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Boards, CEOs and bank behavior: Regulatory and performance perspectives

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Declarations

The following thesis sections are based on work from jointly-authored publications

Thesis section	Jointly-authored publications
Chapter 1: Bank Boards and Misconduct: Evidence from Regulatory Enforcement Actions	Nguyen, D., Hagendorff, J. and Eshraghi, A., 2015, "Can Bank Boards Prevent Misconduct?" *Review of Finance*. Forthcoming.
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The candidate confirms that he is the principal of the publications listed above. For each article, the candidate undertook the literature review, data collection and statistical analyses and made a significant contribution to the conceptual framework used.

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Abstract

This thesis consists of three essays on the performance implications of senior decision-makers in the banking industry. While the first chapter looks at one aspect of bank performance from a regulatory perspective, the next two chapters study performance from an investor perspective.

The first chapter uses regulatory enforcement actions issued against US banks to show that both board monitoring and advising are effective in preventing misconduct by banks. While better monitoring by boards prevents all categories of misconduct, better advising prevents misconduct of a technical nature. Board monitoring increases the likelihood that misconduct is detected, increases the penalties imposed on the CEO, and alleviates shareholder wealth losses following the detection of misconduct by regulators. This chapter offers novel insights on how to structure bank boards to prevent bank misconduct.

The second chapter seeks to understand how the characteristics of bank executives affect the market performance of US banks. To explore the expected performance effects linked to executive characteristics, the changes in the market valuation of banks linked to announcements of executive appointments are estimated. The chapter shows that age, education and the prior work experience of executives create shareholder wealth while gender is not linked to measureable value effects. Furthermore, these wealth effects are moderated by the level of influence of

incoming executives, with their magnitude diminished under independent boards and higher if the incoming executive is also appointed as CEO. The results are robust to the treatment of selection bias. This chapter contributes to the current debate on whether and how individual executives matter for firm performance. The findings also shed light on the value of human capital in the banking industry.

The third chapter explores how the cultural heritage of senior decision-makers affects bank outcomes. To study cultural heritage, this chapter focuses on US-born CEOs who are the children or grandchildren of immigrants. Using a hand-collected dataset that tracks the family tree of US bank CEOs, it is shown that the cultural characteristics prevailing in the country of a CEO's ancestors influence firm performance under pressure. How CEOs respond to competitive pressure is driven by specific cultural dimensions and is causally related to corporate policy choices. To establish causality, I use variation in industry competition generated by a quasi-natural experiment, the staggered adoption of barriers to US interstate branching in the 1990s. I also use an out-of-sample test using a non-banking competitive shock, the Canada-United States Free Trade Agreement, and find robust results.

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Introduction

Banks play a vital role in the economy. The functioning of a country's banking system is directly linked to investment, employment and economic growth. Given the importance of banks, the role of senior decision-makers in the banking industry becomes an equally interesting issue. They are responsible for the day-to-day running of the bank and thus, are key inputs to the functioning of the banking system. Yet, we know very little about them and how their person-specific differences affect bank outcomes. The aim of this thesis is to fill this gap in the literature. It consists of three self-contained chapters that look at the performance implications of senior decision-makers in the banking industry from various perspectives. While the first chapter looks at one aspect of bank performance from a regulatory perspective by linking bank boards to regulatory enforcement actions, the next two chapters study performance from an investor perspective with the second chapter examining market performance and the third chapter studying accounting performance.

The topic of the first chapter is related to the role of a bank's board of directors in preventing misconduct by banks. What banks can do to prevent misconduct is a question of first-order importance because misconduct in banks not only destroys the wealth of bank investors but also undermines the general public's confidence in the safety and soundness of the banking industry. Arguably, a bank's board of directors, in its capacity to monitor and advise the CEO (Adams and

Ferreira, 2007; Fama and Jensen, 1983), should play a key role in the implementation and oversight of controls to mitigate the risk of misconduct. The purpose of this chapter is to test this assertion. Specifically, the chapter examines whether the two key functions of bank boards, monitoring and advising, are effective in preventing misconduct by banks. Regulatory enforcement actions are used to identify banks that engage in misconduct.

I find that effective board monitoring and advising are associated with fewer cases of committed misconduct and more cases of detected misconduct. Further, while better monitoring by boards prevents all categories of misconduct, better advising prevents misconduct of a technical nature. The relation is economically meaningful, statistically significant, and robust to instrumental variables regressions using the geographic remoteness of a bank's headquarters as IVs. The relation is also robust to using alterative bivariate probit specifications, a standard probit regression, various alternative measures of board monitoring and advising, the pre-2008 period only, and various alternative tests. The chapter identifies three channels through which effective boards prevent misconduct – by facilitating detection, lowering bank risk and improving managerial discipline. The results offer novel insights on how to structure bank boards to prevent bank misconduct.

While the first chapter focuses on the role of bank's board of directors, the next two chapters focus on executive (or inside) directors who are responsible for the day-to-day running of the bank.

In the second chapter, I study whether and how bank executives matter by examining the shareholder wealth effects linked to the announcements of executive appointments. There is a growing body of research demonstrating that executives are

a heterogeneous group and shows that executives affect the performance of firms (e.g. Benmelech and Frydman, 2015) and their policy choices (e.g. Bernile, Bhagwat, and Rau, 2015). Surprisingly, little is known about how bank executives create value for bank investors. This chapter aims to fill this void in the literature.

I find that the market reactions to executive appointments are influenced by the characteristics of the executive, consistent with the idea that executive heterogeneity matters to bank investors. I find that age, education and the prior work experience of executives create shareholder wealth while gender, non-banking experience or an MBA degree do not lead to any measureable market returns. Further, I show that the wealth effects linked to executive characteristics are moderated by how much influence the incoming executive is expected to hold over the bank. In particular, the expected performance effects of top executives are reduced as bank boards become more independent. By contrast, the expected performance effects are higher for CEOs, confirming that the CEO is the most important decision-maker in the bank.

The third chapter studies how the cultural heritage of CEOs affects the performance and policy choices of US banks. How culture affects individual behavior and economic outcomes has intrigued social scientists over the last century. While a growing literature in economics and finance studies culture (e.g. Ahern, Daminelli, and Fraccassi, 2015; Eun, Wang, and Xiao, 2015; Griffin et al., 2015; Guiso, Sapienza, and Zingales, 2015), the role played by the cultural heritage of senior decision-makers remains largely unexplored. This chapter aims to fill this gap. I examine how a CEO's cultural heritage shapes the way a firm reacts to an exogenous shock in industry competition. I hand-collect a novel dataset that tracks

the family tree of US CEOs to demonstrate that the cultural values prevailing in the country that a CEO's ancestors originate from affect her decision-making behavior and shape firm policy choices and performance.

The chapter finds evidence that systematically points to CEO cultural heritage as a driving force behind heterogeneity in bank performance and policy choices. I show that Gen2/3 CEOs behave differently from the CEO population, and this is especially pronounced under increased competitive pressure. Further, I demonstrate that the impact of Gen2/3 CEOs on firm performance weakens gradually with later-generation descendants. Finally, the behavior of Gen2/3 CEOs can be traced to the cultural characteristics prevailing in the country their ancestors originate from and that this is causally related to firm policy choices. Thus, an important economic contribution of this chapter is that it does not only show an association between cultural values and an economic outcome, it also offers direct evidence that explains this association.

The thesis is concluded with a chapter that draws together the contributions, policy implications and limitations of the thesis. Directions for further research are also discussed in this chapter.

1
Bank Boards and Misconduct: Evidence from Regulatory Enforcement Actions

1.1 Introduction

The reputation of banks for professional and ethical conduct is in sharp decline. Over recent years, regulators have taken record numbers of enforcement actions against banks to require them to take corrective measures against misconduct. Among the banks engulfed in misconduct cases are various high-profile institutions. For instance, JPMorgan has faced several enforcement actions related to credit card fraud, money laundering and internal accounting controls over the past few years.[1] Misconduct cases are costly to bank investors with the fines imposed often outweighed by substantial reputational losses for offending banks. There are also concerns that repeated instances of misconduct erode public confidence in the safety and soundness of the banking sector. What banks can do to prevent misconduct is therefore an important question. Arguably, a bank's board of directors, in its capacity to monitor and advise the CEO (Adams and Ferreira, 2007; Fama and Jensen, 1983), should play a key role in the implementation and oversight of controls to mitigate the

[1] "OCC to hit JPMorgan Chase With Enforcement Actions", Dow Jones, 14 January 2013.

risk of misconduct.[2] The purpose of this chapter is to test this assertion. Specifically, I examine whether the two key functions of bank boards, monitoring and advising, are effective in preventing misconduct by banks. I use regulatory enforcement actions against banks to identify banks that engage in misconduct.

In some ways, the recent surge in bank misconduct cases is surprising. One explanation for misconduct holds that when a CEO has too much authority within the firm, misconduct is but one potential outcome (Khanna, Kim, and Lu, 2015). However, by most accounts, oversight of CEO decision-making has improved markedly in recent years. Data from Riskmetrics show that eight out of ten members of US bank boards are classified as independent in 2012, up from around half in 2000. With increasing levels of independence, one would expect bank boards to be more effective in preventing misconduct. However, far from a declining trend, the number of enforcement actions has increased from 5 to 28 over the same time period.

The rise in bank misconduct cases under increasingly more independent boards is consistent with the view that true board independence is difficult to achieve (e.g., Coles, Daniel, and Naveen, 2014; Lee, Lee, and Nagarajan, 2014). Board independence can be undermined if CEOs exert intangible influence over those charged with monitoring them. One way in which a CEO could yield intangible influence is by capturing the board through director appointments (Khanna, Kim, and Lu, 2015). Since the CEO is typically involved in the process of recommending directors to the board, directors appointed during the tenure of the current CEO have an incentive to return the favor (Coles, Daniel, and Naveen, 2014; Khanna, Kim, and

[2] Regulators increasingly see boards as key to shaping a bank's risk culture with a view to preventing misconduct. Recent regulatory guidelines issued by the Office of the Comptroller of the Currency (2014) establish "heighted expectations" of the role of the board in ensuring that banks operate in a safe and sound manner. Similar expectations of the role of bank boards are expressed by the Financial Stability Board (2014).

Lu, 2015). Even independent directors may reciprocate the CEO's requests and agree to side with the CEO to support, engage in or conceal wrongdoing. Following this line of argument, only directors appointed before the current CEO's tenure are free from this type of intangible influence and are therefore capable of objectively monitoring the CEO. In this chapter, I measure the quality of board monitoring using the fraction of directors who are appointed before the current CEO takes office (*Monitoring Quality*).

In addition to monitoring, boards also advise the CEO. Advice is critical because CEOs may not always possess the knowledge and skills required to make decisions that lower instances of wrongdoing. Since the banking sector is complex and skill-intensive (Philippon and Reshef, 2012), bank CEOs may be prone to missteps in the absence of technical expertise. Therefore, boards with the capability to advise effectively could assist CEOs in making better decisions and thus play a crucial role in reducing instances of bank misconduct. The quality of board advice is proxied by using the connections that a director has with directors at other firms at any given time (*Advising Quality)*. I focus on director connections because connections arise when a director has qualities that make them valuable to many firms (Coles, Daniel, and Naveen, 2012). Demand for director services arises from a director's ability to provide useful advice, information or contacts. Furthermore, connected directors have better access to information which would allow them to offer higher-quality advice to the CEO.

To identify bank misconduct, I employ a unique dataset of regulatory enforcement actions issued by the three US supervisory bodies (the Federal Reserve Board (FRB), the Federal Deposit Insurance Corporation (FDIC) and the Office of

the Comptroller of the Currency (OCC)) against banks that engage in unsafe, unsound and illegal banking practices which violate laws. One concern with this analysis is that I can only observe detected misconduct (once an enforcement action has been issued), but not the population of all committed cases of misconduct. That is, even in the absence of enforcement actions, a bank may still have engaged in undetected misconduct. To address this problem of partial observability, I follow Wang (2013) and Wang, Winton, and Yu (2010) to employ a bivariate probit model that disentangles committing misconduct from the detection of misconduct conditional upon misconduct having occurred.

I find that a bank in which *Monitoring Quality* is high (all directors have been appointed before the CEO takes office) has a 27% lower probability of committing misconduct and a 35% higher probability of detection (conditional upon misconduct having occurred) than a bank where all directors have been appointed under the current CEO. Further, a one-standard-deviation increase in *Advising Quality* reduces the likelihood that misconduct is committed by 11% and increases the likelihood of detection by 7%. The results are robust to two-stage instrumental variable (IV) analysis that circumvents endogeneity concerns by exploiting the role of the local labor market in supplying directors to a bank. Specifically, I use the distance from a bank's headquarters to the nearest airport and the population of the county where a bank is headquartered as sources of exogenous variation in my measures of board monitoring and advice. The argument is that banks in remote locations will see higher director turnover and struggle to recruit directors of high advising capability. Further, in all specifications, I control for the proportion of independent directors and the number of directors with financial expertise. These traditional measures of board

monitoring and advising are found to have little or no power to prevent bank misconduct.

I am able to rule out alternative economic interpretations of the results. First, one may argue that the measure of board monitoring quality captures the effect of CEO tenure. I address this by constructing *Residual Monitoring Quality* as the residual from a regression of *Monitoring Quality* on CEO tenure. The results continue to hold when using residual monitoring, which removes any correlation between *Monitoring Quality* and CEO tenure. Second, the monitoring measure may capture director experience as longer-tenured directors are less likely to have been appointed by the current CEO. As with CEO tenure, I construct *Residual Monitoring Quality* as the residual from a regression of *Monitoring Quality* on average board tenure. The results remain robust to using this alternative measure of monitoring quality. Third, the monitoring measure is robust to controlling for director's career concerns (Gibbons and Murphy, 1992), board busyness (Fich and Shivdasani, 2006) and for the quality of board advising. Finally, and perhaps most importantly, the measure of board advising quality is distinct from monitoring quality, as demonstrated at various points throughout this chapter.

How do board monitoring and advising prevent bank misconduct? I study two channels that help explain the results. First, many enforcement actions are issued when bank fundamentals indicate increased bank risk. This chapter shows that better monitoring and advising prevent enforcement actions because these boards are associated with higher bank capital cushions, lower portfolio risk and fewer non-performing loans. Second, CEOs will be deterred from committing wrongdoing if they know ex ante that a board will penalize them for instances of misconduct. I find

that boards that are not captured by the CEO are more willing to impose heavier penalties on the CEO following detected misconduct. That is, after misconduct is detected, better *Monitoring Quality* is associated with a larger reduction in (i) the level of CEO pay, (ii) the level of CEO pay relative to the other top executives at the same bank (the CEO pay slice), and (iii) the value of CEO risk-taking incentives.[3] In contrast, *Advising Quality* does not affect CEO discipline, consistent with the argument that *Advising Quality* is distinct from and unrelated to *Monitoring Quality*.

Finally, I examine whether the stock market reaction to bank misconduct is affected by my measures of board quality. I find a positive relation between the announcement returns and board quality, implying that effective boards are associated with less severe fraud. Thus, effective boards not only reduce the likelihood of wrongdoing, but they also alleviate shareholder wealth losses upon announcements of wrongdoing.

This chapter makes several important contributions. First, this chapter contributes to the debate on governance and risk-taking in the banking industry (Adams and Ragunathan, 2013; Beltratti and Stulz, 2012; Ellul and Yerramilli, 2013; Minton, Taillard, and Williamson, 2014). The chapter contributes to this literature by providing the first empirical work that studies the effectiveness of bank boards in preventing enforcement actions in the banking sector. Relative to other bank risk measures studied in the literature, enforcement actions provide a suitable identification of the effectiveness of internal governance. This is because enforcement actions provide an unambiguous external indicator of undesirable

[3] The finding of a reduced CEO pay slice is of particular significance because it indicates that, by disciplining CEOs relative to other bank executives, boards hold CEOs at least in part responsible for misconduct.

conduct in the industry. Further, since regulators determine enforcement, the degree of enforcement varies exogenously across banks. Additionally, the empirical approach adopted in this chapter allows it to elicit the specific mechanisms through which corporate governance affects misconduct tendency in banking.

This chapter also contributes to the literature on the determinants and economics of corporate misconduct. Previous work has linked misconduct to a lack of monitoring by the board (Agrawal and Chadha, 2005; Beasley, 1996; Chidambaran, Kedia, and Prahabla, 2012; Hegde and Zhou, 2014; Khanna, Kim, and Lu, 2015), outside investors (Wang, Winton, and Yu, 2010) or various other parties (Dyck, Morse, and Zingales, 2010; Kedia and Rajgopal, 2011). This chapter contributes to this literature by identifying the role of advising in explaining misconduct. It shows that while monitoring is required to deter all sorts of misconduct, advising plays a clear role in preventing misconduct of a more technical nature.

Further, this chapter contributes to the literature on the role and design of corporate boards (e.g., Adams, Hermalin, and Weisbach, 2010; Coles, Daniel, and Naveen, 2012, 2014; Field, Lowry, and Mkrtchyan, 2013; Minton, Taillard, and Williamson, 2014). The key question in this literature is whether boards matter for firm outcomes, and if they do, which particular board functions matter. The chapter presents the first empirical study that simultaneously considers the effects of board monitoring and advising. The results on how board monitoring and advising jointly and differentially affect misconduct are new to the literature.

1.2 Research Design

1.2.1 HYPOTHESIS DEVELOPMENT

Fama and Jensen (1983) and Adams and Ferreira (2007) posit that directors monitor and advise the CEO to help align the interests between managers and shareholders and to maximize shareholder value. Since corporate misconduct can potentially destroy shareholder value on a large scale (Karpoff, Lee, and Martin, 2008a), I conjecture that an effective board of directors, in its capacity to monitor and advise the CEO, should also play a key role in mitigating the risk of misconduct.

1.2.1.1 Board monitoring quality and bank misconduct

It is well-established that in the absence of tight monitoring from the board, CEOs may have incentives to commit wrongdoing to conceal private benefits (Dechow, Ge, and Schrand, 2010; Jensen and Meckling, 1976; Stein, 1989). Such benefits could involve higher compensation or non-financial benefits such as greater publicity or empire building. Thus, a board of directors that is independent from the CEO is needed to monitor and discipline the CEO to curb managerial misbehavior (e.g., Agrawal and Chadha, 2005; Beasley, 1996).

I hypothesize that boards that are not psychologically captured by the CEO are more willing to monitor the CEO and that this will prevent misconduct. This hypothesis is grounded in social influence theory, which posits that individuals rely on principles of reciprocity, a nearly universal code of moral conduct, when making decisions (Gouldner, 1960). The theory suggests that most people exhibit a psychological aversion to over-benefiting or under-benefiting from social relationships (Fehr and Schmidt, 1999). This implies that when employees believe

they receive help in their appointments to a position of corporate influence, they will be motivated to return the favor to avoid the psychological distress created by over-benefiting from a relationship.

As the CEO is typically involved in appointing and recommending directors to the board, directors appointed by the CEO tend to feel indebted to her and thus have a natural tendency to return the favor (Coles, Daniel, and Naveen, 2014; Khanna, Kim, and Lu, 2015; Landier et al., 2013). Consistent with this, Hermalin and Weisbach (1998) specify in their model of CEO bargaining with the board that directors develop a natural aversion to monitoring because the opportunity cost of director's time can be high. Consequently, the reciprocity fostered through appointment decisions helps directors to justify their aversion to monitoring (see also, e.g. Coles, Daniel, and Naveen, 2014). This creates an environment conducive to misconduct, makes detection of misconduct difficult and reduces a CEO's expected costs of committing misconduct. It is thus predicted that directors appointed before the current CEO are psychologically independent and in a position to objectively monitor the CEO in a way that prevents wrongdoing. I call the fraction of board directors appointed before the current CEO *Monitoring Quality*. I hypothesize:

Hypothesis 1: *Monitoring Quality reduces the likelihood of bank misconduct.*

1.2.1.2 Board advising quality and bank misconduct

My second hypothesis relates board advising to bank misconduct. While early studies suggest that boards monitor and give advice to the CEO (e.g., Mace, 1971), the focus of much subsequent study has been on the monitoring role of the board (see

Coles, Daniel, and Naveen, 2014; Hermalin and Weisbach, 1998; Weisbach, 1988).[4] While Coles, Daniel, and Naveen (2012) offer one of the first studies into the value of board advice by showing that complex firms benefit from greater advice, more recent studies emphasize the role of board advice for firms with minimal experience in public markets (Field, Lowry, and Mkrtchyan, 2013) and firms operating in innovative industries (Dass et al., 2014).

I hypothesize that better board advice prevents corporate misconduct. This is because some CEOs may lack the expertise to make certain informed decisions and misconduct cases may occur when CEOs are unaware of the (il)legality of a certain activity (Khanna, Kim, and Lu, 2015). In banks, some CEOs may lack the technical expertise to effectively oversee regulatory provisioning and reserve requirements—and breaches of either could result in regulatory enforcement actions. Therefore, a board with a higher capability to give advice to the CEO should facilitate more informed decision-making and prevent incidences of misconduct.

I use director connections as an indicator of board advising. Fama and Jensen (1983) suggest that connections signal director quality because in a competitive labor market only high-quality directors hold multiple board appointments. Brickley, Coles, and Linck (1998), Fich and Shivdasani (2007), Kaplan and Reishus (1990) and others show that high quality directors serve on a greater number of boards. In addition, better-connected directors are likely to have had experience with a variety of issues that firms face and can lever their network to access better information (e.g., Cohen, Frazzini, and Malloy, 2008; Coles, Daniel, and Naveen, 2012; Field,

[4] Hermalin and Weisbach (1998) acknowledge that "one limitation of our model is that it focuses solely on the monitoring role of boards. The institutional literature emphasizes that boards also play important roles providing information and advice to management" (p. 112).

Lowry, and Mkrtchyan, 2013). Hence, better-connected directors should be better advisors to the CEO and provide the information, perspectives, and technical expertise to the CEO to help avoid wrongdoing. I define *Advising Quality* as the total number of directors to whom board members on the board are collectively connected, scaled by board size. I hypothesize:

Hypothesis 2: *Advising Quality reduces the likelihood of bank misconduct*

1.2.2 SAMPLE CONSTRUCTION

I gather data on regulatory enforcement actions issued by the three main US banking supervisory authorities (FDIC, FRB and OCC) for the period 2000–2013 from SNL Financial.[5] My sample encompasses all severe enforcement actions, including (1) Formal agreements, (2) Cease and desist orders and (3) Prompt corrective actions.[6]

In the next step, I obtain all banks with accounting data from commercial bank and bank holding company data (FFIEC 031/041 and FR Y-9C). To allow for a lag structure in the dataset, my sample period is from 1999 to 2012. I then obtain market data from the Center for Research in Securities Price (CRSP) and corporate governance data from the BoardEx database and match them with my Call Reports sample.

[5] Enforcement is a key tool that regulators use to ensure that banks maintain safe and sound practices (Delis and Staikouras, 2011). Typically, regulators conduct on-site examinations to ensure that bank operations are consistent with sound banking practices. When on-site examinations reveal unsound or illegal banking practices, regulators will make an informal enquiry to the bank management. This gives the bank the opportunity to justify their practices. The regulator will only issue an enforcement action when there is substantial evidence of misconduct. Therefore, one advantage of using regulatory enforcement actions to identify banks that engage in misconduct is that there is a very low chance of misdetection and thus a low chance of misidentifying banks engaged in misconduct.

[6] *Formal (written) agreements* are agreements between the bank and the regulator that set out details on how to correct conditions that provide the basis for the agreement. *Cease and desist orders* prohibit the bank from engaging in certain banking activities. They also require the bank to take corrective actions to improve on areas that provide the basis for the order. *Prompt corrective actions* are imposed on undercapitalized banks. They require the bank to restore adequate levels of capital and demand submission of a capital restoration plan within a predetermined period.

I then match the name, city and state of each bank that received enforcement actions to my panel dataset. This results in a matched sample of 311 enforcement actions. I then use Factiva to search for newspaper articles reporting the news of the enforcement action and screen each to ensure that I have correctly attributed the enforcement action to a particular bank. If there are multiple enforcement actions relating to a single case of misconduct, I group them together so that only one case is identified. My final sample contains 4,072 bank-year observations of 533 unique banks and 244 enforcement actions.

Table 1-1 provides descriptive statistics on the enforcement action sample. It shows that enforcement actions were taken against banks in every year with a surge following the 2007 global financial crisis. I demonstrate in the Appendix 1-A8 that the results I report are not dependent on the time period analyzed in this chapter and equally hold before 2007. Table 1-1 also shows that my sample is very comprehensive. The sample contains nearly 80% of all enforcement actions (nearly 95% by bank size) issued against listed US banks during my sampling period.

Table 1-1 Time distribution of banks receiving enforcement actions

This table reports the number of regulatory enforcement actions in my sample over the period of 2000-2013. I also show the number of enforcement actions in my sample in terms of all enforcement actions issued against listed US banks and the total assets of banks receiving enforcement actions in my sample as a percentage of the total assets of all listed US banks that receive enforcement actions each year.

Year	# Enforcement actions in my sample	% All enforcement actions against listed banks	% Total assets of listed banks with enforcement actions
2000	5	55.56%	98.48%
2001	5	41.67%	84.34%
2002	3	37.50%	65.24%
2003	7	70.00%	96.61%
2004	12	80.00%	99.01%
2005	5	50.00%	92.77%
2006	6	66.67%	99.24%
2007	2	50.00%	99.67%
2008	10	62.50%	98.62%
2009	48	82.76%	93.49%
2010	59	88.06%	95.18%
2011	39	90.70%	99.60%
2012	28	90.32%	99.85%
2013	15	83.33%	99.82%
TOTAL	**244**	**78.71%**	**94.42%**

1.2.3 EMPIRICAL DESIGN

Empirical research on corporate misconduct faces an inherent challenge, namely that misconduct is not observed until it has been detected. This means the observed outcome is the product of two processes: the commission of misconduct and the detection of misconduct. As long as detection is not perfect, one cannot observe every instance of misconduct that has been committed. To address this partial observability problem, I follow Wang (2013) and Wang, Winton, and Yu (2010) and use the bivariate probit model. The theoretical foundation of this model is drawn from Becker's (1968) economic approach to crime. It can be implied from the model that an individual's probability of committing fraud increases with the expected payoffs and decreases with its expected cost (from getting detected and penalized).

Thus, the probability committing misconduct is determined by two sets of variables. The first set is derived from the expected benefit of committing fraud. The second set of variables is related to the expected cost of committing fraud, which essentially depends on the probability of detection.

In addition, there are factors that are related to both the probability to commit misconduct and to detect misconduct, for example, a board of directors that is not willing to monitor the CEO, and therefore should be included in both equations. However, there are factors that affect the likelihood that misconduct is detected but not a bank's incentives to commit wrongdoing. Likewise, there are factors that incentivize misconduct but do not affect the likelihood that misconduct is detected. The bivariate probit model relies on this intuition to separate fraud detection from commission processes. Let M_{it} and D_{it} represent whether bank i commits wrongdoing in year t and whether the misconduct is detected, respectively:

$$M_{it}^* = X_{M,\,it}\,\beta_M + \mu_{it} \tag{1-1}$$

$$D_{it}^* = X_{D,\,it}\,\beta_D + \nu_{it} \tag{1-2}$$

$X_{M,\,it}$ is a vector of variables that explain firm i's incentives to commit misconduct in year t, and $X_{D,\,it}$ is a vector of variables that explain firm i's likelihood of getting caught. μ_{it} and ν_{it} are zero-mean disturbances with a bivariate normal distribution.

I denote $M_{it} = 1$ if $M_{it}^* > 0$ and $M_{it} = 0$ otherwise. I denote $D_{it} = 1$ if $D_{it}^* > 0$, and $D_{it} = 0$ otherwise. I do not directly observe the realizations of M_{it} and D_{it}. However, I can observe the following: $Z_{it} = M_{it} \times D_{it}$ where $Z_{it} = 1$ if bank i engages in misconduct and this is detected, and $Z_{it} = 0$ if bank i does not commit wrongdoing or commits wrongdoing but this has not been detected.

Let Φ denote the bivariate standard normal cumulative distribution function. ρ is the correlation between μ_{it} and ν_{it} from (1) and (2). Then:

$$P(Z_{it} = 1) = P(M_{it} D_{it} = 1) = P(M_{it} = 1, D_{it} = 1) = \Phi(X_{M,it}\beta_M, X_{D,it}\beta_D, \rho), \quad (1\text{-}3)$$

$$P(Z_{it} = 0) = P(M_{it} D_{it} = 0) = P(M_{it} = 0, D_{it} = 0) + P(M_{it} = 1, D_{it} = 0)$$

$$= 1 - \Phi(X_{M,it}\beta_M, X_{D,it}\beta_D, \rho) \quad (1\text{-}4)$$

Thus, the log likelihood for the model is:

$$L(\beta_M, \beta_D, \rho) = \Sigma \log(P(Z_{it} = 1)) + \Sigma \log(P(Z_{it} = 0)) \quad (1\text{-}5)$$

The bivariate model can be estimated using the maximum-likelihood method. According to Poirier (1980), an important feature of this approach is that $X_{M,it}$ and $X_{D,it}$ do not contain the same set of variables such that there is at least one vector that has one or more variables absent in the other vector (see also Wang (2013), Wang, Winton and Yu (2010)). I detail the variables included in both vectors in Section 1.2.4.

1.2.4 VARIABLES

1.2.4.1 Board quality: monitoring and advising

Monitoring Quality. I capture board monitoring quality using the number of board members appointed before the current CEO takes office. I refer to such members as "non-captured" board members.[7] I define the variable as:

[7] To construct this variable, I compare the start of the employment date of the board member and date the CEO takes office. When the CEO leaves and then gets re-appointed, I do not reset tenure to zero but add on the pre-departure tenure.

$$Monitoring\ Quality = \frac{\#\, non-captured\ board\ members}{Board\ size - 1} \tag{2-6}$$

The denominator is the total number of directors sitting on the board less the CEO as she always sits on the board in the sample. This variable ranges from 0 to 1, with higher values indicating a board that is not captured by the CEO and thus is more willing to independently monitor the CEO. The average *Monitoring Quality* in my sample is 0.54. Thus, in my sample, half of the board is not captured by the CEO. I use BoardEx to construct *Monitoring Quality*. BoardEx provides biographic data of more than 60,000 unique directors serving at over 70,000 private, public and not-for-profit companies.

For robustness, I also construct the alternative measure *Residual Monitoring Quality*, which is defined as the residual from a regression of *Monitoring Quality* on CEO tenure. This variable will remove the positive correlation between *CEO tenure* and *Monitoring Quality*. Thus, it isolates the board monitoring effect from the effect of CEO tenure.

Advising Quality. I use the number of directors to whom existing board members of a given bank are connected to proxy for the ability of the board to advise the CEO. Following Coles, Daniel, and Naveen (2012), I define the variable as:

$$Advising\ Quality = \frac{\#\, directors\ to\ whom\ board\ members\ are\ connected}{Board\ size} \tag{2-7}$$

For each board member of a given bank, I count the number of directors in other firms that this member is connected to by serving as co-directors. I then sum

across all board members of this bank and then divide this sum by the size of the board to obtain *Advising Quality*. The average *Advising Quality* in my sample is 1.81. The correlation between *Monitoring Quality* and *Advising Quality* is 0.01 confirming that the two are distinct measures that proxy for different board functions.[8]

1.2.4.2 Control variables

Estimating the bivariate model requires two sets of control variables, one set designed to explain the commission of misconduct and the other for detection of misconduct. The variables are chosen based on the existing theoretical and empirical work in the corporate fraud literature (Khanna, Kim, and Lu, 2015; Wang, 2013; Wang, Winton, and Yu, 2010).

Commission of misconduct regressions

My baseline specification for the latent equation for banks committing misconduct is as follows:

$$M_{it}^{*} = \mathbf{X}_{M,\,it}\,\beta_{M} + \mathbf{X}_{MD,\,it}\,\gamma_{M} + \mu_{it} \qquad (1\text{-}8)$$

[8] However, one could still argue that *Advising Quality* captures other aspects of board monitoring that are unrelated to *Monitoring Quality*. To completely rule out this possibility, I examine the effects of *Advising Quality* on CEO turnover and CEO compensation policies, which are part of a board's monitoring activities. I find that *Advising Quality* does not have any measurable effect on (i) CEO turnover-performance sensitivity, (ii) the level of CEO pay, (iii) the level of CEO pay relative to other top executives at the same bank (the CEO pay slice), and (iv) the value of CEO risk-taking incentives. This confirms my argument that *Advising Quality* is not associated with the monitoring of the CEO. In contrast, consistent with Coles, Daniel, and Naveen (2014), I find that *Monitoring Quality* is significantly related to CEO turnover-performance sensitivity and various CEO compensation policies. The results are available upon request.

$\mathbf{X}_{M,\,it}$ contains a set of variables that previous studies have shown to influence a bank's incentives to commit wrongdoing but not the likelihood that the wrongdoing is detected. $\mathbf{X}_{MD,\,it}$ contains a set of factors that affect the bank's incentives to commit wrongdoing and also the likelihood of detection.

$\mathbf{X}_{M,\,it}$ includes the bank's profitability, leverage and investor beliefs about industry prospects. CEOs of poorly performing or financially distressed banks could be more likely to commit wrongdoing to inflate earnings. I control for bank profitability using the ratio of earnings before interest and tax divided by total assets (*ROA*) and leverage using the ratio of total liabilities to total assets. In addition, Wang, Winton, and Yu (2010) show that misconduct is related to investor beliefs about industry prospects and find a non-linear relation with industry charter value. Hence, I include *Industry charter value* and *(Industry charter value)*^{2} in the misconduct commission equation. Industry charter value is measured as the median charter value in a given year.

$\mathbf{X}_{MD,\,it}$ contains other bank-level measures such as size, risk, growth prospects, board-level monitoring proxies and CEO characteristics. I control for bank size using the natural logarithm of the book value of total assets. Furthermore, Povel, Singh, and Winton (2007) argue that CEOs of high-growth firms that exhibit a downturn are more likely to commit wrongdoing. Thus, I control for the bank's charter value using the ratio of market value of equity divided by the book value of equity (*Charter value*) and the percentage of change in bank assets over the prior year (*Asset growth*). The corporate fraud literature also suggests that a firm's risk could be related to a firm's tendency to commit wrongdoing. Thus, I control for a bank's portfolio risk using the ratio of risk-weighted assets to total assets.

Board characteristics: I control for various board monitoring proxies, such as the number of directors on the board (*Board size*) and the fraction of independent directors (*Board independence)*. I also include the ratio of independent directors with prior experience as a CFO or a finance director (*Board financial expertise*). The monitoring role by independent directors has been widely documented in the fraud literature (e.g., Beasley, 1996). Furthermore, directors with relevant expertise could offer timely advice to the CEO and could therefore play an important advising role (Agrawal and Chadha, 2005).

Further, Hermalin and Weisbach (1998) suggest another reason for directors' aversion to monitoring is because their career is tied to the CEO. Hence, I control for directors' career concerns to demonstrate that the results based on my measure of monitoring quality are not driven by directors' career concerns. I proxy for career concerns using the average age of directors on the board (*Ln(Board age)*) since career concerns should be stronger when a worker is further away from retirement (Gibbons and Murphy, 1992).[9]

Finally, for better-connected directors to be able to lever their network to access better information and be better advisors to the CEO, board networks should be "good" in the sense that they should not involve connections to firms engaged in misconduct. Otherwise, board connections could be used to foster rather than to prevent misconduct. To control for the quality of director networks, I compute the aggregate connections that board members have to firms that were involved in a

[9] For robustness, I use two alternative measures of career concerns in addition to board age and report the results in Appendix 1-A3

misconduct case in the past 10 years. I call the resulting variable *Exposure to misconduct*.[10]

CEO characteristics: My controls for CEO characteristics include the number of years the CEO has served in this position (*Ln(CEO tenure*)) and whether the CEO also chairs the board (*CEO is chair*). I control for CEO tenure throughout the chapter to demonstrate that the results based on my measure of monitoring quality are not driven by CEO tenure. I control for *CEO is chair* as CEOs who chair the board may block the information flow to board members and hence reduce the quality of board oversight (Fama and Jensen, 1983).

CEO pay: A number of papers link fraud to the compensation of executives (e.g. Johnson, Ryan, and Tian, 2009). CEOs may be incentivized to commit wrongdoing to manipulate short-term performance to enjoy higher payouts. I control for the bonus component of CEO pay, measured as CEO bonus divided by total compensation. I also control for the equity incentives embedded in CEO compensation. The sensitivity of CEO wealth to bank risk (*vega*) measures the changes of CEO wealth to stock return volatility. If misconduct increases equity risk, this means that CEOs with higher *vega* will have an incentive to engage in riskier projects, including those involving wrongdoing. By contrast, the sensitivity of CEO wealth to bank performance (*delta*) measures changes in CEO wealth to stock price performance. Because delta exposes a CEO's wealth also to falling stock prices, a higher *delta* might discourage CEOs from committing wrongdoing. Since CEOs will

[10] I use a database of accounting fraud cases, namely, the SEC's Accounting and Auditing Enforcement Releases (AAERs) to identify misconduct amongst financials and non-financial firms. The database provides detailed information on more than 1,300 cases of accounting misconduct involving banks and non-financials between 1982 and 2013. In robustness tests (Appendix 1-A5), I use cartel cases as an alternative measure of misconduct and report qualitatively similar results.

be interested in the relative impact of both *vega* and *delta* on their wealth before deciding to commit wrongdoing, I scale vega by delta (*CEO vega/delta*).[11]

Top executive characteristics: Bank wrongdoing could directly relate to a range of observable characteristics of top executives. I compute the fraction of top 5 executives with a degree from an Ivy League institution (% *Ivy League executives*), an MBA degree (% *MBA degree*), or military experience (% *Military executives*). Chidambaran, Kedia, and Prahabla (2012) show that CEOs attending an Ivy League university are less likely to commit fraud. Benmelech and Frydman (2015) argue that military-trained CEOs tend to have more conservative corporate policies and ethical principles. Hence, I infer from the findings that military-trained executives are less likely to commit wrongdoing.

Regulators: I control for the main regulator that supervises the bank. I include two dummies: *OCC* (equals 1 if the bank is overseen by the OCC) and *FRB* (equals 1 if the bank is overseen by the FRB).

Detection of misconduct regressions

$$D_{it}^{*} = \mathbf{X}_{MD,\,it}\,\delta_{D} + \mathbf{X}_{D,\,it}\,\beta_{D} + \nu_{it} \qquad (1\text{-}9)$$

As illustrated above, the vector $\mathbf{X}_{MD,\,it}$ contains variables that influence both misconduct commission and detection processes.

However, certain factors trigger the detection of misconduct while unrelated to the causes of banks committing misconduct. This is true for factors that cannot be

[11] I am grateful to Jeffery Coles, Naveen Daniel and Lalitha Naveen for sharing their data on CEO equity-based incentives online. Please refer to Coles, Daniel, and Naveen (2006) and Core and Guay (2002) for detailed calculation of the variables.

anticipated by the CEO at the time when misconduct is committed. For example, a sudden drop in performance is difficult to predict for CEOs, but this performance drop may trigger additional regulatory scrutiny of banks and thus contribute to misconduct being detected. I identify a vector $\mathbf{X}_{D,\ it}$ which includes variables that affect detection but are exogenous to a bank's ex ante incentives to commit wrongdoing. Following Wang (2013), I include *Abnormal ROA*, *Adverse stock return, Abnormal return volatility* and *Abnormal stock turnover* in this vector.

To capture *Abnormal ROA* performance relative to recent past performance, I compute the residuals (ε_{it}) from the following model for each bank: $ROA_{\ it} = \beta_0 + \beta_1 ROA_{it-1} + \beta_2 ROA_{it-2} + \varepsilon_{it}$. *Adverse stock return* is a dummy variable that equals 1 if the bank's stock return is in the bottom 10% of all the bank-year return observations in the CRSP database. In addition, the bank's stock return volatility and stock turnover could also trigger detection by regulators. I measure *Abnormal return volatility* as the demeaned standard deviation of daily stock returns in a given year and *Abnormal stock turnover* as the demeaned daily stock turnover in a given year.

Finally, I include year dummies in all regression specifications in the chapter to control for the general economic environment. Table 1-2 provides the descriptions and Table 1-3 shows the summary statistics of all the variables includes in the analysis.

