

Boards, and the Directors Who Sit on Them

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I wrote this article for the Elsevier Handbook of Corporate Governance. I thank the editors, Benjamin Hermalin and Michael Weisbach, for their comments and for inviting me to write this chapter. I thank Ying Dou, Mandeep Singh and Jing Xu for excellent research assistance.

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Keywords: Boards, Directors, Groups, Advising, Stakeholders, Banks, Gender, Policy, Citations, Traits

JEL Classifications: G34, D70, G38

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Boards, And The Directors Who Sit On Them

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June 30, 2017

Abstract

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1. Introduction

Boards hire and fire the CEO; they advise and monitor the CEO. They are blamed when things go wrong; they sometimes get credit when things go right. They are ultimately responsible for ensuring corporations create value for their stakeholders. So it is not surprising that the question “what makes a board effective?” continues to be such an important question in research and policy making. What may be surprising is how hard it is to answer this question. As I argue in this chapter, boards’ complexities make them a fascinating, impactful and fertile topic for research.

For years, policy-makers and many governance academics thought an effective board was an independent board. Many policy-makers still do. In theory, an independent board is a board that exhibits enough collective independence of thought that it will question management when necessary. In practice, most regulations and most research define an independent board as a board that is comprised primarily of members without measurable conflicts of interest with management. A director who has no family ties with the CEO, does not provide consulting or other services to the company and has not invited the CEO to his own board is typically considered independent.

While conceptually appealing, the evidence that conventional measures of board independence matter is inconclusive (Adams, Hermalin, and Weisbach, 2010; Bhagat and Black, 1999; Hermalin and Weisbach, 2003). Even more worrisome, banks with more independent boards had worse outcomes during the financial crisis.² Instead of being a panacea, independence may be a problem. While this is bad news for those who want easy answers, it is good news for academics interested in challenging research.

Board complexity, data availability and, of course, methods are barriers to our understanding of boards. Boards are difficult to model because of their position in the

² E.g. Adams (2012), Aebi, Sabato and Schmid (2012), Becht, Bolton and Roell (2011), Beltratti and Stulz (2012), Erkens, Hung and Matos (2012) and Minton, Taillard and Williamson (2014).

organizational hierarchy. They are supposed to represent the best interests of the corporation, the entire body of shareholders, and, to varying degrees, the interests of stakeholders. Yet their aggregate ownership stakes in the corporation are typically much smaller than those of management teams. Differences in objectives between boards and shareholders may affect how boards deal with agency problems involving managers.³ How well boards' incentives are aligned with those of non-shareholder stakeholders is also unclear. Differences in objectives between boards and non-shareholder stakeholders may affect how boards deal with agency problems involving managers.

Boards are also difficult to model because they are teams of individuals with different backgrounds, characteristics and individual incentives. These teams vary in their decision-making rules. Some boards may be dictatorships. In others, decisions will be reached by consensus. In dictatorships, the identity of the dictator (presumably, but not necessarily the CEO) is the most important. In democracies, the characteristics of all directors are important. So, firm outcomes will be a function of both board composition and board decision-making rules. While we can observe some aspects of board composition, we cannot observe board decision-making processes. This makes it difficult to interpret data and to develop theory.

Even if we had better data, it would be hard to conclusively identify which board characteristics make boards more effective. For identification, we require randomization of one variable at a time. The best way to achieve randomization is to conduct experiments. But experiments with directors are usually not possible. Even if they were possible it is unlikely they would be credible. For example, to identify the causal effect of board gender diversity on firm performance, an ideal experiment would randomly assign female directors to firms and measure subsequent firm performance. Even if one could conduct such an experiment,

³ Although the literature often suggests there may also be agency problems between shareholders and boards, in corporate law boards are not considered to be agents of shareholders. Unlike agents, directors are not obliged to act as a majority of shareholders wish in carrying out their duties (see American Bar Association, 2009).

one would have to worry about selection into the experiment. The firms and women who might agree to participate would probably be so different from the general population that the results would not be generalizable (see the discussion of this problem in Levitt and List, 2007). Conducting laboratory experiments with students may not be the solution to this problem. As I discuss in Section 7, directors are different from typical members of the population. This suggests they would make different decisions in a laboratory setting than students would.

Because boards differ along so many dimensions, it is also difficult, if not impossible, to find instruments or natural experiments that affect only one characteristic of the board at a time. Regulations are potential candidates for natural experiments because they induce governance changes. But regulations typically affect all firms in a country, i.e. within a country there is no control group of firms that is unaffected by the regulations.

One strategy to deal with this problem is to use firms from other countries as a control group (e.g. Akyol, Lim and Verwijmeren, 2012). While conceptually appealing, this strategy is not convincing unless institutional details that may affect the interpretation are carefully documented. As I show in Section 6, boards are the focus of active policy-making in many countries. If firms in other countries are “treated” by policies other than the one under examination, they no longer form a useful control group.

Boards may also be difficult to compare because their roles and structures vary across countries. These differences may be easily measurable, as in the case of formal employee board representation (or co-determination) and dual versus sole board structures. But the differences may also be more subtle. For example, Puchniak and Kim (2017) and the various articles in Puchniak, Baum and Nottage (2017) describe that the concept of an “independent director” may mean different things in different countries. While I argue that this variation in board structure is interesting and deserving of more research, it complicates identification.

Another problem with using regulations as natural experiments is that regulations typically require many changes at the same time. This makes it difficult to attribute outcomes to variables of interest. For example, the passage of the Sarbanes-Oxley Act and the associated changes in the NYSE and Nasdaq listing rules are often used as shocks to board independence. But neither SOX nor the listing rules' board-level reforms are concerned with independence alone. As Adams, Tumarkin and Rangunathan (2016) point out, the reform independence requirements are generally tied to committee structure. Even firms with independent boards prior to 2002 may have had to change their committees in the wake of SOX. The reforms may have also affected boards in ways that are not as easy to measure as board composition. So it is difficult to attribute changes in firm outcomes after 2002 to changes in independence alone.

But just because it is hard to study boards does not mean we should give up. The law recognizes boards as the primary corporate decision-making body (American Bar Association, 2009). This means they are too important for us to stop learning about them. The study of boards also provides valuable insights into more general questions about decision-making in groups and team behavior. Finally, board complexity is simply too interesting for us to ignore.

Several new developments offer hope that the barriers to our understanding of boards may slowly crumble. First, as I document in Section 5, the literature is increasingly using econometric techniques that are designed to address endogeneity problems. While I believe that it is unrealistic to expect that endogeneity biases can be eliminated, combining econometric tools with theoretical arguments, insights from other disciplines and economic intuition can help make a solid case for the direction of causality or put bounds on the magnitudes of coefficients.

Second, the development of literatures closely related to boards offers new insights into the dimensions along which boards may vary. The recent literature on boards draws on the family firm literature (see e.g. the chapter by Edmans and Holderness (2017) in this Handbook), the literature on culture and gender amongst others. These literatures are particularly useful for understanding how the characteristics of the directors who sit on boards may influence board decision-making outcomes.

Boards of family firms may have different objectives and different decision-making processes than other boards. Non-family firms may also have different corporate cultures that affect how boards make decisions. Corporate culture may be a function of where firms are located. It may also be a function of the nationalities of the directors or the personality and vision of the firm's founders.

Going forward, the literature on gender will be particularly important for understanding boards. As I describe in more detail in Section 6, currently 45 countries have policies to promote boardroom gender diversity in listed corporations. In 2012, the EU approved a draft law that sets an objective of 40% female nonexecutive directors on boards of listed companies across the 28 member states of the EU (European Commission, 2012 a). If passed, the EU law will apply to 5,000 out of the 7,500 listed companies in the EU (European Commission, 2012 b). Because the pool of current female directors is relatively small, these policies will force firms out of their comfort zones when appointing directors. If newly-appointed female directors differ from male directors in their priors and preferences, we should expect board decision-making to change.

Finally, the development of new techniques for collecting and analysing data on top management teams, such as web scraping, textual analysis and linguistic analysis or time diaries and the use of machine learning algorithms (e.g. Green, Jame and Lock, 2016; Gow, Kaplan, Larcker and Zakolyukina, 2016; Nicholson, Pugliese and Bezemer, 2017; Bandiera,

Hansen, Prat, Sadun, 2017), and the diffusion of standardized databases on boards allow us to gain more insight into board behaviour. These databases offer information on standard board characteristics, such as size and composition, but they also provide rich information about individual directors, such as job histories and social networks. For the US, the go-to data set, the ISS director database (formerly Riskmetrics and before that IRRC directors' data), despite several well-known and other not-so-well-known coding errors, offers an increasingly long time dimension which is useful for panel data analyses. The emergence of the Boardex data set has been particularly useful because it provides a uniformly coded data set on boards in different countries. While it is not flawless, it does allow one to take a broader perspective on governance across countries.

In this chapter, I interweave a discussion of the economics and finance literature on boards and directors with discussions of data from a number of my papers and other hand-collected data for this chapter to illustrate what we think we know, what we may not know and what promising areas for future research might be. While it is natural to study boards as a whole because there are few measures of individual director behaviour, I argue that to understand boards we need to understand the people who sit on them. I conclude my chapter with some thoughts on how we might approach the task of doing so.

2. Some evidence on the importance of boards as a research topic

In their 2010 survey of the board literature, Adams, Hermalin and Weisbach (2010, p. 63.) referred to an “explosion” in literature on boards. Their observation was based on their estimate that 200 working papers on boards were written in the first five years since Hermalin and Weisbach (2003) published their board survey (no causal link was implied). While casual observation suggests that this “explosion” is continuing, in this section I provide more systematic evidence on the importance of boards as a topic of finance research using a

bibliometric analysis of published papers. I also suggest some tentative explanations for the “explosion”. My analysis is related to Karolyi’s (2016) analysis of the importance of non-US studies in the finance literature, as well as to Ellison’s (2011) analysis of publication patterns in the economics literature.⁴

To measure the size and importance of the literature on boards of directors I create three data sets. The first data set (database #1) consists of information on all papers related to boards of directors that were published between 1990 and 2014 in finance journals that are known for publishing papers relating to boards, JF, JFE, RFS, RofF, JFQA, FM, JCF, JFI, as well as JAE, JLE, Manag. Sci, and J BUS. I focus on published papers because working papers are often updated and may change names, which makes it more time-consuming to compile data on them. To create the data set, I used the bulk reference download options in ScienceDirect and JSTOR. To identify papers on corporate boards I used the search terms “board” or “directors” in the title, abstract or text. Individual journal websites were used to check if ScienceDirect and JSTOR had complete coverage of papers and to download missing information. The data was also checked to ensure that the papers discussed corporate boards and not other types of boards, e.g. “discussion boards”.

The final data set contains the year of publication, the journal name, the title, the keywords and the abstract for 569 papers, of which 483 are in finance journals. These papers cover a range of topics associated with boards, including some on CEO compensation and turnover. Some of the latter papers do not focus on boards themselves, but on what boards do, i.e. the setting of CEO pay and turnover decisions. While it is debatable whether some CEO compensation and turnover papers are “board” papers, it would make no sense to exclude the keywords “compensation”, “turnover” or “CEO” from a systematic search for board papers.

⁴ A number of other papers examine publication and citation patterns in Economics and Finance, but reviewing them is beyond the scope of this chapter. Ellison (2011) provides a detailed overview of some of this literature.

Thus, I leave them in the sample. Footnote 9 suggests that restricting my sample to a more focused set of papers on boards would not change the overall conclusions from my analysis.

The second data set (database #2) consists of the same information for all papers, not just board papers, published between 1990 and 2014 in what might be considered to be the top 6 finance journals in my set: JF, JFE, RFS, JFQA, Roff, JFI. The data set was updated using journal websites. Since it was not possible to specify the type of article for some bulk downloads of references, anything that was not an article, e.g. forewords, editorial data and announcements had to be manually deleted from the data. The final data set consists of information on 6,879 finance articles.

The third data set (database #3) contains citation and reference information for all papers in database #2 that I could match to Scopus after 1996. Scopus only counts citations in journals that are indexed in Scopus. But since Scopus claims to be the largest abstract and citation database of peer-reviewed literature, Scopus citation counts should be reasonably accurate measures of impact in published work. Scopus also contains data on references in papers, even if they appear in sources outside of Scopus.

Since Scopus's coverage prior to 1996 is poor, I restrict database #2 to papers published between 1996 and 2014 and obtain citation and reference data for all but 34 papers (0.59%) that did not appear in Scopus.⁵ Citation data is measured as of December 10, 2015. Database #3 contains 5,702 papers of which 256 are board papers.

-Insert Table 1 about here-

Table 1 shows the distribution of board papers across journals (database #1) as well as the total number of finance papers published in the top 6 finance journals (database #2). The number of papers published in the JF, RFS, JFE and JFQA in my sample is 6,119. Using EBSCO Publishing as a source, Karolyi (2016) identifies 5,448 papers published in these four

⁵ There were also 49 articles in Scopus that did not appear in my database #2. Most of these (28) were errata, discussions and editorials associated with conference papers.

journals between 1990 and 2011. One average this amounts to 247.6 papers per year, which means there should be roughly 6190.9 ($=5,448+3*247.6$) papers in these four journals in my sample. The fact that my sample contains only 72 papers fewer than this predicted number based on Karolyi's sample suggests that the coverage in my sample is relatively complete.⁶

Published papers on boards of directors comprise roughly 4.14% of all published finance papers in this set of journals. Karolyi (2016) documents that 16% of the papers in the JF, RFS, JFE and JFQA are published on non-US markets and suggests this is a small percentage. However, the non-US papers in Karolyi's sample cover many different topics. It is not clear that 4.14% of papers is a small percentage for *one* topic. One should consider, for example, that the topic of boards does not even have its own JEL code—it belongs to category G34 (Merger, Acquisition, Restructuring, Corporate Governance). Furthermore, category G (Financial Economics) contains 26 other JEL codes. If average journal space were allocated equally across all 27 category G JEL codes, each topic would get 3.7% of all papers. The percentage allocated to each topic would decrease if one also counted finance topics that are classified in other JEL categories, e.g. International Finance (F3) which is a subcategory of category F (International Economics) and contains 10 JEL codes.

-Insert Figure 1 about here-

Of course, some journals specialize in certain topics, either explicitly or implicitly. So, the number of JEL codes may not be a good indicator of the topics journals published in my sample period. Nevertheless, this back of the envelope calculation suggests that the topic of boards is important in the finance literature. Furthermore, its relative importance has increased over time. In Figure 1 I plot the number of papers published on boards between 1990 and 2014. The solid line shows the total number of board papers published in all

⁶ There may be discrepancies across different full text data sources due to omissions and differing treatment of editorials, errata and other non-article material.

journals in my sample. The dashed line shows the total number of board papers published in the finance journals in my sample. Both lines are clearly trending upwards over time.

To illustrate that this trend is not an artefact of an increase in journal space, I plot the fraction of all papers in the top 6 finance journals that are on boards in Figure 2. The dashed line shows the fraction of all papers in the top 3 finance journals, JF, JFE and RFS, on boards. Figure 2 shows that finance journals are increasingly allocating space to papers on boards. This is particularly true of the top 3 journals.

-Insert Figure 2 about here-

An increase in the number of papers on boards is meaningless if nobody reads them. To examine the impact of board papers, I examine citation and reference patterns using database #3. Panel A of Table 2 shows summary statistics for my citation data. Since it takes time to accumulate citations, I summarize the data for the period from 1996 to 2014 (left panel) as well as the period from 1996-2010 (right panel). “Not Cited” is a dummy equal to 1 if the paper has no citations as of December 10, 2015. “Normalized Cites” is the average number of citations per year since publication year ($= \text{Cites}/(2015-\text{year published})$). The mean number of citations (normalized cites) is 67 (6.9) and the maximum is 3445 (278.8). The paper with the highest number of citations is Shleifer and Vishny’s (1997) survey of corporate governance. The paper with the highest normalized cites is Petersen’s (2009) paper on estimating standard errors. I do not classify either one of these as a board paper.

-Insert Table 2 about here-

“Number Refs (All)” is the number of papers in the reference list of the paper according to Scopus. The distribution of the number of references shows some distinct outliers. Some papers show up as having 0 references. Others have an exceedingly large number of references, e.g. the maximum is 246. I examine the titles of the papers to determine what explains these outliers. The observations with few references seem to be data

errors. The observations with many references belong to survey papers. For example, Shleifer and Vishny's (1997) paper is listed in Scopus as having 237 references. To reduce the impact of potential data errors, I focus on papers with references between the 1st (8 references) and the 99th percentile (86 references) in my analysis of references. However, the interpretation of my results remains unchanged if I use the entire sample.

-Insert Figure 3 about here-

In Figure 3, I plot the fraction of citations of board papers published in each year relative to the total number of citations of papers published in the same year in the top 6 finance journals. The fraction of citations of board papers is trending upwards. It is possible that this trend is merely an artefact of the increasing numbers of board papers. If citations are distributed evenly across papers, for example, then the more board papers there are, the greater the fraction of citations they will get. Similarly, if authors always reference all papers on the same topic, then an increase in the number of board papers can lead to a mechanical increase in the fraction of citations of board papers.⁷ I examine these explanations using OLS regressions of citations on control variables. Since citations are count data, Ellison (2011) uses negative binomial regressions to analyze citation patterns. The interpretation of my results remains the same if I approximate negative binomial regressions by using the logarithm of the dependent variables instead. Results of these regressions are available upon request.

In Columns I and III of Table 2 Panel B, I regress "Cites" and "Normalized Cites" to each paper on a board paper dummy variable, a "Top 3" dummy variable and the number of papers published in the same year. I include year of publication fixed effects and cluster the standard errors by journal. In Columns II and III, I include interactions between "Top 3" and "Board Paper".

⁷ I thank Jianfeng Shen for suggesting this explanation.

Consistent with expectations, “Top 3” papers have significantly (both statistically and economically) more cites and normalized cites. Column III suggests “Top 3” papers have 4.6 more normalized cites. This is 66.3 more than the mean number of normalized cites of 6.9. In contrast, the coefficient on the “Number of Papers (Year)” is negative and significant in all columns. A one standard deviation increase in the number of papers published in a year (86.1) is associated with an average reduction of 56.5 cites per paper in Column I and a 1.7 reduction in normalized cites in Column III. Relative to the mean number of cites of 67 and mean normalized cites of 6.9, this is an economically large effect.

There are several possible explanations for this correlation. For example, editors may restrict journal space to increase cites. They may also increase the number of papers when cites are low. Regardless of the explanation, the negative correlation between the number of papers and citations suggests that it is not obvious that a mere increase in the number of papers on a topic would lead to more cites to papers on that topic.

Across all columns the coefficient on “Board Paper” is positive and significant. Board papers get 35.1 more cites than other papers and 3.6 more normalized cites controlling for year of publication and the total number of papers published in the same year. Columns II and IV suggest that this pattern is not driven by particularly high cites of “Top 3” board papers. Results are also similar in different specifications. Without any controls, for example, board papers have on average 24 more citations than other papers.

To examine whether board papers have longer reference lists, I regress the number of references for each paper on “Board paper” and “Number of Papers (Year)”. I also control for “Top 3” although it is not obvious that Top 3 papers would have different referencing patterns. The coefficient on “Number of Papers (Year)” in Column V is positive and significant. It suggests that a one standard deviation increase in “Number of Papers (Year)” (86.1) leads to an addition of 5.3 papers to a reference list, which is a 13.6% increase in the

length of the average reference list (38.9 papers). This is consistent with the idea that the size of the literature should affect citations. However, since it takes an increase of 86.1 papers to achieve an increase of 5.3 papers, these results, in combination with the results in Columns I-IV, also suggest that as the size of the literature grows, authors become more selective in their referencing behaviour.

Controlling for “Number of Papers (Year)” and “Top 3”, board papers do not have statistically significantly longer reference lists than other papers. The magnitude of the coefficient on “Board Paper” is 1.76.⁸ Even if all board papers in my sample had 2 more references per paper, it is hard to see how this could explain the fact that Column I suggests board papers get on average 35.1 more cites than other papers.⁹ Although testing hypotheses explaining the citation patterns I document is outside the scope of this chapter, I suspect they reflect the interdisciplinary nature of the topic of boards. Even if they are published in finance journals, board papers may be more likely to be cited in other disciplines such as accounting and management.

It seems safe to say that the “explosion” in the board literature is continuing. An interesting question is what explains this “explosion”. One reason may be that boards have become a central focus of policy-making since the corporate scandals of the early 2000s. As I document in Section 6, policy-makers around the world are increasingly concerned with the structure and composition of corporate boards. Thus, the study of boards offers many opportunities for academics interested in policy-relevant work.

⁸ In specifications with logs of the dependent variables and the log of “Number of Papers (Year)” in the controls, the coefficients on all right hand side variables have the same sign and similar level of significance as in Table 2, except Board Paper* Top 3, which is negative and insignificant in Columns II and IV and negative and significant at the 5% level in Columns VII and IX, and “Number of Papers (Year)”, which changes signs but is insignificant in all Log(Normalized Cites) regressions. The interpretation of the results is the same.

⁹ I also examine whether my results are biased by the fact that my set of board papers includes papers that are not specifically focused on boards themselves, but on what boards do, e.g. setting CEO compensation and making CEO turnover decisions. If I set Board Paper=0 for papers that only mention boards or directors in the text, not the abstract, title or the keywords, the coefficients on Board Paper in columns I, III and V become 42.99 and 4.08, both significant at the 5% level, and 1.17 (not significant). This suggests that, if anything, I am underestimating the impact of papers focused on boards by having a broad definition of board papers.

In the next sections, I start describing the literature in more detail. As my analysis in this section hopefully makes clear, it would be impossible to do justice to every paper on this topic individually. To deal with this problem, I try to document systematic themes in the published literature using a linguistic analysis of titles, keywords and abstracts. In Sections 3 and 4, I motivate this analysis using a discussion of broad themes in the literature. In later sections, I discuss new themes in the literature in more detail.

For readers interested in topics or papers I am not able to cover in detail, including papers in the management literature, I provide a list of survey papers that touch on the board literature in Table A.1 in the Appendix. To ensure this list is relatively comprehensive, I verify that the list includes all surveys papers I could identify using an Econlit search for papers with the word “board” in the abstract and “survey” or “review” or “overview” in the title. I also check that unpublished surveys with the terms “survey board director” in the title, abstract and keyword fields on SSRN are on the list. Table A.1 also includes the only paper in the *Annual Review of Financial Economics* and *Annual Review of Economics* with the term “board” or “director” in the keywords as well as survey papers associated with the word “board” in the editorial by Aguilera, Florackis and Kim (2016) to the May 2016 Special Issue of *Corporate Governance International Review* on Reviews of Corporate Governance.

Other chapters in this Handbook also discuss topics related to boards. Amongst others, Hermalin and Weisbach (2017) discuss the boards’ assessment role. Edmans and Holderness (2017) discuss blockholders on boards. Mehrotra and Morck (2017) discuss the boards’ objectives and Mulherin, Netter and Poulson (2017) discuss boards in the context of M&A activity.

3. The role of boards in corporate governance-a conceptual framework and survey

The title of this section is intentionally taken from the title of Adams, Hermalin and Weisbach (2010) who provide an extensive discussion of the board literature since Hermalin and Weisbach (2003). Before I discuss new themes in the literature, it is useful to first revisit some of the themes in Adams, Hermalin and Weisbach. While these themes also occur in other surveys of the economics and finance literature on boards, I focus on Adams, Hermalin and Weisbach (2010) because it is relatively recent and is devoted exclusively to boards as opposed to general governance mechanisms.

Adams, Hermalin and Weisbach organize their survey around the following topics: what boards do, board structure, how the board works and director incentives. I touch on the first two topics in this section. Section 4 discusses how the board works. I briefly discuss director incentives in Section 7.

3.1 What do directors do?

State laws vest the board with managing or directing the affairs of the corporation. Board delegate most, but not all, of the management of the corporation to executives. According to the American Bar Association (2009, p. 8), the list of functions that are retained by the board and that are central to their role is as follows:

- Selecting, monitoring, evaluating, motivating and compensating, and when necessary replacing the CEO and other key members of senior management;
- Monitoring corporate performance and assessing whether the corporation is being appropriately managed by the senior management team;
- Providing strategic guidance to the senior management team and reviewing and approving financial objectives and major corporate plans and actions;
- Developing corporate policy;

- Reviewing and approving major changes in auditing and accounting principles and practices;
- Overseeing audit, internal controls, risk management and ethics and compliance;
- In a public company, overseeing financial reporting and related disclosures;
- Declaring dividends and approving share repurchase programs;
- Making decisions on major transactions and other material events concerning the corporation for submission to the shareholders for approval; and
- Performing any other functions prescribed by law, regulation or listing rule, or the corporation's certificate of incorporation or bylaws.

Early descriptive work by Mace (1971), Demb and Neubauer (1992) and Lorsch and McIver (1989) confirms that boards carry out these activities. But the relative weight boards place on different tasks may vary across firms and over time. For example, Adams (2009) shows that directors vary in how important they perceive their monitoring and advisory roles in a survey of the population of directors of listed companies in Sweden. One reason is that the allocation of decision-making power is an important predictor of the roles directors perceive to be important and decision-making power is allocated differently in different firms.

Burkart, Miglietta and Ostergaard (2017) use a unique historical setting to examine boards' roles. They examine 85 Norwegian public corporations at the turn of the 20th century when Norway had no statutory corporate law, but limited liability firms had legal personhood and could freely design their governance structures. They show that not all companies chose to have a board. In the companies that chose to have boards, boards have different decision-

making authority and perform different roles. Burkart, Miglietta and Ostergaard classify the roles as monitoring (boards have authority over dividend and other decisions and are required to inspect the books), advising (managers have authority over decisions), and mediating among shareholders (boards have authority over the dividend decision only). Since the choice of having a board that performs different roles is endogenous, unlike in modern settings, the evidence in Burkart, Miglietta and Ostergaard suggests that each of these roles adds values in different circumstances.

