve the board's ability to navigate diverse institutional contexts facing the firm. It has long been established that "corporate boards are used as if they were instruments with which to deal with the environment" (Pfeffer, 1972: 219) by connecting the firm to external factors that generate uncertainty and external dependencies (Hillman, Cannella, & Paetzold, 2000; Luoma & Goodstein, 1999). In the present study, we seek to paint a more complete picture of how boards fulfil their role as an organizational rejoinder to the firm's external environment (Hillman, Withers, & Collins, 2009; Pfeffer, 1972) by capturing the effects of outside directors' collective exposure to different institutional norms and expectations. Research in the international business domain has produced compelling evidence that the main sources of uncertainty and dependency in the firm's external environment originate from pressures to achieve congruence with different institutional regimes facing the firm across its various markets

(Luo, Chung, & Sobczak, 2009). Scholars from the comparative corporate governance literature have complemented this view by arguing that the efficiency of different institutional arrangements depends on their fit with the respective context (Hall & Soskice, 2001; Whitley, 1990). Firm performance is thus a function of the firm's ability to adapt to institutional environments across the diverse countries to which it is exposed (Jackson & Deeg, 2008). Much of the existing work in the comparative corporate governance domain has been devoted to mapping institutional environments across the globe, making normative conclusions about international best practices or explaining how institutions may evolve, diffuse or converge (Aguilera & Jackson, 2010). With our inquiry, we focus on the strategic leadership of organizations by theorizing and examining how boards' exposure to the plurality of institutional contexts may inform behavior and decisions that benefit the firm. Specifically, we introduce board institutional expertise as a reflection of outside directors' collective exposure to institutionally dissimilar contexts and test its effects on firm performance.

Consistent with resource dependence theory (Pfeffer & Salancik, 1978), we emphasize the role of the firm environment in order to advance our understanding of the board expertise–firm performance relation. Our research builds on the simple yet fundamental premise that external actors facing the firm are situated within institutional contexts that shape their shared normative and cognitive frameworks (Aguilera & Jackson, 2003, 2010). Outside directors who have been exposed to these shared frameworks may be better able to appreciate the interests, values, motivations and behaviors of different institutional constituents, such as suppliers of capital, consumers, and regulatory agencies, and consequently act as effective bridge-builders between the firm and its institutional environment. We posit that board institutional expertise represents a previously overlooked source of information, skills and networks that may improve outside directors' collective ability to perform their two primary functions. Specifically, we propose that board institutional expertise (1) promotes a deeper understanding of different institutional regimes, which in turn allows boards to make governance decisions that appeal to broader institutional conventions and expectations, and (2) improves the ability to gather, process and interpret institution-specific information, which in turn enables boards to provide better strategic guidance.

Additionally, we introduce board busyness as a contingency that influences the relationship between board-level expertise and firm outcomes. Acknowledging the high level of complexity and ambiguity associated with board-level judgments and decision making (Boivie, Bednar, Aguilera, & Andrus, 2016; Forbes & Milliken, 1999; Zajac & Westphal, 1996), we theorize that multiple board memberships will divert time,

attention and cognitive capacity required to fully exercise a focal board mandate (Ferris, Jagannathan, & Pritchard, 2003; Fich & Shivdasani, 2006; Harris & Shimizu, 2004). Utilizing the information, skills and networks derived from institutionally dissimilar contexts requires outside directors to carefully translate their insight to the idiosyncratic context of the focal firm. Hence, we predict that the performance implication of board institutional expertise is greatest when outside directors command the necessary temporal, attentive and cognitive capacity to mindfully utilize their monitoring and resource provision abilities.

Drawing on a panel dataset of large European companies, we built an initial sample of 16,858 outside director-year observations with comprehensive demographic and career history data, including directors' exposure to a comprehensive set of 30 indicators of formal institutions (Holmes, Miller, Hitt, & Salmador, 2013). Using bias-corrected weighted mean Euclidean distance formulas (Arregle, Miller, Hitt, & Beamish, 2016), we then developed for each board-year observation our board institutional expertise measure. Finally, we employed endogeneity-robust system generalized method of moments (GMM) regressions to empirically test our hypotheses (He & Huang, 2011; Oehmichen et al., 2017b; Qian, Wang, Geng, & Yu, 2017; Zona, Gomez-Mejia, & Withers, 2018).

Our results indicate that boards whose outside directors have collectively been exposed to institutionally dissimilar contexts are positively and significantly associated with firm performance. Acknowledging common methodological concerns regarding board composition studies (e.g., Johnson et al., 2013), we control for the possibility that board institutional expertise may be endogenous to other organizational characteristics including firm performance. In our empirical models, we also account for several other intra-board expertise and diversity measures, strengthening our confidence that our results are uniquely driven by board institutional expertise. We find board institutional expertise to be the strongest board-level predictor of firm performance in our models. We also find that the exposure to institutionally dissimilar rather than merely foreign contexts indeed has the strongest performance implication. Consistent with our theorizing, our main effect is negatively moderated by the number of board memberships held by outside directors. This result lends support to our prediction that busyness strains outside directors' temporal, attentive and cognitive capacity, which lessens the extent to which they can devote their human and social capital to the firm.

This article makes important contributions to the strategic management literature. Our study adds to the literature on strategic leadership (Finkelstein, Hambrick, & Cannella, 2009) by introducing outside directors' collective institutional exposure as an

important new form of board-level expertise. By theorizing and empirically demonstrating the performance implications of outside directors' collective institutional exposure, we infuse the strategic leadership literature with conclusions from the international business and comparative corporate governance literatures. Conceptually, our study contributes to the work on resource dependence theory (Pfeffer & Salancik, 1978). With the notion of board institutional expertise, we offer a resource dependency-reducing strategy that does not involve the creation of a formal organizational tie to a resource-controlling entity, as traditional resource dependence theory would suggest (Pfeffer, 1987). Instead, our work suggests that outside directors' exposure to institutionally dissimilar contexts may be a supplementary mechanism in reducing environmental uncertainty and managing dependencies with the firm's external environment. As such, we expand the research that explores strategies for managing resource dependence beyond board cooptation (Drees & Heugens, 2013; Lang & Lockhart, 1990; Westphal, Boivie, & Chng, 2006). Finally, we refine the general understanding of the relationship between board expertise and firm performance. By complementing existing agency theoretic (Haynes & Hillman, 2010) and institutional (Oehmichen et al., 2017b) contingency perspectives with a behavioral perspective, our study sheds new light on an important condition that shapes how board expertise translates into organizational outcomes.

3.2 Background

Although the comparative corporate governance literature and the resource-based view of boards in the strategic leadership literature have matured as different streams of research, they share similar conceptual roots (Scott, 2003; Thompson, 1967). Both streams emphasize the firm's interdependencies with the diversity, fluctuations and uncertainties in its environment, predicating that corporate governance effectiveness results from the degree of economic and noneconomic goal attainment among the various constituents facing the firm (Aguilera, Filatotchev, Gospel, & Jackson, 2008; Hillman, 2005). With our inquiry, we expand on this line of thought by examining how heterogeneity in outside directors' institutional expertise relates to the board's role as organizational rejoinder to the firm's external environment (Hillman et al., 2009; Pfeffer, 1972). In the following, we briefly synthesize the existing body of literature on how institutional pressures shape the firm's environment and how boards may connect the firm to environmental factors and dependencies.

Institutional Environments and their Implications on Corporate Governance

Extant research in the comparative corporate governance literature and related research on international business have emphasized the pivotal role of institutions in explaining corporate governance (Aguilera et al., 2008; Aguilera & Jackson, 2010; Doidge, Karolyi, & Stulz, 2007). Comparative corporate governance scholars have promoted a "thick view of institutions that takes account of the diverse identities and interests of actors across countries", which may lead to comparative advantages for different institutional arrangements (Jackson & Deeg, 2008: 549). International business scholars have studied how single institutions constrain firms' actions and examined different types of isomorphic adaptation in response to institutional idiosyncrasies. The two perspectives are complementary in that the former offers a holistic view of how institutions shape the supply of inputs available to the firm, while the latter emphasizes issues of strategic choice and organizational adaptation in response to institutions (Jackson & Deeg, 2008). Both research streams have testified to the importance and persistence of institutional differences across countries (Hall & Soskice, 2001; Whitley, 1990; Yoshikawa & Rasheed, 2009). Notably, scholars have also emphasized that firms not only face institutional pressures from their country of domicile but are equally pressured to adapt to host-country institutional norms and expectations (Delios & Henisz, 2003; Luo et al., 2009). However, to date, most studies have limited their analyses to home-country national institutions in the assumption that those comprehensively determine firm-level corporate governance (Aguilera & Jackson, 2003; La Porta, Shleifer, Lopez-De-Silanes, & Vishny, 2000). Despite early indications that firms do not always conform to institutional demands but may also resist or manipulate them (Oliver, 1991), scholars have only recently begun to acknowledge more broadly organizations' discretion in deciding to what extent they comply with or deviate from national institutions (Aguilera, Judge, & Terjesen, 2018; Geng, Yoshikawa, & Colpan, 2016). Here, Aguilera and colleagues (2018: 102) point out that multinational firms may engage in institutional arbitrage once they "become aware of different corporate governance practices through their exposure to governance logics outside the realm of their domestic institutional environment". Additionally, institutions may themselves convey mechanisms of managerial control and access to information that shape how boards perform their monitoring and resource provision functions (Oehmichen et al., 2017b). For example, the extent to which shareholders and creditors are legally safeguarded from expropriation by top management and blockholders may affect how outside directors exercise vigilance and control (La Porta et al., 2000). Likewise, disclosure requirements may facilitate or impair the availability of

information about markets and competitors (La Porta, Lopez-De-Silanes, & Shleifer, 2006), which has implications for how firms strategize and what knowledge is required from outside directors to support and advance strategic decision making.

Board Expertise as a Linkage to the Firm Environment

A separate stream of research in the strategic leadership literature has investigated how outside directors may create links between the firm and its external environment. The view of the board as a means to "connect the firm to external factors which generate uncertainty and external dependencies" (Hillman et al., 2000: 238) originates from resource dependence theory. An overwhelming number of studies have adopted resource dependence theory to examine how the formation of interorganizational linkages (e.g., mergers and acquisitions, joint ventures, board interlocks) affects a firm's capacity to manage its external environment (for a review see Hillman et al., 2009). These studies have predominately focused on the role of the board in linking the firm to its competitive environment, typically by analyzing externally perceivable ties to resource-controlling entities such as competitors or suppliers of capital. Less scholarly attention has been devoted to understanding how boards may link the firm to its institutional environment despite widespread consensus on the importance of institutions for board- and firm-level processes and outcomes (Oehmichen et al., 2017b; Yoshikawa, Zhu, & Wang, 2014).

The emerging literature on board-level expertise offers promising new avenues to conceptualize and test outside directors' influence in reducing environmental dependence. Different forms of expertise, defined as accumulated role-specific experience, have been shown to shape directors' procedural knowledge, tacit skills and overall understanding of the board, firm and environment with effects on a variety of organizational outcomes such as strategic change (Haynes & Hillman, 2010; Oehmichen et al., 2017b), firm growth (Kor & Sundaramurthy, 2009), stock market reactions to CEO appointments (Tian et al., 2011), acquisition performance (McDonald et al., 2008), market entry (Diestre et al., 2015), liability of newness (Kor & Misangyi, 2008), and postmarket entry performance (Chen et al., 2017). The prevalent conceptual logic in studying board-level expertise builds on Hillman and Dalziel (2003), who propose that outside directors' collective human and social capital predict a focal board's ability to exercise its two primary roles of monitoring and resource provision, both of which have been shown to improve firm performance (Westphal, 1999). Human capital is defined as resources in the form of a "set or bundle of skills, knowledge, and perspectives that outside directors collectively bring to the board" (Kor & Sundaramurthy, 2009: 984),

and social capital is defined as "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit" (Nahapiet & Ghoshal, 1998: 243).

Because "corporate governance interrelates with variations in internal and external strategic resources that shape a firm's interdependence with market, sectoral, regulatory, or institutional environments" (Aguilera et al., 2008: 476), outside directors' exposure to different institutional contexts provides diverse and unique human and social capital. Several studies have found support for the existence of interrelations between institutional contexts and the realization of board members' productive potential reflected in key board attributes such as gender diversity (Post & Byron, 2015), foreignness (Miletkov, Poulsen, & Wintoki, 2017), and industry expertise (Oehmichen et al., 2017b). For example, Post and Byron (2015) suggest that institutions may influence how boards solicit and utilize individual members' inputs to board decision making and processes. Specifically, these authors find that the positive effect of female board representation on firm performance is more pronounced when shareholder protection is stronger because the latter may serve as an information-processing stimulus that encourages boards to seek more diverse perspectives from their members. Overall, the above studies suggest that board practices are contingent upon the institutional context and that outside directors who have accumulated experience across institutionally dissimilar contexts have been exposed to various organizational responses to different institutional standards and regimes.

Additionally, prior research has found compelling support that outside directors' experiences produce social capital (Certo, 2003; Hillman & Dalziel, 2003; Kor & Sundaramurthy, 2009) and that social capital influences a group's collective actions and effectiveness (Oh, Labianca, & Chung, 2006). The two dominant sources of social capital are internal, through outside directors' personal relationships within the firm, and external, through multiple board appointments (Johnson, Schnatterly, Bolton, & Tuggle, 2011) or acquired experience in a relevant context (Johnson et al., 2013; Kor & Sundaramurthy, 2009). A substantial amount of prior research in this area has studied board interlocks, which have been shown to be associated with directors' strategic involvement (Ruigrok, Peck, & Keller, 2006), acquisition activity (Haunschild, 1993) and premia (Haunschild, 1994), and firm performance (Zona et al., 2018). However, since most board interlocks are domestic (Heemskerk, Fennema, & Carroll, 2016), they are typically unlikely to provide direct access to knowledge and resources from institutionally dissimilar environments. The prior literature therefore suggests that institutional expertise resides in the heterogeneity of board members' social capital

(Geletkanycz & Hambrick, 1997) as reflected in the innate (e.g., nationality) and acquired (e.g., professional experience) attributes of outside directors. Collectively, the body of research on comparative corporate governance and strategic leadership suggests that exposure to institutionally dissimilar contexts promotes complementary perspectives, knowledge and skills, as well as broader social relationships.

3.3 Theory and Hypotheses

Board Institutional Expertise and Firm Performance

Building on the notion of board institutional expertise as a potential source of human and social capital, we argue that boards with more institutional expertise may better meet governance and resource provision role demands. Recognizing the interdependent nature of human and social capital (Haynes & Hillman, 2010), we integrate our theorizing about the effects of board institutional expertise. We posit that the human and social capital gains reflected in board institutional expertise will improve boards' capacity for monitoring and advice, as they reduce uncertainty, facilitate the acquisition of resources and mitigate transaction costs (Hillman et al., 2000). Firms face major uncertainties arising from regulatory, political or economic conditions (Hoppmann, Naegele, & Girod, 2018; Moore, Bell, & Filatotchev, 2010), and boards with institution-specific knowledge may reduce environmental uncertainty because they likely have more diverse information about and deeper relationships with key constituents across different institutional contexts. Maintaining a greater number of links across institutional contexts allows boards to rely on more leads in understanding and assessing institutional idiosyncrasies, thereby mitigating environmental uncertainty (Eisenhardt & Schoonhoven, 1996). For example, outside directors' ability to provide insight into institutional norms and assumptions may increase a focal board's sensitivity to the potential ramifications of business practices and governance decisions across institutional contexts. In ratifying and monitoring the decisions of top management, outside directors look for ways to reduce evaluative uncertainty by finding the most appropriate metrics and benchmarks of performance (Brown et al., 2017). Monitoring mechanisms and performance practices vary among institutional regimes, which can, for example, be attributed to different incentive alignments through the institutional standings of blockholders or the effectiveness of the market for corporate control (Misangyi & Acharya, 2014). Hence, board institutional expertise may offer a rich and diverse set of experiences and approaches that enables the board to make governance decisions that have a lower risk for being challenged by investors and other key constituents in institutionally dissimilar environments. Board institutional expertise may

thus serve as a means of securing organizational responsiveness to external pressures (Boeker & Goodstein, 1991). Additionally, effective strategic guidance requires an appreciation of the variability of firm resources and how those are managed by firms (Kor & Mahoney, 2000; Penrose, 1959). Aguilera et al. (2008) argue that the nature and salience of the organizational resource base is interdependent with the institutional environment, as it affects the character and effectiveness of governance practices. The capacity to notice, make sense of and interpret potentially ambiguous or complex institutional information and its interplay with organizational practices may enable boards with greater institutional expertise to provide more careful advice to the CEO and top management team. The boundary-spanning social networks reflected in board institutional expertise may further improve boards' strategy making capacity through a broader understanding of the practices and procedures used by firms in institutionally dissimilar contexts (Certo, 2003). These arguments collectively suggest that institutional expertise may improve boards' ability to mitigate the uncertainty that is imposed by dissimilar institutions.

Relatedly, we contend that board institutional expertise affects organizational outcomes through preferential access to resources. We argue that boards whose outside directors have acquired experience in multiple institutional contexts should on average have broader access to key stakeholders such as suppliers, buyers, public policy decision makers, lenders and other social groups across those multiple contexts (Hillman et al., 2000). For example, outside directors who have had exposure to investor protection or credit law regimes in institutional contexts less familiar to the firm may improve the board's ability to anticipate, interpret and respond to the expectations of respective suppliers of capital, thereby attracting capital flows to the firm. That assertion is consistent with the international business research, which has stressed that "foreign investors rely on corporate governance models at home to make sense of the foreign world" when engaging in foreign direct investment decisions (Luo et al., 2009: 460). The behavior of investors and other important stakeholders towards a focal firm may thus be influenced by the shared normative and cognitive frameworks shaped by the respective stakeholder's home-country institutional context. Outside directors who have been exposed to these shared frameworks may be important bridge-builders and thus strengthen the relationship between the firm and nondomestic stakeholders. In line with this argument, research has produced evidence that foreign outside directors bring with them the corporate governance standards of their home country (Miletkov et al., 2017), acting as signpost of familiarity to other constituents from the respective country who may consequently be more willing to provide important resources to the focal firm.

Related work has found that boards with a higher proportion of foreign directors or directors with substantial international experience receive more favorable stock market valuations (Giannetti, Liao, & Yu, 2015; Oxelheim, Gregorič, Randøy, & Thomsen, 2013). This finding is also consistent with the research on director prestige. Prestige has been found to be a partly subjective concept because "an individual's prestige resides in the minds of other individuals – specifically, individuals subjectively associate prestige with another's occupational characteristics" (Certo, 2003: 436). It follows that the prestige ascribed to a focal board member may vary among important constituents such as investors and trading partners based on their subjective assessment of board members' backgrounds. For example, a director with extensive exposure to liberal market, shareholder-oriented economies (e.g., the U.S.) serving on the board of a company in an industry-coordinated, stakeholder-oriented economy (e.g., Germany) will likely invoke particularly favorable associations among constituents from the former institutional setting, and vice versa. In sum, board institutional expertise is expected to facilitate access to both financial and nonfinancial resources, such as prestige and goodwill.

Finally, outside directors may reduce the transaction costs associated with managing the interdependencies between the firm and the various institutions to which it is exposed (Williamson, 1984). Scholars adopting institution-based arguments posit that varying levels of country-level institutional factors affect transaction costs and incentives for productive efficiency (Musacchio, Lazzarini, & Aguilera, 2015; North, 1990). Boards that are able to comprehensively attend to the demands placed on them by external constituents (Boeker & Goodstein, 1991) may also experience less friction in dealing with important institutional actors. Building on the above example, it is very conceivable that boards with greater institutional expertise are better equipped to deal with critical investor groups, which may reduce the risk for activist motions being placed against the board. The reduced transaction costs associated with the interdependencies between the firm and the various institutions in its environment may thus result in a cost advantage over competitors, and the resulting lack of distraction may also free up boards' capacity to engage more thoroughly in their monitoring and advisory roles. Additionally, Hillman et al. (2000) argue that boards with deeper knowledge about institutionally dissimilar contexts are able to supply transaction cost-lowering advice to management by offering expertise about procedures or decision makers that is relevant to the implementation of important initiatives such as setting up new operations or securing government contracts. These arguments collectively suggest that the human and social capital gains reflected in board institutional expertise allow boards to better

understand, appeal to and translate institutional conventions, as well as to better gather, process and interpret institution-specific information, thereby allowing them to perform more effectively their dual role of monitoring and resource provision:

> *Hypothesis 1: Board institutional expertise is positively related to firm performance.*

Institutional Expertise and Board Busyness

In seeking to provide a deeper understanding of how board institutional expertise affects the two key board functions (i.e., monitoring and resource provision), we introduce an actor-centric contingency perspective. To fully capture how boards shape organizational outcomes, it is important not only to assess outside directors' overall ability to serve as effective monitors and resource providers but also to consider what might constrain outside directors' from contributing their human and social capital to the firm (Hillman & Dalziel, 2003). These "incentives", or factors that "might act to encourage the provision of resources to the firm", may shape the magnitude and direction of the relationship between outside directors' collective human and social capital and firm performance (Hillman & Dalziel, 2003: 384). Prior research has found that many factors may affect how outside directors' expertise manifests in organizational outcomes, such as CEO power (Haynes & Hillman, 2010), home-country institutional quality (Oehmichen et al., 2017b), director's motivation to demonstrate ability (Veltrop, Molleman, Hooghiemstra, & van Ees, 2017) and their identification with multiple identities (Hillman, Nicholson, & Shropshire, 2008), and the emergence of group decision-making biases (Westphal & Bednar, 2005).

As theorized above, the potential benefits of board institutional expertise inherently result from boards' ability to question existing conceptions of how things work and apply conclusions drawn from the information, skills and networks acquired across institutionally dissimilar contexts. Naturally, that ability requires from outside directors a comprehensive understanding of the focal firm's internal and external environment, thorough deliberation as to the potential applicability and utility of their institutional expertise, and efforts to lay out a persuasive argumentation towards key stakeholders, such as other members of the board, top management team and key investors. We therefore expect that outside directors need to command the necessary time, attentional and cognitive capacity to realize the benefits of board institutional expertise and theorize that maintaining multiple board memberships will strain

directors' capacities and thus reduce the positive impact of board institutional expertise on firm performance.

The high levels of complexity and ambiguity associated with board-level judgments and decision making (Boivie et al., 2016; Forbes & Milliken, 1999; Zajac & Westphal, 1996) routinely impose substantial information-processing demands on outside directors in order to fully understand the firm's business and environment (Galbraith, 1974; Tushman & Nadler, 1978). Theorists of the Carnegie School have long argued that decision making under those challenging conditions is primarily the outcome of behavioral factors rather than conscious deliberation (Cyert & March, 1963; March & Simon, 1958). The research on corporate boards has echoed these tendencies and produced evidence that boards' cognitive bases, attention structures and social psychological dynamics are reflected in core strategic decisions (Carpenter, Geletkancz, & Sanders, 2004; Hambrick & Mason, 1984; Ocasio, 1997; Starbuck & Milliken, 1988; Westphal & Bednar, 2005). More generally, corporate elites are susceptible to behavioral factors because the nature of decisions they confront are often fraught with cognitive biases (Barnes, 1984; Bateman & Zeithaml, 1989).

Directors who serve on multiple corporate boards face particularly difficult conditions that may impede the ability to exercise their monitoring and resource provision role (Ferris et al., 2003; Fich & Shivdasani, 2006; Harris & Shimizu, 2004). Although one could in principle expect that more directorates held by the members of a focal board imply access to more human and social capital, the costs of network maintenance will also increase (Sauerwald, Zhiang, & Peng, 2016). Research has supported the latter notion by showing that the alleged access to more and superior information is in fact often displaced by "potentially burdensome cognitive constraints of social capital, which underscores the situational mechanism of information flow" and results in decreased task performance (Oldroyd & Morris, 2012: 413). In theorizing our moderating effect, we thus elaborate how outside directors' limitations in time, attentional and cognitive capacity may amplify the inertial tendencies of board busyness (Cyert & March, 1963; Kahnemann, 1973; Simon, 1947).

First, the time requirement associated with board directorships is a substantial downside of serving as board member (Boivie, Graffin, & Pollock, 2012; Lorsch & MacIver, 1989). Multiple board memberships are likely to threaten available time to prepare for board meetings (Harris & Shimizu, 2004), which is crucial because the number of board meetings per year tends to be small, and the duration of the meetings is short (Carter & Lorsch, 2004; Finkelstein & Mooney, 2003). Since outside directors tend to have less firm-specific knowledge than executives, limited time is likely to

accentuate information asymmetries and constrain an outside director's ability to vigorously monitor and constructively advise executives on strategic issues (Westphal & Fredrickson, 2001). Forbes and Milliken (1999: 493) argue that "the time that directors devote to their tasks can differ considerably across boards, and these differences can significantly determine the degree to which boards are able to represent shareholders' interests successfully and to make contributions to strategy". As time is an important manifestation of effort, and multiple board mandates require substantial time commitments, one may expect that busy directors are less likely to diligently seek and scrutinize the information needed to govern effectively and offer advice to the top management team.

Second, limited attentional capacity forces individuals to be selectively attentive to some issues while failing to recognize others (Ocasio, 1997). Board members' attention to fulfilling their roles as monitor and resource provider is an important predictor of actual task performance, yet directors do not attend equally to all important issues but instead allocate their attention based on contextual factors (Tuggle, Schnatterly, & Johnson, 2010a; Tuggle, Sirmon, Reutzel, & Bierman, 2010b). Maintaining multiple board memberships is an important factor in that regard because different commitments may create mixed allegiances and competing demands (Harris & Shimizu, 2004), which have been shown to reduce the quality of decision making (Shalley, 1991). Given the limited attentional capacity of individuals and the efforts required from outside directors to notice, encode and interpret issues of importance (Ocasio, 1997; Tuggle et al., 2010a), we argue that multiple board memberships are likely to divert outside directors' attention and thus constrain the extent to which they can contribute their human and social capital to the focal firm.

Third, adding to time and attentional constraints, board members face the same cognitive limitations as all human beings and are boundedly rational in their ability to process information (Cyert & March, 1963). Board memberships routinely strain cognitive resources because they require directors to process large amounts of complex, unstructured and ambiguous information (Walsh, 1995) about the firm's business, technology, and human resources, as well as the industry, institutional and national environments facing the firm. The cognitive burden is likely heightened for busy directors, whereby one may assume that "the greater the cognitive resources directors are required to devote to processing information about other firms, the lower the cognitive resources available for the focal firm and therefore the lower the focal board's effectiveness" (Khanna, Jones, & Boivie, 2014: 560; Kor & Sundaramurthy, 2009). Individuals who are confronted with uncertainty and information overload may rely on

familiar attributes that act as a scaffold for decision making (Elsbach, Barr, & Hargadon, 2005; Tversky & Kahnemann, 1974). We theorized before that board institutional expertise reflects a greater number of links across institutional contexts, yet fully utilizing these links requires adjustments for firm-specific contingencies. Individuals' tendency to retreat to heuristics or other simplifying strategies when faced with cognitive overload may result in busy directors failing to accurately translate the information, skills and networks from institutionally dissimilar contexts to the idiosyncrasies of the focal firm.

In summary, we predict that busy boards will be less likely to uphold the same levels of scrutiny *vis-à-vis* management and will be less inclined to contribute the full range of resources they could otherwise bring to the firm. This decrease in how boards exercise their monitoring and resource provision responsibilities will consequently weaken the positive main relationship between board institutional expertise and firm performance:

> *Hypothesis 2: The relationship between board institutional expertise and firm performance is weaker when outside directors are busy.*

3.4 Data and Methods

Sample and Data

To test our hypotheses, we considered companies that were constantly traded on the primary or secondary stock market in Germany, the Netherlands, Switzerland and the United Kingdom during the period from 2009 to 2014. We selected these four countries in an effort to design a relevant, appropriate and representative study context for our research question. First, our four sample countries are relevant in that they represent an economically viable context that accounts for 22.4% of the world's largest companies outside the U.S. as measured by total revenues in the Fortune Global 500 ranking. Second, the four Western European sample countries pose a particularly appropriate setting because corporate boards in that region tend to be composed of outside directors with stronger international backgrounds than corporate boards in other parts of the world (Spencer Stuart, 2017). In addition, due to the limited size of our sample countries' domestic markets, firms primarily rely on foreign markets. These characteristics constitute a rich empirical setting to study how directors' experiences with institutionally dissimilar contexts influence firm-level outcomes. Third, our sample countries are representative of diverse institutional, legal and governance arrangements. For example, the sample countries vary in terms of type of legal system (e.g., common

law in the U.K. vs. civil law in Germany), level of minority investor protection (e.g., high in the U.K. vs. low in Switzerland), existence of mandated co-determination (mandatory in Germany but not in the other sample countries) and type of prevalent board structure (e.g., two-tier board structure in the Netherlands, one-tier board structure in the U.K.). Testing our hypotheses against these diverse national contexts raises our confidence in the robustness of our effects.

We initially considered for each country the 100 listed firms with the highest market capitalization at 2009 year-end. Of these, 300 companies were constantly traded on the respective stock exchanges. In total, 85 companies were listed in Switzerland, 77 in the United Kingdom, 77 in Germany and 61 in the Netherlands. These firms were active in 58 industries based on their two-digit SIC industry classification. We retained only observations with full information on the career history of all directors, which yielded a completion rate that was comparable with other studies relying on similar variables (e.g., Oehmichen et al., 2017b). Consistent with the prior research, we excluded financial institutions (SIC codes in the 6000s) because their asset structures are different from those of other industries, and they are highly regulated. The final sample included an unbalanced panel with 809 firm-year observations over the 6-year window. We tested for sample-inclusion bias by comparing key firm characteristics (i.e., size and performance) of the final sample with the initial sample using the Kolmogorov-Smirnov two-sample test. The results showed no statistically significant difference between the samples for these two characteristics, indicating that both samples come from the same population. In terms of data sources, we obtained firm data from Thomson Reuters Eikon, Thomson Reuters Datastream and Orbis. The board data were retrieved from the BoardEx database. Missing data were hand-collected from federal sources, firms' investor relation offices and corporate annual or financial reports as reported December 31.

Dependent Variable

We measured firm performance as a firm's *return on assets (ROA)* in each year, operationalized as the quotient of reported net income in a fiscal year and the balance sheet value of total assets. ROA is the most commonly used performance measure in strategy research and therefore allows for comparability with previous studies (Becerra, 2009; Zona et al., 2018). Moreover, the theory developed in this study posits that directors' human and social capital, as reflected in board institutional expertise, enables directors to monitor and provide advice to top management, which should consequently improve firm performance. This effect is best represented by an accounting-based

measure that reflects operating efficiency rather than by market-based measures. The latter are often driven by institutional investors' perceptions of governance effectiveness that are informed by simple indicators such as outsider ratio rather than comprehensive assessments of individual directors' specific capabilities (Khanna et al., 2014). However, similar to other studies on corporate governance and strategic leadership, we also included robustness tests with market-based indicators as detailed in the results section (e.g., Cannella, Park, & Lee, 2008; He & Huang, 2011; Hillman, 2005).

Independent Variable

We constructed *board institutional expertise* by identifying for each outside director the countries and respective formal institutional environments to which they had meaningful exposure. We used three steps to compute the board institutional expertise variable: (a) We developed comprehensive indicators that reflected each country's formal institutional environment, (b) we recorded outside directors' exposure to these countries and (c) we calculated for each board a measure that indicated the level of institutional diversity experienced by its members.

(a) Prior research has acknowledged that institutions should be considered as a variety of components whose configurations work together within each nation rather than examining individual institutions in isolation (Jackson & Deeg, 2008). To understand how a variety of institutions in different countries can support firm strategy, institutions need to be conceptualized and tested as a bundle of factors. We followed a similar approach as Holmes et al. (2013) to construct meaningful factors that jointly determine the institutional environment of a country. We utilized several data sets as sources for the data on formal institutions: The Index of Economic Freedom by the Heritage Foundation, the Political Constraint Index (POLCON) data set (Henisz, 2000), the annual survey of political rights and civil liberties by the Freedom House and the 2017 update of the Worldwide Governance Indicators (WGI) and the Doing Business data set by the World Bank. Our approach allowed us to build a comprehensive data set of 30 institutional indicators that shape the competitive, political and governance context within a country. Table 3.1 presents an overview of the variables along with their untransformed units of measurement and definitions.