Table 1-2 Definition of variables

Variable	Definition	Source
Key governance measures		
Monitoring Quality	The fraction of board members who are appointed before the CEO takes office	BoardEx
Advising Quality	The number of directors to whom board members on the board are collectively connected, scaled by board size	BoardEx
Residual Monitoring Quality	The residual from a regression of *Monitoring Quality* on Ln(CEO tenure)	BoardEx
Board-tenure adjusted monitoring quality	The residual from a regression of *Monitoring Quality* on Ln(Board tenure)	BoardEx
Monitoring Quality of independent directors	The fraction of independent directors who are appointed before the current CEO.	BoardEx
Advising Quality of independent directors	The number of directors to whom independent directors on the board are collectively connected, scaled by the total number of independent directors sitting on the board.	BoardEx
Bank-specific characteristics		
ROA (%)	Earnings before interest and taxes (EBIT) divided by book value of total assets (BHCK2170)	CRSP, FR Y9-C
Leverage	Book value of liabilities divided by book value of total assets	FR Y-9C
Industry charter value	The median charter value in a given year	FR Y-9C
Ln(Assets)	Natural logarithm of total assets (BHCK2170)	FR Y-9C
Asset growth	The percentage of change in total assets relative to prior year	FR Y-9C
Portfolio risk	Ratio of risk-weighted assets (BHCKA223) divided by total assets	FR Y-9C
Charter value	Market value of equity divided by book value of equity	CRSP, R Y9-C
Loans	Ratio of total loans (BHCK2122) divided by total assets	FR Y-9C
Non-performing loans	Ratio of loans past due day 90 days or more (BHCK5525) and nonaccrual loans (BHCK5526) divided by total assets	FR Y-9C
Tier-1 capital	Ratio of Tier-1 capital (BHCK8274) divided by total assets	FR Y-9C
Stock returns	Annual buy-and-hold stock returns	CRSP
Corporate governance measures		
Board size	The number of directors sitting on the board	BoardEx
Board independence	The fraction of non-executive directors on the board	BoardEx
Board financial expertise	The fraction of independent directors with prior experience working as a CFO or finance director	BoardEx
Exposure to misconduct	The aggregate connections board members have with firms that involved in a misconduct case committed within the past 10 years	AAERs
Exposure to cartel networks	The aggregate connections board members have with firms that involved in a price-fixing cartel discovered within the past 10 years	Private International Cartels
Ln (Board age)	Natural logarithm of the average age of board members	BoardEx
Ln (Board tenure)	Natural logarithm of the average tenure of board members	BoardEx
Age <65	The fraction of board members whose age is below 65	BoardEx
First and only directorship	The fraction of board members whose current appointment at the bank is their first and only directorship.	BoardEx
Board busyness	Dummy equals 1 if the majority of board members hold three or more directorships and 0 otherwise.	BoardEx
Institutional ownership	The fraction of shares held by investment companies and independent investment advisors	Thomson One Banker
CEO characteristics and incentives		
Ln (CEO tenure)	Natural logarithm of the number of years the CEO has served in this position	BoardEx
CEO is chair	Dummy that equals 1 if CEO is also the chairperson	BoardEx

CEO bonus/total compensation	CEO bonus divided by CEO total pay	ExecuComp
CEO ownership	The fraction of shares owned by the CEO	ExecuComp
CEO dismissal	I follow Khanna, Kim, and Lu (2015) to identify CEO dismissal. If the press reports the CEO turnover as "fired", "forced out", "dismissed", "resigned following a period of bad performance" or "resigned due to policy differences" it is classified as forced. I classify all departures of CEOs who are older than 60 as voluntary. I classify departures of CEOs who are younger than 60 as "dismissed" if the press does not report the reason as "poor health", "death", or "acceptance of another position"; or if the article reports the CEO is retiring, but does not announce the succession plan at least six months before the new CEO takes office.	Factiva
Ln(CEO total pay)	The natural logarithm of CEO total pay	ExecuComp
CEO pay slice	The fraction of top five executives' pay captured by the CEO	ExecuComp
CEO vega	Sensitivity of CEO compensation to share price, expressed in $'1000	ExecuComp
CEO delta	Sensitivity of CEO compensation to stock return volatility, expressed in $'1000	ExecuComp
Characteristics of top five executives		
% Ivy League executives	The fraction of top five executives with an Ivy League education	BoardEx
% MBA executives	The fraction of top five executives with an MBA degree	BoardEx
% Military executives	The fraction of top five executives with prior military experience	BoardEx
Detection of misconduct		
Abnormal ROA	Residual from the regression: $ROA_t = \alpha_0 + \alpha_1 ROA_{t-1} + \alpha_2 ROA_{t-2} + \varepsilon$	CRSP
Adverse stock return	Dummy equals 1 if stock return is below -20% (or in the bottom 10% of all stocks in CRSP bank sample)	CRSP
Abnormal stock volatility	The demeaned standard deviation of daily stock volatility in a year	CRSP
Abnormal stock turnover	The demeaned average daily stock turnover in a year	CRSP
Instrumental variables		
Ln(Distance airport)	Natural logarithm of the distance from the bank's headquarters to the nearest airport	US Census file
Ln(Population)	Natural logarithm of the population of the county of the bank's headquarters	US Census Bureau
Types of Enforcement Actions		
Technical misconduct	Enforcement actions taken for violations of capital adequacy and liquidity, asset quality, lending, provisions and reserves.	SNL Financial
Non-technical misconduct	Enforcement actions related to failures of the bank's internal control and audit systems, risk management systems, and anti-money laundering systems. This also includes breaches of the requirements concerning the competency of the senior management team and the board of directors as well as violations of various laws such as consumer compliance programs, Federal Trade Commission Act (FTCA), Equal Credit Opportunities Act (ECOA) etc.	SNL Financial

Table 1-3 Descriptive statistics

Definitions of all variables are included in table 1-2. For each variable, the p-value of the difference between banks with misconduct and without misconduct are calculated. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

						Misconduct?	
	N	**Mean**	**Median**	**Std.**	**p.1**	**p.99**	**Yes**	**No**
Key governance measures								
Monitoring Quality	4072	0.544	0.545	0.314	0.000	1.000	0.462	0.548***
Advising Quality	4072	1.815	0.000	3.802	0.000	18.263	1.788	2.338**
Bank-specific characteristics								
ROA (%)	4072	0.580	0.857	1.278	-5.226	2.197	-0.572	0.639***
Leverage	4072	0.906	0.909	0.029	0.815	0.966	0.918	0.905***
Industry charter value	4072	1.503	1.312	0.613	0.787	2.591	1.169	1.169***
Ln(Assets)	4072	21.692	21.328	1.699	19.090	27.298	22.067	21.673***
Asset growth	4072	0.102	0.066	0.190	-0.172	0.789	0.037	0.106***
Portfolio risk	4072	0.728	0.739	0.142	0.314	1.023	0.740	0.727
Charter value	4072	1.503	1.384	0.924	0.139	4.366	1.070	1.526***
Loans	4072	0.666	0.685	0.143	0.135	0.904	0.673	0.666
Non-performing loans	4072	0.002	0.000	0.008	0.000	0.036	0.005	0.002***
Tier-1 capital	4072	0.089	0.086	0.023	0.041	0.161	0.081	0.089
Stock returns	4072	0.010	0.020	0.117	-0.361	0.273	-0.056	0.013***
Corporate governance measures								
Board size	4072	11.598	11.000	3.528	6.000	23.000	11.035	11.626**
Board independence	4072	0.765	0.800	0.138	0.364	0.933	0.772	0.765
Board financial expertise	4072	0.040	0.000	0.077	0.000	0.333	0.050	0.040*
Exposure to misconduct	4072	0.147	0.000	0.569	0.000	3.000	0.172	0.146
Ln (Board age)	4072	4.125	4.126	0.064	3.957	4.288	4.136	4.125**
Institutional ownership	1196	0.243	0.239	0.122	0.017	0.552	0.247	0.242
CEO characteristics and incentives								
Ln (CEO tenure)	4072	1.916	1.988	0.793	0.095	3.395	2.053	1.909**
CEO is chair	4072	0.490	0.000	0.500	0.000	1.000	0.485	0.490
CEO vega/delta	887	0.389	0.286	0.286	0.000	1.623	0.503	0.381**
CEO bonus/total compensation	1273	0.130	0.035	0.166	0.000	0.623	0.122	0.131
CEO ownership	1273	0.028	0.008	0.069	0.000	0.434	0.050	0.027***
CEO dismissal	4072	0.091	0.000	0.288	0.000	1.000	0.111	0.090
Ln(CEO total pay)	1273	7.740	7.585	1.151	5.757	10.593	7.954	7.725*
CEO pay slice	1196	0.376	0.364	0.109	0.124	0.742	0.376	0.376
CEO vega	887	221.473	53.111	412.213	0.000	1908.120	239.649	220.281
Top-5 characteristics								
% Ivy League executives	1196	0.125	0.000	0.185	0.000	0.600	0.135	0.125
% MBA executives	1196	0.294	0.200	0.256	0.000	1.000	0.329	0.292
% Military executives	1196	0.058	0.000	0.120	0.000	0.600	0.044	0.059
Detection of misconduct								
Abnormal ROA	3018	0.000	0.217	1.164	-4.864	2.302	-0.960	0.055***
Adverse stock return	3018	0.045	0.000	0.207	0.000	1.000	0.197	0.037***
Abnormal stock volatility	3018	0.000	-0.009	0.063	-0.124	0.219	0.043	-0.002***
Abnormal stock turnover	3018	0.000	-0.024	0.740	-1.765	2.484	0.282	-0.014***
Instrumental variables								
Ln(Distance airport)	4072	2.539	2.485	0.778	0.531	4.329	2.480	2.418
Ln(Population)	4072	0.771	1.000	0.420	0.000	1.000	0.798	0.769

1.3 Bank Boards and Bank Misconduct

1.3.1 MAIN RESULTS

Table 1-4 reports the bivariate probit estimation regression results. Odd-numbered columns report prediction results for banks committing misconduct [P(M=1)]; even-numbered columns show the prediction results for banks that were detected to have committed misconduct, conditional upon misconduct having been committed [P(D=1|M=1)].

The coefficients of my key variables of interest, *Monitoring Quality* and *Advising Quality*, are statistically significant. Effective board monitoring and advising are associated with fewer cases of committed misconduct and more cases of detected misconduct. The results are economically significant. The estimated coefficient of *Monitoring Quality* suggests that a bank with all directors appointed before the CEO taking office (*Monitoring Quality* = 1) has a 27% lower probability of wrongdoing commission and a 35% higher probability of detection than a bank with no director appointed before the CEO taking office (*Monitoring Quality* = 0). A one-standard-deviation increase in *Advising Quality* is associated with 11% lower probability of wrongdoing and 7% higher probability of detection.

The variables excluded from the detection equation but included in the commission equation (*Abnormal ROA, Adverse stock return* and *Abnormal stock volatility*) show the expected signs and are statistically significant. An F-test of joint significance of *Abnormal ROA, Adverse stock return*, *Abnormal stock volatility* and *Abnormal stock turnover* (F-stats = 62.81; Prob > Chi^2 = 0.000) indicates that they are jointly significant. Likewise, the variables excluded from the commission equation are also individually and jointly significant.

Table 1-4 Bivariate probit model estimation for board effectiveness and bank misconduct

Columns (1) and (3) report the estimated relations between *Monitoring Quality* and *Advising Quality* and the commission of misconduct (M=1), and Columns (2) and (4) report the relations between *Monitoring Quality* and *Advising Quality* and detection, given misconduct (D=1|M=1). Standard errors are clustered at the bank level. The sample covers the period 1999–2012. Definitions of all variables are provided in table 1-2. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

	P(M=1)	**P(D=1|M=1)**	**P(M=1)**	**P(D=1|M=1)**
	(1)	**(2)**	**(3)**	**(4)**
Monitoring Quality	-1.180***	2.187**		
	(-3.212)	(2.044)		
Advising Quality			-0.131***	0.087***
			(-3.839)	(3.360)
ROA	-0.003		0.203**	
	(-0.058)		(2.264)	
Leverage	9.440***		10.789**	
	(2.925)		(2.386)	
Industry Charter Value	-4.923***		-10.326***	
	(-3.111)		(-4.205)	
(Industry Charter Value)^2	1.594***		3.191***	
	(3.014)		(3.650)	
Ln(Assets)	-0.108	0.873***	0.234***	0.097*
	(-1.254)	(3.890)	(3.066)	(1.815)
Asset growth	-0.224	-2.528*	-0.020	-1.555***
	(-0.347)	(-1.793)	(-0.038)	(-3.917)
Portfolio risk	1.259*	-0.321	0.803	0.819
	(1.955)	(-0.208)	(0.907)	(1.169)
Charter value	-0.305***	0.372	-0.354***	0.044
	(-2.968)	(1.535)	(-3.679)	(0.532)
Loans	-1.872**	5.728**	1.016	-0.270
	(-2.255)	(2.490)	(1.364)	(-0.408)
Non-performing loans	10.526	-26.039*	18.607	-12.635**
	(0.976)	(-1.766)	(1.550)	(-2.479)
Tier-1 capital	-2.253	11.234	-6.645	-0.574
	(-0.541)	(1.075)	(-1.338)	(-0.189)
Board size	0.038	-0.204***	-0.018	-0.031
	(1.437)	(-2.594)	(-0.310)	(-1.452)
Board independence	0.241	-0.297	-1.107	0.360
	(0.372)	(-0.185)	(-0.643)	(0.594)
Board financial expertise	0.900	-2.084	0.606	-0.025
	(1.315)	(-1.232)	(0.685)	(-0.043)
Exposure to misconduct	0.391**	-1.209***	0.318*	-0.347***
	(2.115)	(-3.453)	(1.851)	(-3.200)
Ln (Board age)	3.243***	-2.876	-0.215	2.255**
	(2.951)	(-0.849)	(-0.140)	(2.504)
Ln (CEO tenure)	-0.133	0.335	0.414***	0.048
	(-1.023)	(1.048)	(4.067)	(0.619)
CEO is chair	0.510***	-1.610**	0.910***	-0.314***
	(2.942)	(-2.546)	(3.729)	(-2.709)
Abnormal ROA		-0.574***		-0.359***
		(-2.925)		(-5.499)
Adverse stock return		0.584		0.559***
		(1.189)		(3.062)
Abnormal stock volatility		3.544*		3.761***
		(1.725)		(3.644)
Abnormal stock turnover		-0.128		-0.091
		(-0.790)		(-1.474)
Observations	3004	3004	3004	3004
Prob>Chi^2	0.000	0.000	0.000	0.000
Log likelihood	-497	-497	-491	-491

Section 1.6 presents numerous robustness tests which show that my results are robust using a standard probit regression, the pre-2008 period only, board monitoring and advising by independent directors only, as well as various alternative tests.

1.3.2 CEO CHARACTERISTICS AND BANK MISCONDUCT

An alternative explanation for the results I report above could be that CEOs with certain characteristics, such as greater talent or industry experience, may be more attracted to work for more connected boards. Thus, the lower misconduct likelihood associated with effective board advising could be due to CEO characteristics rather than board advising. This section shows that my main results remain robust to the inclusion of variables that measure CEO pay, shareholder ownership, education and military background.

Table 1-5 Board effectiveness and bank misconduct: CEO characteristics

Columns (1) and (3) report the estimated relations between CEO characteristics and the commission of misconduct (M=1), and Columns (2) and (4) report the relations between CEO characteristics and detection, given misconduct (D=1|M=1). *Monitoring Quality* and *Advising Quality* and detection, given misconduct (D=1|M=1). Standard errors are clustered at the bank level. The sample covers the period 1999–2012. Definitions of all variables are provided in table 1-2. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

	P(M=1)	**P(D=1|M=1)**	**P(M=1)**	**P(D=1|M=1)**
	(1)	**(2)**	**(3)**	**(4)**
Monitoring Quality	-3.453***	2.120**	-1.480***	2.331**
	(-4.050)	(2.236)	(-3.035)	(2.291)
Advising Quality	-0.348***	0.350***	-0.128***	0.762***
	(-3.315)	(3.948)	(-3.921)	(4.574)
CEO vega/delta	1.426***	0.412		
	(4.039)	(1.587)		
CEO bonus/total compensation	2.162**	1.343		
	(2.051)	(1.470)		
CEO ownership	-1.656	4.805***		
	(-0.774)	(2.956)		
% Ivy League executives			-1.570***	10.033***
			(-2.781)	(5.350)
% MBA executives			0.257	1.245*
			(0.728)	(1.645)
% Military executives			0.182	-2.122
			(0.212)	(-1.602)
Other controls	Yes	Yes	Yes	Yes
Observations	722	722	945	945
Log likelihood	-117	-117	-176	-176
Prob > Chi^2	0.000	0.000	0.000	0.000

The first two columns of Table 1-5 report the estimates between CEO pay and misconduct commission and detection, respectively. I find that *CEO Bonus/total compensation* and *CEO vega/delta* are positively related to the probability that misconduct is committed. The positive link between CEO bonus payment and wrongdoing is consistent with the argument that CEOs commit wrongdoing in order to boost stock prices and enjoy higher payouts.

Columns (3) and (4) control for the personal characteristics of top executives. I find that executives attending elite universities (*% Ivy League Executives*) are less likely to commit wrongdoing which is consistent with these executives having greater skills and abilities. Alternatively, they could have greater concerns for their career and reputation (Chidambaran, Kedia, and Prahabla, 2012). Executives with an MBA degree or military training have no effect on wrongdoing.

1.3.3 RESULTS FOR DIFFERENT CLASSES OF ENFORCEMENT ACTIONS

While I find that effective boards reduce wrongdoing, it is unclear whether this reduction holds for different types of misconduct. For instance, effective board advising could be particularly relevant in reducing technical types of misconduct where advising via the board will be particularly important to inform CEO decision-making. To verify this, I classify enforcement actions according to how technical the underlying violation is. I examine the newspaper coverage and the websites of bank supervisory authorities to gather information on the exact violation(s) that have given rise to an enforcement action. I classify misconduct cases as technical if the enforcement action has been caused by violations of requirements concerning capital adequacy and liquidity, asset quality, lending, provisions and reserves. I classify misconduct cases as non-technical if the enforcement actions are related to failures of a bank's internal control and audit systems, risk management systems, and anti-money laundering systems. Non-technical misconduct cases also include breaches of the requirements concerning the competency of the senior management team and the board of directors as well as violations of various laws such as consumer compliance programs, Federal Trade Commission Act (FTCA), Equal Credit Opportunity Act (ECOA). [12] Panel A of Table 1-6 shows the summary statistics of the two enforcement action types.

[12] While I cannot rule out that certain technical and non-technical types of misconduct could be functional to each other, I can demonstrate that these two types of misconduct capture largely unrelated types of behavior. I find the correlation between the two types to be 0.02 (not statistically significant). To further ensure that my results are not driven by cases in which both types of enforcement actions occur, I exclude banks that receive both types of enforcement actions during the sample period. The results of this untabulated test do not alter my main findings.

Table 1-6 Board effectiveness and bank misconduct: Split-sample tests

Panel A displays the summary statistics of the two enforcement actions types. In both Panels B and C, odd-numbered columns report the estimated relations between *Monitoring Quality* and *Advising Quality* and the commission of misconduct (M=1), and even-numbered columns report the relations between *Monitoring Quality* and *Advising Quality* and detection, given misconduct (D=1|M=1). Panel B splits the enforcement actions sample into technical enforcement actions and non-technical enforcement actions. Panel C uses alternative proxies of board advising and re-estimate the relations between Advising Quality and the likelihood of **Technical** enforcement actions. Columns (1) and (2) report my estimation using the baseline definition of *Advising Quality*, measured as the number of directors to whom directors on the board are collectively connected, scaled by board size. Columns (3) and (4) report my estimation using *Industry Connections*, which imposes the additional restriction that connected directors should sit on the board of financial services firms. Columns (5) and (6) report my estimation using *Large Firm Connections*, which includes the requirement that a connected director should sit on the board of large firms. Standard errors are clustered at the bank level. The sample covers the period 1999–2012. Definitions of all variables are provided in table 1-2. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Panel A: Summary statistics on regulatory enforcement actions split by degree of technicality

	N
i. Technical Enforcement Actions Enforcement actions taken for violations of capital adequacy and liquidity, asset quality, lending, provisions and reserves.	**147**
ii. Non-technical enforcement Actions Enforcement actions related to failures of the bank's internal control and audit systems, risk management systems, and anti-money laundering systems. This also includes breaches of the requirements concerning the competency of the senior management team and the board of directors as well as violations of various laws such as consumer compliance programs, Federal Trade Commission Act (FTCA), and the Equal Credit Opportunity Act (ECOA).	**97**

Panel B: By types of regulatory enforcement actions

	P(M=1)	P(D=1|M=1)	P(M=1)	P(D=1|M=1)	P(M=1)	P(D=1|M=1)	P(M=1)	P(D=1|M=1)
	Technical				Non-technical			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Monitoring Quality	-1.165***	4.308**			-0.782**	1.255**		
	(-3.174)	(2.510)			(-2.341)	(2.501)		
Advising Quality			-0.074**	0.338***			-0.037	0.477
			(-2.156)	(3.011)			(-1.601)	(1.146)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3004	3004	3004	3004	3004	3004	3004	3004
Log likelihood	-251	-251	-251	-251	-256	-256	-208	-208
Prob > Chi^2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 1-6 Board effectiveness and bank misconduct: Split-sample tests (cont.)

Panel C: Alternative proxies of Advising Quality and Technical Enforcement Actions						
	P(M=1)	**P(D=1|M=1)**	**P(M=1)**	**P(D=1|M=1)**	**P(M=1)**	**P(D=1|M=1)**
	All connections		**Industry connections**		**Large firm connections**	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Advising Quality	-0.074**	0.338***	-0.191***	0.411***	-0.135***	0.377**
	(-2.156)	(3.011)	(2.821)	(3.073)	(-2.671)	(2.332)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3004	3004	3004	3004	3004	3004
Log likelihood	-251	-251	-300	-300	-261	-261
Prob > Chi^2	0.000	0.000	0.000	0.000	0.000	0.000

Consistent with my expectation, Panel B of Table 1-6 shows that *Advising Quality* reduces technical types of misconduct (such as violations of capital requirements or substandard asset quality) but has no measurable effect on non-technical types of misconduct. This reaffirms that my measure of board advising is different from board monitoring. Thus, consistent with previous literature (Coles, Daniel, and Naveen, 2012; Field, Lowry, and Mkrtchyan, 2013), my results indicate that board advising matters more when the demand for director advice is high. On the other hand, *Monitoring Quality* matters to both types of misconduct.

I show that board advising matters most to misconduct of a technical nature. I take the analysis further by narrowing down the definition of the *Advising Quality* proxy and re-estimate this relation. My baseline definition of *Advising Quality* is the number of directors to whom the directors on the board are collectively connected, scaled by the size of the board. This assumes that every director has equal knowledge regardless of the industry in which the director is working. However, it is possible that a director serving on the board of a firm in an industry related to banking has better access to information and will be in a better position to offer relevant advice to the CEO. Furthermore, the director is likely to encounter similar technical issues confronting the board, such as setting the level of capital requirements. Hence, I construct a new measure of board advising: *Industry Connections.* This is defined as the connections that arise only from serving on boards in the following industries: insurance, investment companies, life assurance and private equity.[13] My second measure of advising is *Large Firm Connections*, which is based on the connections arising from serving on boards of large firms, where large means total assets above

[13] BoardEx has a variable called "Sector" which classifies firms into different industry sectors. The analysis shown in this test relies on the BoardEx definition of industry sector.

the sample median. Directors who serve on the board of a large firm have to deal with a wide range of issues facing the board and therefore could be able to offer better advice to the CEO (Coles, Daniel, and Naveen, 2012).

Panel C reports the estimated relations between alternative proxies of board advising and technical-related misconduct. For comparison purposes, columns (1) and (2) report the baseline results using the original definition of *Advising Quality* while Columns (3) and (4) report the results using *Industry Connections* and (5) and (6) report *Large Firm Connections*. All coefficients are statistically significant. Most interestingly, Columns (1) and (3) reveal that the magnitude of *Industry Connections* is twice as large as that of my baseline measure (the difference is statistically significant). The results indicate that directors whose connections arise from firms in a related industry are able to offer high-quality advice to the CEO, providing further support to my hypothesis that board advising matters to misconduct.

Overall, my findings demonstrate that boards with higher advising capacity could assist the CEO in making more accurate and better-informed decisions, thereby decreasing instances of wrongdoing.

1.3.4 ENDOGENEITY OF BOARD MEASURES

Identifying causality between the two board measures and bank misconduct poses some challenges. In particular, banks of a certain board composition could either attract or select CEOs who are more likely to commit misconduct. It is possible, for instance, that CEOs intent on committing misconduct choose to work for banks with ineffective boards. Further, while I control for a range of board and CEO characteristics, it is still possible that unobservable firm characteristics affect both

director selection and the occurrence of misconduct at the same time. For instance, a bank's corporate culture may be such that it makes misconduct more likely and may also attract a certain type of CEO who is more likely to engage in misconduct.

To circumvent these endogeneity concerns, I exploit the role of the local labor market in supplying directors to a bank. Specifically, I construct two instrumental variables (IVs) that are related to *Monitoring Quality* and *Advising Quality* but are not related to misconduct. The first instrument is the distance from a bank's headquarters to the nearest airport (*Ln(Distance Airport)*). Geographic coordinates are obtained from the US Census file. The second instrument is the population of the county of the bank's headquarters (*Ln(Population)*). County information is obtained through COMPUSTAT and the population information comes from the US Census Bureau.

Both instruments are related to *Monitoring Quality* because they both affect the rate of director turnover. Arguably, directors are likely to eschew remotely located banks, that is, banks headquartered further away from an airport, in favor of more conveniently located banks. I would therefore expect higher director turnover in remote bank locations as directors leave these banks for more conveniently located institutions. Higher director turnover results in more director appointments and thus in lower *Monitoring Quality* at remotely located banks. Equally, both instruments affect *Advising Quality* because banks in locations with better access to an airport and banks located in more populous areas should have access to a larger labor market. Since the supply of qualified directors is limited and their recruitment is time-consuming (Knyazeva, Knyazeva, and Masulis, 2013), more convenient bank locations will make it more likely that banks are able to recruit qualified directors

with high advising capabilities. *Advising Quality* should thus be higher for more conveniently located banks.

Importantly, neither the distance to the next airport nor the population of the county of a bank's headquarters should be related to bank misconduct other than through the effect the instruments have on board composition. The Federal Deposit Insurance Corporate Improvement Act of 1991 (FDICIA) puts in place the basis for a consistent intensity of enforcement across the US by requiring that each bank be examined by federal regulators as least once every 12 months.[14] In addition, my data confirm that the enforcement intensity does not vary between urban and rural areas.[15]

The first-stage estimation results are reported in Table 1-7, columns (1), (2), (5) and (6). Specifications (1) and (5) are for the commission equation while specifications (2) and (6) are for the detection equation. I run two first-stage regressions for *Monitoring Quality* and *Advising Quality.*

[14] Some banks may qualify for a lower supervision frequency of 18 months if it is safe and sound and its total assets are below $500 million. This should not be a concern because there are less than 10% of banks in my sample falls into this category.

[15] As in Degryse and Ongena (2005), I define counties as urban if the population is more than 250,000 and as rural otherwise. I calculate *enforcement intensity* as the number of enforcement actions issued divided by the number of banks. The *enforcement intensity* is 0.38 and 0.33 for urban and rural areas, respectively and this difference is not statistically significant at customary levels. Under the assumption that misconduct is not location-related other than through the effect the instruments have on board composition, I interpret this as showing that *enforcement intensity* is uniform across the country.

Table 1-7 Instrumental variable regressions for board effectiveness and bank wrongdoing

This table reports the instrumental variable (IV) regression results. The endogenous variables are *Monitoring Quality* and *Advising Quality*. The instrumental variables are *Ln(Distance Airport)*, the natural logarithm of the distance from the bank's headquarters to the nearest airport and *Ln(Population)*, the natural logarithm of the population of the county of the bank's headquarters. Columns (1), (2), (5) and (6) report the first-stage estimation results while Columns (3), (4), (7) and (8) report the second-stage results. The sample covers the period 1999–2012. Definitions of all variables are provided in table 1-2. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

	1st stage		**2nd stage**		**1st stage**		**2nd stage**	
	Monitoring Quality		**P(M=1)**	**P(D=1|M=1)**	**Advising Quality**		**P(M=1)**	**P(D=1|M=1)**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Ln(Distance airport)	-0.016***	-0.020***			0.005	0.020		
	(-4.353)	(-4.724)			(0.157)	(0.544)		
Ln(Population)	-0.011***	-0.011***			0.144***	0.163***		
	(-4.262)	(-3.984)			(5.926)	(5.354)		
Fitted Monitoring Quality			**-17.619***	**48.254***				
			(-4.805)	**(6.282)**				
Fitted Advising Quality							**-0.596***	**0.492***
							(-5.057)	**(2.781)**
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4072	3004	3004	3004	4072	3004	3004	3004
R-Squared	0.648	0.652			0.673	0.682		
Log likelihood			-463	-463			-350	-350
Prob>Chi^2			0.000	0.000			0.000	0.000
F-statistics (IVs)	10.147	10.764			11.018	11.453		

As expected, *Monitoring Quality* decreases with the distance from a bank's headquarters to the nearest airport and *Advising Quality* increases with the county's population. The second-stage regression results are reported in specifications (3), (4), (7) and (8). The coefficients on the IV estimates are statistically significant and larger than those of OLS estimates. A potential explanation for this difference is that not accounting for endogeneity would bias the coefficients of *Monitoring Quality* and *Advising Quality* in OLS toward zero (Theil, 1971). This problem can be mitigated by the instrumental variable approach. Overall, I interpret these results as showing that my measures of board quality are causally related to misconduct in banking.

1.4 How Do Boards Reduce Enforcement Actions?

In this section, I explore two specific channels through which boards can reduce bank misconduct cases. I examine whether boards that are more effective monitors and advisors could be associated with (i) lower bank risk or (ii) improved managerial discipline.

1.4.1 REDUCTION IN BANK RISK

Many cases of technical misconduct are issued when bank fundamentals indicate increased risk. Thus, effective boards could reduce technical misconduct by reducing a bank's risk measures. I analyze three risk indicators: Tier-1 capital, portfolio risk and the fraction of non-performing loans. Tier-1 capital is a core measure of a bank's financial strength from a regulatory point of view. Commercial banks exert discretion over the level of capital as long as it is above the minimum capital. In

addition, I also examine portfolio risk and the fraction of non-performing loans as both are important causes of enforcement actions. Table 1-8 reports the relation between *Monitoring Quality* and *Advising Quality* and measures of risk.

After controlling for bank and other board characteristics, both *Monitoring Quality* and *Advising Quality* are positively related to Tier-1 capital. A one-standard-deviation increase in the percentage of non-captured board members and connected board members is associated with a 21-basis-point and a 12-basis-point improvement in the bank's Tier-1 capital, respectively. In addition, I find a negative relation between *Monitoring Quality* and the bank's portfolio risk (as measured by the proportion of risk-weighted assets on a bank's balance sheet) and the fraction of non-performing loans. Overall, the results in Table 1-8 indicate that both board monitoring and board advising are associated with safer banks and, hence, reduce the instances of technical misconduct.

Table 1-8 Board quality and bank's accounting measures of risk

This table estimates the impact of board monitoring and advising quality on various measures of risk. The dependent variables are Tier-1 capital ratio, bank's portfolio risk and the fraction of non-performing loans. All models include year dummies and bank-fixed effects. Standard errors are clustered at the bank level. The sample covers the period 1999–2012. Definitions of all variables are provided in table 1-2. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

	Tier-1 capital		**Portfolio risk**		**Non-performing loans**	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Monitoring Quality	0.006**		-0.029***		-0.004***	
	(2.263)		(-3.082)		(-4.025)	
Advising Quality		0.0004**		0.0002		-0.000
		(2.019)		(0.146)		(-0.401)
ROA	0.000	0.000	0.009***	0.009***	-0.001***	-0.001**
	(0.818)	(0.883)	(5.906)	(5.922)	(-3.748)	(-2.091)
Leverage	-0.340***	-0.341***	0.725***	0.720***	0.021**	0.021*
	(-11.920)	(-11.840)	(2.860)	(2.832)	(2.051)	(1.877)
Ln(Assets)	-0.002	-0.003*	-0.004	-0.003	-0.001	-0.001
	(-1.480)	(-1.671)	(-0.398)	(-0.360)	(-1.122)	(-0.809)
Asset growth	-0.006***	-0.006***	-0.002	-0.002	0.000	0.000
	(-3.086)	(-3.202)	(-0.267)	(-0.246)	(0.523)	(0.574)
Portfolio risk	0.026**	0.026**	-	-	0.004	0.005
	(2.374)	(2.321)	-	-	(1.636)	(0.741)
Charter value	0.001*	0.001*	-0.005	-0.005	0.000*	0.000
	(1.713)	(1.710)	(-1.251)	(-1.240)	(1.745)	(1.264)
Loans	0.007	0.007	0.520***	0.522***	-0.007**	-0.007
	(0.739)	(0.803)	(9.800)	(9.855)	(-2.456)	(-1.071)
Non-performing loans	0.084*	0.081*	0.577**	0.599*	-	-
	(1.959)	(1.838)	(1.961)	(1.956)	-	-
Tier-1 capital	-	-	0.659*	0.642*	-0.001	-0.003
	-	-	(1.950)	(1.895)	(-0.104)	(-0.211)
Board size	-0.000	-0.000	0.000	0.001	-0.000***	-0.000***
	(-0.658)	(-1.262)	(0.307)	(0.993)	(-3.205)	(-2.956)
Board independence	0.008*	0.006	-0.008	-0.002	-0.005**	-0.004
	(1.755)	(1.419)	(-0.414)	(-0.132)	(-2.556)	(-1.564)
Board financial expertise	0.014**	0.013**	0.029	0.032	0.004	0.004
	(2.075)	(1.983)	(0.733)	(0.799)	(1.228)	(0.556)
Exposure to misconduct	0.000	-0.000	0.001	0.001	0.000	0.001
	(0.280)	(-0.571)	(0.138)	(0.075)	(1.260)	(1.329)
Ln (Board age)	0.007	0.015	-0.037	-0.073*	-0.001	-0.006
	(0.590)	(1.531)	(-0.889)	(-1.808)	(-0.155)	(-0.908)
Ln (CEO tenure)	0.000	-0.002***	-0.006*	0.003	-0.001***	-0.000
	(0.122)	(-2.847)	(-1.732)	(1.357)	(-3.244)	(-0.072)
CEO is chair	-0.000	-0.000	-0.000	-0.000	-0.002***	-0.002**
	(-0.257)	(-0.230)	(-0.018)	(-0.013)	(-4.058)	(-2.350)
Bank-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3519	3519	3519	3519	3519	3519
R-Squared	0.672	0.671	0.821	0.820	0.524	0.522

1.4.2 MANAGERIAL DISCIPLINE

CEOs are likely to consider the personal costs of committing wrongdoing before they engage in it (Khanna, Kim, and Lu, 2015). There are several ways in which the CEOs could be disciplined following the detection of misconduct. CEOs may lose their reputation and their job, and in some cases may face criminal charges (Karpoff, Lee, and Martin, 2008b). Among these possible consequences, some are determined by the courts, some by the labor market and some by the board.

One of the key monitoring functions of the board is to evaluate and discipline the CEO (Mace, 1971). I expect that boards that are not captured by the CEO will impose heavier penalties on the CEO if wrongdoing is detected. I consider four ways in which boards could discipline CEOs: (1) dismissal, (2) reductions in pay, (3) reductions in pay relative to other top executives, and (4) reductions in contractual risk-taking incentives (*CEO vega*).[16] These variables are measured one year after the enforcement action takes place.

Table 1-9 reports the regressions of my board measures on measures of CEO discipline. $Misconduct_{t-1}$ is equal to 1 if wrongdoing is detected during the previous year. *Misconduct* relates detected wrongdoing to the CEO's penalties via an interaction with *Monitoring Quality*. Therefore, the coefficient of the interaction term measures the penalties the CEO has to bear after wrongdoing is detected and when board monitoring is high.

[16] I am only interested in CEO *vega* but not CEO *delta* because *vega* gives the CEO a clear incentive to commit wrongdoing while *delta* has an ambiguous effect on wrongdoing. Thus, boards would be interested in modifying the *vega* component following wrongdoing discovery.

Table 1-9 Board quality and CEO's anticipated costs of misconduct

This table estimates the impact of board monitoring and advising quality on a CEO's penalties following an enforcement action. The dependent variables are an indicator of CEO dismissal, Ln(CEO total pay), the level of CEO pay relative to other top executives at the same bank (CEO pay slice) and CEO pay-risk sensitivity (vega). All models include year dummies and bank-fixed effects. Standard errors are clustered at the bank level. The sample covers the period 1999–2012. Definitions of all variables are provided in table 1-2. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Panel A: Monitoring quality and CEO's anticipated costs of misconduct

	CEO dismissal		CEO pay		CEO pay slice		CEO vega	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Monitoring Quality*Misconduct		**0.095**		**-0.478****		**-0.117****		**-0.113***
		(0.611)		**(-2.335)**		**(-2.437)**		**(-1.798)**
Misconduct	0.014	-0.035	0.061	0.308**	0.017	0.015	-0.013	0.048
	(0.275)	(-0.401)	(0.634)	(1.998)	(0.699)	(0.479)	(-0.267)	(0.725)
Monitoring Quality	-0.067	-0.075	-0.004	0.037	0.005	0.078*	0.036	0.046
	(-0.877)	(-0.995)	(-0.021)	(0.200)	(0.171)	(1.797)	(0.562)	(0.817)
ROA	-0.025	-0.025	0.029	0.028	0.000	0.000	0.001	0.002
	(-1.528)	(-1.526)	(0.934)	(0.930)	(0.123)	(0.129)	(0.172)	(0.255)
Leverage	0.832	0.818	0.304**	0.311**	-0.072	-0.055	-0.466	-0.460
	(1.489)	(1.466)	(2.417)	(2.456)	(-0.427)	(-0.327)	(-1.045)	(-1.024)
Ln(Assets)	-0.054	-0.055	-	-	0.002	0.004	0.029	0.031
	(-0.995)	(-1.021)	-	-	(0.103)	(0.182)	(0.504)	(0.544)
Charter value	-0.058**	-0.059**	0.123***	0.129***	0.007	0.009	0.050	0.052
	(-2.116)	(-2.112)	(2.857)	(3.006)	(0.939)	(1.101)	(1.397)	(1.436)
Board size	0.009	0.009	0.002	0.003	-0.001	-0.001	-0.001	-0.001
	(1.543)	(1.532)	(0.179)	(0.200)	(-0.620)	(-0.579)	(-0.206)	(-0.149)
Board independence	-0.319*	-0.319*	-0.706**	-0.708**	0.003	0.003	0.100	0.098
	(-1.959)	(-1.967)	(-2.250)	(-2.247)	(0.061)	(0.059)	(0.502)	(0.493)
Board financial expertise	0.062	0.061	0.272	0.278	0.054	0.056	-0.261	-0.259
	(0.266)	(0.260)	(0.594)	(0.600)	(0.606)	(0.621)	(-1.302)	(-1.293)
Exposure to misconduct	-0.368	-0.360	-1.095	-1.132	-0.235	-0.245	-0.140	-0.143
	(-0.737)	(-0.722)	(-1.118)	(-1.135)	(-1.280)	(-1.304)	(-0.575)	(-0.583)
Ln (Board age)	0.005	0.005	0.034	0.032	0.010	0.010	0.050*	0.050*
	(0.202)	(0.221)	(0.909)	(0.854)	(1.652)	(1.593)	(1.721)	(1.705)
Ln (CEO tenure)	0.024***	0.024***	-0.004	-0.004	-0.001	-0.001	0.005*	0.005*
	(4.387)	(4.359)	(-0.325)	(-0.369)	(-0.240)	(-0.295)	(1.667)	(1.699)

Table 1-9 Board quality and CEO's anticipated costs of misconduct (cont.)