3.1.1 CEO turnover and assessment: uncommon and common board tasks

While important, some tasks, such as approving acquisitions or replacing CEOs, may be relatively rare. Ellis, Guo and Mobbs (2014) estimate that S&P 1500 firms experienced CEO turnover in only 12% of firm-years between 1997 and 2010. CEO turnover is forced in only 2% of firm-years and only 7% of directors experience forced turnover. While replacing underperforming CEOs is often described as one of the most important functions of boards, many directors will never experience CEO turnover, either forced or unforced.

For most boards the process of evaluating the CEO will be more important than the hiring and firing process itself. Even if boards do not fire CEOs for underperformance, they need to constantly ask themselves whether they *should* be firing the CEO. They can accomplish this in either by monitoring the CEO directly or by assessing the CEO's ability (or both).

Theoretical work on CEO ability has tied the problem of assessing CEO ability to CEO bargaining power and hold-up problems, project selection, information acquisition and CEO selection. These models emphasize that there are trade-offs in assessment. If the CEO is proven to be of high ability then the CEO may be able to bargain for a board that is less independent and monitors less (Hermalin and Weisbach, 1998). So ability and independence

may be negatively correlated. Similar predictions can also arise in models in which the board's assessment role creates hold-up problems for the CEO (e.g. Almazan and Suarez, 2003; Laux, 2008).

Assessment relies crucially on information that may be costly to obtain. For example, the board may not act if there is a benefit to waiting to learn valuable information from other governance mechanisms, e.g. the existence of a takeover bid (Hirshleifer and Thakor, 1994) or it may give free reign to CEOs in order to learn from his or her mistakes (Dominguez-Martinez, Swank and Visser, 2008). Similarly, short-term projects allow the board to get quick feedback on CEO ability (Laux, 2012). Hermalin (2005) argues that assessment is more valuable for external CEOs whose ability is more uncertain, but only if the board obtains the information necessary to monitor the CEO.

Dow (2013) emphasizes that board ability is also important for CEO turnover decisions. The evidence in Denis, Denis and Walker (2015) suggests that a board's ability to assess the CEO depends on its structure. They show that boards in spin-offs are structured differently when there is more uncertainty about the ability of the CEO of the spin-off.

A fair amount of empirical evidence is consistent with the idea that boards dismiss CEOs following poor performance (e.g. Jenter and Kanaan, 2015). However, it is still not clear how to evaluate the quality of boards' dismissal decisions and which theoretical constraints on assessment are important. Some suggest that boards may be conservative in firing CEOs (e.g. Dow, 2013; Faleye, 2007; Taylor, 2010) while others suggest that boards are prone to firing CEOs for factors that are beyond the CEO's control. Jenter and Kanaan, (2015) provide evidence that a decline in industry performance from the 90th to the 10th percentile doubles the probability of a forced CEO turnover. Kaplan and Minton (2012) document that CEO turnover risk increased substantially between 1992 and 2007. Evidence in Cziraki and Groen-Xu (2017) suggests that having a longer time horizon through reduced

performance-sensitivity of turnover can be important for CEO risk-taking. Cornelli and Karakaş (2012) argue that increasing the CEO's time horizon may be important in firms that are taken private. They find that CEO turnover is lower when LBO sponsors are on the board. Thus, CEOs in LBOs may be better insulated from boards' tendency to use poor industry performance and market performance in turnover decisions (Kaplan and Minton, 2012; Jenter and Kanaan, 2015).

It is not yet clear why boards emphasize performance measures that are outside the CEO's control in their turnover decisions. Eisfeldt and Kuhnen (2013) suggest that when industry conditions change, the quality of the match between CEOs and firms changes. When the match between firms and CEOs is based on multiple characteristics, their model shows that boards should optimally take industry performance into account in their turnover decisions.

An alternative explanation is that boards are too sensitive to shareholders' attribution biases. In Fisman, Khurana, Rhodes-Kropf, and Yim's (2013) model, misattribution of poor performance to the CEO rather than to circumstance leads to worse firm outcomes. In their setting, weak governance and entrenchment can be effective at insulating CEOs from misattribution.

Cornelli, Kominek and Ljungqvist (2013) suggest that soft information plays a similar role in helping boards with large shareholders avoid firing a CEO for bad luck or in response to adverse external shocks. They study CEO turnover in private equity-backed firms. Using unique data on board decisions, they show that enabling boards to act on their soft information leads to better CEO-turnover decisions. Hermalin and Weisbach (2017) discuss the role of assessing and learning about managerial ability in more detail in their chapter in this handbook.

Much of the assessment literature focuses on the board's monitoring role, as does most of the literature on boards to date (see e.g. Section 5). Because non-monitoring tasks are harder to measure empirically, it is tempting to question the relevance of non-monitoring tasks such as "Providing strategic guidance" or "Developing corporate policy" in the American Bar Association's list of what boards do. But lack of direct evidence on e.g. "strategic guidance" does not mean the provision of strategic guidance is unimportant. In fact, since boards are legally the primary corporate decision-making body, one might worry if boards were *not* involved in strategic guidance. Theory also suggests that boards that engage in non-monitoring activities like strategic guidance might perform better than pure monitoring boards. Adams and Ferreira (2007) argue that these tasks serve an important role because they complement the monitoring role of the board.¹⁰ The reason is that assessment depends crucially on information that directors may more readily acquire if they have a strategic (or other) role.

Adams and Ferreira (2007) argue that if boards only monitor, a CEO may be reluctant to share information with the board because it can be used to assess the CEO's ability and potentially fire the CEO. But if boards have a strategic role, the CEO has an incentive to share information with the board to obtain advice that may be helpful for increasing firm value. Since this information can also be used to assess CEO ability, monitoring is better when boards also have an advising role. In situations in which the CEO is still reluctant to share information boards may commit not to monitor too much. This means "friendly" boards may be better for shareholders. But when the CEO's benefits of staying in control are too high, Adams and Ferreira argue that shareholders are better off when the advisory and monitoring roles of the board are split in a dual board system as in e.g. Austria, Germany, Denmark or the Netherlands (see Section 3.2.1).

¹⁰ See also Adams (2000).

Most models incorporating the board's strategic role (e.g. Harris and Raviv, 2008; Raheja, 2005, Song and Thakor, 2006) focus on information transmission in a setting of incomplete contracting.¹¹ Shareholders could do better if complete contracting were possible. But since it is assumed not to be possible, the contractual solution is mimicked by boards who partially commit to how information is being used by being less diligent, less controlling or less independent.

Although not as well-developed as the literature on monitoring, there is a growing empirical literature on the board's strategic role. Holmstrom (2005) (see especially Section V of his paper) provides a thoughtful account of his own experiences on the board of a family company. Like Adams and Ferreira (2007), he suggests that information is extremely important and that boards can only get it if they have a trusting relationship with management.

Early empirical work in this area includes Adams (2009), Schmidt (2008), Ravina and Sapienza, 2009, Duchin, Matsusaka and Ozbas, 2010). In the survey data in Adams (2009), directors who agree more that they primarily monitor management perceive that they participate less in boardroom discussion than directors who agree that the CEO often asks them for advice. Ravina and Sapienza (2009) provide direct evidence that outside directors may be less informed than executives by examining the market reaction to insider trades. They find that the market reacts less positively to purchases of stock by outsider directors than to purchases of stock by executives which suggest the trades of outside directors have less information content. Duchin, Matusaka and Ozbas (2010) provide evidence that

¹¹ Exceptions are Song and Thakor (2006) and Graziano and Luporini (2005). Graziano and Luporini also argue that the dual board separation of strategy formation from monitoring may be beneficial. In their model, a large shareholder who is involved in strategy formation may pursue projects that provide the shareholder with private benefits.

information asymmetry matters by documenting that additions of outside directors add value to firms when the costs of information acquisition are low, but not when the costs are high.¹²

3.1.1 Moving away from analysing board independence

As I show in Section 5, the literature is paying increasing attention to the board's strategic role. Part of the reason is that the evidence on the board's monitoring role is inconclusive. In their 1999 survey of the relationship between board independence and firm performance Bhagat and Black (1999, abstract) conclude "Overall, within the range of board compositions present today in large public companies, there is no convincing evidence that greater board independence correlates with greater firm profitability or faster growth." Hermalin and Weisbach (2003) reach the same conclusion in their 2003 survey. They state (p. 20) "Notably, board composition is not related to corporate performance".

The evidence that board independence is related to other non-turnover related corporate outcomes is also inconclusive. One reason may be that it is difficult to measure truly independent directors. Until the NYSE/Nasdaq listing standards required the disclosure of director independence starting in 2004, proxy statements in the US did not explicitly identify which directors were formally independent. Researchers had to infer independence using various other sections of the proxy statements including sections related to interlocks, family relationships, related part transactions and the ownership and compensation sections. But even if directors are formally independent, they may not be independent in thought. The recent literature on social networks points out, for example, that directors who satisfy the technical definition of being independent may have social ties to the CEO that may weaken

¹² Atanasov and Black (2015) raise three analytical concerns about Duchin, Matsusaka and Ozbas (2010). Duchin, Matsusaka and Ozbas (2015) agree with two concerns, which do not affect the original conclusions. However, they disagree with Atanasov and Black's (2015) argument for adding ad-hoc control variables to achieve covariate balance and controlling for differences in pre-shock board independence between treatment and control firms. They argue alternative empirical specifications support their original conclusions.

their monitoring ability (e.g. Hwang and Kim, 2009; Cohen, Frazzini and Malloy, 2012; Fracassi and Tate, 2012; Nguyen, 2012).

A long-standing argument in the management literature is that directors' independence can be compromised by the mere fact that the CEO was involved in appointing them (e.g. Singh and Harianto, 1989; Wade, O'Reilly and Chandratat, 1990). Coles, Naveen and Daniel (2014), Hasan, Francis and Yu (2012) and Kim and Lu (2017) examine this idea from a finance perspective. Landier, Sraer and Thesmar (2012) and Kim and Lu (2017) extend the argument that the CEO's involvement in appointments matters to executives and provide evidence suggesting that the board's independence from management is also a function of executives' independence from management.

Another reason independence may appear irrelevant is that it is difficult to disentangle its causal effect from the effects of other factors. Many papers try to use the regulatory reforms of the early 2000s to identify a causal effect of board independence. One strategy is to view the passage of the reforms as a treatment that affects some firms more than others and perform difference-in-difference analyses. In these analyses, boards that are independent prior to the passage of the reforms are considered to be "control" firms while boards that had to become independent to comply with the reforms are "treated".¹³

Although the idea is compelling, this strategy does not live up to an economist's standards for causal identification. One problem is that the reforms were broader than just board independence. SOX requires that boards are responsible for internal control, audit committees consist entirely of independent directors, audit committees have at least one financial expert, management certifies financial statements, and board members face large penalties for corporate accounting fraud. The NYSE and Nasdaq exchanges imposed additional requirements on committee structure.

¹³ An alternate strategy is to use sudden deaths of directors (e.g. Nguyen and Nielsen, 2010) to identify the effect of independence.

Currently, for example, a company listed on the NYSE has to have a majority of independent directors, an independent audit committee consisting of at least three members, a financial expert or a reason not to have a financial expert, a completely independent nominating/corporate governance committee, a completely independent compensation committee, regularly scheduled meetings of the nonmanagement directors, and a yearly meeting of the independent directors. Nasdaq's listed companies are subject to similar requirements, although they do not have to have a separate compensation or nominating committee. In addition, SOX, NYSE, and Nasdaq tightened their definitions of independent directors.

Using a sample of firms from 1989 to 2005, Linck, Netter and Yang (2009) show that board structure changed around the SOX/NYSE/Nasdaq reforms. Board independence increased, but so did measures of directors' workload, e.g. the board meeting frequency. Horstmeyer (2016) finds that the internal structure of the board is different after the reforms. Alam, Chen, Ciccotello, and Ryan (2016) document that the geographic proximity of directors to firms decreased around the reforms and this decrease was accompanied by a decrease in financial reporting quality. Using combined data on unregulated firms from Boardex and ISS for the period from 1996 to 2010, Adams, Rangunathan and Tumarkin (2016) show that even firms with independent boards prior to SOX/NYSE/Nasdaq increased independence and changed their reliance on committees after the reforms—consistent with the idea that many of these firms should not be considered to be “untreated”.

Somewhat ironically, the increase in independence associated with SOX/NYSE/Nasdaq reforms may have made it impossible to identify causal effects of board independence in the US using data after these reforms. Nowadays, most boards of listed companies in the US only have one insider on the board, the CEO. Using Adams, Rangunathan and Tumarkin's (2016) sample, I estimate that in 2002 48.34% of the 1,684 firms in their

sample had only one insider on the board. Of the 814 firms with only one insider 62.16% had at most one affiliated/grey director on the board. By 2009, 68.39% of the 2,958 firms in their sample had only one insider on their board. Of these firms, 63.87% of firms did not have an affiliated/grey director on the board—so all other directors were independent—and 88.14% had at most one affiliated director.

The lack of inside director representation is more pronounced in the large firms that are often the focus of empirical studies. I estimate that a one standard deviation increase in $\text{Ln}(\text{Assets})$ in 2009 is associated with a 2.42% increase in the likelihood of having only one insider on the board. What this means is that in recent data much of the variation in board independence is driven by variation in the denominator of independence, namely board size.

To find settings in which there is meaningful variation in independence, one strategy may be to draw on history. Examples of papers that take this approach are Graham, Hazarika, Narasimhan (2011) and Avedian, Cronqvist, Weidenmier (2016) who examine board structure in the 1930s.¹⁵ Graham, Hazarika, Narasimhan focus on the Great Depression as a shock to board actions while Avedian, Cronqvist, Weidenmier focus on the creation of the SEC as a shock to governance.

-Insert Table 3 about here-

Another strategy for examining independence is to use cross-country data. Table 3 shows country-level averages for selected firm-year level board characteristics and the natural logarithm of total assets in USD ($\text{Ln}(\text{Assets})$) between 2001 and 2010 in the Adams and Kirchmaier (2015) data set. To ensure Boardex data can be considered to be representative for a country in a given year, Adams and Kirchmaier only allow data on firms in a country in a given year to enter the sample if Boardex covers at least 70% of the total

¹⁵ Calomiris and Carson (2014) and Babina, Garcia, Tate (2016) also study boards in a historical context, but with a different focus. Calomiris and Carson (2014) focus on ownership of national banks in the 1890s. Babina, Garcia, Tate (2016) focus on networks rather than board structure.

market capitalization of that country in that year. They also require a country to enter the sample in more than one year. Using the 2010 release of Boardex, this procedure results in a sample of firm-level data from 22 countries from 2001 to 2010 with varying coverage over time. I report averages for non-financial firms and banks separately in order to highlight differences in governance between banks and non-financials that I discuss in Section 3.2.4.

Table 3 reports averages for both the fraction of NEDs, non-executive directors or outside directors, as well as the fraction of independent directors by country, where independence is identified by Boardex. As is evident from the table, some countries have on average more outside directors than others, e.g. Portuguese firms have on average 58.4% outside directors while Finnish firms have 96.4% outside directors. But even if boards have a large portion of outside directors, they need not be fully independent. For example, Norway has 94.8% outside directors but only 26.1% of directors are labelled as independent directors by Boardex.

Given the United Kingdom's influence on the adoption of corporate governance standards around the world (e.g. Baum, 2017), it is perhaps surprising that the average proportion of NEDs (53.3%) and board independence (35.3%) for the UK are not the highest in the sample. One reason why it appears low is that Boardex covers many more firms in the UK than it covers in most other countries. As a result, there are many more small firms in Boardex's UK sample than there are in Boardex's samples from other countries. Mean $\text{Ln}(\text{Assets})$ in the UK is 4.742, which is the lowest mean for all countries in Table 3. If I restrict the UK non-financial firm sample to firms with above mean UK assets, with $\text{Ln}(\text{Assets})$ of 10.02, independence increases to 55.2%. The observation that firm size is correlated with independence also suggests that the effects of independence may be more readily documented in samples of smaller firms rather than samples of bigger firms.

Variation in independence may be even greater outside of the mostly Western countries in Table 3. Because the US economy boomed at a time when Asian economies were in crises, many countries in Asia adopted Anglo-American governance standards (Gilson, 2001; 2006). Because independent directors represented a new corporate governance paradigm in the US at the time (Gordon, 2007), independence requirements were central to governance reform following the Asian crisis. As Puchniak, Baum and Kim (2017) describe, board independence has increased rapidly in Asian countries as a result. In fact, average board independence is often higher in some countries in Asia than in the US where the legal concept of independence originated (e.g. Baum, 2017).

The cross-country and over time variation in board independence makes Asia a potentially interesting laboratory for analysing its role. However, Puchniak and Lan (2017) and Puchniak and Kim (2017) also show that independent directors perform different roles in different countries. Thus, the idea that there is only one notion of an “independent” director is misleading. While cross-country analyses have the potential to add great insight into our understanding of independent directors, they must be done carefully.

Of course, other measures of the board’s monitoring role exist than just independence. One measure that the literature relates inversely to a boards’ monitoring intensity is its “busyness”, as proxied by some measure of how many directorships directors have in other firms. While Fich and Shivdasani (2006) find that “busy” boards are negatively related to measures of firm performance, Ferris, Jagannathan and Pritchard (2003) do not find evidence that having too many directorships is detrimental. Field, Lowry and Mkrtchyan (2016) find that “busy” boards are associated with better performance in a sample of IPO firms. The fact that the cost of “busyness” seems to be context specific supports the idea that board roles vary across firms.

3.1.2 Towards analysing the boards' strategic role

While recent data may no longer be as useful for identifying the effect of independence, it offers more possibilities for examining the strategic role of boards. One reason the early literature on boards may have focused so heavily on board independence is that it was relatively easy to measure using hand-collected data. While one can test the importance of boards' strategic roles using readily available measures of board structure, e.g. Duchin, Matsusaka and Ozbas (2010), the availability of more detailed data sets on boards makes it easier to examine strategy setting.

Some of the early work trying to separately measure boards' advisory and monitoring roles relied on hand collected data on committee structure, meeting frequency and director compensation. Klein (1998) studies the representation of insiders on board committees in a sample of S&P 500 firms in 1992. She finds that greater representation of insiders on finance and investment committees is associated with better firm performance. She argues her evidence is consistent with the idea that insiders provide valuable information to the board.

Adams (2003) analyzes committee data for 358 Fortune 500 firms in 1998. She classifies board tasks by classifying committees into "advising", "monitoring" and "stakeholder" committees. She estimates how much effort boards devote to these three functions by estimating the fraction of meetings and fraction of total compensation boards allocate to these functions.

Hayes, Mehran and Schaefer (2004) examine committee data for 500 firms in 1997/1998. They document that there is a significant amount of variation in the number of committees and the presence of each committee, which suggest that boards' roles vary across firms.

More recently, Horstmeyer (2016) collects two cross-sections of data on committee structure from 1999 and 2005/2006 and Nguyen (2014) expands upon a base sample of

committee data from the Corporate Library for three years (2006-2009). While the hand-collected data is useful for highlighting the variation and richness of board structures, the cost of hand collecting is high. This makes it difficult to assemble samples that are large enough to address concerns about omitted variables through the use of firm fixed effects or to analyse how board structures change over time.

The introduction of the Boardex dataset to the literature allows academics to examine the some of the same measures as the papers using hand-collected data did, but on a much larger scale. In the Boardex data, one can easily measure educational affiliation, career paths, networks among individuals and industry and country-level experience. Some of this data is also available in the ISS data. While all of these measures can be associated with monitoring, it is intuitive that they also matter for strategy setting. Examples of papers that exploit this type of data to examine boards' strategic roles are Schmidt (2015) (networks), Kim, Mauldin and Patro (2014) and Adams, Rangunathan and Tumarkin (2016) (committees), Coles, Daniel and Naveen (2012) (connections), Gygas, Hazledine and Martin (2016) and Khang, Liu, Low and Zhang (2014) (social ties). In Section 7, I mention other work that also uses this data, but that focuses on individual director level measures of "expertise" to examine directors' and the board's role.

The recent diffusion of other data collection techniques offers additional opportunities for examining the boards' strategic role. One way to measure boards' strategic role is to simply ask them about it surveys (e.g. Adams, 2009).¹⁶ While Economists have traditionally been sceptical of survey data (see Bertrand and Mullainathan, 2001), surveys of executives have become more prevalent in recent years (see e.g. the series of papers by John Graham and Campbell Harvey and their co-authors). While surveys have their own sets of empirical problems, they can complement large-scale empirical work by providing a unique perspective

¹⁶ Although experiments can also be useful for understanding board behaviour (e.g. Gillette, Noe and Rebello 2003, 2008), there are still relatively few experiments in the literature.

on how boards function. If one is lucky enough to have minutes of board meetings, (e.g. Schwartz-Ziv and Weisbach, 2013; Adams, 2017) or recordings of board meetings (Nicholson, Pugliese and Bezemer, 2017) one can also use textual and linguistic analyses to analyse board behaviour.

3.2. How are Boards of Directors Structured?

As I show in Section 5, much of the work on board structure has focussed on the US. As a result, many basic facts about board structure in the US are well-known. There is less systematic work on board structure outside the US and UK in the economic and finance literature. As I argue below, this is not because boards outside the US are the same as in the US. In fact, there is quite a lot of variation in board structure across countries. Why this variation occurs and how board structure is tailored to specific environments are interesting questions for research.¹⁷

3.2.1 Boards in and outside the US

In the US, boards consist of insiders (executives) and outsiders. Outsiders are either independent directors, i.e. directors with no business, family or interlock connections to the firm or affiliated (or grey) directors, who do have some formal connection to the firm. Some firms may have a “lead independent director”, a director who acts as a liaison between the independent directors and the rest of the board (e.g. Lamoreaux, Litov, Mauler, 2014; Xu, 2015). CEOs may hold the chairman of the board position and boards may be staggered, which means that only one third of the board is up for election every year.

¹⁷ The 2014 special issue of *Corporate Governance an International Review* on “National Governance Bundles” contains useful discussions of this topic from the perspectives of different disciplines, see e.g. the editorial by Schiehl, Ahmadjian and Filatotchev (2014) and Asland and Kumar (2014). See also Ferreira and Kirchmaier (2013) who examine variation in board structure in Europe.

All listed firms have committees. Although having committees is now a requirement of SOX and the NYSE/Nasdaq listing standards, most firms had committees far before these requirements. In a sample of S&P 500 firms in 1992, Klein (1998) documents, for example, that 483 firms (99.6%) have audit committees, 475 (97.9%) have compensation committees, and 374 (77.1%) have nominating committees. She mentions that her data is consistent with observations at the time that there was a rising trend towards committee structures in the 1980s.

Outside the US, boards also consist of insiders/executives and outsiders, of which some may be considered to be more independent than others. The factors that potentially compromise a director's formal independence can vary across countries. The factors that compromise a director's true independence may also vary across countries. Puchniak and Kim (2017) argue that there are at least 6 key factors that shape the types of independent directors that appear in different countries in Asia. The factors are (1) shareholder ownership structures; (2) legal origins; (3) types of shareholders; (4) functional substitutes; (5) political economy; and (6) cultural norms. For example, Puchniak and Kim (2017) describe that family firms in Singapore may appoint family friends to be "independent" directors. While these directors may not be independent monitors, there is evidence that these directors serve a valuable role as trusted mediators between family member block shareholders in family-shareholder disputes.

As Table 3 highlights, family ownership varies substantially across countries in Europe. Thus, it is plausible that at least some, if not all of the factors Puchniak and Kim argue are important for understanding board independence in Asia are also important outside of Asia. Swan and Forsberg (2014) highlight, for example, that the label "independent director" has a different meaning in Australia than it does in the US. In Australia, independent directors must be independent from management and independent from major

shareholders. This leads to a lack of alignment between directors and shareholders according to Swan and Forstberg (2014).

In many countries outside the US, the CEO may also hold the chairman role and boards may be staggered and have committees. But boards outside the US may have additional structural features that do not exist in the US. For example, firms in some countries have dual board structures that might represent an extreme form of the separation of tasks that occurs through committees (Adams and Ferreira, 2007). In a dual board structure, insiders and outsiders are formally separated into “management” and “supervisory” boards (see e.g. Belot, Ginglinger, Slovin, Sushka, 2014).

Boards outside the US may also allow for the formal representation of specific stakeholders, such as employees (see Mehrotra and Morck, 2017 in this Handbook and e.g. recent work by Kim, Maug and Schneider, 2016), or types of directors, e.g. women, on the board. I postpone a discussion of gender policies to Section 6. Table A.2 provides information on the existence of dual board structures and codetermination policies in EU Member States, Norway and Switzerland. The table describes the type of board structure that exists in each country, whether or not codetermination entitles employees to sit on the board, the type of companies with employee board representation and the rights of employee directors. It also shows the “Board representation (BR)” index from Vitols (2010) which measures the strength of legal rights in each country for employee representation in the company's highest decision-making body. The far right columns show the average percentage of employee representatives on the board in non-financials and banks in Adams and Kirchmaier’s (2015) Boardex sample.

Table 3 and A.2 suggests that across the EU there is considerable variation in board structure and composition. The variation may be greater than the tables suggest because of country-specific rules that affect how boards are set up. For example, boards in Sweden are

similar to those in the US and UK, but no more than one person on a Swedish board can be a senior manager, typically, but not always the CEO. Since the law requires that the Chairman and CEO positions are separated, in companies with an executive Chairman, the CEO does not sit on the board. In fact, in Sweden it is common that CEOs do not sit on the board at all, which is quite different from the situation in the US or UK. Because Swedish ownership structure is quite concentrated, it is also common for large shareholders to be represented on the board. The Swedish Governance Code requires that a majority of directors are independent from management and at least two directors are independent of the major shareholder (a shareholder with more than 10% ownership). Thus, “independence” may have a different meaning in Sweden than in some other countries.