We then performed exploratory factor analysis (EFA) to combine the individual items into factors that are indicative of a nation's institutional context. We used EFA instead of confirmatory factor analysis because the latter would have required us to make a priori assumptions about the optimal combination of the institutional measures. In a

Table 3.1 Data Sources, Variable Units and Definitions

Source	Name	Units	Definition
IEF	Property rights	Index, 0 (*low*) to 100 (*high*)	Extent to which a country's legal framework allows individuals to freely accumulate private property, secured by clear laws that are enforced effectively by the government
IEF	Government integrity	Index, as above	Indicates level of corruption of the government
IEF	Tax burden	Index, as above	Tax burden includes direct taxes, in terms of the top marginal tax rates on individual and corporate incomes, and overall taxes, including all forms of direct and indirect taxation at all levels of government, as a percentage of GDP
IEF	Government spending	Index, as above	Burden imposed by government expenditures, which includes consumption by the state and all transfer payments related to various entitlement programs.
IEF	Business freedom	Index, as above	Extent to which the regulatory and infrastructure environments constrain the efficient operation of businesses
IEF	Labor freedom	Index, as above	Legal and regulatory framework of a country's labor market, including regulations concerning minimum wages, laws inhibiting layoffs, severance requirements, and measurable regulatory restraints on hiring and hours worked, plus the labor force participation rate as an indicative measure of employment opportunities in the labor market.
IEF	Monetary freedom	Index, as above	Combination of price stability with an assessment of price controls
IEF	Trade freedom	Index, as above	Extent of tariff and non-tariff barriers that affect imports and exports of goods and services
IEF	Investment freedom	Index, as above	Constraints on the flow of investment capital
IEF	Financial freedom	Index, as above	Indicator of banking efficiency as well as a measure of independence from government control and interference in the financial sector
POLCON	Political constraints	Index, 0 (*low*) to 1 (*high*)	The degree of restrictions on policy changes from veto power and the distribution of power across political branches
POLCON	Executive political restrictions	Index, 1 (*low*) to 7 (*high*)	Extent of institutionalized constraints on the decision-making powers of executives
Freedom House	Political rights	Index, 1 (*high*) to 7 (low)	Extent to which the country's laws allow citizens to participate in government through, for example, voting and running for office
Freedom House	Civil liberties	Index, 1 (*high*) to 7 (low)	Measures a country's approach to governing human rights, such as freedom of speech, religion, and assembly
WGI	Voice and accountability	Index, –2.5 (*weak*) to 2.5 (*strong*)	Reflects perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media
WGI	Political stability, absence of violence / terrorism	Index, –2.5 (*weak*) to 2.5 (*strong*)	Perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism

Table 3.1 (continued)

Source	Name	Units	Definition
WGI	Government effectiveness	Index, –2.5 (*weak*) to 2.5 (*strong*)	Reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies
WGI	Regulatory quality	Index, –2.5 (*weak*) to 2.5 (*strong*)	Reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development
WGI	Rule of law	Index, –2.5 (*weak*) to 2.5 (*strong*)	Reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence
WGI	Control of corruption	Index, –2.5 (*weak*) to 2.5 (*strong*)	Reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests
DBI	Starting a business	Index, 0 (*low*) to 100 (*high*)	Procedures, time, cost and paid-in minimum capital to start a limited liability company
DBI	Dealing with construction permits	Index, as above	Procedures, time and cost to complete all formalities to build a warehouse and the quality control and safety mechanisms in the construction permitting system
DBI	Registering property	Index, as above	Procedures, time and cost to transfer a property and the quality of the land administration system
DBI	Getting credit	Index, as above	Movable collateral laws and credit information systems
DBI	Minority investor protection	Index, as above	Minority shareholders' rights in related-party transactions and in corporate governance
DBI	Paying taxes	Index, as above	Payments, time and total tax rate for a firm to comply with all tax regulations
DBI	Trading across borders	Index, as above	Time and cost to export the product of comparative advantage and import auto parts
DBI	Enforcing contracts	Index, as above	Time and cost to resolve a commercial dispute and the quality of judicial processes

Notes. IEF = Index of Economic Freedom (Heritage Foundation); POLCON = Political Constraint Index; WGI = World Governance Indicators (World Bank); DBI = Doing Business Report (World Bank). Definitions as provided by original sources.

situation in which individual items have not been constructed by the researchers themselves but drawn from archival sources, EFA allows for the best reflection of the true number of factors and the respective factor loadings (Krause, Semadeni, & Withers, 2016). Consistent with accepted practice, we specified the use of factors with unrotated minimum eigenvalues of 1 (Ford, MacCallum, & Tait, 1986). Items with high cross-loadings (greater than ± 0.4) on multiple factors were excluded. The analysis revealed 3 factors that together explained 70.2% of the variance, indicating a good fit with the data. We used oblique oblimin rotation instead of other rotation techniques (e.g., orthogonal rotations) because, as mentioned above, national institutions share common variance

and are interdependent; thus, a technique that allows correlated factors was necessary. Table 3.2 shows the final 3-factor solution for the 18 variables that exhibited a simple structure and had a high factor loading on only one factor.

Table 3.2 Institutional Dimensions: Results of Exploratory Factor Analysis

Item	Factor 1: Business environment	Factor 2: Regulatory control	Factor 3: Political democracy
Monetary freedom	**0.86**	–0.25	0.01
Property rights	**0.76**	0.20	0.07
Control of corruption	**0.71**	0.25	0.06
Trading across borders	**0.68**	0.07	0.13
Investment freedom	**0.67**	0.12	0.23
Financial freedom	**0.67**	0.20	0.14
Paying taxes	**0.55**	0.32	–0.16
Registering property	0.02	**0.82**	–0.24
Starting a business	0.06	**0.77**	0.13
Getting credit	–0.09	**0.70**	0.36
Enforcing contracts	–0.07	**0.70**	–0.09
Investor protection	–0.01	**0.65**	0.21
Regulatory efficiency	0.35	**0.66**	0.02
Trade freedom	0.31	**0.45**	0.23
Executive political restrictions	0.05	0.08	**0.89**
Political constraints	–0.05	-0.06	**0.89**
Civil liberties	–0.37	-0.07	**–0.69**
Political rights	–0.29	-0.05	**–0.75**
Total proportion of variance explained (%)	70.2		

Notes. N = 985. The bold font indicates the factor on which the variable loads.

(b) As a next step, we examined two indicators that reflect the institutional environments to which outside directors have had exposure. First, we expected outside directors to be very familiar with the institutional environments of their home countries. We therefore recorded the country of citizenship for each outside director. Second, we examined prior work experience. Specifically, we recorded the countries in which outside directors had work experience over the past 5 years (including the focal year). We considered both board and non-board roles held at for-profit firms. Due to the advanced career stage of outside directors, typical roles included executive and non-executive board mandates, executive directorships and senior leadership positions. We set the period of interest to 5 years to ensure that board members' experiences were still timely and relevant. Prior research that has used board-level expertise measures to study effects on firm outcomes used similar periods (e.g., Oehmichen et al., 2017b). We then aggregated the information on outside directors' nationalities and career histories to obtain our measure of board institutional expertise.

(c) Finally, we calculated a measure to reflect the collective institutional diversity of outside directors. Given the interval scale nature of the underlying institutional factor scores produced in step (a), we could have computed a diversity measure using standard deviation or the mean Euclidean distance (Harrison & Klein, 2007). Following prior research on institutional diversity (Arregle et al., 2016), we used the latter approach. Since there was considerable variation in the number of countries in which outside directors collectively had experience (ranging from 1, in which all outside directors were citizens of the firm's home country and did not have recent international experience, up to 24 countries), we applied the correction proposed by Biemann and Kearney (2010) to mitigate potential biases when comparing the diversity scores across corporate boards. In addition, we applied weights to reflect the proportion of outside directors who had experience in each country. Hence, board institutional expertise was computed for each board-year observation using bias-corrected weighted mean Euclidean distance as follows:

$$Board\ institutional\ expertise = \frac{\sum_{c=1}^{N} Dir_C \times \frac{\sum_{j=1}^{N} \sqrt{(x_c - x_i)^2}}{N-1}}{N}$$

where N is the number of countries in which outside directors collectively had exposure, Dir_c is the ratio of outside directors with experience in country c by the total number of outside directors and X_c is the sum of the 3 institutional factor scores for country c as computed in step (a). Not surprisingly, the resulting board institutional expertise construct was related to board international experience (Cronbach alpha = 0.72) yet produced stronger estimates as detailed in the results section.

Moderating Variable

To test Hypothesis 2, we constructed a dummy variable, *board busyness,* which took the value 1 when the average number of current board appointments held by outside directors was above the sample median and 0 otherwise. The sample median was 2.20 (sample average 2.21). This approach is similar to He and Huang (2011) who, however, note that using an average specification of board appointments does not mathematically distinguish between boards mainly composed of directors whose number of board memberships is close to the average and boards composed mainly of directors with either few or many board memberships. While we consent with this caveat, we argue that in both situations directors may become overcommitted by the competing burdens, causing overload and limiting the attention necessary to effectively perform their key responsibilities.

Control Variables

We included 15 control variables to capture board-level, firm-level and industry-level attributes that might affect the dependent variable or main relationship of our model. At the board level, we included *board size* as the count of outside directors. Prior research has found that larger boards may be more susceptible to free riding problems than smaller boards (Dalton, Daily, Ellstrand, & Johnson, 1998) which could potentially affect the extent to which directors will contribute their information, skills and networks to the firm. Next, we included *board capital breadth* as an aggregate measure of the heterogeneity of outside directors' human and social capital. In constructing this variable we followed Haynes and Hillman (2010) using a compilation model with measures of a board's heterogeneity in age, gender, nationality, team tenure and interorganizational interlocks. We used the Blau (1977) index to compute diversity for variables measured in k categories and standard deviation for variables with ratio scale, and then multiplied the former with $k/(k-1)$ and the latter with the largest sample value to obtain for all individual variables standardized ranges between 0 and 1 (Biemann & Kearney, 2010; Harrison & Klein, 2007). Next, we controlled for the board's relative power using two variables: 1) CEO duality and 2) CEO tenure overlap. *CEO duality* was measured as a dummy variable that took the value 0 when CEO and Chair roles were separated and 1 otherwise. *CEO tenure overlap* was operationalized as pairwise average overlap in team tenure between outside directors and CEO, using the formula proposed by Carroll and Harrison (1998). Additionally, we controlled for board independence as it may influence board's effectiveness to exercise its key responsibilities (Hillman & Dalziel, 2003; Peng, 2004). *Board independence* was measured as the proportion of outside directors who have been reported as independent in the respective firm's proxy statements.

At the firm level, we first controlled for *prior performance* measured as 1-year lagged ROA. Next, we controlled for the power of large investors as those may exert pressure on board behavior (Hoskisson, Hitt, Johnson, & Grossman, 2002; Westphal & Zajac, 1998). We measured *ownership concentration* as the percentage of shares held by the largest three shareholders (Qian et al., 2017). We included *firm size* as the natural log of annual gross sales to capture possible size effects that may affect board decision making (Finkelstein & Hambrick, 1996). In addition, we controlled for firm *internationalization* measured as foreign sales as a percentage of total sales because reliance on foreign markets will likely influence the performance implications of outside directors' experience with dissimilar institutional environments. Further, because a board's contribution may be affected by decision uncertainty and the predictability of

the firm's operating environment (Almandoz & Tilcsik, 2016), we controlled for firm *risk* measured as the coefficient of the variation of the three-year return on equity. Financial leverage limits the discretion of top management because higher leverage requires them to return a portion of free cash flow to debt holders. The disciplinary force of leverage is particularly important for firms with large cash flows but limited growth prospects (Jensen, 1986), as are many of the mature firms in our sample. We measured financial *leverage* as long-term debt divided by total assets. Finally, we included one-year *sales growth* which has been found to be an important predictor of firm performance (e.g., Brush, Bromiley, & Hendrickx, 2000).

At the industry level, we controlled for *industry munificence* as an indication of resource abundancy within a focal industry, *industry dynamism* as an indication of industry instability or volatility and *industry complexity* as an indication of the heterogeneity in the environment and concentration of resources (Dess & Beard, 1984). We computed the logarithm of cumulative net sales within each four-digit SIC code over the previous five-year period, including the focal year. We then regressed net sales on the previous five years (Boyd, 1995; Keats & Hitt, 1988). We exponentiated the slope and respective standards errors from this regression equation in order to obtain our measure for *industry munificence* and *industry dynamism*, respectively. We used the squared sum of each firm's market share within a four-digit SIC industry as our measure for *environmental complexity* which adopted values between 0 and 1. Values closer to 0 reflected a larger dispersion within the focal industry which is indicative of higher complexity. Similar to previous research, we standardized all industry measures to facilitate interpretation (Krause, Withers, & Semadeni, 2018). Lastly, we included country and year dummies.

Statistical Analysis

To test our models we adopted the system generalized methods-of-moments (GMM) estimator of Arellano and Bover (1995) and Blundell and Bond (1998) using the xtabond2 module in Stata 14. GMM has been shown to be a robust technique for alleviating endogeneity concerns when analyzing board effects on firm performance (Wintoki, Linck, & Netter, 2012) and it has recently been used by literature with similar research designs (e.g., He & Huang, 2011; Oehmichen et al., 2017b; Zona et al., 2018). GMM estimators are designed for short, wide panels with few time periods and many firms, and to fit linear models with one dynamic dependent variable, additional controls and fixed effects. In particular, the inclusion of the lagged dependent variable as a covariate rendered fixed- or random-effects linear regression models problematic due to

its correlation with unobserved panel-level effects (He & Huang, 2011). GMM allows to address several key concerns that are typically associated with a 'small T, large N' data structure, including endogeneity of regressors, fixed effects, and dynamic panel bias (Roodman, 2009b). Below we expand on the key advantages of the GMM model.

First, with GMM we addressed potential endogeneity concerns. While we hypothesized an effect of board institutional expertise on subsequent firm performance, it may be that prior performance determines current board composition because more successful firms may attract directors with a broader set of experiences (i.e., higher institutional expertise). In other words, our key variables may not be strictly exogenous and could be correlated with current or past realizations of the error term. The GMM estimator draws instruments from within the dataset and allows to control for board institutional expertise to be endogenous. This is done by setting k lags of the (dependent and independent) variables and then using the lags from $t > k$ as estimators for the variables in time t. In our context, current firm performance and board institutional expertise may be shaped by a firm's past performance and characteristics. In the GMM regression equation, historical firm attributes from $t > k$ are modeled as exogenous variables that only affect current performance through the k lags. Unlike other techniques such as 2SLS, GMM in principle allows to include all valid lags of untransformed variables because deeper instrument lags do not constrain the number of usable observations (Roodman, 2009a). That is desirable because a larger k increases the plausibility that the lagged instruments are indeed exogenous with respect to current performance. However, increasing the number of lags gives rise to instrument proliferation as the instrument count is quadratic in the time dimension. Instrument proliferation may overfit endogenous variables (Roodman, 2009b). Consequently, k should be kept small enough to avoid the problem of "too many" instruments. However, as Roodman (2009a) point out, there is no consensus in the literature on a specific, "ideal" number of instruments other than that instruments should not outnumber individual units in the panel (i.e., number of firms in our model). In order to avoid instrument proliferation, we followed prior research and restricted our lag range to $k = 2$, using the right-hand-side variables lagged from 2 to 3 years as instruments (e.g., Qian et al., 2017). Using this approach, the instrument count did not outnumber individual panel units in any of our regression models. In designing our instrument matrix, we defined all board- and firm-specific variables as predetermined but not strictly exogenous regressors (i.e., as part of the gmmstyle option in xtabond2) and all industry-, country- and time-related variables as exogenous (i.e., as part of the ivstyle option in xtabond2). By instrumenting endogenous regressors with variables assumed to be

uncorrelated with the fixed effects, system GMM also eliminates unobserved firm heterogeneity. Finally, GMM models address potential threats of dynamic panel bias and autocorrelation stemming from the fact that firm performance tends to correlate with its own past realization, thus hurting the normality assumption of residuals.

We used system GMM instead of difference GMM because the latter has been found to have finite sample bias (Blundell & Bond, 1998) and does not allow for time-invariant regressors (Roodman, 2009a). We used two-step instead of one-step system GMM to avoid biased estimates resulting from limited variance in variables that do change much over time (Oehmichen, Braun, Wolff, & Yoshikawa, 2017a). Since two-step results may be prone to downward bias in the computed standard errors, we applied the Windmeijer (2005) correction to obtain robust standard errors. Finally, we used orthogonal deviations which allowed to preserve sample size for unbalanced panel structures (Arellano & Bover, 1995) and allows to control for firm-specific heteroskedasticity (Oehmichen et al., 2017a).

3.5 Results

Table 3.3 presents descriptive statistics and a correlation matrix for the variables. The independent variables do not correlate strongly with one another or with the control variables, easing concerns about multicollinearity. Table 3.4 presents the estimation results of the system GMM regressions. The diagnostics tests reveal that our models are well-fitted, with the Wald chi-square statistics being significant ($p < 0.000$) across all models. Our key assumptions were that including a lagged performance term would result in first-order serial correlation but that the firm's past performance and characteristics beyond a certain lag would be exogenous with regard to the current realization of performance. Arellano and Bond (1991) propose two formal tests of these assumptions. The AR(1) first-order serial correlation test yielded significant p-values across all models, indicating that we could reject the null hypothesis that there is no first-order autocorrelation of disturbances. The AR(2) second-order serial correlation test examined whether or not we included enough lags of the dependent variable to ensure the validity of the GMM specification. Specifically, the number of lags should be sufficiently high that historical values of firm performance beyond those lags are valid instruments that are exogenous to current performance. The AR(2) yielded nonsignificant p-values across all models, indicating that we cannot reject the null hypothesis that the errors in the first-difference regression exhibit no second-order serial correlation. In addition, we applied the Hansen J test of over-identifying restrictions,

Table 3.3 Descriptive Statistics

	Variable	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)	Return on assets[a]	0.07	0.06	1.00									
(2)	Tobin's Q[a]	3.09	2.55	0.53***	1.00								
(3)	Board institutional expertise	3.27	1.69	–0.02	0.06†	1.00							
(4)	Board international expertise	0.73	0.20	0.04	0.09*	0.62***	1.00						
(5)	Board busyness	0.47	0.50	–0.06†	–0.04	0.36***	0.36***	1.00					
(6)	Board size	7.05	2.28	–0.16***	–0.12**	0.31***	0.29***	0.27***	1.00				
(7)	Board capital breadth	2.25	0.64	0.05	0.07†	0.25***	0.41***	0.27***	0.35***	1.00			
(8)	CEO duality	0.05	0.22	0.00	–0.03	–0.03	–0.05	–0.04	–0.01	0.04	1.00		
(9)	CEO tenure overlap	0.52	0.29	0.07†	0.00	0.01	0.01	–0.03	–0.04	–0.03	0.14***	1.00	
(10)	Board independence	0.40	0.31	0.14***	0.13***	0.19***	0.20***	0.24***	0.08*	0.27***	–0.01	–0.18***	1.00
(11)	Ownership concentration	0.50	0.21	0.10**	0.07†	–0.06	–0.04	0.02	–0.08*	–0.06†	–0.03	–0.04	0.02
(12)	Firm size	4.28	0.63	–0.14***	–0.09*	0.30***	0.35***	0.38***	0.60***	0.36***	–0.13***	0.04	0.12**
(13)	Internationalization	0.70	0.29	–0.04	–0.11**	0.19***	0.24***	0.10**	0.13***	0.11**	0.14***	0.07†	0.12***
(14)	Risk	1.72	29.05	–0.11**	–0.03	–0.01	0.03	–0.02	–0.02	0.01	0.03	0.00	–0.04
(15)	Leverage	0.19	0.12	–0.10**	0.21***	0.04	0.06†	0.14***	0.13***	0.12**	–0.04	–0.04	0.17***
(16)	Sales growth	0.03	0.18	0.33***	0.09*	0.07†	0.12***	–0.01	–0.02	0.07†	–0.06	0.03	0.08*
(17)	Industry munificence	-0.17	0.61	0.00	–0.02	–0.03	–0.01	–0.02	0.04	–0.01	–0.09*	–0.01	–0.05
(18)	Industry dynamism	-0.20	0.70	–0.14**	–0.08*	0.00	0.01	0.06	–0.00	–0.05	0.01	–0.01	0.07*
(19)	Industry complexity	0.09	1.02	–0.01	0.01	–0.05	–0.02	–0.03	–0.05	–0.01	0.07†	–0.03	0.02

	Variable	Mean	SD	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
(11)	Ownership concentration			1.00								
(12)	Firm size			–0.01	1.00							
(13)	Internationalization			–0.16***	0.10**	1.00						
(14)	Risk			–0.04	–0.07†	0.04	1.00					
(15)	Leverage			–0.01	0.11**	–0.23***	–0.02	1.00				
(16)	Sales growth			0.15***	0.06	–0.02	0.03	–0.00	1.00			
(17)	Industry munificence			0.05	0.08*	0.06†	–0.01	0.08*	0.07†	1.00		
(18)	Industry dynamism			–0.11**	–0.01	0.10**	0.04	–0.03	–0.09*	0.12**	1.00	
(19)	Industry complexity			0.08*	–0.03	0.03	0.03	–0.08*	–0.01	0.05	0.40***	1.00

Notes. [a]Winsorized at the 1st and 99th percentile levels.
*** p<0.001, ** p<0.01, * p<0.05, † p<0.10.

Table 3.4 Results of the Two-step System GMM Regression

	ROA		
	Model 1	**Model 2**	**Model 3**
Predictors			
Board institutional expertise		0.005*	0.011**
		(0.002)	(0.004)
Board institutional expertise × Board busyness			–0.008†
			(0.005)
Board busyness			0.021
			(0.019)
Controls			
Board size	–0.003*	–0.004	–0.003†
	(0.001)	(0.002)	(0.002)
Board capital breadth	–0.009	–0.004	–0.003
	(0.007)	(0.007)	(0.008)
CEO duality	0.030	0.019	0.023
	(0.020)	(0.029)	(0.028)
CEO tenure overlap	0.005	0.008	–0.001
	(0.017)	(0.017)	(0.014)
Board independence	0.034	0.050*	0.045†
	(0.024)	(0.023)	(0.024)
Ownership concentration	–0.011	0.005	0.001
	(0.025)	(0.026)	(0.021)
Firm size	0.006	–0.001	0.001
	(0.010)	(0.009)	(0.007)
Prior performance (ROA)	0.632***	0.555***	0.559***
	(0.092)	(0.098)	(0.094)
Internationalization	–0.007	–0.017	–0.017
	(0.019)	(0.021)	(0.017)
Risk	0.001*	0.001*	0.001*
	(0.000)	(0.000)	(0.000)
Leverage	–0.028	–0.028	–0.028
	(0.034)	(0.038)	(0.027)
Sales growth	–0.003	–0.008	–0.008
	(0.022)	(0.019)	(0.021)
Industry munificence	0.001	0.002	0.002
	(0.003)	(0.003)	(0.004)
Industry dynamism	–0.005	–0.008*	–0.008*
	(0.003)	(0.003)	(0.004)
Industry complexity	–0.001	–0.001	–0.001
	(0.002)	(0.002)	(0.003)
Constant	0.034	0.040	0.018
	(0.047)	(0.049)	(0.036)

Table 3.4 (continued)

	ROA		
	Model 1	**Model 2**	**Model 3**
Model fit			
Wald χ^2–statistic	193.03	264.64	280.93
	(23)	(24)	(26)
Arellano-Bond test, AR(1)	–3.28**	–3.05*	–3.11*
	[0.001]	[0.002]	[0.002]
Arellano-Bond test, AR (2)	–1.19	–1.26	–1.24
	[0.236]	[0.206]	[0.214]
Hansen J-statistic	134.65	152.37	151.72
	[0.517]	[0.386]	[0.840]
Observations	809	780	780

Notes. Standard errors in parentheses. *** p<0.001, ** p<0.01, * p<0.05, † p<0.10

which tests the overall validity of the instruments included in the models. The Hansen J-statistic consistently produced nonsignificant *p*-values across all models, which means that we cannot reject the null hypothesis that the specified variables were valid instruments. The nonsignificant J-statistic also suggests that our models do not suffer from omitted variable bias because omitting important explanatory variables would have moved components of variation into the error term, which would have made them correlate with the instruments (Zona et al., 2018).

Model 1 is the baseline model with all control variables included. Noticeably, the board capital breadth variable, which reflects heterogeneity in outside directors' human and social capital, was not a significant predictor of firm performance. In one robustness check, we included the individual variables that form this composite variable, which led to materially equivalent (i.e., nonsignificant) estimates.

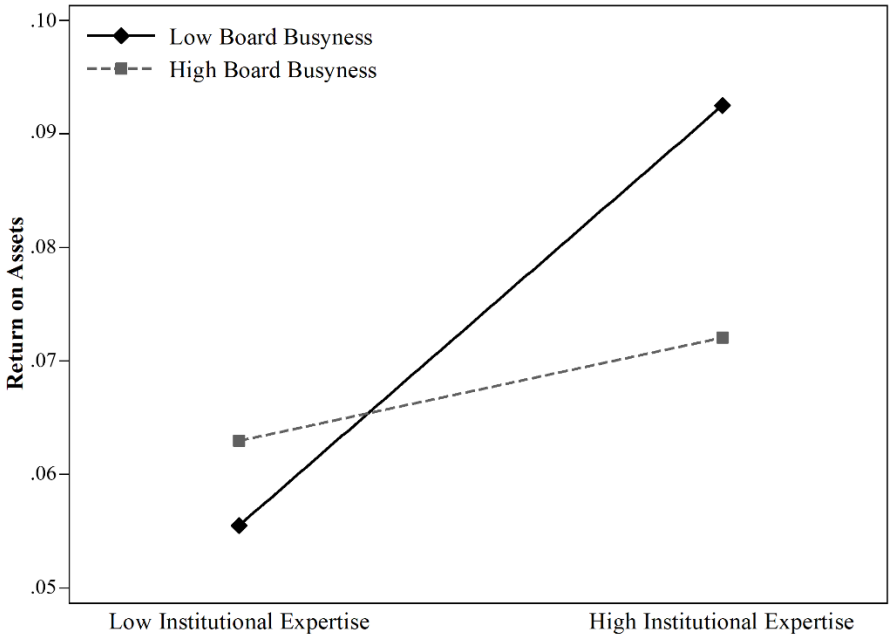
Model 2 presents the estimates for Hypothesis 1, which states that board institutional expertise is likely to be positively related to firm financial performance. In Model 2, the estimated coefficient of board institutional expertise is statistically significant ($b = 0.005$, $p = 0.022$). Moreover, including this variable also improved the model fit compared to Model 1, as indicated by the significant increase in the chi-square value. Hypothesis 1 was thus supported. It is also notable that none of the country dummies (not reported in the regression table) were significantly different from 0. Given that our multicountry sample captured different institutional and governance logics, it appears that greater institutional expertise of outside directors generally has positive performance implications across different contexts.

Model 3 depicts the full model. The significant increase in chi-square indicates a significant improvement in model fit compared to Model 2. Moreover, the main effect

of board institutional expertise is also stronger in Model 3 (b = 0.011, p = 0.005). Hypothesis 2 predicts that the positive effect of board institutional expertise is likely to be weaker in busy boards. Model 3 shows that the estimated coefficient of the interaction effect between board institutional expertise and board busyness was only marginally significant (b = – 0.008, p = 0.76). Figure 3.1 graphs the interaction effect. In further investigating the nature of the interaction effect, we computed predictive margins for values of low levels (1 s.d. below the mean) and high levels (1 s.d. above the mean) of board institutional expertise under conditions of low board busyness (0) and high board busyness (1). We find that for boards with low institutional expertise, the confidence intervals of the predicted estimates of low vs. high board busyness partly overlap: For those boards, the presence of busyness results in a shift in the estimated coefficient from b = 0.055 with a confidence interval of [0.043; 0.068] at the 95% significance level to b = 0.062 with a confidence interval of [0.046; 0.079] at the 95% significance level. The overlap in the lower bounds indicates that the interaction term has less predictive power in explaining a moderation of low board institutional expertise and firm performance. As we elaborate in the discussion section, we argue that this finding is plausible, as the disadvantages of board busyness can reasonably be expected to be less consequential when board ability (i.e., board institutional expertise) is less pronounced. For high board institutional expertise, we find that board busyness results in a shift in the estimated coefficient from b = 0.072 with a confidence interval of [0.063; 0.080] at the 95% significance level to b = 0.092 with a confidence interval of [0.075; 0.109] at the 95% significance level, indicating that the presence of busyness significantly and negatively affects firm performance at high levels of board institutional expertise.

To illustrate the effect size of board institutional expertise, we computed the performance effect of an increase from low levels (1 s.d. below the mean) to high levels (1 s.d. above the mean) of board institutional expertise based on Model 3. Ceteris paribus, firm ROA is predicted to increase by 3.7 percentage points as board institutional expertise shifts from low to high. Given that the median ROA in our sample was 6.4%, such a change is considerable. As a robustness test and to more fully explore our board institutional expertise construct, we reran the models with a measure of board international experience instead of institutional expertise. As expected, more diverse international experience among outside directors was also significantly and positively associated with firm performance (b = 0.060, p = 0.005). However, the effect size of international experience was only 2.36%. Interestingly, the effect size of board institutional expertise was thus 36.1% higher than the effect size of board international

Figure 3.1 The Moderating Effect of Board Busyness on Board Institutional Expertise and Firm Performance



experience, indicating both the theoretical and practical relevance of the board institutional expertise construct.

To further corroborate our results, we ran additional tests in which we substituted our dependent variable for alternative accounting-based and market-based performance measures. Our results remained robust when measuring firm performance using return on equity, indicating that the effect of board institutional expertise prevails when taking into account not only operating efficiency but also the financing choices of the firm. Next, we tested Tobin's Q (calculated as the market value divided by the book value of assets) and obtained results on our hypothesized variables that were in the same direction yet less significant. We discuss the implications of these findings in the discussion section. The robustness tables are not reported in the paper but are available on request from the authors.

3.6 Discussion

Building on resource dependence theory, we posit and find that board institutional expertise, as reflected in outside directors' collective exposure to institutionally dissimilar contexts, is positively associated with firm performance. In particular, we predict that board institutional expertise is reflective of the information, skills and networks that convey crucial resources for boards to mitigate pressures from

institutional norms and expectations facing the firm. Additionally, we propose that board busyness strains outside directors' capacity to fully contribute their human and social capital to the firm, thus negatively moderating the underlying relationship. Our empirical findings seem to support our theoretical predictions. As such, we contribute to resource dependence theory by offering a novel perspective on the role of the board in connecting the firm to its external environment (Pfeffer & Salancik, 1978), adding behavioral contingency to the research on the relationship between board expertise and firm performance (Hillman & Dalziel, 2003) and, more generally, providing new insight into the influence of strategic leaders (Finkelstein et al., 2009).

First, we contribute to resource dependence theory by elucidating how outside directors' exposure to institutionally dissimilar contexts may be a mechanism that is supplementary to board cooptation in reducing environmental uncertainty and managing dependencies with the firm's external environment. With few exceptions (Drees & Heugens, 2013; Westphal et al., 2006), most studies have relied on board interlocks to explain the board's role as a link to the external environment. At the same time, studies have shown that interlocks are mostly domestic and appear to reproduce patterns of national corporate elites (Heemskerk et al., 2016), indicating that interlocks are unlikely to offer access to institutionally dissimilar knowledge. With the notion of board institutional expertise, we add to the literature an important source of boundary-spanning insight and connection that the firm may use to mitigate uncertainty and dependency in its external environment. In doing so, we highlight a novel resource dependency-reducing strategy that extends beyond establishing formal organizational ties with resource-controlling entities and thereby address prior calls to expand our understanding of the firm–environment link (Wry, Cobb, & Aldrich, 2013). We find the positive performance implications of board institutional expertise to be remarkably robust, holding (1) over time in a within-firm analytical model, (2) across the various home-country governance regimes captured by our study, and (3) for different degrees of firms' commercial internationalization. The stability of the board institutional expertise effect also adds to an observation made by Hillman et al. (2009: 1141), who submit that "the dynamic nature of boards (i.e., changing composition as environmental needs change) appears to be a nearly normative convention, although this has received little empirical testing". Our results suggest that the ability to respond to environmental complexity may be attributable to the board's overall versatility of thought, perspectives and experiences rather than being the result of a mechanistic match between director profiles and specific environmental needs. A possible explanation could be that it is difficult to accurately identify and prioritize the environmental needs facing the firm.

Potential needs and threats may not always be fully observable, and they may extend the prevalent institutional expectations one may derive from the firm's current owners, operational presence or key sales markets. For example, influential, shareholder-focused proxy advisors (e.g., Institutional Investor Services) or powerful, stakeholder-focused investors (e.g., the Norwegian Sovereign Wealth Fund) may impose standards and expectations even on firms that have so far been exposed only to their domestic institutional regime. We propose that future research, ideally adopting qualitative research designs, explore the board processes through which outside directors recognize institutional cues and contribute individual expertise to improve boardroom decision making. In that context, it may also be interesting to broaden the inquiry to informal institutions in order to obtain a yet more complete picture of how boards connect the firm to its institutional environment.

Second, we contribute to the prior research on board busyness and introduce behavioral contingency to the board expertise–firm performance relationship. Despite having received scholarly attention in the past, the implications of board busyness have been notoriously ambiguous. In terms of direct effects on organizational outcomes, studies have produced evidence that busy directors continue to fully commit to their board service and governance responsibilities (Ferris et al., 2003) and that they are significantly and positively associated with strategic firm outcomes such as firm growth (Kor & Sundaramurthy, 2009) and acquisition performance (Harris & Shimizu, 2004). At the same time, scholars have found significantly negative effects between board busyness and return on equity (Khanna et al., 2014), as well as between market-to-book ratios, profitability and sensitivity of CEO turnover and firm performance (Fich & Shivdasani, 2006). Harris and Shimizu (2004) encapsulate the double-edged nature of busyness succinctly: On the one hand, one may assert that "busy directors are busy for good reason – they are good contributors" (p. 793), and on the other hand, one may critique that busy directors are "too busy to engage effectively in strategic decisions" (p. 776). Thus, it may not be surprising that we did not find a direct effect of board busyness on firm performance. However, as depicted in Figure 3.1, our results suggest that high levels of board institutional expertise become less valuable under conditions of board busyness. At the same time, busy boards that command high institutional expertise still outperform their non-busy counterparts that command low institutional expertise. In other words, at high levels of institutional expertise, busy directors still add value but not to the same extent as non-busy directors. At low levels of board institutional expertise, the difference in busy vs. non-busy boards' performance contribution is statistically insignificant. These findings add an important nuance to the existing

research, which has typically found that the positive effects of board expertise disappear as boards become busy (Khanna et al., 2014; Kor & Sundaramurthy, 2009). Our findings suggest that the benefits of high board expertise may also materialize under conditions of busyness, reflecting that busyness may also convey benefits such as more information through external directorships. Nevertheless, we find strong support for our theoretical prediction that busyness strains boards' capacity to fully devote their expertise to the firm, which also corroborates the plausibility of the increasingly voiced investor opposition to director busyness (Financial Times, 2018; Hillman, Shropshire, Certo, Dalton, & Dalton, 2011). To better understand the role of busyness in the relationship between board expertise and firm outcomes, future research may more fully explore the conditions under which the costs of busyness may offset its benefits.