CEO is chair	0.022	0.024	0.087	0.080	-0.005	-0.006	-	-
	(0.447)	(0.470)	(1.005)	(0.933)	(-0.334)	(-0.446)	-	-
CEO ownership	-0.642***	-0.649***	-0.332	-0.292	-0.200	-0.191	-0.028	-0.029
	(-2.630)	(-2.645)	(-0.481)	(-0.429)	(-1.469)	(-1.425)	(-0.638)	(-0.674)
Stock returns	-0.025	-0.029	0.154	0.596	0.002	0.007	-0.030	-0.026
	(-0.145)	(-0.167)	(0.658)	(0.780)	(0.050)	(0.178)	(-0.276)	(-0.238)
Institutional ownership	-0.195	-0.188	0.816*	0.777	0.093	0.084	0.079	0.074
	(-0.960)	(-0.929)	(1.709)	(1.623)	(1.142)	(1.044)	(0.441)	(0.413)
Bank-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	944	944	944	944	944	944	738	738
R-Squared	0.247	0.248	0.855	0.856	0.465	0.472	0.786	0.787

Panel B: Advising Quality and CEO's anticipated costs of misconduct

	CEO dismissal	**CEO pay**	**CEO pay slice**	**CEO vega**
	(1)	(2)	(3)	(4)
Advising Quality	-0.012	0.001	0.003	0.014
*Misconduct	(-1.607)	(0.038)	(0.455)	(1.084)
Misconduct	0.056	0.051	0.006	-0.045
	(0.841)	(0.404)	(0.211)	(-0.932)
Advising Quality	0.005	-0.009	0.001	0.013
	(0.854)	(-0.569)	(0.219)	(1.231)

Panel A of Table 1-9 displays the key estimation results. Odd-numbered columns omit the interaction terms while even-numbered columns display the full set of variables. As shown in the odd-numbered columns, *Misconduct* is not significant in any specification. On average, a regulatory enforcement action does not lead to CEOs being disciplined. However, the interaction term between *Misconduct* and *Monitoring Quality* indicates that following misconduct under higher board monitoring quality, CEOs are disciplined in the following ways: CEOs receive (i) a larger pay cut, (ii) a reduced pay slice relative to other top executives at the same bank and (iii) lower contractual risk-taking incentives (*CEO vega*). It is interesting to note that my results on pay slice show that the reduction in CEO pay following misconduct is not due to executive pay having been reduced for all executives, but that CEO pay has been reduced relative to other executives. Evidently, boards view the CEO as the key person holding responsibility for misconduct and therefore reduce the CEO salary relative to the salaries of other executives.

Panel B of Table 1-9 displays the results of tests that interact *Misconduct* with *Advising Quality*. *Advising Quality* should not have an effect on how CEOs get disciplined following misconduct. Consistent with this, none of the interaction terms enter the regression significantly. This validates my interpretation of *Advising Quality* capturing the ability of the board to give advice rather than to monitor the CEO.

The results have two key implications. First, non-captured directors discipline the CEO after wrongdoing is detected, thus increasing the CEO's costs of wrongdoing. This could act as an ex ante deterrent to the CEO to engage in wrongdoing and could explain why my earlier analysis shows that effective board

monitoring reduces the probability that banks engage in misconduct. Second, in the absence of a board that engages in effective monitoring, regulatory enforcement actions have little impact on CEOs being disciplined. These results add novel insights to the CEO's disciplinary mechanisms in the banking sector (Schaeck et al., 2012). In banks, not only shareholders but regulators are also involved in monitoring and therefore play a role in the CEO's disciplinary process. Consistent with this, my results indicate that regulatory action alone does not discipline bank CEOs, but a combination of the two – effective board monitoring and enforcement action – can create the desired effects.

1.5 Does Better Board Quality Alleviate Shareholder Wealth Losses?

In the previous sections, I show how effective boards reduce the likelihood of bank misconduct. I now test whether effective boards also reduce the severity of misconduct. Consistent with the prior literature, I capture the severity of misconduct using the abnormal stock price reaction to the announcement of misconduct (e.g. Cumming, Leung, and Rui, 2015).

I expect to find a positive relationship between the announcement returns and measures of board monitoring and advising. Since high-quality boards are more effective at preventing misconduct, detected cases of misconduct are likely to be less severe. Assuming that the wrongdoing that is detected in *t* is likely to have been committed in *t-1*, I expect lagged board variables to be linked with higher announcement returns.[17] Further, effective boards are more likely to take corrective action, such as disciplining the CEO and "fixing" the bank after wrongdoing has

[17] My results are robust to alternative time gaps between the commission and detection of misconduct. I find qualitatively identical results if the gap is two or three years.

been detected. Thus, investors may be more positive about misconduct when the current board exhibits high monitoring or advising quality. Thus, I also include contemporaneous measures of monitoring and advising in my analysis.

I use event study methodology to test these hypotheses. To find the announcement date, I search newspapers using the Factiva database and define the event day as the earliest trading day when the news of the enforcement action is made public. I drop several observations where there are missing stock returns or when other major corporate news is released on the same day. This yields a sample of 206 announcements. I then estimate a market model using a value-weighted CRSP index as a market index from 46 to 146 days before the announcement of an enforcement action. I construct cumulative abnormal returns (CARs) as the sum of the prediction errors of the market model.

Table 1-10 Do effective boards alleviate shareholder wealth losses when misconduct becomes public?

This table reports the multivariate regression analyses of stock market reactions to the announcements of banks receiving an enforcement action. The dependent variables of all models are CARs for a three-day window [-1, +1] (%). All models include year dummies. Definitions of all variables are provided in table 1-2. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

	CARs [-1, +1] %			
	(1)	**(2)**	**(3)**	**(4)**
Monitoring Quality$_{t-1}$	6.237**			
	(2.127)			
Monitoring Quality $_{t}$		5.927**		
		(2.507)		
Advising Quality$_{t-1}$			-0.134	
			(-0.786)	
Advising Quality $_{t}$				-0.145
				(-0.752)
ROA	0.626*	0.491	0.595	0.621*
	(1.713)	(1.365)	(1.639)	(1.701)
Leverage	-10.245	-15.323	-10.124	-13.629
	(-0.330)	(-0.502)	(-0.328)	(-0.435)
Ln(Assets)	-0.109	0.061	-0.097	0.130
	(-0.260)	(0.146)	(-0.233)	(0.251)
Asset growth	-3.055	-2.795	-3.341	-2.746
	(-0.530)	(-0.493)	(-0.577)	(-0.477)
Portfolio risk	0.734	1.313	0.678	0.819
	(0.083)	(0.151)	(0.077)	(0.093)
Charter value	0.363	0.492	0.280	0.340
	(0.563)	(0.775)	(0.434)	(0.530)
Loans	-4.683	-3.531	-3.890	-4.137
	(-0.587)	(-0.450)	(-0.488)	(-0.520)
Non-performing loans	6.167	14.100	4.250	8.097
	(0.175)	(0.406)	(0.121)	(0.229)
Tier-1 capital	-0.997	-6.661	-2.642	-4.411
	(-0.030)	(-0.204)	(-0.079)	(-0.131)
Board size	0.458**	0.379*	0.449**	0.447**
	(2.113)	(1.759)	(2.051)	(2.037)
Board independence	5.802	3.956	5.092	5.574
	(1.112)	(0.766)	(0.975)	(1.067)
Board financial expertise	2.837	3.257	2.416	2.414
	(0.455)	(0.531)	(0.388)	(0.387)
Exposure to misconduct	-0.670	-0.398	-0.033	-0.734
	(-0.655)	(-0.395)	(-0.025)	(-0.719)
Ln (Board age)	10.751	10.903	12.208	12.077
	(1.123)	(1.159)	(1.268)	(1.256)
Ln (CEO tenure)	-0.419	0.993	-0.079	-0.078
	(-0.651)	(1.175)	(-1.045)	(-1.031)
CEO is chair	0.785	0.302	1.025	1.001
	(0.560)	(0.217)	(0.722)	(0.705)
Constant	-41.393	-46.007	-47.340	-48.467
	(-0.780)	(-0.884)	(-0.896)	(-0.915)
Observations	206	206	206	206
R-squared	0.216	0.225	0.197	0.193

The average CARs over a three-day [-1, +1] event window is -3.50%, (significant difference at the 1% level). This shows that regulatory enforcement actions hurt shareholder wealth. The dependent variables are CARs of three-day window [-1, +1]. Table 1-10 displays the regression results. Columns (1) and (2) show that the announcement returns are positively related to measures of *Monitoring Quality* when wrongdoing is committed (*t*-1) as well as when it is detected (*t*). The coefficients are also economically significant. CARs are on average 6% higher when the board has all directors appointed before the CEO's tenure than when none are appointed before the current CEO's tenure. Thus, effective board monitoring reduces the severity of the misconduct. Further, investors expect an effective board to take action to help the bank recover from the misconduct as shown by a significant coefficient on contemporaneous measures of *Monitoring Quality*. This lends support to my prior finding that following enforcement action, a board with effective monitoring capability will discipline the CEO. Finally, Columns (3) and (4) show that *Advising Quality* does not enter the regression significantly.

1.6 Robustness tests on the relation between board effectiveness and bank misconduct

In this section, I test the robustness of the key results using alternative definitions of my board measures. The tables are reported at the end of this section.

1.6.1 IS MONITORING QUALITY DRIVEN BY CEO TENURE?

Monitoring Quality correlates with CEO tenure as longer-tenured CEOs will have been able to appoint a larger fraction of directors. Thus, my measure of monitoring

quality may capture the effects associated with long CEO tenure instead of effective board monitoring. I show that my results are not affected by CEO tenure as follows.

First, I control for CEO tenure in all specifications in the analysis above. Second, I compute *Residual Monitoring Quality* as the residual from a regression of *Monitoring Quality* on CEO tenure. This variable is free of any positive correlation between CEO tenure and *Monitoring Quality*. As indicated in Appendix 1-A1, the results are robust using the modified measure of *Monitoring Quality* that strips out the effect of tenure.

1.6.2 IS MONITORING QUALITY DRIVEN BY DIRECTOR EXPEIRENCE?

Another possibility is that *Monitoring Quality* correlates with director tenure, and thus reflects the experience of directors. Directors who are not captured by the CEO tend to have longer board tenure. I use two different approaches to deal with this concern.

First, I control for average board tenure. Second, as with CEO tenure, I estimate the residual from a regression of *Monitoring Quality* on average board tenure. The results are robust to using this modified measure of monitoring as indicated in Appendix 1-A2.

1.6.3 IS MONITORING QUALITY CAPTURUEING DIRECTOR'S CAREER CONCERNS?

In the analysis above, I use board age to control for director career concerns. In this section, I use two alternative measures of career concerns and show that controlling for these does not alter the main findings.

First, I include the fraction of board members who are younger than 65. Second, I include the fraction of board members whose current appointment at the bank is their first and only directorship. These directorships should be particularly valuable to directors thus raising their career concerns and turning them into more effective monitors. As shown in Appendix 1-A3, *Monitoring Quality* continues to enter significantly after controlling for these alternative proxies of directors' career concerns.

1.6.4 IS ADVISING QUALITY DIFFERENT FROM BOARD BUSYNESS?

Fich and Shivdasani (2006) define a board to be "busy" if more than half of the outside directors on a board hold three or more directorships. While a board does not need to be "busy" to have high *Advising Quality*, I could expect a positive correlation between these two measures. Thus, *Advising Quality* may capture the effects of a busy board instead of effective advising quality. I define *Board busyness* similar to Fich and Shivdasani (2006) and perform two tests to show that the effects obtained for *Advising Quality* are not driven by *Board busyness*.

As shown in Appendix 1-A4, Board busyness does not explain bank misconduct. First, I include both *Advising Quality* and *Board busyness* in the bivariate probit model. The coefficients of *Board busyness* are insignificant in both the commission and detection equations while the coefficients of *Advising Quality* remain significant. Second, I repeat the analysis by including only *Board busyness* but not *Advising Quality*. Again, none of the coefficients are significant.

1.6.5 ALTERNATIVE MEASURE OF THE QUALITY OF DIRECTOR'S NETWORKS

The chapter uses accounting fraud data to measure the quality of director networks. For robustness, I also use an alternative source of fraud data, the Private International Cartels Data Set (Connor, 2010).[18] This dataset includes more than 2,115 companies involving in price-fixing cartels between 1998 and 2012. As shown in Appendix 1-A5, *Advising Quality* remains significant. Consistent with the argument that the fraudulent culture can be transmissible, I find that banks with more connections to cartelists are more likely to commit wrongdoing and are less likely to get detected.

1.6.6 USING A STANDARD PROBIT MODEL

The chapter uses the bivariate probit model to show that effective boards reduce the probability of the CEO committing misconduct conditional upon detection of misconduct. For robustness, I also show the results of a simple standard probit model to examine the relationship between effective boards and the likelihood of a bank receiving an enforcement action in Appendix 1-A6, *Monitoring Quality* and *Advising Quality* enter negatively and are statistically significant indicating that monitoring and advising are associated with fewer enforcement actions.

1.6.7 ALTERNATIVE BIVARIATE PROBIT SPECIFICATION

In the baseline model, I have some excluded instruments in both the commission and detection equations. Some studies that use the bivariate model to study fraud have excluded instruments in one equation, say, fraud detection equation, but not the other

[18] I thank John Connor for generously sharing the cartel data.

(e.g. Khanna, Kim, and Lu, 2015). To test if the bivariate model is sensitive to the model specification, I remove *ROA*, *Leverage* and *Industry charter value* from the fraud commission equation. The results are in Appendix 1-A7.

1.6.8 ARE THE RESULTS DRIVEN BY THE POST-2007 PERIOD?

Table 1-1 shows a surge in the number of enforcement actions issued after the 2007 financial crisis. This raises concerns that the results could be driven by the 2008 financial crisis. To address this concern, I split the sample into two groups: before and after the crisis. As shown in Appendix 1-A8, my results are not driven by the crisis.

1.6.9 INDEPENDENT DIRECTORS

My definitions of *Monitoring Quality* and *Advising Quality* do not differentiate between directors who are independent and executives who sit on the board. One may argue that my results could be mostly driven by executives on the board who should feel most beholden to the CEO. To address this concern, I limit the analysis to independent directors and calculate the fraction of independent directors who are appointed before the CEO's tenure (*Monitoring Quality of Independent Directors*) and the connections of independent directors (*Advising Quality of Independent Directors*).

As shown in Appendix 1-A9, I find that all results obtained using independent directors are similar to those using all board members. This implies that independent directors can also be susceptible to monitoring quality and advising quality. Monitoring and advising quality among independent directors affects the

likelihood of misconduct being committed and detected in the same way as for the complete board. An implication of this finding is that the share of independent directors that has been extensively studied in the literature as a key monitoring device does not sufficiently capture a board's monitoring ability.

Appendix 1-A1 Is Monitoring Quality driven by CEO tenure?

Residual Monitoring Quality is the residual from a regression of *Monitoring Quality* on *Ln(CEO tenure)*. Column (1) reports the estimated relations between *Residual Monitoring Quality* and the commission of misconduct (M=1), and Column (2) reports the relations between *Residual Monitoring Quality* and detection, given misconduct (D=1|M=1). Standard errors are clustered at the bank level. The sample covers the period 1999–2012. Definitions of all variables are provided in table 1-2. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

	P(M=1)	**P(D=1|M=1)**
	(1)	**(2)**
Residual Monitoring Quality	-1.162***	2.154**
	(-3.194)	(2.016)
Other controls	Yes	Yes
Observations	3004	3004
Log likelihood	-497	-497
Prob>Chi^2	0.000	0.000

Appendix 1-A2 Does Monitoring Quality capture director experience?

Ln(Board tenure) is the natural logarithm of the average tenure of board members. Panel A reports the results when *Monitoring Quality* and *Ln(Board tenure)* are both included in the model. Panel B reports the residual regression results. *Board-tenure adjusted monitoring quality* is the residual from a regression of *Monitoring Quality* on *Ln(Board tenure)*. Standard errors are clustered at the bank level. The sample covers the period 1999–2012. Definitions of all variables are provided in table 1-2. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Panel A: Controlling for average board tenure		
	P(M=1)	**P(D=1|M=1)**
	(1)	**(2)**
Monitoring Quality	-1.244***	2.478**
	(-3.292)	(2.129)
Ln (Board tenure)	0.017	-0.035
	(0.784)	(-0.530)
Other controls	Yes	Yes
Observations	3004	3004
Log likelihood	-497	-497
Prob>Chi^2	0.000	0.000
Panel B: Residual regression		
	P(M=1)	**P(D=1|M=1)**
	(1)	**(2)**
Board-tenure adjusted monitoring quality	-2.143***	0.440*
	(-6.267)	(1.845)
Other controls	Yes	Yes
Observations	3004	3004
Log likelihood	-497	-497
Prob>Chi^2	0.000	0.000

Appendix 1-A3 Is Monitoring Quality capturing director's career concerns?

This appendix controls for alternative measures of director's career concerns. *Age<65* is the fraction of board members whose age is below 65. *First and only directorship* is the fraction of board members whose current appointment at the bank is their first and only directorship. Panel A reports the results when *Monitoring Quality* and *Age<65* are both included in the model. Panel B reports the results when *Monitoring Quality* and *First and only directorship* are both included in the model. Standard errors are clustered at the bank level. The sample covers the period 1999–2012. Definitions of all variables are provided in table 1-2. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Panel A: % of board members <65		
	P(M=1)	**P(D=1|M=1)**
	(1)	**(2)**
Monitoring Quality	-1.170***	2.242**
	(-3.183)	(2.092)
Age <65	-0.108	0.975
	(-0.175)	(0.564)
Other controls	Yes	Yes
Observations	3004	3004
Log likelihood	-497	-497
Prob>Chi^2	0.000	0.000
Panel B: % first and only directorship		
	P(M=1)	**P(D=1|M=1)**
	(1)	**(2)**
Monitoring Quality	-0.961***	1.708*
	(-2.901)	(1.714)
First and only directorship	0.277	-0.599
	(0.703)	(-0.570)
Other controls	Yes	Yes
Observations	3004	3004
Log likelihood	-497	-497
Prob>Chi^2	0.000	0.000

Appendix 1-A4 Does Advising Quality capture Board busyness?

Board busyness is a dummy that equals 1 when the majority of board members hold three or more directorships and 0 otherwise. Panel A reports the results when *Advising Quality* and *Board busyness* are both included in the analysis. Panel B reports the results when only *Board busyness* is included. Standard errors are clustered at the bank level. The sample covers the period 1999–2012. Definitions of all variables are provided in table 1-2. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Panel A: Advising Quality and Board busyness are included		
	P(M=1)	**P(D=1|M=1)**
	(1)	**(2)**
Advising Quality	-0.065**	0.966***
	(-2.496)	(3.391)
Board busyness	0.162	-1.354
	(0.430)	(-0.119)
Other controls	Yes	Yes
Observations	1019	1019
Log likelihood	-177	-177
Prob>Chi^2	0.000	0.000
Panel B: Only Board busyness is included		
	P(M=1)	**P(D=1|M=1)**
	(1)	**(2)**
Board busyness	0.091	-0.542
	(0.137)	(-0.247)
Other controls	Yes	Yes
Observations	945	945
Log likelihood	-195	-195
Prob>Chi^2	0.000	0.000

Appendix 1-A5 Alternative measure of director network quality

This appendix uses an alternative source of fraud data for the quality director's network. I use the Private International Cartels Data Set (Connor, 2010), provided by John Connor, which includes more than 2,115 companies involving in price-fixing cartels. *Exposure to Cartel Networks* is the number of connections that board members of a given bank have with firms that used to be involved in a price-fixing cartel. The sample covers the period 1999–2012. Definitions of all variables are provided in table 1-2. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

	P(M=1)	**P(D=1|M=1)**
	(1)	**(2)**
Advising Quality	-0.059**	0.123***
	(-2.056)	(3.549)
Exposure to Cartel Networks	0.148*	-0.302**
	(1.693)	(-2.367)
Other controls	Yes	Yes
Observations	3004	3004
Log likelihood	-497	-497
Prob>Chi^2	0.000	0.000

Appendix 1-A6 Probit model estimation for board effectiveness and bank misconduct

This appendix reports standard probit model estimation results. The dependent variable equals 1 if an enforcement action is issued during the year. Standard errors are clustered at the bank level. The sample covers the period 1999–2012. Definitions of all variables are provided in table 1-2. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

	Probit P(M=1)	**Probit P(M=1)**	**Probit P(M=1)**
	(1)	**(2)**	**(3)**
Monitoring Quality	-0.468**		-0.476**
	(-2.409)		(-2.448)
Advising Quality		-0.034*	-0.035*
		(-1.665)	(-1.706)
ROA	-0.136***	-0.139***	-0.139***
	(-4.871)	(-4.975)	(-4.982)
Leverage	4.886**	4.984**	4.766**
	(2.522)	(2.570)	(2.470)
Ln(Assets)	0.242***	0.279***	0.296***
	(3.004)	(3.378)	(3.564)
Asset growth	-0.567*	-0.541*	-0.563*
	(-1.869)	(-1.746)	(-1.844)
Portfolio risk	0.643	0.616	0.818
	(1.230)	(1.139)	(1.558)
Charter value	-0.132	-0.129	-0.132
	(-1.558)	(-1.473)	(-1.549)
Loans	-0.173	-0.200	-0.313
	(-0.354)	(-0.403)	(-0.641)
Non-performing loans	6.917	8.065	6.971
	(1.273)	(1.440)	(1.282)
Tier-1 Capital	-1.058	-0.982	-1.197
	(-0.413)	(-0.375)	(-0.470)
Board size	-0.030**	-0.063	-0.030**
	(-2.082)	(-0.206)	(-2.074)
Board independence	-0.151	0.155	-0.118
	(-0.492)	(0.328)	(-0.378)
Board financial expertise	-0.116	1.421*	-0.096
	(-0.238)	(1.922)	(-0.198)
Exposure to misconduct	-0.131	0.149	-0.082
	(-1.353)	(1.407)	(-0.768)
Ln (Board age)	1.570**	0.018***	1.581**
	(2.166)	(3.298)	(2.182)
Ln (CEO tenure)	0.004	-0.059	0.003
	(0.435)	(-0.704)	(0.297)
CEO is chair	-0.053	0.376***	-0.043
	(-0.622)	(3.802)	(-0.511)
Observations	4066	4066	4066
Prob>Chi^2	0.000	0.000	0.000
Log likelihood	-682	-687	-680

Appendix 1-A7 Alternative specification of bivariate probit model

Columns (1) and (3) report the estimated relations between *Monitoring Quality* and *Advising Quality* and the commission of misconduct (M=1), and Columns (2) and (4) report the relations between *Monitoring Quality* and *Advising Quality* and detection, given misconduct (D=1|M=1). Standard errors are clustered at the bank level. The sample covers the period 1999–2012. Definitions of all variables are provided in table 1-2. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

	P(M=1)	**P(D=1|M=1)**	**P(M=1)**	**P(D=1|M=1)**
	(1)	**(2)**	**(3)**	**(4)**
Monitoring Quality	-1.150**	1.373**		
	(-2.208)	(2.085)		
Advising Quality			-0.094***	0.092***
			(-4.003)	(4.159)
Ln(Assets)	-0.207**	0.422***	0.084	0.147***
	(-2.329)	(3.524)	(1.353)	(3.056)
Asset growth	-0.198	-0.772	0.914	-1.738***
	(-0.203)	(-0.640)	(1.394)	(-4.053)
Portfolio risk	0.665	-0.390	0.537	0.955*
	(0.753)	(-0.348)	(0.907)	(1.765)
Charter value	-0.351***	0.342**	-0.381***	-0.040
	(-3.226)	(2.385)	(-5.865)	(-0.569)
Loans	-1.648	2.446*	-0.440	0.066
	(-1.471)	(1.808)	(-0.653)	(0.124)
Non-performing loans	16.012	-24.116	37.403***	-12.232**
	(1.366)	(-1.624)	(4.395)	(-2.109)
Tier-1 capital	-8.192*	8.493	-12.299***	0.398
	(-1.913)	(1.322)	(-4.448)	(0.155)
Board size	0.034	-0.074	-0.032	-0.030*
	(0.974)	(-1.514)	(-1.471)	(-1.824)
Board independence	0.282	-0.354	1.020*	-0.252
	(0.257)	(-0.239)	(1.824)	(-0.580)
Board financial expertise	0.701	-1.055	0.577	-0.195
	(0.777)	(-0.876)	(0.735)	(-0.348)
Exposure to misconduct	2.022	-1.422	0.220	2.092***
	(1.284)	(-0.666)	(0.212)	(2.612)
Ln (Board age)	0.534**	-0.792***	0.467***	-0.453***
	(2.442)	(-2.999)	(3.166)	(-3.835)
Ln (CEO tenure)	-0.076	0.117	0.516***	-0.009
	(-0.419)	(0.491)	(5.544)	(-0.141)
CEO is chair	0.522**	-0.783***	0.349***	-0.191*
	(2.324)	(-2.739)	(2.860)	(-1.777)
Abnormal ROA		-0.193**		-0.333***
		(-2.258)		(-6.926)
Adverse stock return		0.249		0.315*
		(1.508)		(1.909)
Abnormal stock volatility		1.845**		4.030***
		(2.175)		(5.204)
Abnormal stock turnover		-0.053		-0.130**
		(-0.911)		(-2.087)
Observations	3004	3004	3004	3004
Prob>Chi^2	0.000	0.000	0.000	0.000
Log likelihood	-513	-513	-505	-505

Appendix 1-A8 Are the results driven by the 2008 crisis?

Odd-numbered columns report the estimated relations between *Monitoring Quality* and *Advising Quality* and the commission of misconduct (M=1), and even-numbered columns report the relations between *Monitoring Quality* and *Advising Quality* and detection, given misconduct (D=1|M=1). Standard errors are clustered at the bank level. The sample covers the period 1999–2012. Definitions of all variables are provided in table 1-2. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

	P(M=1)	**P(D=1|M=1)**	**P(M=1)**	**P(D=1|M=1)**	**P(M=1)**	**P(D=1|M=1)**	**P(M=1)**	**P(D=1|M=1)**
	1999–2007				**2008–2012**			
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Monitoring Quality	-1.042*	1.293*			-0.367*	5.278***		
	(-1.828)	(1.754)			(1.753)	(-4.440)		
Advising Quality			-0.175***	0.900***			-0.094***	0.127***
			(-2.936)	(3.664)			(-2.792)	(4.309)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1416	1416	1416	1416	1588	1588	1588	1588
Log likelihood	-109	-109	-95	-95	-349	-349	-348	-348
Prob > Chi^2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Appendix 1-A9 Monitoring and Advising Quality for independent directors

Monitoring Quality of independent directors is the fraction of independent directors who are appointed before the current CEO. *Advising Quality of independent directors* is the number of directors to whom independent directors on the board are collectively connected, scaled by the total number of independent directors sitting on the board. Columns (1) and (3) report the estimated relations between *Monitoring Quality of independent directors* and *Advising Quality of independent directors* and the commission of misconduct (M=1), and Columns (2) and (4) report the relations between *Monitoring Quality of independent directors* and *Advising Quality of independent directors* and detection, given misconduct (D=1|M=1). Standard errors are clustered at the bank level. The sample covers the period 1999–2012. Definitions of all variables are provided in table 1-2. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

	P(M=1)	**P(D=1|M=1)**	**P(M=1)**	**P(D=1|M=1)**
	(1)	**(2)**	**(3)**	**(4)**
Monitoring Quality of independent directors	-0.913***	2.119*		
	(-2.964)	(1.802)		
Advising Quality of independent directors			-0.118***	0.080***
			(-4.306)	(3.573)
Other controls	Yes	Yes	Yes	Yes
Observations	3004	3004	3004	3004
Log likelihood	-497	-497	-491	-491
Prob>Chi^2	0.000	0.000	0.000	0.000

1.7 Conclusions

Trust in the banking sector is vital to the functioning of the financial system and for economic activity. Misconduct in banking undermines the general public's confidence in the safety and soundness of the banking sector. Thus, studying the determinants of bank misconduct is an important topic of potentially wide implications.

In this chapter, I focus on two key functions of bank boards, monitoring and advising, and find that both functions are effective in reducing the probability that banks receive enforcement actions from regulators. Further analyses reveal that while board monitoring reduces all categories of misconduct, board advising reduces misconduct of a more technical nature. The results are economically meaningful and robust to two-stage instrumental variable analysis. Overall, I identify three channels through which effective boards deter misconduct: effective boards increase the likelihood that misconduct is detected, they reduce bank risk and they increase the penalties imposed on the CEO following the discovery of misconduct. Furthermore, effective boards also mitigate the severity of misconduct.

This chapter has important implications for policy makers. The Office of the Comptroller of the Currency (2014) in its recent regulatory guidelines establishes 'heightened expectations' of the role of bank boards in shaping a bank's risk culture and in reducing misconduct cases. These views are echoed by the Financial Stability Board (2014) which places bank boards at the core of effective risk management and emphasizes their responsibility in monitoring and providing "sage advice" to senior management. The findings I report in this chapter confirm that boards play an

important role in the risk management of banks and that the "heightened expectations" of boards in preventing misconduct are justified.

Finally, this chapter offers novel insights on how to structure bank boards to prevent misconduct. First, this chapter shows that in addition to monitoring, directors also give advice to the CEO and this plays an important role in preventing misconduct. Thus, the advisory function of boards deserves more attention as part of the governance process. Second, I show that conventional board measures such as board independence and financial expertise have no measurable effect on bank misconduct being committed or detected. By contrast, the board metrics I study in this chapter related to monitoring and advising are important predictors of misconduct. Overall, this chapter illustrates that board governance matters in banking. My findings demonstrate that governance metrics revolving around CEO connections warrant more attention from regulators, investors and governance activists.

2
The value of bank executives

2.1 Introduction

There is a considerable debate amongst the public, policymakers and academics as to whether individual executives matter for firm performance and behavior. A growing body of research demonstrates that executive directors are a heterogeneous group and suggests that executive behavior is governed by more than economic trade-offs. Studies have shown that executives affect the performance of firms (e.g., Adams, Almeida, and Ferreira, 2005; Bennedsen, Perez-Gonzalez, and Wolfenzon, 2008; Custodio and Metzger, 2013; Kaplan, Klebano, and Sorensen, 2012) and their policy choices (e.g., Bertrand and Schoar, 2003; Custodio and Metzger, 2014; Malmendier, Tate, and Yan, 2011). Other studies argue that individual executives have little impact on firm performance and behavior because seemingly unique executive-specific "styles" may in fact be shaped by the board of directors and that new executives are appointed with desired characteristics to take a firm in the direction determined by the board (Fee, Hadlock, and Pierce, 2013). This chapter sheds new light on whether and how executives matter by demonstrating that variations in

observable demographic and experience characteristics of executives have market valuation effects.

With existing work mostly limited to non-financial firms, there is an inherent lack of analysis concerning the banking sector. Since banks are complex institutions and may require employees with specialized skills (Philippon and Reshef, 2012), selecting the right executives could give banks a significant competitive edge as well as contribute to the growth of the economy. Recently, the banking sector has received much criticism for its contribution to the financial crisis that started in 2007. Many blame incompetent banking executives for engaging in activities that endangered the safety and soundness of the financial system and gave rise to unprecedented government support of the banking sector. By the same token, certain bank executives have been credited with steering their organizations successfully through the financial crisis.[19]

In this chapter, I focus on executive directors[20] who are responsible for the day-to-day running of the bank. Since executive directors have substantial discretion over their decisions, their individual characteristics such as prior experience could make an important difference to bank outcomes (e.g. Kim and Lu, 2015; Landier et al., 2013). In contrast, non-executive directors, who are responsible for monitoring and advising the CEOs, are not involved in managing the bank on a daily basis. Hence, compared with non-executive directors, executives have more influence and

[19] For example, John Stumpf from Wells Fargo and Jamie Dimon from JPMorgan are often cited as successful bank executives. See 'Jamie Dimon, the last King of Wall Street', *Financial Times*, 17 May 2013.

[20] I follow Custodio and Metzger (2013) in defining top executives. They include CEO, CFO, COO, CRO, CIO, Chairman, President, Division CEO, Division President, Division Chairman, Head of Division, Regional CEO, Regional President, and Regional Chairman.

their characteristics are more likely to have measurable implications for the market performance of banks.

I argue that executive characteristics such as age, education, and employment history are performance relevant. I examine whether the stock market reaction to the appointment of a new executive is driven by the characteristics of the appointee. Focusing on the appointment of a new executive offers an appropriate setting in which to examine the value of characteristics that the appointee brings to the hiring bank. In an efficient capital market, the market reaction is indicative of the anticipated future performance conditional on relevant information (Perez-Gonzalez, 2006; Warner, Watts, and Wruck, 1988). Thus, market returns will be higher when an appointee with desirable characteristics is hired because investors believe that this appointee will improve performance. In this chapter, I do not look at internal appointments of executives because the identification of any causal effects between appointee characteristics and announcement returns are not straightforward in this case. From a resource-based perspective, the marginal addition in terms of human capital to the firm is likely to be smaller when internal candidates (who, most likely, already contribute to bank decision-making in senior positions) are appointed compared to an externally appointed director.

My sample consists of 252 executive appointment announcements by 145 US banks. Exploring this dataset, I examine whether the stock market reaction to the appointment announcement is affected by seven characteristics of the appointee: (1) age, (2) gender, (3) the number of prior executive directorships, (4) the number of current non-executive directorships (busyness), (5) the number of non-banking

industries (in which the appointee has experience), (6) an Ivy League education and (7) an MBA degree.

There are two main econometric challenges I face in the analysis. First, a bank's decision to make a top executive appointment could be driven by endogenous factors, e.g., when a bank is not performing well and faces shareholder pressure to improve performance by making new appointments (Berger, Kick, and Schaeck, 2014; Fee, Hadlock, and Pierce, 2013). I therefore exclude appointments where the press coverage indicates an appointment followed investor dissatisfaction with management or corporate strategy. The second challenge is that, since I am interested in the expected performance effects linked to a new appointment, my sample only contains single appointment announcements which involve external appointments (i.e., executives who have previously not worked for the sample bank). This might introduce a selection bias when the decision to make a single (rather than multiple) appointment announcement or the decision to choose an external (rather than an internal) appointee correlates with factors associated with announcement returns. I address this second challenge using the Heckman (1979) two-step procedure and the findings I report in this chapter are robust to controlling for selection bias.

The key findings are as follows. First, announcement returns following appointments are statistically positive, suggesting that the addition of top managers, on average, is valuable for US banks. Second, I examine whether the market reaction to executive appointments is influenced by characteristics of the executive. Overall, my findings suggest that the age, education and prior experience of the executives create shareholder wealth in the US banking sector. In contrast, gender, non-banking experience or an MBA degree do not lead to any measurable market returns. In

addition, the appointment of executives who hold non-executive directorships with outside firm at the time of the appointment results in negative returns, consistent with the hypothesis that busy executives have less attention to focus on an individual bank (Fich and Shivdasani, 2006).

Third, my analysis of interaction terms shows that the wealth effects linked to executive characteristics are moderated by how much influence the incoming executive is expected to hold over the bank. Thus, the expected performance effects of top executives are reduced as bank boards become more independent. By contrast, the expected performance effects are higher for CEOs, confirming that the CEO is the most important decision-maker in the bank.

Overall, this chapter makes three significant contributions to the literature. First, I contribute to a growing literature that uses manager fixed effects to address the question of how important executive "styles" are to various corporate outcomes (Adams, Almeida, and Ferreira, 2005; Bamber, Jiang, and Wang, 2010; Bertrand and Schoar, 2003; Frank and Goyal, 2007; Graham, Li, and Qiu, 2012). It is empirically challenging to quantify the effects of individual executives on firm performance. Fee, Hadlock, and Pierce (2013) argue that executive turnover, which forms the empirical basis to work out executive styles, may frequently be endogenous (e.g., when they follow a period of underperformance). When focusing on "exogenous" CEO replacements brought about by CEO retirements and deaths, the authors do not find evidence of manager fixed effects in corporate policy choices. This raises the question whether or not the results of the manager styles literature are biased and that whether, more broadly, executives matter for corporate outcomes.

This chapter offers an alternative route to showing that executives indeed matter. Unlike Fee, Hadlock, and Pierce (2013) I do not focus on executive "styles", but on demographic and experience variables of executives. I show that the majority of executive appointments are linked to value gains around the announcement date. By analyzing the variation in short-term returns following executive appointments, I can exclude events other than the appointment causing the observed effect. I thus interpret the results as evidence demonstrating that it matters who bank executives are in a similar way that much of the executive styles literature demonstrates.

Second, this chapter provides direct empirical evidence on the value of top executive characteristics in the US banking sector. I am unaware of any published research that looks at the value of top executives in the banking sector. Since the banking sector is relatively opaque, complex and skill-intensive (Philippon and Reshef, 2012), I contribute towards uncovering the "black box" of desirable characteristics top corporate leaders should possess to affect performance in the banking sector. In addition, my findings add to the current debate on the value of generalist versus specialist managerial experience in banking. While many studies recognise the growing importance of general managerial experience (Custodio, Ferreira, and Matos, 2013; Lazear, 2004), I show that cross-industry experience is not value-relevant to US bank shareholders.

Third, this chapter contributes to the scant literature on governance inside the top management team. Despite the central roles CEOs and other executives play in managing the company, there are surprisingly few studies that focus on top executives (e.g., Berger, Kick, and Schaeck, 2014; Landier et al., 2013; Masulis and Mobbs, 2011). Recently, Kim and Lu (2015) show how strengthening board

independence weakens executive suite independence, which is proxied by the fraction of executives appointed before the current CEO. I similarly focus on the interplay between the boards and top management teams and demonstrate that board independence weakens the expected performance effects linked to certain executive characteristics.

2.2 Literature review

2.2.1 THEORETICAL BACKGROUND

Much research in both non-financial and financial firms has devoted considerable attention to studying the board of directors.[21] For example, recent studies analyze the effects of board size on firm value (e.g., Coles, Daniel, and Naveen, 2008), the optimal balance between non-executive and executive directors (e.g., Dahya and McDonnell, 2007; Dulewicz and Herbert, 2004), the impact of board diversity on firm value (e.g., Carter et al., 2010; Erhardt, Werbel, and Shrader, 2003), or the value of firm-level governance practices (e.g., Van Essen, Engelen, and Carney, 2013; Ward, Brown, and Rodriguez, 2009). There is also a stream of research that looks at the impact of gender diversity on firm performance (e.g., Adams and Ferreira, 2009; Farrell and Hersch, 2005; Rose, 2007; Singh, Vinnicombe, and Johnson, 2001). In the banking industry, Adams and Mehran (2012) and Andres and Vallelado (2008) show some evidence that bank board structure is relevant for bank performance.

However, relatively little attention has been paid to top executives who are responsible for managing the bank on a daily basis. There remains considerable uncertainty around whether or not individual executives matter for corporate

[21] See Adams, Hermalin and Weisbach (2010) and de Haan and Vlahu (2015) for a review on recent developments of corporate governance literature in the non-financial and financial industries respectively. See also Song and Thakor (2006) for an analysis of the advisory role of the boards.

outcomes. Thus, neoclassical economics assumes that individuals are homogeneous and different executives are perfect substitutes for each other. Agency theory, while acknowledging that executives may pursue different courses of action to advance their personal interests, sees executive actions shaped by the quality of corporate governance in the organisation.

In contrast, the management literature and Hambrick and Mason's (1984) upper echelons theory suggests that individual characteristics matter. Upper echelons theory argues that executives' idiosyncratic experiences affect their interpretations of strategic decision-making situations and, in turn, affect their strategic choices and performance levels. Upper echelons theory predicts individual differences among executives will be most salient when the decision-making situations are complex and ambiguous as would be the case for banking organizations.

To summarize, existing theories make contradicting predictions regarding whether executives matter for firm outcomes. To shed light on this issue, I use variations in observable demographic and experience characteristics of executives to answer two key empirical questions: (1) *whether* executives matter and (2) *how* executives matter.

2.2.2 EXECUTIVE CHARACTERISTICS AND BANK PERFORMANCE

In this section, I explain how demographic and experience characteristics of executives affect the announcement returns. The characteristics I focus on are (1) age, (2) gender, (3) the number of prior executive directorships, (4) the number of current non-executive directorships and (5) the number of non-banking industries (in which the executive has experience), (6) Ivy League education and (7) MBA degree.

Age. The age of the appointees could impact their decision-making capability, risk-taking behavior, career concerns and economic incentives. Compared to younger appointees, older ones have more experience in making decisions when they face complex and ambiguous tasks (Worthy et al., 2011). Furthermore, older appointees face less career uncertainty and have fewer incentives to improve their job security. Thus, they are less likely to engage in value-destroying excessively risky activities. For example, Yim (2013) shows that older CEOs are less likely to engage in M&A activities and tend to perform better. Hence, older appointees could create wealth for bank shareholders.

However, younger appointees have more energy and drive (Harman, 1991; Roberts and Rosenberg, 2006). This could translate into other characteristics such as enthusiasm, decisiveness and ambition. In addition, compared to older appointees, younger ones have more ideas, are quicker in learning new technologies (Grund and Westergård-Nielsen, 2008) and are able to make innovative decisions. With these qualities, younger appointees may create shareholder wealth.