Because the coverage of Boardex for Asian countries was historically weaker than its coverage of Western countries, Tables 2 and 3 focus primarily on Western countries. Boards in Asian countries may have additional structural characteristics that affect how the board operates. For example, Morris (2008) describes that in China companies typically have a “board of supervisors” that is charged with reviewing the company’s finances and supervising the board of directors and senior management. The supervisory board is usually chaired by an employee representative from the All China Federation of Trade Unions. Other members of this board are at least one person elected by shareholders, and, typically, an official from the company’s internal Chinese Communist party committee. Company directors and other senior managers are not allowed to sit on the board of supervisors (Morris, 2008).

Another feature of the Chinese system is that directors can publicly express their dissent with management (e.g. Jiang, Hua, Zhao, 2016; Ma and Khanna, 2016). Thus, even though companies in China formally have a one-tier board, their boards are not strictly comparable to US or UK boards. Complicating our understanding of Chinese boards even

further is the fact that the Chinese state has more control over privately-owned enterprises than ownership structures might suggest, as Milhaupt and Zheng (2015) argue. Puchniak, Baum and Nottage (2017) provides more details about how board structures that superficially look the same as in the US or UK may have different functions in Asian countries.

3.2.2 The Evolution of board structure

Little is known about how board structure evolves over time, even in the US. Examining trends in board structure can be useful for identifying the features of board structure that vary in economically interesting ways and for highlighting the extent to which there may be holes in our current understanding of boards. For the sake of making the argument, I document the evolution of board size over time in the 22 countries in Adams and Kirchmaier (2015). I focus on board size because board size is easy to compute and observe and its definition does not change over time, unlike the definition of independence.

Panels A-D of Figure 4 show plots of average board size in non-financial firms in different regions. Panel A is for countries outside of Europe. Panels B, C and D show data for Western, Northern and Southern European countries. These plots illustrate that there are notable trends in board size in some countries, e.g. Germany and Greece, but almost no trends in board size elsewhere. In most countries, the differences in average board size at the beginning of the sample and average board size in 2010 are economically small (less than one person).

-Insert Figure 4 about here-

Since Boardex covers both large and small firms and board size is related to firm size (e.g. Boone, Field, Karpoff, Raheja, 2008; Coles, Daniel, Naveen, 2008) the graphs in Panels A-D may reflect compositional changes in firm size. Panel E of Figure 4 shows the evolution of board size in a sample of non-financial firms whose mean size is relatively stable over

time, the S&P 1500 in the US. The data is from Adams, Rangunathan and Tumarkin (2017). In this sample, average board size is extremely persistent, even throughout the reform period around SOX. In contrast, as Panel F shows, board independence increased dramatically for this sample during the same time period. These graphs suggest that the patterns in board characteristics Linck, Netter and Yang document for the years from 1989-2005 extend to a longer period.

Figure 4 suggests that there may be more cross-country variation in board size than over-time variation. This is interesting because there is a literature arguing that larger boards may underperform smaller boards because of frictions in group decision-making. As Hermalin and Weisbach write in their 2003 survey article (p. 2): “For example, one of the most consistent empirical relationships regarding boards of directors is that board size is negatively related to firm profitability. The out-of-equilibrium interpretation of this finding says that limits on board size should be encouraged, or perhaps even mandated.”

Bennedsen, Kongsted and Nielsen (2008) identify Yermack (1996) as the first paper documenting a negative relation between board size and firm performance. In the aftermath of the corporate scandals of the 2000s, companies faced increased pressure to reduce board size. Many countries implemented corporate governance codes with explicit limits on board size (e.g. Bennedsen, Kongsted and Nielsen, 2008). However, the stability of average board size since 1996 in Figure 4 Panel E does not seem consistent with the idea that firms responded to pressure to reduce board size. This stability, along with what appear to be persistent cross-country differences in mean board size, appears more consistent with Hermalin and Weisbach’s (2003, p.2) equilibrium argument: “In contrast, the equilibrium interpretation of this result implies that some other factor is causing both board size and profitability,....”

The observation that firms may be in equilibrium is the motivation for Graham, Hazariqa and Narasimhan (2011) to study board size in a period of dis-equilibrium, the Great Depression. In their sample, complex firms (large multi-segment firms that they argue would benefit more from board advice) exhibit a positive relation between board size and firm value, and simple firms (small, single segment firms) exhibit a negative relation between board size and firm value. Accordingly, different sized firms restructure their boards differently in response to the Great Depression. Small firms react to the Great Depression by shrinking their boards. Before the Depression (1926-1929), they have boards of on average 10.16 directors. After the Depression (1930-1938), they have 9.36 directors. In contrast, large firms expand their board size from 14.08 pre-Depression to 14.32 post-Depression.

While boards appear to be in equilibrium in the 15-year period I document in Figure 4, Panel E, the data from Holderness, Kroszner and Sheehan (1999) suggest that board size has declined over the very long run even as firms have become bigger. For a sample of firms in 1935, Holderness, Kroszner and Sheehan document a board size of 8. They document the same average board size of 8 for a sample of firms in 1995 that are roughly four times the size of the firms they examine in 1935. Even though firms have become bigger over time, and arguably more complex, firms seem to have shrunk their boards (i.e. average assets per director increased), not expanded them over time. Moreover, this decline seems to have happened much before policy makers began pressuring firms to decrease board size.

One might argue that the long-term data patterns in Holderness, Kroszner and Sheehan (1999) are driven by changes in the composition of the population of firms. The evidence in Lehn, Patro and Zhao (2009) does not support this argument. Lehn, Patro and Zhao (2009) examine the evolution of board structure and firm size in a sample of roughly 80 firms that survived between 1935 and 2000. Even though these firms increased substantially in size, and presumably complexity, average board size decreased from 12.43 to 11.16 and

assets per directors increased dramatically. While declining growth opportunities may be one factor explaining the decline in board size, during the entire period sales per director shrank in only one period, the period right after the Second World War.

The evidence that firm size and complexity are important for understanding cross-sectional variation in board size for firms within a country is compelling because it is consistent across studies (e.g. Boone, Field, Karpoff, Raheja, 2008; Coles, Daniel, Naveen, 2008). But long-term data patterns suggest that other factors are also important. Figure 4, Panel F suggests that regulation is clearly important in shifting equilibrium board structure. While the reforms around SOX had little effect on average board size for US firms, the regulatory environment can still matter even if board size is not a direct target of the regulation. For example, Avedian, Cronqvist and Weidenmier (2015) show that average board size increased by two directors after the SEC was created in 1933. While their results suggest there was a substitution between governance mechanisms in 1933, it is possible that the nature of the interaction between governance mechanisms changes over time. The role of the board may also change over time. The fact that boards may have different roles in different contexts is important to keep in mind when trying to understand cross-country variation in board structure as in Panels A-D of Figure 4.

3.2.4 Staggered boards and firm value revisited again and again and again

Few features of board structure have generated as much debate in recent years as the staggering of director elections. A board is staggered or classified if only a subset of directors is up for (re-) election every year. Typically, staggered boards divide directors into three classes of roughly equal sizes. Theoretically, staggered boards are an insurmountable defence against hostile takeovers in combination with a poison pill. In fact, in their criticism of the finance literature on anti-takeover statutes, Catan and Kahan (2016, p. 646) write that “pill

validation statutes make business combination, fair price, and control share acquisition statutes moot”.

To understand why, it is important to understand what a poison pill does. A poison pill is a shareholder right plan that allows existing shareholders to buy shares at a discount if anyone buys a large block of shares (typically 10-20%) without management’s approval. Firms without poison pills can easily adopt one, even after receiving a hostile bid. A poison pill can only be removed by the board of directors. Thus, to remove the pill a potential bidder must wage a proxy fight to change the board. Since it takes at least three years to change the entire board when the board is staggered, staggered boards make the takeover process extremely costly—at least in theory.

Because of their potential role in takeovers, detractors of staggered boards argue that they allow managers to entrench themselves as the expense of shareholders. A popular index in governance research that includes a staggered board dummy as one of its six components is even labelled the “Entrenchment-Index” or E-Index (Bebchuk et al., 2009). Proponents of staggered boards argue that staggering elections ensures continuity on the board which is important for long-run investment and maintaining relations with customers and suppliers.

Many papers relate staggered board structure to firm value (see Amihud, Schmid and Solomon (2017) for a survey of the literature). Until recently the bulk of the evidence could be considered to be consistent with the entrenchment view. In fact, in their 2012 survey Adams, Hermalin and Weisbach (2012, p. 83) describe the literature on staggered boards as “All in all, it appears that firms with staggered firms do worse than firms with annual elections.” For example, Bebchuk, Cohen, and Ferrell (2009) find that firms with staggered boards have worse performance as measured by Q and Cohen and Wang (2013) provide evidence that market participants perceive staggered boards to be value-reducing on average.

However, there is little direct evidence that a staggered board will continue to resist a bid if one third of the board is replaced in a proxy fight, i.e. it is not clear that more than one year is necessary to take over a firm with a staggered board. Moreover, several recent papers argue that the findings in the staggered board literature may be affected by outliers or biased because of endogeneity due to reverse causality and omitted variables. Amihud and Stoyanov (2016) argue, for example, that Cohen and Wang's (2013) results are sensitive to the inclusion of penny stocks, although Cohen and Wang (2017) disagree.

One difficulty in addressing the endogeneity of staggered board structure is that, similar to board size, it is persistent over time. Cremers, Litov and Sepe (2016) use a long panel of data that allows for the inclusion of firm fixed effects and find a positive coefficient on staggered board dummy in performance regressions.

To address concerns about reverse causality, Daines, Li and Wang (2016) are the first to exploit the passage of a 1990 law in Massachusetts that imposed a staggered board structure on all companies incorporated in Massachusetts. In 1990, BTR P.L.C., a large British industrial firm, made a hostile tender for Norton Company, a Massachusetts manufacturer. Norton had a poison pill in place, but no staggered board, so BTR launched a proxy fight to replace the incumbent board. Because BTR was a British firm, employees and the community were concerned about the takeover. This made it possible for Norton's managers to get support from the state legislature and a bill imposing a staggered board on all firms incorporated in Massachusetts was passed (MA House Bill 5556).

Daines, Li and Wang (2016) conduct a difference-in-difference analysis using data from 1984 to 2004 around the passage of MA House Bill 5556. Treated firms in their set-up are MA firms without staggered boards (58); control firms are matched non-MA firms without staggered boards (116). They find that the passage of the law led to an increase in Tobin's Q for treated firms. Since the treated firms in Massachusetts are much smaller than

the typical firms in other staggered board papers, Daines, Li and Wang (2016) argue that staggering can have heterogeneous effects. They suggest that innovative firms with high information asymmetry may be the most likely to benefit from a long-run perspective that continuity on the board ensures. Consistent with this interpretation, they find that treated firms increase R&D investments after the law.

By focusing on smaller firms, Daines, Li and Wang (2016) start filling in a gap in the staggered board literature. To date, most papers in this literature focus on the value implications of staggered boards for large listed firms in the US. But staggered boards are prevalent in many other types of organizations and settings, including settings in which takeovers are irrelevant and the managerial entrenchment motive is arguably largely absent. Studying the role of staggered boards in these settings may lead to additional insights into their roles that can also inform the literature on large listed firms. In fact, casual observation of other settings suggests that staggered boards may be the rule, not the exception. If so, instead of primarily asking: “why do firms stagger their boards?”, we might also want to ask: “at what stage of their evolutionary cycle do firms hold annual elections?” or even “what are the characteristics of organizations with annual board elections?”

Although the data on staggered boards in other settings is sparse, staggered boards appear to play a role in non-profits, state-owned companies and young companies, as well as in firms outside the US. I am not aware of systematic evidence on the prevalence of staggered boards outside the US. But, some suggestive evidence that staggered boards may be important in Europe comes from Glass Lewis’s (2016) proxy voting recommendations for Continental Europe. On p. 12 of their guidelines, Glass Lewis (2016) write: “Although we recognise that classified boards and staggered board elections are *common practice* [emphasis added] in most of Europe...”. Since poison pills are not wide-spread in Europe, or even

prohibited (Wolf, 2015) it is not clear whether staggered boards serve an entrenchment role outside the US or whether they might have other purposes.

Evidence from young firms suggests that one purpose of staggered boards may be to allow founders to continue to influence the firm. Fields and Karpoff (2002) document that 36.2% of firms in their sample of 1,019 IPOs from 1988-1992 have staggered boards. Staggered boards seem to have become more popular at the IPO stage over time. In Hartzell, Kallberg and Liu's (2008) sample of 107 REIT IPOs between 1991-1998, 69% of firms have staggered boards. In Romano and Sanga's (2017) sample of 679 IPOs between 2010–2014, 66% of firms have staggered boards. Although Fields and Karpoff (2002) and Hartzell, Kallberg and Liu (2008) relate staggered boards in IPOs to the entrenchment motive, other interpretations are possible. For example, Chazen (1999) makes the observation that staggered boards are primarily absent in IPOs with majority shareholders who have no concerns about a loss of control. Since the threat of takeover is not a major concern at the IPO stage, Chazen suggests that staggered boards are put in place in IPOs to allow for a gradual evolution of control.

Perhaps counter-intuitively, staggered boards may serve a purpose in maintaining independence in some settings. The Development Bank of Latin America (CAF, 2017) examines the importance of staggered boards in state-owned companies. It surveys 50 public companies in 13 countries in Latin America and the Caribbean where the Bank is located and documents that 31% of 49 respondents have a staggered board. Staggering makes directors appointed by the State more independent from electoral cycles. Thus, CAF argues that staggered boards are one of the most effective mechanisms for insulating SOEs from political interference that can hamper the SOE from carrying out its mission.

Election staggering serves a similar role in the Federal Reserve System, as Adams (2017) describes. Each of the 12 Federal Reserve Banks is a separately incorporated non-

profit. Since they are incorporated, they have boards. Banks in each Federal Reserve district elect six out of nine directors. The remaining three directors are appointed by the Board of Governors. Banks are divided into three size groups and each group elects two directors on a rotating basis, i.e. directors serve staggered terms of 3 years. The reason is to ensure large banks do not gain too much power over the elections.

Evidence from non-profits, such as hospitals, suggests that staggered boards may also play an role in maintaining institutional knowledge and culture. Although there is a literature on hospital governance (e.g. Eldenburg, Hermalin, Weisbach, Wosinka, 2004), this literature does not analyse staggered boards. However, anecdotal evidence suggests that staggering is important for hospitals. For example, the top two hospitals in the US according to US News and World Report (2017), the Mayo Clinic and the Cleveland Clinic, elect directors (called Trustees at the Mayo Clinic) for 4 year terms. The Mayo Clinic's bylaws state that “..the initial terms of Public Trustees elected to new Trustee positions shall be set in such a fashion as to ensure an orderly and regular pattern of expirations of Public Trustee terms.”¹⁸ In an article in *Trustee*, a magazine of the American Hospital Association, Moylan and Pierce (2017) argue that hospital trustees *should* serve staggered terms.

These examples of staggering in IPOs, SOES and non-profits serve to illustrate that even in settings in which takeover motives are absent, staggering is often present. In these settings, staggering seems to serve a role as providing “voice”, independence from certain constituencies and stability.

3.2.4 Different Firms/Different Times

Due to data availability, most of the literature focuses on large, listed companies in panel settings. Following convention, most authors exclude financial firms and other

¹⁸ <http://www.mayoclinic.org/documents/bylaws-of-mayo-clinic-pdf/doc-20079609>

regulated entities from their samples. As a result, it is still not well understood whether boards structure themselves in similar ways in different types of organizations and across industries. It is also not well understood how boards respond to short-term shocks. The discussion of non-profits and SOEs in Section 3.2.3 already suggests that board structure varies across organizational types. I complement this discussion by highlighting some evidence on the role of boards in private firms and financial firms. I also discuss some of what we know about boards of firms in crises.

Private firms

While data on boards of private firms was always available in SEC filings, it became easier to study them once academics obtained access to Capital IQ and BoardEx's data on private firms. Capital IQ compiles data on private firms that are required to file statements with the SEC because they have outstanding public debt or because they have more than \$10 million in total assets and a class of equity securities with 500 or more shareholders.

Gao, He and Kang (2015) find that private firms have smaller boards and more outside directors than similar-sized public firms in the same industry and year. Directors in private firms are more likely to have MBA and elite school degrees and financial expertise in banking and venture capital businesses. Gao, He and Kang argue that the governance role of boards in private firms is more important because other external governance mechanisms may be lacking. Although Gao, Harford and Li (2017) document that CEO turnover in private firms is less sensitive to performance than in public firms and occurs at a lower rate, Gao, He and Kang (2015) show that the sensitivity of CEO turnover to performance in private firms is increasing in the proportion of outsiders on the board.

Banks

If private firms are on one end of the spectrum in terms of board size, listed banks are on the other end (e.g. Kroszner and Strahan, 2001; Booth et al. 2002; Adams and Mehran, 2003, 2012; Adams, 2012).¹⁹ Listed banks in the US and other countries have systematically larger boards than other companies—a fact that was a concern for some policy makers in the financial crisis. In response to the crisis, the UK government commissioned Sir David Walker to recommend measures to improve board-level governance at banks. The Walker Review (Walker 2009, p. 41) points out that the boards of listed UK banks in 2007–2008 were larger than those of other listed companies and argued this was problematic because of “a widely-held view that the overall effectiveness of the board, outside a quite narrow range, tends to vary inversely with its size. That view would probably tend to converge around an “ideal” size of 10–12 members . . .”.

Bank board size in both Adams and Mehran (2012) and Adams (2012) is well above Walker’s (2009) ideal number of 10-12. In Adams and Mehran’s sample of large US banks between 1986 and 1999, banks have on average 18 directors. Adams (2012) documents that banks have on average 4.6 more directors than other firms in ISS data between 1996 and 2007. Controlling for Ln(Assets), ROA, Tobins’ Q, stock return volatility and year dummies, banks in ISS have on average 1.9 more directors than other firms in this period.

Although bank boards in these samples are large compared to boards of non-financial firms, they are small by historical standards. In Figure 5, I show the evolution of bank board size and the number of outside directors between 1965 and 1999 using the data from Adams and Mehran (2012). The figure shows that banks had much larger boards prior to Adams and Mehran’s main sample period of 1986. Since the average number of outsiders tracks board

¹⁹ Banks comprise the second largest set of firms in Gao, He and Kang’s sample of private firms (11.28%) after firms in Business Services (11.46%), but Gao, He and Kang do not show characteristics of board structure by industry. It is unclear whether private banks have larger boards than other private firms.

size closely, the figure also illustrates that the reason bank boards were historically larger is because they had more outside directors, not inside directors (see also Calomiris and Carlson, 2016).

-Insert Figure 5 about here-

The data in Table 3 illustrates that banks outside the US also have systematically different governance structures from other firms. On average, banks have larger boards than non-financials in every country in Table 3. In each country, the difference in board size between banks and non-financials is statistically significant and generally economically large. Differences in other characteristics between banks and non-financials are almost always significant as well.

Table 3 also shows that the book value of assets is also much larger in banks than in non-financial firms. To the extent that the book value of assets can be considered a proxy for size in banks, it is tempting to attribute these differences in governance structure to differences in size. However, size does not fully explain these differences or the evolution of board structure in banking. Neither does complexity. For example, Figure 5 shows that bank boards shrink even as banks increase in size and complexity. While deregulation of the banking industry could be a contributing factor to this decrease, as it was for the airline industry (e.g. Kole and Lehn, 1999), the downward trend in bank board size begins prior to the deregulation of bank branching restrictions in the 1980s.

The evidence in Ferreira, Kirchmaier and Metzger (2011) suggests that there is unlikely to be one single factor that explains why bank boards might be different from boards in other firms. In a comprehensive cross-country study, they document that country-level policies seem important for understanding variation in bank board independence, but not the variation in the banking expertise of bank directors.

Like independence across firms in different countries, independence can have different meanings for different types of firms or firms in different industries within a country. For example, Adams (2010) argues that many nominally independent bank directors may be customer-directors. The presence of customer-directors need not be a sign of weak governance. In fact, the evidence in Figure 5 suggests that customer-directors may have been historically important. But, even relatively straightforward measures of board structure, like board size, can play a different role in different types of firms. Adams and Mehran (2012) argue, for example, that the need to accommodate directors of subsidiary banks leads bank holding companies' boards to expand. Consistent with the idea that large boards may be a solution to an organizational problem, they show board size is positively related to bank performance in their sample. This contrasts with findings for non-financial firms.

Realizing that board structures and roles may vary across industry is important for designing effective policy. Adams and Mehran's (2012) evidence suggests that the Walker Review's argument that there is an ideal board size for all firms is unfounded. The evidence that banks with more independent boards had potentially worse outcomes during the financial crisis (e.g. Adams, 2012; Aebi, Sabato and Schmid, 2012; Becht, Bolton and Roell, 2011; Beltratti and Stulz, 2012; Erkens, Hung and Matos, 2012 and Minton, Taillard and Williamson, 2014) suggests that policies targeting greater board independence may be counterproductive in banking. Similarly, Adams' (2012) evidence that prior to the crisis bank CEOs and bank directors received lower total compensation than CEOs and directors in other industries suggests that policies targeting compensation in financial institutions after the crisis may not have targeted a fundamental problem with bank governance. Enriques and Zetsche (2014) provide a more detailed discussion of potential problems with bank board regulation.

Given the importance of finance for growth, more work needs to be done to deepen our understanding of the governance of financial institutions, not just banks. But other sectors are also important. Governments are increasingly focusing on innovation as an important channel to foster economic growth. Firms in the STEM sector play an important role in innovation. Although one might think there is no reason to expect systematic differences in board structure across firms in the STEM and non-STEM sectors, Adams and Kirchmaier (2016) document that boards of STEM firms have significantly lower gender diversity than boards in other industries. It is possible boards of these firms differ in other characteristics as well.

Firms in a Crisis

The financial crisis brought the classic question of how boards perform during a crisis to the fore again. Mace (1971) and Lorsch and MacIver (1989) suggest that it is easier to identify the effects of boards during a crisis. But, a “normal” board need not be the best board to deal with a crisis. In a crisis, boards may want to restructure themselves because they require different types of expertise, as the results in Graham, Hazarika, Narasimhan (2011) and Avedian, Cronqvist, Weidenmier (2016) suggest. In a crisis, boards may also have to restructure themselves because directors exit the board. Some directors may exit because they must. For example, Brochet and Srinivasan (2014) document that directors named in class action lawsuits are significantly more likely to leave sued firms.

Other directors may exit to avoid penalties associated with being on the boards of firms that experience negative events. Fos and Tsoutsoura (2014) document, for example, that directors at firms who experience proxy contests experience a decline in the number of directorships. The evidence in Agrawal and Chen (2017) and Bar-Hava, Huang, Segal and Segal (2015) suggests that director departures often precede proxy contests, shareholder

class-action lawsuits, asset divestitures and delistings. Fahlenbrach, Low and Stulz (2015) argue such resignations reflect directors' incentives to avoid reputational penalties associated with negative events.

If directors can avoid responsibility for their actions by resigning pre-emptively, then this would suggest that the labor market for directors is not effective. But, it is not clear that it is. Suppose, for example, that there are two types of directors: "smart" directors who know the firm will experience a bad event and "ignorant" directors who have no idea. The optimal behaviour for the smart directors is to resign before the event happens to avoid the mess of dealing with the event. Then, only ignorant directors are left. In this case, the reduction in the number of directorships after the event occurs is not a penalty for bad governance but simply reflects the fact that the director who stays is revealed to be ignorant.

Dou (2016) recognizes that to understand whether the labor market is effective, one must examine what happens to directors who resign before adverse events, directors who stay during the event and directors who leave after the event. He shows that directors who leave prior to negative events (class action lawsuits, earnings restatements, severe dividend reductions, and debt covenant violations) experience smaller declines in the number of their directorships than directors who leave after the events, but greater declines than directors who stay through the events. This has two implications that are new to the board literature: First, directors cannot avoid responsibility by resigning pre-emptively. Second, the labor market rewards directors for taking responsibility by dealing with the bad events.

In a crisis, boards may also have to restructure themselves because control rights change. An early paper by Gilson (1990) examines 111 publicly traded firms that either file for bankruptcy or privately restructure their debt and finds that bank lenders frequently appoint new directors through increases in ownership or directly. In some cases, bankers themselves join the board. On average, only 46% of incumbent directors remain when

bankruptcy or debt restructuring ends. Resigning directors hold significantly fewer seats on other boards following their departure. Similarly, Kaplan and Minton (1994) document that poor financial performance leads former bank directors to join the board in Japan and Dittman, Maug and Schneider (2010) document that banker-directors act as financial advisors who help German firms obtain funding during difficult times.

Ferreira, Ferrreira and Mariano (2016) show that banks influence board appointments even when firms are in less extreme states of financial distress than bankruptcy. They document that the number of independent directors increases by 24% following covenant violations. This increase is not due to replacements; instead, board size expands to accommodate the new directors. While they do not show that creditors intervene directly in corporate governance, they document that the new directors are frequently tied to creditors through other lending relationships and that boards make more creditor-friendly decisions following convenient violations.

Since directors typically stay on the board for many years, their evidence suggests that financial distress can have a long term impact on how firms are governed. Since it is unclear that shareholders benefit from board independence, their evidence highlights an additional indirect cost to shareholders of financial distress. Somewhat ironically, their evidence also suggests that one of the policy reactions to the financial crisis, enhanced independence requirements for compensation committees (see Dodd-Frank, 2010), may have happened anyways—at least at firms that experienced distress in the crisis.