Third, we contribute to an increasing body of literature that examines strategic leaders' expertise, testifying to the importance of outside directors' capabilities and limitations in predicting organizational outcomes. Our study lends support to the view that specific knowledge and experience are better predictors of outside directors' monitoring and resource provision aptitude than simple governance controls (Hillman & Dalziel, 2003; Johnson et al., 2013; Wintoki et al., 2012). Structurally similar boards may have different impacts on organizational outcomes depending on their directors' capabilities. Similar to Khanna et al. (2014), we find that board independence has no significant effect on predicting firm performance (Model 1). Only when accounting for the specific capabilities and limitations of the board (Model 2) does this variable carry statistical power in explaining organizational outcomes. Independence is thus not an indicator of governance quality, which supports the findings of earlier scholarly inquiries into board effectiveness (Dalton et al., 1998). Interestingly, our post hoc analysis, which explored effects on market-based performance outcomes (i.e., Tobin's Q), revealed that investors are relatively agnostic about board-level expertise, with board institutional expertise receiving only marginally significant support and no support in the full model, which included board busyness. Given the strong effect of board institutional expertise demonstrated by our models based on operational performance, these findings suggest that investors and proxy advisors may need to refine their evaluation standards when assessing board composition and effectiveness. In particular, our results suggest that outside directors' exposure to institutionally dissimilar countries is associated with economic benefits for the firm. These findings directly speak to the comparative corporate governance and international business research that has emphasized the persistence of institutional dissimilarities across nations (Yoshikawa & Rasheed, 2009) and its relevance for firms' strategic actions (Luo et al., 2009).

Specifically, it appears that board institutional expertise reflects human and social capital gains that improve outside directors' ability to interpret and respond to the shared normative and cognitive frameworks held by various institutional constituents of the firm. Prior research has generally found positive effects of international experience for both inside directors (Carpenter, Sanders, & Gregersen, 2001) and outside directors (Giannetti et al., 2015; Miletkov et al., 2017; Oxelheim et al., 2013), yet our results suggest that the greatest human and social capital gains appear to come from experience across institutionally distinct rather than merely foreign countries. We therefore add to the strategic leadership literature the notion that outside directors' first-hand experience with different institutional norms and expectations may influence how organizations function within diverse contexts. Consequently, we encourage researchers to further explore how outside directors' individual and collective biographies and capabilities shape the strategic behavior of the firm.

3.7 References

Aguilera, R. V. & Jackson, G. 2003. The cross-national diversity of corporate governance: Dimensions and determinants. ***Academy of Management Review***, 28(3): 447-465.

Aguilera, R. V., Filatotchev, I., Gospel, H., & Jackson, G. 2008. An organizational approach to comparative corporate governance: Costs, contingencies, and complementarities. ***Organization Science***, 19(3): 475-492.

Aguilera, R. V. & Jackson, G. 2010. Comparative and international corporate governance. ***Academy of Management Annals***, 4(1): 485-556.

Aguilera, R. V., Judge, W. Q., & Terjesen, S. A. 2018. Corporate governance deviance. ***Academy of Management Review***, 43(1): 87-109.

Almandoz, J. & Tilcsik, A. 2016. When experts become liabilities: Domain experts on boards and organizational failure. ***Academy of Management Journal***, 59(4): 1124-1149.

Arellano, M. & Bond, S. 1991. Some tests of specification for panel data: Monte carlo evidence and an application to employment equations. ***The Review of Economic Studies***, 58(2): 277-297.

Arellano, M. & Bover, O. 1995. Another look at the instrumental variable estimation of error-components models. ***Journal of Econometrics***, 68(1): 29-51.

Arregle, J. L., Miller, T. L., Hitt, M. A., & Beamish, P. W. 2016. How does regional institutional complexity affect mne internationalization? ***Journal of International Business Studies***, 47(6): 697-722.

Barnes, J. H. J. 1984. Cognitive biases and their impact on strategic planning. ***Strategic Management Journal***, 5(2): 129-137.

Bateman, T. S. & Zeithaml, C. P. 1989. The psychological context of strategic decisions: A model and convergent experimental findings. ***Strategic Management Journal***, 10(1): 59-74.

Becerra, M. 2009. ***Theory of the firm and strategic management***. Cambridge, England: Cambridge University Press.

Biemann, T. & Kearney, E. 2010. Size does matter: How varying group sizes in a sample affect the most common measures of group diversity. ***Organizational Research Methods***, 13(3): 582-599.

Blau, P. M. 1977. ***Inequality and heterogeneity***. New York: Free Press.

Blundell, R. & Bond, S. 1998. Initial conditions and moment restrictions in dynamic panel data models. ***Journal of Econometrics***, 87(1): 115-143.

Boeker, W. & Goodstein, J. 1991. Organizational performance and adaptation: Effects of environment and performance on changes in board composition. ***Academy Of Management Journal***, 34(4): 805-826.

Boivie, S., Graffin, S. D., & Pollock, T. G. 2012. Time for me to fly: Predicting director exit at large firms. ***Academy of Management Journal***, 55(6): 1334-1359.

Boivie, S., Bednar, M. K., Aguilera, R. V., & Andrus, J. L. 2016. Are boards designed to fail? The implausibility of effective board monitoring. ***Academy of Management Annals***, 10(1): 319-407.

Boyd, B. K. 1995. Ceo duality and firm performance: A contingency model. ***Strategic Management Journal***, 16(4): 301-312.

Brown, J. A., Anderson, A., Salas, J. M., & Ward, A. J. 2017. Do investors care about director tenure? Insights from executive cognition and social capital theories. ***Organization Science***, 28(3): 471-494.

Brush, T. H., Bromiley, P., & Hendrickx, M. 2000. The free cash flow hypothesis for sales growth and firm performance. ***Strategic Management Journal***, 21(4): 455-472.

Cannella, A. A., Park, J.-H., & Lee, H.-U. 2008. Top management team functional background diversity and firm performance : Examining the roles of team member colocation and environmental uncertainty. ***Academy of Management Journal***, 51(4): 768-784.

Carpenter, M. A., Sanders, G., & Gregersen, H. B. 2001. Bundling human capital with organizational context: The impact of international assignment experience on

multinational firm performance and ceo pay. ***Academy of Management Journal***, 44(3): 493-511.

Carpenter, M. A., Geletkancz, M. A., & Sanders, G. 2004. Upper echelons research revisited: Antecedents, elements, and consequences of top management team composition. ***Journal of Management***, 30(6): 749-778.

Carroll, G. R. & Harrison, J. R. 1998. Organizational demography and culture: Insights from a formal model and simulation. ***Administrative Science Quarterly***, 43(3): 637-667.

Carter, C. B. & Lorsch, J. W. 2004. ***Back to the drawing board: Designing corporate boards for a complex world***. Boston: Harvard Business School Press.

Certo, S. T. 2003. Influencing initial public offering investors with prestige: Signaling with board structures. ***Academy of Management Review***, 28(3): 432-446.

Chen, P. L., Kor, Y., Mahoney, J. T., & Tan, D. 2017. Pre-market entry experience and post-market entry learning of the board of directors: Implications for post-entry performance. ***Strategic Entrepreneurship Journal***, 11(4): 441-463.

Cyert, R. M. & March, J. G. 1963. ***A behavioral theory of the firm***. Englewood Cliffs, NJ: Prentice-Hall.

Dalton, D. R., Daily, C. M., Ellstrand, A. E., & Johnson, J. L. 1998. Meta-analytic reviews of board composition, leadership structure, and financial performance. ***Strategic Management Journal***, 19(3): 269-290.

Delios, A. & Henisz, W. J. 2003. Policy uncertainty and the sequence of entry by japanese firms, 1980–1998. ***Journal of International Business Studies***, 34(3): 227-241.

Dess, G. G. & Beard, D. W. 1984. Dimensions of organizational task environments. ***Administrative Science Quarterly***, 29(1): 52-73.

Diestre, L., Rajagopalan, N., & Dutta, S. 2015. Constraints in acquiring and utilizing directors' experience: An empirical study of new-market entry in the pharmaceutical industry. ***Strategic Management Journal***, 36(3): 339-359.

Doidge, C., Karolyi, G. A., & Stulz, R. M. 2007. Why do countries matter so much for corporate governance? ***Journal of Financial Economics***, 86(1): 1-39.

Drees, J. M. & Heugens, P. P. M. 2013. Synthesizing and extending resource dependence theory: A meta-analysis. ***Journal of Management***, 39(6): 1666-1698.

Eisenhardt, K. M. & Schoonhoven, C. B. 1996. Resource-based view of strategic alliance formation: Strategic and social effects in entrepreneurial firms. ***Organization Science***, 7(2): 136-150.

Elsbach, K. D., Barr, P. S., & Hargadon, A. B. 2005. Identifying situated cognition in organizations. ***Organization Science***, 16(4): 422-433.

Ferris, S. P., Jagannathan, M., & Pritchard, A. C. 2003. Too busy to mind the business? Monitoring by directors with multiple board appointments. ***Journal of Finance***, 59(3): 1087-1111.

Fich, E. M. & Shivdasani, A. 2006. Are busy boards effective monitors? ***Journal of Finance***, 61(2): 689-724.

Financial Times; Investors revolt against directors with too many jobs. 'Overboarding' joins governance and pay as agm target; https://www.ft.com/content/f81c8bda-4fa0-11e8-9471-a083af05aea7; 04.05.2018.

Finkelstein, S. & Hambrick, D. C. 1996. ***Strategic leadership: Top executives and their effects on organizations***. Minneapolis/St. Paul, MN: West.

Finkelstein, S. & Mooney, A. 2003. Not the usual suspects: How to use board process to make boards better. ***Academy of Management Executive***, 17(2): 101-113.

Finkelstein, S., Hambrick, D. C., & Cannella, A. A. 2009. ***Strategic leadership: Theory and research on executives, top management teams, and boards***. New York: Oxford University Press.

Forbes, D. P. & Milliken, F. J. 1999. Cognition and corporate governance: Understanding boards of directors as strategic decision-making groups. ***Academy of Management Review***, 24(3): 489-505.

Ford, J. K., MacCallum, R. C., & Tait, M. 1986. The application of exploratory factor analysis in applied psychology: A critical review and analysis. ***Personnel Psychology***, 39(2): 291-314.

Galbraith, J. R. 1974. Organization design: An information processing view. ***Interfaces***, 4(3): 28-36.

Geletkanycz, M. A. & Hambrick, D. C. 1997. The external ties of top executives: Implications for strategic choice and performance. ***Administrative Science Quarterly***, 42(4): 654-681.

Geng, X., Yoshikawa, T., & Colpan, A. M. 2016. Leveraging foreign institutional logic in the adoption of stock option pay among japanese firms. ***Strategic Management Journal***, 37(7): 1472-1492.

Giannetti, M., Liao, G., & Yu, X. 2015. The brain gain of corporate boards: Evidence from china. ***Journal of Finance***, 70(4): 1629-1682.

Hall, P. A. & Soskice, D. 2001. An introduction to varieties of capitalism. In P. A. Hall & D. Soskice (Eds.), ***Varieties of capitalism: The institutional foundations of comparative advantage***: 1-70. New York: Oxford University Press.

Hambrick, D. C. & Mason, P. A. 1984. Upper echelons: The organization as a reflection of its top managers. ***Academy of Management Review***, 9(2): 193-206.

Harris, I. C. & Shimizu, K. 2004. Too busy to serve? An examination of the influence of overboarded directors. ***Journal of Management Studies***, 41(5): 775-798.

Harrison, D. A. & Klein, K. J. 2007. What's the difference? Diversity constructs as separation, variety, or disparity in organizations. ***Academy of Management Review***, 32(4): 1199-1228.

Haunschild, P. R. 1993. Interorganizational imitation: The impact of interlocks on corporate acquisition activity. ***Administrative Science Quarterly***, 38(4): 564-592.

Haunschild, P. R. 1994. How much is that company worth?: Interorganizational relationships, uncertainty, and acquisition premiums. ***Administrative Science Quarterly***, 39(3): 391-411.

Haynes, K. T. & Hillman, A. J. 2010. The effect of board capital and ceo power on strategic change. ***Strategic Management Journal***, 31(11): 1145-1163.

He, J. & Huang, Z. H. I. 2011. Board informal hierarchy and firm financial performance: Exploring a tacit structure guiding boardroom interactions. ***Academy of Management Journal***, 54(6): 1119-1139.

Heemskerk, E. M., Fennema, M., & Carroll, W. K. 2016. The global corporate elite after the financial crisis: Evidence from the transnational network of interlocking directorates. ***Global Networks***, 16(1): 68-88.

Henisz, W. J. 2000. The institutional environment for economic growth. ***Economics and Politics***, 12(1): 1-31.

Hillman, A. J., Cannella, A. A., & Paetzold, R. L. 2000. The resource dependence role of corporate directors: Strategic adaptation of board composition in response to environmental change. ***Journal of Management Studies***, 37(2): 235-255.

Hillman, A. J. & Dalziel, T. 2003. Boards of directors and firm performance: Integrating agency and resource dependence perspectives. ***Academy of Management Review***, 28(3): 383-396.

Hillman, A. J. 2005. Politicians on the board of directors: Do connections affect the bottom line? ***Journal of Management***, 31(3): 464-481.

Hillman, A. J., Nicholson, G., & Shropshire, C. 2008. Directors' multiple identities, identification, and board monitoring and resource provision. ***Organization Science***, 19(3): 441-456.

Hillman, A. J., Withers, M. C., & Collins, B. J. 2009. Resource dependence theory: A review. ***Journal of Management***, 35(6): 1404-1427.

Hillman, A. J., Shropshire, C., Certo, S. T., Dalton, D. R., & Dalton, C. M. 2011. What i like about you: A multilevel study of shareholder discontent with director monitoring. ***Organization Science***, 22(3): 675-687.

Holmes, R. M., Miller, T., Hitt, M. A., & Salmador, M. P. 2013. The interrelationships among informal institutions, formal institutions, and inward foreign direct investment. ***Journal of Management***, 39(2): 531-566.

Hoppmann, J., Naegele, F., & Girod, B. 2018. Boards as a source of inertia: Examining the internal challenges and dynamics of boards of directors in times of environmental discontinuities. ***Academy of Management Journal***: Forthcoming.

Hoskisson, R. E., Hitt, M. A., Johnson, R. A., & Grossman, W. 2002. Conflicting voices: The effects of institutional ownership heterogeneity and internal governance on corporate innovation strategies. ***Academy of Management Journal***, 45(4): 697-716.

Jackson, G. & Deeg, R. 2008. Comparing capitalisms: Understanding institutional diversity and its implications for international business. ***Journal of International Business Studies***, 39(4): 540-561.

Jensen, M. C. 1986. Agency costs of free cash flow, corporate finance, and takeovers. ***American Economic Review***, 76(2): 323-329.

Johnson, S. G., Schnatterly, K., Bolton, J. F., & Tuggle, C. 2011. Antecedents of new director social capital. ***Journal of Management Studies***, 48(8): 1782-1803.

Johnson, S. G., Schnatterly, K., & Hill, A. D. 2013. Board composition beyond independence: Social capital, human capital, and demographics. ***Journal of Management***, 39(1): 232-262.

Kahnemann, D. 1973. ***Attention and effort***. Englewood, NJ: Prentice-Hall.

Keats, B. W. & Hitt, M. A. 1988. A causal model of linkages among environmental dimensions, macro organizational characteristics, and performance. ***Academy of Management Journal***, 31(3): 570-598.

Khanna, P., Jones, C. D., & Boivie, S. 2014. Director human capital, information processing demands, and board effectiveness. ***Journal of Management***, 40(2): 557-585.

Kor, Y. Y. & Mahoney, J. T. 2000. Penrose's resource-based approach: The process and product of research creativity. ***Journal of Management Studies***, 37(1): 109-139.

Kor, Y. Y. & Misangyi, V. F. 2008. Outside directors' industry-specific experience and firms' liability of newness. ***Strategic Management Journal***, 29(12): 1345-1355.

Kor, Y. Y. & Sundaramurthy, C. 2009. Experience-based human capital and social capital of outside directors. ***Journal of Management***, 35(4): 981-1006.

Krause, R., Semadeni, M., & Withers, M. C. 2016. That special someone: When the board views its chair as a resource. ***Strategic Management Journal***, 37(9): 1990-2002.

Krause, R., Withers, M. C., & Semadeni, M. 2018. Compromise on the board: Investigating the antecedents and consequences of lead independent director appointment ***Academy of Management Journal***: Forthcoming.

Kroll, M., Walters, B. A., & Wright, P. 2008. Board vigilance, director experience, and corporate outcomes. ***Strategic Management Journal***, 29(4): 363-382.

La Porta, R., Shleifer, A., Lopez-De-Silanes, F., & Vishny, R. 2000. Investor protection and corporate governance. ***Journal of Financial Economics***, 58(1-2): 3-27.

La Porta, R., Lopez-De-Silanes, F., & Shleifer, A. 2006. What works in securities laws? ***The Journal of Finance***, 61(1): 1-32.

Lang, J. R. & Lockhart, D. E. 1990. Increased environmental uncertainty and changes in board linkage patterns. ***The Academy of Management Journal***, 33(1): 106-128.

Lorsch, J. W. & MacIver, E. 1989. ***Pawns or potentates: The reality of america's corporate boards***. Boston: Harvard Business School Press.

Luo, X., Chung, C.-N., & Sobczak, M. 2009. How do corporate governance model differences affect foreign direct investment in emerging economies? ***Journal of International Business Studies***, 40(3): 444-467.

Luoma, P. & Goodstein, J. 1999. Stakeholders and corporate boards: Institutional influences on board composition and structure. ***Academy of Management Journal***, 42(5): 553-563.

March, J. G. & Simon, H. 1958. ***Organizations***. New York: Wiley.

McDonald, M. L., Westphal, J. D., & Graebner, M. E. 2008. What do they know? The effects of outside director acquisition experience on firm acquisition performance. ***Strategic Management Journal***, 29(11): 1155-1177.

Miletkov, M., Poulsen, A., & Wintoki, B. M. 2017. Foreign independent directors and the quality of legal institutions. ***Journal of International Business Studies***, 48(2): 267-292.

Misangyi, V. F. & Acharya, A. G. 2014. Substitutes or complements? A configurational examination of corporate governance mechanisms. ***Academy of Management Journal***, 57(6): 1681-1705.

Moore, C. B., Bell, R. G., & Filatotchev, I. 2010. Institutions and foreign ipo firms: The effects of 'home' and 'host' country institutions on performance. ***Entrepreneurship: Theory and Practice***, 34(3): 469-490.

Musacchio, A., Lazzarini, S. G., & Aguilera, R. V. 2015. New varieties of state capitalism: Strategic and governance implications. ***Academy of Management Perspectives***, 29(1): 115-131.

Nahapiet, J. & Ghoshal, S. 1998. Social capital, intellectual capital, and the organizational advantage. ***Academy of Management Review***, 23(2): 242-266.

North, D. C. 1990. ***Institutions, institutional change and economic performance***. Cambridge, UK: Cambridge University Press.

Ocasio, W. 1997. Towards an attention-based view of the firm. ***Strategic Management Journal***, 18((Summer Special Issue)): 187-206.

Oehmichen, J., Braun, D., Wolff, M., & Yoshikawa, T. 2017a. When elites forget their duties: The double-edged sword of prestigious directors on boards. ***Journal of Management Studies***, 54(7): 1050-1078.

Oehmichen, J., Schrapp, S., & Wolff, M. 2017b. Who needs experts most? Board industry expertise and strategic change-a contingency perspective. ***Strategic Management Journal***, 38(3): 645-656.

Oh, H., Labianca, G., & Chung, M.-H. 2006. A multilevel model of group social capital. ***Academy of Management Review***, 31(3): 569-582.

Oldroyd, J. B. & Morris, S. S. 2012. Catching falling stars: A human resource response to social capital's detrimental effect of information overload on star employees. ***Academy of Management Review***, 37(3): 396-418.

Oliver, C. 1991. Strategic responses to institutional processes. ***The Academy of Management Review***, 16(1): 145-179.

Oxelheim, L., Gregorič, A., Randøy, T., & Thomsen, S. 2013. On the internationalization of corporate boards: The case of nordic firms. ***Journal of International Business Studies***, 44(3): 173-194.

Peng, M. W. 2004. Outside directors and firm performance during institutional transitions. ***Strategic Management Journal***, 25(5): 453-472.

Penrose, E. T. 1959. ***The theory of the growth of the firm***. New York: John Wiley.

Pfeffer, J. 1972. Size and composition of corporate boards of directors: The organization and its environment. ***Administrative Science Quarterly***, 17(2): 218-228.

Pfeffer, J. & Salancik, G. R. 1978. ***The external control of organizations: A resource dependence perspective***. New York: Harper & Row.

Pfeffer, J. 1987. A resource dependence perspective on interorganizational relations. In M. S. Mizruchim & S. M. (Eds.), ***Intercorporate relations: The structural analysis of business***: 25-55. Cambridge, UK: Cambridge University Press.

Post, C. & Byron, K. 2015. Women on boards and firm financial performance: A meta-analysis. ***Academy of Management Journal***, 58(5): 1546-1571.

Qian, C., Wang, H. C., Geng, X., & Yu, Y. 2017. Rent appropriation of knowledge-based assets and firm performance when institutions are weak: A study of chinese publicly listed firms. ***Strategic Management Journal***, 38(4): 892-911.

Roodman, D. 2009a. How to do xtabond2: An introduction to difference and system gmm in stata. ***The Stata Journal***, 9(1): 86-136.

Roodman, D. 2009b. A note on the theme of too many instruments. ***Oxford Bulletin of Economics and Statistics***, 71(1): 135-158.

Ruigrok, W., Peck, S. I., & Keller, H. 2006. Board characteristics and involvement in strategic decision making: Evidence from swiss companies. ***Journal of Management Studies***, 43(5): 1201-1226.

Sauerwald, S., Zhiang, L. I. N., & Peng, M. W. 2016. Board social capital and excess ceo returns. ***Strategic Management Journal***, 37(3): 498-520.

Scott, W. R. 2003. ***Organizations: Rational, natural, and open systems***. Englewood Cliffs, NJ: Prentice-Hall.

Shalley, C. E. 1991. Effects of productivity goals, creativity goals, and personal discretion on individual creativity. ***Journal of Applied Psychology***, 76(2): 179-185.

Simon, H. 1947. ***Administrative behavior:A study of decision making processes in administrative organization***. New York: Macmillan.

Spencer Stuart. 2017. Spencer stuart board index. Chicago, IL.

Starbuck, H. & Milliken, F. J. 1988. Executives' perceptual filters: What they notice and how they make sense. In D. C. Hambrick (Ed.), ***The executive effect: Concepts and methods for studying top managers***: 35-65. Greenwich: JAI Press.

Thompson, J. D. 1967. ***Organizations in action***. New York: McGraw-Hill.

Tian, J. J., Haleblian, J. J., & Rajagopalan, N. 2011. The effects of board human and social capital on investor reactions to new ceo selection. ***Strategic Management Journal***, 32(7): 731-747.

Tuggle, C. S., Schnatterly, K., & Johnson, R. A. 2010a. Attention patterns in the boardroom : How board composition and processes affect discussion of entrepreneurial issues. ***Academy of Management Journal***, 53(3): 550-571.

Tuggle, C. S., Sirmon, D. G., Reutzel, C. R., & Bierman, L. 2010b. Commanding board of director attention: Investigating how organizational performance and ceo duality affect board members' attention to monitoring. ***Strategic Management Journal***, 31(9): 946-968.

Tuschke, A., Sanders, W. M. G., & Hernandez, E. 2014. Whose experience matters in the boardroom? The effects of experiential and vicarious learning on emerging market entry. ***Strategic Management Journal***, 35(3): 398-418.

Tushman, M. L. & Nadler, D. A. 1978. Information processing as an integrating concept in organizational design. ***Academy of Management Review***, 3(3): 613-624.

Tversky, A. & Kahnemann, D. 1974. Judgment under uncertainty: Heuristics and biases. ***Science***, 185: 1121-1131.

Veltrop, D. B., Molleman, E., Hooghiemstra, R. B. H., & van Ees, H. 2017. Who's the boss at the top? A micro-level analysis of director expertise, status and conformity within boards. ***Journal of Management Studies***, 54(7): 1079-1110.

Walsh, J. P. 1995. Managerial and organizational cognition: Notes from a trip down memory lane. ***Organization Science***, 6(3): 280-321.

Westphal, J. D. & Zajac, E. J. 1998. The symbolic management of stockholders: Corporate governance reforms and shareholder reactions. ***Administrative Science Quarterly***, 43(1): 127-153.

Westphal, J. D. 1999. Collaboration in the boardroom: Behavioral and performance consequences of ceo-board social ties. ***Academy of Management Journal***, 42(1): 7-24.

Westphal, J. D. & Fredrickson, J. W. 2001. Who directs strategic change? Director experience, the selection of new ceos, and change in corporate strategy. ***Strategic Management Journal***, 22(12): 1113-1137.

Westphal, J. D. & Bednar, M. K. 2005. Pluralistic ignorance in corporate boards and firms' strategic persistence in response to low firm performance. ***Administrative Science Quarterly***, 50(2): 262-298.

Westphal, J. D., Boivie, S., & Chng, D. H. M. 2006. The strategic impetus for social network ties. Reconstituting broken ceo friendship ties. ***Strategic Management Journal***, 27(5): 425-445.

Whitley, R. D. 1990. Eastern asian enterprise structures and the comparative analysis of forms of business organization. ***Organization Studies***, 11(1): 47-74.

Williamson, O. 1984. Corporate governance. ***The Yale Law Journal***, 93(7): 1197-1230.

Windmeijer, F. 2005. A finite sample correction for the variance of linear efficient two-step gmm estimators. ***Journal of Econometrics***, 126(1): 25-51.

Wintoki, M. B., Linck, J. S., & Netter, J. M. 2012. Endogeneity and the dynamics of internal corporate governance. ***Journal of Financial Economics***, 105(3): 581-606.

Wry, T., Cobb, J. A., & Aldrich, H. E. 2013. More than a metaphor: Assessing the historical legacy of resource dependence and its contemporary promise as a theory of environmental complexity. ***Academy of Management Annals***, 7(1): 441-488.

Yoshikawa, T. & Rasheed, A. A. 2009. Convergence of corporate governance: Critical review and future directions. ***Corporate Governance: An International Review***, 17(3): 388-404.

Yoshikawa, T., Zhu, H., & Wang, P. 2014. National governance system, corporate ownership, and roles of outside directors: A corporate governance bundle perspective. ***Corporate Governance: An International Review***, 22(3): 252-265.

Zajac, E. J. & Westphal, J. D. 1996. Director reputation, ceo-board power, and the dynamics of board interlocks. ***Administrative Science Quarterly***, 41(3): 507-529.

Zona, F., Gomez-Mejia, L. R., & Withers, M. C. 2018. Board interlocks and firm performance: Toward a combined agency–resource dependence perspective. ***Journal of Management***, 44(2): 589-618.

4 How Boards Shape Global M&A Patterns

Abstract

Extant literature provided limited understanding of how boards of directors influence firms' selections among globally dispersed strategic opportunities. In this study, we examine how outside directors' prior geographic exposure shapes acquisition target selection. We propose that when decision makers are confronted with spatially dispersed acquisition targets, geographic exposure serves as a filtering mechanism that channels attention to familiar locations and introduces bias into target selection. We propose that the strength of this effect is contingent upon the target location's salience to different actors both within and outside the acquiring firm. To test our hypotheses, we construct for each realized deal an opportunity space of alternative targets and apply conditional logit analysis. Based on a sample of Western European acquirers and 448,018 realized and non-realized acquirer-target dyads, we find empirical support for our hypotheses, controlling for alternative explanations, such as CEO and target characteristics, institutional contexts, and geographic distance. We contribute to the literature on mergers and acquisitions (M&A) and corporate governance by providing a behavioral perspective of the emergence of global M&A patterns and by elucidating outside directors' behavioral biases in strategic decision-making processes.

Note. A version of this manuscript has been presented at the 2018 Strategic Management Society Annual Conference in Paris, France.

4.1 Introduction

Global M&A transactions have continued to surge, exceeding $3 trillion annually over the past three years. Corporate takeovers may reconfigure global value chains, re-define the bargaining power of customers and suppliers, and re-shape the competitive landscape. Given their high importance as engines of transformation in the global economy and the fact that they – on average – fail to realize their intended objectives (Datta, Pinches, & Narayanan, 1992; King, Dalton, Daily, & Covin, 2004), it is important to understand how global patterns of M&A activity emerge. What drives target selection? While a large proportion of prior M&A research has examined the different consequences of deal activity, research on the selection of acquisition targets is still relatively sparse (Yu, Umashankar, & Rao, 2016). This dearth may be related to the empirical challenge of capturing counterfactuals – deals that would have been viable matches between targets and acquiring firms but did not materialize. Research only recently made advances in modeling target selection, approximating the space of alternative acquisition opportunities with different methodological approaches, such as propensity score matching or exogenous stratification (Chakrabarti & Mitchell, 2013; Chen, Kale, & Hoskisson, 2018; Hernandez & Shaver, 2018; Rogan & Sorenson, 2014).

A common theme in this literature is the assertion that target search and selection are subject to information asymmetries (Reuer, 2005), uncertainty (Coff, 1999), and decision makers' limited processing capacity (Duhaime & Schwenk, 1985). Given these challenges, prior works find that firms are more likely to buy public targets than private ones (Capron & Shen, 2007), firms within similar industry networks or technology domains (Schildt & Laamanen, 2006), targets with whom they share geographic overlap (Chen et al., 2018), overlapping clients (Rogan & Sorenson, 2014), and geographically proximate firms (Chakrabarti & Mitchell, 2013). Notwithstanding the significant insights of these studies, they tend to regard the acquiring firm as a monolithic entity. By assuming that firms with similar profiles make similar choices, the role of strategic leaders as drivers for heterogeneous choices is not fully captured; therefore, the impact of individual decision makers on strategic choices remains relatively obscure. Further, the majority of these studies examine target selection in focused, domestic samples. Thus, we have limited understanding about how the attributes of decision makers at the corporate apex influence a firm's selection among globally dispersed strategic opportunities, and thus, shape the footprint of multinational enterprises and global patterns of M&A activity at large. To address this gap, we examine the role of the board in acquisition target selection. Recent research on corporate governance suggests that the board acts not only as a monitoring entity but also adopts an active strategic role,

providing advice and expertise to the firms' CEO (Haynes & Hillman, 2010; Hillman & Dalziel, 2003). In this vein, prior studies indicate that directors' innate and acquired characteristics have a significant impact on major strategic decisions, such as market entry (Diestre, Rajagopalan, & Dutta, 2015; Tuschke, Sanders, & Hernandez, 2014), alliance formation (Gulati & Westphal, 1999), strategic change (Carpenter & Westphal, 2001; Oehmichen, Schrapp, & Wolff, 2017), as well as acquisition likelihood (Chen, Crossland, & Huang, 2016) and performance (McDonald, Westphal, & Graebner, 2008).

Depending on the level of specificity with which a firm has defined its acquisition objectives, firms across industries on average face between 128 and 830 globally dispersed acquisition targets[11]. Due to the sheer number of potential acquisition targets, involving enormous amounts of ambiguous data (Coff, 1999; Duhaime & Schwenk, 1985), decision makers are faced with information overload. Because decision makers are limited in terms of time, resources, and cognitive capacity (Cyert & March, 1963; Simon, 1947) we argue that firms neither comprehensively identify all the viable acquisition targets nor do they impartially evaluate the acquisition opportunities that have been identified. Although valuable resources are often spatially scattered across various locations, decision makers' cognitive bases may skew their field of vision by amplifying opportunities in certain areas, attenuating opportunities in others (Gregoire, Barr, & Shepherd, 2010; Starbuck & Milliken, 1988), and attributing subjective levels of incalculability to the remaining opportunities (Heath & Tversky, 1991; Pablo, Sitkin, & Jemison, 1996). We examine the role of board exposure to certain geographic locations as a specific attribute that introduces bias to the selection of acquisition targets. We hypothesize that a positive relationship exists between board geographic exposure to a particular country and the likelihood of an acquisition in that country. Board geographic exposure, our key predictor, is defined as outside directors' collective prior exposure to the target country, either through nationality or through recent professional experience in the target country.

Additionally, we hypothesize that our main effect is moderated by the salience of the target country as a location for potential acquisitions. By salience, we mean the shared awareness among a defined group of actors about the availability and eligibility of acquisition targets. Specifically, we propose that competition – defined as the country-specific deal intensity – enhances the underlying relationship as an externally mirrored form of salience. Conversely, we hypothesize that experience – defined as the number of prior acquisitions conducted by the acquirer in the target country – reduces

[11] This number emerges from our construction of the opportunity space. Further details are specified in the methodology section.

the strength of the underlying relationship, by presenting an internally mirrored form of salience.

We test our hypotheses on a sample of large acquiring firms from four Western European countries, where the proportion of foreign outside directors is substantially larger than in other parts of the world (Spencer Stuart, 2017). The companies in our sample collectively account for 22.4% of the world's largest companies outside the U.S. in the Fortune Global 500 ranking. This sample also allows us to test our arguments across contexts that vary in terms of economic, institutional, and governance characteristics. For each of the 540 announced acquisitions in our sample, we constructed an opportunity space that includes all the alternative target firms globally available at that time. We analyze a total of 448,018 realized and non-realized acquirer-target dyads with a conditional logit model and find empirical support for our hypotheses. Controlling for a number of alternative explanations, such as the CEO effect, target characteristics, institutional contexts, and geographic distance, our analyses indicate that acquirer-target dyads in which the acquirer board has high target country exposure are 31% more likely to announce an acquisition than an acquirer-target dyad in which members of the acquirer's board have low geographic exposure to the target country. While attempting to capture the global opportunity space as comprehensively as possible, we also constructed alternative specifications of the opportunity space with different levels of scope in terms of the temporal, industrial, and geographic dimensions. The latter two reflect different assumptions about the level of specificity with which firms have pre-defined their search scope. Here, our results indicate that the more narrowly we define the search scope of the firm, the larger the effect size becomes.