Gender. Female appointees possess unique skills, experience and networks, allowing them to contribute to the functional decision making capability of the bank. In addition, female appointees could counterbalance potentially excessive risk-taking behavior by male colleagues. For example, Faccio, Marchica, and Mura (2015) document that firms run by female CEOs have lower leverage, less volatile earnings, and a higher chance of survival than firms run by male CEOs. Since excessive risk-taking could destroy value, the appointment of a female executive could create wealth for bank shareholders.

However, there is a possibility of conflict between the newly appointed female executive and the existing male executives. It may prove difficult for female executives to be listened to on an equal basis by other members if there are very few females on the board or in the executive suite (Terjesen, Sealy, and Singh, 2009). This could impose psychic costs on the female executive, which could result in performance losses (Becker, 1957).

Empirical results that attempt to link the presence of female executives to firm performance are mixed. For example, Lee and James (2007) find a significant negative stock market reaction to the news of female CEO appointments while Gupta and Raman (2013) find no gender-specific difference in the stock reactions to the news of the CEO appointment or in the post-appointment operating performance of firms. Adams and Ferreira (2009) show that for firms with good corporate governance standards in place, more gender-diverse boards are negatively associated with firm performance.

Prior executive directorships experience. It is possible that there is a unique set of skills and managerial abilities acquired by those with prior executive directorships that sets them apart from other individuals (Fama, 1980; Fama and Jensen, 1983). Hence, holding prior executive directorships in listed firms signals the appointee's proven track record and accomplishments. In addition, experienced appointees also bring their existing social ties and networks to the bank. This places the bank in the networks of other firms, giving it access to various external constituencies such as industry regulators (Hillman, Cannella, and Paetzold, 2000). Looking at diversifying M&A, Custodio and Metzger (2013) show that when the acquirer's CEO has prior experience working in the target industry, acquirer's

abnormal announcement returns are higher than those generated by a CEO without similar experience.

Current non-executive directorships (busyness). The appointment of an executive with non-executive directorships could give the bank "endorsement benefits", allowing it access to corporate elites and external resources (Fich, 2005; Masulis and Mobbs, 2011).

However, appointees holding non-executive directorships can be distracted from their responsibilities at the bank (Ferris, Jagannathan, and Pritchard, 2003; Fich and Shivdasani, 2006). They might not have the time and energy to fulfil their duties. Multiple directorships have been associated with lower board inputs from busy directors (Jiraporn et al., 2009). Bar-Hava, Gu and Lev (2013) show that when busy directors resign from one of the board positions, investors of firms which the directors continue to serve react positively to the news. Finally, examining US commercial banks, Grove et al. (2011) show that the proportion of busy directors has a weak inverted-U relationship with bank performance.

Experience in non-banking industries. Several studies suggest that general skills acquired through experience in a diversified set of industries are becoming increasingly important and value-adding (e.g. Cremers and Grinstein, 2013; Custodio, Ferriera, and Matos 2013; Lazear, 2004). This allows appointees to make a variety of decisions in different contexts. However, as the banking industry is highly specialized, appointees with experience in multiple non-banking industries might have fewer specialist financial skills and thus, might be less capable of making technical decisions.

Ivy League education. I choose Ivy League institutions[22] as an indicator of highly reputable universities. While not a perfect proxy for academic excellence, there is empirical evidence showing that Ivy League graduates perform better than non-Ivy ones. For example, Laderman (1994) finds that during the period from the 1989-1993 period, mutual funds managed by Ivy League graduates generally outperform their non-Ivy counterparts. More recently, Falato, Li, and Milbourn (2015) demonstrate that CEOs who study at more selective institutions are paid at a premium and this effect is associated with talent. In addition, Ivy League graduates often have access to certain elite groups including successful businesspeople or experts in their own areas.

However, Ivy League educated appointees might choose to engage only with peers with a similar educational background and refuse to collaborate with other members in the executive team. This could result in an unhealthy corporate culture where different social groups compete for power (Farnum, 1990). Since conflicts of social preference can impose psychic costs on team members and lower overall group performance (Becker, 1957), the presence of Ivy League educated appointees could destroy shareholder wealth.

MBA degree. One well-documented benefit of an MBA degree is the extensive social links that the appointees form during their MBA study. Appointing executives with an MBA degree could place the hiring bank in a more central position in the corporate social networks, and this could create value for bank shareholders.

[22] Ivy League institutions are eight North Eastern American higher education institutions, including Brown University, Columbia University, Cornell University, Dartmouth College, Harvard University, Princeton University, University of Pennsylvania and Yale University.

However, there is no clear empirical evidence suggesting that MBA executives outperform non-MBA ones. For example, Chevalier and Ellison (1999) find that hedge fund managers with an MBA degree do not perform significantly better than those without one. Furthermore, McCabe, Butterfield and Trevino (2006) show that self-reported cheating is higher in MBA program than in other graduate programs. Since individuals who cheat at school also tend to cheat in the workplace (Nonis and Swift, 2001), MBA executives might be more likely to commit wrongdoing during their tenure at the bank. This could destroy shareholder wealth because the losses associated with corporate fraud can be enormous (Karporff, Lee, and Martin, 2008a).

Overall, there are arguments for both positive and negative effects linked to the executive characteristics I discuss above. Therefore, it is ultimately an empirical question to see whether the director characteristics have positive or negative effects on shareholder wealth.

2.3 Data and empirical strategy

2.3.1 DATA

I examine new appointments of executives to US banks from January 1999 to December 2011. I start by obtaining a list of all banks on BoardEx, a leading business intelligence service that provides information on executive characteristics. *BoardEx* covers in excess of 700 US banks which is far more than other similar databases which track executives over time, allowing me to also include smaller banks into the sample. Recently, several studies have used BoardEx to obtain director-level data. For example, Custodio, Ferreira and Matos (2013) use it to track

the lifetime work experience of S&P 1500 CEOs and Van Essen, Engelen, and Carney (2013) use it to obtain board characteristics of European firms. Since BoardEx covers executive-level information from 1999 onward in good detail, my sample period starts in 1999.

I then use Factiva to search for newspapers articles containing the search terms related to executives ("officer", "executive" etc.) and appointments ("appoint", "name" etc.). To avoid missing appointment events, I keep my search terms generic and avoid using specific terms such as 'executive director'. As in Custodio and Metzger (2013), I retain appointments to executive positions including CEO, CFO, COO, CRO, CIO, Chairman, President, Division CEO, Division President, Division Chairman, Head of Division, Regional CEO, Regional President, and Regional Chairman. Some of the executive appointments are simultaneously board appointments. This is the case for most CEO appointments and for a limited number of President or COO appointments. Since investors could react differently to appointments that mix the hiring of a new executive with board appointments, I will deal with this possibility in subsequent sections.

The event date is defined as the earliest trading day when the announcement is made. In the final sample, I impose two exclusion criteria to ensure that the stock market reaction is purely driven by the event of the incoming executive appointment. First, I remove all appointment announcements that are simultaneously announced with other corporate events (e.g., earnings or merger announcements) because the stock market reactions might be confounded by the other news items in these cases. Second, I exclude all appointment announcements that are made simultaneously with announcements of *unplanned* executive departures. I exclude these announcements,

because the stock market reaction to this type of event might be driven by the predecessor's unplanned departure rather than by the incoming executive appointment. Planned departures (that is, previously announced executive departures due to retirement) are kept in the sample.[23] I also remove appointment announcements where appointee information cannot be retrieved from BoardEx and where daily stock returns are not available from the Center for Research in Security Prices (CRSP) database. I then cross-check each announcement with information disclosed in *BoardEx* and in the bank's financial reports to verify the accuracy of the information.

This generates a set of 658 executive appointment announcements by 308 banks. The 658 appointment announcements are classified into three categories: (1) single appointment announcements of externally-hired executives (252 cases), (2) single appointment announcements of internally-promoted executives (271 cases), and (3) appointment announcements where two or more executives are simultaneously appointed (135 cases).

The sample of interest consists of single and externally-hired appointment announcements. While differences in the announcement effects for externally- versus internally-hired directors are an interesting research question, this is beyond the scope of the present chapter. In this chapter, I restrict the sample to externally-hired executives to unambiguously measure the marginal value effect linked to the inclusion of new executives. Compared to an externally appointed director, the marginal addition in terms of human capital to the firm is likely to be smaller when

[23] Since investors are already aware of the retirement of the outgoing executive, I argue that the stock market reactions to planned retirement announcements are purely driven by the joining event of the incoming executive

internal candidates who already contribute to bank decision-making are appointed. Similarly, I cannot separate the announcement effects linked to individual executives when multiple executives are simultaneously appointed. However, focusing solely on external appointments could introduce a selection bias when banks choose to make external appointments over types of appointments. I will deal with this potential selection bias in subsequent sections. Table 2-1 summarizes my classification of 658 executive appointment announcements.

Table 2-1 Sample distribution

This table reports the composition of the sample of 658 announcements of executive appointments to 308 US banks between 01 January 1999 and 31 December 2011. Based on the information provided in the newspapers announcements, I classify the appointment announcements into three categories: (1) single and externally-hired appointment announcements, (2) single and internally-promoted appointment announcements, and (3) multiple executive appointment announcements. For clarity, I further classify 252 single and externally-hired appointment announcements into joining announcements and joining mixed with planned retirement announcements.

		Number
Single and externally-hired appointment announcements		
Joining announcements of the incoming executives	201	
Joining mixed with planned retirement announcements	51	**252**
Single and internally-promoted appointment announcements		**271**
Multiple appointment announcements		
All internal candidates	99	
At least one external candidate	36	**135**
All		**658**

I obtain data on appointee characteristics from BoardEx. I first include two basic demographic measures: *Age* measures the age of the appointee at the time of the appointment and Female is a dummy that that equals to 1 if the appointee is a female and 0 otherwise. Second, I include three variables that capture the appointee experience and competitiveness in the external labor market: *#Executive directorships* measures the number of executive directorships with listed firms that

the appointee has held prior to joining the bank. *Busyness* measures the number of non-executive directorships the appointee holds at the time of the appointment. *#Non-banking industries* measures the number of non-banking industries (based on 4-digit SIC codes) the appointee has worked in prior to joining the bank. Finally, I include two variables that capture executive educational background: *Ivy League* is a dummy that equals 1 if the appointee obtains at least one degree from Ivy League institutions and 0 otherwise and MBA is a dummy that equals 1 if the appointee possesses an MBA degree and 0 otherwise.

2.3.2 EMPIRICAL STRATEGY

My main purpose is to investigate how market investors evaluate appointee characteristics using the stock market reactions to executive appointments. Since my approach is to employ only single appointment announcements involving appointees external to the bank, I face two main challenges.

First, the bank decision to make an executive appointment could be driven by endogenous factors, e.g., when it is not performing well and faces shareholder pressures to improve its performance by making new appointments (Berger, Kick and Schaek, 2014; Fee, Hadlock, and Pierce, 2013). The stock market reaction to such appointments, therefore, could be driven by investor satisfaction with the bank decision to take action rather than the performance effects linked to a new appointment. Since I am interested in examining how appointee characteristics are evaluated by market investors, I exclude appointment announcements that are made because the bank is not performing well. I rely on the contents provided in the press coverage to judge whether an appointment is made due to poor performance. In

particular, if there is information indicating that the appointment is made because the bank is facing "disappointing performance" or trying to "seek a turnaround" for example, I do not include such appointment announcements in the sample.

The second challenge is that using only the sample of single and externally-hired executive appointment announcements might introduce a selection bias. This happens when the decision to make a single external appointment correlates with factors which also explain the announcement returns. For example, if underperforming banks are more likely to make single external appointment announcements and this causes negative returns, then ignoring this possibility will bias my estimates.

By observing single external appointments jointly with other appointment types (i.e., multiple executive appointments and single, internal executive appointments), I am able to address this problem using the Heckman (1979) two-step procedure. In the first step, I construct a probit model to estimate the probability that the bank will make a single and externally-hired executive appointment announcement. Let a dummy variable be equal to 1 if the bank makes a single external announcement and 0 otherwise. The value of q would be determined by:

$$q = \varsigma^{*}\mathbf{Z} + \varepsilon$$

where **Z** contains appointee-level and bank-level variables that may influence the bank's decision to make a single and externally-hired appointment. The predicted individual probabilities obtained in the probit model are then used to calculate the inverse Mill's ratio for inclusion in the second-stage model as an additional explanatory variable (Heckman, 1979). Essentially, this procedure allows me to take into account the potential selection bias when banks choose to make a single external

appointment instead of other appointment types. In the second-step, I estimate the following regression model to examine the effects of appointee characteristics on the announcement returns:

$$\text{5-day CAR (\%)} = \alpha + \beta_1 \text{ appointee characteristics} + \beta_2 \text{ control variables} + \beta_3 \sigma \frac{\phi(q)}{\Phi(q)} + \varepsilon$$

The second-step regression can now be updated by including the term $\phi(q)/\Phi(q)$ in the regression, where $\phi(q)/\Phi(q)$ is the inverse Mill's ratio (Heckman, 1979). The dependent variables are 5-day CAR (%) around the announcement of a single externally-hired executive appointment. Appointee characteristics measures are defined as previously. Control variables refer to a set of variables that I include to ensure that the results on appointee characteristics are robust to the inclusion of these variables in the regression. I cluster standard errors at the bank-level.

The Heckman procedure requires an instrument in the form of a variable that influences the first step (the probability that a bank makes a single external appointment), but not the second-step (the appointment announcement CARs). I use the natural logarithm of the distance from the bank's headquarter to an international airport as an instrument (see Adams, Akyol, and Verwijmeren (2015) for a detailed discussion of this instrument). The economic rationale behind this instrument is that banks with better access to a good talent pool are more likely to hire externally. Furthermore, holding all else constant, better-located banks are more attractive to talented executives and this could motivate them to move to work for the bank. Thus, these banks are less constrained in choosing executives and are more likely to hire externally. In addition, other than affecting the bank's access to local director pool,

there is no reason to believe that this instrument would affect the announcement returns to director appointment. Thus, I postulate that this is a suitable instrument for my model.

2.4 Determinants of single and externally-hired executive appointments

I first study the characteristics of appointees and banks that make single and externally-hired executive appointments. I report the probit estimates where the dependent variable equals 1 if banks make a single external executive appointment and 0 otherwise. This analysis is estimated over the population of appointment announcements (which includes the sample of single appointment announcements of externally-hired executives as well as single appointment announcements of internally-promoted executives and appointment announcements where multiple executives are appointed to executive and board positions).

The explanatory variables I include are appointee-level and bank-level variables. Appointee-level variables are the seven appointee characteristics defined as previously. I then include bank-specific variables, including bank size, which is the natural logarithm of the bank total assets (Bank size); charter value, which is the ratio between the market value of equity and book value of equity (Charter value); bank liabilities, which is the ratio of total (book) liabilities to the book value of equity (Leverage). I further control for bank portfolio risk using the ratio of risk-weighted assets to the book value of total assets (Portfolio risk). I also control for the prior bank performance using an accounting-based performance measure: return on assets (ROA), which is the ratio of net income to total assets. All bank-specific variables are lagged at time *(t*-1*)*. Bank accounting information is collected from

fourth quarter Consolidated Financial Statements for Bank Holding Companies (BHCs), i.e. Form FR 9Y-C from the Federal Reserve Board database.

I also include a set of bank governance variables that could have significant impacts on the probability of banks making a single external appointment. I include board characteristics, such as the total number of executive and non-executive directors on the board (Board size), the proportion of non-executive directors on the board (Board independence), and whether the CEO is also a chairman (Duality). Furthermore, since the nominating committee is responsible for searching for and nominating executives, I add a dummy variable that equals 1 if the CEO sits on the nominating committee and 0 otherwise (CEO in Nom). When the bank does not have a standing nominating committee, *CEO in Nom* takes the value of 1. Data on bank governance are collected from BoardEx. Finally, I add a dummy variable to indicate whether the incoming executive joins as a CEO (CEO Post) and whether the appointment is made after the 2008 financial crisis (Post crisis). Table 2-2 shows the summary statistics and variable definitions. Table 2-3 shows the pairwise correlations between the variables.

Table 2-2 Summary Statistics

This table reports the descriptive statistics of the variables in the sample. The sample consists of 252 single externally-hired executive appointment announcements to 145 US banks between 01 January 1999 and 31 December 2011.

Variable	Definition	N	Mean	SD	p1	p99
Panel A: Executive characteristics						
Age	The age of the appointee	252	49.47	6.54	35.00	66.00
Female	Dummy equals to 1 if the appointee is a female and 0 otherwise.	252	0.06	0.24	0.00	1.00
#Executive directorships	Number of executive directorships at listed firms that the appointee holds prior to joining the bank	252	0.69	0.86	0.00	4.00
Busyness	Number of non-executive directorships the appointee holds at the time of the appointment.	252	0.06	0.32	0.00	2.00
#Non-banking industries	Number of non-banking industries the appointee has worked in prior to joining the bank.	252	0.25	0.80	0.00	5.00
Ivy League	Dummy that equals to 1 if the appointee obtains at least one degree from Ivy League institutions and 0 otherwise	252	0.15	0.35	0.00	1.00
MBA	Dummy that equals to1 if the appointee possesses an MBA degree and 0 otherwise	252	0.46	0.50	0.00	1.00
Panel B: Bank characteristics						
ROA	Earnings before interests and taxes (EBIT) divided by book value of total assets.	252	1.26	1.27	-2.63	5.63
Bank size	Natural logarithm of total assets	252	22.84	2.06	19.49	28.41
Portfolio risk	Risk-weighted assets divided by book value of total assets	252	0.76	0.28	0.03	0.93
Charter value	Market value of equity divided by book value of equity	252	1.67	1.06	0.13	4.60
Leverage	Book value of liabilities divided the book value of equity	252	9.95	3.50	1.52	19.68
Board size	Number of executive and non-executive directors on the board.	252	12.10	3.58	6.00	21.00
Board independence	The proportion of non-executive directors on the board.	252	0.76	0.14	0.25	0.93
Duality	Dummy that equals to 1 if the CEO is also a Chairman and 0 otherwise	252	0.52	0.50	0.00	1.00
CEO in Nom.	Dummy that equals to 1 if the CEO sits in the nominating committee and 0 otherwise	252	0.10	0.30	0.00	1.00
CEO post	CEOPOST equals to 1 if the appointee is appointed to a CEO position and 0 otherwise.	252	0.27	0.43	0.00	1.00
Distance to airport	The distance from the bank's headquarter to the nearest international airport (miles)	252	18.23	19.50	0.7	104

Table 2-3 Correlation matrix

This table presents the pairwise correlation coefficients between the variables used in the regression analysis. Definitions of all variables are included in table 2-2. Bold coefficients denote statistical significance at 5% level.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
(1) 5-day CAR (%)	1.00																		
(2) Age	0.08	1.00																	
(3) Female	0.00	-0.06	1.00																
(4) #Executive directorships	0.08	**0.22**	-0.06	1.00															
(5) Busyness	-0.10	**0.18**	0.05	0.12	1.0														
(6) #Non-banking industries	-0.06	**0.17**	-0.02	**0.22**	**0.60**	1.00													
(7) Ivy League	0.10	0.11	-0.06	0.03	0.09	0.05	1.00												
(8) MBA	0.01	0.05	0.12	0.09	0.02	0.11	0.09	1.00											
(9) ROA	-0.07	**-0.27**	-0.01	-0.12	-0.05	-0.07	0.03	-0.03	1.00										
(10) Bank size	0.04	0.09	0.10	**0.18**	**0.26**	**0.30**	**0.22**	0.00	0.05	1.00									
(11) Portfolio risk	-0.01	0.02	0.09	0.04	0.04	-0.04	-0.02	-0.03	0.01	0.00	1.00								
(12) Charter value	**-0.16**	-0.11	-0.02	-0.04	-0.05	-0.03	0.07	-0.02	**0.65**	0.02	0.04	1.00							
(13) Leverage	0.01	0.00	-0.09	0.07	0.00	0.07	0.10	0.03	**-0.19**	**0.18**	0.01	0.00	1.00						
(14) Board size	0.03	0.02	0.00	-0.01	**0.15**	0.11	0.06	0.05	0.01	**0.33**	**0.14**	0.12	0.03	1.00					
(15) Board independence	0.08	-0.04	0.06	0.13	0.08	0.08	0.04	0.03	**-0.26**	**0.19**	0.06	**-0.26**	0.02	0.05	1.00				
(16) Duality	0.03	-0.09	**0.15**	-0.02	-0.03	-0.08	0.09	0.04	0.09	**0.22**	0.04	0.07	0.08	0.09	-0.05	1.00			
(17) CEO in Nom	0.04	-0.06	-0.09	-0.09	-0.03	-0.06	-0.07	0.03	0.07	**-0.16**	0.01	0.08	-0.01	-0.01	**-0.26**	-0.04	1.00		
(18) CEO post	-0.07	**0.17**	-0.12	0.08	-0.06	-0.07	0.08	0.06	-0.09	**-0.23**	0.07	0.01	0.03	**-0.15**	-0.09	-0.22	0.02	1.00	
(19) Distance to airport	-0.10	0.01	-0.04	-0.06	-0.07	**-0.13**	-0.06	-0.02	-0.03	**-0.26**	0.11	-0.05	0.06	-0.01	-0.08	-0.05	0.09	0.24	1.00

Table 2-4 presents the results of the first-stage probit regression. Consistent with my expectations, the natural logarithm of distance to a major airport is negatively related to the likelihood of single external appointments, confirming its statistical validity as an instrument. In terms of appointee-level variables, the probability of a single external appointment is higher when the appointees have an Ivy League education. This could be because, in deciding between different potential candidates, banks tend to look for an unambiguous signal of competence. An Ivy League education could easily allow one candidate to stand out from other candidates. In addition, a single external appointment is more likely to include appointees with an MBA degree and is less likely to include those having prior executive directorship experience.

In terms of bank-level characteristics, the results indicate that the growth prospect of the bank, measured by charter value, is inversely related to the likelihood of single external appointment. This finding supports the notion that banks look for external human capital when they need someone with new perspectives to enhance their growth potential. Finally, banks are less likely to appoint an external candidate to a CEO position. This result is consistent with Cremers and Grinstein (2013), who report that external CEO succession is much less common than internal CEO succession in the banking industry.

In essence, along with appointee-level characteristics, bank-level characteristics differ systematically for firms that make the single external appointments contained in my sample as opposed to other types of appointments. Therefore, not accounting for

these differences could bias the estimates of the expected performance effects linked to director appointments.

Table 2-4 Probit estimates of probability of single and externally-hired appointments

This table estimates the likelihood that the bank is going to make single and externally-hired appointments. This analysis is estimated over the full sample of 658 executive appointment announcements, including single and externally-hired appointment announcements (my sample of interest), single and internally-promoted appointment announcements, and multiple executive appointment announcements. The dependent variable is a dummy that equals to 1 if the bank makes a single and externally-hired appointment. Year fixed-effects are included. Definitions of all variables are included in table 2-2. t-statistics are reported in brackets. The symbols ***, **, *, denote significance at the 1%, 5% and 10% level, respectively.

	(1)	(2)	(3)
Appointee-level characteristics			
Age	-0.01*	-0.01	-0.01
	(-1.69)	(-1.47)	(-1.49)
Female	-0.36	-0.37	-0.33
	(-1.55)	(-1.58)	(-1.39)
Executive directorships	-0.38***	-0.39***	-0.39***
	(-4.04)	(-4.15)	(-4.19)
Busyness	-0.27	-0.26	-0.27
	(-1.34)	(-1.29)	(-1.31)
#Non-banking industries	0.17*	0.17*	0.15
	(1.84)	(1.79)	(1.61)
Ivy League	0.30*	0.28	0.26
	(1.75)	(1.61)	(1.44)
MBA	0.50***	0.51***	0.53***
	(4.40)	(4.48)	(4.57)
Bank-level characteristics			
ROA	0.08	0.09	0.09
	(1.35)	(1.41)	(1.44)
Bank size	-0.02	-0.01	-0.04
	(-0.59)	(-0.44)	(-1.20)
Portfolio risk	0.17	0.16	0.14
	(1.24)	(1.17)	(0.97)
Charter value	-0.18***	-0.18**	-0.18**
	(-2.59)	(-2.39)	(-2.39)
Leverage	-0.01	-0.01	-0.01
	(-0.83)	(-0.81)	(-0.81)
Board size	-0.02	-0.02	-0.02
	(-1.35)	(-1.27)	(-1.04)
Board independence	0.61	0.39	0.38
	(1.42)	(0.82)	(0.79)
Duality	-0.14	-0.16	-0.14
	(-1.28)	(-1.45)	(-1.28)
CEO in Nom	0.33*	0.42**	0.46**
	(1.82)	(2.05)	(2.21)
CEO Post	-0.56***	-0.57***	-0.52***
	(-4.02)	(-4.01)	(-3.66)
Post crisis	0.06	-0.14	-0.15
	(0.41)	(-0.28)	(-0.30)
Distance to airport			-0.22***
			(-3.96)
Year fixed-effects	No	Yes	Yes
Pseudo R-squared	11.73%	12.58%	14.19%
Observations	658	658	658

2.5 Event study methodology and results

2.5.1 EVENT STUDY METHODOLOGY

I use event study methodology to examine the stock market reactions to single and externally-hired appointment announcements (N=252). Following prior studies on executive appointments, I concentrate on the time period immediately surrounding the appointment announcement.

Specifically, I estimate the following market model:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} t = -300, \ldots, -46 \quad (2\text{-}1)$$

where R_{it} are the daily stock returns for firm *i* at day *t* and R_{mt} are equally-weighted CRSP index return for day *t*. I estimate the model parameters using 255 daily return observations starting from 300 to 46 days before the executive announcement date. I specify that there is no other executive appointment made during this estimation period. For robustness, I also use a different estimation period (–146, –46) and a different market benchmark (Datastream All US Banks Index). I construct abnormal returns as the sum of the prediction errors of the market model. To test for the statistical significance of the abnormal returns (ARs) and the cumulative abnormal returns (CARs), I run the Patell-Z test and the Wilcoxon sign-ranked test.

2.5.2 EVENT STUDY RESULTS

Table 2-5 presents the cumulative abnormal returns (CARs) surrounding single and externally-hired executive appointment announcements. CARs are calculated for two-, three-, four- and five-day event windows from day –1 to 0, 0 to +2, 0 to +3 and 0 to +4 (0 is the appointment date). The choice of event windows is motivated from the

observation that the appointee is new to investors. Hence, investors require time to do their research on the appointee before they could accurately evaluate the appointee's impact on bank performance. Thus, this is likely to take a couple of days until a reliable and market price-moving assessment can be made. Table 2-5 shows that the stock market reaction to the appointment news, on average, is positive. Two-day (–1, 0), three-day (0, +2), four-day (0, +3) and five-day (0, +4) CARs are +0.71%, +0.31%, +0.47% and +0.99%, respectively. I observe that shorter event windows such as two-day (–1, 0) or three-day (0, +2) are not statistically significant while longer event window of (0, +4) is significant (at 5% level for mean and median significance tests). Hence, this validates the expectation that there is a lag in the stock market reaction to the appointment news.

Although the average CAR is positive, CARs are not always positive. For example, 118 out of 252 executive appointments (46.8%) are associated with negative returns over 5-day window. Therefore, the next sections of this chapter will investigate the determinants of stock market reactions to single and externally-hired executive announcements.

Table 2-5 The stock market reaction to announcements of single and externally-hired appointments

This table shows the stock price reactions to 252 single and externally-hired executive appointment announcements to 145 US banks between 01 January 1999 and 31 December 2011. I report abnormal returns for different event windows surrounding executive appointment announcements. In addition to the mean and the median abnormal return, I also report the Patell-Z test, the Wilcoxon sign-raked test and the percentage of positive abnormal returns. The symbols ***, **, * denote significance at the 1%, 5% and 10% level, respectively.

Event window	N	Average CAR (%)	Patell-Z	Median CARs	Sign-ranked	% Positive CARs
-1 to 0 day	252	0.71	1.14	0.18	0.99	52.8
0 to + 2 day	252	0.31	0.55	-0.16	0.07	48.0
0 to + 3 day	252	0.47	0.74	0.14	0.49	52.0
0 to + 4 day	252	0.99	1.96**	0.24	1.65**	53.2

2.6 Regression results

2.6.1. APPOINTEE CHARACTERISTICS AND APPOINTMENT ANNOUNCEMENT RETURNS

In this section, I investigate the relationship between the announcement effects and various appointee characteristics. The dependent variables are CAR of 5-day window (0, +4) around the announcement of an executive appointment. Appointee characteristics measures are defined as previously. I include a set of control variables identical to those in table 2-4 to ensure that the results on appointee characteristics are robust to the inclusion of these variables in the regression.

Table 2-6 shows the results of the second-stage regressions against 5-day CAR (%). In columns 1, 3, 6 and 8, I show that the stock market returns are positively and significantly related to three appointee characteristics: (1) age, (2) number of executive directorships, and (3) Ivy League education. The magnitude for each of the coefficient estimates is generally consistent across columns. The coefficient estimates indicate that CARs are on average 1.2% higher when the appointee is 10 years older, 1.4% higher when the appointee has one prior executive directorships position and 3.5% higher when the appointee has an Ivy League education.

With respect to age, among several possible explanations, I argue that younger appointees have more incentives to increase their job security by engaging in risky and value-destroying activities. Thus, market investors react less favorably to the appointment of a young appointee because they envisage that this appointment will impose an additional agency cost to the bank.

Table 2-6 Appointee characteristics and stock market reactions to executive appointments

This table reports the results of multivariate Heckman (1979) regression analyses of stock market reactions to the announcements of single and externally-hired executive appointments. The dependent variables of all models are 5-day CAR (%). Lambda represents the inverse Mill's ratio of the first stage probit regression that estimates the likelihood of the bank making a single externally-hired executive appointment announcement. Definitions of all variables are reported in table 2-2. Standard errors are clustered at bank-level. t-statistics are reported in brackets. The symbols ***, **, * denote significance at the 1%, 5% and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Age	0.12*							0.13**
	(1.77)							(1.99)
Female		-0.76						1.21
		(-0.44)						(0.79)
Executive directorships			1.36**					1.53***
			(2.43)					(2.89)
Busyness				-3.27***				-3.91***
				(-2.60)				(-3.46)
#Non-banking industries					-0.34			-
					(-0.80)			-
Ivy League						3.52**		2.15*
						(2.12)		(1.65)
MBA							1.83	-1.42
							(1.56)	(-1.62)
ROA	0.60	1.27*	0.43	1.22*	1.24*	1.20*	1.34*	0.58
	(0.93)	(1.85)	(0.67)	(1.78)	(1.81)	(1.72)	(1.92)	(0.86)
Bank size	-0.18	-0.41	-0.17	-0.27	-0.37	-0.54**	-0.43*	-0.20
	(-0.82)	(-1.60)	(-0.88)	(-1.07)	(-1.43)	(-2.01)	(-1.66)	(-0.91)
Portfolio risk	-0.45	0.01	-0.58	-0.04	-0.10	-0.05	0.08	-0.78
	(-0.45)	(0.01)	(-0.56)	(-0.03)	(-0.07)	(-0.04)	(0.06)	(-0.68)
Charter value	-1.11*	-2.07***	-0.86	-2.02***	-2.04***	-2.09***	-2.11***	-0.98
	(-1.66)	(-3.01)	(-1.39)	(-2.90)	(-2.97)	(-3.07)	(-3.03)	(-1.64)
Leverage	0.07	0.02	0.08	0.00	0.02	-0.00	0.02	0.08
	(0.63)	(0.10)	(0.74)	(0.03)	(0.13)	(-0.03)	(0.12)	(0.74)
Board size	0.09	-0.01	0.13	0.03	-0.00	-0.01	-0.03	0.19*
	(0.89)	(-0.06)	(1.18)	(0.19)	(-0.03)	(-0.05)	(-0.21)	(1.70)
Board independence	5.79	10.60**	3.75	9.95**	10.48**	10.34**	10.35**	4.49
	(1.42)	(2.49)	(0.97)	(2.34)	(2.46)	(2.45)	(2.42)	(1.16)
Duality	0.36	-0.61	0.43	-0.73	-0.71	-0.80	-0.81	0.33
	(0.43)	(-0.59)	(0.51)	(-0.70)	(-0.67)	(-0.79)	(-0.77)	(0.36)
CEO in Nom	0.60	1.54	0.25	1.79	1.58	1.67	1.65	0.66
	(0.29)	(0.66)	(0.13)	(0.78)	(0.68)	(0.76)	(0.71)	(0.34)
CEO Post	-0.68	-4.09**	0.03	-3.81**	-4.03**	-4.42**	-4.48**	-0.12
	(-0.41)	(-2.07)	(0.02)	(-1.97)	(-2.06)	(-2.31)	(-2.21)	(-0.09)
Post crisis	-4.41	-7.74*	-4.69	-7.04*	-7.73*	-7.72*	-7.70*	-4.76
	(-1.21)	(-1.82)	(-1.33)	(-1.67)	(-1.83)	(-1.83)	(-1.81)	(-1.33)
Lambda	0.08	7.51***	-1.77	7.21***	7.46***	7.45***	7.77***	-1.90**
	(0.03)	(4.40)	(-1.21)	(4.12)	(4.70)	(4.39)	(4.68)	(2.34)
Time fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Single external appointments	252	252	252	252	252	252	252	252
R-Squared	9.56%	8.60%	9.87%	10.93%	9.11%	9.66%	8.58%	16.36%

The positive coefficient estimates for number of executive directorships demonstrate that prior experience performing functional tasks as a top executive equips the appointee with the most relevant expertise and skills to excel in the new job (Gary and Nowland, 2013). I obtain similar estimation results when narrowing the definition of "executive directorships" to "CEO directorships".

Columns 2, 5, 7 and 8 show that stock market returns are not affected by three executive characteristics: (1) being female, (2) number of non-banking industries, and (3) having an MBA degree.[24] Thus, my findings suggest that the gender of the executive does not matter, in the eyes of investors, for their future performance in the bank. However, this insignificant results should be interpreted with caution. It is plausible that there is information leakage surrounding the appointment of executives, particularly around the appointment of high-profile female appointments. Prior to the announcement, there could be speculation about the potential candidates and their chances of being appointed. If this is the case, the appointment news would not come as a surprise to market investors, which could explain the lack of a reaction on the announcement date. Thus, information leakage could undermine the statistical significance of some of my estimation coefficients.

Columns 4 and 8 show that the coefficient estimates for busyness are statistically significant and negative. The magnitude of the coefficient is economically large, indicating that CARs are 3.27% lower for each additional non-executive directorship the

[24] Table 3-3 indicates a high correlation of 0.56 between the number of non-banking industries and number of current non-executive directorships (busyness). Thus, in column 8, I exclude the number of prior non-banking industries to prevent the problem of multicollinearity.

appointee holds. Hence, investors expect banks appointing busy executives to perform significantly worse than those appointing more committed executives.

The coefficients on the control variables generally have the expected signs. Board independence is positive and significant, implying that the board makes better executive appointment decisions when it is highly independent. Announcement returns are also higher when the banks perform well as indicated by ROA. By contrast, charter value is statistically negative, demonstrating that investors react more positively to single and externally-hired appointments when the bank growth rate is low. Thus, investors expect the externally-hired executive to bring new perspectives and ideas and improve the bank growth opportunities.

Another interesting finding is that Lambda is statistically positive in several specifications. Lambda controls for selection bias caused by a bank's decision to make a single external appointment (rather than a different type of appointment). The positive coefficient on Lambda implies that the factors motivating banks to make a single external executive appointment correlate with positive announcement returns and that results not controlling for this will be biased.

2.6.2 ALTERNATIVE SPECIFICATIONS AND ROBUSTNESS CHECKS

I repeat the regression analysis in column 8 of table 2-6 using different event-study specifications and report the results in table 2-7.

Table 2-7 Additional evidence on the value of appointee characteristics

This table reports the results of multivariate Heckman (1979) regression analyses of stock market reactions to the announcements of single and externally-hired appointments for different specifications. Column 1 reports the coefficient estimates for an alternative event window of (0, +3). Column 2 reports the coefficient estimates for an alternative estimation period of (-146, -46). Column 3 reports the coefficient estimates using an alternative benchmark of Datastream US banks Index (BANKSUS). Column 4 excludes announcements that contain sentiments. Column 5 adds bank fixed-effects into the model. Column 6 performs a placebo regression on event window (-15, -13). Definitions of all variables are reported in table 2-2. Standard errors are clustered at bank-level. t-statistics are reported in brackets. For brevity, I do not show the control variables. The symbols ***, **, * denote significance at the 1%, 5% and 10% level, respectively

	CAR (0, +3)	Estimation period (-146, -46)	Datastream US banks index	Non-sentimental	Bank Fixed-effects	Placebo CARs (-15, -13)
	(1)	(2)	(3)	(4)	(5)	(6)
Age	0.13**	0.17**	0.08*	0.13*	0.23***	0.02
	(2.49)	(2.09)	(1.84)	(1.98)	(2.84)	(0.20)
Female	1.13	-0.08	0.99	1.25	3.13	1.47
	(0.86)	(-0.05)	(0.73)	(0.80)	(1.56)	(0.45)
Executive directorships	1.34***	1.85***	0.47	1.49***	1.13	0.45
	(2.96)	(2.73)	(1.42)	(2.79)	(0.77)	(0.13)
Busyness	-3.84***	-3.72**	-1.77***	-3.97***	-6.10***	-0.25
	(-3.22)	(-2.53)	(-2.82)	(-3.51)	(-5.12)	(-0.25)
#Non-banking industries	2.01*	2.17	1.80**	1.81	0.86	0.34
	(1.69)	(1.59)	(1.97)	(1.36)	(0.71)	(0.39)
Ivy League	-0.93	-1.73	-0.57	-1.48*	-2.53	-0.86
	(-1.23)	(-1.49)	(-0.84)	(-1.66)	(-1.17)	(-0.18)
Other control variables	Yes	Yes	Yes	Yes	Yes	Yes
Time-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Single external appointments	252	252	252	242	252	252
R-Squared	21.23%	15.06%	14.58%	13.30%	69.43%	7.12%

Column 1 of table 2-7 reports the coefficient estimates using a 4-day event window (0, +3). Column 2 uses a shorter estimation period of (–146, –46) and column 3 uses Datastream All US Banks Index (BANKSUS) as an alternative benchmark to calculate abnormal returns. Columns 1-3 show that my estimation results are similar to those of the previous section. Overall, the findings reported are insensitive to choices of event windows, estimation periods and benchmark types.

Furthermore, although the text contained in the appointment announcements made by banks are standardized, the text in a few announcements might go beyond simply announcing the new executive. For example, one announcement in the sample

explains that a new chief risk officer is appointed because the bank is currently battling with regulatory authorities and needs to improve its image after a scandal. Therefore, the stock market reactions could be interspersed with information other than those related to the new appointee. I exclude 10 such announcements and redo the analysis performed in column 8 of table 2-6.[25] As column 4 of table 2-7 shows, the new coefficient estimates are similar to those obtained previously. In addition, as some of the banks appear several times in my working sample, I add bank fixed-effects into the model. Column 5 shows that the results remain qualitatively similar to those obtained earlier.

To show that the estimation results I obtain in table 2-6 are non-random, I also run a placebo test during a 3-day event window (–15, –13). Since this event window is before the appointment announcement date, I expect none of the main coefficient estimates to take significant values. Column 6 of table 2-7 confirms this expectation. This shows that the results I obtain in the main analysis in table 2-6 are indeed driven by the event of the incoming executive appointment.

2.6.3 DOES BOARD INDEPENDENCE MODERATE THE MARKET VALUATION OF EXECUTIVE CHARACTERISTICS?

In table 2-8, I examine whether the proportion of non-executive directors influences the market evaluation of appointee characteristics. More non-executive directors on the board implies more monitoring pressure on the top executives. Thus, a board with more

[25] Among the excluded announcements, two contain political sentiments and eight point out the specific rationale behind the appointment. The rationales include: stabilizing bank operations (two cases), improving bank image after the scandal (one case), making aggressive expansion into a new product market or geographical area (five cases).

non-executive directors could inhibit executive influence and, thus, diminish the expected performance effects linked to the appointee characteristics. To verify this, I include several interaction terms which are the products of executive characteristics and the proportion of non-executive directors, such as Board independence*Age into the regression model.