Since few US boards have more than one insider on the board in recent years, it is hard to argue that further increases in independence in a crisis can increase boards' monitoring intensity through an independence channel. But, what may still be important in a crisis is how director types change around the crisis. In Ferreira, Ferreira and Mariano (2016), structural changes in the board of firms in financial distress are directly associated with

changes in a specific type of director, directors linked to creditors. But even firms that do not experience structural changes around adverse events seem to experience a change in director type around the event. As I suggest in Sections 7 and 8, this suggests that standard structural variables like board size and independence alone are inadequate for characterizing board behaviour. Board behaviour must be shaped by the characteristics of directors in normal and crisis periods.

4. How Does the Board Work?

Because of a lack of data, we still have a poor understanding of how boards work. While we believe board structure and composition map into board behaviour, it is not yet clear how they do so. Although imperfect, survey data, interviews and board minute meeting data can shed some light on the processes boards use to make decisions. This type of data can illustrate, for example, how board structure is linked to director voting behaviour which is essential for understanding boards' decisions. But even this type of data cannot answer basic questions about how boards operate, such as "How are meetings scheduled?" "How is voting conducted?" or "How is the board meeting agenda set?"

Board Size and Committees

The literature on teams argues that larger groups may be beneficial because they pool more information. However, the benefits of information sharing may be weakened when group members behave strategically (Li, Rosen, and Suen, 2001), when group members free-ride or when their priors differ (Garlappi, Giammarino and Lazrak, 2016). Building on this literature, the governance literature argues that firms choose board size to balance advisory needs with the costs of decision-making in large groups, e.g. Boone, Field, Karpoff, Raheja, 2008; Coles, Daniel, Naveen, 2008). What is not clear is why boards might have difficulty in

striking this balance. For example, Coles, Daniel and Naveen (2008) find that firm performance is on average lower for firms with larger boards (regressions not reported, but see Panel A of Figure 2). In contrast, Wintocki, Linck, Netter (2012) suggest that the board size-performance relationship disappears once endogeneity concerns are properly addressed.

What is not yet clear from the literature is how group-decision making is affected by the presence of subcommittees. The economics literature on groups typically contrasts individual with group decision-making. While they may exist, I have been unable to identify theoretical papers on sub-committees of groups other than Laux and Laux (2012). The political science literature has examined sub-committees of Congress and the Senate, but it is not clear that these sub-committees are useful for understanding board committees. For example, committees of Congress and the Senate play a role in securing distributive benefits for members' districts and allowing parties to maintain some control over policies (e.g. Groseclose and King, 2001). It is not clear what the board analogy to these types of committee roles would be.

Board Composition

The idea that group composition affects members' incentives to work together and to share information is at the core of the literature examining diversity on boards and in other teams. Amongst other reasons, diversity can be beneficial because diverse groups may have stronger incentives to gather costly information (e.g. Malenko, 2014). But, if group members exhibit homophily, increases in diversity can disrupt the functioning of the group (see e.g. Giannetti and Zhao, 2016 and Bernile, Bhagwat and Yonkers, 2017). There may be other reasons why it might be difficult for different types of group members to work together, e.g. they may have different priors or skill sets or information that lead them to disagree (e.g. Garlappi, Giammarino and Lazrak, 2016; Adams, Akyol and Verwijmeren, 2016;

Chemmanur and Fedaseyeu, 2016). These arguments along with the mounting evidence that disagreement occurs and can be disruptive (e.g. Agrawal and Chen, 2017; Horstmeyer, 2017; Jiang, Hua, Zhao, 2016; Ma and Khanna, 2016; Marchetti, Siciliano, Ventoruzzo, 2016) suggest that examining structure and processes alone are not sufficient for understanding board behaviour. It is also important to examine how individual director characteristics relate to each other.

CEO Chair Duality and Other Board Leadership Structures

Many academics and policy makers view CEO Chair duality, when the CEO also holds the Chairman of the Board position, as a symbol of poor governance. However, few academics and policy makers explain why. I believe it is not obvious that duality is a mechanism of entrenchment.

Technically, the Chairman of the board's job is to run board meetings. If the CEO does not do it, someone else has to do it, e.g. an inside or outside Chair. Furthermore, this person has to get paid to do it. While the person running a meeting can influence the nature of the discussion by choosing who gets to speak, the CEO will be in the room no matter what (except when directors meet in executive session). So, it is not obvious that the discussion will be very different if a non-CEO director chairs the meeting.

More important than who runs the meeting may be who gets to set the agenda. Because of time constraints, meeting participants typically have to discuss items on the agenda first. They are not able to raise "Further Matters" or "Other Business" until the end of the meeting, at which point there may be little time for discussion. Even if they have enough time, they may be tired. If non-CEO Chairmen can set the meeting agenda independently of the CEO, I believe a bigger case could be made that separating the two roles matters.

While I am not aware of systematic data on who gets to set the agenda, a casual examination of corporate governance charters suggests that non-CEO Chairmen typically *cannot* set the agenda on their own (presumably for good reason). For example, GM’s corporate governance guidelines state “The Chairman establishes the agenda for each Board meeting (in consultation with the CEO, if the Chairman is not also the CEO)... Each Board member may suggest the inclusion of additional item(s) on the agenda.”²⁰

Even in firms *with* CEO duality, the CEO may not be able to set the agenda in isolation. The CEO/Chair may need to consult a lead independent director, as at ExxonMobil: “Specific duties of the Presiding Director include...reviewing in advance, in consultation with the Chairman, the schedule and agenda for all Board meetings ...”, or the chairmen of board committees, as at IBM: “Agenda items are determined by the Chairman and Committee Chairs with input from the directors.”²¹

As these examples illustrate, boards have different leadership structures (see also Larcker and Tayan, 2016; Xu, 2015). So, it is not obvious why CEO duality per se should lead to poor governance. In addition, in some companies the Chairman role serves an important role in “passing-the-baton” succession processes for the CEO role (e.g. Brickley, Coles and Jarrell, 1997). In this case, the Chairman’s role is not only to run the board meetings, but also to help groom the CEO. Since the CEO needs to consult with the Chairman in such cases, decision-making time may increase. Decision-making time may also increase if a separate Chairman oversteps his or her authority. Consistent with the idea that firms with CEO duality may quicker decisions, Xu (2015) finds that the number of days to complete an M&A deal is significantly lower in firms in which the CEO is also the Chair.

²⁰ See https://www.gm.com/content/dam/gm/en_us/english/Group4/InvestorsPDFDocuments/Corporate_Governance_Guidelines.pdf, accessed on June 20, 2017.

²¹ See <http://corporate.exxonmobil.com/en/investors/corporate-governance/corporate-governance-guidelines/guidelines> and <https://www.ibm.com/investor/governance/corporate-governance-guidelines.html>, both accessed June 20, 2017.

Whether or not the individual holding the Chair position uses it to accumulate excessive power is likely to be a function of the formal board leadership structure, as well as the characteristics of the individual holding the position. As such, it is not surprising that there is no robust relationship between CEO Chair duality and firm performance. Balsam, Puthenpurackal, and Upadhyay (2016) argue that the presence of outside Chairmen leads to better firm performance, but Narayanan, Nanda and Ryan (2015) find no evidence that CEO duality destroys value.

As with independence, CEO duality, or the absence thereof, may play a different role in different countries. As Table 3 suggests, CEO duality is more common in some countries than others and it is important to understand the institutional features that drive this variation before jumping to conclusions concerning the benefits, or lack thereof, of duality. For example, Korkeamäki, Liljeblom and Pasternack (2017) document that it is not common for CEOs in Finland to also hold the Chairman of the board position. But this does not mean Finnish firms are necessarily better governed than, e.g. US firms. Instead, the absence of duality signals that the CEO does not sit on the board. In this case, major shareholders may be calling the shots, potentially to the detriment of minority shareholders.

5. The State of the Published Literature—A Textual Analysis

Using database #1 from Section 2, I estimate that 250 papers on boards were published in the set of journals covered in database #1 since 2010, the year Adams, Hermalin and Weisbach (2010) published their survey of the board literature. I am not sure what the conversion rate of working papers to published papers is, but it is not hard to imagine that there are at least 500 working papers on boards since 2010. It would clearly be impossible to discuss each paper (or topic), published or unpublished, in a chapter with such a broad scope. As a result, I do not provide detailed discussions of the literature on boards and activism or

litigation, the literature on boards of family firms or even much of the literature on diversity. This is not because I think they are unimportant. In fact, the opposite is true, which means I would exceed the page limit by a substantial amount if I wanted to do these, and other omitted topics, justice.

Different authors also have different perspectives on the literature, which is why there are so many surveys on similar topics (see Table A.1). To inject an element of objectivity into this chapter, I use a textual-analysis approach to document some of the trends in the board literature. These trends can help illustrate important themes and work that needs to be done. Of necessity, I restrict myself to published papers (database #1).

To conduct the textual analysis, I use keywords in the paper keywords, abstracts and titles to identify whether the paper deals with a certain theme. I use the topics I discuss in Sections 3 and 4 to guide my choice of keywords. I create dummy variables that are equal to 1 if the abstract of a paper contains any of the keywords belonging to a theme and 0 otherwise. After creating the dummy variables, I double-check to make sure that the paper really deals with the theme and refine my set of keywords by changing words and stemming them if necessary. As with any textual analysis, my classifications will have some measurement error because the keywords may not identify all relevant papers or they may pick up information that is not relevant for the theme. As long as the measurement error is not systematic, however, the classifications should still be meaningful.

-Insert Figure 6 about here-

Sections 3 and 4 touch on many themes. For the sake of brevity, I focus on the following subset of themes: Methodology (Theory and Identification), The Role of the Board (Monitoring, Advising, Stakeholders), Financial Institutions, Gender, International, Policy. Table 4 shows the set of keywords I use to identify these themes. Figures 6-8 show graphs of the number of papers and percent of all board papers with a given theme over time.

-Insert Table 4 about here-

Panel A of Figure 6 illustrates trends in theoretical papers. Although many believe that journals do not publish theory anymore, the trend in the number of theoretical papers is upwards. There is also a slight trend upwards in the percentage of theory papers. On average theoretical papers constitute 12.7% of board papers. Whether or not this constitutes the optimal percentage of theory papers is unclear. Personally, I believe we need more theory, but, as I point out earlier, doing theoretical work on boards is difficult.

-Insert Figure 7 about here-

Panel B of Figure 6 illustrates trends in identification methods. The figure shows authors began emphasizing identification of causal effects only recently. Prior to 2000, few papers mention identification methods in their title, abstract or keywords. In 2013, 26.5% of papers emphasize identification. On average, 14.41% of board papers highlight their identification method up front. Of course, this does not mean only 14.41% of board papers deal with identification. It simply illustrates that identification has become a more prominent theme over time.

-Insert Figure 8 about here-

Panels A, B and C of Figure 7 illustrate trends in how papers characterize the board's role. The percentage of papers examining the board's role as monitoring is relatively stable over time, but there has been a trend upward in the percentage of papers examining the board's advisory role, particularly in recent years. The number of papers examining the board's role with respect to stakeholders is very small and exhibits little time trend. As a result, the percentage of papers on boards and stakeholders has been declining over time. On average, 52.2% of papers mention the board's monitoring role, 25% mention the board's advisory role and 5.3% mention the board's role in dealing with stakeholders. Some papers mention multiple roles. Thirty-four percent of papers do not commit to a particular

interpretation of the boards' role up front, i.e. the board's role is not classified as monitoring, advising or stakeholder in the title, abstract or keywords.

Panels A-D of Figure 8 illustrate trends in other themes in the literature. Panel A shows the trend in papers related to boards and financial institutions. There is a slight trend upwards in the number of papers relating to boards and financial institutions, but the percentage is declining over time. Given the policy emphasis on governance in the financial crisis, this is a little surprising, although it may also simply reflect the publication lag. On average, 9.1% of board papers deal with financial institutions. This number overestimates the percentage of papers examining boards of financial institution since it includes papers discussing the role of bankers sitting on the boards of non-financials.

In the 7-year period since 2007, the year the financial crisis started, 24 papers were published on boards and financial institutions. In the 18-year period prior to 2007, only 28 papers were published on this theme. Many blamed poor board governance at financial institutions for the crisis. It is possible that boards were blamed in part because the state of knowledge about boards at financial institutions was not very developed at the time (see the discussion in Adams, 2012).

Panel B of Figure 8 shows the number and percentage of papers on boards outside the US. The dashed-dotted line shows the number of international board papers published in the Top 3 Finance journals. While the trend in the overall number of papers on non-US boards is upwards, the trend in the number of papers published on non-US boards in the Top 3 Finance journals is negligible. In addition, the overall percentage of papers is not trending upwards very quickly, especially not in the Top 3 Finance journals (not reported).

On average, 11.2% of papers deal with boards in an international context. This percentage decreases to 6.28%, a total of 15 papers for the entire period, if I restrict my sample to the Top 3 Finance journals. These patterns are consistent with Karolyi's (2016)

evidence that the top Finance journals publish relatively few papers on international financial markets. Since boards are presumably no less important outside the US, this suggests that there is scope for the journals to publish more research on boards in an international context.

Only 2.5% of papers discuss gender on boards. Panel C of Figure 8 shows that gender is a recent topic of interest. Given the dramatic increase in the number of gender policies around the world in the last couple of years, I expect the trend to continue to be steeply upwards. As I argue in Adam (2016), I believe that going forward one cannot study boards without taking gender into account.

Panel D of Figure 8 illustrates that there has also been a rise in the number of papers examining boards in the context of policies or regulation in recent years. In the 14-years prior to 2003, 18 papers mention policies or regulation. Since then, 74 papers mention policies. Many of these papers use policies as shocks for identification purposes. Given the dramatic increase in the number of policies relating to boards in recent years (see Section 6), I expect to see more board papers dealing with policies in the future.

I interpret the textual analysis I present here as broadly consistent with my own (admittedly subjective) view of the literature. Although theory papers are being published, it seems as if the ratio of theory to empirical work is too small. It is more and more difficult to publish without having a solid identification strategy. Advising (including the role of individual director characteristics) is becoming an important topic. Gender and policies are also becoming more important. But it also seems as if there are still too few papers on boards of financial institutions and on boards in an international context. While data limitations can explain the lack of studies on boards internationally, this cannot explain the lack of studies on boards of financial institutions. Given the importance of the finance sector for economic growth, it seems much more work is needed on this topic.

6. Policy Makers and Boards

Regulation and laws play an important role in shaping boards. A number of papers document that boards changed following the passage of the Sarbanes-Oxley Act in the US (see Adams, Rangunathan and Tumakin, 2016; Alam, Chen, Ciccotello, and Ryan, 2016; Linck, Netter and Yang, 2009; Horstmeyer, 2016). Governance codes can also play an important role in board governance — even when they are not mandatory. Dahya, McConnell, and Travlos (2002) and Dahya and McConnell (2007) find that firms that adopted the recommendations of the Cadbury Report in the United Kingdom show a greater sensitivity of CEO turnover to performance than non-adopting firms.

While SOX and the Cadbury report have been studied in depth, numerous other governance policies have not (but see Aguilera and Cuervo-Cazurra, 2004 and 2009; Cuomo, Mallin, Zattoni, 2016). In this Section, I provide an overview of some of the policies that affect board governance globally. One reason is simply to provide information. Academics who examine boards in a global context obviously need to be aware of the constraints firms face in different countries. But I also want to suggest that the policy-making process concerning boards itself is interesting.

As I show below, policy-making and advocacy concerning board governance has increased dramatically in recent years. This is particularly noticeable for board-level gender policies. It is not necessarily clear why this trend has occurred (but see Terjesen, Aguilera and Lorenz, 2014). Nor is it necessarily clear what this activity as a whole will achieve. Policies often occur in clusters because legislative and non-legislative bodies act to improve governance independently of each other. In extreme cases, firms may be subject to governance regulations, codes, listing standards, disclosure requirements and gender quotas — all at the same time. While a policy may be effective in isolation, it is unclear how

effective clusters of policies can be, especially when they are not all enacted by the same body.

To illustrate this point it is useful to consider the case of a typical NYSE listed firm in the US. This firm faces governance requirements from different agencies. For example, the requirements to have a majority of independent director requirement, an independent audit committee of at least three members, a completely independent nominating/corporate governance committee, a completely independent compensation committee, regularly scheduled meetings of the nonmanagement directors and a yearly meeting of the independent directors are NYSE listing standards. The requirement to have a financial expert or a reason not to have a financial expert and to disclosure of the board's reasons for nominating directors and its policies with respect to diversity (Item 401(e) of Regulation S-K) are SEC requirements.

To provide an overview of general governance policies, I update the policy data in Adams (2012) and Adams and Kirchmaier (2016) using the ECGI code database at <http://www.ecgi.org/codes/>, as well as International Finance Corporation (2016), Catalyst (2017), OECD (2017) and an internet search. The ECGI database aims to be a comprehensive source of governance codes, principles and recommendations in Europe and elsewhere. It contains codes at the country-level as well as more general principles for e.g. the OECD, the EBRD and the Commonwealth. For some countries it contains proposals and draft codes, e.g. for Kenya it contains a sample code and principles in 2002 and a draft code in 2014; for other countries it contains governance codes as well as updates to the codes, e.g. for Austria it contains the 2002 code along with 6 updates.

I double-check my data against Aguilera and Cuervo-Cazurra (2009), Kim and Lu (2013), Cuomo, Mallin and Zattoni (2015) and Fauver, Hung, Li and Taboada, (2015) and reconcile conflicting information as much as possible. In some cases, this is difficult because

older versions of codes are not always archived. To ensure policies are relatively comparable across countries, I eliminate drafts of codes and proposals for codes. I also eliminate recommendations from governance institutes (e.g. the 2010 Baltic Guidance on the Governance of Government-owned Enterprises from the Baltic Institute of Corporate Governance) as these are not directly comparable to national codes or mandatory regulations/listing standards. I retain code amendments to document policy activity.

My final database contains 441 (74.12% of the total of 595) policy documents from the ECGI code database and 154 policy documents from other sources.²² The policies cover 108 countries with a minimum of 1 per country to a maximum of 37 (for the United Kingdom) between 1990 and 2016. The policies consist of laws (5.72%), national governance codes and updates (61.35%), exchange listing standards (13.61%), codes for financial institutions (7.73%) and recommendations by shareholder associations and other types of organizations. At the country level, 101 countries have governance codes, 75 of which ask companies to comply with the code or explain why not (4 could not be verified), 25 countries have laws pertaining to boards (e.g. Sarbanes-Oxley in the US) and 36 countries have exchange listing standards pertaining to boards. As the example for the US above illustrates, these categories are not mutually-exclusive.

Panel A of Figure 9 shows the number of board policies enacted each year, the subset of the number of board policies that have expectations of compliance built into them (laws and comply-or-explain codes—the dashed line) and the subset of policies that specifically ask for or mandate greater gender diversity on boards (the dash-dot line). Panel B of Figure 9 shows the percentage of countries that have a policy of each type. To calculate the country percentages, I add Hong Kong and Taiwan to the list of 193 members of the United Nations

²² I will make the data available on my website.

(as of March 3, 2017), plus the Holy See and Palestine, which brings me to a total of 197 countries.

Figure 9 shows that policy-making on governance has been extremely active in the last 10 years. A recent refinement of governance policies centres on diversity requirements. As of 2016, governance codes in 29 countries ask companies to disclose their diversity policy and/or consider gender as a criterion in nominating directors. In eight countries, the exchanges or the securities commissions require listed companies to disclose their diversity policies. Eleven countries have enacted mandatory board gender quotas for listed companies. Three US States, California (Senate Concurrent Resolution No. 62), Massachusetts (Resolution S.1007) and Illinois (House Resolution HR0439), have adopted resolutions that encourage listed companies in these states to have specific ratios of women on their boards. Overall, more than 20% of countries (45 countries) currently have a board-level policy touching on the topic of gender and more are likely to be enacted. In 2012, the European Union approved a draft law that sets an objective of 40% female nonexecutive directors on boards of listed firms across the 28 member states of the EU (European Commission, 2012a). If passed, the EU law will apply to 5,000 out of the 7,500 listed firms in the EU (European Commission, 2012 b).

-Insert Figure 10 about here-

Some of this policy-activity is driven by pressure from transnational organizations, like the OECD and the International Finance Corporation, and foreign investment. Corporate scandals and crises are also a trigger for activity. One reason why policy-makers highlight the importance of diversity is because they attribute some of the behaviour leading to corporate scandals to groupthink associated with the “old Boy’s Club”, see e.g. the 2003 Higgs and Tyson reports, commissioned by the UK government in response to corporate scandals in the early 2000s. Between the years 2007-2010 around the financial crisis, 49 countries either

developed or updated their governance codes or regulations according to estimates by Adams (2011).

These policies clearly have impact. Following SOX, boards in the US have become formally independent; following the implementation of gender quotas, boards in Norway, France and other countries have become gender-diverse. What is not clear is whether the policies solve governance problems. As I highlight in Section 5, the literature on boards in an international context and policies is still underdeveloped, so it is too early to draw any conclusions about the impact of these policies.

-Insert Figure 10 about here-

The fact that few papers exist on topics that may be relevant to policy-makers suggests that much of the policy-making activity is not guided by the academic literature. To illustrate this point, I graph the number of papers published on boards (dashed line), the number of papers about gender on boards (connected line), the number of papers on boards in an international context (dotted line) together with total policy activity (solid line) and gender policy activity (dash-dotted line) in Figure 10. While the literature and the policies on boards developed at the same time, it appears as if the literature lags policy-making rather than the other way around. This is particularly noticeable for gender policies. Much of the policy-making on gender takes place prior to the development of the literature on this topic.

Policy-makers obviously cannot wait for the literature to develop before implementing policy. But, even the literature that does exist does not always inform policy. As I point out in Adams (2012), for example, the Walker Review (Walker 2009), which serves as the basis for the new UK Governance Code that took effect in 2010, lists only 17 references for recommendations concerning the chairman role, appointments of directors, and board and committee size. Fourteen of the references are dated between 1948 and 2001. Not one of the 17 references is from the finance or economics literature. Although the Walker

Review focuses on financial institutions, not one of the 17 references concerns financial institutions.

Policy-making on board gender diversity seems particularly distant from the academic literature. Most policy-makers justify board gender policies by appealing to the “business case” argument that firms with more women on boards perform better. In support of this argument, they cite studies by [Catalyst \(2007\)](#), [McKinsey \(2007\)](#) and [Credit Suisse \(2012\)](#), that merely show that the correlation between measures of firm performance and board diversity is positive. As I point out in [Adams \(2016\)](#), there is no robust correlation between board diversity and firm performance in the academic literature. Correlations seem shaky evidence on which to base policy-making on such a complicated and important topic as gender.

While policy-making can lead to governance improvements, it can also lead to distortions. More research needs to be done to understand the objectives of policy-making and the impact of the policies. There is also scope for academics to develop better ways of disseminating their research results to policy-makers. Fortunately, policy-making in the area of governance does not seem to be static. As codes and policies are updated, there may be scope for the academic literature to influence policy.

7. Directors

Along with the increasing interest in the board’s advisory role and a concern about groupthink has come an increased interest in the characteristics of individual directors beyond independence. The literature on boards argues that directors may (or may not) add value for different reasons. Some directors may add value because of who they work for, as the literature on industry experience argues.²³ Some directors add value because of whom they

²³ See e.g. [Dass, Kini, Nanda, Onal and Wang \(2013\)](#).

know, as the literature on political and social connections argues. Some distinguish themselves because of their gender or where they come, as the literature on gender, cultural background, director location and foreign directors argues.²⁴ Some have potentially valuable professional or career skills, including their experience on the board.²⁵ Others may add value because the titles they hold, e.g. CEO or CFO, suggest they have valuable leadership or financial skills.²⁶

Directors may also differ in their incentives. In the US, all directors face the same compensation schedule and their pay varies primarily because they were appointed in different years (which may affect initial stock grants) and because they sit on different committees, although recent work suggests that pay may be more variable than it appears (e.g. Engel, Hayes and Wang, 2010; Fedaseyev, Linck and Wagner, 2017; Matveyev, 2016). But even when pay is relatively uniform, directors may have different motivations because of the stage of their career they are at, which affects their concerns about reputation.

Directors' incentives to take certain decisions may also vary because of differing psychological attributes. Directors may vary in their intrinsic motivation (e.g. Stout, 2003; Adams and Ferreira, 2008) or their desire to take risk. Many papers on director gender and age assume, for example, that female directors and older directors are more risk-averse and that their risk-aversion will spill over to board decision-making.

Adams, Licht and Sagiv (2011) and Licht and Adams (2017) provide evidence that psychological factors may also be related to directors' concern for non-shareholder stakeholders. They confront directors with scenarios derived from seminal court cases in which the interests of shareholders conflict with those of stakeholders. They also survey

²⁴ See e.g. Knyazeva, Knyazeva, and Masulis (2013), Masulis, Wang and Xie (2012), Alam, Chen, Ciccotello, and Ryan (2016).

²⁵ See Krishnan, Wen and Zhao (2011), Naveen, Daniel and McConnell (2013).

²⁶ See Fich (2005), Guner, Malmendier and Tate (2008), Fahlenbrach, Low and Stulz (2010), Bedard, Hoitash and Hoitash (2013).

directors on their human values according to Schwartz (1992). They find that directors who emphasize “entrepreneurial” values, e.g. directors who emphasize achievement and self-direction more, favor shareholders over stakeholders. Their results suggest that even within a uniform legal regime directors may interpret the law differently.

Even if directors have well-defined and measurable skills and incentives, the evidence that they add value (or not) because of these attributes is not always clear. For example, while Drobotz, et al. (2013), Dass, et al. (2013) and Faleye, Hoitash and Hoitash (2012) find that directors’ industry experience adds value, Kang, Kim and Lu (2013) find that the effect of industry experience is insignificant in some circumstances. Fich (2005) finds that shareholders seem to value CEO experience of directors, while Fahlenbrach, Low and Stulz (2010) find that CEOs do not add value. Similarly, while Huang and Kisgen (2013), Levi, Li and Zhang (2014) and Faccio, Marchica and Mura (2015) find evidence consistent with greater female risk-aversion, Adams and Raganathan (2016) find evidence consistent with *lower* female risk-aversion.