Overall, we contribute to the literature on M&A and corporate boards by answering calls to increase our understanding of the role of directors' behavioral biases in strategic decision-making processes (Hambrick, Werder, & Zajac, 2008; Johnson, Schnatterly, & Hill, 2013). While prior studies on target selection rely on firm level variables to explain strategic choices, reducing individual decision makers to "faceless abstractions" (Bettis & Prahalad, 1995:6), our study explicitly captures how strategic choices are infused by individuals' cognitive structures. Controlling for the effect of the CEO, we show that the biographies of outside directors significantly impact the selection of acquisition targets, highlighting the relevant role of board composition in shaping the global footprint of large multinationals. Moreover, we integrate prior theoretical insights about selective attention and subjective risk perception and develop a behavioral

perspective on global M&A activity, highlighting the significant role of familiarity when deciding among globally dispersed opportunities.

4.2 Board Influence in Mergers and Acquisitions

The influence of boards in M&A related processes has been addressed by prior research in a number of different ways. We review the extant literature and identify three distinct streams. First, a number of studies examine the board as a vehicle for inter-firm diffusion of M&A related practices. These studies focus on interlocks among board members as a means of contagion. As such, interlocking directorates have been shown to facilitate mimetic behavior by affecting a firm's propensity to make an acquisition (Haunschild, 1993; Haunschild & Beckman, 1998; Westphal, Seidel, & Stewart, 2001), paying similar premia for acquisition targets (Haunschild, 1994), or adopting defense mechanisms against hostile acquisitions (Davis, 1991).

Second, a large number of studies have examined the board as a monitoring body in M&A decision making. Overall, this stream has provided a mixed picture of the effectiveness of board monitoring. Despite the prevailing assumption about outside directors' effectiveness in limiting entrenched executives' takeover attempts (e.g. Baysinger & Hoskisson, 1990; Kroll, Wright, Toombs, & Leavell, 1997), empirical findings remain inconclusive (Boivie, Bednar, Aguilera, & Andrus, 2016). Some evidence, for example, suggests that stock and stock option pay for outside directors are related to a firm's acquisition rate, indicating that outside directors may be as susceptible to financial incentives as CEOs (Deutsch, Keil, & Laamanen, 2007). In contrast, Hayward and Hambrick (1997) find that boards with a smaller number of outside directors or a smaller amount of stock-holdings among outside directors will give hubristic CEOs more latitude for paying high acquisition premia. In an attempt to reconcile inconclusive findings, Goranova and colleagues (Goranova, Priem, Ndofor, & Trahms, 2017) suggest that board monitoring is a double-edged sword, associated with both lower M&A losses and lower M&A gains. While monitoring can constrain executives' ability to pursue value-destroying M&A deals, it cannot simultaneously encourage or enable CEOs to pursue value-creating deals.

The third group of studies pertains to an emerging strategic perspective of boards. These studies examine how board members bring their inherent and acquired preferences and experiences into the acquisition process. As such, research has shown that the demographic characteristics of board members, such as gender, may impact the frequency and size of acquisitions (Chen et al., 2016). Other studies conclude that outside directors' M&A experience from previous appointments matter for acquisition

performance and are positively associated with higher abnormal returns on acquisition announcements for the focal firm(Kroll, Walters, & Wright, 2008; McDonald et al., 2008). A recent study provides a fine-grained view on the impact of directors' prior premium experience on collective board decision making (Zhu, 2013). This study introduces a group polarization argument and suggests that board members who experienced relatively low premia in past acquisitions will favor lower premia, while board members who experienced relatively high premia in previous deals will favor even higher acquisition premia prior to board discussions.

Despite pertaining to different theoretical traditions, the accumulated body of prior work unanimously highlights the significant role of the board in M&A decision making. Overall, a variety of different outcomes have been examined, with particular emphasis on explaining acquisition propensity, price, and performance. However, to date, no study has examined how board characteristics influence which particular targets are being acquired and thus how boards shape the evolution of the global footprint of multinational firms. In this study, we adopt a strategic view of the board to address this gap and analyze how board members bring their inherent and acquired preferences and experiences into the target selection process.

4.3 Theory and Hypotheses

In the modern corporation, outside directors operate at the apex of the firm, acting not only as monitors but also as advisors and counselors to the company's CEO (Hillman & Dalziel, 2003; Pfeffer & Salancik, 1978). As board members are the preeminent legal representatives of the organization, their values, cognitive bases, and attention structures are likely to be reflected in core strategic choices (Carpenter, Geletkanycz, & Sanders, 2004; Hambrick & Mason, 1984; Ocasio, 1997; Starbuck & Milliken, 1988). We propose that this mechanism particularly manifests itself in the context of target selection, as it presents one of the most pivotal and difficult corporate-level decisions. Target selection decisions are often irreversible and may lead to unintended outcomes. Additionally, they are characterized by high uncertainty and an overwhelming amount of ambiguous information (Coff, 1999; Duhaime & Schwenk, 1985). However, the extent to which board members' cognitive structures reify in strategic choices depends on the contextual aspects of the selection process and in particular, on the type of contextual salience inherently mirroring board members' strategic inclinations. In the following, we develop our hypotheses. First, we theorize about the mechanisms through which board geographic exposure impacts acquisition target selection, and second, we propose contingencies that strengthen and weaken this relationship: externally mirrored

salience through country-specific deal competition and internally mirrored salience through the firm's country-specific deal experience.

Board Geographic Exposure and Acquisition Target Selection

While the rational decision-making model assumes that decision makers start by considering a comprehensive set of available alternatives that would be evaluated with impartial diligence before selecting the most viable alternative, theorists of the Carnegie School have argued that complex decisions are largely the outcome of behavioral factors rather than a mechanistic quest for optimization (Cyert & March, 1963; March & Simon, 1958). In line with this view, we propose that both stages of the target selection process, namely, identification and assessment, are prone to be influenced by outside directors' geographic exposure. We argue that boards neither comprehensively identify all the viable acquisition targets nor do they impartially evaluate the acquisition opportunities that have been identified.

An individual's exposure to a particular country, through either nationality or recent work experience, is likely to be manifested in strategic choices. Exposure to a country increases both the cognitive salience of and the perceived familiarity with this country. First, exposure shapes perceptions. Ample prior research has documented how prior exposure to certain domains shapes the way decision makers notice and make sense of their environment (Dearborn & Simon, 1958; Elsbach, Barr, & Hargadon, 2005; Gregoire et al., 2010; Starbuck & Milliken, 1988; Walsh, 1988, 1995). Geographic exposure spawns a dense and possibly regular flow of cues, both business and non-business related, about a particular country to which individuals are exposed through their own experiences, social contacts or media consumption. In the case of geographic exposure, attributes that pertain to a particular country are more central and more accentuated in the individual's mental map than attributes pertaining to other countries. Second, country exposure is likely to engender sentiments of trust and comfort, about which decision makers may or may not be oblivious. Having close ties to residents and being conversant with customs and social norms of a particular country reduces the perceived incalculability related to individuals or objects associated with this country. Holding other factors constant, the subjective perception of uncertainty is lower than that for other countries. Due to these associated mechanisms, geographic exposure is likely to influence target selection in different ways.

On the one hand, geographic exposure may introduce bias to identification. Given the information overload associated with acquisition decisions, search processes typically include only a fraction of the population of available targets (Chakrabarti &

Mitchell, 2013; Pablo et al., 1996). In the M&A decision-making process, the abundance of information often has to be evaluated under considerable time pressure because of concerns regarding secrecy and competitive bidding (Jemison and Sitkin, 1986). Because decision makers are confronted with uncertainty and information overload, familiar attributes act as a scaffold for decision making (Elsbach et al., 2005; Tversky & Kahneman, 1974). When scanning globally dispersed acquisition targets, strategic decision makers' geographic exposure serves as such a scaffold, channeling attention to familiar countries. Although valuable resources are often spatially scattered, decision makers' perceptual filters amplify certain stimuli and attenuate others thereby distorting raw data and channeling attention (Starbuck & Milliken, 1988). This filtering process, which occurs rather instinctively, may skew the field of vision and introduce bias to target identification.

On the other hand, geographic exposure may distort the evaluation of identified acquisition opportunities. A number of studies suggest that investors prefer to invest based on familiarity (Coval & Moskowitz, 1999; Lin & Viswanathan, 2016; Sorenson & Stuart, 2001). Kilka and Weber (2000) find that German business students' subjective probability distributions of German stocks are significantly less dispersed and more optimistic than those for American stocks, and vice versa for American students. Even in the absence of explicit normative beliefs about the supremacy of acquisition targets from a particular country, high uncertainty induces decision makers to revert to options they are familiar with and hence perceive to be less unpredictable. Experimental and field studies indicate that individuals are reluctant to bet if they do not perceive themselves do be sufficiently knowledgeable in an area, while the willingness to make a bet based on their judgements increases with perceived domain-specific competence (Graham, Harvey, & Huang, 2009; Heath & Tversky, 1991; Huberman, 2001). This indicates that decision makers may not impartially evaluate a set of identified acquisition targets, even when it is suggested by professional deal advisors or the CEO. Instead, targets from certain countries have a higher likelihood to be considered compared to targets from other countries. Given its impact on both stages of the selection process, namely, identification and evaluation, we propose that outside directors' exposure to a particular country will increase the likelihood of selecting a target in this country. We formally restate this hypothesis below:

> *Hypothesis 1. A positive relationship exists between board target country exposure and the probability of an acquisition match.*

The Moderating Effects of Externally Mirrored and Internally Mirrored Location Salience

After having hypothesized the main relationship, we now outline conditions that positively and negatively moderate the underlying effect. We argue that the relevance of board target country exposure in explaining strategic choices depends on the salience of the target country as a location of potential acquisitions for other actors. Specifically, we propose that deal activities of other firms – country-specific deal competition – is a type of salience that creates perceived pressures and thus amplifies the importance of board members' familiarity. In contrast, prior deal activity of a focal firm – country-specific deal experience – mirrors the collective strategic inclinations of board members and different managerial layers within the acquiring organization, and thus, attenuates the relevance of boards' geographic exposure.

We first discuss country-specific deal competition. We defined salience as the shared awareness among a group of decision makers in terms of the availability and eligibility of acquisition targets in a particular country. In the case of competition, salience is shared within the external sphere of the organization; among competitors, analysts, consultants, and investors. Prior research reveals that peer comparison is an important driver of acquisition behavior. Managers often mimic the acquisition behaviors of firms they are aware of (Haunschild, 1993; Haunschild & Miner, 1997; Ozmel, Reuer, & Wu, 2017; Westphal et al., 2001), a mechanism that sometimes evolves into bandwagon pressures and industry-spanning acquisition waves (Carow, Heron, & Saxton, 2004; Harford, 2005; McNamara, Haleblian, & Dykes, 2008). One particular dimension in these imitation tendencies is space. Given the high degree of uncertainty that is associated with target selection, acquirers are inclined to undertake acquisitions that are in close proximity to their competitors' recent acquisitions (Baum, Li, & Usher, 2000). Targets that are co-located in the same country presumably possess similar kinds of location-specific resources, such as advanced R&D capabilities associated with particular technological clusters, regulatory advantages, or natural resource endowments. Conducting an acquisition in the same country suggests being conducive to matching a competitor's newly obtained resources. The higher the collective country-specific deal activity is, the higher the perceived attractiveness of the target location appears to be, raising market participants' attentiveness to the target country. These dynamics may even create isomorphic pressures to carry out similar acquisitions, once an action becomes institutionalized or taken-for-granted. Such externally mirrored salience increases the perceived importance of an outside director's familiarity with the respective country, both for him or herself as well as for other corporate decision

makers. The fear of "missing out" or becoming a latecomer in this particular M&A market (McNamara et al., 2008) creates pressures that directly relate to the experience profile of individual board members. Outside directors' implicit strategic inclinations are thus more likely to be manifested in strategic choices, increasing the likelihood that the firm undertakes an acquisition in countries for which board members have had prior exposure to.

> *Hypothesis 2a. The positive relationship between board target country exposure and the probability of an acquisition match is more pronounced when more competing acquirers are active in the target country.*

Next, we discuss a focal firm's country-specific deal experience. We propose that the impact of board geographic exposure on acquisition match is weakened if salience is mirrored from within the organization. We argue that the relevance of outside director experience for target selection may be reduced if the acquiring firm has previously conducted acquisitions in the target country. In this case, the perceived target country salience is shared among different managerial levels within the acquiring organization. Prior research has shown that acquisition experience of a particular type increases the likelihood of engaging in similar actions in the future (Amburgey & Miner, 1992; Haleblian, Kim, & Rajagopalan, 2006). Here, again, space is a relevant dimension. Baum and colleagues (2000) show that acquisition experience in a particular location increases the likelihood of undertaking subsequent acquisitions in close proximity to the previous target. Collectively, these studies suggest that organizations tend to be biased against discovering opportunities distant from past choices and instead, are inclined to repeat and exploit previous choices until all the opportunities are exhausted. Following this line of reasoning, we propose that if a firm has already engaged in one or more acquisitions in a particular country, then this country will have elevated cognitive salience for a large number of organizational members, both across and below the corporate apex. During the previous acquisitions carried out in the target country, the acquiring organization had to develop country-specific processes for the search, courting, and due diligence of potential targets. This experience may reverberate and shape the perception of the local opportunity space for the wider organization (March, Sproull, & Tamuz, 1991), off-setting the uniqueness of the experience profile of individual directors. If the salience of a potential acquisition location is mirrored within the acquiring organization, then board members' cognitive inclinations to pay more

attention to potential acquisition targets from this particular country and to evaluate them more favorably are less strongly reified in target selection decisions.

Hypothesis 2b. The positive relationship between board target country exposure and the probability of an acquisition is less pronounced if the acquirer has previously acquired in the target country.

4.4 Data and Methods

Research Design

Our primary interest is exploring how outside directors' exposure to the country of domicile of a potential acquisition target affects the probability of an acquisition match. An acquisition match is realized when any dyad between an acquirer and a target announced a deal during our study period between 2009 and 2014. To study the impact of board geographic exposure, we develop a conditional choice model that specifies (a) the set of takeover targets available to a focal acquirer; (b) the attributes of each acquirer-target dyad; and (c) the focal acquirer's choice behavior. While it is conceivable that targets may face multiple bidders and in effect select their acquirer (Chen et al., 2018), we follow prior research that conceptualizes the acquirer as the dominant actor in the acquisition process, with the target assuming a more passive role (Berchicci, Dowell, & King, 2012; Hernandez & Shaver, 2018; Kaul & Wu, 2016; Rogan & Sorenson, 2014). We employ a McFadden's choice model (i.e., conditional logistic regression), where each realized acquisition is matched with an opportunity space of potential targets that the acquirer could have chosen from (McFadden, 1973). We explain the details and specific construction of the opportunity space in the next section.

Research Context and Databases

Drawing on data from Thomson Reuters' Deal Module, we identified 540 acquisitions with deal values higher than $1 million announced by listed European companies over six consecutive years between 2009 and 2014. During the study period, the cumulative value of transactions on the European M&A market was between two peaks[12]. The acquisitions we sampled were therefore less likely to be driven by industry shocks and large scale reallocation of assets, which are typically associated with periods of abnormally high transaction values (Harford, 2005). In our sample selection, we also

[12] Peaks occurred in 2007, with a cumulative transaction value of €1.8 trillion and in 2015, with a cumulative transaction value of €1.2 trillion (Institute for Mergers, A. a. A.; Institute for Mergers, Acquisitions and Alliances; https://imaa-institute.org/.

account for the restrictions posed by our main independent variable (i.e., board target country exposure). One key component of board target country exposure is outside directors' nationality. In many parts of the world, the proportion of foreign board members is small. For example, foreign outside directors only comprise 7% of the directors in the US, 3% of those in Japan and 8% of those in India (Spencer Stuart, 2017). Consequently, corporate boards from these countries may not allow for sufficient variance in our geographic exposure variable. We hence focus on a Western European sample, where corporate boards tend to have a substantially larger share of foreign outside directors (Spencer Stuart, 2017). Further, due to the limited size of our sample countries' domestic markets, most deals are cross-border. Of the announced deals in our sample, 77% involve foreign targets, and 96% of potential targets in the opportunity space are located outside acquirers' home countries. Therefore, the sample used in this study represents a rich empirical setting for examining our research question.

Our initial sample was based on the 400 largest listed firms headquartered in Germany, the Netherlands, Switzerland and the United Kingdom over six consecutive years from 2009 to 2014. These four countries capture diverse characteristics in their respective institutional and governance arrangements that have implications for the specific roles and responsibilities of the board. For example, Switzerland has comparably weak minority investor protection (1.3 standard deviations below the population mean), which compares to strong minority investor protection in the U.K. (1.9 standard deviations above the population mean). Further, there is variance in the legal systems (e.g., common law in the U.K. vs. civil law in Germany), mandated co-determination (mandatory in Germany but not in the other sample countries) and the type of prevalent board structures (e.g., two tier board structure in the Netherlands and one tier board structure in the U.K.). Testing our hypotheses in these diverse national contexts increases our confidence in the robustness of our results.

Our sample companies are listed on either the primary or secondary stock market and have been identified based on their market capitalization at the year-end of 2009. Firms had to meet the following three criteria to be eligible for inclusion in the final sample: First, they were classified as large firms based on the European Commission's Union's definition throughout the study period (i.e., they had more than 250 persons employed and an annual revenue of over €50 million) (European Commission Recommendation 2003/361/EC). Second, they continuously operated throughout the study period and did not become target of an M&A transaction. Third, they were not subsidiaries of another company. The application of the inclusion criteria resulted in a sample of 300 companies. Of these, 85 companies were listed in Switzerland, 77 in the

United Kingdom, 77 in Germany and 61 in the Netherlands. Over the study period, on average, these companies accounted for 22.4% of the world's largest companies outside the U.S., as measured by total revenues in the Fortune Global 500 ranking. These firms were active in 58 industries, based on their two-digit SIC industry classification.

In terms of data sources, we obtained firm data from Thomson Reuters Eikon, Thomson Reuters Datastream and Orbis. Board data were retrieved from the BoardEx database. Missing data were hand-collected from federal sources (e.g., Companies House in the U.K., *Kamer van Koophandel* in the Netherlands, and *Bundesanzeiger* in Germany), firms' investor relations offices and corporate annual or financial reports, as detailed in the following sections.

Sampling and Matching Strategy

We recorded each of the 540 acquisitions announced during the study period as a separate acquirer-target dyad. We focus on deal announcements rather than only completed deals as this carries more information about underlying target search and selection processes (Chakrabarti & Mitchell, 2013). After having identified the realized acquirer-target dyads, we sampled an opportunity space of non-realized acquirer-target dyads that could have formed but did not. We first collected data on all global deals announced between 2007 and 2016. For each realized acquirer-target dyad, we then identified an opportunity space consisting of a set of alternative targets that the focal acquirer could have acquired. Non-realized acquirer-target dyads had to satisfy two conditions to be included in the opportunity space. First, non-realized acquirer-target dyads had to reflect the same strategic expansion objective as the realized acquirer-target dyad. The opportunity space should therefore reflect whether an acquirer intended to pursue a related or an unrelated acquisition (Chakrabarti & Mitchell, 2013).

For each realized acquirer-target dyad, we constructed a choice set of alternative deals, and we only used cases where both the acquirer and the potential target were from the same two-digit SIC industry as the respective transaction partners in the realized acquirer-target dyad. Second, potential targets had to be available for takeover. Hence, we only considered targets that were acquired within a period of 5 years around the year of the focal acquisition. By applying these two conditions, we follow prior strategy literature that studies choice problems based on matched samples in the context of acquisition decisions (Chakrabarti & Mitchell, 2013; Chen et al., 2018). The overall opportunity space comprises 447,478 non-realized acquirer-target dyads. On average, a firm announcing an acquisition (i.e., realized acquirer-target dyad) faced an opportunity

space of 830 alternative targets that it could have acquired but did not (i.e., non-realized acquirer-target dyads).[13]

We retain all dyads in our analyses instead of employing techniques such as propensity score matching (Chen et al., 2018; Hernandez & Shaver, 2018), coarsened matching (Rogan & Sorenson, 2014) or stratified sampling (Chakrabarti & Mitchell, 2013). The large number of non-occurrences means that our conditional logit models are likely to underestimate the probability of an acquisition match and only present a conservative estimation of the true effect of our independent variables. Introducing a priori assumptions about which deals in the opportunity space are more likely to occur, for example, by limiting the opportunity space only to those target firms with a similar size as the actual target, might have strengthened our effects but would have limited our ability to fully capture the global dispersion of all strategic opportunities. Cumulatively, in our sample, outside directors are citizens of 51 distinct countries with recent experience in 102 distinct countries who can choose targets from 191 countries. By retaining all non-realized acquirer-target dyads, we aim to provide a comprehensive portrayal of the underlying choice problem.

Additionally, our approach builds on a careful and fine-grained dyad-specific matching of firm attributes. For example, instead of using aggregate measures of firm internationalization (e.g., foreign sales to total sales) and board diversity (e.g., nationality diversity), for each of the 448,018 dyads in our sample, we construct matches according to whether a focal acquirer is international in the sense that it has established operations in the focal target country and whether its board is diverse in the sense that outside directors have had specific exposure to the focal target country. However, we do acknowledge that not all potential acquisitions are equally likely to occur. In our analyses, we therefore not only account for acquirer fixed-effects but also include a comprehensive set of control variables that may influence the probability of an acquisition match, including characteristics that are target firm-specific, deal-specific and target country-specific.

[13] As a robustness check, we strengthened both conditions of the opportunity space construction: 1) We constructed the opportunity space based on the target's four-digit SIC industry. In this case, firms on average face 203 deal opportunities. 2) We also constructed different temporal configurations of the opportunity space. For example, constructing the opportunity space based on the year of the focal acquisition only (instead of a 5-year window), on average yields 164 potential targets for the acquirer to choose from. Finally, we also constructed different geographic configurations of the opportunity space. For example, restricting the opportunity space to potential targets from the same sub-region as the focal target's sub-region resulted in an average of 128 available acquisition opportunities. Alternative configurations of the opportunity space produced estimates that are consistent with our predictions and are reported in the results section.

Dependent Variable

Our binary dependent variable, *acquisition match*, indicates whether any dyad between two firms announced a deal during our study period. We distinguish two types of dyads, realized acquirer-target dyads (coded 1) and non-realized acquirer-target dyads (coded 0). The former represents all 540 acquisitions announced by our sample companies during the study period. The latter represents the opportunity space of 447,478 deals that could have taken place but did not.

Independent and Moderator Variables

Board target country exposure. Our main independent variable measures the exposure of acquirers' outside directors to the country of domicile of an acquisition target. We use two indicators to construct this variable. First, we computed the ratio of outside directors at the acquirer board who hold citizenship of the target country. Outside directors who are target country nationals will typically have had greater exposure to the intricacies of target country business practices and operations (Miletkov, Poulsen, & Wintoki, 2017) and will likely have greater target country-specific exposure through relationships they maintain with compatriots. Second, we computed the ratio of outside directors with work experience in the target country over the past 5 years (including the focal year). We considered both board and non-board roles held by individual directors at for-profit firms. Due to the advanced career stage of outside directors, typical roles included executive and non-executive board mandates, executive directorships and senior leadership positions. We set the period of interest to 5 years to ensure that board members' experiences were still timely and relevant. Since we conceptualize the opportunity space as a time-variant set of potential targets, it is particularly important to account for temporal proximity in assessing directors' geographic exposure to any given target country. Prior research that used board-level expertise measures to study effects on strategic firm outcomes used similar periods (Oehmichen et al., 2017). We measure board exposure to the target country by creating an exposure index with values from 0 to 2 (Cronbach alpha = 0.78). A higher value indicates greater exposure of the board to the respective target market. It should be noted that the geographic exposure variable is computed separately for each dyad in our sample. For example, consider a London-based acquirer with three British and two South African board members of which two have experience in France and three in Singapore. The geographic exposure value will for that same acquirer differ depending on whether it forms a dyad with a target from the U.K. (resulting in a geographic exposure value of 1.6), Singapore (0.6), South Africa (0.4) or France (0.4). Note that the board-level geographic exposure value is equal for

South Africa and France although one is driven by director nationality and the other by director experience. We assert that this is a reasonable assumption given that our primary interest lies in studying whether an acquisition match occurs or not. Geographic exposure is a board-level construct which aggregates information on nationalities and career histories of individual outside directors. We only retained observations where full information was available for each outside director. Incomplete information led to the exclusion of 4 realized acquirer-target dyads and the corresponding opportunity space consisting of 450 non-realized acquirer-target dyads. We lagged the 'board target country exposure' variable by one year.

Competing acquirer activity. We capture the effect of competing acquirer activity by measuring for each dyad the proportion of deals announced by competing acquirers in the respective target country.

Prior deals in target country. We measured whether the acquirer had announced an acquisition in the target country over the past three years (Goranova et al., 2017). Most sample companies (83%) had not recently acquired a company in the target country. The prior acquisition volume was 1 at the 90th percentile, 2 at the 95th percentile and 6 at the 99th percentile, respectively. To reduce the effect of spurious outliers we constructed a binary variable, *'prior experience'*, that takes the value 1 if the acquirer announced at least one target country acquisition within the past three years and 0 otherwise.

Controls

CEO target country exposure. The CEO is a key decision maker in corporate M&A decisions. CEOs have been shown to affect several key dimensions such as the size, relatedness, or premium paid for acquisitions (Chatterjee & Hambrick, 2007; Hayward & Hambrick, 1997; Lane, Cannella, & Lubatkin, 1998). It should be noted that in Europe CEO and Chair roles are typically separate. CEO duality is present in 1.11% of the realized acquirer-target dyads that we study (across all 300 European firms in our initial sample CEO duality is present in 3.79% of all firm-year observations). We account for the potential CEO effect on acquisition match by creating a measure of CEO's target country exposure. Specifically, *CEO target country exposure* takes the value 1 if the CEO is a target country national or has recent experience in the focal target country and 0 otherwise. We lagged the 'CEO target country exposure' variable by one year.

Operations in target country. Companies that have already established meaningful operations in a target country may be more likely to identify and evaluate targets, leading to a higher probability of an acquisition match with targets from such a

country. We collected information on the number and location of foreign undertakings, including consolidated group companies, affiliated companies and investments in joint ventures of our sample companies for each year preceding an acquisition announcement. Those data were retrieved from the respective notes to the consolidated financial statements as well as federal sources such as the registrar of companies (e.g. Companies House in the U.K.), chambers of commerce (e.g. *Kamer van Koophandel* in the Netherlands) or other official publications (e.g. *Bundesanzeiger* in Germany). In few cases where information was not available, incomplete, or ambiguous we contacted investor relations offices of the respective companies to request the lists of foreign undertakings. Overall, we collected information on 217,036 individual entities of which 161,664 were located across 207 foreign countries. As a next step we computed for each host country the number of entities divided by the total number of foreign entities in the respective firm-year. Our sample companies on average were active in 24 foreign countries where they generated 74.5% of their annual revenues. We acknowledge that some foreign entities may have been established in response to target country regulations or may serve primarily as financial investment vehicles without any operational relevance. In order to assess whether companies hold meaningful operations in a specific target country we construct a binary variable, *'prior operations'*, that takes the value 1 if the acquirer's share of operations in any given target country is above the sample median (0.017) and 0 otherwise. We lagged the 'prior operations' variable by one year.

Target is private. We control for the influence of private targets versus public targets on the formation of an acquisition match. Private targets tend to be smaller and less visible than public targets which makes them more difficult for acquirers to identify and properly evaluate (Capron & Shen, 2007). We used a binary variable, *'target is private'*, that takes the value 1 if the target is private and 0 otherwise.

Target is foreign. Since the domestic target search context is different from an international search context with regard to important features such as regulations, cultural differences and psychic distance, we created a binary variable, *'target is foreign'*, that takes the value 1 for foreign targets and 0 if the target and acquirer are co-located in the same country.

Geographic distance. Geographic distance makes it more difficult for acquirers to identify and evaluate acquisition opportunities (Chakrabarti & Mitchell, 2013; Chen et al., 2018; McCann, Reuer, & Lahiri, 2016; Ragozzino & Reuer, 2011) which in turn lowers the probability of an acquisition match. We capture this effect by including the geographic distance between the capital of the acquirer country and the capital of the

target country. Specifically, we applied the Great Circle distance formula to calculate the distance in kilometers, as follows:

$$\textit{Geographic distance} = r \times \arccos\left[\sin(\mathrm{rad}(90 - lat_{acq})) \times \sin(\mathrm{rad}(90 - lat_{tar})) + \cos(\mathrm{rad}(90 - lat_{acq})) \times \quad (1)\ \cos(\mathrm{rad}(90\ lat_{tar})) \times \cos(\mathrm{rad}(lon_{tar} - lon_{acq}))\right],$$

where r is the Earth radius in kilometers (i.e., r = 6,371) and *lat* and *lon* refer to the latitude and longitude of the acquirer and target country capital, respectively. Latitude and longitude data were obtained from the United Nation's Department of Economic and Social Affairs.

U.S. target and *Chinese target.* We tested whether our results are driven by two individual markets that are overrepresented in the opportunity space. Across all acquirer-target dyads, 26% of targets are U.S and 13% Chinese. Although we capture competing acquirer activity in the target country in a separate variable and control for target country institutional characteristics, we add two dummy variables to account for possible idiosyncratic effects from these two dominant target countries. The binary variable, *'U.S. target'*, takes the value 1 if the target is U.S. and 0 otherwise. The binary variable, *'Chinese target'*, takes the value 1 for Chinese targets and 0 otherwise.

Target acquired by domestic firm. 96% of potential targets in the opportunity are located outside our four focal acquirer countries Germany, Netherland, Switzerland und United Kingdom. Some targets may not have been available to foreign acquirers, for instance due to political opposition (Xie, Reddy, & Liang, 2017). We proxy this effect by examining whether a potential target was eventually taken over by a domestic or foreign acquirer. The binary variable, *'target acquired by domestic firm'*, takes the value 1 if a potential target in the opportunity space was taken over by another firm from the same country and 0 otherwise.

Deal value and *target value.* Larger and more expensive deals have a greater impact on a firm's long-term development and are therefore likely to receive greater board-level attention (Chen et al., 2016).. The variable *deal value* measures the transaction value in US$ as reported in Thomson Reuter's Deal Module. The variable *target value* measures the enterprise value of the target firm at the announcement date in US$ as reported in the same database. We account for extreme values by winsorizing both variables at the 1st and 99th percentile levels.

Consideration includes cash and *consideration includes stock.* Research has shown that acquirers may use stock as a dominant method of payment if the board

believes that its own shares are overvalued (Fuller, Netter, & Stegemoller, 2002). Since target firms are aware of this an acquisition match is less likely to occur. Conversely, cash-based payment signals the acquirer's value to the market and may increase the probability of an acquisition match. We use two measures to capture the effects of the consideration structure: First, we use a binary variable, *'consideration includes cash'*, that takes the value 1 if the deal has been fully or partially cash-financed and 0 otherwise. Second, we use a binary variable, *'consideration includes stock*, that takes the value 1 if the deal has been fully or partially stock-financed and 0 otherwise.

Target country openness. The openness of an economy indicates the degree to which capital inflows are restricted. Economic nationalism may affect the probability of an acquisition match because it limits the acquirer's ability to form an acquisition with targets from respective countries. We measure *target country openness* using data from Heritage Foundation's Index of Economic Freedom. The variable is calculated as the average of the composite values 'trade freedom', 'investment freedom' and 'financial freedom'. Finally, we subtract the openness score of the focal acquirer's home country to compute the dyad-specific institutional difference in target country openness.

Target country investor protection. Prior research has shown that countries with stronger investor protection are associated with more M&A activity (Rossi & Volpin, 2004; Xie et al., 2017). Higher levels of target country investor protection may therefore increase the probability of an acquisition match. We measure *target country investor protection* on a scale from 0–10 as indicated by the World Bank's Minority Investor Protection Index and subtract the investor protection score of the focal acquirer's home country. The resulting value indicates the dyad-specific institutional difference in minority investor protection.

Team tenure. We measure *team tenure* for each acquirer-target dyad as the average team tenure in years among those outside directors with exposure to the focal target country.

Statistical Approach

We analyze our dichotomous dependent variable 'acquisition match' using a conditional logistic regression model in which the unit of analysis is the choice of acquisition opportunity (McFadden, 1973). This approach seems to be particularly appropriate for modeling the choice problem of our acquirers: Each realized acquirer-target dyad is paired with a discrete set of alternative targets that might compete for the focal acquisition opportunity. Another advantage is that the choice is conditioned for the attributes of the acquiring firm (Rogan & Sorenson, 2014), which means the analysis

includes a fixed effect at the firm level, allowing us to neglect non-dyad-specific acquirer attributes. Because the acquirer is "fixed" across all available choice options, we can concentrate our analytical focus on the question: Given the attributes of the acquirer, what dyad-specific attributes will increase the probability of an acquisition match? Since the choice set is discrete and does not capture time differences, we do not need to control for time fixed-effects.

4.5 Results

Table 4.1 displays the sample's descriptive statistics. The correlations between variables are modest. Not surprisingly, the strongest relationships are among institutional characteristics and target country dummy variables as well as among target value and deal value. Table 4.2 shows the results of the conditional logistic regression. Model 1 is the baseline model that includes all control variables that could affect the acquisition match. The results of Model 1 indicate that CEO target country exposure affects the probability of an acquisition match. Specifically, the coefficient is positive (b = 0.346) with a confidence interval of [– 0.097, 0.789] at the 99% significance level. Since we employ a nonlinear model, the absolute value of the coefficients in Table 4.2 do not directly indicate the substantive importance of the effect. Following prior studies (cf. Chen et al., 2018), we assess the substantive effect by computing the odds ratio for different values. An increase in the CEO target country variable from 0 (CEO does not have target country exposure) to 1 (CEO has target country exposure) is associated with an odds ratio of exp [(1 – 0]) * 0.346] = 1.41, which means that an acquisition match is approximately 41% more likely to occur if the CEO has exposure to the target country through nationality or prior experience. Model 1 is also consistent with prior research in that it shows that acquisitions are less likely to form if the target is geographically distant from the acquirer (Chakrabarti & Mitchell, 2013; Chen et al., 2018), the target is foreign (Schildt & Laamanen, 2006) or if the deal is fully or partially stock-financed (Fuller et al., 2002).