Panel A of table 2-8 shows that board independence has a statistically negative effect on investor evaluation of (1) Ivy League education, (2) #executive directorships and (3) number of non-banking industries (in which the executive has experience). Although insignificant, board independence also exerts a negative effect on investor evaluation of executive's age.

To further investigate whether board independence diminishes the wealth effects of executive characteristics, I construct an F-test, the results of which are displayed in Panel B of Table 2-8. The results demonstrate that the more a board is dominated by non-executive directors, market returns become less affected by characteristics of the executive. This is consistent with the prediction that non-executive directors act as monitors to inhibit top executive discretion and influence. Thus, when the level of influence of the incoming executive is diminished, their characteristics become less relevant to investors. Consequently, in a highly independent board, the positive wealth effects of executive characteristics disappear.

Overall, I argue that executives are valuable for shareholders except when the board of directors is highly independent. In such cases, executives become value irrelevant.

Table 2-8 Appointee characteristics, board independence and stock market reactions to executive appointments

This table reports the results of multivariate Heckman (1979) regression analyses of stock market reactions to announcements of single and externally-hired appointments. The dependent variables of all models are 5-day CAR (%). Characteristic refers to the appointee characteristic shown in the column specification. Board independence is the proportion of non-executive directors on a board. Lambda represents the inverse Mill's ratio of the first stage probit regression that estimates the likelihood of the bank making a single externally-hired executive appointment announcement. Definitions of all variables are reported in table 2-2. Standard errors are clustered at bank-level. t-statistics are reported in brackets. For brevity, I do not show the control variables. The symbols ***, **, * denote significance at the 1%, 5% and 10% level, respectively.

	Age	Female	# Exec Directorships	Busyness	# Non Banking	Ivy League	MBA
Panel A: Regression results							
Board independence*characteristic	-0.11	17.00	-7.12**	4.95	-6.54**	-10.48*	3.89
	(-0.21)	(1.42)	(-2.09)	(0.29)	(-2.26)	(-1.82)	(0.70)
characteristic	0.20	-14.12	6.87	-7.26	4.91**	10.14**	-1.15
	(0.48)	(-1.43)	(0.82)	(-0.56)	(2.22)	(2.26)	(-0.25)
Board independence	11.12	10.06***	8.51	9.81***	7.06**	7.38***	8.54
	(0.44)	(2.39)	(0.52)	(2.32)	(2.32)	(2.67)	(1.62)
Lambda	0.09	7.51***	-1.97	7.20***	7.52***	7.31***	7.78***
	(0.04)	(4.51)	(-0.07)	(4.07)	(4.61)	(4.62)	(4.72)
Other control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Single external appointments	252	252	252	252	252	252	252
R-Squared	9.58%	8.68%	10.23%	11.09%	9.11%	11.45%	8.65%
Panel B: H0 = Board independence * characteristic + characteristic = 0							
F-test	0.52	1.07	0.13	0.33	1.33	0.01	2.92*
Prob> Chi^2	(0.47)	(0.30)	(0.72)	(0.57)	(0.25)	(0.94)	(0.09)

2.6.4 ARE CEOS DIFFERENT?

In Table 2-9, I examine whether the CEO dummy (CEO Post) influences the market evaluation of appointee characteristics. In the sample of executive appointment announcements, I mix CEOs with other executives such as CFOs or CROs. Because the CEO is the most important decision maker in the bank, investors might value CEO characteristics differently from those of lower-ranked executives. Thus, I include several interaction terms which are the products of appointee characteristics and CEO dummy, such as CEO Post*Age into the regression model.

Panel A of Table 2-9 shows that CEO Post has a positive effect on investor evaluation of: (1) Ivy League education and (2) number of executive directorships. This implies that market investors place additional reward on talented and experienced CEOs relative to other executives. By contrast, CEO Post has a negative effect on investor evaluation of (3) busyness. Consequently, investors place an additional value cost on a CEO who is busy holding too many non-executive directorships. Thus, I observe a negative interaction term.

To further investigate the wealth effects of CEO characteristics, I construct another F-test in Panel B of Table 2-9. Panel B shows that the wealth effects of all characteristics are enhanced when the appointee joins as a CEO. In essence, my results show that, in the case of CEOs, investors value desirable characteristics more and penalize undesirable characteristics more.

Table 2-9 Appointee characteristics, CEO dummy and stock market reactions to executive appointments

This table reports the results of multivariate Heckman (1979) regression analyses of stock market reactions to announcements of single and externally-hired appointments. The dependent variables of all models are 5-day CAR (%). Characteristic refers to the appointee characteristic shown in the column specification. CEO Post equals to 1 if the appointee is appointed to a CEO position and 0 otherwise. Lambda represents the inverse Mill's ratio of the first stage probit regression that estimates the likelihood of the bank making a single externally-hired executive appointment announcement. Definitions of all variables are reported in table 2-2. Standard errors are clustered at bank-level. t-statistics are reported in brackets. For brevity, I do not show the control variables. The symbols ***, **, * denote significance at the 1%, 5% and 10% level, respectively.

	Age	**# Exec Directorships**	**Busyness**	**# Non-banking**	**Ivy League**	**MBA**
Panel A: Regression results						
CEO Post* Characteristic	-0.04	1.59**	-10.45***	-0.81	3.77**	1.79
	(-0.24)	(2.03)	(-4.13)	(-0.33)	(2.10)	(0.81)
Characteristic	0.12*	0.74*	-2.77**	-0.52	1.19	1.51
	(1.75)	(1.68)	(-2.43)	(-0.95)	(1.33)	(1.29)
CEO Post	1.46	-1.47	-3.47**	-0.47	-2.05**	-5.40**
	(0.17)	(-1.40)	(-1.96)	(-0.37)	(-2.19)	(-2.07)
Lambda	0.08	-1.77	7.22***	7.42***	7.42***	7.77***
	(0.03)	(-1.21)	(4.36)	(4.04)	(4.61)	(4.71)
Other control variables	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes
Single external appointments	252	252	252	252	252	252
R-Squared	9.58%	9.88%	12.44%	9.13%	10.17%	8.96%
Panel B: H0 = CEO Post* Characteristic + Characteristic = 0						
F-test	0.24	9.21***	27.61***	0.30	9.27***	1.90
Prob> Chi^2	(0.62)	(0.00)	(0.00)	(0.59)	(0.00)	(0.17)

Finally, some appointment announcements entail the appointee also being appointed to the board of directors. This happens in most CEO appointments and in some President appointments. Since I have already found stronger wealth effects linked to CEO appointment, I examine whether hiring mixed with board appointment to non-CEO positions also causes larger valuation effects. Overall, the interaction coefficients are insignificant, implying that investors do not place additional value on this appointment type. For brevity, I do not report the results.

2.7 Discussion and conclusion

This chapter investigates the value of executives to shareholders of US banks by examining the stock market reaction to the appointment of new executives. The argument is that if executives are valuable to shareholders, announcement returns will be higher when executives with certain desirable characteristics are appointed to a bank. I employ an event study to compute the expected performance gains linked to executive characteristics such as age, education and experience.

Using a hand-collected of 252 executive appointments from 1999 to 2011, I demonstrate that certain executive characteristics create shareholder wealth. In particular, I show that market returns are higher when the appointee is older, has prior experience as an executive director or holds an Ivy League degree. By contrast, the appointment of an executive who holds multiple non-executive directorships results in negative returns. In addition, the gender of the appointee and experience in non-banking industries do not affect stock market returns around the announcement of a new executive.

More importantly, I show that the level of influence that the appointee is expected to exert on the bank moderates the value which shareholders attach to appointee characteristics. I first document that the wealth effects disappear or diminish substantially the higher the proportion of non-executive directors. This implies that increased board monitoring and involvement in board decision making of non-executive directors reduces the influence of the incoming executive and therefore diminishes any wealth effects linked to their appointment. In addition, my findings demonstrate that the

wealth effects are enhanced when the appointee joins as a CEO, consistent with the view that the CEO is the most important decision maker in the bank.

Overall, this chapter complements existing literature on why and how individual executives matter for firm performance. My results stress the crucial role of the nominating committee, which is responsible for searching and hiring directors (Shivdasani and Yermack, 1999). The results also have important policy implications. First, I echo de Haan and Vlahu (2015) that appointing more executives with expertise to the bank is an important policy concern. My findings are consistent with calls by policy makers to appoint more executives that are highly qualified and possess relevant industry experience. Second, this chapter does not show that the expected performance effects linked to executives vary by gender. Since it is plausible that there is information leakage surrounding the appointment of high-profile female executives, it is difficult to rely on the event study results to conclude whether increasing the proportion of female executives will affect bank performance. Therefore, my results also highlight the difficulty in using event study evidence in the debate concerning gender diversity.

3
CEO Cultural Heritage and Bank Performance under Competitive Pressure

3.1 Introduction

Do the cultural values a person inherits from her ancestors living generations ago affect her decision-making in the present time? While a growing literature in economics and finance studies culture (e.g. Ahern, Daminelli, and Fraccassi, 2015; Eun, Wang, and Xiao, 2015; Griffin et al., 2015; Guiso, Sapienza, and Zingales, 2015), the role played by the cultural heritage of senior decision-makers remains largely unexplored. This chapter aims to fill this gap. I examine how a CEO's cultural heritage shapes the way a firm reacts to an exogenous shock in industry competition. I hand-collect a novel dataset that tracks the family tree of US CEOs to demonstrate that the cultural values prevailing in the country that a CEO's ancestors originate from affect her decision-making behavior and shape firm policy choices and performance.

Culture is difficult to measure. The concept of culture is so broad that it is often confounded with other institutional or legal parameters. My identification strategy is designed to circumvent this empirical challenge. I examine CEOs who are

the US-born children or grandchildren of immigrants. I refer to these CEOs as *Gen2/3* CEOs. While Gen2/3 CEOs are exposed to the same legal, social, and institutional conditions as other CEOs, they possess a cultural heritage that is different from other CEOs. For instance, the cultural preferences and beliefs of Gen2/3 CEOs are likely to bear the mark of the countries that their parents or grandparents have emigrated from. This research design enables me to capture the heterogeneity in a CEO's cultural heritage while holding constant the institutional and economic factors that all CEOs face.[26]

To identify a CEO's cultural heritage, I hand-collect data on the country of origin of a CEO's ancestors from *Ancestry.com*. With access to more than 12.7 billion family histories, Ancestry.com is the world's largest genealogy database. I use a combination of CEO name, birth year, and birthplace to uniquely identify the family tree of each CEO. Using this approach, I manage to accurately track a CEO's ancestral country as well as whether a CEO is a Gen2/3 CEO. As an example, James Dimon, the current CEO of JP Morgan, is a third-generation descendant of Greek immigrants to the US. This fine-grained dataset enables me to construct precise tests of the role of CEO's cultural heritage on firm outcomes.

I present a multi-layered analysis that systematically points to CEO cultural heritage as a driving force behind heterogeneity in firm performance and policy choices. I show that Gen2/3 CEOs behave differently from the CEO population, and this is especially pronounced under increased competitive pressure. Further, I demonstrate that the impact of Gen2/3 CEOs on firm performance weakens gradually with later-generation descendants. Finally, the behavior of Gen2/3 CEOs can be

[26] See Fernandez (2008) for a review of this approach

traced to the cultural characteristics prevailing in the country their ancestors originate from and that this is causally related to firm policy choices. Thus, an important economic contribution of this chapter is that it does not only show an association between cultural values and an economic outcome, it also offers direct evidence that explains this association.

Identifying a causal effect of CEO cultural heritage on firm performance is challenging, because of endogenous firm and CEO matching. Fee, Hadlock, and Pierce (2013) argue that CEOs with desired characteristics are strategically appointed to take firms in a direction determined by the boards (see also, Custodio and Metzger, 2014; Pan, 2015; Pan, Siegel and Wang, 2014). Thus, it is not clear whether CEOs imprint their own preferences on a firm or whether they have been selected to implement the preferences of the board. Given this challenge, a suitable approach to test for the existence of a CEO-specific effect on firm outcomes is to study changes in firm policies that occur after an idiosyncratic shock to the preferences of both the firm and the CEO.

In this paper, I study the effect of CEO cultural heritage on firm outcomes by exploiting an exogenous shock to industry competition. I use the Interstate Banking and Branching Efficiency Act (IBBEA) of 1994 which legalizes interstate branching across the US and markedly increases competitive pressures in some US states (see Rice and Strahan, 2010). Similar to Cornaggia et al. (2015), my identification relies on the staggered (and unanticipated) deregulation of interstate branching in individual US states which introduces both geographical and temporal variations in industry competition. I argue that person-specific CEO traits linked to cultural heritage will be important under higher competitive pressures brought about by

IBBEA and use variation in competitive pressures across US states and time to isolate CEO-specific effects. This allows me to establish a causal link between CEO cultural heritage and firm performance. Given this empirical set-up, I restrict the main analysis to banks. However, as shown later on, the results hold more widely and can be replicated using non-financial firms and a shock that applies to non-financial firms.

I start the analysis of whether and how the cultural heritage of the CEO impacts firm performance by using a difference-in-differences (DiD) approach. I find that banks led by Gen2/3 CEOs are associated with superior performance under high industry competition. The economic magnitude of this effect on performance is larger than that of other CEO characteristic we control for (including education or experience). The findings are robust to using both accounting and market measures of bank performance and a set of variables that control for CEO, board, bank and local heterogeneity. The results are also robust to including various types of fixed-effects including firm fixed-effects, suggesting that corporate culture and other time-invariant unobservable factors do not explain my findings.

When further examining the generation of immigrants that a CEO belongs to, I observe a monotonic reduction in bank performance under competitive pressures as I move from CEOs who are second-generation descendants to CEOs who are later-generation descendants. Further, if Gen2/3 CEOs perform better under competitive pressure, does this effect vary according to the country that their ancestors emigrates from? My tests indicate that this is the case. I find that CEOs whose ancestors are from Germany, Italy, Poland and Russia are associated with better bank performance

under competitive pressure while those with British or Irish ancestors do not display different performance from the rest of the sample.

I rule out several alternative interpretations for these findings. First, one can argue that the decision to open or block interstate competition may not be completely unanticipated (and therefore not exogenous). For instance, some banks may have lobbied politicians to block competition. This suggests the possibility of reverse causality when banks, in anticipation of deregulation, select CEOs who match their preferences. I address this concern by employing the methodology of Bertrand and Mullainathan (2003). I examine the dynamics of bank profitability surrounding the deregulation of interstate branching and find no prior trend in bank profitability. This indicates that reverse causality does not explain the main results. I also construct an out-of-sample test where I use an alternative competitive shock that applies to non-financial firms – the 1989 Canada-United States Free Trade Agreement – and arrive at a similar conclusion that culture matters to performance under pressure.

Second, immigrants do not randomly settle in the US and are historically more dominant in certain geographic regions such as New York or Massachusetts. It could therefore be argued that the measure of CEO country of origin captures the geographical characteristics of the area that banks are chartered in rather than a CEO's cultural heritage. I address this concern by controlling for various time-variant and time-invariant local factors to show that the results are not driven by omitted geographical variables.

Third, one could argue that the measure captures CEO skills instead of cultural heritage. It is well known that immigrants invest heavily in the education of their children (Portes and Rumbaut, 2001) and Gen2/3 CEOs could therefore be more

skilled than other CEOs. I address this by controlling for observed and unobserved CEO heterogeneity. I control for CEO characteristics, such as experience or compensation incentives, that may be correlated with both the CEO being a Gen2/3 and with superior performance under high industry competition. I also find robust results when including CEO fixed-effects to control for time-invariant (or slow-moving) CEO heterogeneity such as latent managerial ability or skills.

Finally, the results could be driven by omitted institutional and economic factors outside the US and prevailing at the time when the CEO's ancestors migrate. I find robust results when controlling for GDP per capita in the year 1900,[27] life expectancy, and the legal system of the CEO's country of origin.

Next, I examine whether culture explains why the positive performance effect linked to Gen2/3 CEOs differs depending which country a CEO's ancestors originate from. In essence, I demonstrate that a CEOs' cultural heritage affects her decision-making. To test this, I examine whether the culture prevailing in the country of origin of the CEO affects bank performance under pressure. I focus on three cultural dimensions that are likely to have a significant bearing on CEO performance under pressure: individualism (versus collectivism), uncertainty avoidance, and indulgence (versus restraint).[28] These cultural dimensions are developed by Hofstede (1980, 2001) and Hofstede, Hofstede and Minkov (2010). I assign an index score to each

[27] 1900 is the year when the majority of ancestors of Gen2/3 migrate to the US.

[28] Cultures which score highly on individualism advocate the right of individuals to serve their own interests (and that of their immediate families) while opposing external interference from society, government or other institutions. In cultures that score highly on uncertainty avoidance, ambiguity and uncertainty cause discomfort. Indulgence describes a culture that allows relatively free gratification of basic and natural human drives related to enjoying life and having fun. In addition to these measures, Hofstede has three other cultural measures: masculinity, power distance and long-term vision. However, since there is little theoretical support on why these dimensions should be related to competitive behavior, I do not include them in the model.

individual country for each cultural dimension.[29] The results reveal that CEOs whose cultural heritage is characterized by higher uncertainty avoidance, lower individualism and lower indulgence are more likely to outperform under pressure. [30]

As a final step in confirming a causal relationship between cultural heritage and performance, I explore some of the mechanisms that explain the results. I show evidence that CEO cultural heritage affects performance through three bank policy choices: cost efficiency, credit losses, and acquisition performance. That is, I find CEOs with ancestors of a low-indulgence cultural background boost profitability by being more cost-efficient while CEOs of a cultural background that is uncertainty avoiding are associated with lower credit losses and better acquisition performance.

This chapter contributes to an emerging body of research that links culture to economic outcomes (e.g., Ahern, Daminelli, and Fraccassi, 2015; Eun, Wang, and Xiao, 2015; Griffin et al., 2015; Guiso, Sapienza, and Zingales, 2006, 2015). This chapter is the first to show that the cultural heritage of the CEO shapes the way a firm reacts to a changing industry environment. By exploiting an exogenous shock to the industry environment, I am able to circumvent the frequently encountered matching issues between CEOs and firms. Therefore and to the best of my knowledge, this chapter is the first to draw a causal link between CEO cultural heritage and firm outcomes. I offer direct evidence that CEO cultural heritage operates to affect real economic outcomes through its indirect impact on corporate policy choices. Further, the results shown in this chapter also contribute to work in

[29] I address concerns related to the validity of Hofstede's cultural measures using data from the General Social Survey and show the results in section 3.7.2

[30] The results are robust to controlling for the genetic distances between country pairs, which measures the biological differences as well as very persistent cultural differences between two countries (Spolaore and Waxziarg, 2009). This implies that genetic differences do not confound cultural differences in explaining performance under competitive pressure.

economics that shows how generations of immigrants to the US continue to carry a "cultural marker" from their country of origin (Fernandez and Fogli, 2006, 2009; Giuliano, 2007).

This chapter is also related to the growing literature that studies the impact of CEO attributes on corporate outcomes. Bertrand and Schoar (2003) identify significant time-invariant "managerial styles" in a range of policy choices. Various studies have subsequently attempted to explain heterogeneity in managerial styles with reference to a manager's physiology (Adams, Keloharju, and Knuper, 2015; Halford and Hsu, 2014; Limbach and Sonnenburg, 2015), life experiences (Bernile, Bhagwat, and Rau, 2015; Benmelech and Frydman, 2015; Lin et al., 2013; Malmendier and Nagel, 2011), or prior work experience (Custodio and Metzger 2013, 2014; Dittmar and Duchin, 2015). I contribute to this literature by providing evidence consistent with a time-invariant manager style in the form of culture. Aiding my identification of an effect of CEO characteristics on firms is the fact that, unlike education, career moves or many other manager characteristics previously studied, cultural heritage is not a choice that managers can make. My findings can therefore be seen as additional evidence of a manager-specific effect on firms.

3.2 Conceptual framework and hypothesis development

3.2.1 INTERGENERATIONAL TRANSMISSION OF CULTURAL PREFERENCES

To study cultural heritage I look at US-born CEOs who are the children or grandchildren of immigrants to the US (Gen2/3 CEOs).[31] The intuition behind this approach is straightforward. Gen2/3 CEOs are likely to have a different cultural heritage compared to other CEOs because their cultural preferences and beliefs are likely to bear the mark of the home country from which their parents and grandparents have emigrated. A key requirement of this strategy is that the cultural preferences must be transmitted inter-generationally, and are retained over subsequent generations of immigrants.

Theory and empirical evidence back the notion of a cultural heritage that changes little with time. This is because culture is learnt and transmitted by parents to children, between peers, and through interactions in the neighborhood and school system. However, transmission between parents and children is widely seen as the most important mechanism that determines an individual's cultural values (Bisin and Verdier, 2000, 2001). This so-called vertical transmission gives rise to a slow evolution of culture as parents teach their children what they learn from their own parents (Guiso, Sapienza, and Zingales, 2006). Giavazzi, Petkov, and Schiantarelli (2014) demonstrate that several cultural traits, such as religious, moral or family values, are persistent beyond the fourth generation of immigrants. This is consistent with the idea that the cultural assimilation of immigrants into the US occurs slowly over time (Glazer and Moynihan, 1963).

[31] I do not consider foreign-born CEOs in the sample because they are likely to face a different institutional and legal environment compared to US-born CEOs.

3.2.2 CEO CULTURAL DIMENSIONS AND BANK PERFORMANCE UNDER PRESSURE

The notion that culture influences behavior in a competitive setting is supported by the literature. Conducting field experiments in matriarchal and patriarchal societies, Gneezy, Leonard, and List (2009) find that cross-cultural differences affect how women and men react to competition. Similarly, Booth and Nolen (2012) and Dreber et al. (2011) report that cultural upbringing plays a large role in shaping competitive behavior. Building on these insights, I ask how CEO cultural heritage may shape a firm's reaction to changes in the competitive environment.

I focus on three cultural values that prior studies in economics, psychology and marketing have identified as important dimensions of competitive behavior: individualism, uncertainty avoidance and indulgence. These cultural dimensions have been identified by Hofstede (1980, 1991, 2001) and Hofstede, Hofstede, and Minkov (2010) which are amongst the most prominent studies of cross-cultural differences.

A CEO who succeeds under pressure is someone who appreciates the strength of her competitors and does not overestimate her own ability (Deshpande and Gatignon, 1994). Further, it has been widely documented that an individual’s risk attitude is highly correlated with her competitive attitude. In addition, thriving under pressure often requires hard work and self-restraint. Therefore, individualistic, risk

and gratifying attitudes are expected to be key inputs to competitive behavior and performance.[32]

Individualism

Individualism is arguably the most important cultural dimension as evidenced by its inclusion in numerous cultural classification systems such as Hofstede (1980), Fiske (1991), Schwartz (1994), and Trompenaars (1993). Individualism reflects the degree to which people focus on their own internal attributes to differentiate themselves from others. A large experimental literature has shown that individualism is associated with overconfidence and self-attribution bias (e.g. Chui, Titman, and Wei, 2010; Markus and Kitayama, 1991).

I thus expect CEOs from individualistic cultures to be more likely to overestimate their own abilities. Furthermore, individualistic people are more likely to possess analytical rather than holistic thinking skills (Choi and Nisbett, 2000; Eun, Wang, and Xiao, 2015). Thus, I expect that individualistic CEOs may not be able to think ahead of the competition and less likely to come up with holistic strategies, hence underperforming under competition.

Uncertainty Avoidance

Uncertainty avoidance is the extent to which a person is not comfortable with unpredictability and ambiguity (Hofstede 1980, 2001). Uncertainty avoidance has been shown to be significantly associated with an individual's risk preferences in

[32] There are three other cultural values identified in Hofstede (2001): masculinity, power distance and long-term vision. However, since there is little theoretical support on why these dimensions should be related to competitive behavior, I do not include them in the model. Expectedly, I find that these values play minimal role in explaining performance under pressure. The results are available upon request.

surveys with participants from a large number of countries (Rieger, Wang, and Hens, 2015) and is closely studied in behavioural economics under the label of "ambiguity aversion".

Recent empirical studies in finance show that uncertainty avoidance is associated with lower firm-level risk-taking (Li et al., 2013) and CEO uncertainty avoidance negatively affects corporate investment (Pan, Siegel, and Wang, 2014). Since uncertainty-avoiding CEOs dislike ambiguity, they may make a considerable effort to acquire as much available information about their competitors as possible. This facilitates better strategy planning and execution. Thus, I expect that an ambiguity-averse CEO can create value by avoiding these profit-destroying strategies.

Indulgence

The final cultural dimension I consider is *indulgence*, which is based on World Value Survey (WVS) items and is also included as the sixth cultural dimension in Hofstede, Hofstede, and Minkov (2010). An indulgent culture allows free gratification of basic human drives related to enjoying life and having fun. It tends to focus more on individual happiness and well-being thus assigning great importance to leisure time. In contrast, restraint cultures believe individual leisure is not as important and gratification needs to be curbed.

Being a relatively new cultural dimension, there has been little work examining the effects of indulgence on economic outcomes. I argue that an indulgent attitude is particularly relevant in the context of competition because surviving under pressure requires hard work and sacrifices in terms of personal leisure. Furthermore,

people from indulgent societies are less likely to see maintenance of order as an important goal (Hofstede, Hofstede, and Minkov, 2010). Therefore, I expect banks led by indulgent CEOs may not follow strict discipline and lose out in competition as a result.

3.3 Identification and Data

3.3.1 IDENTIFICATION: COMPETITIVE PRESSURE IN THE US BANKING SECTOR

In this chapter, I use a quasi-natural experiment, the staggered adoption and removal of barriers to interstate branching in the 1990s, to identify the causal effect of CEO cultural heritage on firm outcomes. The deregulation of branching laws introduces an unexpected increase in industry competition at the level of individual states that is exogenous to banks and, thus, serves as an identification of any manager-specific effects on bank performance (see Cornaggia et al., 2015).

Before 1994, interstate branching is largely prohibited and there is almost no out-of-state bank branching. The Interstate Banking and Branching Efficiency Act (IBBEA) allows unrestricted interstate banking and interstate branching across the US from 1997. This relaxation leads to an exponential growth of banking activities across state borders. While there are only 64 out-of-state banks exist in 1994, this number increases to 24,000 by 2005 (Johnson and Rice, 2008).

My identification strategy relies on a unique feature of the IBBEA: the ability of individual US states to block competition by erecting barriers against deregulation. The key advantage of this identification is that different states enact the roadblocks at different points in time, which gives me multiple competitive shocks

that vary across states and time. Further, this decision is made at state-level and cannot be anticipated by individual banks. This offers an experimental setting to gauge how CEOs react to changes in competitive pressure which are exogenous to the bank which they work for (Rice and Strahan, 2010).

Specifically, US states have the option to: (1) impose a minimum age of three years on target institutions of interstate acquirers; (2) not to permit de novo interstate branching; (3) not to permit the acquisition of individual branches by an out-of-state bank; (4) set a deposit cap of 30% on an interstate bank merger transaction[33]. I define a state to be competitive if it passes (i.e., chooses not to block) either (3) or (4). This is because only these two barriers have real effects on blocking competition (Johnson and Rice, 2008) while the requirements on age and de novo interstate branching can be easily circumvented.[34] Table 3-1 lists all changes by state and year and Figure 3-1 shows the competitive states in 1996 and 2006.

[33] If a state has set a deposit cap below 30%, a bank cannot enter into an interstate bank merger with any bank holding more than 30% of the deposits in that particular state.
[34] I also construct a robustness test using all roadblocks provisions. My results remain unchanged.

Table 3-1 Interstate deregulation

This table shows the regulatory changes in the banking industry over the period of 1994-2006. Each column represents the roadblocks that a state adopts against the IBBEA provisions. Data source: Rice and Strahan (2010).

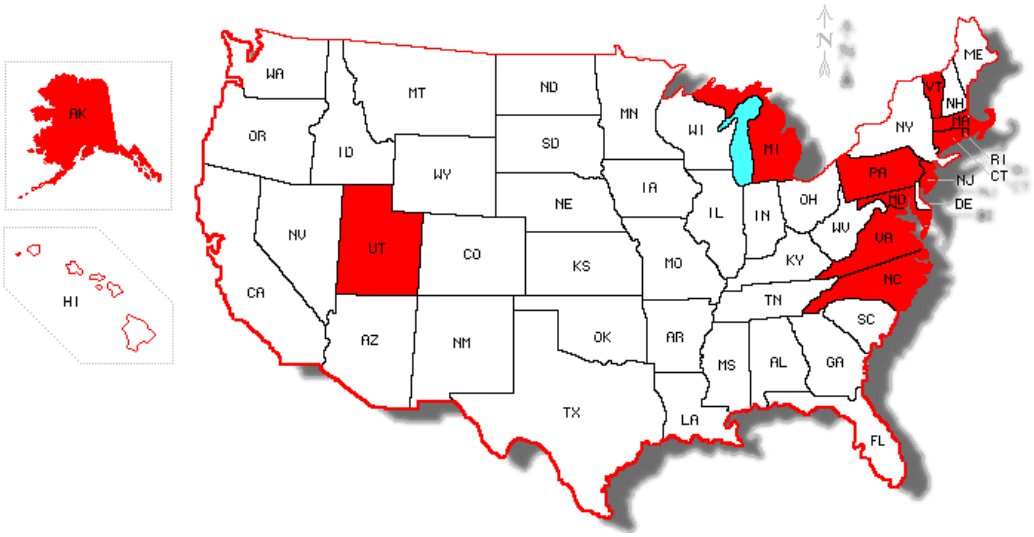
State	Effective Date	Single branch acquisition restriction	Statewide deposit cap on branch acquisition	Age restriction	De novo interstate branching restriction
Alabama	5/31/1997	Yes	30%	5	Yes
Alaska	01/01/1994	No	50%	3	Yes
Arizona	8/31/2001	No	30%	5	Yes
Arizona	09/01/1996	Yes	30%	5	Yes
Arkansas	06/01/1997	Yes	25%	5	Yes
California	9/28/1995	Yes	30%	5	Yes
Colorado	06/01/1997	Yes	25%	5	Yes
Connecticut	6/27/1995	No	30%	5	No
Delaware	9/29/1995	Yes	30%	5	Yes
DC	6/13/1996	No	30%	No	No
Florida	06/01/1997	Yes	30%	3	Yes
Georgia	05/10/1997	Yes	30%	3	Yes
Georgia	06/01/1997	Yes	30%	5	Yes
Hawaii	01/01/2001	No	30%	No	No
Hawaii	06/01/1997	Yes	30%	5	Yes
Idaho	9/29/1995	Yes	No	5	Yes
Illinois	8/20/2004	No	30%	No	No
Illinois	06/01/1997	Yes	30%	5	Yes
Indiana	07/01/1998	No	30%	5	No
Indiana	06/01/1997	No	30%	No	No
Iowa	04/04/1996	Yes	15%	5	Yes
Kansas	09/29/1995	Yes	15%	5	Yes
Kentucky	3/22/2004	Yes	15%	No	Yes
Kentucky	3/17/2000	Yes	15%	No	Yes
Kentucky	06/01/1997	Yes	15%	5	Yes
Louisiana	06/01/1997	Yes	30%	5	Yes
Maine	01/01/1997	No	30%	No	No
Maryland	9/29/1995	No	30%	No	No
Massachusetts	08/02/1996	No	30%	3	No
Michigan	11/29/1995	No	No	Np	No
Minnesota	06/01/1997	Yes	30%	5	Yes
Mississippi	06/01/1997	Yes	25%	5	Yes
Missouri	9/29/1995	Yes	13%	5	Yes
Montana	10/01/2001	Yes	22%	5	Yes
Montana	9/29/1995	N/A	+1% per year from 18% to 22%	4	N/A
Nebraska	5/31/1997	Yes	14%	5	Yes
Nevada	9/29/1995	Limited	30%	5	Limited
New Hampshire	01/01/2002	No	30%	No	No
New Hampshire	08/01/2000	No	30%	5	No
New Hampshire	06/01/1997	Yes	20%	5	Yes
New Jersey	4/17/1996	No	30%	No	Yes
New Mexico	06/01/1996	Yes	40%	5	Yes
New York	06/01/1997	No	30%	5	Yes
North Carolina	07/01/1995	No	30%	No	No
North Dakota	08/01/2003	No	25%	No	No
North Dakota	5/31/1997	Yes	25%	No	Yes
Ohio	5/21/1997	No	30%	No	No
Oklahoma	5/17/2000	No	20%	No	No
Oklahoma	5/31/1997	Yes	15%	5	Yes
Oregon	07/01/1997	Yes	30%	3	Yes
Pennsylvania	07/06/1995	No	30%	No	No
Rhode Island	6/20/1995	No	30%	No	No

South Carolina	07/01/1996	Yes	30%	5	Yes
South Dakota	03/09/1996	Yes	30%	5	Yes
Tennessee	3/17/2003	No	30%	3	No
Tennessee	07/01/2001	No	30%	5	No
Tennessee	05/01/1998	No	30%	5	Yes
Tennessee	06/01/1997	Yes	20%	5	Yes
Texas	09/01/1999	No	20%	No	No
Texas	8/28/1995	N/A	20%	N/A	N/A
Utah	4/30/2001	No	30%	5	No
Utah	06/01/1995	No	30%	5	Yes
Vermont	01/01/2001	No	30%	No	No
Vermont	5/30/1996	No	30%	5	Yes
Virginia	9/29/1995	No	30%	No	No
Washington	05/09/2005	No	30%	5	No
Washington	06/06/1996	Yes	30%	5	Yes
West Virginia	5/31/1997	No	25%	No	No
Wisconsin	05/01/1996	Yes	30%	5	Yes
Wyoming	5/31/1997	Yes	30%	3	Yes

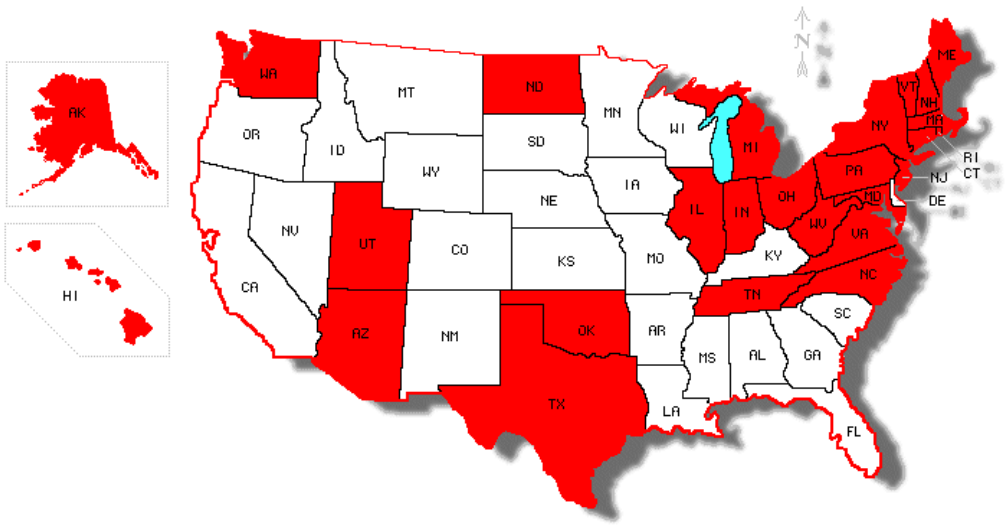
Figure 3-1 Competitive states in 1996 and 2006

This figure shows the competitive states in 1994 (the first year when states were allowed to introduce regulatory barriers) and 2006 (one year after the last regulatory change was enacted). Competitive states are colored in red while non-competitive ones are in white.

Panel A: Competitive states in 1996



Panel B: Competitive states in 2006



3.3.2 CEO CULTURAL ORIGIN DATA

My sample period spans from 1994 (the first year in which states were allowed to introduce regulatory barriers) to 2006 (one year after the last regulatory change was enacted). I identify CEOs, including their full name, gender, age, tenure, education and professional experience using both S&P's *ExecuComp* database which covers S&P 1500 firms starting from 1992 and *BoardEx*, which covers a large range of public firms starting from 1999. I also manually read Edgar DEF14A forms to recover missing CEO information. I am able to identify 955 CEOs that were in office in 726 US banks between 1994 and 2006. Of these, 939 CEOs were born in the US.

I obtain information on each CEO's country of origin and immigrant generation by tracing back the family tree of the CEO. The key data source is *Ancestry.com*, the world-largest genealogy database that provides access to nearly 13 billion genealogical records. The US Census Bureau conducts a population count every 10 years in years ending with a zero. These records contain detailed demographic information on all members of the household, including name, gender, race, the date and place of birth, etc. However, in order to protect the privacy of those who are alive and are in the workforce, the census records are only made publicly available for viewing 72 years after the original census day. Thus, the most recent publicly available census records are from the 1940 census.

Hence, I am able to find ancestry information for all 209 CEOs who were born before 1940. I adopt a "crawling back" strategy to trace the birth locations of the CEO's ancestors. I first identify information on the CEO's father, including his name, birth year and place of birth. I will stop the search if the father is born outside the US. In that case, the CEO is classified as a second-generation immigrant from the

country in which his father is born. If the father is born in the US, I begin a new search using the CEO father's name, year and location of birth. I then use earlier Census records, such as those in 1900 or 1920, to identify information on the CEO's grandfather. If the CEO's grandfather is born outside the US, the CEO is treated as a third-generation immigrant from the country in which his grandfather is born. If the grandfather is born in the US, I continue the search using earlier generations of the CEO ancestors as far back as data availability permits, which is normally in the early 1800s.

I rely on the CEO's paternal ancestry because the CEO's mother and grandmother will normally change their surnames following marriage. Hence, I cannot apply this "crawling back" technique to identify the CEO's maternal ancestry. Fortunately for the purpose of this chapter, cross-cultural intermarriages were rare among European immigrants to the US in the early 20th century (e.g., Kalmijn, 1999; Pagnini and Morgan, 1990). Therefore, I can accurately identify a CEO's ancestry based on her paternal ancestry.

I drop observations where the CEO's ancestry is mixed, i.e. when each parent comes from a different country. I use these mixed-heritage CEOs for an out-of-sample-test. Overall, for each CEO, I collect three types of ancestry information: the country where her ancestor is born, which generation of immigrants she belongs to, and whether she is a Gen2/3. To illustrate, James Dimon is a third generation immigrant from Greece.

To find ancestry information for the remaining 730 CEOs who were born after 1940, I rely on the unique combination of the CEO surname and the county of their birthplace to ensure the accuracy. I first identify the CEO birthplace. For each

CEO name, I retrieve information regarding the birthplace and birth year from Marquis Who's Who, NNDB.com, LinkedIn, or simply through extensive Google searches of other public data sources. I am able to obtain reliable information on the city, county and state where 533 CEOs were born. I then use the 1940 Census records to search for families that share the same surname with the CEO and live in the same county as the CEO's birthplace.

I then trace back the ancestors of those families using the same "crawling back" strategy described above. If this process gives me two identical answers regarding the CEO's origin, I keep this CEO in the sample. As an example, if there are two families with the *Theobald* surname living in Cincinnati, Ohio and both families migrated to the US from Germany at about the same time, the CEO must have been born to one of these two families. If, at any point during the search, I discover that there may be inconsistencies regarding the CEO's origins, I remove this CEO from the sample. This process yields 403 CEOs. Overall, I end up with 612 US-born CEOs in the sample. Figure 3-2 summarizes the data collection process.

Figure 3-2 Collection of CEO's ancestry

Panel A: CEO's family tree (Step 1)

NAME:	Thomas Charles Theobald
AGE:	2
ESTIMATED BIRTH YEAR:	1938
GENDER:	Male
RACE:	White
BIRTHPLACE:	Ohio
MARITAL STATUS:	Single
RELATION TO HEAD OF HOUSE:	Son
HOME IN 1940:	Cincinnati, Hamilton, Ohio
STREET:	Bella Vista Avenue
RESIDENCE IN 1935:	Same Place
SHEET NUMBER:	5A
ATTENDED SCHOOL OR COLLEGE:	No
HIGHEST GRADE COMPLETED:	None

HOUSEHOLD MEMBERS	NAME	AGE
	A R Theobald	40
	Irma Theobald	36
	Jerome Theobald	9
	Thomas Charles Theobald	2
	Hettie Ingram	35

Panel B: CEO's father family tree (Step 2)

1900 United States Federal Census

See More

NAME:	Arthur Theobald
AGE:	11/12
BIRTHPLACE:	Ohio
HOME IN 1900:	Cincinnati Ward 11, Hamilton, Ohio
RACE:	White
GENDER:	Male
RELATION TO HEAD OF HOUSE:	Son
MARITAL STATUS:	Single
FATHER'S NAME:	Charles Theobald
FATHER'S BIRTHPLACE:	Ohio
MOTHER'S NAME:	Kate Theobald
MOTHER'S BIRTHPLACE:	Ohio

HOUSEHOLD MEMBERS	NAME	AGE
	Charles Theobald	27
	Kate Theobald	26
	Karl Theobald	3
	Arthur Theobald	11/12

Panel C: CEO's grandfather family tree (Step 3)

Name:	Charles Theobald
Age:	27
Birth Date:	Feb 1873
Birthplace:	Ohio
Home in 1900:	Cincinnati Ward 11, Hamilton, Ohio
Race:	White
Gender:	Male
Relation to Head of House:	Head
Marital Status:	Married
Spouse's Name:	Kate Theobald
Marriage Year:	1896
Years Married:	4
Father's Birthplace:	Germany
Mother's Birthplace:	Germany

A major advantage of this approach is that it gives me precise information on the immigrant generation and origin of the CEO. Several contemporaneous studies (e.g. Du, Yu, and Yu, 2014; Pan, Siegel, and Wang, 2014) rely on the individual's surnames to infer their countries or ethnics of origin, which is far less accurate. For instance, a person with a surname *Welch* could possibly come from England, Scotland, Ireland, or even Germany.