There are several possible reasons for such conflicting findings. One reason is that directors are not one-dimensional; directors have multiple attributes, each of which may or may not add value to the firm. Empirically it may be difficult to vary one attribute while holding other attributes fixed. For example, Adams and Kirchmaier (2015; 2016) show that women are less likely to be directors in STEM and Finance industries. If women are also less likely to hold executive positions in these industries, then an increase in the ratio of “industry experts” on the board may be associated with a decrease in gender diversity in these industries. To stick with the gender example, it would be stereotyping to assume all women and men are the same (see also Kim and Starks, 2016). Thus, it is not necessarily clear what happens to the board as gender diversity changes. Similar arguments can be made about “foreigners” or directors from different cultural backgrounds.

Adams, Akyol and Verwijmeren (2016) point out that another reason why it may be difficult to identify the effect of individual director attributes is that it is difficult to consider a director's attributes in isolation from the attributes of other directors. If directors have different skills, they may complement each other. But directors with different backgrounds may not always understand each other's viewpoints because they approach problem-solving in different ways. In a theoretical model, directors may have different priors that lead them to disagree and invest inefficiently (e.g. Garlappi, Giammarino and Lazrak, 2016).

Incorporating a multi-dimensional perspective into governance theory and empirical work is challenging. Even if one cannot do so explicitly, future governance research and policy may still benefit from recognizing that the governance problems firms face are more complex than we typically imagine. Taking a broader perspective can also be helpful for resolving empirical and theoretical puzzles. For example, studies relating individual director characteristics to firm value often face the challenge of explaining why firms do not optimize. If industry experience is positively related to firm performance, for example, then a standard prediction is that firms would do better by having more industry experts. The question is why some firms do not.

If we view directors as one-dimensional, this question is difficult to answer. But if we view directors as multi-dimensional, it becomes easier. When firms appoint directors, they face a multi-dimensional search problem. In the presence of frictions, e.g. search costs, firms may not be able to optimize along every dimension. Similarly, in trying to fulfill governance regulations focusing on one characteristic, e.g. independence, firms may not achieve the best match between new directors and the board. Thus, governance regulations may not always lead to better firm outcomes.

Choosing Directors

As with any team, a good structure is unlikely to make a board effective if the wrong people are on the board. Similar, a bad structure may not make the board ineffective if it contains the right people. Much more research needs to be done before we are able to quantify the relative importance of structure and institutions and people. But, if one accepts that idea that the identity of directors is important, an important question becomes: How are they chosen?

A better understanding of this process is particularly important for evaluating the potential impact of board gender policies. Implicit in the business case argument for more women on boards is the suggestion that firms are deliberately not hiring women even though they could. The European Commission (2012a), p. 3) makes this explicit:

“The core of the problem lies in the persistence of multiple barriers faced by the constantly growing number of highly qualified women who are available for board seats on their way to the top positions in corporations. The reluctance to appoint female candidates to board positions is often rooted in gender stereotypes in recruitment and promotion, a male-dominated business culture and the lack of transparency in board appointment processes.”

But, there is little direct evidence that biased recruitment processes are an important reason women are not on boards. Connections may also matter (e.g. Adams and Ferreira, 2009; Agarwal, Qian, Reeb and Sing, 2016), as well as other factors affecting the pipeline of women in the executive pool. Without direct evidence on the recruitment process, it is difficult to determine what the target of policy-making efforts to increase board diversity should be (see e.g. Adams and Kirchmaier, 2015). Should policy-makers target firms? Or should they target institutions?

Fernandez-Mateo and Fernandez (2016) argue that viewing hiring as an outcome rather than a process may provide misleading inferences about the source of labor market frictions in top jobs. While demand-side factors, such as discrimination, can be important, supply-side factors can also be important. One reason may be that women do not put themselves forward for a top job because they anticipate discrimination. This problem may be exacerbated if women have biased self-assessments of their own abilities.

To circumvent this problem, Fernandez-Mateo and Fernandez examine an “anticipation-free” supply-side setting in which candidates are considered for a top job without their knowledge by an executive search firm. They examine data on 10,970 individuals for 219 C-level and board vacancies that the search firm worked to fill during the period 2005–2009 period. Their evidence suggests that there are few gender differences in the process of recruiting. Instead, the bottleneck for women occurs at the very beginning of the hiring process. The limited supply of female candidates translates into a low proportion of women hired.

Although Fernandez-Mateo and Fernandez (2016) focus on gender, their argument that understanding the hiring process may be important for understanding hiring outcomes applies more generally. Partly because of data limitations, there is very little work on the process through which directors are chosen and the work of the nominating committee.

Akyol and Cohen (2014) examine the director nomination process in S&P 1500 firms following the passage of a 2003 SEC regulation requiring firms to explain their director nomination process and to disclose the sources of all new directors. In the five-year period following the regulation, their sample firms appointed 5,866 new directors, 21.12% of which were identified using executive search firms. Of these directors, 4,963 were independent directors and 23.9% were identified using search firms. The fraction of female nominees was

greater in the pool of candidates identified using a search firm (19.3%) than through other sources (14%).

Unfortunately, the 2003 regulations occurs at the same time as SOX and the US exchange requirements pressuring firms to increase board independent. This, it is not possible to tell if firms' usage of executive search firms in Akyol and Cohen (2014) was "normal" or a response to the pressure to increase board independence, similar to what may happen when firms are pressured to appoint more women (e.g. Ferreira, Ginglinger, Edith, Laguna, and Skalli, 2015). Regardless, is clear that connections to board members matter for appointments. Other than members of the executive team and directors, the only other agents in Akyol and Cohen (2014) who nominated independent directors (8.5% of the total) were large (block) shareholders. Cai, Nguyen and Walkling (2017) document that connections appear particularly important for director appointments in complex firms and for firms in more competitive environments.

Because of a concern that management has too much control over board appointments, in 2010 the SEC passed a resolution allowing shareholders access to the ballot. A number of papers examine the wealth effects of access to the proxy and find conflicting results, e.g. Larcker, Ormazabal and Taylor (2011), Akyol, Lim and Verwijmeren (2012a and b), and Becker, Bergstresser and Subramanian (2013). As I argue above, firms face a multi-dimensional optimization problem when searching for new directors. There is no reason to believe the search problem is simpler for shareholders. It may even be harder because shareholders have less information about directors' personalities and board dynamics. Thus, it is not surprising that the findings concerning the wealth effects of access to the ballot are mixed. Nor is it necessarily surprising that companies opposed shareholder access to the ballot (e.g. Matsusaka and Ozbas, 2017; Matsusaka, Ozbas and Yi, 2017).

8. What Does it Take to Further Our Understanding of Boards?

In Finance, the topic of boards (including CEOs) is probably the topic that deals most directly with human behavior. Some topics in Economics deal directly with human behavior, most notably Labor. However, the settings that are the focus of the labor literature are quite different from corporate leadership setting. As a result, I believe we should add an additional tool to our standard toolkit of theory, methods, data and “shoe leather empirics” (see the chapter in this handbook by Edmans and Holderness, 2017), namely Empathy. Empathy is “a social process by which a person has an understanding and awareness of another's emotions and/or behaviour,..” that is different from sympathy (see <https://www.nature.com/subjects/empathy>). I believe it is important to have empathy to develop theories about director behaviour and to avoid stereotyping directors.

It is particularly easy to illustrate a potential role for empathy in the context of gender, a characteristics for which stereotyping is a particular concern (see the discussion in Adams, 2016). Adams and Funk (2012) use data from the European Social Survey and survey data on directors’ psychological traits (human values according to Schwartz, 1992) to show that female directors can be very different from women in the population in characteristics that are likely to be related to selection. Female directors can also be very different from male directors. For example, female directors are both less tradition-oriented than women in the population and less tradition-oriented than male directors in Adams and Funk’s sample.

In Adams and Funk’s data from the European Social Survey, the relation between how tradition-minded an individual is and the number of children the individual has is positive and particularly strong for women. This suggests that it is costlier for women who are tradition-minded to pursue a career path leading to a directorship. As a result, women in the boardroom may be quite different from women in the population and male directors.

Similarly, Adams and Funk (2012) document that female directors are less risk-averse than male directors, which suggests that risk-averse women may not pursue a career leading to a directorship. Their analysis suggests it may be important to think through the choices women might have to make to attain their positions before making assumptions about the preferences of women in corporate leadership positions.

While it is easy to illustrate this argument using gender, the argument applies more generally. Cashman, Gillan and Whitby (2013) document that financial expertise, holding an MBA degree, and S&P 500 experience increase the likelihood of individuals gaining a board seat. Director connections are also important. Similarly, Do, Nguyen and Rau (2015) find that directors who are female, who hold MBA degrees, have S&P 500 or CEO work experience and have larger social networks are more likely to get a second directorship. Directors who obtain their first directorship in a recession are less likely to get a second one. Matveyev (2016) estimates that 72% of new director appointments to the S&P 500 firms in 2011 had prior director experience.

The findings in Cashman, Gillan and Whitby (2013) and Do, Nguyen and Rau (2015) highlight that directors achieve their positions through a two-sided process of selection. It seems clear that firms might prefer individuals with certain characteristics to sit on their boards. But some individuals may also care more about obtaining directorships than others. The literature on director reputation argues that the ability to obtain a new directorship can be motivating, e.g. Yermack (2004). But doing what is necessary to gain a new directorship may not appeal to everyone. Levit and Malenko (2016) examine how the desire to obtain a second directorship affects director incentives to take actions in a theoretical model of the director labor market.

This two-sided selection process may affect the characteristics of the director pool we study. These characteristics may be observable, e.g. an MBA degree, as well as unobservable.

For example, using the same data as Adams and Funk (2012), Adams and Giannetti (2012) document that directors are significantly different from the population in their psychological traits, as measured by Schwartz (1992) values. I illustrate their findings in Figure 11.

Figure 11 illustrates the differences between the average Schwartz values of 628 directors and CEOs and those of more than 1,500 individuals in the Swedish population in Adams and Funk (2012) and Adams and Giannetti (2012). The figures illustrate that directors and CEOs differ from members of the population in many ways.²⁷ They are more power-oriented and achievement-oriented than members of the population, but they are also more self-directed than members of the population and much less tradition-oriented. Adams, Licht and Sagiv (2011) classify “achievement” and “self-direction” as entrepreneurial values. Thinking of directors as “entrepreneurial” may be useful for both theory and empirical work.

To shed additional light on how directors might differ from the population, I compare data on cognitive ability (IQ) that I was able to obtain for most male directors of listed companies in Sweden in 2005 to data on cognitive ability in the population. My comparison is similar to the comparison of traits of CEOs to traits in the population in Adams, Keloharju and Knüpfer (2016), however, my sample is smaller.

My underlying sample is the population of directors and CEOs that was surveyed in Adams (2009), Adams, Lilach and Sagiv (2011), Adams and Funk (2012) and Adams and Giannetti (2012). The data on cognitive ability comes from entrance examinations for the Swedish military at age 18 and is only available for men. In 2005, listed companies in Sweden had 1,081 unique male directors (including CEOs sitting on the board— see the discussion in Section 3.2.1). I am able to obtain cognitive ability scores for 947 of them. Data is missing for some directors because some directors are not Swedish and because records for

²⁷ The differences are statistically different for all values except conformity and security. Adams and Giannetti (2016) assess the economic significance of these differences.

individuals who were conscripted prior to 1969 were not stored in electronic form and may be missing from the archives.

The cognitive ability test consists of four subtests designed to measure inductive reasoning, verbal comprehension, spatial ability, and technical comprehension. The scores on the subtest are aggregated into a final grade and reported a stanine scale (see Adams, Keloharju and Knüpfer (2016) for more details). On this scale a normal distribution is divided into nine intervals, each of which has a width of 0.5 standard deviations excluding the first and last. Since the stanine scale assigns a fixed proportion of the population to each score (i.e. 4% each to scores 1 and 9, 7% each to scores 2 and 8, 12% each to 3 and 7, 17% each to scores 4 and 6 and 20% to score 5), it is theoretically straightforward to compare cognitive ability scores of directors to those in the general population. Since there is an upward trend in mean cognitive ability scores over time (Flynn, 1984), I use the empirical distribution of cognitive ability scores for the population of conscripts from Adams, Keloharju and Knüpfer (2016) as a benchmark.

-Insert Figure 11 about here-

Figure 11 shows the percentage of the population and the percentage of directors in each stanine. Clearly, directors have higher average cognitive ability than members of the general population. For example, the proportion of the population in stanines 8 and 9 is 7.9% and 4.2%, respectively. The proportion of directors in stanines 8 and 9 is 24.4% and 17.3%, respectively. By comparison, the proportion of CEOs with the highest cognitive ability (CEOs of large firms with more than 10 billion SEK in assets) in Adams, Keloharju and Knüpfer (2016) in stanines 8 and 9 is 21.6% and 16.9%, respectively. On average directors are pretty smart.

Recognizing that directors may have different psychological traits than members of the population may be important for formulating assumptions about directors' preferences

and motivation and behavioural biases. In the context of CEOs, Kaplan, Klebanov and Sorenson (2012) and Kaplan and Sorenson (2016) show that CEOs have different personality traits than other executives. Gow, Kaplan, Larcker and Zakolyukina (2016) show that CEO personality traits are related to corporate outcomes. There is no reason to think that directors would be any different.

Gaining Empathy

Perhaps not surprisingly from the perspective of firms, academics who study boards typically do not sit on boards. Francis, Hasan and Wu (2015) document that 39.34 of academic directorships in the ISS database between 1996 and 2011 belong to academics with a PhD in a business discipline. The evidence in White, Woidtke, Black and Schweitzer (2013) suggests that many of these academic directors may no longer be research-active. In their sample of appointments of academics to boards of Fortune 1000 firms between 1995 and 2007, White et al. (2013) find that 60.36% of academics hold administrative roles. Only 26% of academics hold business or law degrees. Because of SOX's requirement to have finance expert on the audit committee, presumably many of these directors are accounting professors. A quick scan of names of academics in ISS data suggests that many of these academics do not specialize in board research.

Personal experience can be useful for highlighting board processes. But even without direct board experience, personal experience can inform research on boards. Boards are teams, after all, and most academics have experience with working in teams through their service on department and university committees and working with co-authors. Such experiences can be useful for building intuition about how boards might work. Of course, experiences may differ so it is also important to exercise caution in generalizing from personal experiences.

9. Conclusion

People often ask me questions like “Do boards “matter”?” or “What is the “one” thing we know about boards?” or “What is the best paper on boards you have read recently?” From my perspective, these are not well-posed questions. In Mathematics, a well-posed problem is one to which a unique solution exists and whose behaviour changes systematically with initial conditions. As I document in this chapter, boards are complicated. They are influenced by the choices of firms, individuals and policy-makers. Our data is imperfect and our methods are imperfect. While simplification is part of the scientific process, we should not expect simple answers to questions like “Do boards matter?”.

The lack of simple answers is precisely what makes boards intellectually interesting and worthy of study. Although the literature on boards has been growing, as I highlight in this chapter there are many areas for future research on boards. Given the interdisciplinary nature of the subject, and its relevance for corporate leaders and policy-makers, I expect it to continue to be a vibrant and impactful topic in the Economics and Finance literature for many years to come.

Appendix

Table A.1 Literature Surveys That Discuss Boards of Directors

This table lists literature surveys that discuss boards of directors. The list includes, but is not limited to, all surveys I could identify using an Econlit search for papers with the word “board” in the abstract and “survey” or “review” or “overview” in the title as of January 27, 2016. It also includes surveys with the terms “survey, board, director” in the title, abstract and keyword fields on SSRN as of January 27, 2016, as well as survey papers associated with the word “board” in the editorial by Aguilera, Florackis and Kim (2016) to the May 2016 Special Issue of *Corporate Governance International Review* on Reviews of Corporate Governance and papers with keywords “board” or “director” in the *Annual Review of Financial Economics* and the *Annual Review of Economics* as of May 3, 2017.

Authors	Brief description of content
Zahra and Pearce (1989)	Synthesizes empirical research findings on the impact of boards on corporate financial performance
Johnson, Daily, Ellstrand (1996)	Reviews literature addressing boards of directors from the perspective of their control, service, and resource dependence roles
John and Senbet (1998)	Survey the empirical and theoretical literature on mechanisms of corporate governance with a focus on internal mechanisms
Bhagat and Black (1999)	Survey the evidence on the relationship between board composition and firm performance
Huse (2000)	Reviews research and presents a research agenda on boards of directors in SMEs
Denis (2001)	Reviews the field of corporate governance in the US from the perspective of financial economists
Claessens and Fan (2002)	Reviews corporate governance structures in Asia
Becht, Bolton and Roell (2003)	Reviews theoretical and empirical research on the main mechanisms of corporate control
Hermalin and Weisbach (2003)	Surveys the research on boards of directors in the economics and finance literature
Denis and McConnell (2003)	Surveys international corporate governance
Fields and Keys (2003)	Reviews the literature on board diversity and shareholder value through 2002
Hillmand and Dalziel (2003)	Integrates agency and resource dependence perspectives in the literature
Macy and O’Hara (2003)	Provides overview of corporate governance and discusses the particular corporate governance problems of banks
Yermack (2006)	Summarizes event study evidence on director appointments to the board
Gillan (2006)	Develops a corporate governance framework and provides a broad overview of recent corporate governance research
Michaud and Magaram (2006)	Reviews governance working papers published on SSRN in 2004 to see if they are constructive
Finegold, Benson, Hecht (2007)	Examines literature to see if US governance reforms are justified
Terjesen, Sealy, Singh (2009)	Reviews literature on how gender diversity on corporate boards influences corporate governance outcomes
Pugliese, Bezemer, Zattoni, Huse,	Illustrates that research on boards of directors and strategy evolved from normative and structural approaches to behavioural and

Van den Bosch, Volberda (2009)	cognitive approaches
Armstrong, Guay, Weber (2010)	Reviews literature on the role of financial reporting transparency in reducing governance-related agency conflicts among managers, directors, and shareholders and creditors
Ferreira (2010)	Reviews research findings concerning board composition with an emphasis on the demographic characteristics of board members
Adams, Hermalin and Weisbach (2010)	Surveys literature on boards with an emphasis on assessing how both theoretical and empirical work deal with endogeneity problems
Adams (2010)	Surveys governance of banks
Mehran, Morrison and Shapiro (2011)	Provides overview of governance of banks
Agrawal and Knoeber (2012)	Reviews the literature on corporate governance and firm performance in economies with dispersed stock ownership and an active market for corporate control, such as the US and the UK
Chandrasekar and Ren (2012)	Provides an overview of the literature on the relationship between ownership structures, board of directors, incentive systems and R&D investment
de Haan and Razvan (2013)	Surveys literature on the governance of banks
Pan (2013)	Discusses corporate governance developments in emerging global markets
Choudhary, Schloetzer and Sturgess (2013)	Discusses the role of boards of directors, public accounting firms, and corporate attorneys in the preparation and review of mandatory disclosures
Licht (2014)	Reviews current research on culture's consequences for corporate governance
Rhode and Packel (2014)	Surveys the literature on the gender composition of boards and financial performance
Ellul (2015)	Reviews the role of risk management in corporate governance
Larcker and Tayan (2015)	Briefly reviews literature related to seven commonly accepted beliefs about boards of directors
Adams (2016)	Discusses challenges facing literature on board diversity
Aktas, Croci, and Simsir (2016)	Examines link between corporate governance, including boards, and takeover outcomes
Gabaldon, deAnca, Mateos de Cabo, and Gimeno (2016)	Reviews literature on women on boards
Jain and Jamali (2016)	Surveys literature on corporate governance and corporate social responsibility
John, De Masi, Paci (2016)	Reviews the literature on the governance of banks
Lamb and Roundy (2016)	Conducts a systematic review of the board interlocks research that is not discipline specific
Srivastav and Hagendorff (2016)	Surveys governance and bank risk-taking

Table A.2 Board Structure and Codetermination Policies in EU Member States, Norway and Switzerland

Table A.2 shows data on board structure and employee board representation in the 28 member states in the European Union and Norway and Switzerland. Board structure (BS) indicates if companies in a country have monistic (sole) board structures (M), dualistic (dual) board structures (D) or both (C). Codetermination (CD) is equal to 1 if the country has employee representation on the board. Board representation (BR) is from Vitols (2010). It is an index measuring the strength of legal rights in each country for employee representation in the company's highest decision-making body. Board representation was developed by the SEEurope network of the European Trade Union Institute. The index classifies countries in three groups: 'widespread participation rights' (2), 'limited participation rights' (1) and 'no (or very limited) participation rights' (0). Companies affected describes the companies that have employee board representation. Rights describes the rights of employee directors. Nature of policy provides information on the numbers of employee representatives on the boards. NF is the percent of non-financial companies in the Adams and Kirchmaier (2015) sample that Boardex indicates had an employee representative on the board at any point in the sample period. B is the same information for banks. Entries for countries without codetermination are left blank. Entries for Netherlands and Luxembourg are coded as NA as no firm is reported by Boardex as having employee representatives on the board even though these countries have codetermination. Asterisks indicate whether the difference in mean board characteristics between non-financials and banks is statistically significant. ***, **, * indicate statistical significance at greater than the 1%, 5% and 10% level, respectively. Data sources for variables other than Board Representation are Kluge and Stollt (2006), Osterloh, Frey and Zeitoun (2011) and country-level data from Fulton (2011) and Fulton (2015) accessed online on April 12, 2017 at <http://www.worker-participation.eu/National-Industrial-Relations/Countries>.

Country	BS	CD	BR	Companies Affected	Rights	Nature of policy	NF	B
Austria	D	1	2	Joint-stock companies and Limited Liability companies >300 employees and state-owned companies	Same rights and duties as other supervisory board members, although they are not paid for this work.	33% of the supervisory council consists of members of work council and are appointed by the works council	42.2	33.3
Belgium	M	0	0					
Bulgaria	C	0	0					
Croatia	C	1	NA	State-owned and private companies	The legislation specifically states that the employee representative has the same legal position as other board members.	The single representative at board level is appointed and recalled by the works council.		
Cyprus	M	0	0					
Czech Republic	D	1	2	State-owned companies		33% of the supervisory board elected by employees. Until January 2014, employees in privately owned public limited companies (a.s.) had the right to elect one third of the members of the supervisory board, provided there were at least 50 employees. This is no longer the case.		

Denmark	D	1	2	>35 employees	The employee representatives, who are elected by the whole workforce, have the same rights and responsibilities as other board members; Cannot be involved in decisions on industrial disputes.	33% of directors (at least 2) consists of employees	83.6	63.6*
Estonia	D	0	0					
Finland	C	1	2	State-owned and private companies >150 employees	Same rights as other members of the board, or other body; Cannot participate in decisions on industrial disputes, pay and conditions or the recruitment and dismissal of senior managers.	Under the statutory provisions, there must be between one and four employee representatives, who must be employees of the company and they may make up one fifth of the body on which they sit (be equivalent to a quarter of the other members). At any time the statutory provisions can be replaced by an agreement with the company, under certain conditions.	4.6	0***
France	C	1	1	State-owned and private companies; obligatory in larger shared-based companies (Société anonyme (SA) with 5,000 or more employees worldwide or 1,000 or more in France. (Pre-2015, thresholds were 10,000 and 5,000)	Position of an employee representative at board level cannot be combined with any other elected position, such as a member of the works council or a trade union representative.	One employee representative, where there are up to 12 board members, and two where there are more than 12; When chosen through elections, the list of candidates must contain an equal number of male and female candidates. Where two are appointed by the group works council, central works council or works council, one must be a man and one a women.	7.4	72.2***
Germany	D	1	2	State-owned and Private companies with 500-2000 employees/>2000 employees	Same rights and duties as other supervisory board members; Must not be discriminated against as a result of their membership of the board; Must not be restricted in their work as supervisory board members; Entitled to reimbursement of their expenses and adequate training.	33%/50% of supervisory board consists of employees. Special regulations for trade unions and the iron, coal and steel industry.	65.2	100***
Greece	M	1	1	State-owned companies		2-3 members of the board are de facto nominated by the union and elected by employees	9.3	0***
Hungary	D, C for PLCs	1	2	State-owned and private companies	Same rights and obligations as other members of the supervisory board; Under legislation passed in 2013 lost their right to protection against	33% of supervisory board appointed by works council in companies with 2 tier boards.		

					dismissal.			
Ireland	M	1	1	Some state-owned companies, several privatised companies		Usually 1/3 of the board: between 1-5 directors, nominated by the union and elected by employees	0	0
Italy	C	0	0					
Latvia	D	0	0					
Lithuania	C	0	0					
Luxembourg	M	1	2	Private companies>1000 employees and state-owned companies	Same rights and duties as other members of the board of directors; Period of office is the same as other members; Cannot be members of more than two boards.	33% of the board consists of employees appointed by the works council.	NA	NA
Malta	M	0	1			Employee representatives in companies at board level have now largely disappeared in Malta, and are now only found in companies belonging to the union or the Malta Labour Party.		
Netherlands	C	1	2	Private companies >100 employees or equity capital >16 Million Euro or existence of a works council and state-owned companies		up to 33% of the board consists of worker representatives who are not employees of the same company. They are nominated by works council and appointed at the AGM.	NA	NA
Norway	M	1	NA	Private companies>30 employees and state-owned companies	Same powers and rights as all other directors.	In companies with between 30 and 50 employees, they are entitled to a single director, irrespective of the size of the board, and in companies with more than 50 but less than 200 employees, they are entitled to one third of the seats. Both sexes must be represented if two or more board members are elected by the employees. This does not apply if one sex makes up less than 20% of the workforce.	50.1	0***
Poland	D	1	1	State-owned and privatised companies	Same rights as other board members.	Between 1 and 5 members depending on level of state ownership.		
Portugal	M	1	1	State-owned companies	Only have a consultative role.	The legislation states that the number of employees to be elected, as well as the body on which they sit, are to be determined by the company's own rules. In practice, at most 1 member of the board.		
Romania	M	0	0					
Slovak Republic	D	1	2	State-owned and private companies		Employees have a right to a third of the seats on the supervisory board of companies in the private sector with more than 50 employees, provided some other conditions are met, and to half the seats in state-owned companies.		