H1 states that the probability of an acquisition match is higher to the extent that outside directors on the acquirer's board have greater exposure to the target country through nationality or recent experience. Model 2 in Table 4.2 supports H1 with a positive coefficient associated with board target country exposure (b = 0.886) falling in a confidence interval of [0.312, 1.460] at the 99% significance level. Based on Model 2 in Table 4.2, an increase from the 25th percentile (0) to the 75th percentile (0.286) for the board target country exposure variable is associated with an odds ratio of exp [(0.29 – 0]) * 0.957] = 1.31. This result means that an acquirer-target dyad for which the

Table 4.1 Descriptive Statistics

	Variable	Mean	SD	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)	Acquisition match	0.00	0.03	0.00	1.00	1.00									
(2)	Board target country exposure	0.23	0.41	0.00	2.00	0.03	1.00								
(3)	Competing acquirer activity	0.14	0.13	0.00	1.00	0.00	0.26	1.00							
(4)	Prior deals in target country	0.17	0.38	0.00	1.00	0.01	0.46	0.29	1.00						
(5)	CEO target country exposure	0.17	0.37	0.00	1.00	0.02	0.62	0.22	0.38	1.00					
(6)	Operations in target country	0.50	0.50	0.00	1.00	0.02	0.44	0.40	0.40	0.34	1.00				
(7)	Target is private	0.81	0.39	0.00	1.00	0.00	-0.01	0.06	-0.01	-0.02	0.03	1.00			
(8)	Target is foreign	0.96	0.19	0.00	1.00	-0.03	-0.69	0.07	-0.22	-0.46	-0.18	-0.03	1.00		
(9)	Geographic distance	6179.25	3925.57	0.00	18827.51	-0.02	-0.27	0.11	-0.10	-0.17	-0.12	-0.03	0.32	1.00	
(10)	U.S. target	0.26	0.44	0.00	1.00	0.00	0.39	0.60	0.35	0.30	0.29	-0.02	0.12	0.02	1.00
(11)	Chinese target	0.15	0.35	0.00	1.00	-0.01	-0.22	0.39	-0.11	-0.15	0.12	0.14	0.08	0.17	-0.25
(12)	Target acquired by domestic firm	0.64	0.48	0.00	1.00	-0.03	-0.01	0.28	0.02	-0.01	0.04	-0.02	0.04	0.15	0.10
(13)	Deal value[a]	189.96	612.61	1.10	4671.06	0.03	0.09	0.03	0.06	0.08	0.05	-0.21	0.00	-0.06	0.13
(14)	Consideration includes cash	0.53	0.50	0.00	1.00	0.00	0.07	0.02	0.04	0.04	0.05	-0.11	-0.04	0.01	0.07
(15)	Consideration includes stock	0.15	0.36	0.00	1.00	-0.01	0.07	0.07	0.06	0.07	0.06	-0.04	-0.03	0.02	0.06
(16)	Target country openness	-15.97	15.94	-81.67	9.07	0.01	0.39	-0.12	0.24	0.29	0.08	-0.07	-0.20	-0.22	0.36
(17)	Target country investor protection	0.95	2.47	-6.30	6.70	0.00	0.09	0.14	0.06	0.16	0.03	-0.06	0.08	-0.02	0.38
(18)	Target value[a]	564.86	2037.49	1.27	15875.42	0.03	0.07	-0.01	0.04	0.06	0.02	-0.26	-0.01	-0.08	0.10
(19)	Team tenure	5.07	2.96	0.00	37.90	0.00	0.05	-0.11	-0.02	0.13	0.06	-0.02	-0.03	-0.10	0.02

	Variable	Mean	SD	Min	Max	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	
(11)	Chinese target					1.00									
(12)	Target acquired by domestic firm					0.17	1.00								
(13)	Deal value[a]					-0.08	-0.07	1.00							
(14)	Consideration includes cash					-0.06	0.02	0.06	1.00						
(15)	Consideration includes stock					-0.07	0.10	0.07	0.02	1.00					
(16)	Target country openness					-0.72	-0.12	0.09	0.08	0.11	1.00				
(17)	Target country investor protection					-0.26	0.05	0.05	0.09	0.02	0.39	1.00			
(18)	Target value[a]					-0.10	-0.06	0.74	0.04	0.04	0.10	0.03	1.00		
(19)	Team tenure					-0.18	-0.09	0.03	0.03	0.00	0.11	0.20	0.03	1.00	

Notes. [a]Winsorized at the 1st and 99th percentile levels.

acquirer's board has high target country exposure is 31% more likely to announce an acquisition than an acquirer-target dyad where members of the acquirer's board are neither target country nationals nor have recent work experience in the target country. Thus, board target country exposure has a substantive impact on the probability of an acquisition match. The results are consistent when the opportunity space is constructed based on targets' four-digit SIC industry codes. This additional constraint restricts the average number of potential targets to 203 and produces a positive coefficient (b = 0.676) with a confidence interval of [0.041, 1.312] at the 99% significance level. For this narrowed specification of the opportunity space, the probability of an acquisition match is 18% higher when board target country exposure increases from the 25th percentile (0) to the 75th percentile (0.25).

Models 3 and 4 in Table 4.2 present the results of the interaction effects hypothesized in H2a and H2b. Model 3 shows that the coefficient associated with the interaction between board target country exposure and competing acquirer activity (H2a) is positive (b = 1.839) with a confidence interval of [0.025, 3.653] at the 95% significance level. Model 4 in Table 4.2 presents the coefficient associated with the interaction between board target country exposure and prior deals in the target country (H2b), which is negative (b = – 0.723) with a confidence interval of [– 1.158, – 0.287] at the 99% significance level. The signs of the coefficients show that the general effects of the interaction terms on the acquisition match variable are as hypothesized in H2a and H2b: The moderator in Model 3 is associated with an increased probability of an acquisition match, and the moderator in Model 4 is associated with a decreased probability of an acquisition match.

Since we are estimating a nonlinear model, we have to examine the magnitude of the interaction effects to determine whether the underlying hypotheses are supported (Buis, 2010). We compute the implied coefficient for board target country exposure at different values of the moderators based on the full model (Model 5 of Table 4.2). Based on the implied coefficients, we report the marginal effect of the interaction terms on an acquisition match when board target country exposure increases from 0 to 0.286. In Table 4.3, we illustrate typical acquirer-target configurations and present the economic impact of the moderators on the main effect: (a) In case 1, we assume that competing acquirer activity is at the sample median (competing acquirer activity = 0.0858), the focal acquirer has not established operations in the target country (operations in target country = 0) and the potential target is private (target is private = 1). As the variable 'prior deals in the target country' increases by 1 unit – that is, the acquirer has previously acquired in the target country versus it has not – the percentage change in the odds ratio

Table 4.2 Conditional Choice Models for the Relationship between Board Target Country Exposure and Acquisition Match

DV: Acquisition match	(1) Baseline model	(2) H1	(3) H2a	(4) H2b	(5) Full model
Board target country exposure		0.886***	0.571*	1.152***	0.664*
		(0.223)	(0.277)	(0.229)	(0.281)
Board target country exposure × Competing acquirer activity			1.839*		3.310**
			(0.925)		(1.047)
Board target country exposure × Prior deals in target country				-0.723***	-0.911***
				(0.169)	(0.183)
Competing acquirer activity		-3.114***	-4.196***	-2.809***	-4.597***
		(0.731)	(0.931)	(0.728)	(0.948)
Prior deals in target country		0.800***	0.788***	1.303***	1.389***
		(0.133)	(0.134)	(0.172)	(0.173)
Controls					
CEO target country exposure	0.346*	0.133	0.137	0.130	0.139
	(0.172)	(0.179)	(0.180)	(0.177)	(0.178)
Operations in target country	1.060***	0.889***	0.905***	0.771***	0.778***
	(0.130)	(0.136)	(0.136)	(0.140)	(0.139)
Target is private	0.063	0.061	0.056	0.061	0.053
	(0.121)	(0.123)	(0.123)	(0.123)	(0.123)
Target is foreign	-0.728***	0.607	0.310	0.603	0.077
	(0.210)	(0.377)	(0.412)	(0.374)	(0.418)
Geographic distance	-0.000**	-0.000*	-0.000*	-0.000**	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
U.S. target	0.014	-0.052	0.072	-0.190	-0.017
	(0.158)	(0.211)	(0.224)	(0.213)	(0.226)
Chinese target	-1.669***	-1.041**	-0.856*	-1.067**	-0.766*
	(0.348)	(0.367)	(0.377)	(0.369)	(0.377)
Target acquired by domestic firm	-1.755***	-1.737***	-1.749***	-1.738***	-1.754***
	(0.112)	(0.114)	(0.114)	(0.114)	(0.115)
Deal value[a]	0.000***	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Consideration includes cash	0.112	0.118	0.118	0.122	0.126
	(0.094)	(0.094)	(0.094)	(0.094)	(0.095)
Consideration includes stock	-1.025***	-1.009***	-1.000***	-1.014***	-0.999***
	(0.218)	(0.218)	(0.218)	(0.218)	(0.218)
Target country openness	-0.005	-0.007	-0.006	-0.007	-0.005
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Target country investor protection	-0.093*	-0.063	-0.074†	-0.046	-0.060
	(0.039)	(0.040)	(0.041)	(0.040)	(0.041)
Model characteristics					
Number of observations	448,018	447,564	447,564	447,564	447,564
Number of groups	540	536	536	536	536
McFadden's Pseudo R-squared, %	15.64	16.73	16.81	17.04	17.23

Notes. Standard errors in parentheses. *** p<0.001, ** p<0.01, * p<0.05, † p<0.10
[a]Winsorized at the 1st and 99th percentile levels.

decreases from 31.13% to 1.08%. This result indicates a substantive negative moderating effect attributable to the prior deal activity of the acquirer in the target country. (b) In case 2, we present a scenario where the acquirer has not recently acquired in the target country (prior deals in target country = 0) but has established local operations (operations in target country = 1) and attempts to acquire a public target

(target is private = 0). As the variable 'competing acquirers in the target country' increases from 0 (low) to 1 (high), the percentage change in the odds ratio associated with the effect of board target country exposure on acquisition match increases from 20.90% to 211.25%. Both cases provide strong support for the negative moderating effect hypothesized in H2a and the positive moderating effect hypothesized in H2b, respectively.

Table 4.3 Implied Coefficients on Board Target Country Exposure by Typical Moderator Value (based on Model 5 of Table 4.2)

DV: Acquisition match	Implied coefficient	Odds ratio when increasing board target country exposure from 25th to 75th percentile	Percentage change
Prior deals in target country = 0			
Operations in target country = 1			
Target is private = 0			
Competing acquirers in target country = 0	0.664	1.2090	20.90%
Competing acquirers in target country = 1	3.974	3.1127	211.25%
Competing acquirer activity = 0.0858			
Operations in target country = 0			
Target is private = 1			
Prior deals in target country = 0	0.949	1.3113	31.13%
Prior deals in target country = 1	0.038	1.0108	1.08%

Robustness Checks

Models 6–12 in Table 4.4 provide alternative specifications to corroborate the robustness of our main Models 1–5. In Model 6, we test whether the results are affected by target value. Full information on target value was available only for a subset of observations. As expected, the coefficient of our main effect is positive (b = 1.147) with a confidence interval of [0.100, 2.193] at the 99% significance level. This coefficient implies that the substantive effect increases from 31% (based on Model 2) to 39% when controlling for target value. The availability of target value data was better for countries with more active M&A markets, which resulted in less target country variance, explaining why the interaction effect between board target country exposure and competing acquirers in the target country is weakened (b = 1.637) with a confidence interval of [– 1.406, 4.679] at the 95% significance level.

In Model 7 in Table 4.4, we address an important endogeneity concern: Are acquisition decisions the result of outside directors' target country exposure or did the focal acquirer intend to expand to the focal target country and therefore appoint an outside director with relevant experience? We first looked at the descriptive data for the

540 realized acquirer-target dyads that announced an acquisition. The average team tenure of outside directors with target country exposure is 5.15 years in the year of the acquisition announcement, 5.19 years one year preceding the acquisition announcement and 5.21 two years preceding the acquisition announcement. An analysis of variance (ANOVA) shows that the differences between these means are not statistically significant (p = 0.95). Similarly, the average number of outside directors with target country exposure is 2.86 in the year of the acquisition announcement, 2.83 one year preceding the acquisition announcement and 2.82 two years preceding the acquisition announcement. Again, the ANOVA indicates that the differences in these means are not statistically significant (p = 0.97). In Model 7, we formally test whether the probability of an acquisition match increases as the average team tenure of outside directors with target country exposure decreases. We find a negative coefficient (b = – 0.038) with a confidence interval of [– 0.139, 0.062] at the 99% significance level, which shows that the estimated coefficient for team tenure is not significantly different from 0. This finding together with the ANOVA results strengthens our confidence that an acquisition match is not driven by outside directors with target country exposure who have been appointed only recently.

In Models 8 and 9 in Table 4.4, we test different temporal configurations of the opportunity space. The two lagged years in the initial opportunity space (i.e., the two years preceding the focal acquisition announcement) could potentially distort the choice model as acquirers may have not or less actively searched for targets. In Model 8 in Table 4.4, the opportunity space only includes potential targets from dyads for the same year as the focal acquisition announcement. Model 9 extends Model 8 to include the following two years after the focal acquisition announcement. Models 8 and 9 produce estimates that are consistent with the full model (Model 5) and provide strong support that the temporal configuration of the opportunity space does not affect our hypothesized relationships.

In Model 10 in Table 4.4, we restrict the opportunity space to target countries with frequent M&A activity. Of the 191 target countries included in the initial opportunity space, 96.8% of all 447,478 observations involved targets from only 48 target countries. Among the 540 realized acquirer-target dyads, all target firms were located in these 48 countries. Similarly, 97.3% of outside directors had been exposed to one or more of these 48 countries, and only 2.7% of outside directors had been exposed to the remaining 143 target countries. In other words, based purely on the relative representation in the opportunity space and outside directors' biographies, an acquisition match with targets from 75% of the countries is 1) relatively unlikely to occur and 2)

less likely to be affected by board geographic exposure compared with targets from the remaining 25% of countries. In Model 10, we therefore only include potential targets in the opportunity space that are located within the top 25th percentile of target countries in terms of deal activity. As seen from Model 10, the coefficient associated with the main effect is positive ($b = 0.597$) and falls into the confidence interval of [0.044, 1.150] at the 95% significance level. In addition, the results for the interaction effects remain consistent with the full model (Model 5).

Model 11 in Table 4.4 presents a spatial refinement of the opportunity space. With this model, we restrict the opportunity space to potential targets that operate within the same sub-region as the acquired target. We adopt the clustering as proposed by the United Nations Statistics Division (2011), which groups countries into 17 sub-regions (Australia and New Zealand; Central Asia; Eastern Asia; Eastern Europe; Latin America and the Caribbean; Melanesia; Micronesia; Northern Africa; Northern America; Northern Europe; Polynesia; South-eastern Asia; Southern Asia; Southern Europe; Sub-Saharan Africa; Western Asia; and Western Europe), and exclude the separate controls for targets from the U.S. and China. The coefficient for board target country exposure is positive ($b = 1.218$) with a confidence interval of [0.240, 2.196] at the 95% significance level. The implied effect size provides additional support for our theoretical argument: When limiting the acquisition choice to targets in a narrow region, an increase in board target country exposure from the 25th percentile (0) to the 75th percentile (0.8) is associated with a more than two-and-a-half-fold increased probability (+ 165%) of an acquisition match. When confronted with geographically similar acquisition opportunities, outside directors' exposure to a specific target country is associated with a particularly strong inclination to acquire from a more familiar target country. A possible explanation for the increased impact of board geographic exposure in an intra-regional context might be that some competing acquisition motives become less important compared to a cross-regional context. For example, in a cross-regional search context, a Swiss firm with considerable board geographic exposure to Sweden might not acquire a Swedish target simply because it intends to grow market share in China, thereby limiting the effect of board geographic exposure. Conversely, in the intra-regional context, the Swiss acquirer may consider acquisition opportunities within the confines of Northern Europe as more substitutive, making board preferences and biases for a particular target country more salient. Model 11 also shows that in an intra-regional search context, the two interaction terms no longer significantly moderate the main effect, which reflects the limited variance in intra-regional compared to cross-regional target country characteristics.

Table 4.4 Regression Results for Robustness Checks

DV: Acquisition match	(6) Target value	(7) Team tenure	(8) Focal year only	(9) Focal year +2	(10) Top countries	(11) Sub-regions	(12) No financials
Board target country exposure	1.147**	1.123**	0.682*	0.645*	0.597*	1.218*	0.726*
	(0.406)	(0.394)	(0.307)	(0.285)	(0.282)	(0.499)	(0.294)
Board target country exposure × Competing acquirer activity	1.637	1.370	2.417*	3.154**	3.617***	0.169	3.083**
	(1.553)	(1.513)	(1.174)	(1.064)	(1.058)	(0.616)	(1.086)
Board target country exposure × Prior deals in target country	-0.587*	-1.027***	-0.627**	-0.846***	-0.873***	-0.320	-0.966***
	(0.263)	(0.300)	(0.199)	(0.189)	(0.183)	(0.300)	(0.196)
Competing acquirer activity	-3.507**	-3.129*	-5.494***	-4.670***	-4.826***	-1.305***	-4.437***
	(1.183)	(1.461)	(1.104)	(0.974)	(0.954)	(0.352)	(0.982)
Prior deals in target country	1.118***	1.730***	1.322***	1.385***	1.357***	1.041***	1.399***
	(0.256)	(0.324)	(0.187)	(0.179)	(0.172)	(0.292)	(0.187)
Controls							
CEO target country exposure	-0.022	0.112	0.147	0.161	0.137	0.066	0.107
	(0.271)	(0.234)	(0.193)	(0.183)	(0.178)	(0.323)	(0.189)
Operations in target country	0.915***	0.920***	0.807***	0.786***	0.688***	0.644**	0.670***
	(0.190)	(0.276)	(0.149)	(0.141)	(0.138)	(0.200)	(0.150)
Target is private	0.048	0.023	0.068	-0.002	0.056	0.049	0.078
	(0.149)	(0.163)	(0.132)	(0.125)	(0.123)	(0.137)	(0.132)
Target is foreign	0.148	0.503	0.088	0.044	0.004	1.548*	0.060
	(0.603)	(0.533)	(0.460)	(0.422)	(0.419)	(0.742)	(0.442)
Geographic distance	-0.000†	-0.000	-0.000*	-0.000*	-0.000**	-0.000	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
U.S. target	-0.202	-0.102	0.259	0.030	0.067		0.113
	(0.326)	(0.309)	(0.253)	(0.230)	(0.227)		(0.236)
Chinese target	-0.910*	-1.306	-0.548	-0.792*	-0.873*		-0.613
	(0.417)	(0.875)	(0.404)	(0.382)	(0.375)		(0.389)
Target acquired by domestic firm	-1.822***	-1.212***	-1.829***	-1.814***	-1.773***	-1.766***	-1.722***
	(0.160)	(0.136)	(0.123)	(0.118)	(0.115)	(0.127)	(0.122)
Deal value[a]	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Consideration includes cash	-0.028	0.366**	0.213*	0.025	0.122	0.162	0.150
	(0.136)	(0.131)	(0.102)	(0.096)	(0.095)	(0.103)	(0.101)
Consideration includes stock	-0.778**	-1.225***	-0.899***	-0.951***	-0.997***	-1.129***	-1.252***
	(0.244)	(0.283)	(0.224)	(0.220)	(0.218)	(0.233)	(0.252)
Target country openness	-0.016*	-0.015	-0.005	-0.005	-0.008	0.003	-0.005
		(0.012)	(0.006)	(0.005)	(0.005)	(0.009)	(0.006)
Target country investor protection	-0.017	-0.153*	-0.075†	-0.065	-0.084*	0.073	-0.050
	(0.056)	(0.068)	(0.044)	(0.042)	(0.041)	(0.072)	(0.044)
Target value[a]	0.000*						
	(0.000)						
Team tenure		-0.038					
		(0.039)					
Model characteristics							
Number of observations	160,283	105,525	85,776	265,870	435,519	64,477	397,898
Number of groups	277	315	524	535	536	503	475
McFadden's Pseudo R-squared, %	20.08	14.94	22.57	19.12	17.38	12.86	17.25

Notes. Standard errors in parentheses. *** p<0.001, ** p<0.01, * p<0.05, † p<0.10

[a]Winsorized at the 1st and 99th percentile levels.

Finally, in Model 12 in Table 4.4, we present the full model results excluding financial services (SIC 6000–6999). Financial sector companies have different asset structures and are subject to high levels of regulation, which is why they are often excluded from cross-industry studies in the strategy literature. Although our analytical model accounts for firm fixed-effects and we do not seek to explain performance-related outcomes, regulatory constraints in the financial sector may affect acquisition decisions. As seen in Model 10, the exclusion of financial firms produced materially equivalent results to those in the full model (Model 5).

4.6 Discussion

In this study, we examine how board members' biographies shape decisions about acquisition target selection. We proposed that a boards' exposure to a particular country increases the likelihood of selecting an acquisition target from that country. The underlying relationship is statistically significant across different institutional contexts, with an effect size of 31%, which only becomes larger as we test the relationship with more narrowly defined versions of the assumed opportunity space. We proposed that country-specific deal intensity and country-specific acquisition experience are two different types of salience that moderate the underlying relationship. Our empirical findings seem to support our theoretical predictions. This study makes several important contributions. In particular, we add to the M&A literature by providing a behavioral perspective on global M&A patterns, and we contribute to the corporate governance literature by identifying a behavioral bias at the board level that distorts the choice of geographically dispersed strategic opportunities. In the following, we describe our contributions in further detail.

A Behavioral Perspective on Global M&A Patterns

Prior literature has examined the collective patterns of M&A from both temporal and spatial perspectives. While one set of studies focused on the temporal clustering of acquisitions, mimetic forces, and the emergence and implications of M&A waves (Carow et al., 2004; Haleblian, McNamara, Kolev, & Dykes, 2012; Haunschild, 1993; McNamara et al., 2008), another one explored the spatial dimensions of acquisition activity and the attributes of the firms involved. Here, a number of different explanations were brought forward to explain how firms select acquisition targets. One stream of the literature has emphasized certain strategic rationales to explain target selection, such as target productivity and the level of capability development (Kaul & Wu, 2016) or the similarities and complementarity between target and acquirer (Yu et al., 2016). Another

stream of the literature has examined institutional factors that explain the likelihood of acquisitions such as the strength of anti-director rights (Maas, Heugens, & Reus, 2018), the strictness of antitrust laws (Clougherty, 2005) or the general enforcement of laws and regulations (Meyer, Estrin, Bhaumik, & Peng, 2009). A third stream adopted an information economics perspective and highlighted the role of information asymmetries that make it more or less difficult for decision makers to assess the resources and capabilities of the target firm (Capron & Shen, 2007; McCann et al., 2016; Reuer, Tong, Tyler, & Arino, 2013). However, all these perspectives incorporate the implicit assumption of objectivity by suggesting that strategic leaders make the best possible decision depending on the desired resources and capabilities, the institutional conditions in the target country, or the severity of information asymmetries. Complementing these perspectives, our theorizing explicitly elucidates the boundedly rational and subjective nature of target selection and thus offers a behavioral perspective on global M&A patterns. Here, we relate to earlier studies that highlight target selection mechanisms that deviate from quasi-rational decision-making modes, such as geographic proximity (Chakrabarti & Mitchell, 2013), homophily (Rogan & Sorenson, 2014), or vicarious and re-enforcement learning (Baum et al., 2000). However, our study offers a micro perspective of the role of individual decision makers by examining the direct impact of outside directors' innate and acquired dispositions and preferences. One core contribution of this study is that we show that target selection is shaped by the subjective attention patterns and risk perception tendencies of key strategic decision makers.

We are not only moving to a lower level of analysis to establish a more fine-grained link between the attributes of corporate leaders and their strategic choice patterns but also extend the empirical scope of inquiry, aiming for high generalizability of our core mechanism. As summarized in Table 4.5, we complement prior studies that limit their samples either to acquirers from a particular industry (Rogan & Sorenson, 2014; Schildt & Laamanen, 2006), a particular country (Chen et al., 2018), or both (Baum et al., 2000; Chakrabarti & Mitchell, 2013; Kaul & Wu, 2016; Yu et al., 2016) because we purposefully test our predictions in a multi-industry, multi-country setting. Following recent calls to incorporate the complexity associated with cultural and institutional differences (Chen et al., 2018), we construct global opportunity spaces for each realized acquisition event and thus model the choice problems of our sample firms in a more comprehensive manner. The results show that the impact of the geographic exposure of outside directors on target selection holds across different institutional contexts; therefore, we offer a behavioral explanation of corporate transaction patterns that seems to hold on a global scale.

Table 4.5 Comparison of our Sample and Methodology with Other Studies

	Our study	**Chen, Kale & Hoskisson (2018)** *Strategic Management Journal*	**Rogan & Sorenson (2014)** *Administrative Science Quarterly*	**Chakrabarti & Mitchel (2013)** *Organization Science*
Focus	Cross-country, cross-industry	Single country, cross-industry	Cross-country, single industry	Single country, single industry
Dependent variable	*Acquisition match* (0/1)	*Acquisition pairing* (0/1)	*Target firm choice* (0/1)	*Acquisition* (0/1)
Main independent variable	Board target country exposure	Geographic overlap	Common clients	Geographic distance
Type of acquisition	Announced	Completed	Completed	Announced
Time period	2009-2014	1997-2008	1995-2003	1980-2003
Acquirer countries	Europe (Germany, Netherlands, Switzerland, U.K.)	U.S.	Global	U.S.
Target countries	Global (191 countries)	U.S.	Global	U.S.
Acquirer industries	Cross-industry	Cross-industry	Advertising	Chemical manufacturing
Target industries	Cross-industry	Cross-industry	Advertising	Cross-industry
Observations (full model)	448,018	9,499	324	12,421
Sampling strategy	Choice-based	Propensity score matching	Coarsened exact matching	Endogenous stratification
Methodology	Conditional logit regression	Conditional logit regression	Conditional logit regression	Weighted exogenous sampling maximum likelihood estimation

Outside Directors' Behavioral Biases in Strategic Decision Making

Corporate governance research is increasingly developing a strategic perspective on the board, moving beyond and away from the view of the board as a pure monitoring body and acknowledging the role of directors as strategic actors that provide council and advice to the CEO and the wider management team (Boivie et al., 2016; Forbes & Milliken, 1999; Hillman & Dalziel, 2003; McDonald et al., 2008; Pfeffer & Salancik, 1978; Westphal & Fredrickson, 2001). Along this vein, a number of studies have tried to develop a more fine-grained perspective on the decision-making processes in corporate boards (Garg & Eisenhardt, 2017; Hoppmann, Nägele, & Girod, 2018; Tuggle, Schnatterly, & Johnson, 2010; Westphal & Bednar, 2005; Zhu, 2013) to gain more nuanced insights into how corporate boards influence the overarching strategic course of firms or particular strategic decisions. We contribute to this emerging body of

research by examining decision-making patterns that seem to deviate from perfect rationality, thus answering the call for research on behavioral biases in board decision making (Hambrick et al., 2008; Johnson et al., 2013) and contributing to an emerging actor-centric behavioral theory of corporate governance (Westphal & Zajac, 2013). The particular bias we observe indicates that the geographic exposure of board members distorts both the identification and evaluation of potential acquisition targets. While the finance literature has observed similar phenomena among investors at the individual level, a tendency to which they frequently refer to as "home bias" (Coval & Moskowitz, 1999; Graham et al., 2009; Huberman, 2001), this literature has been rather silent on the specific theoretical mechanisms driving this pattern (Lin & Viswanathan, 2016). Here, we aim for more thorough theorizing that is grounded in prior research on selective attention and subjective risk perception. Thus, we offer a view that does not rely on homophily (McPherson, Smith-Lovin, & Cook, 2001; Rogan & Sorenson, 2014) or the explicit belief that target firms from a particular country are superior but rather emphasizes the cognitive, and potentially subconscious, distortions of the decision-making process.

Our study also entails important evidence on the relative importance of board and CEO characteristics in explaining firm strategy. Similar to other studies (Westphal & Fredrickson, 2001), we find that the CEO has a significant impact on our dependent variable, which, however, disappears once we account for the board. These findings highlight the relevant role of the board in strategy formulation and lend support to the assertion that "executive effects on strategy can mask board effects" (Westphal & Fredrickson, 2001). While the literature on top executives, and in particular that on CEOs, is already far more advanced in examining how the innate and acquired characteristics of top managers (Carpenter & Fredrickson, 2001; Kish-Gephart & Campbell, 2015; Zhang & Rajagopalan, 2010), their psychological dispositions (Gamache, McNamara, Mannor, & Johnson, 2015; Malhotra, Reus, Zhu, & Roelofsen, 2017) and attention patterns (Cho & Hambrick, 2006; Eggers & Kaplan, 2009; Nadkarni & Chen, 2014) shape the course of the firm, similar mechanisms might be at play among non-executive board members. Despite the general consensus on the notions that organizations are reflections of their corporate elites (Hambrick & Mason, 1984) and strategic choices emerge from the patterns of organizational attention (Ocasio, 1997) it is not always clear precisely which elites and whose attention needs to be considered.

4.7 References

Amburgey, T. L. & Miner, A. S. 1992. Strategic momentum - The effects of repetitive, positional, and contextual momentum on merger activity. ***Strategic Management Journal***, 13(5): 335-348.

Baum, J. A. C., Li, S. X., & Usher, J. M. 2000. Making the next move: How experiential and vicarious learning shape the locations of chains' acquisitions. ***Administrative Science Quarterly***, 45(4): 766-801.

Baysinger, B. & Hoskisson, R. E. 1990. The Composition of Boards of Directors and Strategic Control - Effects on Corporate-Strategy. ***Academy of Management Review***, 15(1): 72-87.

Berchicci, L., Dowell, G., & King, A. A. 2012. Environmental capabilities and corporate strategy: exploring acquisitions among US manufacturing firms. ***Strategic Management Journal***, 33(9): 1053-1071.

Bettis, R. A. & Prahalad, C. K. 1995. The Dominant Logic - Retrospective and Extension. ***Strategic Management Journal***, 16(1): 5-14.

Boivie, S., Bednar, M. K., Aguilera, R. V., & Andrus, J. L. 2016. Are boards designed to fail? The implausibility of effective board monitoring. ***Academy of Management Annals***, 10(1): 319-407.

Buis, M. L. 2010. Stata tip 87: Interpretation of interactions in nonlinear models. ***The Stata Journal***, 10(2): 305-308.

Capron, L. & Shen, J.-C. 2007. Acquisitions of private vs. public firms: Private information, target selection, and acquirer returns. ***Strategic Management Journal***, 28(9): 891-911.

Carow, K., Heron, R., & Saxton, T. 2004. Do early birds get the returns? An empirical investigation of early-mover advantages in acquisitions. ***Strategic Management Journal***, 25(6): 563-585.

Carpenter, M. A. & Fredrickson, J. W. 2001. Top management teams, global strategic posture, and the moderating role of uncertainty. ***Academy of Management Journal***, 44(3): 533-545.

Carpenter, M. A. & Westphal, J. D. 2001. The Strategic Context of External Network Ties: Examining the Impact of Director Appointments on Board Involvement in Strategic Decision Making. ***Academy of Management Journal***, 44(4): 639-660.

Carpenter, M. A., Geletkanycz, M. A., & Sanders, W. G. 2004. Upper echelons research revisited: Antecedents, elements, and consequences of top management team composition. ***Journal of Management***, 30(6): 749-778.

Chakrabarti, A. & Mitchell, W. 2013. The Persistent Effect of Geographic Distance in Acquisition Target Selection. ***Organization Science***, 24(6): 1805-1826.

Chatterjee, A. & Hambrick, D. C. 2007. It's all about me: Narcissistic chief executive officers and their effects on company strategy and performance. ***Administrative Science Quarterly***, 52(3): 351-386.

Chen, G. L., Crossland, C., & Huang, S. 2016. Female Board Representation and Corporate Acquisition Intensity. ***Strategic Management Journal***, 37(2): 303-313.

Chen, Z., Kale, P., & Hoskisson, R. 2018. Geographic overlap and acquisition pairing. ***Strategic Management Journal***, forthcoming.

Cho, T. S. & Hambrick, D. C. 2006. Attention as the mediator between top management team characteristics and strategic change: The case of airline deregulation. ***Organization Science***, 17(4): 453-469.

Clougherty, J. A. 2005. Antitrust holdup source, cross-national institutional variation, and corporate political strategy implications for domestic mergers in a global context. ***Strategic Management Journal***, 26(8): 769-790.

Coff, R. W. 1999. How buyers cope with uncertainty when acquiring firms in knowledge-intensive industries: Caveat emptor. ***Organization Science***, 10(2): 144-161.

Coval, J. D. & Moskowitz, T. J. 1999. Home bias at home: Local equity preference in domestic portfolios. ***Journal of Finance***, 54(6): 2045-2073.

Cyert, R. & March, J. 1963. ***A Behavoral Theory of the Firm***. Englewood Cliffs, NJ: Prentice-Hall.

Datta, D. K., Pinches, G. E., & Narayanan, V. K. 1992. Factors Influencing Wealth Creation From Mergers and Acquisitions - A Metanalysis. ***Strategic Management Journal***, 13(1): 67-84.

Davis, G. F. 1991. Agents without Principles - The Spread of the Poison Pill through the Intercorporate Network. ***Administrative Science Quarterly***, 36(4): 583-613.