The flipside to ensuring this high level of accuracy in determining a CEO's heritage is that I drop about 40% of CEOs who were born after 1940 due to missing information. I am concerned that this sampling may have given rise to a selection bias.[35] To account for potential self-selection, I base all of the regression models on a standard Heckman's (1979) two-step procedure. This procedure ensures that my conclusions regarding CEO heritage and other factors that drive bank performance are not driven by unobservable factors that make sample inclusion more likely.[36]

[35] For instance, the average bank in my sample are larger, holds less capital than the average Compustat bank. Further, the average CEO in my sample has a longer tenure than the population of Boardex bank CEOs.

[36] The first step of the Heckman procedures estimates the probability that banks are included in my sample using data on banks included as well as banks I am unable to include in the sample due to data restrictions. Identification rests on the exclusion restriction which requires the first stage to be estimated using a set of variables that is larger by at least one variable than the set of variables in the second stage. I use the length of the CEO's surname as this additional variable that is included in the first but not the second stage. The rationale for this variable is that CEOs with longer surnames are more likely to be identified in my data collection procedure because their names are more likely to be unique. At the same time, the length of a CEO's surname is not plausibly related to bank performance. The first-stage results are shown in table 3-2. The second stage of the Heckman procedure include *Lambda* which contains information from the first step to control for unobservable factors which make sample inclusion more likely.

Table 3-2 Probit estimates of the probability that I can find data on CEO's ancestor (First-stage Heckman)

This table reports the likelihood that I can retrieve data on the CEO's ancestor. This analysis is estimated over a full sample of 5636 bank-year observations from 1996 to 2004. The dependent variable equals 1 when I can retrieve data on the CEO's ancestor. Definitions of other variables are provided in table 3-3. Standard errors are corrected for heteroskedasticity. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Dependent variable: Equals 1 if data on the CEO's ancestor is available		
	(1)	(2)
Ln(Assets)	0.102***	0.096**
	(2.612)	(2.184)
$Ln(Assets)^2$	-0.001	-0.001
	(-1.216)	(-0.865)
Competitive States	-0.034	-0.091***
	(-1.408)	(-3.089)
Leverage	-0.019	-0.018
	(-0.133)	(-0.133)
Lending	-0.120**	-0.073
	(-2.569)	(-1.402)
Deposit	0.294***	0.281***
	(4.340)	(3.688)
HHI	0.077*	1.334***
	(1.808)	(50.506)
Stock Volatility	0.238	0.203
	(0.379)	(0.263)
Ln(CEO Age)	-12.070***	-12.091***
	(-7.396)	(-6.658)
$Ln(CEO\ Age)^2$	1.517***	1.518***
	(7.509)	(6.759)
Ln(CEO Tenure)	0.086***	0.122***
	(3.363)	(4.206)
$Ln(CEO\ Tenure)^2$	-0.009	-0.017**
	(-1.261)	(-2.079)
CEO's surname length	**0.042*** **	**0.042*** **
	(12.681)	**(11.638)**
Year FE	√	
State FE	√	
State x Year FE		√
Observations	5636	5636

3.3.3 BANK DATA

I obtain all banks with accounting data from commercial bank and bank holding company data (FFIEC 031/041 and FR Y-9C). The sample period is from 1994 to 2006. I then obtain market data from the Center for Research in Securities Price (CRSP) and corporate governance data from the *BoardEx* database and match them with the Call Reports sample. I manually retrieve the missing governance data in the period 1994-1998 from Edgar DEF14A forms. The final sample includes all listed banks whose data are available from FFIEC 031/041, FR Y-9C, CRSP and BoardEx.

The main dependent variable is return on assets (ROA). Several recent studies (e.g., Amore and Garofalo, 2015; Ellul and Yerramilli, 2013) use ROA as a proxy for bank performance. The results are also robust to other market and accounting measures of bank performance.

Following the extant literature, I control for several bank and CEO characteristics. First, I control for the size of the bank using the natural logarithm of the book value of total assets. Since the size distribution of US banks are highly skewed, I also include its square term, $Ln(Asset)^2$, to account for possible non-linearity between the bank size and performance (see, Amore and Garofalo, 2015; Ellul and Yerramilli, 2013). Further, I control for heterogeneity in banks' balance sheets using the ratios Deposits/Assets, Loans/Assets, and Liabilities/Assets. I use stock volatility to control for bank risk and the Herfindahl-Hirschman index (HHI) of deposits by state and year to control for state-level concentration of banking activities. Finally, I control for CEO characteristics by including the natural logarithm of the CEO age and tenure, as well as their square terms. This is to account for the non-linearity between CEO career horizons and her behavior (see, for

instance, Custodio and Metzger, 2013). My result is robust to controlling for several additional measures of CEO unobserved and observed heterogeneity. Table 3-3 reports the variable description and Table 3-4 reports the summary statistics.

Table 3-3 Definitions of variables

Variable	Definition	Source
CEO cultural heritage measures		
Gen2/3	Equals 1 if the CEO is a child or grandchild of immigrants	Ancestry.com
Generation4+	Equals 1 if the CEO is a fourth (or higher) generation of immigrants	Ancestry.com
British	Equals 1 if the CEO is a Gen2/3 and has a British ancestor	Ancestry.com
Irish	Equals 1 if the CEO is a Gen2/3 and has an Irish ancestor	Ancestry.com
German	Equals 1 if the CEO is a Gen2/3 and has a German ancestor	Ancestry.com
Italian	Equals 1 if the CEO is a Gen2/3 and has an Italian ancestor	Ancestry.com
Polish	Equals 1 if the CEO is a Gen2/3 and has a Polish ancestor	Ancestry.com
Russian	Equals 1 if the CEO is a Gen2/3 and has a Russian ancestor	Ancestry.com
Second-gen	Equals 1 if the CEO is a child of immigrants	Ancestry.com
Third-gen	Equals 1 if the CEO is a grandchild of immigrants	Ancestry.com
Fourth-gen	Equals 1 if the CEO is a great-grandchild of immigrants	Ancestry.com
Fifth-gen (or higher)	Equals 1 if the CEO is a great-great-grandchild (or higher) of immigrants	Ancestry.com
Foreign-born	Equals 1 if the CEO is born outside the US	Ancestry.com
Mixed baby	Equals 1 for CEOs whose parents are of two or more different nationalities	Ancestry.com
Uncertainty Avoidance	Uncertainty Avoidance Index, taken from Hofstede	Ancestry.com
Individualism	Individualism Index, taken from Hofstede	Ancestry.com
Indulgence	Indulgence Index, taken from Hofstede	Ancestry.com
Bank competition measures		
Competitive State	Dummy equals 1 if a given state at any given time removes barriers to single branch acquisition and/or state-wide deposit cap on branch acquisition	Rice and Strahan (2010)
#openings	Number ranges from 0 (highly regulated) to 4 (deregulated) based on regulation changes in a given state	
Before^{2+}	All years up to and including two years before the deregulation	
Before^{1}	One year prior to deregulation	
Present	The year of deregulation	
After^{1}	One year post deregulation	
After^{2+}	Two years after the deregulation	
Bank performance measures		
ROA (%)	Earnings before interest and taxes (EBIT) divided by book value of total assets (BHCK2170)	CRSP, FR Y9-C
ROE (%)	Earnings before interest and taxes (EBIT) divided by book value of total equity (BHCK3210)	CRSP, FR Y9-C
Tobin's Q	Market value of equity divided by book value of total equity (BHCK3210)	CRSP
Tail risk	The negative of the average return on the bank's stock during the 5% worst returns day for the bank's stock during the year	CRSP
Expenses/Income	Total expenses (BHCK4073+ BHCK4093) divided by total income (BHCK 4107+BHCK4079)	FR Y9-C
Nonperforming loans	Ratio of loans past due day 90 days or more (BHCK5525) and nonaccrual loans (BHCK5526) divided by total assets	FR Y9-C
Other CEO characteristics		
Ln (CEO age)	Natural logarithm of the CEO age	BoardEx
Ln (CEO tenure)	Natural logarithm of the number of years the CEO has served in this position	BoardEx
Ivy League	Equals 1 if the CEO has an Ivy League education	BoardEx
MBA	Equals 1 if the CEO has an MBA degree	BoardEx
Past Directorship	Equals 1 if the CEO has a prior executive directorship	BoardEx
Depression baby	Equals 1 if the CEO was born in between 1920 and 1929	BoardEx
Ln (Bonus Comp)	Natural logarithm of the CEO bonus compensation	ExecuComp
CEO ownership	The fraction of shares owned by the CEO	ExecuComp
CEO vega	Sensitivity of CEO compensation to share price, expressed in $'1000	ExecuComp

CEO delta	Sensitivity of CEO compensation to stock return volatility, expressed in $'1000	ExecuComp
Other bank characteristics		
Ln(Assets)	Natural logarithm of total assets (BHCK2170)	FR Y-9C
Leverage	Book value of liabilities divided by book value of total assets	FR Y-9C
Lending	Ratio of total loans (BHCK2122) divided by total assets	FR Y-9C
Deposits	Ratio of total deposits (BHDM6631+BHFN6631 + BHDM6636 + BHFN6636) divided by total assets	FR Y-9C
Stock volatility	Standard deviation of a firm's stock return in a given year	CRSP
HHI	Index measuring the concentration of deposits at the state-level	FR Y-9C
County-level characteristics		
Ln(Population)	Natural logarithm of the county population	US Census Bureau
Civil labor force	Fraction of the population who have jobs or seeking for job, are at least 16 years old, are not serving in the military and are not institutionalized.	US Census Bureau
Ln (Personal Income)	Natural logarithm of the individual's income from wages, investment enterprises, and other ventures.	US Census Bureau
Characteristics at origin in 1900		
Ln(GDP) at origin	Natural logarithm of GDP at the country of origin of the CEO	UN Statistics Division
Ln(Life Expectancy) at origin	Natural logarithm of life expectancy at the country of origin of the CEO	UN Statistics Division
Legal system at origin	Equals 1 if the CEO country of origin has a Napoleonic law with German law influence, 2 if Germanic law, 3 if Common law, 4 if Nordic law, 5 if mixed between Napoleonic law and German law.	UN Statistics Division
Corporate governance measures		
Board size	The number of directors sitting on the board	BoardEx
Board independence	The fraction of non-executive directors on the board	BoardEx
Deal characteristics		
Cross-border	Dummy equals 1 for deals where the target is located outside the USA	SDC Platinum
Cash finance	Dummy equals 1 if deals is at partially (or fully) financed in cash	SDC Platinum
Ln(Deal value)	Natural logarithm of deal value	SDC Platinum
Deal significance	The fraction of deal value relative to the acquirer's market capitalization	SDC Platinum

Table 3-4 Summary Statistics

This table reports the summary statistics for various CEOs and bank-specific variables. Panel A classifies CEOs into *Gen2/3*, i.e. CEOs who are children or grandchildren of immigrants to the US; and *Generation4+*, i.e. fourth (or higher) generation of immigrant CEOs. Panel B breaks down the specific country of origin of *Gen2/3 CEOs*. Panel C reports the generation of immigrant for all CEOs in my sample. Panel D reports the summary statistics for other CEOs and bank-specific variables. The sample covers all public US banks for the period of 1994-2006. Definitions of all variables are included in table 3-3.

Panels A-C: CEO's country of origin and generation of immigrant

	N	Shares of total
Panel A: Gen2/3 vs Generation4+ CEOs		
Gen2/3	293	48%
Generation4+	317	52%
Total	612	100%
Panel B: CEO's country of origin		
Britain	37	12%
Ireland	18	6%
Germany	68	23%
Italy	41	14%
Poland	22	7%
Russia	19	6%
Others	88	31%
Total	293	100%
Panel C: Generations of immigrant		
Second-gen	107	11%
Third-gen	186	18%
Fourth-gen	48	8%
Fifth-gen (or higher)	225	36%
Unidentified	156	25%
Total	612	100%

Panel D: CEO and Firm characteristics

Variables	N	Mean	STD	p1	p50	p99
Dependent variables: Bank performance and policies						
ROA (%)	3007	1.112	0.682	-0.065	1.098	2.465
ROE (%)	3007	12.450	6.015	-1.299	12.810	25.520
Tobin's Q	2321	1.004	0.004	1.000	1.003	1.016
Tail risk	2988	0.043	0.018	0.017	0.039	0.101
Expenses/Income	3007	0.758	0.085	0.562	0.758	0.986
Nonperforming loans	2060	0.007	0.008	0.000	0.006	0.033
Competitive measures						
Competitive States	3007	0.570	0.495	0.000	1.000	1.000
#openings	3007	1.840	1.528	0.000	2.000	4.000
CEO-specific measures						
Uncertainty Avoidance	3006	0.054	0.017	0.034	0.046	0.095
Indulgence	3006	0.041	0.022	0.024	0.026	0.083
Individualism	3002	0.058	0.016	0.020	0.068	0.069
Ln (CEO age)	3007	4.035	0.137	3.689	4.043	4.357
Ln (CEO tenure)	3007	1.920	0.802	0.000	2.015	3.466
Depression baby	3007	0.036	0.185	0.000	0.000	1.000
Ivy League	2765	0.156	0.363	0.000	0.000	1.000
MBA	2765	0.247	0.431	0.000	0.000	1.000
Past Directorship	2765	0.210	0.407	0.000	0.000	1.000
Ln (Bonus Comp)	817	7.173	1.009	5.740	7.048	9.473
CEO vega/delta	773	0.305	0.252	0.000	0.257	0.993
CEO ownership	788	0.020	0.055	0.000	0.003	0.336
Bank-specific measures						
Ln(Assets)	3007	14.670	1.808	12.080	14.230	19.870
Leverage	3007	0.909	0.041	0.820	0.914	0.953
Lending	3007	0.643	0.133	0.103	0.664	0.869
Deposit	3007	0.749	0.116	0.298	0.768	0.909
Stock volatility	3007	0.020	0.009	0.008	0.019	0.048
HHI	3007	0.379	0.197	0.109	0.326	1.000

3.4. Empirical results

3.4.1 DIFFERENCE-IN-DIFFERENCES (DID) TEST: BASELINE SPECIFICATION

My empirical strategy adopts a difference-in-differences (DiD) analysis to analyze how a CEO's cultural heritage affect the bank reaction to an exogenous shock in industry competition. This approach allows me to exploit (1) within-state variation in a CEO's cultural heritage across banks and (2) across- and within-state variation in competitive pressure across time. The latter is exogenously created by the removal and adoption of roadblocks to bank competition through the IBBEA deregulation (Amore and Garofalo, 2015; Cornaggia et al., 2015; Rice and Strahan, 2010).

The following example illustrates my empirical approach. Consider two otherwise identical banks - Bank 1 and Bank 2 - headquartered in New York in 1996. Bank 1 has a Gen2/3 CEO while Bank 2 has a Generation4+ CEO. The state of New York unexpectedly opens to interstate branching on the 6th Jan 1997, exposing both banks to a sudden increase in industry competition. Thus, the performance difference between these two banks around the competitive shock can be attributed to the cultural heritage of a CEO. In addition, my identification also utilizes Bank 3 and Bank 4 which are both headquartered in California, one with a Gen2/3 CEO and one with a Generation4+ CEO. Crucially, California does not experience an increase in competition in 1997. Therefore, Banks 3 and 4 serve as a control group to absorb the general economic conditions as well as differences that are specific to banks with certain CEO cultural heritages. This model allows me to conduct a DiD analysis to study the effect of CEO cultural heritage on a bank's reaction to increasing competitive pressures.

Before conducting the multivariate analysis, I make sure that the assignment of banks to competitive and non-competitive states is indeed random (see Atanasov and Black, 2015). Following the literature, I first compare the characteristics of the treatment group (banks in competitive states) and the control group (banks in non-competitive states) during the fiscal year immediately before the announcement month of IBBEA (September 1994). I do not observe any difference in bank performance (ROA) or the allocation of Gen2/3 CEOs between the treatment and control groups. Banks in the treatment and control group are also similar in terms of size, leverage, lending, deposit concentration level (HHI), CEO age and tenure.

Next, I check whether the parallel assumption, which is the key assumption in any DiD design, holds in my sample of treatment and control banks. The parallel assumption states that in the absence of treatment (IBBEA deregulation), the coefficient on the DiD estimator is zero. Thus, it requires a similar pre-event trend for both treatment and control groups. Following the literature, I calculate the two-year growth rate of ROA before IBBEA. The finding shows that there is no difference in ROA growth between treatment and control banks, suggesting that the parallel trend assumption is likely to hold. The result is reported in Panel A of Table 3-5. Figures 3-3 shows the time trend for the mean value of ROA (%) surrounding deregulation for the treated and control banks.

Table 3-5 Univariate difference-in-difference (DiD) test: Diagnostics and results

Panel A compares the characteristics of treatment (operating in a competitive state) and control banks in 1994, the fiscal year immediately before IBBEA becomes effective. The difference between two groups and its p-value are reported. Panel B reports the determinants of CEO appointments in 1994. The dependent variable in column (1) is *Gen2/3 CEOs*, a dummy equals 1 if the CEO is a child or grandchild of immigrants and 0 otherwise. The dependent variables in columns (2)-(7) are dummies that equal 1 if the CEO, respectively, has ancestor coming from the UK, Ireland, Germany, Italy, Poland and Russia. Definitions of all variables are included in the table 3-3

Panel A: Bank characteristics immediately before the IBBEA

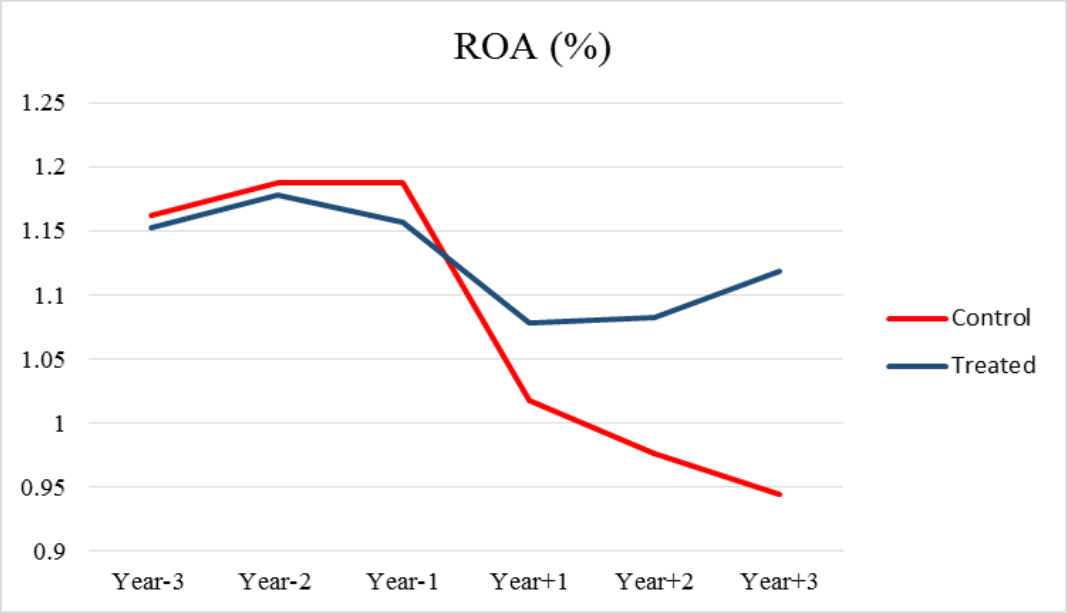
	Treatment	**Control**	**Treatment *minus* Control**	
	Mean	Mean	Difference	p-value
ROA (%)	1.044	1.042	0.003	0.971
Gen2/3	0.473	0.375	0.098	0.192
Ln(Assets)	14.594	14.466	0.128	0.631
Leverage	0.917	0.916	0.001	0.770
Lending	0.615	0.619	-0.005	0.776
Deposit	0.757	0.813	-0.056	0.001
Stock volatility	0.025	0.024	0.001	0.642
HHI	0.386	0.428	-0.042	0.231
Ln(CEO age)	4.014	4.018	-0.004	0.838
Ln(CEO tenure)	1.810	1.720	0.090	0.458
ROA growth 2-year (%)	0.072	-0.060	0.132	0.231

Panel B: Determinants of CEO appointments in 1994

	Gen2/3	British	Irish	German	Italian	Polish	Russian
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ROA_{t-1}	0.024	-0.023	-0.026	-0.027	0.018	-0.024	0.088*
	(0.111)	(-0.336)	(-0.399)	(-0.675)	(1.003)	(-1.035)	(1.812)
$Ln(Assets)_{t-1}$	0.326	0.447	0.072	-0.394	-0.123	0.320	-0.329
	(0.360)	(1.124)	(0.515)	(-1.116)	(-0.810)	(1.251)	(-0.969)
$Ln(Assets)^2_{t-1}$	-0.012	-0.015	-0.002	0.012	0.003	-0.010	0.011
	(-0.410)	(-1.185)	(-0.463)	(1.046)	(0.573)	(-1.234)	(0.969)
$Leverage_{t-1}$	6.181	0.908	1.443	-0.225	-0.255	-1.920	0.767
	(0.816)	(0.242)	(0.951)	(-0.082)	(-0.229)	(-1.205)	(0.335)
$Lending_{t-1}$	1.115	0.386	0.303	-0.468*	0.260	-0.283	0.110
	(1.620)	(1.000)	(1.658)	(-1.845)	(1.489)	(-1.141)	(0.413)
$Deposit_{t-1}$	-0.198	0.180	-0.089	0.608	-0.422	-0.076	0.175
	(-0.177)	(0.358)	(-0.301)	(1.464)	(-1.302)	(-0.498)	(0.535)
Stock $volatility_{t-1}$	-0.031	-3.266	4.026	-6.141	-1.015	1.298	5.432
	(-0.003)	(-0.929)	(0.904)	(-1.636)	(-0.626)	(0.943)	(0.988)
HHI_{t-1}	-0.108	0.141	-0.139	0.268	-0.503*	0.219	-0.881
	(-0.205)	(0.664)	(-0.820)	(1.174)	(-1.813)	(1.252)	(-1.477)
$Ln(CEO\ Age)_{t-1}$	13.940	13.143	-3.481	10.667	-13.308	-6.379	5.345
	(0.576)	(0.902)	(-0.740)	(1.421)	(-1.406)	(-1.155)	(0.658)
$Ln(CEO\ Age)^2_{t-1}$	-1.682	-1.655	0.452	-1.371	1.725	0.813	-0.665
	(-0.548)	(-0.905)	(0.753)	(-1.462)	(1.423)	(1.159)	(-0.646)
$Ln(CEO\ Tenure)_{t-1}$	0.053	0.018	0.033	0.136	0.081	-0.016	0.024
	(0.195)	(0.201)	(0.316)	(0.998)	(1.375)	(-0.390)	(0.249)
$Ln(CEO\ Tenure)^2_{t-1}$	-0.004	0.009	-0.014	-0.039	-0.035	0.011	0.006
	(-0.049)	(0.305)	(-0.484)	(-1.103)	(-1.645)	(0.786)	(0.166)
State FE	√	√	√	√	√	√	√
Observations	135	135	135	135	135	135	135

Figure 3-3: ROA (%) surrounding deregulation for treated and control banks

This figure presents the time trend for the mean value of ROA (%) surrounding deregulation event for the treated and control banks. The red line indicates time trend for treated group (banks in competitive states) and the blue line is for the control group (banks in non-competitive states). The y-axis indicates ROA (%). The x-axis indicates the years before and after deregulation.



The novelty of my DiD framework is that it addresses endogenous matching between CEOs and banks. However, CEO-firm matching might still be an issue before IBBEA. To exclude this, I examine the determinants of banks having a Gen2/3 CEO in 1994, the fiscal year before IBBEA became effective. As shown in Panel B of Table 3-5, prior performance has no effect on the likelihood of having a CEO coming from any particular country of origin. Furthermore, very few other bank-specific characteristics enter significantly, implying that there is little evidence of pre-treatment window matching.

3.4.2 BASELINE RESULTS

I perform the DiD tests in a multivariate framework. I estimate the following model:

$$ROA_{itk} = \alpha + \beta_1 \text{Gen2/3 CEO}_{it} * \text{Competitive state}_{tk} + \beta_2 \text{Gen2/3 CEO}_{it} + \beta_3 \text{Competitive state}_{tk} + \text{Controls} + \text{Fixed-Effects} + \varepsilon_{itk} \quad \textbf{(3-1)}$$

where *t* indexes time, *i* indexes banks, and *k* indexes US states. The dependent variable is bank profitability (ROA). *Competitive state* is a dummy that equals 1 if the state eases one of the two main provisions on interstate branching. Controls include bank- and CEO-specific characteristics. I add various types of fixed-effects including firm fixed-effects, suggesting that any firm-level time-invariant unobservable factors do not impact my findings. I account for the interactive effects of regulatory changes on bank performance by including the interaction term between Competitive State and all controls in the model[37]. My coefficient of interest

[37] For brevity, I do not report the interaction terms with the controls.

is the interaction term β_1, which tells how the profitability of banks with Gen2/3 differs under two competition regimes. Table 3-6 reports the baseline results.

I find that when competition exogenously increases from low to high, banks led by CEOs who are the children or grandchildren of immigrants exhibit a significantly higher level of profitability than those led by Generation4+ CEOs. The interaction term between Gen2/3 CEO and Competitive state is positive and statistically significant at 1% level. Its magnitude is about 16 percentage points, corresponding to an increase of 6% over the sample mean. Panel B of Table 3-6 confirms that the net performance effect of Gen2/3 CEOs under competitive pressure is statistically positive. This result offers the first indication of my cultural heritage interpretation: Gen2/3 CEOs have a cultural heritage that is different from other CEOs and this explains the performance difference under pressure.

Table 3-6 Competitive pressure, CEO "cultural heritage" status, and performance

This table reports the OLS estimation results. The dependent variable is the return on assets (ROA). Panels A and B show the results using both across- and within-state variation. Panels C and D show the results using only within-state variation. Gen2/3 is a dummy equals 1 if the CEO is a child or grandchild of immigrants to the US. Competitive state is a dummy equals 1 if a given state at any given time removes barriers to single branch acquisition and/or state-wide deposit cap on branch acquisition. Columns (1) to (5) present OLS results controlling for self-selection bias by including the inverse Mills ratio from the first-stage probit regression shown in table 3-2. Column (6) replicates the model in column (5) after excluding the inverse Mills ratio. Standard errors are corrected for heteroskedasticity. The sample covers the period 1994–2006. Definitions of other variables are provided in table 3-3. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Panel A: Interaction analysis						
Dependent variable: Return on Assets (ROA)						
	Heckman 2-stage					OLS
	(1)	(2)	(3)	(4)	(5)	(6)
Gen2/3*Competitive State	-	0.161***	0.161***	0.098**	0.167**	0.154***
	-	(4.412)	(4.372)	(2.237)	(2.271)	(2.657)
Gen2/3	-0.006	-0.121***	-0.109***	-0.063	0.263	0.281
	(-0.356)	(-4.185)	(-3.731)	(-1.482)	(1.294)	(1.453)
Competitive State	0.260	0.899	0.271	0.084	1.352	1.133
	(0.923)	(0.711)	(0.193)	(0.054)	(0.564)	(0.456)
Ln(Assets)	0.377***	0.416***	0.367***	-0.062	-0.197	-0.108
	(5.594)	(3.758)	(3.246)	(-0.367)	(-0.780)	(-0.488)
Ln(Assets)^2	-0.009***	-0.011***	-0.010***	-0.003	0.001	-0.001
	(-4.218)	(-3.185)	(-2.603)	(-0.550)	(0.094)	(-0.158)
Leverage	-11.760***	-10.476***	-10.553***	-5.682***	-5.274***	-4.875***
	(-51.781)	(-33.135)	(-33.166)	(-11.225)	(-7.288)	(-3.592)
Lending	-0.068	0.200	0.235*	-0.067	0.023	-0.123
	(-0.899)	(1.617)	(1.800)	(-0.452)	(0.100)	(-0.604)
Deposit	0.053	-0.341**	-0.239	-0.713***	-0.659**	-0.710**
	(0.523)	(-2.391)	(-1.595)	(-3.544)	(-2.284)	(-2.029)
Stock volatility	0.117	-0.164*	0.200	-0.077	-0.035	-0.087
	(0.137)	(-1.688)	(0.239)	(-0.897)	(-0.267)	(-0.669)
HHI	-4.641***	-5.736***	-2.392	-8.093***	-8.117***	-7.753**
	(-3.846)	(-3.870)	(-1.449)	(-5.918)	(-4.277)	(-2.427)
Ln(CEO Age)	-3.661	0.831	-0.348	9.817**	8.838	-2.441
	(-1.202)	(0.288)	(-0.119)	(2.483)	(0.949)	(-0.455)
Ln(CEO Age)^2	0.461	-0.116	0.026	-1.214**	-1.135	0.263
	(1.215)	(-0.322)	(0.072)	(-2.453)	(-0.969)	(0.388)
Ln(CEO Tenure)	0.246***	0.128**	0.106*	0.015	0.017	0.075
	(6.150)	(2.248)	(1.745)	(0.283)	(0.197)	(1.323)
Ln(CEO Tenure)^2	-0.053***	-0.020	-0.015	0.004	0.019	0.018
	(-4.827)	(-1.226)	(-0.878)	(0.239)	(0.656)	(0.792)
Lambda	0.272***	0.108	0.217***	-0.248**	-0.508*	-
	(3.588)	(1.489)	(3.013)	(-2.036)	(-1.733)	-
Year FE	√	√		√	√	√
State FE	√	√				
State x Year FE			√			
Firm FE				√		
CEO FE					√	√
Observations	3006	3006	3006	3006	2992	2992
Panel B: H0 = Gen2/3 CEOs * Competitive State + Gen2/3 CEOs = 0						
F-test	-	2.95*	5.31**	0.73	4.73**	5.12**
Prob.> Chi^2	-	(0.086)	(0.021)	(0.392)	(0.030)	(0.024)

Panel C: Within-state variation only						
Dependent variable: Return on Assets (ROA)						
	Heckman 2-stage					OLS
	(1)	(2)	(3)	(4)	(5)	(6)
Gen2/3*Competitive State	-	0.114**	0.113*	0.087*	0.165*	0.159***
	-	(2.081)	(1.924)	(1.714)	(1.647)	(2.599)
Gen2/3	0.030	-0.065	-0.050	-0.014	0.315	0.336
	(1.380)	(-1.280)	(-0.923)	(-0.237)	(1.071)	(1.436)
Competitive State	-0.123	-0.335	-0.904	-1.226	0.254	-0.944
	(-0.054)	(-0.148)	(-0.372)	(-0.631)	(0.063)	(-0.366)
Ln(Assets)	0.685***	0.657***	0.622**	0.054	-0.077	-0.078
	(2.770)	(2.653)	(2.335)	(0.200)	(-0.141)	(-0.186)
Ln(Assets)^2	-0.019**	-0.018**	-0.017**	-0.008	-0.005	-0.003
	(-2.371)	(-2.295)	(-2.026)	(-0.910)	(-0.270)	(-0.262)
Leverage	-13.221***	-13.090***	-13.209***	-5.615***	-3.715***	-4.462***
	(-21.957)	(-21.642)	(-20.285)	(-7.878)	(-2.586)	(-2.673)
Lending	-0.354	-0.296	0.028	-0.528**	-0.224	-0.321
	(-1.464)	(-1.219)	(0.100)	(-2.391)	(-0.503)	(-1.284)
Deposit	0.251	0.129	-0.124	-0.750**	-1.023	-0.679*
	(0.757)	(0.385)	(-0.340)	(-2.257)	(-1.488)	(-1.727)
Stock volatility	-0.180	-0.128	-0.900**	-0.167	-0.055	-0.114
	(-1.123)	(-0.791)	(-2.044)	(-1.370)	(-0.227)	(-0.672)
HHI	-5.377*	-5.894*	0.038	-14.846***	-18.493***	-16.105**
	(-1.665)	(-1.821)	(0.010)	(-6.022)	(-3.662)	(-2.489)
Ln(CEO Age)	-0.052	-0.046	0.530	4.932	3.409	-6.705
	(-0.013)	(-0.012)	(0.127)	(1.033)	(0.242)	(-0.991)
Ln(CEO Age)^2	-0.021	-0.019	-0.078	-0.602	-0.487	0.792
	(-0.041)	(-0.039)	(-0.151)	(-1.002)	(-0.269)	(0.921)
Ln(CEO Tenure)	0.113	0.100	0.057	0.044	-0.045	0.027
	(0.955)	(0.839)	(0.443)	(0.505)	(-0.250)	(0.307)
Ln(CEO Tenure)^2	-0.012	-0.010	-0.009	0.005	0.057	0.040
	(-0.350)	(-0.273)	(-0.245)	(0.176)	(0.938)	(1.165)
Lambda	0.454***	0.454***	0.534***	-0.077	-0.647	-
	(3.605)	(3.606)	(4.157)	(-0.412)	(-1.249)	-
Year FE	√	√		√	√	√
State FE	√	√				
State x Year FE			√			
Firm FE				√		
CEO FE					√	√
Observations	2101	2101	2101	2101	2086	2086
Panel D: H0 = Gen2/3 CEOs * Competitive State + Gen2/3 CEOs = 0						
F-test	-	4.38**	7.29**	2.86*	2.89*	4.76**
Prob.> Chi^2	-	(0.036)	(0.007)	(0.091)	(0.089)	(0.031)

I add state and year fixed-effects in column (2). I add state x year fixed-effects in column (3) to absorb all variables that do not vary across banks within a given industry and year, such as investment opportunities or business cycles. I include firm fixed-effects in column (4) to control for time-invariant firm-specific factors. Since my model exploits within-CEO variation, I also add CEO fixed-effects in column (5) to control for unobserved CEO heterogeneity such as latent talent. Finally, column (6) replicates the model in column (5) but excluding the inverse Mills ratio.

This evaluates various alterative explanations for my findings—including reverse causality, CEO skills and experience. Additionally, section 3.7.3 presents numerous additional tests that demonstrate that my results are robust to using alternative measures of bank performance and industry competition, and monitoring by the board of directors.

For reference purposes, I also regress ROA on Gen2/3 without controlling for an exogenous change in competition in column (1). In this specification, the coefficient on Gen2/3 is statistically indistinguishable from zero. This indicates that, absent the experimental setting, Gen2/3 CEOs have no detectable performance effect. This is not surprising given the serious selection issues around boards and managers. This further highlights the need for a research design such as the one used here that allows for any manager-specific effect to become identifiable.

Finally, I test whether the results are sensitive to the set-up of my DiD framework. My main identification follows Amore and Garofalo (2015) and Cornaggia et al. (2015) where I construct the treatment group as Gen2/4 CEOs in competitive states with all banks located in less competitive states in the control

group. This control group absorbs general macroeconomic conditions and differences that are specific to banks with Gen2/3 CEOs. In an alternative DiD set-up, I restrict identification to within-state variation in CEO heritage and competition. Thus, I examine competitive states and assign banks with Gen2/3 CEOs to the treatment group and those with Gen4+ CEOs to the control group. Panel C replicates Panel A using the new identification. As shown in Panel C of Table 3-6, our results remain robust. Similarly, Panel D replicates Panel B and displays consistent results. Thus, our baseline results are not sensitive to the identification used.

3.4.3 INTER-GENERATIONAL CULTURAL TRANSMISSION

I next present a more fine-grained test of the cultural heritage hypothesis by distinguishing between different generations of immigrant CEOs. Successive generations of immigrants tend to slowly change their cultural values to adapt to the norms of a new society. This could be the response to changes in economic incentives and opportunities, technology and institutions (see, for example, Giavazzi, Petkov, and Schiantarelli, 2014). If my cultural heritage hypothesis is correct, I should expect the positive performance effect to be strongest for second-generation CEOs and this effect gets weaker as I move further away from the second-generation. Table 3-7 reports the results.

As expected, I observe a monotonic decline in the magnitude of bank performance under pressure when moving from the second to the fifth and above generation CEOs. While both the second and third generation CEOs are associated with a significant and positive performance under pressure, the coefficient estimate for second-generation CEOs (0.17) is larger than that of third-generation CEOs

(0.13). This positive effect disappears when I examine the fourth-generation CEOs and become significantly negative when I look at the fifth (and beyond) generation CEOs. Overall, bank performance under pressure varies with the CEO's generations of immigrants.

Interestingly, foreign-born CEOs, i.e. those who are born outside the US, are not associated with any detectable performance difference under competitive pressure. This could be because foreign-born CEOs may face various language and social barriers which prevents them from performing well under pressure.

Table 3-7 Competitive pressure, CEO's generation of immigrant, and performance

This table reports the OLS estimation results. The dependent variable is the return on assets (ROA). Foreign CEOs are naturalized immigrants, i.e. those who are born overseas and migrate to the US. Second-gen is the children of the naturalized immigrants. Third-gen is the grandchildren of the naturalized immigrants. Fourth-gen is the great-grandchildren of the naturalized immigrants. Fifth-gen (or higher) is great-great-grandchildren (or beyond) of the naturalized immigrants. Competitive state is a dummy equals 1 if a given state at any given time removes barriers to single branch acquisition and/or state-wide deposit cap on branch acquisition. All models include state x year fixed-effects. Standard errors are corrected for heteroskedasticity. The sample covers the period 1994–2006. Definitions of other variables are provided in table 3-3. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Panel A: Interaction analysis					
Dependent variable: Return on Assets (ROA)					
	Foreign-born	Second-gen	Third-gen	Fourth-gen	Fifth-gen
	(1)	(2)	(3)	(4)	(5)
Foreign-born * Competitive State	0.097				
	(0.402)				
Foreign-born	-0.028				
	(-0.452)				
Second-gen * Competitive State		0.169***			
		(3.227)			
Second-gen		-0.093**			
		(-2.432)			
Third-gen * Competitive State			0.134**		
			(2.035)		
Third-gen			-0.050		
			(-0.931)		
Fourth-gen * Competitive State				-0.034	
				(-0.525)	
Fourth-gen				0.046	
				(0.830)	
Fifth-gen * Competitive State					-0.140***
					(-3.967)
Fifth-gen					0.075***
					(2.764)
Competitive State	-0.987	-2.496	-2.286	-2.362	0.125
	(-0.686)	(-1.641)	(-0.936)	(-1.546)	(0.088)
Lambda	0.120	0.090	0.118	0.104*	0.243***
	(1.261)	(1.577)	(1.464)	(1.826)	(3.367)
Other controls	√	√	√	√	√
State x Year FE	√	√	√	√	√
Observations	3006	2307	2307	2307	3006
Panel B: H0 = Generation of immigrant CEOs* Competitive State + Generation of immigrant CEOs = 0					
F-test	0.09	4.95**	3.30*	0.05	8.72***
Prob.> Chi^2	(0.768)	(0.0262)	(0.069)	(0.083)	(0.003)

3.4.4 DOES BANK PERFORMANCE VARY WITH THE COUNTRY OF ORIGIN OF THE CEO?

To further corroborate that a CEO's cultural heritage is behind my finding that Gen2/3 CEOs outperform under competitive pressure, I examine if this effect can be traced back to the country of origin of a CEO's ancestors? Table 3-8 suggests it does.