Slovenia	C	1	2	State-owned and private companies; Joint-stock companies with a supervisory board	Cannot chair the board.	Between a third and a half of the seats on the supervisory board of companies with a two-tier structure; In companies with a single board they have at least a third.		
Spain	M	1	1	some state-owned companies, some credit unions		2 members-1 each appointed by the two most represented unions	2.2	40.0***
Sweden	M	1	2	State-owned and private companies 25-1000 employees/>1000 employees	Same rights as directors representing the shareholders; Cannot take part in discussions on issues where there is a conflict of interest between the company and the union (e.g. collective bargaining or industrial action); No power of veto; Normally receive their ordinary pay for the work as a board member.	2 members/3 members of the board are appointed by trade unions with a collective labor agreement	55.6	0**
Switzerland	M	0	NA					
United Kingdom	M	0	0					

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Figure 1 The Number of Papers Published on the Topic of Boards of Directors Over Time

Figure 1 shows the number of papers published on boards between 1990 and 2014 in finance journals JF, JFE, RFS, RofF, JFQA, FM, JCF, JFI, as well as JAE, JLE, Manag. Sci, and J BUS. Potential papers on boards were identified using the search term “board” or “director” in JSTOR and Sciencedirect. Papers that did not discuss boards of directors were manually eliminated. The final data set (database #1) contains the year of publication, the journal name, the title, the keywords and the abstract for 569 papers, of which 483 are in finance journals

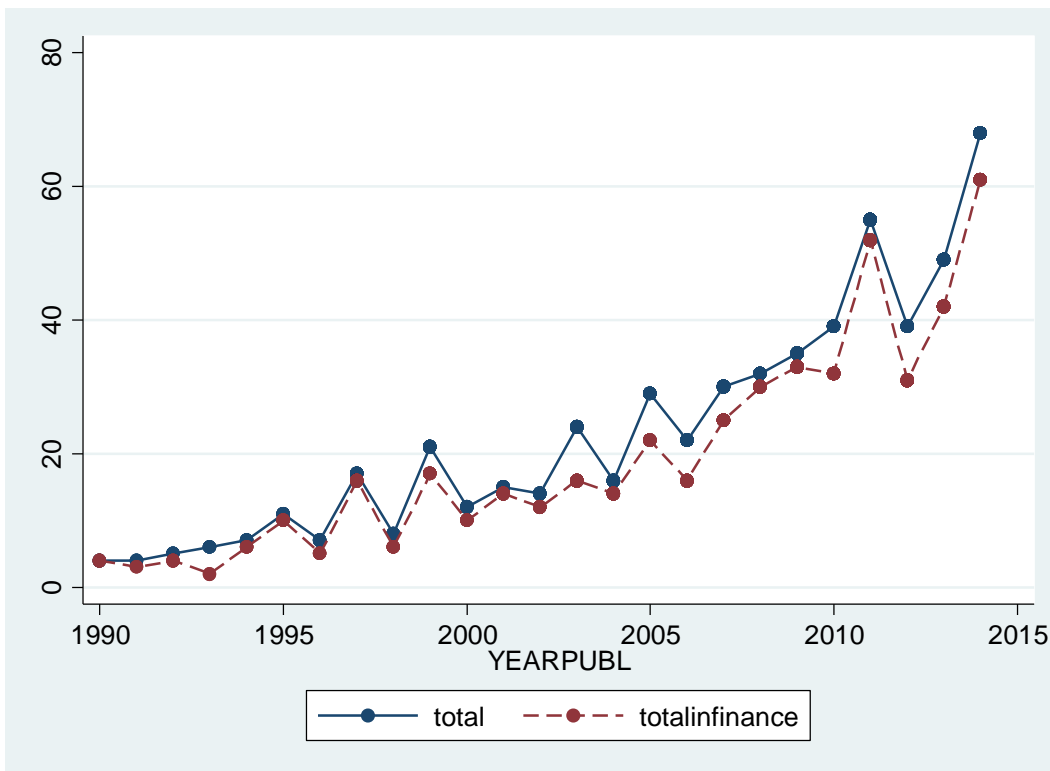


Figure 2 The Fraction of Top 6 Finance Journal Space Allocated to the Topic of Boards of Directors

Figure 2 shows the fraction of all papers published in JF, JFE, RFS, JFQA, Roff, JFI on the topic of boards of directors between 1990 and 2014. Papers on boards were identified as in Figure 1 and Table 1. All finance references were bulk downloaded from JSTOR and ScienceDirect and cross-checked with journal websites to ensure complete coverage. Material that did not consist of articles was manually eliminated. The final data set (database #2) consists of information on 6,879 finance articles.

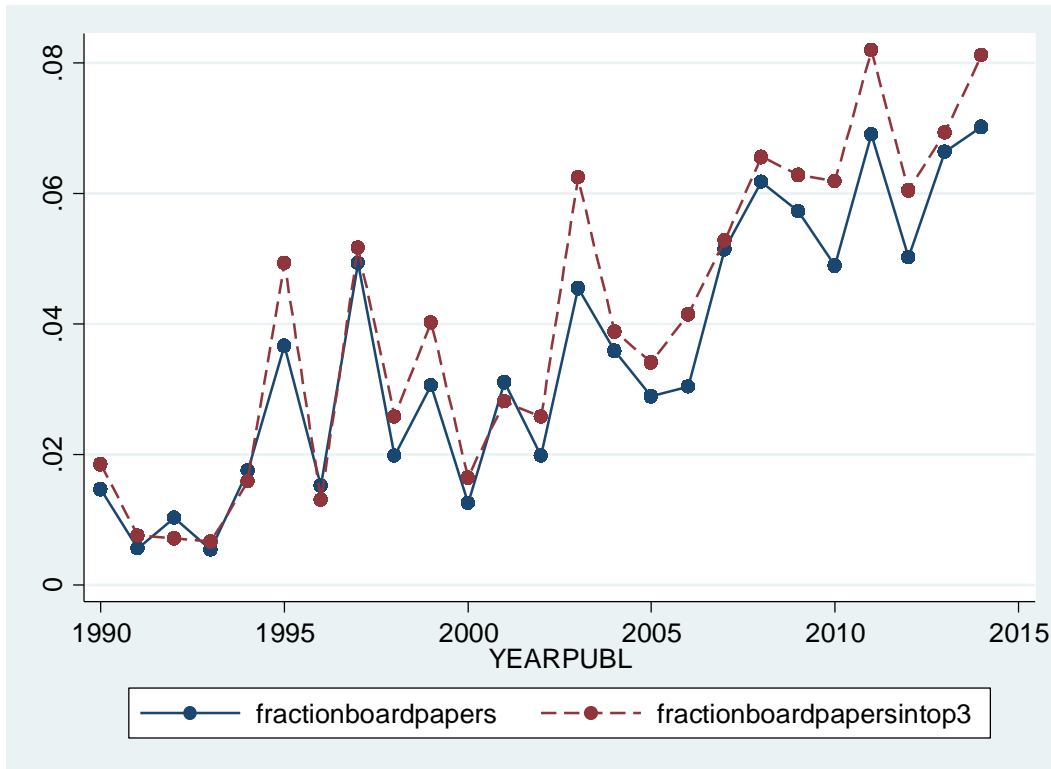


Figure 3 The Fraction of Top 6 Finance Journal Citations Allocated to the Topic of Boards of Directors

Figure 3 shows the ratio of the sum of all citations to papers on boards published in a given year in JF, JFE, RFS, JFQA, Roff, JFI relative to the total number of citations to papers published in these journals in the same year between 1996 and 2014. Citations are measured as of December 10, 2015. Citations are from Scopus. Scopus only counts cites in journals that are indexed in Scopus. Papers on boards were identified as in Figure 1 and Table 1. Only papers in the intersection between the sample in Figure 2 (database #2) and the bulk download of papers in the 6 finance journals from Scopus are used in Figure 3. Papers published prior to 1996 are excluded due to poor coverage of finance journals in Scopus prior to 1996. 34 (0.59%) of papers in database #2 did not appear in Scopus for this time period. The total sample of papers (database #3) with Scopus citation data consists of 5,702 papers of which 256 are board papers.

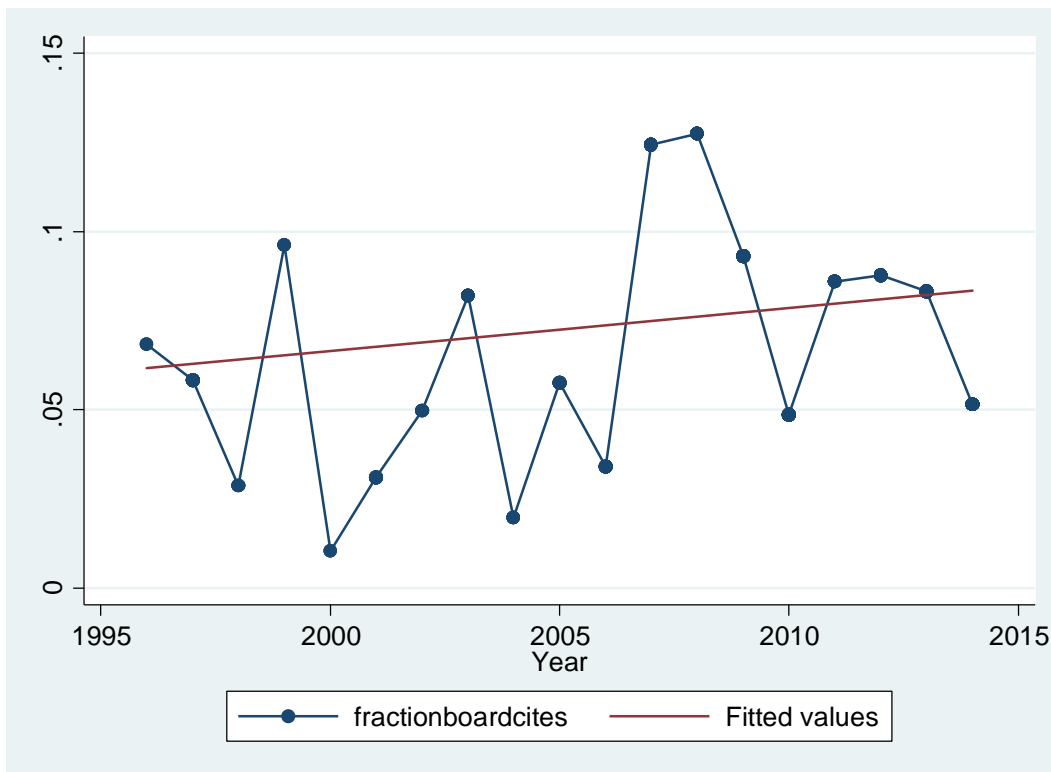
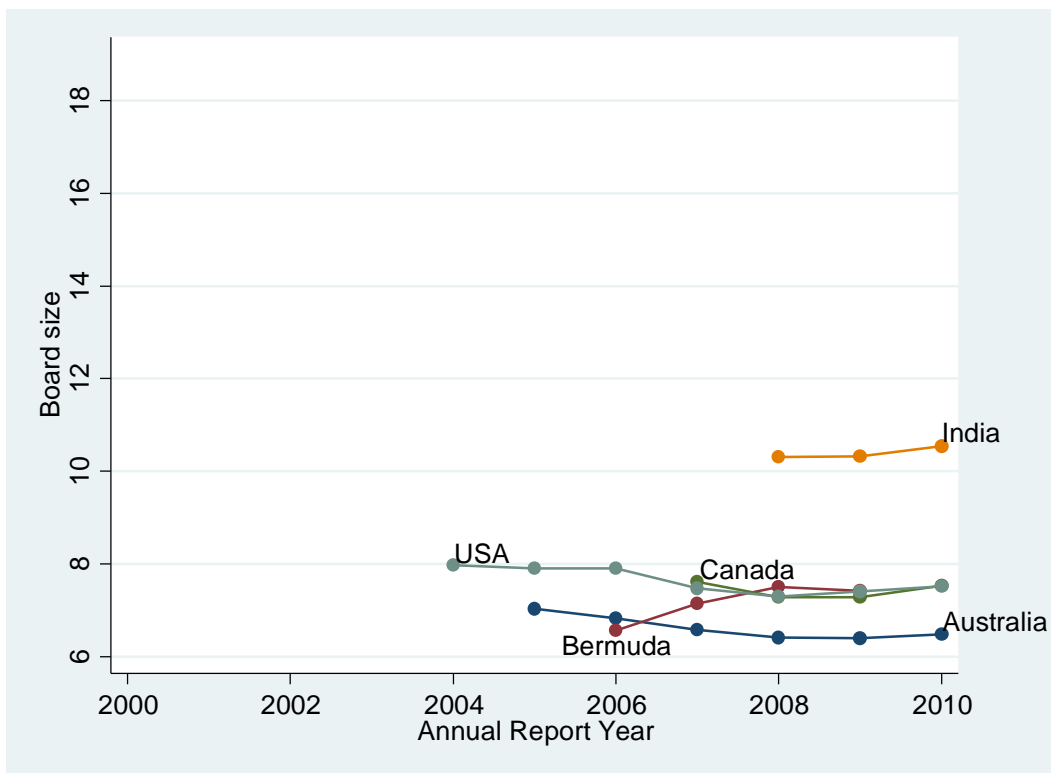


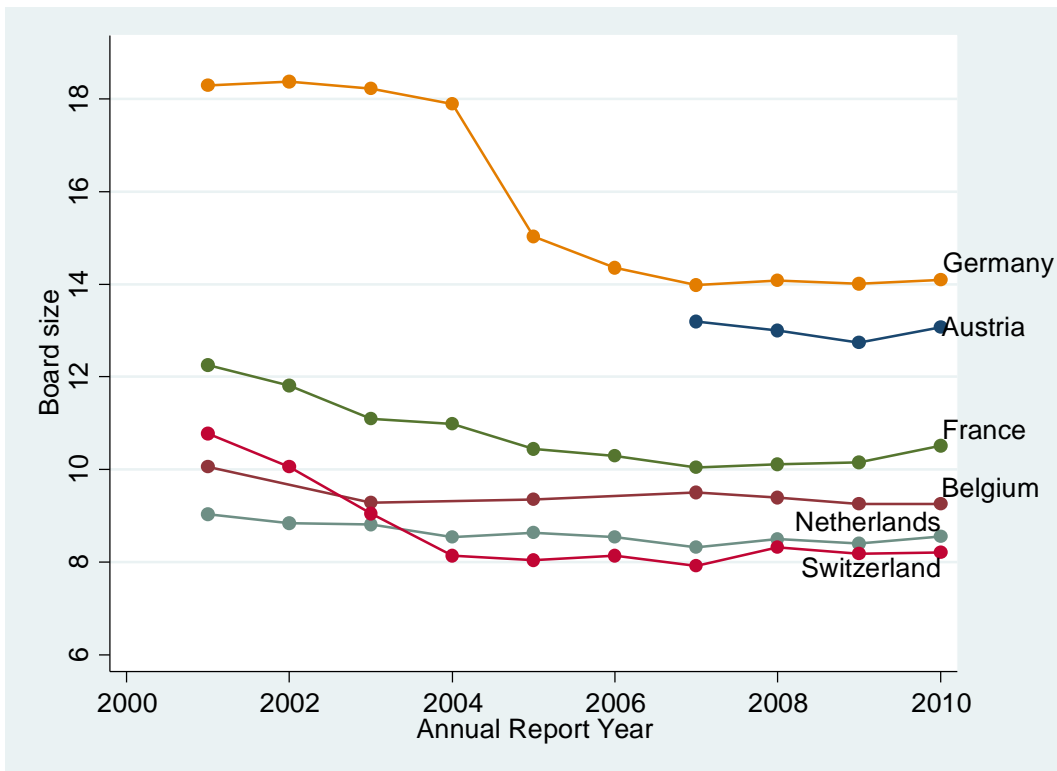
Figure 4 The Evolution of Board Structure in 22 Countries

Panels A-D of Figure 4 shows plots of average board size for non-financial firms in 22 countries between 2001 and 2010 in a sample of Boardex data from Adams and Kirchmaier (2015). Data for a country is included if Boardex covers more than 70% of market capitalization for that country in that year. More details on the sample construction are in Adams and Kirchmaier (2015). In dual-board countries, board size is the sum of the sizes of the supervisory and management boards. Observations on Australia, Canada and Bermuda are dropped for years 2004, 2006 and 2005, respectively because the number of firms drops substantially in those years. Observations for Luxembourg are dropped because there are only two years of data for Luxembourg. Panel A is for the sample countries outside of Europe. Panels B, C and D show data for Western, Northern and Southern European countries in the sample. Regional classifications are done according to the United Nations Statistics Division—Standard Country and Area Codes Classifications. Panels E and F show plots of board size, $\ln(\text{assets})$ and board independence in S&P 1500 firms in Adams, Rangunathan and Tumarkin’s (2016) sample of combined ISS and Boardex data on unregulated firms. The dip in board independence in Panel F is caused by the switchover from ISS to Boardex’s classification of independent directors (NEDs).

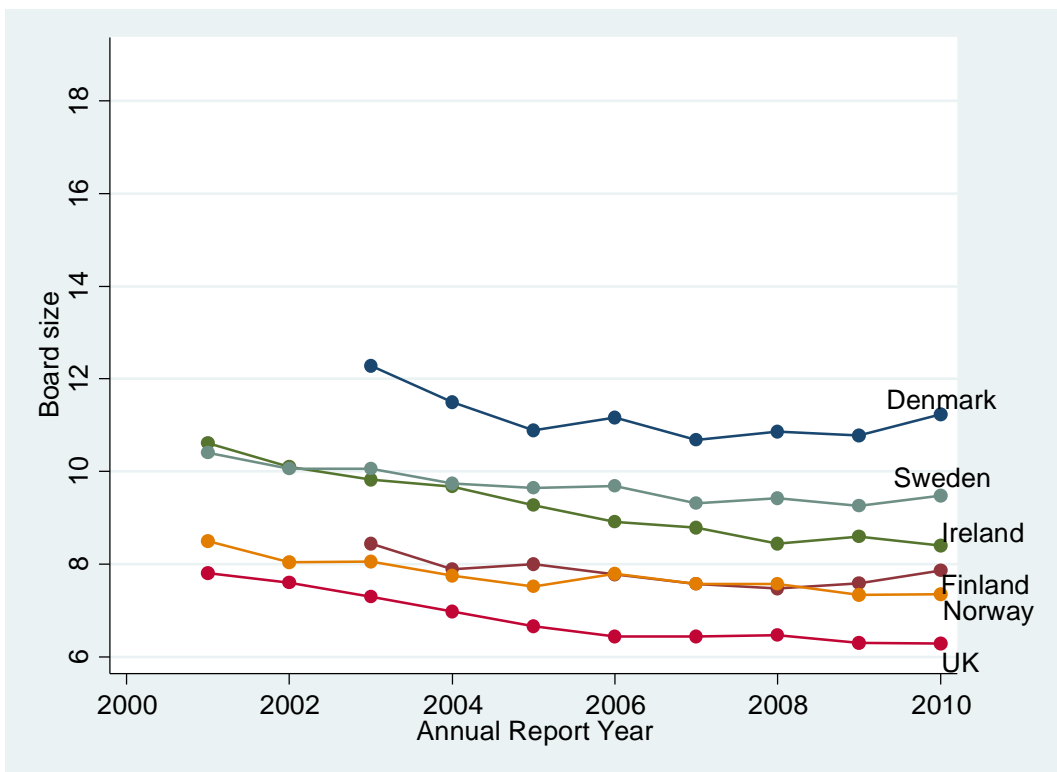
Panel A: Countries Outside Europe



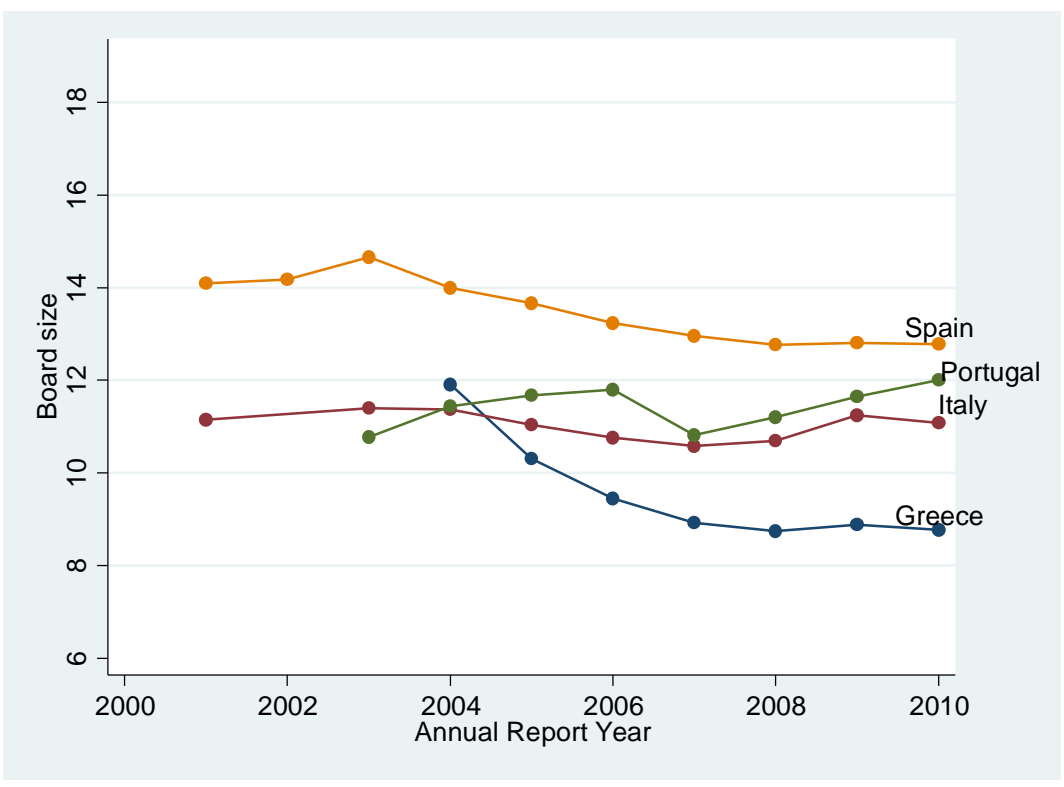
Panel B: Western Europe



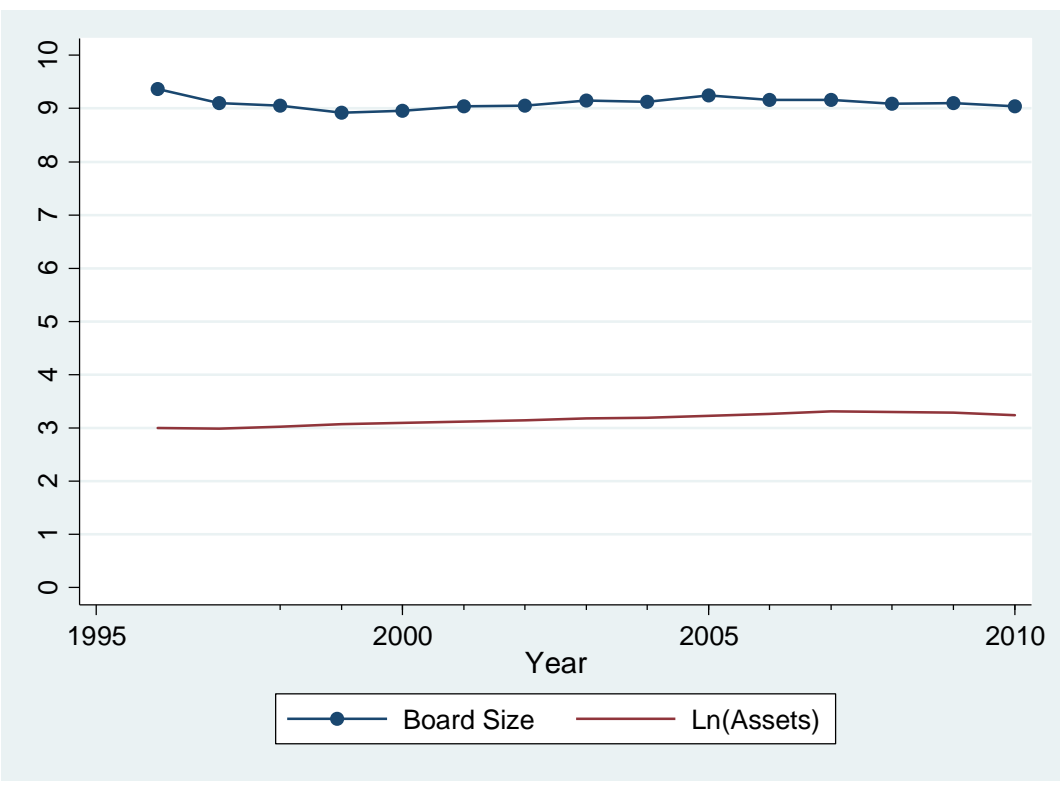
Panel C: Northern Europe



Panel D: Southern Europe



Panel E: Board-size and Ln(Assets) in S&P 1500 Firms (Financials and Utilities Excluded)



Panel F: Board Independence in S&P 1500 Firms (Financials and Utilities Excluded)

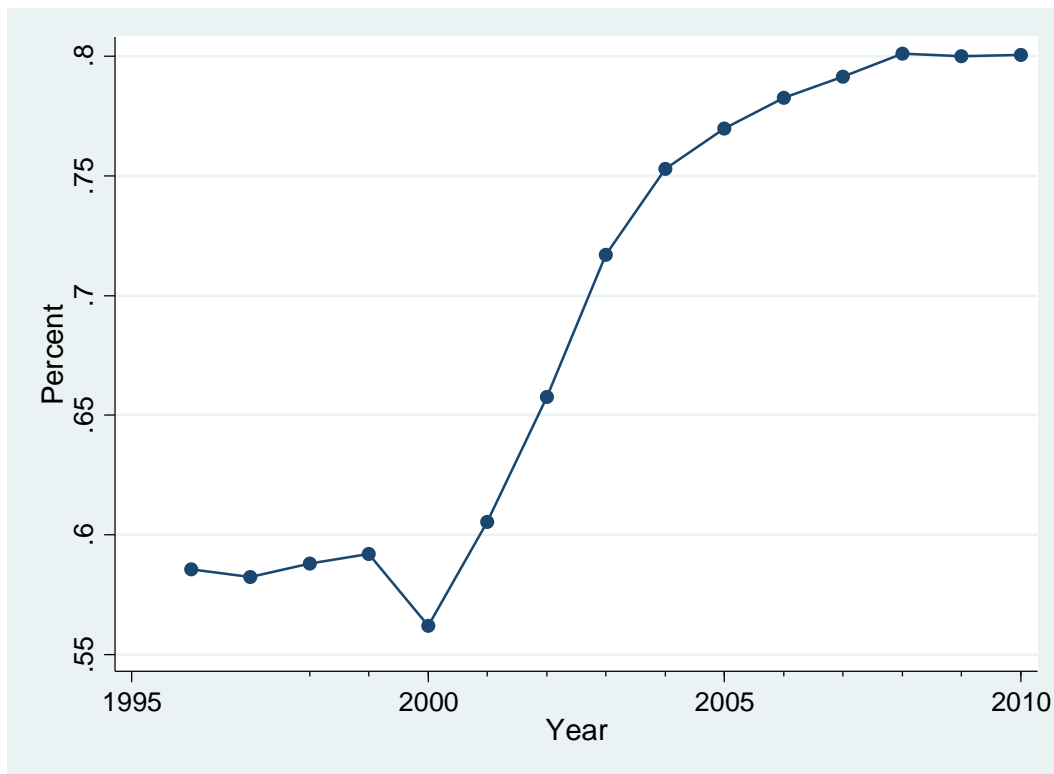


Figure 5 Bank Board Size

Figure 5 plots average board size and the number of non-insiders in Adams and Mehran's (2012) for a sample of large banking organizations in the 1986-1999 period. From 1982 to 1999 all sample firms are bank holding companies. Prior to 1982, the sample firms consist of a mixture of BHCs and banks. Data prior to 1986 is from Moody's Bank and Finance Manuals. Data post-1986 is from bank proxy statements. In 1965, there were 34 institutions; during 1966–1996 there were 35 institutions. In 1997, 1998 and 1999, there were 34, 33 and 32 institutions, respectively. A non-insider is defined to be any director who is not currently an officer of the top layer of the organizational hierarchy of the banking firm. The vertical line indicates the year in which data sources transition from Moody's manuals to proxy statements.