Dearborn, D. C. & Simon, H. A. 1958. Selective Perception - A Note on the Departmental Identifications of Executives. ***Sociometry***, 21(2): 140-144.

Deutsch, Y., Keil, T., & Laamanen, T. 2007. Decision making in acquisitions: The effect of outside directors' compensation on acquisition patterns. ***Journal of Management***, 33(1): 30 - 56.

Diestre, L., Rajagopalan, N., & Dutta, S. 2015. Constraints in Acquiring and Utilizing Director's Experience: An Empirical Study of New Market Entry in the Pharmaceutical Industry. ***Strategic Management Journal***, 36(3): 339-359.

Duhaime, I. M. & Schwenk, C. R. 1985. Conjectures on Cognitive Simplification in Acquisition and Divestment Decision Making. ***Academy of Management Review***, 10(2): 287-295.

Eggers, J. P. & Kaplan, S. 2009. Cognition and Renewal: Comparing CEO and Organizational Effects on Incumbent Adaptation to Technical Change. ***Organization Science***, 20(2): 461-477.

Elsbach, K. D., Barr, P. S., & Hargadon, A. B. 2005. Identifying Situated Cognition in Organizations. ***Organization Science***, 16(4): 422-433.

Forbes, D. P. & Milliken, F. J. 1999. Cognition and corporate governance: Understanding boards of directors as strategic decision-making groups. ***Academy of Management Review***, 24(3): 489-505.

Fuller, K., Netter, J., & Stegemoller, M. 2002. What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions. ***Journal of Finance***, 57(4): 1763-1793.

Gamache, D. L., McNamara, G., Mannor, M. J., & Johnson, R. E. 2015. Motivated to Acquire? The Impact of CEO Regulatory Focus on Firm Acquisitions. ***Academy of Management Journal***, 58(4): 1261-1282.

Garg, S. & Eisenhardt, K. M. 2017. Unpacking the CEO-Board Relationship: How Strategy Making Happens in Entrepreneurial Firms. ***Academy of Management Journal***, 60(5): 1828-1858.

Goranova, M. L., Priem, R. L., Ndofor, H. A., & Trahms, C. A. 2017. Is there a "Dark Side" to Monitoring? Board and Shareholder Monitoring Effects on M&A Performance Extremeness. ***Strategic Management Journal***, 38(11): 2285-2297.

Graham, J. R., Harvey, C. R., & Huang, H. 2009. Investor Competence, Trading Frequency, and Home Bias. ***Management Science***, 55(7): 1094-1106.

Gregoire, D. A., Barr, P. S., & Shepherd, D. A. 2010. Cognitive Processes of Opportunity Recognition: The Role of Structural Alignment. ***Organization Science***, 21(2): 413-431.

Gulati, R. & Westphal, J. D. 1999. Cooperative or Controlling? The Effects of CEO-board Relations and the Content of Interlocks on the Formation of Joint Ventures. ***Administrative Science Quarterly***, 44(3): 473-506.

Haleblian, J., McNamara, G., Kolev, K., & Dykes, B. J. 2012. Exploring firm characteristics that differentiate leaders from followers in industry merger waves: a competitive dynamics perspective. ***Strategic Management Journal***, 33(9): 1037-1052.

Haleblian, J. J., Kim, J. Y. J., & Rajagopalan, N. 2006. The influence of acquisition experience and performance on acquisition behavior: Evidence from the US commercial banking industry. ***Academy of Management Journal***, 49(2): 357-370.

Hambrick, D. C. & Mason, P. A. 1984. Upper Echelons - The Organization as a Reflection of its Top Managers. ***Academy of Management Review***, 9(2): 193-206.

Hambrick, D. C., Werder, A. V., & Zajac, E. J. 2008. New directions in corporate governance research. ***Organization Science***, 19(3): 381-385.

Harford, J. 2005. What drives merger waves? ***Journal of Financial Economics***, 77(3): 529-560.

Haunschild, P. R. 1993. Interorganizational Imitation - The Impact of Interlocks on Corporate Acquisition Activity. ***Administrative Science Quarterly***, 38(4): 564-592.

Haunschild, P. R. 1994. How much is that Company worth - Interorganizational Relationships, Uncertainty, and Acquisition Premiums. ***Administrative Science Quarterly***, 39(3): 391-411.

Haunschild, P. R. & Miner, A. S. 1997. Modes of interorganizational imitation: The effects of outcome salience and uncertainty. ***Administrative Science Quarterly***, 42(3): 472-500.

Haunschild, P. R. & Beckman, C. M. 1998. When do interlocks matter?: Alternate sources of information and interlock influence. ***Administrative Science Quarterly***, 43(4): 815-844.

Haynes, K. T. & Hillman, A. J. 2010. The effect of board capital and CEO power on strategic change. ***Strategic Management Journal***, 31(11): 1145-1163.

Hayward, M. L. A. & Hambrick, D. C. 1997. Explaining the premiums paid for large acquisitions: Evidence of CEO hubris. ***Administrative Science Quarterly***, 42(1): 103-127.

Heath, C. & Tversky, A. 1991. Preference and Belief - Ambiguity and Competence in Choice under Uncertainty. ***Journal of Risk and Uncertainty***, 4(1): 5-28.

Hernandez, E. & Shaver, M. 2018. Network Strategy. ***Administrative Science Quarterly***, forthcoming: 1-32.

Hillman, A. J. & Dalziel, T. 2003. Boards of Directors and Firm Performance: Integrating Agency and Resource Dependence Perspectives. ***Academy of Management Review***, 28(3): 383-396.

Hoppmann, J., Nägele, F., & Girod, B. 2018. Boards as a Source of Inertia: Examining the Internal Challenges and Dynamics of Boards of Directors in Times of Environmental Discontinuities. ***Academy of Management Journal***, forthcoming.

Huberman, G. 2001. Familiarity breeds investment. ***Review of Financial Studies***, 14(3): 659-680.

Institute for Mergers, A. a. A.; Institute for Mergers, Acquisitions and Alliances; https://imaa-institute.org/.

Johnson, S. G., Schnatterly, K., & Hill, A. D. 2013. Board Composition Beyond Independence: Social Capital, Human Capital, and Demographics. ***Journal of Management***, 39(1): 232-262.

Kaul, A. & Wu, B. 2016. A Capabilities-Based Perspective on Target Selection in Acquisitions. ***Strategic Management Journal***, 37(7): 1220-1239.

Kilka, M. & Weber, M. 2000. Home Bias in International Stock Return Expectations. ***Journal of Psychology and Financial Markets*** 1(3-4): 176-192

King, D. R., Dalton, D. R., Daily, C. M., & Covin, J. G. 2004. Meta-analyses of post-acquisition performance: Indications of unidentified moderators. ***Strategic Management Journal***, 25(2): 187-200.

Kish-Gephart, J. J. & Campbell, J. T. 2015. You Don't Forget your Roots: The Influence of CEO Social Class Background on Strategic Risk Taking. ***Academy of Management Journal***, 58(6): 1614-1636.

Kroll, M., Wright, P., Toombs, L., & Leavell, H. 1997. Form of control: A critical determinant of acquisition performance and CEO rewards. ***Strategic Management Journal***, 18(2): 85-96.

Kroll, M., Walters, B. A., & Wright, P. 2008. Board Vigilance, Director Experience, and Corporate Outcomes. ***Strategic Management Journal***, 29(4): 363-382.

Lane, P. J., Cannella, A. A., & Lubatkin, M. H. 1998. Agency problems as antecedents to unrelated mergers and diversification: Amihud and Lev reconsidered. ***Strategic Management Journal***, 19(6): 555-578.

Lin, M. F. & Viswanathan, S. 2016. Home Bias in Online Investments: An Empirical Study of an Online Crowdfunding Market. ***Management Science***, 62(5): 1393-1414.

Maas, A. J. J., Heugens, P., & Reus, T. 2018. Viceroys or Emperors? An Institution-Based Perspective on Merger and Acquisition Prevalence and Shareholder Value. ***Journal of Management Studies***, forthcoming.

Malhotra, S., Reus, T., Zhu, P., & Roelofsen, E. 2017. The Acquisitive Nature of Extraverted CEOs. ***Administrative Science Quarterly***, 63(2): 370 - 408.

March, J. & Simon, H. 1958. ***Organizations***. New York: Wiley.

March, J. G., Sproull, L. S., & Tamuz, M. 1991. Learning from Samples of One or Fewer. ***Organization Science***, 2(1): 1-13.

McCann, B. T., Reuer, J. J., & Lahiri, N. 2016. Agglomeration and the choice between acquisitions and alliances: An information economics perspective. ***Strategic Management Journal***, 37(6): 1085-1106.

McDonald, M. L., Westphal, J. D., & Graebner, M. E. 2008. What do they Know? The Effects of Outside Director Acquisition Experience on Firm Acquisition Performance. ***Strategic Management Journal***, 29(11): 1155-1177.

McFadden, D. S. 1973. Conditional logit analysis of qualitative choice behavior. In P. Zarembka (Ed.), ***Frontiers in econometrics (Economic Theory and Mathematical Economics)***: 105–130. New York, NY: Academic Press.

McNamara, G. M., Haleblian, J., & Dykes, B. J. 2008. The performance implications of participating in an acquisition wave: Early mover advantages, bandwagon effects, and the moderating influence of industry characteristics and acquirer tactics. ***Academy of Management Journal***, 51(1): 113-130.

McPherson, M., Smith-Lovin, L., & Cook, J. M. 2001. Birds of a feather: Homophily in social networks. ***Annual Review of Sociology***, 27: 415-444.

Meyer, K. E., Estrin, S., Bhaumik, S. K., & Peng, M. W. 2009. Institutions, Resources, and Entry Strategies in Emerging Economies. ***Strategic Management Journal***, 30(1): 61-80.

Miletkov, M., Poulsen, A., & Wintoki, B. M. 2017. Foreign independent directors and the quality of legal institutions. ***Journal of International Business Studies***, 48(2): 267-292.

Nadkarni, S. & Chen, J. H. 2014. Bridging Yesterday, Today, and Tomorrow: CEO Temporal Focus, Environmental Dynamism and the Rate of New Product Introduction. ***Academy of Management Journal***, 57(6): 1810-1833.

Ocasio, W. 1997. Towards an attention-based view of the firm. ***Strategic Management Journal***, 18(1): 187-206.

Oehmichen, J., Schrapp, S., & Wolff, M. 2017. Who needs Experts most? Board Industry Expertise and Strategic Change - A Contingency Perspective. ***Strategic Management Journal***, 38(3): 645-656.

Ozmel, U., Reuer, J. J., & Wu, C. W. 2017. Interorganizational Imitation and Acquisitions of High-tech Ventures. ***Strategic Management Journal***, 38(13): 2647-2665.

Pablo, A. L., Sitkin, S. B., & Jemison, D. B. 1996. Acquisition decision-making processes: The central role of risk. ***Journal of Management***, 22(5): 723-746.

Pfeffer, J. & Salancik, G. 1978. ***The External Control of Organizations: A Resource Dependence Perspective***. New York. NY: Harper and Row.

Ragozzino, R. & Reuer, J. J. 2011. Geographic distance and corporate acquisitions: Signals from IPO firms. ***Strategic Management Journal***, 32(8): 876-894.

Reuer, J. J. 2005. Research brief - Avoiding lemons in M&A deals. ***Mit Sloan Management Review***, 46(3): 91-95.

Reuer, J. J., Tong, T. W., Tyler, B. B., & Arino, A. 2013. Executive Preferences for Governance Modes and Exchange Partners : An Information Economics Perspective. ***Strategic Management Journal***, 34(9): 1104-1122.

Rogan, M. & Sorenson, O. 2014. Picking a (Poor) Partner: A Relational Perspective on Acquisitions. ***Administrative Science Quarterly***, 59(2): 301-329.

Rossi, S. & Volpin, P. F. 2004. Cross-country determinants of mergers and acquisitions. ***Journal of Financial Economics***, 74(2): 277-304.

Schildt, H. A. & Laamanen, T. 2006. Who buys whom: information environments and organizational boundary spanning through acquisitions. ***Strategic Organization***, 4(2): 111-133.

Simon, H. 1947. ***Administrative Behavior:A Study of Decision Making Processes in Administrative Organization***. New York: Macmillan.

Sorenson, O. & Stuart, T. E. 2001. Syndication networks and the spatial distribution of venture capital investments. ***American Journal of Sociology***, 106(6): 1546-1588.

Spencer Stuart. 2017. Spencer Stuart board index. Chicago, IL.

Starbuck, W. & Milliken, F. 1988. Executives perceptual filters: What they notice and how they make sense, ***The Executive Effect: Concepts and Methods for Studying Top Managers***. Greenwich: JAI Press.

Tuggle, C. S., Schnatterly, K., & Johnson, R. A. 2010. Attention Patterns in the Boardroom: How Board Composition and Processes Affect Discussion of Entrepreneurial Issues. ***Academy of Management Journal***, 53(3): 550-571.

Tuschke, A., Sanders, W. M. G., & Hernandez, E. 2014. Whose experience matters in the boardroom? The effects of experiential and vicarious learning on emerging market entry. ***Strategic Management Journal***, 35(3): 398-418.

Tversky, A. & Kahneman, D. 1974. Judgement under Uncertainty: Heuristics and Biases. ***Sciences***, 185(4157): 1124–1131.

Walsh, J. P. 1988. Selectivity and Selective Perception - An Investigation of Managers Belief Structures and Information-Processing. ***Academy of Management Journal***, 31(4): 873-896.

Walsh, J. P. 1995. Managerial and Organizational Cognition - Notes from a Trip down Memory Lane. ***Organization Science***, 6(3): 280-321.

Westphal, J. D. & Fredrickson, J. W. 2001. Who Directs Strategic Change? Director Experience, the Selection of New CEOs, and Change in Corporate Strategy. ***Strategic Management Journal***, 22(12): 1113-1137.

Westphal, J. D., Seidel, M. D. L., & Stewart, K. J. 2001. Second-order imitation: Uncovering latent effects of board network ties. ***Administrative Science Quarterly***, 46(4): 717-747.

Westphal, J. D. & Bednar, M. K. 2005. Pluralistic Ignorance in Corporate Boards and Firms' Strategic Persistence in Response to Low Firm Performance. ***Administrative Science Quarterly***, 50(2): 262-298.

Westphal, J. D. & Zajac, E. J. 2013. A Behavioral Theory of Corporate Governance: Explicating the Mechanisms of Socially Situated and Socially Constituted Agency. ***Academy of Management Annals***, 7(1): 607-661.

Xie, E., Reddy, K. S., & Liang, J. 2017. Country-specific determinants of cross-border mergers and acquisitions: A comprehensive review and future research directions. ***Journal of World Business***, 52(2): 127-183.

Yu, Y., Umashankar, N., & Rao, V. R. 2016. Choosing the right target: Relative preferences for resource similarity and complementarity in acquisition choice. ***Strategic Management Journal***, 37(8): 1808-1825.

Zhang, Y. & Rajagopalan, N. 2010. Once an outsider, always an outsider? CEO origin, strategic change, and firm performance. ***Strategic Management Journal***, 31(3): 334-346.

Zhu, D. H. 2013. Group polarization on corporate boards: Theory and evidence on board decisions about acquisition premiums. ***Strategic Management Journal***, 34(7): 800-822.

5 How Board Industry Expertise Origin Affects Strategic Resource Allocation

Abstract

Research has produced inconclusive results about the effect of board industry expertise on the reallocation of strategic resources. We develop the notions of domestic and international industry expertise and theorize that they convey unique human and social capital that shape outside directors' understanding of how strategic actions are linked to organizational outcomes. We test our predictions on a refined interpretation of the strategic change measure that captures distinct patterns in how boards orchestrate the redeployment of strategic resources both for organizational growth and decline scenarios. Based on a panel of large European firms, we find strong support that boards with more domestic industry expertise are associated with strategic resource reallocations that emphasize the primary need of change (*"top-line focus"*) while boards with more international expertise simultaneously reconfigure other resources to avoid losing strengths along with weaknesses (*"bottom-line focus"*). We also find that these distinct strategic preferences deteriorate as the co-working experience among outside directors and the CEO increases. Thus, our study offers a refined view of how board expertise shapes corporate strategy and reconciles previously inconsistent findings of prior studies.

.

Note: A version of this manuscript is available at https://www.alexandria.unisg.ch/255627/.

5.1 Introduction

An increasing portion of research in strategic management and strategic leadership focuses on how corporate boards shape firm strategy (Golden & Zajac, 2001; Greve & Zhang, 2017; Haynes & Hillman, 2010; Kor & Sundaramurthy, 2009; Oehmichen, Schrapp, & Wolff, 2017; Westphal & Bednar, 2005; Westphal, Seidel, & Stewart, 2001; Westphal & Zajac, 1997; Zhang & Greve, 2018; Zhu & Chen, 2015). Drawing on resource dependence theory (Pfeffer & Salancik, 1978), scholars have argued that outside directors' prior experiences reflect knowledge, skills and relationships that may enhance the quality with which boards exercise their primary two functions of monitoring and resource provision (Hillman & Dalziel, 2003) which, in turn, shapes strategic firm outcomes (Diestre, Rajagopalan, & Dutta, 2015; Feldman & Montgomery, 2015; Hillman, 2005; Kroll, Walters, & Wright, 2008; McDonald, Westphal, & Graebner, 2008; Tuschke, Sanders, & Hernandez, 2014). In particular, outside directors' industry expertise, defined as role-specific experience within the industry of a focal firm, has been recognized as a critical resource that influences strategy formulation (Kor & Sundaramurthy, 2009; Oehmichen et al., 2017). However, while some scholars have found that board industry expertise significantly predicts change in how firms reallocate strategic resources (Oehmichen et al., 2017), there is evidence that industry expertise may be associated with less openness to altering opinions and integrating new perspectives when faced with new developments (Almandoz & Tilcsik, 2016; Furr, Cavarretta, & Garg, 2012; Kor, 2003) which has led some scholars to conclude that boards with higher collective industry expertise "are less likely to encourage strategies that differ from those of industry competitors and from historical norms" (Haynes & Hillman, 2010: 1159). Despite the pivotal role of the board as a strategic leadership group (Baysinger & Hoskisson, 1990; Forbes & Milliken, 1999), the effect of industry expertise on how boards allocate strategic resources has thus remained unclear.

We suggest that our understanding of board industry expertise and strategic resource allocation require a more careful conceptualization to reconcile prior findings and fully unpack the effects of industry expertise on firm strategy. In particular, we emphasize the role of the context in the accumulation of industry expertise. Outside directors may gather industry expertise through a variety of forms, such as interlocking directorships, managerial positions, or occupational experience within a focal industry (Haynes & Hillman, 2010). In our study, we distinguish whether outside directors have acquired industry experience within a single country or across multiple country contexts. In doing so, we draw on insights from the comparative corporate governance literature which posits that "corporate governance interrelates with variations in internal and

external strategic resources that shape a firm's interdependence with market, sectoral, regulatory, or institutional environments (Aguilera, Filatotchev, Gospel, & Jackson, 2008: 476). Strategic responses are thus not universalistic but interdependent with the diversity, fluctuations and idiosyncrasies of the broader environment facing the firm (Child, 1997; Scott, 2003). We develop a model that moves beyond the monolithic, context-free conceptualization of industry expertise by accounting for the pervasive influence of the country as a decision context (Doidge, Karolyi, & Stulz, 2007). We build on the idea that the decision context shapes outside directors' understanding of problems, solutions, and how organizational practices are linked to organizational outcomes (Hitt & Tyler, 1991; Sutcliffe & Huber, 1998; Tuggle, Schnatterly, & Johnson, 2010) which, in turn, will affect how boards govern and what advice they will provide to top management. We thus respond to calls in the literature for a better understanding of potentially complementary patterns in industry expertise (Carpenter & Westphal, 2001), and, more explicitly, we answer an important question put forward by Johnson, Schnatterly, and Hill (2013: 253) as a next research frontier: "Does industry-specific expertise vary based on country"?

To reveal the strategic preferences of outside directors with different industry expertise origins, we draw on a refined version of the strategic change construct (Finkelstein & Hambrick, 1990; Oehmichen et al., 2017; Quigley & Hambrick, 2012; Westphal et al., 2001; Zhang & Rajagopalan, 2010). We build on the same set of strategic dimensions that prior research has identified as being indicative of the firm's "fundamental pattern of present and planned resource deployments" (Hofer & Schendel, 1978: 25). However, instead of only considering absolute changes in these dimensions, we account for directionality of change in a firm's strategic resource allocation to obtain a more nuanced reflection of its strategic profile (Geletkanycz & Hambrick, 1997). Specifically, the disaggregation of strategic change allows us to show that resource reallocations both aimed at organizational growth or decline can either be driven by a *bottom-line focus* (e.g., sales increase at a higher rate than expenses; sales decrease at a lower rate than expenses) or by a *top-line focus* (e.g., sales increase at a lower rate than expenses; sales decrease at a higher rate than expenses). We theorize that outside directors who have acquired extensive levels of industry experience across several country contexts have made more diverse experiences with potential benefits and risks of strategic responses to industry-specific opportunities and threats and have consequently developed a more comprehensive view on strategic resource allocation decisions. Based on a sample of European firms and fixed-effects panel models, we find that, consistent with our theoretical prediction, international industry expertise is

associated with the more comprehensive bottom-line focus while domestic industry expertise is associated with the resource allocation profile of a top-line focus.

Drawing on the pervasive question whether strategy is shaped by boards or by the CEO (e.g., Westphal & Fredrickson, 2001; Zhu & Chen, 2015), we also investigate how outside directors' distinct strategic preferences interact with the influence of the CEO on strategic resource allocation profiles. Using the notion of CEO-board tenure overlap (Carroll & Harrison, 1998), we show that the effects of outside directors on strategic resource allocations deteriorate as co-working experience increases. Our findings lend support to the time-variant notion of board expertise (Brown, Anderson, Salas, & Ward, 2017), and provide further explanation for previously inconclusive results on the strength and direction of the relationship between board industry expertise and strategic resource allocation (Haynes & Hillman, 2010; Oehmichen et al., 2017).

We contribute to the strategic management and corporate governance literatures in multiple ways. First, we introduce different types of industry expertise that advance our understanding of how industry experts on boards shape strategic decision processes. We provide support to the notion that single- and multiple-country industry expertise have distinct effects on the firm's strategic resource allocation profile. In doing so, we "clarify the conditions and functional form" of the effect of board industry expertise on firm outcomes (Johnson et al., 2013: 241) and contribute to the board capital literature (Haynes & Hillman, 2010; Hillman & Dalziel, 2003) by deconstructing the 'board capital depth' dimension. As suggested by Hillman and Dalziel (2003), we advance the theoretical development of board capital by thoroughly delineating the effects of one specific type of board expertise (i.e., board industry expertise). Second, by capturing the interactive effects between the board and CEO we further unmask the conditions under which different corporate elites matter most. Third, we offer an alternative operationalization and interpretation of the strategic change construct which, while being closely related to prior approaches, offers new potential to assess the implications of different directions of strategic change. Fourth, with our refined conceptualizations of board industry expertise and strategic change, we theoretically integrate the weak (Haynes & Hillman, 2010) and contradicting (Haynes & Hillman, 2010; Oehmichen et al., 2017) results of previous inquiries into the board industry expertise-strategic resource allocation relationship.

5.2 Background

Board Expertise and Strategic Firm Outcomes

A growing number of studies have demonstrated that boards predict strategic firm outcomes such as mergers and acquisitions (Gulati & Westphal, 1999; Kroll et al., 2008; McDonald et al., 2008), new market entry (Diestre et al., 2015), sales growth (Kor & Sundaramurthy, 2009), executive succession and CEO selection (Tian, Haleblian, & Rajagopalan, 2011; Westphal & Fredrickson, 2001), and strategic change (Carpenter & Westphal, 2001; Golden & Zajac, 2001; Goodstein, Gautam, & Boeker, 1994; Haynes & Hillman, 2010; Oehmichen et al., 2017). A key assumption of recent work is that outside directors' knowledge, skills and experiences are reflective of unique resources and expertise that increase directors' ability to perform critical board functions. As a result, the contribution of outside directors to the board and firm will vary based on their individual biography.

We add to this line of research by developing theory on how the origin of industry expertise held by outside directors may shape how boards perform their two key functions, resource provision and monitoring. To capture the effect of industry expertise on how boards counsel and control top management on strategic decisions, we draw on the integrated view proposed by Hillman and Dalziel (2003). This integrated view builds on resource dependence theory (Pfeffer & Salancik, 1978) and focuses on specific board characteristics as resources or "board capital" to explain the functioning of the board. Scholars have typically referred to the combination of director human and social capital as an effective proxy for directors' capacity to provide benefits to the firm (Haynes & Hillman, 2010; Hillman & Dalziel, 2003).

Human capital is defined as resources in the form "innate and learned abilities, expertise, and knowledge" (Castanias & Helfat, 2001: 662), and social capital is defined as "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit" (Nahapiet & Ghoshal, 1998: 243). The role of human and social capital of boards (Kor & Sundaramurthy, 2009; Oehmichen et al., 2017; Sauerwald, Zhiang, & Peng, 2016; Tian et al., 2011) and, more recently, individual directors (Krause, Semadeni, & Withers, 2016) have received considerable attention. Most prior studies accounted for the interdependent nature of human and social capital (Nahapiet & Ghoshal, 1998) by integrating the theorizing on their effects.

Industry Expertise and Strategic Resource Allocation

Prior literature has emphasized that industry expertise reflects human and social capital-enhancing experiences that increase directors' ability to anticipate, evaluate and respond to industry-specific opportunities, threats and uncertainty, thereby increasing capacity for action to initiate strategic resource reallocations (Haynes & Hillman, 2010; Kor & Misangyi, 2008; Oehmichen et al., 2017). Industry expertise, acquired through interlocking directorships, managerial positions, or occupational experience, therefore informs what is operationally and professionally appropriate and may lead industry experts to develop a specific concept about the optimal allocation of strategic resources (Spender, 1989). However, there is also evidence that industry expertise may promote complacent behavior (Almandoz & Tilcsik, 2016) and that boards may benefit more from heterogeneity in industry expertise (Beckman, Schoonhoven, Kim, & Rottner, 2014; Tuggle et al., 2010; Westphal & Bednar, 2005).

A shared assumption among most researchers who have either emphasized beneficial effects of industry depth (i.e., intra-industry expertise) or the importance of industry breadth (i.e., heterogeneity in industry backgrounds) has been that the mere affiliation with a focal industry is expected to convey a universal understanding about how the industry functions as a whole (Hambrick, Geletkanycz, & Fredrickson, 1993; Spender, 1989). However, there is evidence that directors perceive the same industry differently due to variation in the salience and interpretation of attributes shaping its environment. For example, Sutcliffe and Huber (1998) have examined executives' homogeneity of perceptions along five determinants of the organizational environment (i.e., instability, munificence, complexity, hostility, and controllability). While they found strong congruence in perceptions based on affiliation with a particular firm, there seems to be less consensus in how directors perceive a particular industry. The two sources of inconsistency in how directors frame the industry environment refer to assessments of industry hostility and controllability. Notably, these are the two dimensions that prior research has identified as critical in predicting the propensity (Dutton & Jackson, 1987; Jackson & Dutton, 1988; Johnson, 1992), magnitude (Jackson & Dutton, 1988), and the specific type of change in strategic resource allocations (Thomas, Clark, & Gioia, 1993). These findings suggest that, even within an industry, firms respond differently to industry-specific opportunities and threats based on their sense-making of the industry environment. Consequently, industry experts may experience different strategic responses to the same developments within a focal industry. Prior research has highlighted the importance of these experiential differences for strategic resource allocation decisions because "directors' strategic preferences are

influenced by their beliefs and prior experiences" (Westphal & Fredrickson, 2001: 1131) and "specific types of experience are influential in shaping the orientation of a board toward strategic change" (Golden & Zajac, 2001: 1105).

5.3 Theory and Hypotheses

In theorizing the effects of industry expertise origin on strategic resource reallocation, we build on three key conclusions outlined in the background section: (1) previous industry experience predicts outside directors' ability to detect the need for and initiate strategic resource reallocations (Kor & Misangyi, 2008; Oehmichen et al., 2017), but (2) the specific experiences that individual outside directors make within a focal industry may differ (Sutcliffe & Huber, 1998; Trahms, Ndofor, & Sirmon, 2013), and (3) these experiential differences may lead to variation in the preferred resource allocation profile (Golden & Zajac, 2001; Marcel, Barr, & Duhaime, 2011; Westphal & Fredrickson, 2001). Consequently, we center our theorizing on the assumption that industry expertise may generally strengthen the ability to identify the *need* for strategic resource reallocations, but different industry expertise origins may promote distinct strategic preferences about the appropriate *means*.

Specifically, we distinguish whether outside directors have acquired industry expertise exclusively within the domestic context of a focal firm or if they possess international industry expertise. In general, both forms of industry expertise increase outside directors' familiarity with industry-specific practices, regulatory provisions, technologies, customer preferences, and competitors (Kor & Misangyi, 2008). However, these aspects are likely to differ across countries (Doidge et al., 2007). Specifically, corporate governance and strategic decision making are interrelated with country-specific market, economic, sociopolitical and institutional factors (Aguilera et al., 2008) which form unique country-specific resource environments that promote (or constrain) specific strategic choices based on differences in how firms coordinate, learn, and reconfigure capabilities within their national context (Jackson & Deeg, 2008). In other words, the country context may engender cues about expectations, desired behaviors, and how to construe strategic actions (Sutcliffe & Huber, 1998) based on which outside directors develop different perceptions and interpretations of the environment that, in turn, accentuate the salience of specific strategic actions (Sharma, 2000; Tripsas & Gavetti, 2000).

Since industry experience acquired within a single context is more likely to confer a similar sense-making of the industry environment, fewer strategic options may be salient to respective directors (Trahms et al., 2013). Thus, outside directors with

domestic industry expertise may have accumulated narrower perspectives about how strategic responses are linked to organizational outcomes (Hitt & Tyler, 1991; Sutcliffe & Huber, 1998; Tuggle et al., 2010). While they may be able to detect industry trends and the need for strategic change, they may have been exposed to fewer strategic choices that they can draw on in formulating strategic responses. Therefore, outside directors who have only acquired domestic industry expertise are likely to possess less diverse first-hand experiences and social networks that facilitate the identification, assessment and implementation of different strategic actions. We argue that this dearth of experience influences the perception about how strategic resources may best be orchestrated. Specifically, we hypothesize that outside directors with domestic industry expertise will rather adopt a *top-line focus* in supervising strategic resource reallocations: They are expected to devise decisions focused on the primary need of a focal strategic initiative with less attention being paid to secondary concerns. For example, they may encourage the pursuit of organizational growth initiatives with less focus on cost-related implications (i.e., upper right quadrant in Figure 5.1), or initiatives aimed at organizational decline with less focus on maintaining operational strength (i.e., upper left quadrant in Figure 5.1).

Outside directors who have accumulated experiences across diverse contexts may more fully grasp the complex and ambiguous array of interdependencies associated with specific strategic responses. In a challenging economic environment that in many industries is characterized by global competitiveness, pressures for specialization, low-margins and shorter product-life cycles, international industry expertise may increase exposure to a broader set of strategic responses and their implications. We submit that international industry expertise exposes outside directors to more first-hand experiences about the applicability and effectiveness of unique strategic responses. Additionally, outside directors with international industry expertise may command greater external social capital which provides motivation and opportunity to exchange tacit knowledge about appropriate strategic responses to industry-specific opportunities and threats with knowledgeable individuals outside the domestic industry context (Brown et al., 2017; Tian et al., 2011). In monitoring and counseling top management on resource allocation decisions that deviate from prior strategy, this will be reflected in more critical and comprehensive assessments of individual strategic actions, which we hypothesize will result in a *bottom-line focus*: Outside directors with international industry expertise are likely to draw from a larger repository of knowledge and relationships to guide management towards the comprehensive implications that specific resource reallocations, both aimed at organizational growth and organizational decline, may

have. For example, they may encourage organizational growth initiatives that equally account for cost-related concerns (i.e., lower right quadrant in Figure 5.1), or advise on initiatives aimed at organizational decline while seeking to maintain operational strength (i.e., lower left quadrant in Figure 5.1). That may be achieved by discouraging strategic responses that have been proven ineffective in other contexts, encouraging alternative responses that have been proven effective in other contexts; or advising on the implementation of a focal strategic response to realize potential efficiency gains.

In sum, we expect that industry expertise will generally enhance human and social capital and, in turn, the ability to identify *when* strategic resources should be reallocated, but we hypothesize that the origin of industry expertise may be associated with distinct inclinations about *how* the redeployment should be implemented in order to achieve the strategic goal. While the overall effectiveness of different strategic preferences held by outside directors will eventually depend on the fit with the strategic needs and context of the focal firm, we expect that boards with more domestic industry expertise are associated with strategic resource reallocations that emphasize the primary need of change while boards with more international expertise simultaneously reconfigure other resources to avoid losing strengths along with weaknesses.

Hypothesis 1a: Board domestic industry expertise is associated with top-line focused strategic resource reallocations.
Hypothesis 1b: Board international industry expertise is associated with bottom-line focused strategic resource reallocations.

Industry expertise and CEO-board tenure overlap

Besides their dissimilar experiences, a typical feature of board members is that they initially possess little firm-specific knowledge and co-working experience, and gradually develop shared experiences that add to their individual backgrounds (De Villiers, Naiker, & van Staden, 2011; Kesner, 1988; Krause, Withers, & Semadeni, 2018). Hence, we introduce a contingency to explain how boards coordinate and act on the different experiences possessed by individual members over time. Building on the notion of CEO-tenure overlap, we expect that board cohesion and cooperation will increase over time which will mitigate the strength with which individual experiences manifest in firm-level outcomes (Carroll & Harrison, 1998).