Table 3-8 Competitive pressure, CEO country of origin, and performance

This table reports the OLS estimation results. The dependent variable is the return on assets (ROA). British is a dummy equals 1 if the CEO is a Gen2/3 and has a British ancestor. Irish is a dummy equals 1 if the CEO is a Gen2/3 and has an Irish ancestor. German is a dummy equals 1 if the CEO is a Gen2/3 and has a German ancestor. Italian is a dummy equals 1 if the CEO is a Gen2/3 and has an Italian ancestor. Polish is a dummy equals 1 if the CEO is a Gen2/3 and has a Polish ancestor. Russian is a dummy equals 1 if the CEO is a Gen2/3 and has a Russian ancestor. Competitive state is a dummy equals 1 if a given state at any given time erects barriers to single branch acquisition and/or state-wide deposit cap on branch acquisition. Home state is a dummy variable equals 1 if the state has an above-median fraction of immigrants coming from the same country of origin as the CEO. All models include state x year fixed-effects. Standard errors are corrected for heteroskedasticity. The sample covers the period 1994–2006. Definitions of other variables are provided in table 3-3. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Panel A: CEO country of origin and performance under pressure						
Dependent variable: Return on Assets (ROA)						
CEO Ancestor	British	Irish	German	Italian	Polish	Russian
	(1)	(2)	(3)	(4)	(5)	(6)
British * Competitive State	0.038					
	(0.293)					
British	-0.091					
	(-0.768)					
Irish * Competitive State		0.022				
		(0.318)				
Irish		0.128***				
		(2.605)				
German * Competitive State			0.135**			
			(2.512)			
German			-0.112***			
			(-2.642)			
Italian * Competitive State				0.163*		
				(1.826)		
Italian				-0.219***		
				(-2.741)		
Polish * Competitive State					0.338***	
					(3.300)	
Polish					-0.141*	
					(-1.866)	
Russian * Competitive State						0.222**
						(2.260)
Russian						0.016
						(0.234)
Competitive State	0.771	1.122	0.683	0.905	0.905	0.859
	(0.587)	(0.855)	(0.522)	(0.648)	(0.694)	(0.654)
Lambda	0.236***	0.241***	0.233***	0.240***	0.208***	0.249***
	(3.279)	(3.356)	(3.248)	(3.182)	(2.898)	(3.445)
Other controls	√	√	√	√	√	√
State x Year FE	√	√	√	√	√	√
Observations	3006	3006	3006	3006	3006	3006

Panel B: CEO country of origin, immigrant community, and performance under pressure						
Dependent variable: Return on Assets (ROA)						
CEO Ancestor	British	Irish	German	Italian	Polish	Russian
	(1)	(2)	(3)	(4)	(5)	(6)
Ancestor* Competitive State * Home State	-0.032	0.053	-0.029	0.023	-0.115	-0.078
	(-0.271)	(0.753)	(-0.416)	(0.159)	(-0.798)	(-0.522)
Ancestor* Competitive State	0.059	-0.051	0.155**	0.142	0.514***	0.278**
	(0.388)	(-0.880)	(2.177)	(0.892)	(3.665)	(2.206)
Ancestor	-0.091	0.118***	-0.112***	-0.220***	-0.213***	0.425
	(-0.768)	(2.633)	(-2.642)	(-2.741)	(-2.602)	(0.995)
Home State	0.605	0.231	0.420	0.277	-0.879	0.001
	(0.512)	(0.575)	(0.962)	(0.691)	(-0.722)	(0.013)
Competitive State	0.765	0.839	0.710	0.636	1.082	0.526
	(0.583)	(0.630)	(0.542)	(0.451)	(0.779)	(0.367)
Lambda	0.235***	0.243***	0.231***	0.240***	0.220***	0.267***
	(3.269)	(3.379)	(3.217)	(3.180)	(2.918)	(3.516)
Other controls	√	√	√	√	√	√
State x Year FE	√	√	√	√	√	√
Observations	3006	3006	3006	3006	3006	3006

Panel A of Table 3-8 shows that banks led by CEOs whose ancestors are from Germany, Italy, Poland and Russia are associated with stronger performance under competitive pressure while those led by British or Irish ancestors are not. This is consistent with the interpretation that the culture prevailing in the CEO country of origin explains bank performance under pressure. Importantly, not all Gen2/3 CEOs outperform under pressure. This also confirms that my baseline results are not driven by characteristics that are common among to all Gen2/3 CEOs and not to cultural heritage.

I next test whether the above results are driven by the geographical location of the bank. In other words, does a CEO of Polish descent outperform because she works for a bank located in an area dominated by Polish immigrants? To the extent that CEOs with Polish ancestors may receive preferential treatment in their Polish neighborhood, this could lead to an interpretation that is different from my cultural heritage story.

To test this conjecture, I add a triple interaction term, *Competitive State*Polish CEO*Polish State*, where *Polish State* is a dummy variable that equals

1 if the bank is located in a state having an above-median fraction of Polish immigrants. The estimated coefficient tells how important geography is to my interpretation of CEO cultural heritage. As indicated in Panel B of Table 3-8, the triple interaction term is insignificant while the key variable *Competitive State* Polish CEO* remains statistically significant. I find the same pattern for other countries of origin: while the triple interaction term is not significant, the key results remain largely unchanged to controlling for the dominant immigrant community in US states.

Overall, the results confirm that my results are not driven by geographical factors. More importantly, this finding also augments our understanding of whether family or community is the dominant channel through which cultural heritage is transmitted (see Bisin and Verdier 2000, 2001). While the family channel purports that culture is mostly learnt and transmitted within the family, the community channel suggests that culture is transmitted via social interactions outside the family, such as those in the local neighborhood. Since Panel B shows little evidence on the role of the immigrant community, I interpret this as indicating that family is the main mechanism through which culture is transmitted.

3.4.5 ALTERNATIVE EXPLANATIONS

The results so far systematically point to CEO cultural heritage as a driving force for bank performance under competitive pressure. This section discusses and rules out a number of alternative explanations for this finding. The tables are reported at the end of this section.

Potential endogeneity: Reverse Causality

My identification allows me to draw a causal link from culture to economic outcomes. However, the decision to open or block interstate competition may not be completely exogenous, e.g. banks may lobby the state's governor to block competition. This suggests the possibility of reverse causality when banks, in anticipation of deregulation, select CEOs who match their preferences.

I argue that reverse causality issues are unlikely to affect my conclusions. Previous evidence clearly shows that the decision to open a state to interstate branching is not related to political and economic factors at US state-level (Rice and Strahan, 2010). Instead, state-level factors explain the decision to expose states to open for *intrastate* branching deregulation (Kroszner and Strahan, 1999).

Additionally, I offer two tests that demonstrate that regulatory barriers to interstate branching are indeed exogenous shock. First, I follow Bertrand and Mullainathan (2003) to examine the dynamics of bank performance surrounding deregulation. Specifically, I decompose the *Competitive State* dummy into five dummies associated with five periods: up to and including two years before deregulation ($Before^{2+}$), one year before deregulation ($Before^{1}$), the year of deregulation (*Present*), one year post-deregulation ($After^{1}$), and two years and after post-deregulation ($After^{2+}$). Significant interaction terms between $Before^{2+}$, $Before^{1}$ and *Gen2/3 CEOs* would indicate a relationship between a CEO's cultural heritage and bank performance before the deregulation becomes effective and therefore be indicative of reverse causality. As indicated in Panel A of Table 3-9, the interaction terms are not significant before the deregulation while they are significant on and

after deregulation. This rules out the possibility of reverse causality and adds confidence to the validity of my results.

Second, I conduct a placebo test to see whether the results disappear when I randomly assign states to my competition categories. If the results are indeed driven by an omitted factor, say macroeconomic conditions, the significant results should continue to stay in the model. As shown in Panel B of Appendix 4, the interaction term is statistically indistinguishable from zero, ruling out the possibility of omitted variables.

Section 3.7.1 addresses any remaining concerns related to IBBEA as an exogenous shock by constructing an out-of-sample test. I use an alternative competitive shock – the 1989 Canada-United States Free Trade Agreement – and arrive at a similar conclusion that the CEO cultural heritage matters to firm performance under pressure.

Potential endogeneity: Omitted variable bias

Immigrants do not randomly settle in the US. They are likely to prefer populous areas over remote areas, and because banks located in populous areas have access to a larger labor market, my results may capture the bank's ability to recruit suitable CEOs rather than CEO cultural heritage. This opens the possibility of a link between certain US regions and my measure of the country of origin of the CEO.

This interpretation is unlikely since section 3.4.4 shows geography is unlikely to explain my results. To illustrate this point further, I include various time-variant and geographical controls in additional tests. First, all models include state, city or county fixed-effects which absorb time-invariant factors at different geographical

levels – for example, consistent economic outperformance. Second, I control for time-variant geographical factors by adding several county-level data on population, the civilian labor force,[38] and income per capita. As shown in Panels A-B of Table 3-10, my results are robust to these additional controls. In unreported tests, I also divide the sample into rural vs. urban and high vs. low civilian labor forces and find that my results are unaffected by the local conditions of the area.

CEO skill

One may argue that my measure captures the CEO skills instead of cultural heritage. For instance, if Gen2/3 CEOs are systematically more experienced than the other CEOs, then the documented results may be due to skills. This interpretation is very unlikely, because columns (5) and (6) of Table 3-6 show that the results are robust to including CEO fixed-effects, which control for unobserved CEO heterogeneity. Nevertheless, to illustrate this point further, I control for various time-invariant and varying CEO characteristics, such as prior top executive experience, Ivy League education, or compensation incentives, which may be correlated with both the CEO being a Gen2/3 and with superior performance under high industry competition. As indicated in Table 3-11, the results remain robust.

Economic development and institutional quality in the country of origin

The key advantage of looking at Gen2/3 CEOs is that I hold constant the economic and institutional factors that Gen2/3 CEOs face while exploiting variations in the cultural values they inherited from their foreign ancestors. However, one could

[38] This is the fraction of the population 16 and above and are available to participate in the labor force

argue that the omitted institutional and economic factors at the time when a CEO's ancestor immigrates to the US could drive the results. For instance, immigrants to the US from the UK could belong to very different socioeconomic stratum than those from, for instance, Russia (Carroll, Rhee, Rhee, 1994, 1999; Pan, Siegel, and Wang, 2014). Hence, the measure may merely reflect differences between Anglo-Saxon and Germanic legal systems. To rule out this possibility, I collect country-level data for the year 1900 on GDP per capita, life expectancy, and the legal system of the CEO's country of origin.[39] As shown in Table 3-12, the results remain robust.

Do we observe a general "descendants-of-immigrants" effect?

Finally, the results could be driven by omitted factors that are not related to an individual's cultural heritage but shared by all children and grandchildren of immigrants. For instance, children and grandchildren of immigrants could thrive better under challenging circumstances. Witnessing their foreign parents overcoming the hardship to settle into a new land, they could be more adaptable to the changing environment, compete more aggressively and work harder (e.g., Portes and Rumbaut, 2001).

This is unlikely to be the case, because as shown in Section 3.4.5, the outperformance linked to Gen2/3 does not hold for all country of origin, to outperform under competitive pressure. Further, I conduct an additional test to further address this concern. In particular, I run a placebo test looking at CEOs who are *mixed*, i.e. having foreign parents each coming from different countries. If the children-of-immigrant hypothesis is correct, I should also observe a similar positive

[39] 1900 is roughly the year when the majority of ancestors of Gen2/3 CEOs migrate to the US.

performance effect of mixed CEOs under competitive pressure. Table 3-13 shows that firms led by mixed CEOs in fact perform worse under competitive pressure. This evidence is inconsistent with the "descendants-of-immigrants" interpretation.

In sum, the evidence presented lends confidence to the conclusion that CEO cultural heritage is a main driving force behind bank performance under competitive pressure.

Table 3-9 Dynamics of bank profitability during deregulation episode

This table reports OLS regression estimates. I replace the competitive state dummy with a set of dummies around the year which the state imposes the barriers that block interstate branching. All models include state x year fixed-effects. Standard errors are corrected for heteroskedasticity. The sample covers the period 1994–2006. Definitions of other variables are provided in table 3-3. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Panel A: Dynamics of bank profitability		
Dependent variable: Return on Assets (ROA)		
	(1)	(2)
$Before^{2+}$ * Gen2/3	0.054	0.111
	(0.791)	(1.516)
$Before^{1}$* Gen2/3	0.006	0.097
	(0.059)	(0.936)
Present* Gen2/3	0.145	0.185*
	(1.623)	(1.922)
$After^{1}$* Gen2/3	0.151*	0.139*
	(1.908)	(1.687)
$After^{2+}$* Gen2/3	0.202***	0.212***
	(4.634)	(4.970)
Gen2/3	-0.145***	-0.150***
	(-4.165)	(-4.391)
$Before^{2+}$	0.191	0.047
	(0.783)	(0.155)
$Before^{1}$	0.262	0.067
	(1.066)	(0.218)
Present	0.067	0.087
	(0.249)	(0.066)
$After^{1}$	0.019	0.136
	(0.072)	(0.103)
$After^{2+}$	-0.065	0.355
	(-0.246)	(0.259)
Lambda	0.104	0.200***
	(1.426)	(2.779)
Other controls	√	√
Year FE	√	
State FE	√	
State x Year FE		√
Observations	3006	3006

Panel B: Placebo checks	
Dependent variable: Return on Assets (ROA)	
	(1)
Gen2/3* Competitive State	0.042
	(1.157)
Gen2/3	-0.040*
	(-1.651)
Competitive State	17.915*
	(1.709)
Other controls	√
State x Year FE	√
	3006

Table 3-10 Controlling for omitted geographical characteristics

This table reports the OLS estimation results. Panel A adds county and city-level fixed-effects. Panel B includes additional time-variant county-level controls: 1) Ln(*Population)*, natural logarithm of the county population; 2) *Civil labor force*, the fraction of the population who have jobs or seeking for job, are at least 16 years old, are not serving in the military and are not institutionalized; 3) *Ln(Personal income)*, natural logarithm of the individual's income from wages, investment enterprises, and other ventures. Panel C includes an additional control: *State with more immigrants*, a dummy that equals to 1 if the bank locates in a state having an above-median fraction of immigrants. Standard errors are corrected for heteroskedasticity. The sample covers the period 1994–2006. Definitions of other variables are provided in table 3-3. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Panel A: Alternative geographical fixed-effects		
Dependent variable: Return on Assets (ROA)		
Fixed-effects	County-level	City-level
	(1)	(2)
Gen2/3* Competitive State	0.102**	0.094**
	(2.487)	(2.283)
Gen2/3	-0.071**	-0.057*
	(-2.216)	(-1.677)
Competitive State	2.157*	-0.987
	(1.665)	(-0.734)
Lambda	-0.162*	-0.252***
	(-1.883)	(-2.626)
Other controls	√	√
Year FE	√	√
Observations	3006	3006
Panel B: Additional time-variant county-level controls		
Dependent variable: Return on Assets (ROA)		
		(1)
Gen2/3* Competitive State		0.153***
		(4.044)
Gen2/3		-0.099***
		(-3.339)
Ln(Population) * Competitive State		0.016
		(0.933)
Ln(Population)		-0.027**
		(-2.072)
Civil labor force * Competitive State		0.513
		(1.061)
Civil labor force		-0.071
		(-0.184)
Ln(Personal Income) * Competitive State		-0.115
		(-1.508)
Ln(Personal Income)		0.157**
		(2.076)
Competitive State		0.943
		(0.596)
Lambda		0.226***
		(3.153)
Other controls		√
State x Year FE		√
Observations		2997

Table 3-11 Controlling for CEO skills

This table reports the estimation results where I control for several additional CEO characteristics. Standard errors are corrected for heteroskedasticity. The sample covers the period 1994–2006. Definitions of other variables are provided in table 3-3. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Dependent variable: Return on Assets (ROA)		
	(1)	(2)
Gen2/3* Competitive State	0.120***	0.140**
	(3.125)	(2.021)
Gen2/3	-0.100***	-0.072
	(-3.234)	(-1.382)
Ivy League * Competitive State	-0.102*	
	(-1.898)	
Ivy League	0.137***	
	(3.228)	
MBA * Competitive State	0.205***	
	(4.546)	
MBA	-0.141***	
	(-3.880)	
Past directorship * Competitive State	-0.062	
	(-1.435)	
Past directorship	-0.114***	
	(-3.468)	
Depression baby * Competitive State	-0.027	
	(-0.228)	
Depression baby	-0.114	
	(-1.261)	
Ln(Bonus Comp) * Competitive State		-0.306***
		(-5.239)
Ln(Bonus Comp)		0.469***
		(9.902)
CEO ownership * Competitive State		-0.828***
		(-4.820)
CEO ownership		0.297**
		(2.105)
CEO vega/delta * Competitive State		-0.660
		(-0.818)
CEO vega/delta		0.210
		(0.305)
Competitive State	0.545	-9.129**
	(0.374)	(-2.206)
Lambda	0.265***	0.123
	(3.713)	(1.151)
Other controls	√	√
State x Year FE	√	√
Observations	3006	726

Table 3-12 Controlling for Institutional Quality

This table reports the estimation results where I control for the economic development and quality of institutions of the CEO's country of origin. I measure them in 1900, where the CEO's ancestors are likely to make the decision to emigrate. Standard errors are corrected for heteroskedasticity. The sample covers the period 1994–2006. Definitions of other variables are provided in table 3-3. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Dependent variable: Return on Assets (ROA)	
	(1)
Gen2/3* Competitive State	0.123**
	(2.453)
Gen2/3	-0.086**
	(-2.228)
Ln (GDP) at origin * Competitive State	-0.002
	(-0.017)
Ln (GDP) at origin	0.107
	(1.194)
Ln (Life expectancy) at origin * Competitive State	-0.381
	(-1.372)
Ln (Life expectancy) at origin	-0.127
	(-0.589)
Legal system at origin * Competitive State	0.048*
	(1.902)
Legal system at origin	-0.011
	(-0.571)
Competitive State	0.805
	(0.495)
Lambda	0.151*
	(1.948)
Other controls	√
State x Year FE	√
Observations	3006

Table 3-13 Are we observing a general descendants-of-immigrants effect?

This table reports the OLS estimation results. I perform a placebo test looking at mixed baby CEOs, those having foreign parents each migrating from a different country. Standard errors are corrected for heteroskedasticity. The sample covers the period 1994–2006. Definitions of other variables are provided in table 3-3. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Dependent variable: Return on Assets (ROA)	
	(1)
Mixed baby CEO * Competitive State	-0.332***
	(-3.089)
Mixed baby CEO	0.133
	(1.554)
Competitive State	0.649
	(0.454)
Lambda	0.238***
	(3.309)
Other controls	√
State x Year FE	√
Observations	3006

3.5 The impact of specific cultural dimensions on CEO behavior

3.5.1. BASELINE RESULTS

In the previous sections, I show that the "foreign heritage" status of the CEO affects performance and attribute this to the inter-cultural differences in the country of origin of the CEO. If this is the case, I should be able to trace back this performance effect to some specific cultural values which prevail in the country of the CEO's ancestors.

To capture culture, I use three cultural dimensions: individualism, uncertainty avoidance and indulgence. These values are taken from the most prominent theory of cultural differences: Hofstede (1980, 1991, 2001) and Hofstede, Hofstede and Minkov (2010). Hofstede's cultural dimensions provide the most suitable proxy for the CEO cultural values. This is because Hofstede collects data to construct his cultural indexes during the 1967-1973 period, which is precisely when an average CEO in my sample grows up and has her cultural values shaped. Nevertheless, I construct several tests to validate these measures, including one using the General Social Survey (GSS). In particular, I use the general public responses to the GSS and find supportive evidence that these cultural measures indeed capture individualistic, risk and gratifying attitudes. The results are displayed in section 3.7.2.

Table 3-14 shows the pairwise correlations between CEO's specific cultural dimensions and bank performance under pressure. The correlations are generally low and are not statistically significant.

I then proceed to examine this hypothesis in a multivariate framework. I assign an index score to each individual country for each cultural dimension. To illustrate, CEOs whose ancestor coming from Germany and the UK respectively receive a score of 67 and 89 for Individualism. I then run the following model:

$$ROA_{itk} = \alpha + \beta_1 \text{Cultural Indexes}_{it} * \text{Competitive state}_{tk} + \beta_2 \text{Cultural Indexes}_{it} + \beta_3 \text{ Competitive state}_{tk} + \text{Controls} + \text{Fixed-Effects} + \varepsilon_{itk} \quad \textbf{(3-2)}$$

where *i* indexes bank, *t* indexes time and *k* indexes state. I include similar controls as those in Tables 3-6 and use state x year fixed-effects in all specifications. My coefficient of interest is the interaction term β_1, which tells how the profitability of banks with CEOs with different cultural measures differs under two competition regimes. Table 3-15 reports the results.

The coefficients on the interaction term are significant and with the expected sign: when competition switches from low to high, banks led by CEOs whose ancestors come from a culture that is 1) less individualistic; 2) more uncertainty avoiding; 3) less indulgent exhibit a significantly higher level of profitability. The economic significance of the cultural values are also noteworthy: a one-standard deviation increase in individualism and indulgence respectively decreases bank performance under pressure by 5% and 6% of its mean. By contrast, a one-standard deviation increase in uncertainty avoidance increases bank performance under pressure by 6% of its mean.

Importantly, this result helps explain why CEOs with certain ancestors perform better under competitive pressure. For instance, Polish culture is collectivistic, uncertainty avoiding, and restrained. Thus, results in Table 3-15 predict that CEOs with Polish ancestors perform better under competitive pressure. And they indeed perform better under pressure, as indicated in Table 3-8. In contrast, the British culture places emphasis on individualism, uncertainty avoidance and

indulgence. Consistently, CEOs with British ancestors are not associated with a detectable performance difference under pressure. Figure 3-4 demonstrates that the differences in three cultural measures indeed explain the performance gap across CEOs with different ancestors. The figure plots the relationship between the three cultural indexes and the estimated coefficient of performance under competitive pressure. As shown, countries in the high uncertainty avoidance, low individualism and low indulgence group outperform those in the other group.

Overall, the results support my hypothesis that the inter-cultural differences in the CEO country of origin explain variation in bank performance under pressure. I show that three specific cultural dimensions: *individualism, uncertainty avoidance*, and *indulgence* explain this performance gap.

3.5.2 CULTURAL OR GENETIC TRANSMISSION?

I interpret the above result as consistent with the transmission of cultural preferences. However, an immediate alternative interpretation could be that variation in these cultural dimensions partially reflect the genetic differences between countries of origin of the CEO. Since the frequency of specific genes could casually link to individual behavior and economic outcomes (see Kuhnen and Chiao, 2009; Spolaore and Wacziarg, 2009), the findings may be due to the genetic transmission rather than cultural transmission.

I address this concern by controlling for genetic differences in the country of origin of the CEO. I obtain the genetic distance data from the global set of country pairs (*Genetic Distance (World)*) and for the European pairs (*Genetic Distance (Europe)*) from Spolaore and Wacziarg (2009). Genetic distance measures the

genetic differences between two populations and captures the biological differences as well as very persistent cultural differences between countries (Spolaore and Wacziarg, 2009). I define the country that scores highest in each cultural dimension as the "base country" and set its genetic distance to 0. I then calculate the genetic distance to this "base country" for the remaining countries.

I include the genetic distance and its interaction term with competitive state as two additional controls in the models and report the results in columns (4) – (6) of Table 3-15. The interaction term between genetic distance and competitive state is not statistically significant, implying that biological differences between the CEO's country of origin do not affect performance under pressure. More importantly, the cultural measures remain statistically significant and economically meaningful despite the high correlation between the genetic and cultural measures. Therefore, it is the inter-cultural differences, not biological differences, in the CEO's country of origin that drive the results.

Table 3-14: Correlations between CEO's specific cultural measures and competitive performance

This table presents the pairwise correlations between CEO's specific cultural measures, competition and bank performance. Definitions of all variables are in table 3-3.

	(1)	(2)	(3)	(4)	(5)
(1) ROA	1.000				
(2) Competitive State	-0.008	1.000			
(3) Individualism	-0.003	-0.004	1.000		
(4) Uncertainty avoidance	0.008	0.048	-0.767	1.000	
(5) Restraint	-0.003	0.058	-0.763	0.883	1.000

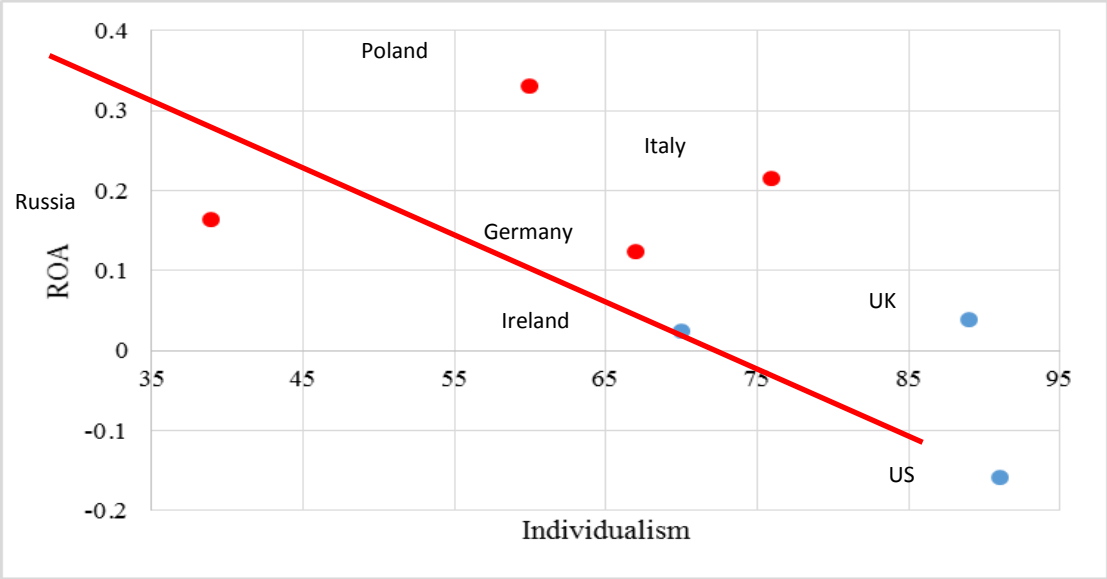
Table 3-15 Competitive pressure, CEO's specific cultural measures, and performance

This table reports the OLS estimation results. The dependent variable is the return on assets (ROA). Competitive state is a dummy equals 1 if a given state at any given time removes barriers to single branch acquisition and/or state-wide deposit cap on branch acquisition. Uncertainty Avoidance and Individualism are indexes obtained from Hofstede. Indulgence is an index obtained from Hofstede, Hofstede and Minkov (2010). Genetic distance measures the genetic difference between two populations. Data on genetic distance are taken from Spolaore and Waxziarg (2009). All models include state x year fixed-effects. Standard errors are corrected for heteroskedasticity. The sample covers the period 1994–2006. Definitions of other variables are provided in table 3-3. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

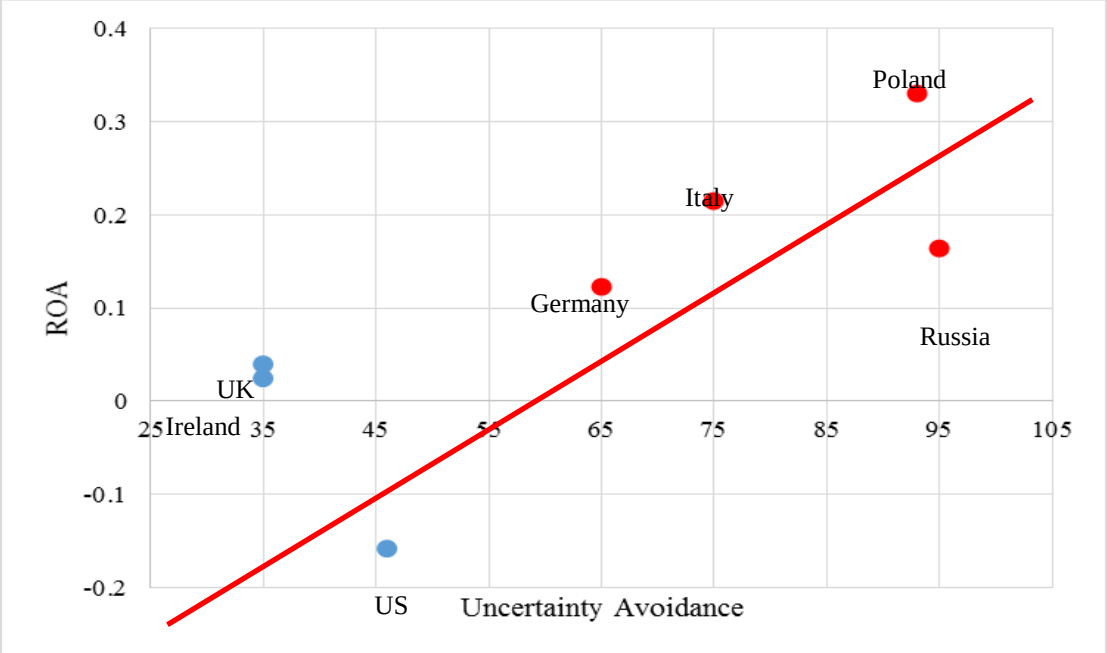
Dependent variable: Return on Assets (ROA)						
Cultural Indexes	Individualism	Uncertainty Avoidance	Indulgence	Individualism	Uncertainty Avoidance	Indulgence
	(1)	(2)	(3)	(4)	(5)	(6)
Individualism * Competitive State	-2.336**			-3.661*		
	(-2.447)			(-1.712)		
Individualism	1.125			0.166		
	(1.548)			(0.091)		
Uncertainty Avoidance * Competitive State		2.731***			2.533**	
		(3.026)			(2.328)	
Uncertainty Avoidance		-1.483**			-1.606*	
		(-2.195)			(-1.858)	
Indulgence * Competitive State			-2.568***			-3.257***
			(-2.903)			(-2.866)
Indulgence			0.275			2.467***
			(0.458)			(2.727)
Genetic Distance * Competitive State	-	-	-	-2.618**	-2.747	0.961
	-	-	-	(-2.223)	(-1.348)	(0.532)
Genetic Distance	-	-	-	2.065**	0.835	-2.063
	-	-	-	(2.045)	(0.512)	(-1.313)
Competitive State	0.157	0.218***	0.150**	0.206	0.783	0.198
	(0.588)	(2.827)	(2.315)	(0.145)	(0.549)	(0.140)
Lambda	0.219***	0.207***	0.216***	0.212***	0.212***	0.216***
	(3.029)	(2.878)	(3.003)	(2.936)	(2.941)	(3.007)
Other controls	√	√	√	√	√	√
State x Year FE	√	√	√	√	√	√
Observations	3005	3005	3001	3003	3003	3001

Figure 3-4 CEO's cultural measures and bank performance under pressure

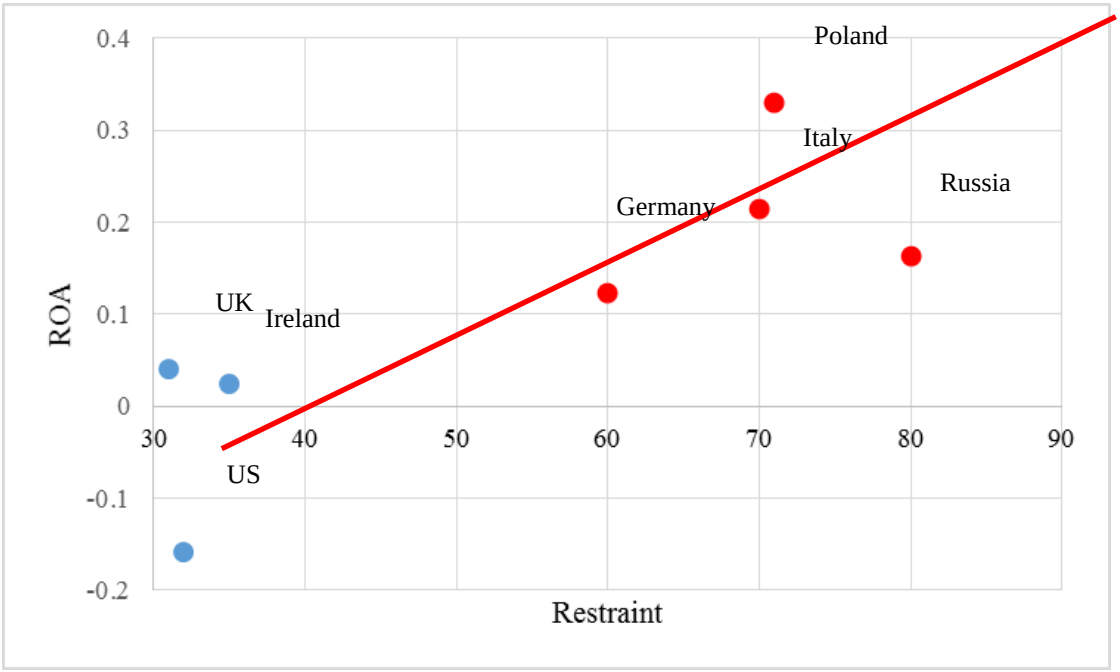
Panel A: CEO's individualism and performance under pressure



Panel B: CEO's Uncertainty Avoidance and performance under pressure



Panel C: CEO restraint and performance under pressure



3.6. What are the channels of improved performance? Cost efficiency, credit risk and acquisition performance

How does the CEO cultural heritage drive bank performance under pressure? This section shows that the observed performance effect is driven by the indirect effects of CEO cultural heritage on three bank policies: cost efficiency, credit risk, and acquisition performance. These are firm decisions that the CEO has significant influence on. Further, these bank policies also parsimoniously capture the key industry challenges faced by banks during the deregulation episode.

3.6.1 COST EFFICIENCY

Some banks may enjoy a higher level of profitability because they manage to cut costs when competition intensifies. I test whether the cultural heritage of the CEO influences the bank's cost efficiency under competitive pressure. To proxy for cost efficiency, I use a simple measure of the bank's total expense scaled by its total income. A lower ratio indicates a more economical use of expenses. I use similar controls as with the above tables and include state x year fixed-effects in all regression specifications. The coefficient of interest is the interaction term β_1, which tells how much expense per income banks with different ancestors differ under two competition regimes. Table 3-16 reports the results.

Table 3-16 Competitive pressure, CEO's country of origin, and cost efficiency

This table reports the OLS estimation results. The dependent variable is total expense scaled by total income. British is a dummy equals 1 if the CEO is a Gen2/3 and has a British ancestor. Irish is a dummy equals 1 if the CEO is a Gen2/3 and has an Irish ancestor. German is a dummy equals 1 if the CEO is a Gen2/3 and has a German ancestor. Italian is a dummy equals 1 if the CEO is a Gen2/3 and has an Italian ancestor. Polish is a dummy equals 1 if the CEO is a Gen2/3 and has a Polish ancestor. Russian is a dummy equals 1 if the CEO is a Gen2/3 and has a Russian ancestor. Competitive state is a dummy equals 1 if a given state at any given time removes barriers to single branch acquisition and/or state-wide deposit cap on branch acquisition. All models include state x year fixed-effects. Standard errors are corrected for heteroskedasticity. The sample covers the period 1994–2006. Definitions of other variables are provided in table 3-3. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Dependent variable: Expense/ Income						
CEO Ancestor	British	Irish	German	Italian	Polish	Russian
	(1)	(2)	(3)	(4)	(5)	(6)
British * Competitive State	-0.007					
	(-0.344)					
British	0.030					
	(1.525)					
Irish * Competitive State		0.005				
		(0.416)				
Irish		0.001				
		(0.075)				
German * Competitive State			-0.006			
			(-0.649)			
German			0.005			
			(0.668)			
Italian * Competitive State				-0.038***		
				(-2.776)		
Italian				0.012		
				(1.005)		
Polish * Competitive State					-0.077***	
					(-4.583)	
Polish					0.019	
					(1.560)	
Russian * Competitive State						-0.043***
						(-2.678)
Russian						-0.003
						(-0.304)
Competitive State	-0.180	-0.755***	-0.180	-0.151	-0.181	-0.200
	(-0.790)	(-3.222)	(-0.791)	(-0.665)	(-0.798)	(-0.880)
Lambda	-0.019	-0.023**	-0.018	-0.018	-0.012	-0.021*
	(-1.638)	(-1.978)	(-1.613)	(-1.636)	(-1.095)	(-1.842)
Other controls	√	√	√	√	√	√
State x Year FE	√	√	√	√	√	√
Observations	3006	3006	3006	3006	3006	3006

I find that, when competition increases from low to high, banks led by CEOs with Italian, Polish and Russian ancestors exhibit lower levels of expenses for the same amount of income generated. In contrast, those led by CEOs with British, Irish, and German ancestors do not exhibit this reduction. This result explains the performance effect I observe in Table 3-6. Furthermore, it is consistent with Italian, Polish and Russian cultures having low Indulgence indexes, and thus, being more restrained from incurring unnecessary expenses.

3.6.2 CREDIT RISK

Banks' most important assets are loans. The ability of banks to manage the credit risk underlying these loans is an important driver of bank performance. Many banks incurred massive credit losses during the deregulation episode because they lend too recklessly (Dick, 2006). I test whether the country of origin of the CEO, and hence, her cultural values, affects the bank's credit risk under increased competition. As with the prior literature (e.g. Dick, 2006), I use the ratio of nonperforming loans scaled by total loans as a proxy for credit risk. I use similar controls as the above models and include state x year fixed-effects in all specifications. The coefficient of interest is the interaction term β_1, which tells how the fraction of nonperforming loans banks with different ancestors differ under two competition regimes. Table 3-17 reports the results.

Table 3-17 Competitive pressure, CEO's country of origin, and credit losses

This table reports the OLS estimation results. The dependent variable is the fraction of nonperforming loans. British is a dummy equals 1 if the CEO is a Gen2/3 and has a British ancestor. Irish is a dummy equals 1 if the CEO is a Gen2/3 and has an Irish ancestor. German is a dummy equals 1 if the CEO is a Gen2/3 and has a German ancestor. Italian is a dummy equals 1 if the CEO is a Gen2/3 and has an Italian ancestor. Polish is a dummy equals 1 if the CEO is a Gen2/3 and has a Polish ancestor. Russian is a dummy equals 1 if the CEO is a Gen2/3 and has a Russian ancestor. Competitive state is a dummy equals 1 if a given state at any given time removes barriers to single branch acquisition and/or state-wide deposit cap on branch acquisition. All models include state x year fixed-effects. Standard errors are corrected for heteroskedasticity. The sample covers the period 1994–2006. Definitions of other variables are provided in table 3-3. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Dependent variable: Nonperforming loans						
CEO Ancestor	British	Irish	German	Italian	Polish	Russian
	(1)	(2)	(3)	(4)	(5)	(6)
British * Competitive State	-0.001					
	(-0.373)					
British	0.002					
	(0.865)					
Irish * Competitive State		0.004***				
		(2.682)				
Irish		-0.003***				
		(-3.167)				
German * Competitive State			0.001			
			(0.835)			
German			-0.002***			
			(-2.638)			
Italian * Competitive State				-0.008***		
				(-5.042)		
Italian				0.008***		
				(5.765)		
Polish * Competitive State					-0.005***	
					(-2.749)	
Polish					0.003**	
					(2.250)	
Russian * Competitive State						0.004
						(1.567)
Russian						-0.005*
						(-1.685)
Competitive State	0.035	0.030	0.035	0.041	0.033	0.059
	(1.079)	(0.935)	(1.104)	(1.304)	(1.034)	(1.461)
Lambda	-0.009***	-0.009***	-0.009***	-0.009***	-0.008**	-0.009***
	(-2.742)	(-2.739)	(-2.699)	(-2.613)	(-2.520)	(-2.692)
Other controls	√	√	√	√	√	√
State x Year FE	√	√	√	√	√	√
Observations	2059	2059	2059	2059	2059	2059

I find that, when competition switches from low to high, banks led by CEOs with Italian and Polish ancestors incur a significantly lower level of credit risk while those led by CEOs with British, German and Russian ancestors do not. Interestingly, banks with CEOs with Irish ancestors incur a higher level of credit losses. Again, this result explains the performance effect I observe in Table 3-6. It is also consistent with Italian and Polish cultures have low Uncertainty Avoidance indexes. CEOs inheriting such values from their ancestors tend to be more risk-adverse and pursue safer lending strategies. This helps the bank to avoid credit losses, leading to higher profitability under pressure.