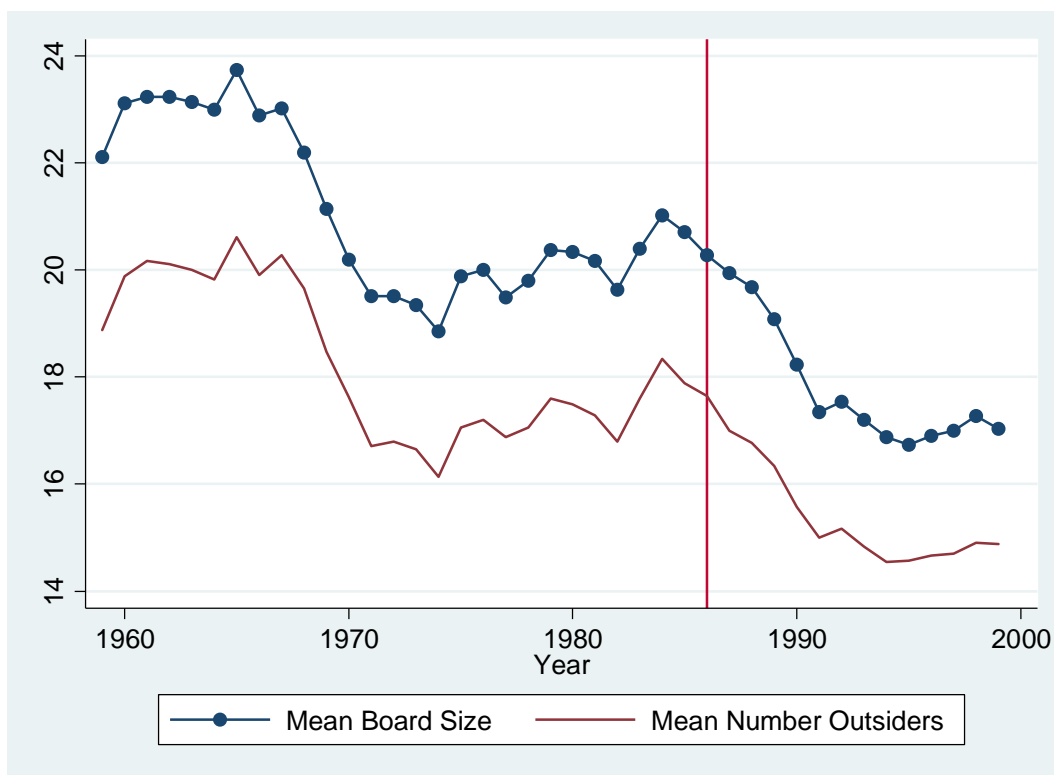
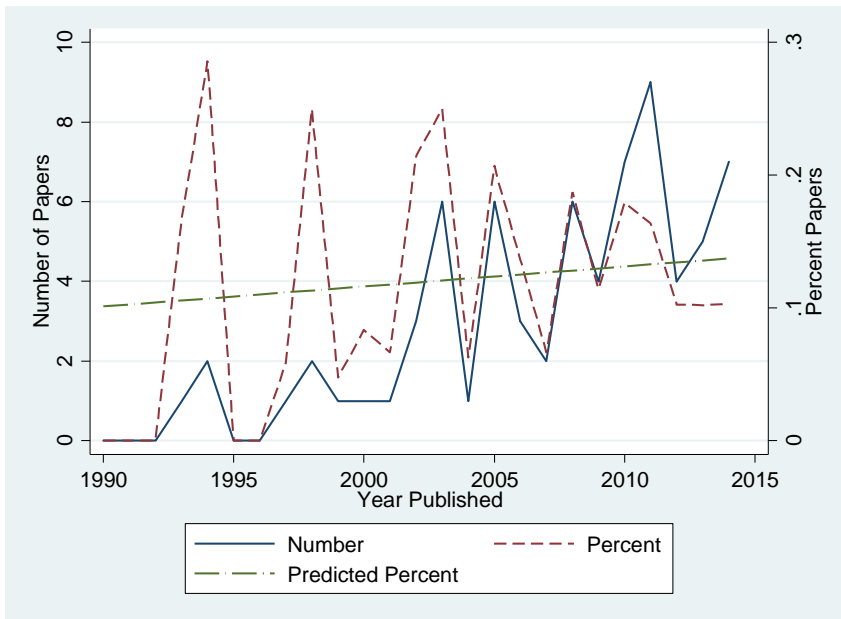


Figure 6 Trends in the Literature: Methodology

Panel A of Figure 6 shows papers in database #1 (see Table 1) with keywords I associate with theoretical papers in the papers' keywords, abstracts and titles. Panel B of Figure 6 shows papers in database #1 with keywords I associate with identification in the papers' keywords, abstracts and titles. Table 4 shows the list of keywords I use to classify papers' themes.

Panel A: Theory



Panel B: Identification

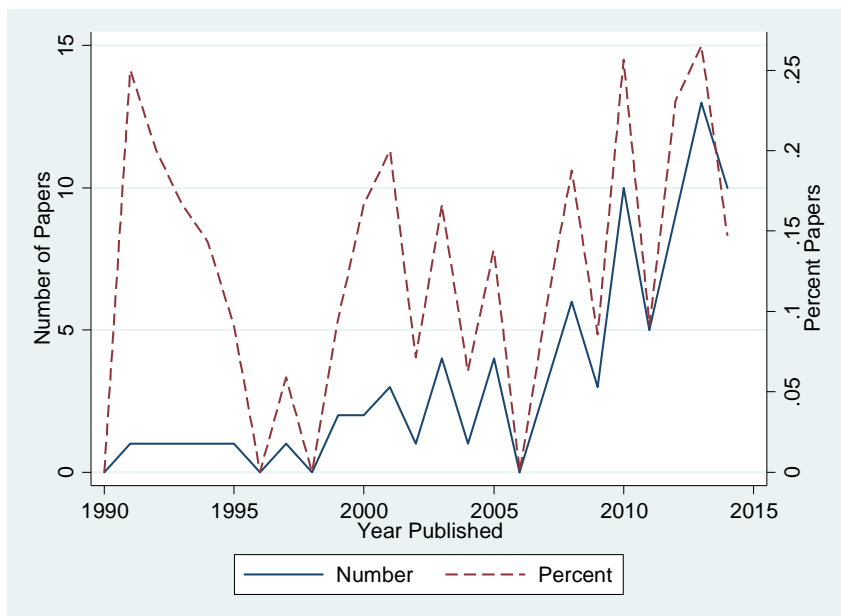
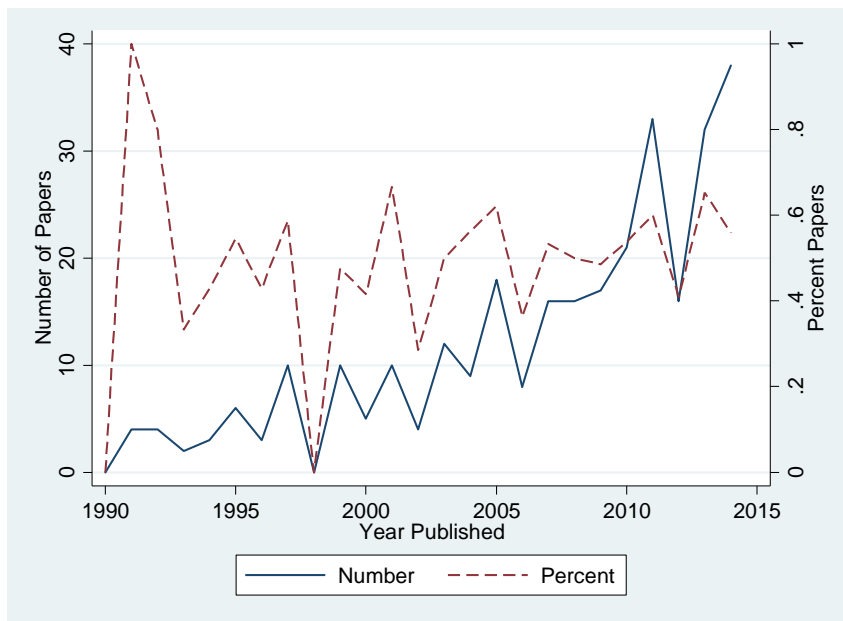


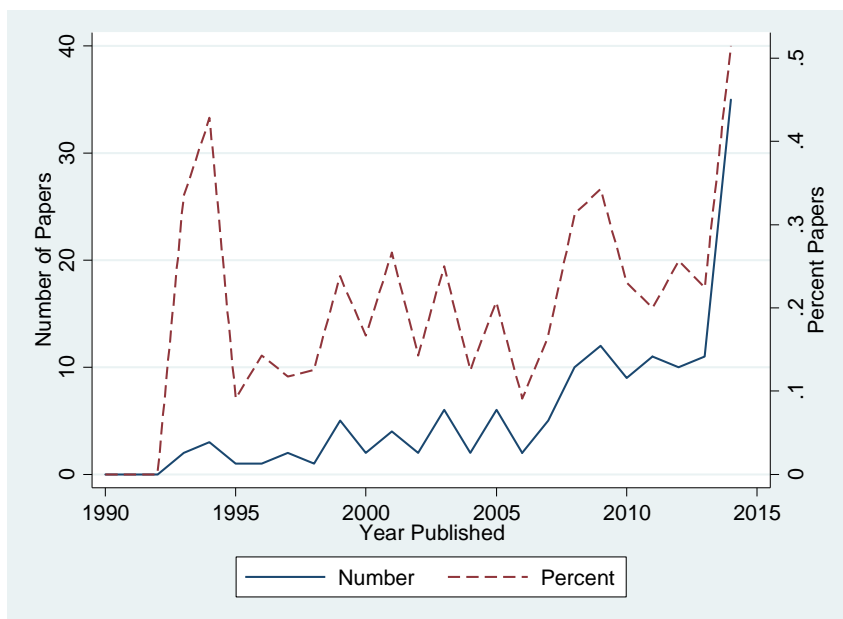
Figure 7 Trends in the Literature: The Role of the Board

Figure 7 shows papers in database #1 (see Table 1) with keywords I associate with specific board roles in the papers' keywords, abstracts and titles. Panel A shows trends for papers examining the board's monitoring role. Panel B shows trends for papers examining the board's advisory role. Panel C shows trends for papers examining the board's monitoring role. These categories need not be mutually exclusive. Table 4 shows the list of keywords I use to classify papers' themes.

Panel A: Monitoring



Panel B: Advising



Panel C: Stakeholders

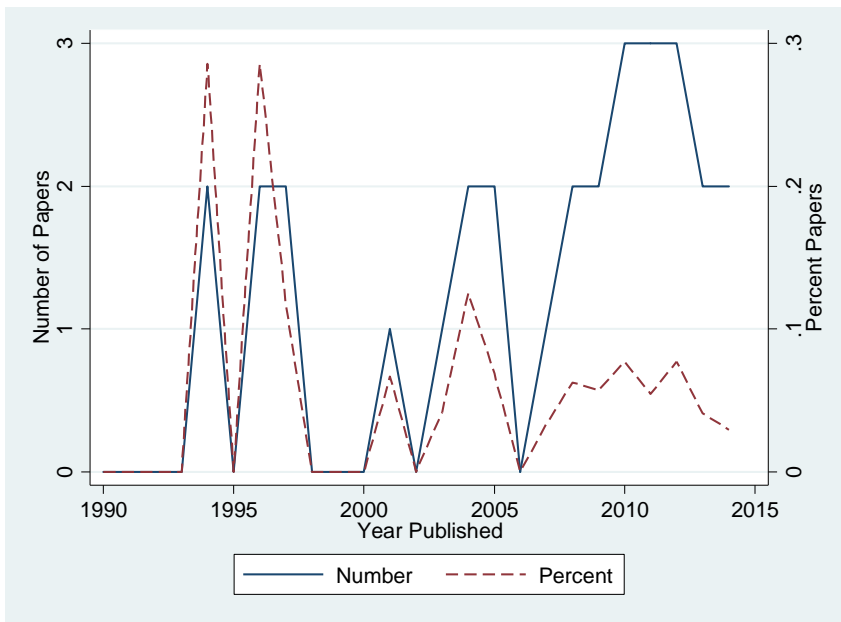
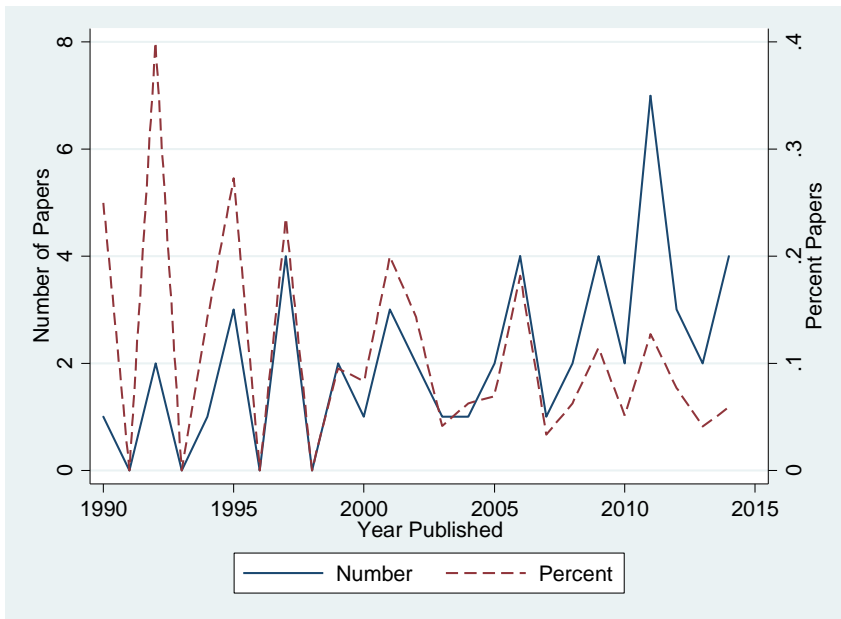


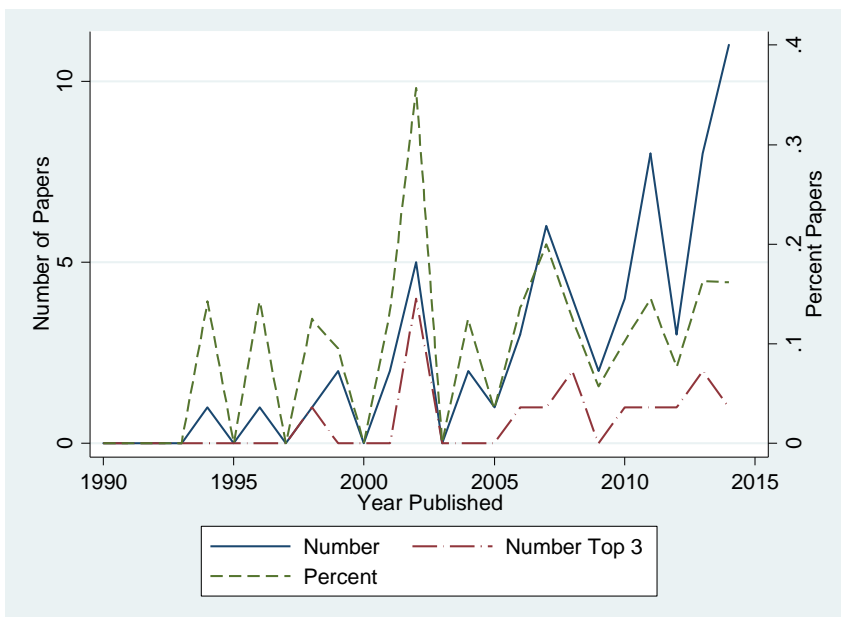
Figure 8 Trends in the Literature: Selected Themes

Figure 8 shows papers in database #1 (see Table 1) with keywords I associate with selected themes in the papers' keywords, abstracts and titles. Panel A shows trends for papers examining the board and financial institutions. Panel B shows trends for papers examining boards outside the US. Panel C shows trends for papers examining gender. Panel D shows trends for papers examining policies. These categories need not be mutually exclusive. Table 4 shows the list of keywords I use to classify papers' themes.

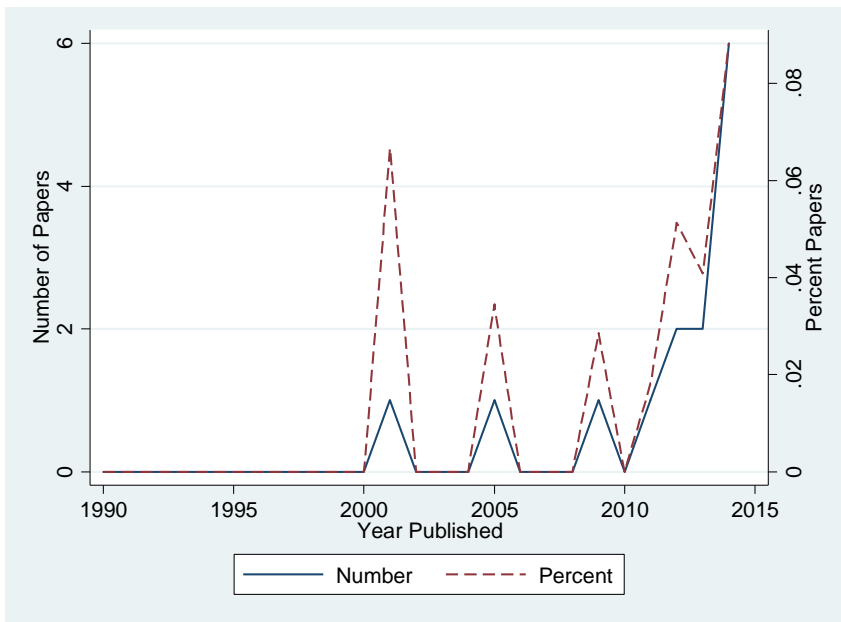
Panel A: Financial Institutions



Panel B: Boards Outside The US



Panel C: Gender



Panel D: Policy

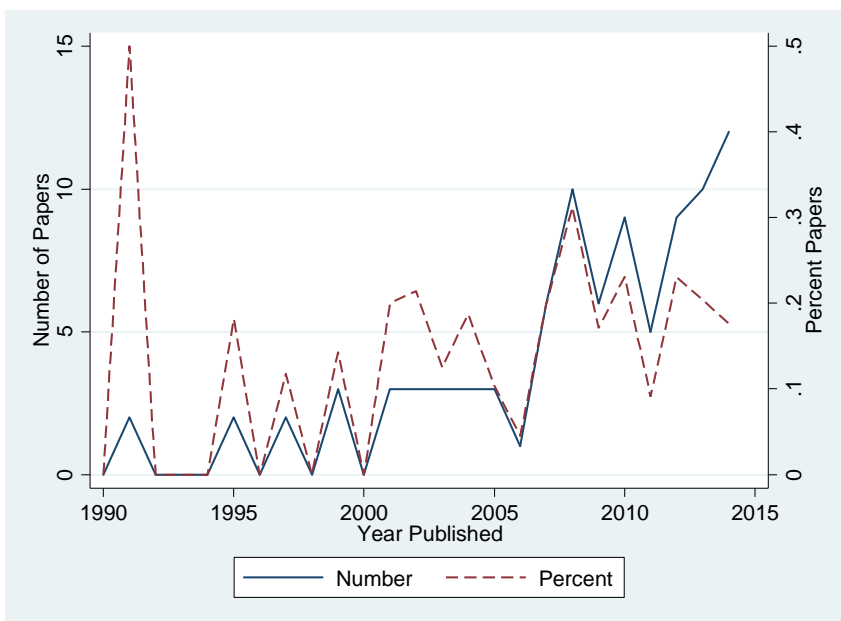
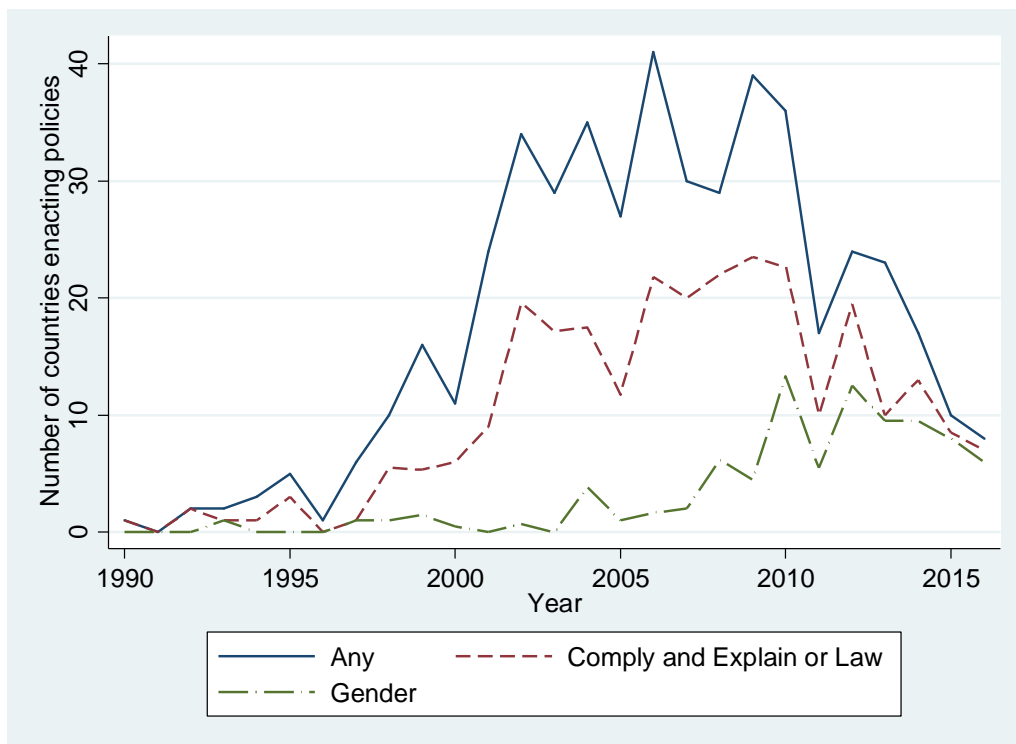


Figure 9 Policy Activity

Panel A of Figure 9 shows the number of board-level policies of any type (solid line), the number of policies that are mandatory or have “comply or explain” provisions (dashed line) and the number of gender policies (dash dot) passed by countries in a year. Data on policies is from Adams (2012) and Adams and Kirchmaier (2016), the ECGI code database at <http://www.ecgi.org/codes/> and International Finance Corporation (2016), Catalyst (2017), OECD (2017) and an internet search. My final database contains policy documents from the ECGI code database and 154 policy documents from other sources. My sample covers policies in 108 countries. The policies consist of laws (5.72%), national governance codes and updates (61.35%), exchange listing standards (13.61%), codes for financial institutions (7.73%) and recommendations by shareholder associations and other types of organizations. Panel B shows the percentage of countries with board-level policies by a given year. To calculate the country percentages, I add Hong Kong and Taiwan to the list of 193 members of the United Nations (as of March 3, 2017), plus the Holy See and Palestine, which brings me to a total of 197 countries.