Little co-working experience among outside directors and CEO implies that distinct expertise resides within different individuals. Research on information processing and transactive memory, defined as “group memory system that details the

expertise possessed by group members along with an awareness of who knows what within the group", shows that the distribution of special expertise within a group provides access to information for some members that others may not have (Reagans, Argote, & Brooks, 2005; Rulke & Rau, 2000: 373). Board members and CEOs may initially be more likely to act according to their individual understanding and interpretation of the strategic context facing the firm. At these earlier stages, it may thus be difficult to recognize, share, and coordinate cognitive frameworks and unique expertise that board members have acquired from past experiences (Littlepage, Robison, & Reddington, 1997). For example, Miller, Burke, and Glick (1998) found in their study of top management team cognitive diversity that, contrary to common assumptions, cognitive diversity among executives inhibits comprehensive examinations of current opportunities and threats as well as extensive long-range planning. Diverse and fragmented information are likely to converge over time as directors have more opportunities to express concerns and share tacit knowledge that informs their understanding of the firm and its environment. As Tian et al. (2011: 736) point out, "directors who share long co-working experience are likely to develop a group-level mutual knowledge based on their first-hand understanding of one another's expertise and through the face-to-face interactional dynamics among themselves".

CEOs may play a particularly important role in this context because they may be a valuable conduit of firm-specific information that helps outside directors to put their individual understanding of the "industry recipe" for success (Hambrick et al., 1993; Spender, 1989) into perspective of the unique strategic needs of a focal firm. This may also attenuate social categorization tendencies (Webber & Donahue, 2001) which prior board research has found to impede the effectiveness boardroom discussions about strategy (Tuggle et al., 2010). Collectively, these arguments suggest that longer co-working experience may promote shared assessments among the board and CEO about critical issues facing the firm which may itself constitute a strategic resource of the board that mitigates the effect of individual director expertise (Tian et al., 2011). Accordingly, we formulate our second hypothesis as:

> *Hypothesis 2: The effects of board industry expertise origin on strategic resource allocation profiles disappear when outside directors and the CEO share common experiences.*

5.4 Data and Methods

Sample and Data

Our study examined an initial sample of the 400 largest listed firms headquartered in Germany, the Netherlands, Switzerland and the United Kingdom over six consecutive years from 2009 to 2014. The four countries captured diverse characteristics in their respective institutional and governance arrangements with implications for the specific roles and responsibilities of the board. For example, Switzerland has a comparably weak minority investor protection which compares to strong minority investor protection in the U.K. There is variance in the legal system (e.g., common law in the U.K.; civil law in Germany), mandated co-determination (mandatory in Germany but not in the other sample countries), and the type of prevalent board structures (e.g., two tier board structure in the Netherlands; one tier board structure in the U.K.). Testing our hypotheses against these diverse national contexts raises our confidence of the robustness of our effects. Additionally, our research context is particularly suitable because corporate boards in our four sample countries are more international than boards in other regions of the world (Spencer Stuart, 2017) which allows us to capture sufficient variance in our main independent variables. Moreover, the four countries also present an economically viable context. Over the study period they on average accounted for 22.4% of the world's largest companies outside the U.S. as measured by total revenues in the Fortune Global 500 ranking.

Our sample companies were listed on the primary or secondary stock market and have been identified based on their market capitalization at 2009 year-end. Firms had to meet the following three criteria to be included in the final sample: First, they were classified as large firms based on the European Commission's Union's definition throughout the study period (i.e., they had more than 250 persons employed and an annual revenue of over €50 million) (European Commission Recommendation 2003/361/EC). Second, they had continuous operations throughout the study period and did not become target of an M&A transaction. Third, they were not subsidiaries of another company. The application of the inclusion criteria resulted in a sample of 300 companies. In total, 85 companies were listed in Switzerland, 77 in the United Kingdom, 77 in Germany and 61 in the Netherlands. These firms were active in 58 industries based on their two-digit SIC industry classification. The final sample includes an unbalanced panel with 717 firm-year observations over the 6-year study period. We conducted Kolmogorov-Smirnov two-sample tests to determine whether our final sample differed from the initial sample with respect to our dependent variable (i.e., strategic resource allocation) or other key firm characteristics (i.e., size and performance). The results

showed no statistically significant difference between the two samples in these characteristics, indicating that both samples reflect the same population. We obtained firm data from Thomson Reuters Eikon, Thomson Reuters Datastream and Orbis. Board data were retrieved from the BoardEx database. Missing data were hand-collected from federal sources, firms' investor relation offices and corporate annual or financial reports.

Dependent Variable

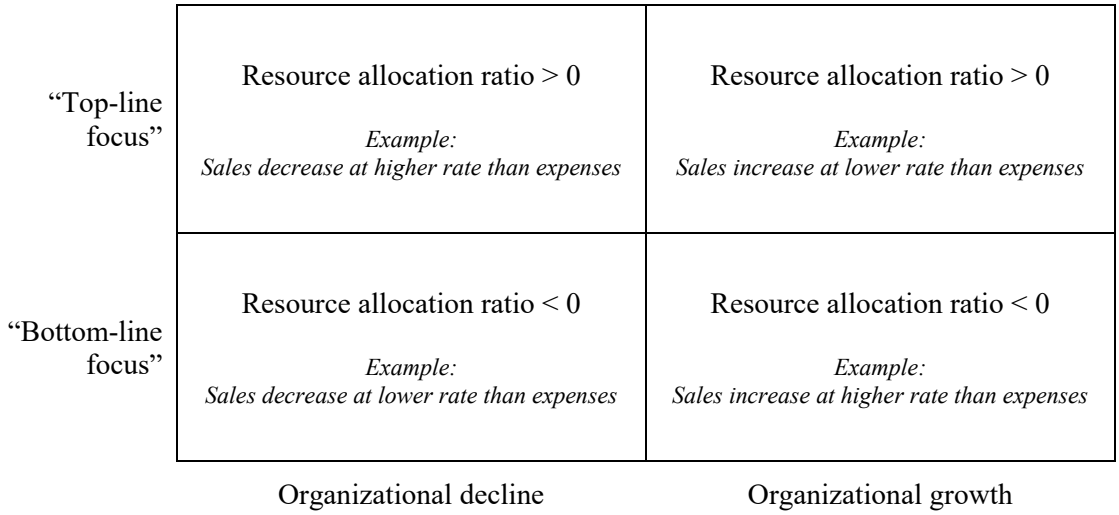
Strategy and strategic resource allocation can be measured in various ways (for an overview see Golden & Zajac, 2001). We followed prior research that used Mintzberg's (1978) conception of strategy as a pattern of actions and calculated *strategic resource allocation* using a composite measure that reflects the firm's strategic resource allocation profile (Finkelstein & Hambrick, 1990; Oehmichen et al., 2017; Quigley & Hambrick, 2012; Westphal et al., 2001; Zhang & Rajagopalan, 2010). In constructing the composite measure, we relied on four ratios, (1) plant and equipment newness (net P&E/gross P&E); (2) nonproductive overhead (selling, general, and administrative expenses/sales); (3) inventory levels (inventories/sales); and (4) financial leverage (total debt/equity). A change in these ratios over time indicates the reallocation of strategic resources. Specifically, we calculated the difference between two subsequent years. To account for industry trends, we subtracted the industry mean. *Strategic resource allocation* was then calculated as the average of the z-scores of the industry-adjusted differences of the four ratios between two subsequent years.[14] Since we did not use the absolute values of z-scores, our strategic resource allocation variable reflects whether a deviation is rather driven by a relative increase (or decrease) in the nominator or the denominator of the four ratios. Specifically, a negative sign of our dependent variable indicates a *bottom-line focus* (e.g., sales increase at a higher rate than expenses; sales decrease at a lower rate than expenses), and a positive sign indicates a *top-line focus* (e.g., sales increase at a lower rate than expenses; sales decrease at a higher rate than expenses. Figure 5.1 summarizes the different manifestations that our dependent variable can adopt. Consistent with prior research, we winsorized strategic resource allocation at the 1% level to alleviate the influence of extreme observations (Crossland, Zyung, Hiller, & Hambrick, 2014).

Independent Variables

We constructed three board industry expertise variables reflecting different types of industry expertise held among outside directors. We followed the approach by Haynes

[14] Using sums yielded estimates that are consistent with the use of averages.

Figure 5.1 Typology of Changes in Strategic Resource Allocation Profiles



and Hillmann (2010) and first identified all directors who (1) held prior positions in for-profit firms within the focal 4-digit *Industry Classification Benchmark* (ICB) code, and (2) maintain current board directorates within the industry.[15] We then measured *industry expertise* as the summed proportions of outside directors with experience in the focal industry either through industry occupation or industry interlocks. As a next step, we identified the country of domicile of each of the companies where directors have held current or past intra-industry positions. *Domestic industry expertise* was then measured as the summed proportion of outside directors with prior industry occupation or current industry interlocks within the home country of a focal firm. *International industry expertise* was measured as the summed proportion of outside directors with prior industry occupation or current interlocks outside the home country of a focal firm. All three industry expertise variables were thus distributed along an index of industry embeddedness between 0 and 2, with higher values indicating a higher degree of embeddedness for the respective type of industry expertise. Cronbach's alpha between domestic and international industry expertise was 0.148, indicating that both variables reflect distinct dimensions of industry expertise.

Moderating Variable

To test Hypothesis 2, we measured *CEO tenure overlap* as pairwise average overlap in team tenure between outside directors and the CEO, using the formula proposed by Carroll and Harrison (1998). Specifically, we used the formula:

[15] In two robustness checks we used the 2-digit and 3-digit ICB codes, respectively. Both tests produced estimates consistent with the 4-digit ICB code.

$$Tenure\ overlap = \frac{1}{N}\sum_{i \neq j} min(u_i, u_j),$$

where u_i is the team tenure of the i^{th} directors in years and N is the number of pairwise comparisons. The adoption of this measure is consistent with prior research that studied board co-working experience (Tian et al., 2011).

Controls

To account for factors that might provide alternative explanations for our dependent variable or confound the effects of board industry expertise, we included 17 control variables at the board, firm, industry, and institutional level.

At the board level, we measured *board size* as the natural logarithm of number of outside directors sitting on the board of a focal company. Board size may affect the collective knowledge available at the board and the quality of interactions among outside directors, thereby potentially influencing how boards strategize (Dalton, Daily, Ellstrand, & Johnson, 1998). We further controlled for board independence as it may influence the board's effectiveness to exercise its key responsibilities (Hillman & Dalziel, 2003; Peng, 2004). *Board independence* was measured as the proportion of outside directors that have been reported independent in the respective firm's proxy statements. Furthermore, research has shown that external information-processing demands may restrict the extent to which outside directors utilize their expertise in a focal firm (Khanna, Jones, & Boivie, 2014; Kor & Sundaramurthy, 2009). We approximated external demands by calculating the average number of board memberships currently held outside the focal firm with our *board busyness* variable. Since we hypothesized a potential influence of domestic vs. international industry expertise in our main effects, we also proxied the overall internationality of the board. We used the Blau (1977) index to compute *board nationality diversity* among all outside directors of a focal board. Additionally, although there is conflicting evidence regarding the magnitude and direction, prior research has found that CEO succession may be an important adaptive event that shapes strategic resource allocation (Quigley & Hambrick, 2012). We therefore measured *CEO succession* as a dummy variable that took the value 1 when a CEO succession event took place in the respective year and 0 otherwise. The same logic was applied to capture potential effects of a *chair succession* event.

At the firm level, we controlled for prior firm performance. We used Tobin's Q, calculated as the market value divided by the book value of assets, to measure *prior firm performance*. We accounted for the presence of extreme outliers in the Tobin's Q measure by winsorizing the variable at the 1st and 99th percentile levels. We used a

market-based instead of an accounting-based measure because it less reliant on short-term financial performance and reflects external expectations that may inform board behavior (He & Huang, 2011; Keats & Hitt, 1988).[16] We included *firm size* as the natural log of annual gross sales to capture possible size effects that may affect board decision making (Finkelstein & Hambrick, 1996). Furthermore, we captured firm internationalization as a potential channel of information and networks, thereby possibly substituting the importance of outside directors' international industry expertise. *Firm internationalization* was measured as foreign sales as a percentage of total sales. We also controlled for financial leverage as a reflection of obligations to debt holders which may affect strategic initiatives pursued by the firm (Jensen, 1986). We measured financial *leverage* as long-term debt divided by total assets. Additionally, because a board's contribution to strategy may be affected by decision uncertainty and the predictability of the firm's operating environment (Almandoz & Tilcsik, 2016), we controlled for firm *risk* as the coefficient of the variation of the three-year return on equity. Finally, we included one-year *sales growth* which has been found to be an important predictor of strategic firm outcomes (e.g., Brush, Bromiley, & Hendrickx, 2000).

At the industry level, we controlled for key characteristics of the industry environment. Although our dependent variable accounts for resource allocation trends within a focal industry, we aimed at capturing additional indicators that reflect environmental conditions. Specifically, we used *industry munificence* as an indication of resource abundancy within a focal industry, *industry dynamism* as an indication of industry instability or volatility and *industry complexity* as an indication of the heterogeneity in the environment and concentration of resources (Dess & Beard, 1984). We computed the logarithm of cumulative net sales within each industry over the previous five-year period, including the focal year. We then regressed net sales on the previous five years (Boyd, 1995; Keats & Hitt, 1988). We exponentiated the slope and respective standards errors from this regression equation in order to obtain our measure for *industry munificence* and *industry dynamism*, respectively. We used the squared sum of each firm's market share within their industry as our measure for *environmental complexity* which adopted values between zero and one. Values closer to zero reflected a larger dispersion within the focal industry which is indicative of higher complexity. Similar to previous research, we standardized all industry measures across the full sample to facilitate interpretation (Krause et al., 2018).

[16] Despite our theoretical reasoning, our results remained robust when using return on assets as an alternative, accounting-based measure to measure prior firm performance.

We also included institutional controls following prior research that has emphasized the importance of the institutional environment for the relationship between board expertise and strategic change (Oehmichen et al., 2017). Specifically, this research found that institutions may provide means of regulatory safeguards and convey information which may reduce the extent to which board industry expertise manifests in strategic resource allocation. We constructed *institutional diversity* by identifying for each firm the strength and quality of the formal institutional environment it has been exposed to across home and host markets. We used three steps to compute the variable: First, we used the approach proposed by Holmes, Miller, Hitt, and Salmador (2013) to develop a comprehensive set of indicators that reflect each country's institutional environment. Second, we collected information on the number and location of undertakings, including consolidated group companies, affiliated companies and investments in joint ventures of our sample companies for each year during our study period to determine a focal firm's exposure to individual countries. Third, we used the approach outlined by Arregle, Miller, Hitt, and Beamish (2016) and computed bias-corrected weighted mean Euclidean distances, representing the institutional diversity facing a focal firm across the markets where it operates.

Statistical analysis

We employ a fixed-effects panel regression to analyze the data. We adopt a fixed-effects model because our theoretical constructs and relationships build on a within-firm interpretation (Certo, Withers, & Semadeni, 2017). Specifically, our hypothesized main effects suggest that an increase in a focal type of board industry expertise will be associated with strategic resource allocation relative to the previous level of strategic resource allocation within a firm.[17] Fixed-effects estimators are not without limitations. Fixed-effects models (1) consider the panel-level error term to be time-invariant which may be an unrealistic assumption and (2) estimate the panel-level error term with dummy variables which leads to a loss in degrees of freedom (Certo & Semadeni, 2006). However, fixed-effects models significantly alleviate potential endogeneity of explanatory variables (Sun, Hu, & Hillman, 2016; Wooldridge, 2002). In contrast to random-effects models, fixed-effects models allow to control for all factors that vary across firms but not over time, and those that vary over time but are constant across firms, thus controlling for unobserved firm and year effects (Allison, 2009). The Hausman test for orthogonality of random effects yielded a significant result, rejecting

[17] A between-firm interpretation of our main effect would suggest that firms with more board industry expertise will engage in more strategic resource reallocations than firms with less board industry expertise.

the null hypothesis that the estimated panel-level error term was uncorrelated with independent variables. Since fixed-effects models are not restricted by this assumption they were identified as the preferable estimation technique (Greene, 2008). We used heteroscedasticity-consistent Huber-White standard errors to mitigate concerns that the variances of the error terms are not equal. To be conservative, all significance tests are two-tailed. Finally, we lagged all independent, moderating, and control variables by one year to further mitigate potential endogeneity.

5.5 Results

Table 5.1 presents descriptive statistics and pairwise correlations. Not surprisingly, both domestic and international industry expertise are positively and significantly correlated with industry expertise. While the correlation between domestic and international industry expertise is negative, it is only marginally significant and small in magnitude ($b = – 0.04$, $p = 0.09$), indicating that outside directors with different types of industry expertise do not merely represent different companies in our sample.[18] Table 5.1 also reveals that outside directors with more international industry expertise are associated with (1) larger, more successful and more international companies, (2) larger and more international boards, (3) higher levels of board independence but also (4) higher levels of busyness. Variance inflation factors suggest that multicollinearity is not a concern with all variables being less than 2.4 and at an average of 1.4, thereby well below the generally accepted limit of 10 (Cohen, Cohen, West, & Aiken, 2003).

Table 5.2 presents the models of our fixed-effects regression. Model 1 provides the regression results with all controls and the base effect of overall industry expertise. The estimated coefficient of industry expertise (irrespective of origin) is positive ($b = 0.014$) with a confidence interval of [0.003, 0.025] at the 95% significance level which is consistent with prior research (Golden & Zajac, 2001; Oehmichen et al., 2017). Hypotheses 1a and 1b predict that the origin of industry expertise will affect the direction of change in our dependent variable. Model 2 shows that domestic industry expertise is positive ($b = 0.031$) with a confidence interval of [0.011, 0.051] at the 95% significance level, and international industry expertise is negative ($b = – 0.032$) with a confidence interval of [– 0.056, – 0.006] at the 95% significance level. Both findings thus provide strong support for Hypotheses 1a and 1b.

[18] Across our 717 board-year observations, 69% of boards had any form of industry expertise, 41% had domestic industry expertise, and 46% had international industry experience. The 10 most prevalent countries (excluding our sample countries) where outside directors had acquired international industry expertise were the U.S., France, Belgium, China (incl. Hong Kong), South Africa, Canada, Sweden, India, Australia, and Italy.

Table 5.1 Descriptive Statistics

	Variable	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1)	Strategic resource allocation[a]	0.00	0.02	1.00										
(2)	Industry expertise	0.30	0.36	0.04	1.00									
(3)	Domestic industry expertise	0.11	0.16	0.02	0.57***	1.00								
(4)	International industry expertise	0.13	0.23	–0.00	0.62***	–0.04†	1.00							
(5)	Board size	7.30	2.30	0.02	–0.03	–0.15***	0.13***	1.00						
(6)	Board independence	0.33	0.32	–0.04	0.08*	–0.17***	0.29***	0.12***	1.00					
(7)	Board busyness	2.25	0.69	–0.04	0.22***	0.06	0.29***	0.33***	0.23***	1.00				
(8)	Nationality diversity	0.45	0.30	0.03	0.18***	–0.16***	0.39***	0.28***	0.39***	0.29***	1.00			
(9)	Chair succession	0.13	0.33	0.03	–0.03	–0.02	0.03	–0.04	0.05	–0.03	0.01	1.00		
(10)	CEO succession	0.13	0.34	0.01	–0.03	–0.04	0.01	0.08*	0.03	0.01	0.00	0.20***	1.00	
(11)	CEO–board tenure overlap	0.52	0.29	0.04	0.05	0.07*	–0.07*	–0.07†	–0.10**	0.02	–0.09*	–0.20***	–0.47***	1.00
(12)	Prior performance[a]	2.90	2.67	–0.01	0.18***	0.06	0.15***	–0.15***	0.10**	0.00	0.08*	–0.07†	–0.06	0.01
(13)	Firm size	4.34	0.65	0.00	–0.04	–0.07†	0.02	0.64***	0.15***	0.51***	0.26***	–0.01	0.04	0.01
(14)	Firm internationalization	0.74	0.25	0.01	0.03	–0.10**	0.18***	0.06	0.30***	0.15***	0.32***	–0.02	–0.06	0.09*
(15)	Leverage	0.18	0.11	0.09*	0.08*	–0.04	0.01	0.13***	0.09*	0.11**	0.11**	–0.01	–0.02	–0.01
(16)	Risk	1.12	12.52	0.01	0.04	0.08*	0.01	–0.03	–0.03	–0.05	0.04	0.02	0.00	0.00
(17)	Sales growth	0.02	0.18	–0.24***	0.02	0.10**	0.01	–0.02	0.01	0.02	0.02	0.00	–0.05	0.04
(18)	Industry munificence	–0.04	0.88	0.03	–0.01	0.02	–0.10**	–0.02	–0.07†	–0.12**	–0.03	–0.05	0.01	–0.02
(19)	Industry dynamism	–0.14	0.82	–0.03	–0.01	–0.03	0.06	–0.03	0.09*	0.01	0.06	0.02	0.03	–0.02
(20)	Industry complexity	0.04	1.00	0.03	–0.07†	–0.06†	0.02	–0.06†	–0.02	–0.09*	0.04	–0.04	0.05	–0.04
(21)	Institutional diversity	0.10	0.10	–0.01	–0.03	–0.02	–0.04	–0.11**	0.09*	–0.18***	–0.09*	0.00	0.05	–0.18***
	Variable	**Mean**	**SD**	**(12)**	**(13)**	**(14)**	**(15)**	**(16)**	**(17)**	**(18)**	**(19)**	**(20)**	**(21)**	
(12)	Prior performance[a]			1.00										
(13)	Firm size			–0.17***	1.00									
(14)	Firm internationalization			–0.11**	0.11**	1.00								
(15)	Leverage			0.16***	0.12***	–0.11**	1.00							
(16)	Risk			–0.02	–0.07†	0.04	–0.02	1.00						
(17)	Sales growth			0.10*	0.01	0.02	–0.07†	0.04	1.00					
(18)	Industry munificence			–0.09*	–0.02	0.05	0.16***	–0.01	0.05	1.00				
(19)	Industry dynamism			–0.08*	–0.03	0.04	0.06	0.03	–0.13***	0.20***	1.00			
(20)	Industry complexity			0.05	–0.07†	–0.03	–0.06	0.04	–0.02	0.10**	0.39***	1.00		
(21)	Institutional diversity			0.06	–0.30***	–0.38***	0.10**	–0.03	–0.05	0.01	–0.04	0.00	1.00	

Notes. [a]Winsorized at the 1st and 99th percentile levels.
*** p<0.001, ** p<0.01, * p<0.05, † p<0.10.

Table 5.2 Fixed-effects Regression Predicting Strategic Resource Allocation

	Full sample		Low overlap	High overlap
Variables	**Model 1**	**Model 2**	**Model 3**	**Model 4**
Industry expertise	0.014*			
	(0.005)			
Domestic industry expertise		0.031**	0.041**	0.016
		(0.010)	(0.013)	(0.025)
International industry expertise		–0.032*	–0.034*	0.026
		(0.012)	(0.015)	(0.036)
Board size	–0.001	–0.001	–0.002	0.002
	(0.001)	(0.001)	(0.002)	(0.002)
Board independence	–0.006	–0.004	–0.028	0.015
	(0.016)	(0.016)	(0.031)	(0.013)
Board busyness	–0.004	–0.004	–0.008	0.004
	(0.004)	(0.004)	(0.005)	(0.007)
Board nationality diversity	0.016*	0.024**	0.021†	0.030†
	(0.008)	(0.008)	(0.011)	(0.017)
Chair succession	0.003	0.004	0.009*	–0.005†
	(0.003)	(0.003)	(0.004)	(0.003)
CEO succession	0.003	0.003	0.002	0.000
	(0.003)	(0.003)	(0.004)	(0.007)
CEO–board tenure overlap	0.009	0.009		
	(0.006)	(0.006)		
Prior performance[a]	0.002**	0.002**	0.003*	0.002***
	(0.001)	(0.001)	(0.001)	(0.001)
Firm size	0.014	0.018	0.009	0.026
	(0.011)	(0.012)	(0.013)	(0.042)
Firm internationalization	0.017	0.018	–0.017	0.047*
	(0.019)	(0.019)	(0.056)	(0.021)
Leverage	0.161***	0.158***	0.195***	0.228***
	(0.020)	(0.020)	(0.021)	(0.035)
Risk	–0.000	–0.000	0.000	–0.001
	(0.000)	(0.000)	(0.000)	(0.001)
Sales growth	–0.031***	–0.032***	–0.019*	–0.039*
	(0.009)	(0.009)	(0.008)	(0.015)
Industry munificence	0.001	0.000	0.005†	–0.001
	(0.001)	(0.002)	(0.003)	(0.002)
Industry dynamism	–0.000	–0.001	–0.000	0.003
	(0.001)	(0.001)	(0.001)	(0.005)
Industry complexity	–0.019	–0.015	–0.051†	–0.003
	(0.027)	(0.027)	(0.027)	(0.043)
Institutional diversity	–0.012	–0.019	–0.021	–0.113†
	(0.025)	(0.024)	(0.026)	(0.059)
Constant	–0.107*	–0.125*	–0.024	–0.231
	(0.050)	(0.055)	(0.074)	(0.179)

Table 5.2 (continued)

	Full sample		Low overlap	High overlap
Variables	**Model 1**	**Model 2**	**Model 3**	**Model 4**
Adjusted R–squared (within), %	23.5	24.1	28.4	32.7
Δ R–squared[b]		0.6	4.9	9.2
F–statistic	8.40***	9.13***	11.19***	7.69***
Observations	717	717	359	358

Notes. Robust standard errors in parentheses. *** p<0.001, ** p<0.01, * p<0.05, † p<0.10.
[a]Winsorized at the 1st and 99th percentile levels.
[b]Relative to Model 1.

Model 3 and Model 4 present the results of hypothesis testing for Hypothesis 2; that is, the effects of domestic and international board industry expertise on strategic resource allocation depending on the contingency of CEO-board tenure overlap. To test these effects, we divided the sample into two subsamples (low and high CEO-board tenure overlap) based on whether the contingency variable was below or above the median in our sample. Hypothesis 2 predicts that in firms with less CEO-board tenure overlap, the underlying main effects between strategic preferences reflected in the origin of industry expertise and strategic resource allocation will increase while these effects will disappear when CEO-board tenure overlap is high. As shown in Model 3, the distinct effects of domestic and international board industry expertise are highest under conditions of low CEO-board tenure overlap. Specifically, the coefficient for domestic industry expertise is positive ($b = 0.041$) with a confidence interval of [0.014, 0.068] at the 95% significance level and the coefficient for international industry expertise is negative ($b = -0.034$) with a confidence interval of [–0.063, – 0.005] at the 95% significance level. Model 4 shows that the origin of board industry expertise does not predict strategic resource allocation under conditions of high CEO-board tenure overlap. Hypothesis 2 thus receives strong support. Moreover, the differences in the adjusted R-squared measures between Models 3 and 1 and Models 4 and 1 indicate substantial improvements in the model fit. Further, the F-statistic is highest for Model 3 and lowest for Model 4, reflecting that the overall significance of the relationships between the explanatory variables and our dependent variable are strongest in the former and weakest in the latter model.

To assess the substantive effect of our findings, we computed the effect sizes of an increase from low (1 s.d. below the mean) to high (1 s.d. above mean) levels of domestic and international industry expertise, respectively. Ceteris paribus, the strategic resource allocation is predicted to increase by 1.3 percentage points as domestic industry expertise increases from 1 standard deviation below to 1 standard deviation above the

mean, and to decrease by 1.7 percentage points for a respective change in the international industry expertise variable. To better illustrate the implication of this effect size we use the example of the inventory levels (inventories/sales) component of the strategic resource allocation measure. The sample median for this ratio is 0.12 and median inventory levels are $1.2 billion resulting in median sales of $9.8 billion. Holding all variables constant and setting inventory levels to $1.2 billion, firms with boards who have more domestic industry expertise generate sales of $8.8 billion, which compares to $11.4 billion in sales for firms whose boards have more international industry expertise; an increase in sales of about 30%. Conversely, holding all variables and sales at $9.8 billion constant shows that firms with high domestic board industry expertise require $1.3 billion in inventories to generate these sales compared with $1.0 billion for firms whose boards have high international industry expertise. These examples show that the effects of different board industry expertise origins are not only statistically significant but also substantive in their magnitude. We elaborate on performance and other implications in the discussion section.

Our findings remained robust when we replicated our regressions (1) with different aggregations (i.e., sums) and combinations of the four strategic resource allocations components, (2) with individual components of the strategic resource allocation measure, (3) with different industry operationalizations of our main independent variables (i.e., based on 2-digit and 3-digit ICB codes), or (4) with return on assets instead of Tobin's Q as a measure of prior firm performance. To corroborate whether the interaction effect was driven by CEO-board tenure overlap and not by other forms of tenure, we recalculated our models using average board tenure and tenure overlap among outside directors only. In both cases, we obtained significant results that are consistent with our main models, albeit at lower significance levels and with smaller effect sizes. That emphasizes our initial theoretical prediction regarding the important influence of the CEO on strategic resource allocation profiles. Finally, we examined possible country and regional effects of the locations where outside directors have acquired international industry expertise. Specifically, we tested whether strategic resource allocation profiles are determined (1) by industry expertise in one of the large world economies (i.e., U.S. or China), or (2) by industry expertise in any of the 17 sub-regions proposed by the United States Statistics Division (2011). We were not able to relate country- or region-specific industry expertise to a distinct resource allocation profile, indicating that it is indeed outside directors' collective domestic vs. international industry expertise that drives the effects on strategic resource allocation.

5.6 Discussion

Building on resource dependence theory, we posit and find that the origin of industry expertise is associated with strategic preferences that manifest in distinct strategic resource allocation profiles. In particular, we predict that the specific human and social capital acquired through international industry expertise result in bottom-line focused change whereas the knowledge, skills and networks acquired through domestic industry expertise promote top-line focused change. Additionally, we propose that co-working experience among the CEO and board attenuates the effect of outside directors' strategic preferences on strategic resource reallocations. We find empirical support for our theoretical predictions. Our study makes both theoretical and phenomenological contributions by clarifying the conditions and functional forms of different types of board industry expertise, adding to our understanding about the relative influence of the board and the CEO on strategy, offering an alternative operationalization and interpretation of the strategic change construct, and reconciling previously inconsistent findings on the relationship between board expertise and change in strategic resource allocation profiles.

First, our study shows that the monolithic, context-free understanding of industry expertise requires refinement. While prior studies have assumed that industry expertise conveys a generic sense about how the industry functions as a whole, our study suggests that it may reflect different experiences which have idiosyncratic effects on outside directors' strategic preferences. We contribute to the literature that has shown that the same experiential measure may have unique implications when accounting for additional characteristics that interrelate with a focal experience (Hillman, Nicholson, & Shropshire, 2008; Zhu & Westphal, 2014). Specifically, we find strong support that industry expertise origin may inform how outside directors assess and pursue strategic actions. As such, we respond to prior calls to explore whether industry expertise may vary based on country (Johnson et al., 2013), which we find does indeed seem to be the case. In that regard, our results mirror research in the domain of comparative corporate governance that has highlighted the importance of the country context for how boards govern (e.g., Aguilera et al., 2008; Aguilera & Jackson, 2003, 2010). Few, if any, studies have explored how these country differences may affect outside directors' experiences and, subsequently, impact strategic outcomes in firms on whose boards they serve. The importance of context in which experiences have been acquired have implications for our understanding of human and social capital. While prior studies have highlighted conditions that enhance or deteriorate both forms of capital, our findings imply that a quantitative enhancement can be associated with qualitative differences and, in turn,

different strategic implications for the firm. The possibility that heterogeneity may reside within what is seemingly an identical attribute shared by board members (i.e., industry expertise) opens new perspectives on studying group-level processes. For example, Almandoz and Tilcsik (2016) have shown that the representation of industry experts may lead boards to succumb to overconfidence and complacency due to a lack of diverse perspectives. Our findings imply that industry expertise may not be a sufficient attribute to infer a shared cognitive frameworks among outside directors when it comes to evaluating and responding to strategic challenges. We encourage future research to account for that possibility because it may affect the appropriate theoretical reasoning of why certain board compositions may be associated with specific outcomes. More generally, future research on board expertise may more systematically examine variations within seemingly similar types of experiences to better understand how boards exercise their monitoring and resource provision roles.

Second, we contribute to the long-contested question which corporate elites shape strategy (Carpenter, Pollock, & Leary, 2003; Golden & Zajac, 2001; Westphal et al., 2001; Zhu & Chen, 2015). We find support for the idea that strategic preferences among outside directors, and between the board and the CEO, appear to converge over time. While this may also be a reflection of the relative power between the board and CEO (e.g., Golden & Zajac, 2001; Haynes & Hillman, 2010; Sauerwald et al., 2016; Zhu & Chen, 2015), it lends support a recent finding that the effects of director expertise appear to be time-variant (Brown et al., 2017). That has important implications both for theory and for practice. Baysinger and Hoskisson (1990: 72) have argued that "astute CEOs learn what the dispositions of the board are, conduct themselves in a manner compatible with these dispositions, and, thus, initiate and implement decisions that comport with the board's concept of strategy". However, it appears that these dispositions are neither consistent among board members nor are they stable over time. Despite recent advances (Garg & Eisenhardt, 2017), research on the CEO-board relationship is still nascent and we encourage future research to unpack more thoroughly the mechanisms that shape this important relationship. More generally, this would also contribute to our understanding about how information flows within the boardroom and how boards and CEOs jointly shape the strategy of the firm.