Panel A: Board Policy Activity



Panel B: Percentage Countries with Board Policies

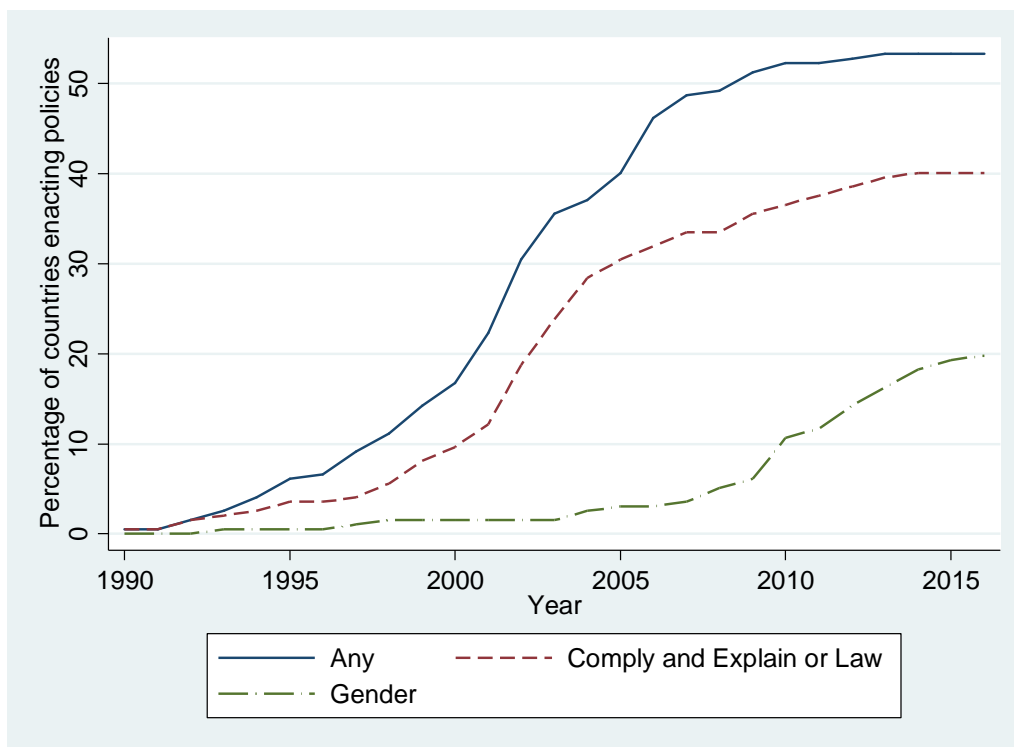


Fig 10 Policy-Making and the Academic Literature

Figure 10 shows the number of papers published on boards (dashed line), the number of papers about gender on boards (connected line), the number of papers on boards in an international context (dotted line) together with total policy activity (solid line) and gender policy activity (dash-dotted line). The sample is restricted to the period between 1990 and 2014 since that the year database #1 ends. The source for the data on the number of papers is database #1. Data for policies is from Figure 9.

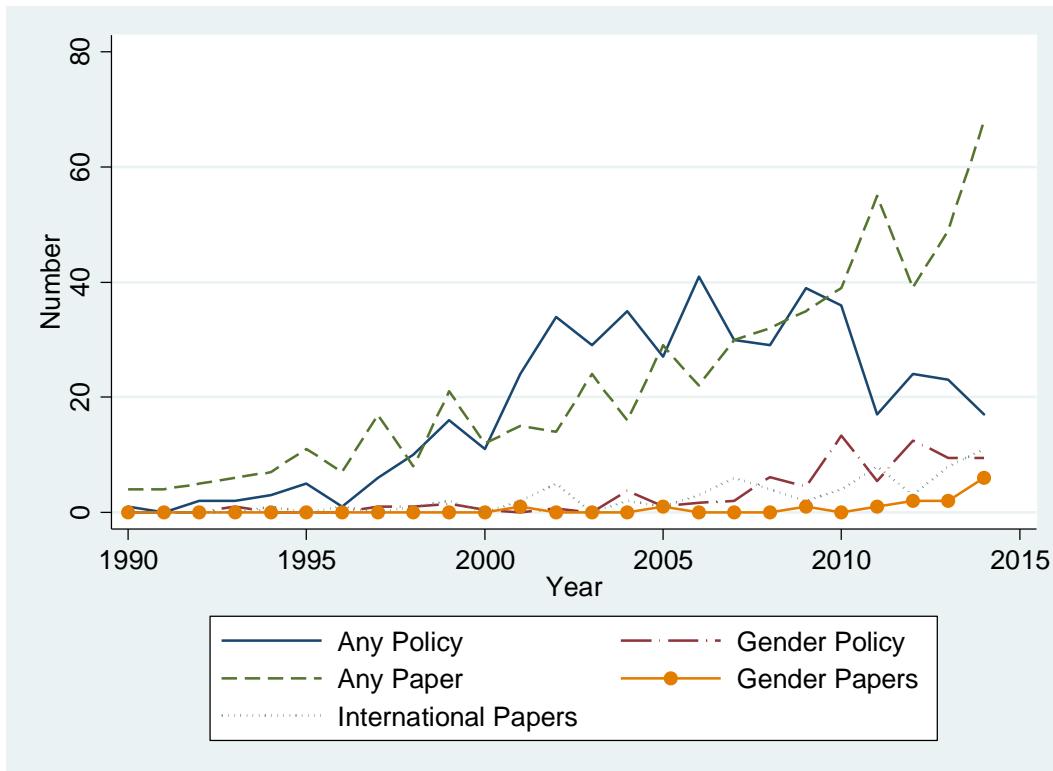


Figure 11 Psychological Traits of Directors and the Population

This figure provides a graphic depiction of results in Adams and Funk (2012) and Adams and Giannetti (2012). The data on directors consists of survey measures of human values according to Schwartz (1992) in a survey of the population of directors of listed Swedish companies in 2005. Data for the population consists of measures of Schwartz (2012) values from the European Social Survey. The sample contains data for 628 directors and more than 1,500 individuals in the Swedish population. Raw value scores range between 1 and 6, with higher numbers reflecting a higher importance of the respective value dimension. The figure shows data on relative values which are individuals' raw values minus their mean response to all survey items. The figure shows the difference between the average relative values for directors and the average relative values for the population.

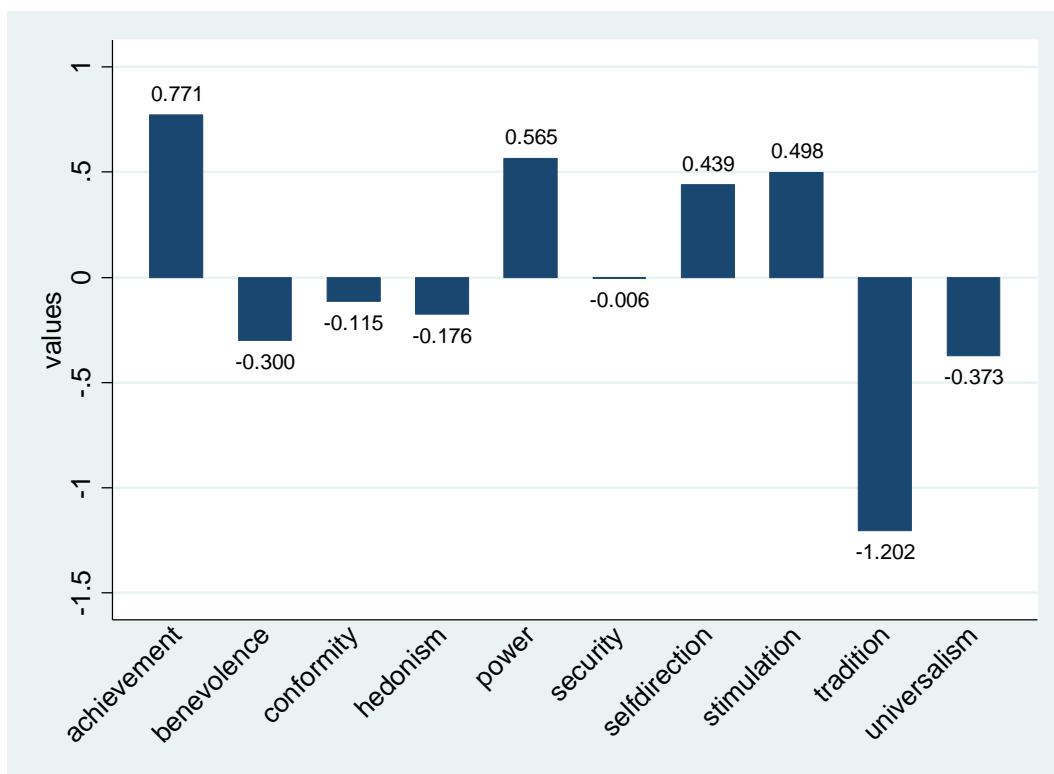


Figure 12 Director IQ

Figure 12 shows the distribution of cognitive ability scores across stanines for the Swedish (male) population and male directors of listed companies in Sweden in 2005. The data on cognitive ability comes from entrance examinations for the Swedish military at age 18 and is only available for men. In 2005, listed companies in Sweden had 1,081 unique male directors (including CEOs sitting on the board). The sample contains cognitive ability scores for 947 directors. Data is missing for some directors because some directors are not Swedish and because records for individuals who were conscripted prior to 1969 were not stored in electronic form and are missing from the archives.

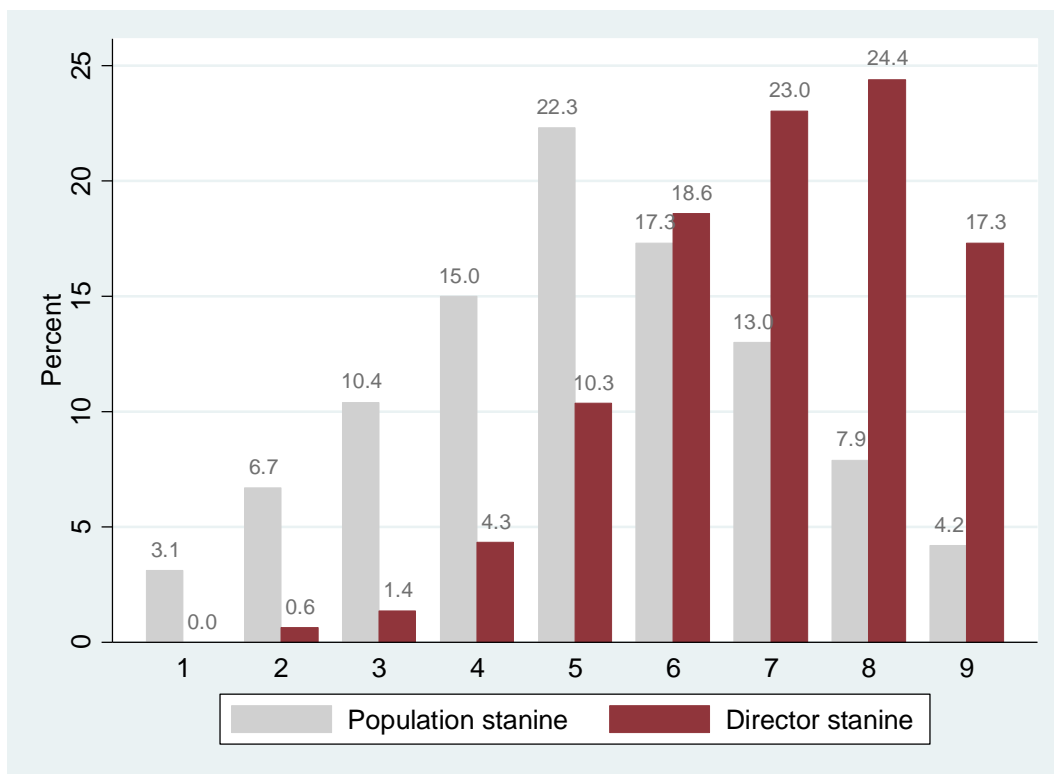


Table 1 Distribution of board papers across journals between 1990 and 2014

Table 1 shows the number of papers published on boards in finance and other journals, as well as the total number of papers published in select finance journals between 1990 and 2014. The finance journals are JF, JFE, RFS, RofF, JFQA, FM, JCF, JFI. The non-finance journals are JAE, JLE, Manag. Sci, and J BUS. Papers were identified using the search term “board” or “director” in JSTOR and Sciencedirect. Papers that did not discuss boards of directors were manually eliminated. All finance references were bulk downloaded from JSTOR and ScienceDirect and cross-checked with journal websites to ensure complete coverage. Material that did not consist of articles was manually eliminated.

JOURNAL	Number of papers on boards	Number of papers in journal
FM <i>Financial Management</i>	40	
JAE <i>Journal of Accounting and Economics</i>	47	
JB <i>Journal of Business</i>	10	
JCF <i>Journal of Corporate Finance</i>	158	
JF <i>Journal of Finance</i>	61	1,968
JFE <i>Journal of Financial Economics</i>	141	1,807
JFI <i>Journal of Financial Intermediation</i>	6	454
JFQA <i>Journal of Financial and Quantitative Analysis</i>	29	960
JLE <i>Journal of Law and Economics</i>	10	
MS <i>Management Science</i>	19	
RFS <i>Review of Financial Studies</i>	37	1,384
RofF <i>Review of Finance</i>	11	306
Total	569	6,879

Table 2 Patterns in Citations of Board Papers

Panel A of Table 2 shows summary statistics on citation data for papers published in JF, JFE, RFS, JFQA, RofF, JFI between 1996 and 2014 (left panel) and 1996 and 2010 (right panel). Citations are measured as of December 10, 2015. Citations are from Scopus. Scopus only counts cites in journals that are indexed in Scopus. Papers on boards were identified as in Figure 1. Only papers in the intersection between the sample in Figure 2 and the bulk download of papers in the 6 finance journals from Scopus are used in Table 2. 2.69% of papers did not merge to Scopus in large part because of formatting inconsistencies in titles. Papers published prior to 1996 are excluded due to poor coverage of finance journals in Scopus prior to 1996. The total sample of papers between 1996 and 2014 with Scopus citation data consists of 5,702 papers of which 256 are board papers. “Not Cited” is a dummy equal to 1 if the paper has not cites as of December 10, 2015. “Normalized Cites” is the average number of cites per year since publication year (= Cites/(2015-year published)). Number Refs (All) is the number of papers in the reference list of the paper according to Scopus. Number References is Number Refs (All) for papers with the number of references between the 1% (8 references) and the 99% (86 references). “Board Paper” is a dummy equal to 1 if the paper is a paper about boards. “Number of Papers (Year)” is the total number of papers published each year in the 6 journals. “Top 3” is a dummy equal to 1 if the paper is published in JF, JFE, RFS. Panel B shows regressions of Cites, “Normalized Cites” and Number References on “Board Paper” and interactions with Top 3 (for citation measures). All regressions include publication year dummies. Robust standard errors are clustered by journal.

Panel A: Summary Statistics

Variable	Papers published between 1996 and 2014					Papers published between 1996 and 2010				
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
Not Cited	5,702	0.029	0.168	0	1	4,055	0.004	0.065	0	1
Cites	5,702	67	135.439	0	3445	4,055	89.432	154.713	0	3445
Normalized Cites	5,702	6.886	10.238	0	278.833	4,055	7.947	11.535	0	278.833
Number Refs (All)	5,702	39.342	17.933	0	243	4,055	37.449	17.769	0	243
Number References	5,584	38.874	15.255	8	86	3,981	36.932	14.629	8	86
Board Paper	5,702	0.045	0.207	0	1	4,055	0.038	0.191	0	1
Top 3	5,702	0.750	0.433	0	1	4,055	0.770	0.421	0	1
Number Papers (Year)	5,702	324.697	86.118	191	450	4,055	288.753	75.544	191	414

Table 2, Panel B: Regressions of Measures of Cites and Number of References on a Board Paper Dummy

VARIABLES	Cites		Normalized Cites		Number of References	Cites		Normalized Cites		Number of References
	I	II	III	IV		V	VI	VII	VIII	
Board Paper	35.059*** [9.18]	25.202*** [7.35]	3.639*** [10.75]	2.386** [3.65]	1.760 [1.46]	56.698*** [10.81]	36.092*** [10.02]	5.417*** [12.96]	3.231*** [7.86]	0.057 [0.06]
Top 3	42.936*** [4.79]	42.556*** [4.71]	4.567*** [6.20]	4.519*** [6.08]	2.854 [1.74]	59.926*** [5.54]	59.318*** [5.41]	5.437*** [7.03]	5.372*** [6.82]	3.448* [2.54]
Board Paper*Top 3		11.777*** [4.71]		1.498* [2.20]			23.946*** [5.26]		2.540** [3.87]	
Number of Papers (Year)	-0.656*** [-5.85]	-0.656*** [-5.85]	-0.020*** [-4.13]	-0.020*** [-4.14]	0.061*** [10.06]	-0.499*** [-5.50]	-0.499*** [-5.53]	-0.004 [-1.55]	-0.004 [-1.59]	0.051*** [10.06]
Constant	232.614*** [6.21]	232.962*** [6.22]	7.560*** [5.16]	7.604*** [5.19]	17.286*** [9.50]	188.153*** [6.31]	188.824*** [6.34]	3.789** [3.59]	3.860** [3.65]	18.837*** [13.05]
Sample period	1996-2014					1996-2010				
Year of Publication Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5,702	5,702	5,702	5,702	5,584	4,055	4,055	4,055	4,055	3,981
R-squared	0.156	0.156	0.079	0.080	0.099	0.102	0.102	0.056	0.056	0.086
Adjusted R-squared	0.153	0.152	0.0762	0.0762	0.0956	0.0987	0.0986	0.0521	0.0521	0.0825

Table 3 Average Board characteristics in 22 countries between 2001 and 2010

Table 3 shows averages of firm-year board characteristics across 22 countries between 2001 and 2010 in a sample of Boardex data from Adams and Kirchmaier (2015) for non-financial firms and banks. Data for a country is included if Boardex covers more than 70% of market capitalization for that country in that year. More details on the sample construction are in Adams and Kirchmaier (2015). N is the number of firm-years in the country. NED is the fraction of non-executive or outside directors on the board. INED is the fraction of independent directors on the board. In countries with a dual board system (Austria, Germany, Denmark, Netherlands), we classify supervisory board members as NEDs and management board members as EDs (executive directors). In dual-board countries, board size is the sum of the sizes of the supervisory and management boards. Exec. chair is a dummy equal to one if the CEO holds the Chairman position or the Chairman position is held by another executive. Female is the fraction of women on the board. Family is a dummy if the firm is a family firm. Ln(Assets) is the natural logarithm of inflation adjusted total assets converted into USD at 2011 exchange rates. Total assets are in millions. There is no data on banks in Luxembourg in the sample. Asterisks indicate whether the difference in mean board characteristics between non-financials and banks is statistically significant. ***, **, * indicate statistical significance at greater than the 1%, 5% and 10% level, respectively.

Country	Non-financials								Banks							
	N	NED	INED	Board size	Exec. chair	Female	Family	Ln(Assets)	N	NED	INED	Board size	Exec. chair	Female	Family	Ln(Assets)
Australia	1480	0.733	0.569	6.622	0.193	0.058	0.063	5.903	52	0.859***	0.816***	9.577***	0.019***	0.168***	0.000***	11.540***
Austria	116	0.709	0.386	12.991	0.560	0.043	0.147	7.497	24	0.788***	0.528**	21.083***	0.917***	0.101***	0.167	10.668***
Belgium	313	0.778	0.451	9.415	0.240	0.070	0.351	6.796	24	0.782	0.196***	16.042***	0.125	0.135***	0.000***	12.029***
Bermuda	154	0.714	0.430	7.156	0.494	0.077	0.182	6.662	2	0.875***	0.125***	8.000***	1.000***	0.000***	0.000***	9.972***
Canada	1404	0.723	0.603	7.586	0.375	0.070	0.075	5.229	45	0.902***	0.838***	14.000***	0.111***	0.217***	0.000***	11.231***
Denmark	152	0.830	0.306	11.105	0.059	0.097	0.322	7.804	22	0.756***	0.236	15.909***	0.364***	0.157***	0.182	11.285***
Finland	175	0.964	0.804	7.743	0.051	0.206	0.040	8.112	12	0.716***	0.510***	8.250**	0.333**	0.231	0.000***	10.663***
France	1719	0.718	0.304	10.595	0.849	0.093	0.386	7.575	36	0.873	0.343	18.778***	0.528***	0.079	0.000***	13.441***
Germany	1131	0.701	0.044	15.343	0.762	0.059	0.169	7.663	88	0.763***	0.019***	20.898***	0.750	0.118***	0.148	11.054***
Greece	151	0.631	0.344	9.285	0.722	0.045	0.285	7.299	51	0.722***	0.228***	14.255***	0.647	0.087***	0.137**	10.656***

India	347	0.719	0.500	10.395	0.519	0.048	0.447	7.571	39	0.774***	0.448	11.410***	0.718**	0.069**	0.231***	10.246***
Ireland	496	0.634	0.466	9.089	0.371	0.053	0.131	5.845	28	0.732***	0.628***	13.643***	0.071***	0.105***	0.036**	11.615***
Italy	469	0.738	0.416	10.977	0.687	0.051	0.431	7.968	146	0.785***	0.448	16.699***	0.527***	0.019***	0.212***	10.609***
Luxembourg	23	0.851	0.549	8.174	0.261	0.047	0.174	8.343								
Netherlands	623	0.658	0.483	8.592	0.639	0.049	0.037	7.156	35	0.670	0.623***	12.429***	0.829***	0.079***	0.000***	9.722***
Norway	529	0.948	0.261	7.715	0.053	0.250	0.119	6.032	8	1.000***	0.424***	17.000***	0.000***	0.385***	0.000***	12.258***
Portugal	129	0.584	0.268	11.426	0.558	0.040	0.527	8.099	17	0.656*	0.395***	17.588***	0.471	0.016***	0.529	10.794***
Spain	368	0.818	0.340	13.340	0.793	0.065	0.424	8.439	59	0.775***	0.466***	14.746*	0.966***	0.073	0.424	11.813***
Sweden	843	0.906	0.420	9.683	0.019	0.179	0.153	6.022	50	0.880**	0.477*	12.580***	0.040	0.291***	0.240	11.253***
Switzerland	566	0.824	0.377	8.498	0.329	0.058	0.094	7.676	57	0.688***	0.238***	15.298***	0.228*	0.073	0.018***	11.032***
United Kingdom	8371	0.533	0.353	6.658	0.283	0.051	0.072	4.742	66	0.697***	0.544***	15.561***	0.348	0.082***	0.076	12.192***
United States	22826	0.776	0.689	7.614	0.601	0.076	0.096	5.548	3405	0.838***	0.772***	10.424***	0.446	0.092***	0.104	7.320***

Table 4 Keywords for identifying themes in the Published Board Literature

This table lists stemmed keywords for identifying the themes in Section 5. I use the topics I discuss in Sections 3 and 4 to guide my choice of keywords. I create dummy variables that are equal to 1 if the abstract of a paper contains any of the keywords belonging to a theme and 0 otherwise. After creating the dummy variables, I double-check to make sure that the paper really deals with the theme and refine my set of keywords by changing words and stemming them if necessary. In the Notes column, I describe reasons why other words were not included in the final set.

Theme	Stemmed keywords	Notes on Keyword Choices
Methodology		
Theory	model	Stems of “theory” are too broad as they also identify “theoretical” motivation
Identification	endog, experim, discontin, causa, panel, gmm, arellano, shock, discontinuity	Variations of “iv” or “instrumental” are not useful as they also capture the meaning “useful”; stems of “treatment” or “fixed” are misleading as they often refer to data handling; “rdd” is not mentioned; stems of “identification” are too broad
The role of the board		
Monitoring Role	monit, oversi, overse, agency, confl, steal, moral, rubbe, perk, tunn, diversion, overcon, incent, supervi, opted, interlock	Stems of “performance” are not useful because they identify papers about pay-performance sensitivity not related to monitoring; stems of “power” pick up papers with “power of test” and other uses; stems of “capture” are not useful because it relates to “effects”; “risk” is misleading since it is also about preferences; “appropriate” is misleading
Advisory Role (version 1)	advi, innov, internat, diversit, diverse, fem, expert, advice, skill	Stems of “strategy” are too broad because they pick up “empirical strategy”; stems of “experience” are not useful because “experience” also means “to undergo”; stems of “industry” do not add incremental value; “social” does not add incremental value; stems of “ability” are misleading; stems of “match” are misleading
Advisory Role (version 2)	advi, innov, internat, diversit, diverse, fem, expert, advice, skill, informat, informe	Same as above
Stakeholder Role	stakeh, worker, employee, csr, creditor, debth,	“labor” is not useful because it picks up “labor market”; stems of “environment” are not useful because they pick up “surroundings”; esg is not used in any paper
Selected Themes		
Financial Institutions	bank, mutual	Stems of “finance” are too broad; “bank” already identifies investment banks;

		“fund” is misleading; stems of “institutional” are misleading
International	internat, foreign, europe, asia, countr, china, chine, kingdom, uk, cadbury, italy france, frenc, norway, germany, german , india, taiwan, hong, canad, chile, finn, columbia, netherlan, israel, korea, russia, singapore	Other country names and nationalities did not flag any papers
Gender	female, gender, wom, sex	
Policy	sox, cadbury, dodd, regulat, legal, sarbanes, law, passage	“code” too general, also refers to measurement

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