Third, by allowing for directionality in the strategic change measure, we reveal two distinct strategic resource allocation profiles. While being closely related to prior approaches, we look more carefully into how relative changes in the underlying ratio can be interpreted. We find that the origin of industry expertise appears to be associated with different choices about the redeployment of strategic resources. Our findings seem

to challenge the existence of generic "industry recipes" (Hambrick et al., 1993; Spender, 1989) which we attribute to the fact that corporate elites make sense of the industry environment in different ways based on the context in which they have experienced it (Sutcliffe & Huber, 1998). Prior research has found that found industry characteristics produce only small effect sizes on reconfigurations in the deployment of strategic resources and our results may elucidate an important mechanism that explains these findings (Hitt & Tyler, 1991). The novelty of our findings may in part be due to the fact that prior empirical work on board expertise has been primarily based on U.S. samples. Since U.S. boards tend to be less international than European boards (Spencer Stuart, 2017), researchers may not have been able to isolate the cross-country effects that our study reveal. Our findings therefore substantiate prior calls to introduce new research contexts to board research (Johnson et al., 2013). Furthermore, despite offering a conceptual and empirical refinement of the strategic change measure, we cannot infer performance effects. Prior research has typically emphasized normative interpretations where less strategic change is characterized as "inertial and imitative", and more strategic change indicates "novelty", "quantum changes", and "distinctiveness" (Crossland et al., 2014: 653). Our findings are consistent with that notion in that for each type of industry expertise we test in our models we find a significant association with strategic change (irrespective of directionality). That seems to lend support to the general idea that industry expertise increases the capacity for action (Kor & Sundaramurthy, 2009; Oehmichen et al., 2017). Although the introduction of directionality has allowed us to identify different strategic preferences held by outside directors based on the origin of their industry expertise, those do not allow for conclusions about which preferences are most effective. As Oehmichen et al. (2017: 654) note, "the empirical conceptualization of strategic change does not address whether change is appropriate in a given situation or whether the change is undertaken in the correct direction". Depending on the specific situation of the firm, different strategic resource allocation profiles may be more or less successful (Venkatraman & Prescott, 1990). Although the *bottom-line focus* discussed in our study may intuitively promise to be more successful than a *top-line focus*, various scenarios are conceivable where the firm may temporarily benefit from the latter (e.g., corporate transformations, policy changes, exogenous shocks). Hence, future research may be warranted to explore in greater depth how board industry expertise affects the quality, and not only change in, strategy.

Finally, we reconcile prior findings on the relationship between board industry expertise and strategic resource allocation profiles (Haynes & Hillman, 2010;

Oehmichen et al., 2017). We have shown that the effects of industry expertise are best observable when accounting for the origin of industry expertise, the co-working experience between the board and CEO, and directionality in strategic change. This may explain why earlier studies that did not account for these subtler features have produced inconsistent results. In that regard, our study points to the inherently contingent nature of relationship between board expertise and firm outcomes. Future research may explore additional contingencies that may affect this important relationship, such as the role of the top management team, individual behavioral tendencies of outside directors, or the broader fit between outside directors' industry expertise and the strategic needs of the firm. Those studies could make important contributions to our understanding about how boards strategize and why an apparently similar board composition may result in different outcomes.

5.7 References

Aguilera, R. V. & Jackson, G. 2003. The cross-national diversity of corporate governance: Dimensions and determinants. ***Academy of Management Review***, 28(3): 447-465.

Aguilera, R. V., Filatotchev, I., Gospel, H., & Jackson, G. 2008. An organizational approach to comparative corporate governance: Costs, contingencies, and complementarities. ***Organization Science***, 19(3): 475-492.

Aguilera, R. V. & Jackson, G. 2010. Comparative and international corporate governance. ***Academy of Management Annals***, 4(1): 485-556.

Allison, P. 2009. ***Fixed effects regression models***: SAGE Publications

Almandoz, J. & Tilcsik, A. 2016. When experts become liabilities: Domain experts on boards and organizational failure. ***Academy of Management Journal***, 59(4): 1124-1149.

Arregle, J. L., Miller, T. L., Hitt, M. A., & Beamish, P. W. 2016. How does regional institutional complexity affect mne internationalization? ***Journal of International Business Studies***, 47(6): 697-722.

Baysinger, B. & Hoskisson, R. E. 1990. The composition of boards of directors and strategic control: Effects on corporate strategy. ***Academy of Management Review***, 15(1): 72-87.

Beckman, C. M., Schoonhoven, C. B., Kim, S. J., & Rottner, R. M. 2014. Relational pluralism in de novo organizations: Boards of directors as bridges or barriers to diverse alliance portfolios? ***Academy of Management Journal***, 57(2): 460-483.

Blau, P. M. 1977. ***Inequality and heterogeneity***. New York: Free Press.

Boyd, B. K. 1995. Ceo duality and firm performance: A contingency model. ***Strategic Management Journal***, 16(4): 301-312.

Brown, J. A., Anderson, A., Salas, J. M., & Ward, A. J. 2017. Do investors care about director tenure? Insights from executive cognition and social capital theories. ***Organization Science***, 28(3): 471-494.

Brush, T. H., Bromiley, P., & Hendrickx, M. 2000. The free cash flow hypothesis for sales growth and firm performance. ***Strategic Management Journal***, 21(4): 455-472.

Carpenter, M. A. & Westphal, J. D. 2001. The strategic context of external network ties: Examining the impact of director appointments on board involvement in strategic decision making. ***Academy of Management Journal***, 44(4): 639-660.

Carpenter, M. A., Pollock, T. G., & Leary, M. M. 2003. Testing a model of reasoned risk-taking: Governance, the experience of principals and agents, and global strategy in high-technology ipos firms. ***Strategic Management Journal***, 24(9): 803-820.

Carroll, G. R. & Harrison, J. R. 1998. Organizational demography and culture: Insights from a formal model and simulation. ***Administrative Science Quarterly***, 43(3): 637-667.

Castanias, R. P. & Helfat, C. E. 2001. The managerial rents model: Theory and empirical analysis. ***Journal of Management***, 27(6): 661-678.

Certo, S. T. & Semadeni, M. 2006. Strategy research and panel data: Evidence and implications. ***Journal of Management***, 32(3): 449-471.

Certo, S. T., Withers, M. C., & Semadeni, M. 2017. A tale of two effects: Using longitudinal data to compare within- and between-firm effects. ***Strategic Management Journal***, 38(7): 1536-1556.

Child, J. 1997. Strategic choice in the analysis of action, structure, organizations and environment: Retrospect and prospect. ***Organization Studies***, 18(1): 43-76.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. 2003. ***Applied multiple regression/correlation analysis for the behavioral sciences***. Mahwah, NJ: Lawrence Erlbaum Associates.

Crossland, C., Zyung, J., Hiller, N. J., & Hambrick, D. C. 2014. Ceo career variety: Effects on firm-level strategic and social novelty. ***Academy of Management Journal***, 57(3): 652-674.

Dalton, D. R., Daily, C. M., Ellstrand, A. E., & Johnson, J. L. 1998. Meta-analytic reviews of board composition, leadership structure, and financial performance. ***Strategic Management Journal***, 19(3): 269-290.

De Villiers, C., Naiker, V., & van Staden, C. J. 2011. The effect of board characteristics on firm environmental performance. ***Journal of Management***, 37(6): 1636-1663.

Dess, G. G. & Beard, D. W. 1984. Dimensions of organizational task environments. ***Administrative Science Quarterly***, 29(1): 52-73.

Diestre, L., Rajagopalan, N., & Dutta, S. 2015. Constraints in acquiring and utilizing directors' experience: An empirical study of new-market entry in the pharmaceutical industry. ***Strategic Management Journal***, 36(3): 339-359.

Doidge, C., Karolyi, G. A., & Stulz, R. M. 2007. Why do countries matter so much for corporate governance? ***Journal of Financial Economics***, 86(1): 1-39.

Dutton, J. E. & Jackson, S. E. 1987. Categorizing strategic issues: Links to organizational action. ***Academy of Management Review***, 12(1): 76-90.

Feldman, E. R. & Montgomery, C. A. 2015. Are incentives without expertise sufficient? Evidence from fortune 500 firms. ***Strategic Management Journal***, 36(1): 113-122.

Finkelstein, S. & Hambrick, D. C. 1990. Top-management-team tenure and organizational outcomes: The moderating role of managerial discretion. ***Administrative Science Quarterly***, 35(3): 484-503.

Finkelstein, S. & Hambrick, D. C. 1996. ***Strategic leadership: Top executives and their effects on organizations***. Minneapolis/St. Paul, MN: West.

Forbes, D. P. & Milliken, F. J. 1999. Cognition and corporate governance: Understanding boards of directors as strategic decision-making groups. ***Academy of Management Review***, 24(3): 489-505.

Furr, N. R., Cavarretta, F., & Garg, S. 2012. Who changes course? The role of domain knowledge and novel framing in making technology changes. ***Strategic Entrepreneurship Journal***, 6(3): 236-256.

Garg, S. & Eisenhardt, K. M. 2017. Unpacking the ceo–board relationship: How strategy making happens in entrepreneurial firms. ***Academy of Management Journal***, 60(5): 1828-1858.

Geletkanycz, M. A. & Hambrick, D. C. 1997. The external ties of top executives: Implications for strategic choice and performance. ***Administrative Science Quarterly***, 42(4): 654-681.

Golden, B. R. & Zajac, E. J. 2001. When will boards influence strategy? Inclination x power = strategic change. ***Strategic Management Journal***, 22(12): 1087-1111.

Goodstein, J., Gautam, K., & Boeker, W. 1994. The effects of board size and diversity on strategic change. ***Strategic Management Journal***, 15(3): 241-250.

Greene, W. H. 2008. ***Econometric analysis*** (6th ed.). Upper Saddle River, NJ: Prentice Hall.

Greve, H. R. & Zhang, C. M. 2017. Institutional logics and power sources: Merger and acquisition decisions. ***Academy of Management Journal***, 60(2): 671-694.

Gulati, R. & Westphal, J. D. 1999. Cooperative or controlling? The effects of ceo-board relations and the content of interlocks on the formation of joint ventures. ***Administrative Science Quarterly***, 44(3): 473-506.

Hambrick, D. C., Geletkanycz, M. A., & Fredrickson, J. W. 1993. Top executive commitment to the status quo: Some tests of its determinants. ***Strategic Management Journal***, 14(6): 401-418.

Haynes, K. T. & Hillman, A. J. 2010. The effect of board capital and ceo power on strategic change. ***Strategic Management Journal***, 31(11): 1145-1163.

He, J. & Huang, Z. H. I. 2011. Board informal hierarchy and firm financial performance: Exploring a tacit structure guiding boardroom interactions. ***Academy of Management Journal***, 54(6): 1119-1139.

Hillman, A. J. & Dalziel, T. 2003. Boards of directors and firm performance: Integrating agency and resource dependence perspectives. ***Academy of Management Review***, 28(3): 383-396.

Hillman, A. J. 2005. Politicians on the board of directors: Do connections affect the bottom line? ***Journal of Management***, 31(3): 464-481.

Hillman, A. J., Nicholson, G., & Shropshire, C. 2008. Directors' multiple identities, identification, and board monitoring and resource provision. ***Organization Science***, 19(3): 441-456.

Hitt, M. A. & Tyler, B. B. 1991. Strategic decision models: Integrating different perspectives. ***Strategic Management Journal***, 12(5): 327-351.

Hofer, C. W. & Schendel, D. 1978. ***Strategy formulation: Analytical concepts***. St. Paul, MN: West.

Holmes, R. M., Miller, T., Hitt, M. A., & Salmador, M. P. 2013. The interrelationships among informal institutions, formal institutions, and inward foreign direct investment. ***Journal of Management***, 39(2): 531-566.

Jackson, G. & Deeg, R. 2008. Comparing capitalisms: Understanding institutional diversity and its implications for international business. ***Journal of International Business Studies***, 39(4): 540-561.

Jackson, S. E. & Dutton, J. E. 1988. Discerning threats and opportunities. ***Administrative Science Quarterly***, 33(3): 370-387.

Jensen, M. C. 1986. Agency costs of free cash flow, corporate finance, and takeovers. ***American Economic Review***, 76(2): 323-329.

Johnson, G. 1992. Managing strategic change: Strategy, culture and action. ***Long Range Planning***, 25(1): 28-36.

Johnson, S. G., Schnatterly, K., & Hill, A. D. 2013. Board composition beyond independence: Social capital, human capital, and demographics. ***Journal of Management***, 39(1): 232-262.

Keats, B. W. & Hitt, M. A. 1988. A causal model of linkages among environmental dimensions, macro organizational characteristics, and performance. ***Academy of Management Journal***, 31(3): 570-598.

Kesner, I. F. 1988. Directors' characteristics and committee membership: An investigation of type, occupation, tenure, and gender. ***Academy of Management Journal***, 31(1): 66-84.

Khanna, P., Jones, C. D., & Boivie, S. 2014. Director human capital, information processing demands, and board effectiveness. ***Journal of Management***, 40(2): 557-585.

Kor, Y. Y. 2003. Experience-based top management team competence and sustained growth. ***Organization Science***, 14(6): 707-719.

Kor, Y. Y. & Misangyi, V. F. 2008. Outside directors' industry-specific experience and firms' liability of newness. ***Strategic Management Journal***, 29(12): 1345-1355.

Kor, Y. Y. & Sundaramurthy, C. 2009. Experience-based human capital and social capital of outside directors. ***Journal of Management***, 35(4): 981-1006.

Krause, R., Semadeni, M., & Withers, M. C. 2016. That special someone: When the board views its chair as a resource. ***Strategic Management Journal***, 37(9): 1990-2002.

Krause, R., Withers, M. C., & Semadeni, M. 2018. Compromise on the board: Investigating the antecedents and consequences of lead independent director appointment ***Academy of Management Journal***: Forthcoming.

Kroll, M., Walters, B. A., & Wright, P. 2008. Board vigilance, director experience, and corporate outcomes. ***Strategic Management Journal***, 29(4): 363-382.

Littlepage, G., Robison, W., & Reddington, K. 1997. Effects of task experience and group experience on group performance, member ability, and recognition of expertise. ***Organizational Behavior and Human Decision Processes***, 69(2): 133-147.

Marcel, J. J., Barr, P. S., & Duhaime, I. M. 2011. The influence of executive cognition on competitive dynamics. ***Strategic Management Journal***, 32(2): 115-138.

McDonald, M. L., Westphal, J. D., & Graebner, M. E. 2008. What do they know? The effects of outside director acquisition experience on firm acquisition performance. ***Strategic Management Journal***, 29(11): 1155-1177.

Miller, C. C., Burke, L. M., & Glick, W. H. 1998. Cognitive diversity among upper-echelon executives: Implications for strategic decision processes. ***Strategic Management Journal***, 19(1): 39-58.

Mintzberg, H. 1978. Patterns in strategy formation. ***Management Science***, 24(9): 934-948.

Nahapiet, J. & Ghoshal, S. 1998. Social capital, intellectual capital, and the organizational advantage. ***Academy of Management Review***, 23(2): 242-266.

Oehmichen, J., Schrapp, S., & Wolff, M. 2017. Who needs experts most? Board industry expertise and strategic change-a contingency perspective. ***Strategic Management Journal***, 38(3): 645-656.

Peng, M. W. 2004. Outside directors and firm performance during institutional transitions. ***Strategic Management Journal***, 25(5): 453-472.

Pfeffer, J. & Salancik, G. R. 1978. ***The external control of organizations: A resource dependence perspective***. New York: Harper & Row.

Quigley, T. J. & Hambrick, D. C. 2012. When the former ceo stays on as board chair: Effects on successor discretion, strategic change, and performance. ***Strategic Management Journal***, 33(7): 834-859.

Reagans, R., Argote, L., & Brooks, D. 2005. Individual experience and experience working together: Predicting learning rates from knowing who knows what and knowing how to work together. ***Management Science***, 51(6): 869-881.

Rulke, D. L. & Rau, D. 2000. Investigating the encoding process of transactive memory development in group training. ***Group and Organization Management***, 25(4): 373-396.

Sauerwald, S., Zhiang, L. I. N., & Peng, M. W. 2016. Board social capital and excess ceo returns. ***Strategic Management Journal***, 37(3): 498-520.

Scott, W. R. 2003. ***Organizations: Rational, natural, and open systems***. Englewood Cliffs, NJ: Prentice-Hall.

Sharma, S. 2000. Managerial interpretations and organizational context as predictors of corporate choice of environmental strategy. ***Academy of Management Journal***, 43(4): 681-697.

Spencer Stuart. 2017. Spencer stuart board index. Chicago, IL.

Spender, J. C. 1989. ***Industry recipes: An enquiry into the nature and sources of managerial judgment***. New York: Blackwell.

Sun, P., Hu, H. W., & Hillman, A. J. 2016. The dark side of board political capital: Enabling blockholder rent appropriation. ***Academy of Management Journal***, 59(5): 1801-1822.

Sutcliffe, K. M. & Huber, G. P. 1998. Firm and industry as determinants of executive perceptions of the environment. ***Strategic Management Journal***, 19(8): 793-807.

Thomas, J. B., Clark, S. M., & Gioia, D. A. 1993. Strategic sensemaking and organizational performance: Linkages among scanning, interpretation, action, and outcomes. ***Academy of Management Journal***, 36(2): 239-270.

Tian, J. J., Haleblian, J. J., & Rajagopalan, N. 2011. The effects of board human and social capital on investor reactions to new ceo selection. ***Strategic Management Journal***, 32(7): 731-747.

Trahms, C. A., Ndofor, H. A., & Sirmon, D. G. 2013. Organizational decline and turnaround: A review and agenda for future research. ***Journal of Management***, 39(5): 1277-1307.

Tripsas, M. & Gavetti, G. 2000. Capabilities, cognition, and inertia: Evidence from digital imaging. ***Strategic Management Journal***, 21(Special Issue): 1147-1162.

Tuggle, C. S., Schnatterly, K., & Johnson, R. A. 2010. Attention patterns in the boardroom : How board composition and processes affect discussion of entrepreneurial issues. ***Academy of Management Journal***, 53(3): 550-571.

Tuschke, A., Sanders, W. M. G., & Hernandez, E. 2014. Whose experience matters in the boardroom? The effects of experiential and vicarious learning on emerging market entry. ***Strategic Management Journal***, 35(3): 398-418.

United Nations Statistics Division (2011); Standard country or area codes for statistical use; https://unstats.un.org/unsd/methodology/m49/overview/; 24 February 2018.

Venkatraman, N. & Prescott, J. E. 1990. Environment-strategy coalignment: An empirical test of its performance implications. ***Strategic Management Journal***, 11(1): 1-23.

Webber, S. S. & Donahue, L. M. 2001. Impact of highly and less job-related diversity on work group cohesion and performance: A meta-analysis. ***Journal of Management***, 27(2): 141-162.

Westphal, J. D. & Zajac, E. J. 1997. Defections from the inner circle: Social exchange, reciprocity, and the diffusion of board independence in u.S. Corporations. ***Administrative Science Quarterly***, 42(1): 161-183.

Westphal, J. D. & Fredrickson, J. W. 2001. Who directs strategic change? Director experience, the selection of new ceos, and change in corporate strategy. ***Strategic Management Journal***, 22(12): 1113-1137.

Westphal, J. D., Seidel, M.-D. L., & Stewart, K. J. 2001. Second-order imitation: Uncovering latent effects of board network ties. ***Administrative Science Quarterly***, 46(4): 717-747.

Westphal, J. D. & Bednar, M. K. 2005. Pluralistic ignorance in corporate boards and firms' strategic persistence in response to low firm performance. ***Administrative Science Quarterly***, 50(2): 262-298.

Wooldridge, J. M. 2002. ***Econometric analysis of cross section and panel data***. Cambridge, MA: MIT Press.

Zhang, C. M. & Greve, H. R. 2018. Dominant coalitions directing acquisitions: Different decision makers, different decisions. ***Academy of Management Journal***: Forthcoming.

Zhang, Y. & Rajagopalan, N. 2010. Once an outsider, always an outsider? Ceo origin, strategic change, and firm performance. ***Strategic Management Journal***, 31(3): 334-346.

Zhu, D. H. & Westphal, J. D. 2014. How directors' prior experience with other demographically similar ceos affects their appointments onto corporate boards and the consequences for ceo compensation. ***Academy of Management Journal***, 57(3): 791-813.

Zhu, D. H. & Chen, G. 2015. Ceo narcissism and the impact of prior board experience on corporate strategy. ***Administrative Science Quarterly***, 60(1): 31-65.

6 Discussion

While all studies of this dissertation have formulated distinct contributions in the respective discussion sections, this overall discussion chapter takes a step back to elaborate how this thesis advances prior literature and to disclose its potential limitations. First, the phenomenological contributions to board expertise research are summarized. Second, the theoretical contributions are discussed. Third, the broader implications of this thesis for the strategic leadership literature are highlighted. Finally, a reflection on relevant limitations is provided.

6.1 Contributions to Board Expertise Research

This dissertation offers several contributions to advance the concept of board expertise. Building on the gaps identified by the literature review (Chapter 2), we aimed at addressing shortcomings that have previously constrained our understanding of the effects that outside directors' experiences and expertise have on firm outcomes.

First, this dissertation advances the board expertise literature by introducing a new type of expertise. While previous studies have often examined the implications of straightforward sources of expertise, such as board, firm or industry experience, the findings presented in Chapter 3 indicate that other relevant sources may have thus far been unnoticed. It signals that board expertise may be a fruitful area of research because it has the potential to infer from archival data previously unrecognized board attributes that shape firm outcomes. Specifically, it promises less incremental contributions than research on surface-level demographics and board structure where key variables have already been comprehensively identified and tested, and the data from which to develop new measures of expertise are more readily available than for instance decision makers' psychological dispositions, which are notoriously difficult to measure. As such, board expertise research may combine two distinctive features that most researchers are looking for but that are often mutually exclusive: novelty and feasibility.

Second, this dissertation contributes to board expertise research by rethinking the often monolithic assumptions behind expertise. Few, if any, prior studies have reflected on how a decomposition may allow to identify and mitigate potentially confounding effects inherent to a specific type of expertise. This dissertation shows that such approaches may be useful in reconciling inconsistent findings and increasing the theoretical and empirical specificity of board expertise studies. More generally, we show

that also for types of expertise that have been subject to scholarly scrutiny, the potential to create new contributions may not be exhausted.

Third, by addressing the dearth of studies that used matching models, this dissertation emphasizes the potential of jointly considering outside directors' experiences and firm-related attributes. As Chapter 4 shows, extending beyond composition and compilation models may reveal new ways in which boards shape firm outcomes. Linking the characteristics of the board to specific characteristics of the firm and its strategic choices may thus be a powerful approach to identify relationships that would remain undetected by count, proportion, or heterogeneity measures.

6.2 Contributions to Theory

Drawing on board expertise as a research phenomenon has allowed us to make several theoretical contributions. First, building on the observation that the accumulated board expertise research has largely failed to make unequivocal and generalizable predictions, we have developed an integrative model to delineate the key interdependencies that shape the magnitude and direction of board expertise outcomes. That model integrates multitheoretic perspectives adopted by prior research and thus may help to refine the theoretical reasoning in future board expertise research. Arguably, the board reflects a rich research context to study discrete theories but, as Hillman and Dalziel's (2003) integration of resource dependence and agency theory has shown, the larger body of literature will only develop conclusive findings if theoretical lenses are applied to the adequate relationships. In that regard, this dissertation also highlights the need for the application and development of resource dependence theory in concert with other theories, thereby responding to Hillman and Dalziel's (2003) call to develop finer-grained reflections on the theoretical mechanisms driving the relationship between the board and firm outcomes.

Second, this dissertation contributes to resource dependence theory. One tenet of resource dependence theory is the central role of the board in establishing channels between the firm and its external environment through which information and resources can flow (Pfeffer, 1987). While past research has overwhelmingly assumed that these channels can only be established through cooptation, this dissertation highlights the role of board expertise as an alternative resource dependency-reducing strategy that extends beyond establishing formal organizational ties with resource-controlling entities. That offers a new perspective of how the firm may mitigate environmental uncertainty and it suggests that there may be boundary-spanning mechanisms through which boards can connect the firm to sources of dependency in the external environment. Pfeffer (1972)

notes that unless sources of uncertainty and dependency can be fully absorbed by the organization, boards may be the appropriate instrument to manage them. This logic has commonly been referred to study the influence of formal entities such as other large organizations, suppliers of capital, or political bodies. However, this dissertation posits and finds that there may be other, less tangible sources of uncertainty that organizations cannot fully absorb, and where boards may act as an important connector.

Third, we address the calls for research on behavioral biases in board decision making (Hambrick, Werder, & Zajac, 2008; Johnson, Schnatterly, & Hill, 2013) and contribute to an emerging actor-centric behavioral theory of corporate governance (Westphal & Zajac, 2013). By accounting for behavioral contingencies such as cognitive strain, selective attention, and subjective risk assessments, this dissertation refines the link between the attributes of corporate leaders and their strategic choice patterns. Hence, we contribute to the broader understanding of board behavior by applying micro perspectives of the role of individual decision makers to examine their specific inclinations and preferences.

6.3 Contributions to the Strategic Leadership Literature

All papers in this dissertation draw conclusions on the strategic leadership role of the board. Despite widespread agreement that boards matter, researchers have raised concerns about how well the board can really assume its pivotal role and fulfill its extensive responsibilities. In this vein, some scholars have recently asked whether boards may be "designed to fail" (Boivie, Bednar, Aguilera, & Andrus, 2016) and practitioners posited that "the corporate board of directors is a largely useless, if mostly harmless, institution carried on out of inertia" (Gillespie & Zweig, 2010). This dissertation elucidates factors that may increase or diminish the boards' influence on key firm outcomes. In identifying sources and constraints of board expertise along with its effects on outcomes, this thesis highlights some of the boundary conditions that facilitate or impede how boards operate. Overall, the cumulative findings of the four studies emphasize the key role of the board in shaping the organization. Despite being faced with numerous and substantial barriers, this dissertation shows that boards can have a positive effect on financial firm performance (Chapter 3); thereby responding to the skepticism voiced by earlier literature on this relationship (Dalton, Daily, Ellstrand, & Johnson, 1998). At the same time, it appears that the role and influence of the board must been seen in close conjunction with other corporate elites. Notably, this thesis shows that board effects may be masked by CEO effects, but the same may also hold in the opposite direction. Contributing to the long-lasting question about which corporate

elites matter most for the strategic leadership of the firm (Westphal & Fredrickson, 2001), we show that boards seem to be particularly important during high-profile punctuated events such as acquisition decisions (Chapter 4) whereas ongoing strategizing seems to be driven more by the CEO after outside directors have gained experience with the focal firm and its top executive (Chapter 5). This may not be an indicator of board ineffectiveness or inertia, because not "owning the strategy" may improve boards' ability to challenge the top management effectively and to provide advice that offers new perspectives on the current strategy. Figure 2.2 shows that 40% of the research on board expertise have examined effects on firms' strategic choices and this thesis suggests that the specific type of strategic decision may determine whether or not the board is the adequate strategic leader to study.

6.4 Limitations

As with most studies, the papers of this dissertation are not without limitations. Two key limitations refer to the granularity and accuracy in measuring relevant theoretical mechanisms, the third limitation relates to organizational implications of the strategic choice findings, and the fourth and fifth limitations pertain to the specific empirical context of this dissertation.

First, and perhaps most importantly, a pervasive challenge in board research remains the measurement of the mechanisms that explain the underlying relationships. A key observation in Chapter 2 was that the mere presence of a focal type of expertise may not sufficiently explain how directors individually and boards collectively act on it. That raises concerns to varying degrees of severity. For example, while it seems very conceivable that quantifiable external information-processing demands strain outside directors' capacity and decrease the extent to which they contribute their expertise to the firm (Chapter 3), it is less clear what mechanisms explain how directors' individual strategic preferences inform decisions of the entire board. In Chapter 4, we found that exposure to a certain geography increases the likelihood of an acquisition in the focal country, but it remains subject to speculation how directors who possess the focal exposure convince their board colleagues to actually pursue a strategic opportunity in the respective target country. In other words, we assumed that boards' collective actions are the result of preferences held by a subgroup of directors without measuring the underlying mechanism that explains how individual experiences translate to board decisions. While this is a common weakness of board composition research, the often-disregarded problem of behavioral aggregation constitutes a substantial lack in the understanding of board behavior and its eventual outcomes. As Chapter 2 concluded,

the effects of board experiences and expertise on firm outcomes may only be fully understood by adopting a process perspective and qualitative methods may be particularly helpful to fully capture the mechanisms that drive this important relationship.

Second, consistent with prior research, we accounted for the influence of the CEO in how board expertise influences firm outcomes. However, there may be other powerful gatekeepers who inform the actions of the board and the CEO. Inside the company, other members of the top management team may influence the identification and assessment of critical information that subsequently shape boardroom discussions. Outside the company, influential proxy advisory firms may constrain or encourage specific decisions of the board. Incorporating the interactions between the board and other gatekeepers may therefore reveal additional mechanisms that shape the magnitude and direction of the relationship between board expertise and firm outcomes.

Third, Chapters 4 and 5 have revealed that outside directors' experiences and expertise are associated with specific strategic choices. While these studies identified critical antecedents to firm behavior and, more generally, how board expertise may shape patterns in the global economy, a more systematic examination of the quality of strategic choices may be warranted. In unreported post-hoc tests, we were unable to establish significant subsequent performance implications of the strategic choices captured by our studies.[19] Both studies make important contributions to the understanding of why firms strategize the way they do and suggest that boards appear to rely on familiar attributes as a scaffold for strategic decision making (Elsbach, Barr, & Hargadon, 2005; Tversky & Kahnemann, 1974). However, future research may refine these findings by developing and testing new theory about the specific boundary conditions that may explain when board expertise enhances or mitigates the quality of strategic choices.

Fourth, all papers of this dissertation have focused on large, listed European companies. This research context offers a much-needed extension beyond prior studies' prevalent focus on U.S. samples (Johnson et al., 2013), and allows to show that effects hold across different European jurisdictions despite their unique prescriptions regarding the role and responsibilities of the board. However, caution may be warranted when relating insights of this dissertation to different samples, such as small- or medium-sized firms or firms facing contexts that substantially deviate in their governance logic from

[19] To ensure theoretical parsimony, we did not include the results of the post-hoc tests in the main papers. It should also be noted that these tests were preliminary and only captured overall firm performance. An accurate determination of the quality of the focal strategic choice would have required explicit tests of M&A performance, a notion that is contested (Cording, Christmann & Weigelt, 2010; Zollo & Meier, 2008), and to assess whether a specific reallocation of strategic resources achieved the underlying strategic goal.

European countries (e.g., China). Future cross-country studies may be needed to further explore the influence of the country on the relationship between board expertise and firm outcomes.

Finally, despite our extensive efforts in the data collection process, data availability and completeness remain important concerns. Although several sensitivity and robustness tests raised confidence that the samples used in this dissertation accurately reflect the population, studies with larger samples may be needed to further corroborate the statistical results. As disclosure requirements become increasingly stringent also outside the U.S. and the overall board expertise research continues to mature, more complete samples and meta-analytic efforts will likely prove helpful in producing more generalizable insights.

6.5 References

Boivie, S., Bednar, M. K., Aguilera, R. V., & Andrus, J. L. 2016. Are boards designed to fail? The implausibility of effective board monitoring. ***Academy of Management Annals***, 10(1): 319-407.

Cording, M., Christmann, P., & Weigelt, C. 2010. Measuring theoretically complex constructs: The case of acquisition performance. ***Strategic Organization***, 8(1): 11-41.

Dalton, D. R., Daily, C. M., Ellstrand, A. E., & Johnson, J. L. 1998. Meta-analytic reviews of board composition, leadership structure, and financial performance. ***Strategic Management Journal***, 19(3): 269-290.

Elsbach, K. D., Barr, P. S., & Hargadon, A. B. 2005. Identifying situated cognition in organizations. ***Organization Science***, 16(4): 422-433.

Gillespie, J. & Zweig, D. 2010. ***Money for nothing: How the failure of corporate boards is ruining american business and costing us trillions***. New York: Free Press.

Hambrick, D. C., Werder, A. V., & Zajac, E. J. 2008. New directions in corporate governance research. ***Organization Science***, 19(3): 381-385.

Hillman, A. J. & Dalziel, T. 2003. Boards of directors and firm performance: Integrating agency and resource dependence perspectives. ***Academy of Management Review***, 28(3): 383-396.

Johnson, S. G., Schnatterly, K., & Hill, A. D. 2013. Board composition beyond independence: Social capital, human capital, and demographics. ***Journal of Management***, 39(1): 232-262.

Pfeffer, J. 1972. Size and composition of corporate boards of directors: The organization and its environment. ***Administrative Science Quarterly***, 17(2): 218-228.

Pfeffer, J. 1987. A resource dependence perspective on interorganizational relations. In M. S. Mizruchim & S. M. (Eds.), ***Intercorporate relations: The structural analysis of business***: 25-55. Cambridge, UK: Cambridge University Press.

Tversky, A. & Kahnemann, D. 1974. Judgment under uncertainty: Heuristics and biases. ***Science***, 185: 1121-1131.

Westphal, J. D. & Fredrickson, J. W. 2001. Who directs strategic change? Director experience, the selection of new ceos, and change in corporate strategy. ***Strategic Management Journal***, 22(12): 1113-1137.

Westphal, J. D. & Zajac, E. J. 2013. A behavioral theory of corporate governance: Explicating the mechanisms of socially situated and socially constituted agency. ***Academy of Management Annals***, 7(1): 607-661.

Zollo, M. & Meier, D. 2008. What is m&a performance? ***Academy of Management Perspectives***, 22(3): 55-77.

Curriculum Vitae

Georg Guttmann
Nationality: German
Date of birth: 12 April 1986
Place of birth: Berlin, Germany

Academic Positions

2012-2018 Assistant to the Dean, Executive School of Management, Technology and Law (ES-HSG), University of St.Gallen, Switzerland
2012-2018 Research and Teaching Assistant, Research Institute for International Management (FIM-HSG), University of St.Gallen, Switzerland

Education

2012-2018 PhD in Strategy and Management, University of St.Gallen, Switzerland
2015-2016 Visiting PhD candidate, Lee Kong Chian School of Business, Singapore Management University, Singapore
2009-2011 MSc in General Management, University of Tuebingen, Germany
2005-2009 BSc in International Business Administration, European University Viadrina, Germany

Languages

German (native), English, French