3.6.3 ACQUISITION PERFORMANCE

Finally, I examine how CEO cultural heritage affects bank acquisition performance under pressure. This test is motivated by two reasons. First, acquisitions are among the most complex decisions a CEO can make and the potential wealth effects for shareholders can be large. Thus, this test uncovers an important channel through which cultural heritage influences performance. Second, it is widely documented that many banks reacted to increased competition by rushing to acquire other competitors (e.g. Schoenberg and Reeves, 1999). Existing evidence in this chapter shows that outperforming CEOs under pressure are uncertainty avoiding, more indulgent and collectivistic individuals. Thus, my key hypothesis is that these CEOs would carefully analyze and negotiate potential acquisition deals, which enables them to make value-enhancing acquisitions.

I focus on M&A deals that are publicly announced between 1994 and 2006 by US banks. I obtain data on bank acquisitions from the Thomson Financial's

merger database (SDC). All deals must be at least $250 million and be subsequently completed. I drop all observations where there is missing data or when there is other major news released on the same day. This yields a sample of 264 deals. I then estimate a market model using a value-weighted CRSP index as a market index from 46 to 146 days before the announcement of an M&A decision. I construct cumulative abnormal returns (CARs) as the sum of the prediction errors of the market model.

The average CARs over a 5-day [-2, +2] event window is -2.32% (significant at the 1% level). This is consistent with the M&A literature where acquirers only earn modest to negative cumulative abnormal returns (CARs). The dependent variables are CARs of 5-day window [-2, +2]. Table 3-18 displays the regression results. I find that when competition switches from low to high, acquisition performance is significantly higher for CEO with Polish or Russian ancestry. The results are economically significant. An average bank making an acquisition in my sample has a total market capitalization of $48 billion. Thus, when competition intensifies, acquisition deals made by Polish and Russian CEOs earn shareholders a total wealth of $1.44 billion and $3.84 billion, respectively. The results are consistent with the idea that CEOs with Polish and Russian ancestors are uncertainty avoiding and thus, are careful in analyzing and picking the best acquisition deals. In contrast, CEOs with ancestors from the UK, Ireland, Germany, or Italy are not associated with a detectable M&A performance difference.

Table 3-18 Competitive pressure, CEO's country of origin, and acquisition performance

This table reports the multivariate regression analyses of stock market reactions to the merger announcements. The dependent variables of all models are CARs for a 5-day window [-2, +2] (%). Standard errors are corrected for heteroskedasticity. The sample consists of 264 bank acquisitions made in the period 1994–2006. Definitions of other variables are provided in table 3-3. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Dependent variable: CARs [-2, +2] %						
CEO Ancestor	British	Irish	German	Italian	Polish	Russian
	(1)	(2)	(3)	(4)	(5)	(6)
British * Competitive State	0.035					
	(1.504)					
British	-0.014**					
	(-2.256)					
Irish * Competitive State		0.021				
		(0.833)				
Irish		0.000				
		(0.005)				
German * Competitive State			-0.005			
			(-0.353)			
German			-0.007			
			(-0.520)			
Italian * Competitive State				-0.020		
				(-1.246)		
Italian				0.028***		
				(3.413)		
Polish * Competitive State					0.033**	
					(2.158)	
Polish					-0.028**	
					(-2.319)	
Russian * Competitive State						0.080***
						(3.977)
Russian						-0.027
						(-1.507)
Competitive State	-0.007	-0.008	-0.005	-0.006	-0.007	-0.008
	(-1.304)	(-1.296)	(-0.911)	(-1.123)	(-1.240)	(-1.490)
Ln(Assets)	0.009	0.020	0.025	0.012	0.015	0.019
	(0.177)	(0.433)	(0.487)	(0.239)	(0.288)	(0.382)
Ln(Assets)^2	0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.021)	(-0.210)	(-0.311)	(-0.042)	(-0.099)	(-0.196)
ROA	0.010**	0.009**	0.010**	0.010**	0.009**	0.011**
	(2.280)	(2.289)	(2.256)	(2.261)	(2.232)	(2.282)
Ln(CEO Age)	-3.361**	-4.011**	-3.767**	-3.850**	-3.748**	-4.343***
	(-2.193)	(-2.541)	(-2.373)	(-2.430)	(-2.210)	(-2.816)
Ln(CEO Age)^2	0.414**	0.494**	0.465**	0.475**	0.463**	0.537***
	(2.181)	(2.528)	(2.363)	(2.423)	(2.198)	(2.810)
Ln(CEO Tenure)	0.020	0.017	0.018	0.017	0.018	0.019
	(1.285)	(1.103)	(1.213)	(1.116)	(1.140)	(1.267)
Ln(CEO Tenure)^2	-0.002	-0.001	-0.002	-0.001	-0.002	-0.002
	(-0.534)	(-0.343)	(-0.473)	(-0.315)	(-0.386)	(-0.528)
Cross-border	0.012	0.012	0.012	0.012	0.012	0.013
	(1.382)	(1.361)	(1.298)	(1.319)	(1.299)	(1.477)
Cash-finance	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
	(3.163)	(3.208)	(3.222)	(2.988)	(3.242)	(3.277)
Ln (Deal value)	-0.012***	-0.012***	-0.012***	-0.012***	-0.012***	-0.012***
	(-4.498)	(-4.585)	(-4.379)	(-4.506)	(-4.533)	(-4.386)
Deal significance	-0.000	0.010	0.002	0.003	0.006	-0.001
	(-0.009)	(0.255)	(0.052)	(0.073)	(0.143)	(-0.030)
Observations	264	264	264	264	264	264

3.7 Robustness tests

3.7.1 ALTERNATIVE IDENTIFICATION: CANADA-UNITED STATES FREE TRADE AGREEMENT (FTA) AS AN OUT-OF-SAMPLE TEST

The analysis so far exploits the exogenous variation generated by the staggered adoption of barriers to interstate branching. The aim of this section is to go out-of-sample in the following sense: can the results be generated in settings other than banking? An ideal alternative test would be to employ another exogenous shock in industry competition that occurs in a different industry at a different time. I use the Canada-United States Free Trade Agreement (FTA) as such an alternative, and show below that I find similar results as when using the staggered deregulation event. This indicates that my results are not specific to the banking sector but rather capture the link between CEO cultural heritage and performance under pressure more generally.

The alternative exogenous shock I use here is the 1989 Canada-United States Free Trade Agreement (FTA), which eliminates all tariffs and other trade barriers between two countries. This leads to an unexpected increase in US imports from Canada for goods with greater tariff reduction. As a result, firms operating in industries facing such trade liberalization experience an exogenous increase in the competitive environment, which is useful to circumvent the CEO-firm endogenous matching (see Guadalupe and Wulf, 2010; Yang and Zhao, 2014).

The challenge is that this shock occurs in the 1980s – a sample period that is not covered by Execucomp or BoardEx. Due to such data limitation, I select the largest 100 Compustat firms in 1990.[40] I then use a combination of Factiva and

[40] I am more likely to recover historical data for larger firms because they generally receive more news coverage. Data limitation is also the reason why I use this shock for the robustness tests rather than for the main analyses.

Google search to identify the CEO demographic information and use similar search algorithm described in section 3.3.2 to identify the CEO's ancestry information. After excluding financial, utility and missing data firms, the final sample includes 65 firms with 120 CEOs from 1980 to 2000. Following Yang and Zhao (2014), I estimate the following model:

$$ROA_{it} = \alpha + \beta_1 Gen2/3CEO_{it} * Post89 * Tariff_i + \beta_2 * Post89 * Tariff_i + Controls + Fixed\text{-}Effects + \varepsilon_{itk} \quad \textbf{(3-3)}$$

where *i* indexes firm and *t* indexes time. The dependent variable is the profitability of the firm (ROA). *Gen2/3 CEO* indicates CEOs who are children or grandchildren of immigrants to the US, *Post89* is a dummy that equals one from 1989 onwards and *Tariff* indicates the average tariff rate for firm *i* during the period 1986-1989. A vector of controls and several fixed-effects are included. The coefficient of interest is the interaction term β_1, which shows how the profitability of firms with Gen2/3 differs when receiving tariff reductions. Table 3-19 displays the regression results.

As shown in Table 3-19, the coefficient is positive and statistically significant. It indicates that firms with Gen2/3 CEOs which receive the FTA-mandated tariff cuts experience a higher level of profitability compared to a Generation4+ CEOs that also receive FTA-mandated tariff cuts. Overall, these findings provide evidence strongly consistent with the notion that CEO cultural heritage affects performance under pressure and that my results are not banking-specific.

Table 3-19 CEO cultural heritage and the 1989 Canada-United States Free Trade Agreement (FTA)

This table reports the regression results using the 1989 Canada-United States Free Trade Agreement (FTA) as an exogenous shock to industry competition. *Post89* is a dummy that equals one from 1989 onwards. Import tariff data come from Feenstra (1996). Export tariff data come from Trefler (2004). Tariff rate are aggregated from the commodity level to the level of four-digit SIC codes. I obtain firm-level segment sales and the four-digit SIC codes associated with each segment from the Compustat Segments database, then compute a weighted-average tariff rates based on the firms' segment sales. I then assign firms with above median import tariff with a score of 1 and those with a below median import tariff a score of 0. Similarly, firms with above median export tariff receive a score of 1 and those with a below median import tariff receive a score of 0. I then sum these two score to obtain *Tariff Rank*, which can receive a value of 0, 1 or 2. The sample includes those largest firms in Compustat database from the period 1980-2000. Definitions of other variables are provided in table 3-3. Standard errors are corrected for heteroskedasticity. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Dependent variable: Return on Assets (ROA)		
	(1)	(2)
Gen2/3*Post89*Tariff Rank	1.303***	1.363**
	(2.797)	(1.967)
Post89*Tariff Rank	0.868*	-1.365
	(1.682)	(-1.466)
Gen2/3	0.015	-0.817*
	(0.038)	(-1.721)
Tariff Rank	-0.720	0.925*
	(-1.269)	(1.899)
Ln(Assets)	-3.091	-1.545
	(-1.188)	(-0.375)
$Ln(Assets)^2$	0.124	0.041
	(0.994)	(0.209)
Asset growth	29.169***	53.218***
	(3.186)	(4.280)
Leverage	-12.470***	-15.645***
	(-7.859)	(-7.228)
Stock Volatility	-0.980***	-0.932***
	(-3.582)	(-2.817)
Ln(CEO Age)	1.013	0.275
	(0.416)	(0.105)
$Ln(CEO\ Age)^2$	0.183	0.004
	(0.314)	(0.007)
Ln(CEO Tenure)	0.142*	0.138
	(1.805)	(0.990)
$Ln(CEO\ Tenure)^2$	-0.017***	-0.022**
	(-3.337)	(-2.003)
Year FE	√	
Industry FE	√	
Industry x Year FE		√
Observations	775	775

3.7.2 VALIDATION OF HOFSTEDE'S CULTURAL MEASURES

My main cultural measures are based on Hofstede (2001) and Hofstede, Hofstede, and Minkov (2010). Despite being an extremely popular cultural measure, Hofstede's model is not without its criticisms. Many critics argue that Hofstede's cultural measures may not be accurate because the data is old and only focus on one company (e.g. McSweeney, 2002).

To validate Hofstede's cultural measures, I use the approach proposed by Liu (2015) and look at the answers of the general public in the General Social Survey (GSS). Specifically, I test whether the Hofstede indexes (individualism, uncertainty avoidance, and indulgence) of the country of ancestors of the respondents are related to their individualistic, risk and gratifying attitudes. The data is from 1990 to 2012 and based on around 1,500 randomly selected US residents per year. I estimate the following model:

$$\text{GSS Survey Question}_{ikt} = \beta_1 \text{Hofstede's cultural measure}_k + \beta_2 \text{Individual Controls}_i + \beta_3 \text{Survey Year Fixed-effects}_t + \varepsilon_{ikt} \quad \textbf{(3-4)}$$

where *i* indexes respondents, *k* indexes countries of origin, and *t* indexes time. I identify the respondent's ancestor through the question: "from what countries or part of the world did your ancestors come?" and then assign corresponding Hofstede's Individualism, Uncertainty Avoidance, and Indulgence indexes for these countries.

Following Liu (2015), I include the respondent's age, gender, years of education, income, marital status, health status, race dummies and work status dummy. The dependent variable, GSS Survey Question, is one of the three survey

questions I use to proxy for respondents' Individualism, Uncertainty Avoidance, and Indulgence. GSS asks respondents to rate the importance of a child being able to "think for herself" to prepare herself for life. I use this question to assess the respondent's level of individualism. Next, I gauge the respondents' level of uncertainty avoidance based on how they rate the importance of having "job security". Finally, their rating on the importance of a child "working hard" to achieve future success is used to proxy for their indulgence. Table 3-20 displays the regression results.

All columns of Table 3-20 show evidence that Hofstede cultural measures indeed capture what they are purported to capture. Column (1) shows that individuals whose ancestors coming from individualistic countries are more likely to believe that the ability of a child to "think for herself or himself" is important. Column (2) shows that individuals whose ancestors coming from uncertainty avoiding countries believe job security is important. Finally, column (3) shows that respondents whose ancestors coming from indulgent countries are less likely to think that "working hard" is an important future success factor. Overall, the results lend extra confidence to the cultural measures I use in this chapter.

Table 3-20 Validation of Hofstede's cultural measures

This table validates Hofstede's cultural measures. The dependent variables are survey questions from the 1990 to 2012 sample of the General Social Survey (GSS). **THNKSELF** asks "If you had to choose, which thing on this list you would pick as the most important for a child to learn to prepare him or her for life? TO THINK FOR HIMSELF OR HERSELF". **SECJOB** ask "On the following list there are various aspects of jobs. Please circle one number to show how important you personally consider it is in a job: JOB SECURITY". **WORKHARD** asks "If you had to choose, which thing on this list you would pick as the most important for a child to learn to prepare him or her for life? WORKING HARD". For all three questions, the answer can range from 1 (not important at all) to 5 (very important). Uncertainty Avoidance and Individualism are indexes obtained from Hofstede. Indulgence is an index obtained from Hofstede, Hofstede and Minkov (2010). Age is the respondent's age at the time of the interview. Male is a dummy that equals 1 if the respondent is male. Income is the respondent's family income bracket. Ln (education) is the natural logarithm of the respondent's years of education. Health is a variable that ranks the respondent's health from 1 (poor) to 4 (excellent). Married is a dummy that equals 1 if the respondent is married. Black and White are indicators of respondent's reported races. Have a job is a dummy equals 1 if the respondent is employed. Survey year fixed-effects are included. Standard errors are corrected for heteroskedasticity. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

	THNKSELF	SECJOB	WORKHARD
	(1)	(2)	(3)
Individualism	2.465***		
	(3.185)		
Uncertainty Avoidance		1.337**	
		(1.974)	
Indulgence			-0.937**
			(-2.029)
Age	3.532***	0.965	-0.625
	(5.752)	(1.405)	(-1.307)
Age^2	-0.478***	-0.127	0.058
	(-5.839)	(-1.371)	(0.901)
Male	0.234***	0.076***	-0.092***
	(10.620)	(2.885)	(-5.284)
Income	0.035***	0.001	0.017***
	(5.462)	(0.747)	(3.308)
$Income^2$	-0.000***	-0.099	-0.000***
	(-5.659)	(-0.766)	(-3.641)
Ln(education)	0.896***	-0.027	0.074
	(3.242)	(-0.910)	(0.434)
$Ln(education)^2$	-0.024	0.028**	0.005
	(-0.412)	(2.126)	(0.142)
Health	0.013	-0.036	-0.014*
	(1.373)	(-1.365)	(-1.720)
Married	-0.077***	-0.043	-0.003
	(-3.287)	(-0.788)	(-0.140)
Black	0.248***	-0.169***	-0.191***
	(3.894)	(-3.749)	(-4.219)
White	0.468***	0.003	-0.160***
	(8.111)	(0.085)	(-4.157)
Have a job	0.021	0.965	0.005
	(0.780)	(1.405)	(0.234)
Survey Year FE	√	√	√
Observations	12824	3038	12824

3.7.3 APPENDIX: ADDITIONAL ROBUSTNESS

This section displays further robustness tests of the key results. I show the tests using Gen2/3 CEO as the key explanatory variable. The appendixes are shown at the end of this section. I also re-estimate "generation of immigrant" (Table 3-7) and "country of origin" (Table 3-8) and find robust, consistent results. They are available upon request.

Alternative performance & industry competition measures

Panel A of Appendix 3-A1 shows re-estimation results for alternative measures of bank performance. My main measure is ROA. For robustness, I use returns on equity (ROE) and two market-based measures of performance: Market-to-book ratio (e.g. Andres and Vallelado, 2008), and Tail risk (e.g. Ellul and Yerramilli 2013). As shown, Gen2/3 CEOs are associated with higher level of Tobin's Q ratio and lower level of tail risk. I next use an alternative definition of Competitive State, which employs all four regulatory barriers instead of just two. As shown in Panel B, my results are robust to this alternative definition.

Does the data collection process drive my results?

There could be noise in my data collection process: while I can retrieve the family records of all CEOs who were born before 1940, I rely on the unique combination of CEO surname and birthplace to deduce the ancestry information of CEOs who were born after 1940. To address this concern, I split the sample into two groups: CEOs who born before 1940 and those after 1940. As shown in Appendix 3-A2, the results remain robust.

Controlling for board characteristics

Another concern is that my result may simply reflect the quality of board governance. Since immigrants may prefer settling in populous areas over remote ones and because banks located in populous areas have access to a larger pool of directors, the results may capture the bank's ability to recruit talented directors who can be effective monitors and advisors to the CEO. I address this by controlling for various bank's board characteristics. Board data are collected from *BoardEx*, *Riskmetrics* and Edgar DEF14A forms. As shown in Appendix 3-A3, my results remain robust. Interestingly, an independent bank board is associated with a lower bank performance under pressure. My interpretation is similar to that of Li, Lu, and Phillips (2015) – too much monitoring from the board may restrain the CEO from having the authority to make quick, tough decisions to react to heightened competition.

Do the results reflect non-competitive rents captured by banks operating in rural areas?

I argue earlier that because immigrants prefer settling in larger cities, banks located in urban areas are more likely to appoint Gen2/3 CEOs while those in rural areas are more likely to appoint Generation4+ CEOs. I have addressed this concern by showing that the results are unaffected by the location of the bank.

However, a related interpretation is that, prior to the deregulation event, banks led by Generation4+ CEOs face fewer competitors because they operate in rural areas. Thus, they are able to capture "non-competitive" profits. In this case, the

large profitability drop I observe for Generation4+ CEOs could be due to the fact that competition erodes this non-competitive extra profits, whereas banks led by Gen2/3 CEOs always enjoy a normal level of profitability. I address this by controlling for the profitability in 1994, i.e. pre-treatment window, and show in Appendix 3-A4 that the key results remain robust. In fact, the economic significance of the baseline results is strengthened.

Appendix 3-A1 Alternative measures of bank performance and industry competition

This table reports the OLS estimation results. Panel A uses alternative performance measures as dependent variables: 1) Return on Equity (ROE); 2) Market-to-book ratio (Tobin's Q); 3) Tail risk. Panel B uses an alternative measure of industry competition: #openings, the number of openings (as opposite to barriers) the state adopts towards interstate branching. Standard errors are corrected for heteroskedasticity. The sample covers the period 1994–2006. Definitions of other variables are provided in table 3-3. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Panel A: Alternative bank performance measures			
Dependent variables:	Return on Equity (ROE)	Tobin's Q	Tail risk
	(1)	(2)	(3)
Gen2/3* Competitive State	2.232***	0.505***	-0.002**
	(4.791)	(4.535)	(-1.976)
Gen2/3	-1.666***	-0.354***	0.001
	(-4.531)	(-3.782)	(1.131)
Competitive State	-20.844	-17.735***	-0.135***
	(-1.197)	(-4.418)	(-2.841)
Lambda	1.329	0.696**	-0.002
	(1.491)	(2.299)	(-0.897)
Other controls	√	√	√
State x Year FE	√	√	√
Observations	3006	3006	3006

Panel B: Alternative competition measure	
Dependent variable: Return on Assets (ROA)	
	(1)
Gen2/3* #openings	0.041***
	(3.353)
Gen2/3	-0.054**
	(-1.969)
# openings	-0.058
	(-0.147)
Lambda	0.208***
	(2.904)
Other controls	√
State x Year FE	√
Observations	3006

Appendix 3-A2 Are the results driven by the data collection process?

This table reports the OLS estimation results. Column (1) includes firm-year observations where the CEO is born before 1940 while column (2) include observations where the CEO is born after 1940. Standard errors are corrected for heteroskedasticity. The sample covers the period 1994–2006. Definitions of other variables are provided in table 3-3. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Dependent variable: Return on Assets (ROA)		
	CEO birth year <=1940	CEO birth year >1940
	(1)	(2)
Gen2/3* Competitive State	0.152**	0.193***
	(2.041)	(4.206)
Gen2/3	-0.110**	-0.122***
	(-2.339)	(-3.251)
Competitive State	0.393	-2.812
	(0.114)	(-1.569)
Lambda	0.370***	0.351***
	(3.211)	(4.299)
Other controls	√	√
State x Year FE	√	√
Observations	812	2194

Appendix 3-A3 Controlling for board characteristics

This table reports the OLS estimation results where I include additional controls for board characteristics: *board size*, the total number of directors on the board; and *board independence*, the fraction of non-executive directors on the board. Standard errors are corrected for heteroskedasticity. The sample covers the period 1994–2006. Definitions of other variables are provided in table 3-3. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Dependent variable: Return on Assets (ROA)	
	(1)
Gen2/3* Competitive State	0.213***
	(4.774)
Gen2/3	-0.131***
	(-3.515)
Board size * Competitive State	-0.001
	(-0.155)
Board size	-0.010**
	(-2.574)
Board independence * Competitive State	-0.466***
	(-3.283)
Board independence	0.183
	(1.628)
Competitive State	0.555
	(0.331)
Lambda	0.226***
	(2.765)
Other controls	√
State x Year FE	√
Observations	2384

Appendix 3-A4 Do the results reflect "non-competitive" profits captured by banks operating in rural areas?

This table reports the OLS estimation results where I include an additional control *ROA in 1994*, which is the performance of bank at the beginning of the sample period. Standard errors are corrected for heteroskedasticity. The sample covers the period 1994–2006. Definitions of other variables are provided in table 3-3. *t-Statistics* are reported in parentheses. ***, **, and * indicate significance at the 1, 5 and 10% level, respectively.

Dependent variable: Return on Assets (ROA)	
	(1)
Gen2/3* Competitive State	0.164***
	(4.319)
Gen2/3	-0.062**
	(-2.020)
Competitive State	-20.472**
	(-2.097)
ROA in 1994	0.214***
	(13.933)
Lambda	0.047
	(0.610)
Other controls	√
State x Year FE	√
Observations	2368

3.8 Conclusions

This chapter advances and tests a new hypothesis on the link between the cultural heritage of senior decision-makers and various corporate outcomes. This hypothesis holds that the culture prevailing in the country of origin of the CEO influences her economic decision-making behavior, which, in turn, affect firm policy choices and performance. To study cultural heritage, I focus on US-born CEOs who are children or grandchildren of immigrants.

To causally link the CEO's cultural heritage to firm outcomes, I exploit the staggered introduction and removal of interstate branching during the mid-1990s and 2000 as a source of exogenous variation to industry competition. I find that the cultural heritage of the CEO has a statistically significant and economically meaningful impact on shaping the way a bank reacts to competitive pressure. This effect is driven by specific cultural dimensions of individualism, uncertainty avoidance and indulgence and is causally related to bank policy choices.

This chapter, to the best of my knowledge, provides the first causal link from the cultural heritage of the CEO to various firm outcomes. The findings reported in this chapter have important implications for future research on culture, finance and sociology.

Conclusions

This thesis studies the role and value of senior decision-makers in the banking industry. Chapter 1 investigates the role of bank's board of directors in preventing bank misconduct and shows that both board monitoring and advising are associated with lower misconduct cases by banks. This is the first empirical study that relates bank boards to bank misconduct. Chapter 2 uses the event of executive appointments to study the value of bank executives. It sheds light on whether and how bank executives matter. Chapter 3 looks at how the cultural heritage of CEOs affect bank performance and policy choices. To establish causality, this chapter uses the staggered adoption of barriers to interstate branching as a source of exogenous shock to industry competition. This is the first study that causally links cultural preferences to CEO behavior and firm outcomes.

Contributions of the thesis

Given the pivotal role of banks, studying the value of senior decision-makers in the banking industry is important. Until today, knowledge about them remains limited. This thesis, therefore, makes valuable contributions to the understanding of whether, when, and how senior bankers matter to bank outcomes. By showing that individual senior decision-makers are important, this thesis broadly contributes to the literature in finance and economics which conventionally assumes that individuals are

homogenous and different executives are perfect substitutes for each other. The remaining contributions of the thesis can be grouped into three distinct themes based on the three chapters presented in the thesis.

The first chapter contributes by showing that effective bank boards prevent bank misconduct, adding to the debate on governance and risk-taking in the banking industry. The first chapter also contributes to the literature on corporate misconduct by identifying the role of board advising in explaining misconduct. Finally, this chapter presents the first empirical study that simultaneously considers the effects of board monitoring and advising, contributing to the literature on the role and design of corporate boards.

The second chapter contributes to the debate on whether and how individual executives matter for firm performance and behavior. Further, the findings also shed new light on the value of human capital in the banking industry. This chapter underscores the importance of ensuring the competency of executives in banking. The findings advocate policies that mandate banks to appoint highly qualified executives with relevant banking experience.

This final chapter contributes by providing the first causal link between the CEO cultural heritage and bank outcomes. By exploiting an exogenous shock to the industry environment, I am able to circumvent frequently encountered matching issues between CEOs and firms. Overall, the chapter contributes to an emerging body of research that links culture to economic outcomes (e.g., Ahern, Daminelli, and Fraccassi, 2015; Eun, Wang, and Xiao, 2015; Griffin et al., 2015; Guiso, Sapienza, and Zingales, 2006, 2015). Further, this chapter contributes to literature

that studies the impact of CEO attributes on corporate outcomes by providing new evidence consistent with a time-invariant manager style in the form of culture.

Policy implications

Because of banks' importance to economic growth and the functioning of the economy, the stability of the banking system is of considerable interest to policy makers. This thesis looks at senior decision-makers in the banking industry – the key inputs to the banking system – and thus, the results shown in this thesis generate important implications for policy makers.

Regulators increasingly see boards as key to shaping a bank's risk culture with a view to preventing misconduct. The Office of the Comptroller of the Currency (2014) in its recent regulatory guidelines establishes "heightened expectations" of the role of bank boards in shaping a bank's risk culture and in reducing misconduct cases. These views are echoed by the Financial Stability Board (2014) which places bank boards at the core of effective risk management and emphasizes their responsibility in monitoring and providing "sage advice" to senior management. The findings I report in chapter 1 confirm that boards play an important role in the risk management of banks and that the "heightened expectations" of boards in preventing misconduct are justified.

Further, the results of chapter 2 document the value of bank executives and thus, also carry important policy implications. It echoes de Haan and Vlahu (2015) that appointing more executives with expertise to the bank is an important policy concern. The results are consistent with calls by policy makers to appoint more executives that are highly qualified and possess relevant industry experience.

Constraints of the thesis

Based on the analyses conducted in the three empirical chapters, a number of shortcomings of the thesis can be identified.

The first shortcoming is related to the use of event study methodology. While this methodology is considered as the "workhorses in empirical finance" (Kothari and Warner, 2005) which has been used extensively in a few hundred studies, it is important to bear a few caveats in mind. On a fundamental level, this method assumes that the event in question must be completely unexpected by investors. In reality, it is plausible that there is information leakage surrounding the event. For instance, market investors could anticipate the news about the appointment of executives. Prior to the announcement, there could be speculation about the potential candidates and their chances of being appointed. Similarly, when regulators conduct their investigation on the bank, investors could foresee that an enforcement action is on its way. Thus, information leakage could undermine the statistical significance of some of my estimation coefficients.

With regards to the first chapter on bank misconduct, a caveat is in order. While I find that a board that is captured by the CEO is associated with more misconduct cases, I do not suggest that they are bad overall. For instance, a closely knit board may facilitate better and faster decision-making, resulting in better reactions to internal and external challenges. Li, Lu and Phillips (2015) show that a captured board is associated with better firm performance under high product market competition. In contrast, this chapter sheds light on the dark side of board capture – its association with misconduct.

Further, board characteristics and misconduct cases are examined at the BHC-level and not at the level of individual subsidiaries. The reason for this is that board- and firm-level data are less readily available for lower organizational-level tiers. However, it is possible that the wrongdoing is committed at the subsidiary levels where directors at the BHC-level have less influence over. In this case, I might understate the true impact of bank directors on misconduct.

There are also some limitations related to the CEO cultural heritage data in the third chapter. Whilst my dataset provides detailed CEO ancestry information, it is important to point out that I rely on paternal data to infer about the CEO ancestor. This is because the mother and grandmother of the CEO change their surnames following marriage, making it difficult to track their original family tree. Fortunately for the purpose of this chapter, cross-cultural intermarriages were rare among European immigrants to the US in the early 20th century (e.g., Kalmijn, 1999; Pagnini and Morgan, 1990). Therefore, I can credibly infer the CEO's ancestor using her paternal ancestry.

Finally, data limitation also poses some constraint to the analysis shown in the third chapter. To address CEO-firm endogenous matching, I use two quasi-natural experiments to show that CEO cultural heritage affects firm performance under pressure. Of course, it is more natural to ask how CEO cultural heritage affects firm performance *generally*. One approach is to look at exogenous CEO appointments, e.g. those triggered by a sudden death of the CEO predecessor, and see how firm outcomes change following this event. However, sudden deaths are rare among bank CEOs, making it difficult to make meaningful statistical inferences from the results.

Directions of future research

The constraints identified above indicate that this area would benefit from future research.

More research is needed at the subsidiary levels. For instance, it would be fruitful to see how directors at the subsidiary levels influence decision-making and outcomes at the subsidiaries and the BHC. Further, it is common that board members of the BHC also sit on the boards of the subsidiary (Adams and Mehran, 2012). Hence, future research could also examine how this board interlock matters to the governance and risk profiles of the BHC and the subsidiaries.

Finally, research on culture is in its nascent stage and more research is definitely needed. The analysis presented in this thesis looks at subsequent generations of immigrants in the US. It is natural to see culture from a more international perspective. Hence, it would be fruitful to examine how culture in other culturally-diversified countries, say Singapore, matters to behavior and economic outcomes.

Bibliography

Adams, R.B., Akyol, A.C., and Verwijmeren, P., 2015, "Director skill sets," Working paper

Adams, R.B., Almeida, H., and Ferreira, D., 2005, "Powerful CEOs and their impact on corporate performance," Review of Financial Studies 18: 1403-1432

Adams, R.B. and Ferreira, D., 2007, "A theory of friendly boards," Journal of Finance 62, 116–150

_____., 2009, "Women in the boardroom and their impact on governance and performance," Journal of Financial Economics 94: 291–309

Adams, R.B., Keloharju, M., and Knuper S., 2015, "Are CEOs Born Leaders? Lessons from Traits of a Million Individuals," Working Paper

Adams, R.B., Hermalin, B.E., and Weisbach, M.S., 2010, "The role of boards of directors in corporate governance literature: A conceptual framework and survey," Journal of Economic Literature, 48(1): 58-107

Adams, R.B. and Mehran, H., 2012, "Bank board structure and performance: Evidence from large bank holding companies," Journal of Financial Intermediation 21: 227-248

Adams, R.B. and Ragunathan, V., 2013, "Lehman sisters," Working paper

Agrawal, A. and Chadha, S., 2005, "Corporate governance and accounting scandals," Journal of Law and Economics 48: 371–406

Ahern, K., Daminelli, D., and Fracassi C., 2015, "Lost in translation? The effect of cultural values on mergers around the world," Journal of Financial Economics 117: 165-189

Amore, M.D. and Garofalo O., 2015, "How does market structure influence the relationship between executive gender and business outcomes? Evidence from the US banking industry," Working Paper

Andres, P.E. and Vallelado, E., 2008, "Corporate governance in banking: The role of the board of directors," Journal of Banking and Finance 32 (12): 2570-2580

Atanasov, V.A. and Black, B.S., 2015, "Shock-Based Causal Inference in Corporate Finance and Accounting Research," Critical Finance Review Forthcoming

Bamber, L.S., Jiang, X., and Wang, I.Y., 2010, "What's my style? The influence of top managers on voluntary corporate financial disclosure," The Accounting Review 85: 1131-1162

Bar-Hava, K., Gu, F., and Lev, B., 2013, "Busy directors are detrimental to corporate governance health," Working paper

Beasley, M.S., 1996, "An empirical analysis of the relation between the board of director composition and financial statement fraud," Accounting Review 71: 443–465

Becker, G.S., 1957, "The economics of discrimination." Chicago: University of Chicago Press

Becker, G.S., 1968, "Crime and punishment: An economic approach," Journal of Political Economy 76: 169–217.

Beltratti, A. and Stulz, R.M., 2012, "The credit crisis around the globe: Why did some banks perform better?" Journal of Financial Economics 105: 1–17

Benmelech, E. and Frydman C., 2015, "Military CEOs," Journal of Financial Economics 117: 43-59

Bennedsen, M., Perez-Gonzalez, F., and Wolfenzon, D., 2008, "Do CEOs matter?" Working paper

Berger, A., Kick, T., and Schaeck, K., 2014, "Executive board composition and risk taking," Journal of Corporate Finance 28: 48-65

Bernile, G., Bhagwat V., and Rau P.R., 2015, "What doesn't kill you will make you more riskloving: Early-life disasters and CEO behaviour," Working Paper

Bertrand, M. and Mullainathan, S., 2003, "Enjoying the quiet life? Corporate governance and managerial preferences," Journal of Political Economy 111: 1043-1075

Bertrand, M., and Schoar, A., 2003, "Managing with style: The effects of managers on firm policies," The Quarterly Journal of Economics, 118(4): 1169-1208

Bisin, A. and Verdier T., 2000, "Beyond the Melting Pot: Cultural Transmission, Marriage, and the Evolution of Ethnic and Religious Traits," Quarterly Journal of Economics 115: 955-988

_____, 2001, "The Economics of Cultural Transmission and the Dynamics of Preferences," Journal of Economic Theory 97: 298-319

Booth, A.L. and Nolen, P., 2012, "Gender differences in risk behaviour: Does nurture matter?" The Economic Journal, 112: F56–F78.

Brickley, J.A., Coles, J.L., and Linck, J.S., 1998, "What Happens to CEOs After They Retire? New Evidence on Career Concerns, Horizon Problems, and CEO Incentives," Journal of Financial Economics 52: 341–377

Carroll, C.D., Rhee B., and Rhee C., 1994, "Are there cultural effects on saving? Some cross sectional evidence," Quarterly Journal of Economics 109: 685-699

_____, 1999, "Does Cultural Origin Affect Saving Behavior? Evidence from Immigrants," Economic Development and Cultural Change 48: 33-50

Carter, D.A., D'Souza, F., Simkins, B.J., and Simpson, W.G., 2010, "The diversity of corporate board committees and financial performance," Corporate Governance: An International Review 15: 396-414

Cesarini, D., Dawes. C.T., Johannesson, M., Lichtenstein, P., and Wallace B., 2010, "Genetic Variation in Financial Decision-Making," Journal of Finance 65: 1725–1754

Chevalier, J., and Ellison, G., 1999, "Are some mutual funds better than others? Cross-sectional patterns in Behavior and Performance," Journal of Finance, 54: 875-899

Chidambaran, N.K., Kedia, S. and Prabhala, N.R., 2012, "CEO-director connections and corporate fraud," Working paper

Choi, I. and Nisbett E., 2000, "Cultural psychology of surprise: Holistic theories and recognition of contradiction," Journal of Personality and Social Psychology 7: 890–905

Chui, A. C., Titman, S., and Wei K. J., 2010, "Individualism and momentum around the world," Journal of Finance 65, 361–392

Cohen, L, Frazzini, A, and Malloy, C., 2008, "The small world of investing: Board connections and mutual fund returns," Journal of Political Economy 116: 951–979

Coles, J.L., Daniel, N.D. and Naveen, L., 2006, "Managerial incentives and risk-taking," Journal of Financial Economics 79: 431–468

_____, 2008, "Boards: Does one size fit all?" Journal of Financial Economics: 87: 329–356

_____, 2012, "Board advising," Working paper

_____, 2014, "Co-opted boards," Review of Financial Studies 27: 1751–1796

Connor, J.M., 2010, "Recidivism revealed: Private international cartels 1990-2009," Competition Policy Journal 6: 101–127

Core, J. and Guay, W., 2002, "Estimating the value of employee stock option portfolios and their sensitivities to price and volatility," Journal of Accounting Research 40: 613–630

Cornaggia J., Mao, Y., Tian, X. and Wolfe B., 2015, "Does banking competition affect innovation?" Journal of Financial Economics 115: 189-209

Cremers, M., and Grinstein, Y., 2013, "Does the market for CEO talent explain the controversial CEO pay practices?" Review of Finance. Forthcoming

Custodio, C., Ferreira, M.A., and Matos, P., 2013, "Generalists vs. Specialists: Life time work experience and chief executive officer pay," Journal of Financial Economics, 108: 471-492

Custodio, C. and Metzger D., 2013, "How do CEOs Matter? The Effect of Industry Expertise on Acquisition Returns," Review of Financial Studies 26: 2008-2047

_____, 2014, "Financial Expert CEOs: CEO's Work Experience and Firm's Financial Policies," Journal of Financial Economics 114: 125-154

Cumming, D.J., Leung, T.Y. and Rui, O.M., 2015, "Gender diversity and securities fraud," Academy of Management Journal. Forthcoming

Dahya, J., and McConnell, J.J, 2010. "Board composition, corporate performance, and the Cadbury committee recommendation," Journal of Financial and Quantitative Analysis 42: 535-564

Dass, N., Kini, O., Nanda, V., Onal, B., and Wang, J., 2014, "Board Expertise: Do Directors from Related Industries Help Bridge the Information Gap?" Review of Financial Studies 27: 1533–1592

de Haan, J., and Vlahu, R., 2015, "Corporate governance of banks: A survey," Journal of Economic Surveys. Forthcoming

Dechow, P.M., Ge, W., and Schrand C., 2010, "Understanding earnings quality: A review of the proxies, their determinants and their consequences," Journal of Accounting and Economics 50: 344–401

Degryse, H. and Ongena, S., 2005, "Distance, lending relationships and competition," Journal of Finance 60: 231–266.

Delfgaauw J., Dur, R., Sol, J. and Verbeke, W., 2013, "Tournament incentives in the field: Gender differences in the workplace," Journal of Labor Economics 31: 305-326

Delis, M.D. and Staikouras, P., 2011, "Supervisory effectiveness and bank risk," Review of Finance 15: 511–543.

Deshpande, R. and Gatignon H., 1994, "Competitive Analysis," Marketing Letters 5: 271-287

Dick A., 2006, "Nationwide branching and its impact on market structure, quality and bank performance," Journal of Business 79: 567-592.

Dittmar, A. and Duchin R., 2015, "Looking in the Rear View Mirror: The Effect of Managers' Professional Experience on Corporate Financial Policy," Review of Financial Studies Forthcoming.

Dreber, A., von Essen, E. and Ranehill, E., 2011, "Outrunning the gender gap: Boys and girls compete equally," Experimental Economics, 14: 567–582.

Du Q., Yu, F., and Yu X., 2014, "Cultural Proximity and the Processing of Financial Information," Working Paper.

Dulewicz, V. and Herbert, P., 2004, "Does the composition and practice of boards of directors bear any relationship to the performance of their companies?" Corporate Governance: An International Review, 12: 263-280.

Dyck, A., Morse, A. and Zingales, L., 2010, "Who blows the whistle on corporate fraud?" Journal of Finance 65: 2213–2253.

Ellul, A. and Yerramilli, V., 2013, "Strong risk controls, lower risk: Evidence from US bank holding companies," Journal of Finance 68: 1757–1803

Erhardt, N.L., Werbel, J.D., and Shrader, C.B., 2003, "Board of director diversity and firm financial performance," Corporate Governance: An International Review, 11(2): 102–111.

Eun C.S., Wang, L., and Xiao S., 2015, "Culture and R^2," Journal of Financial Economics 115: 283-303

Faccio, M, Marchica, M., and Mura, R., 2015, "CEO gender, corporate risk-taking, and the efficiency of capital allocation," Working paper.

Falato, A., Li, D., and Milbourn, T.T., 2015, "Which skills matter in the market for CEOs? Evidence from pay for CEO credentials," Management Science. Forthcoming

Fama, E.F., 1980, "Agency problems and the theory of the firm," The Journal of Political Economy 88: 288–307.

Fama, E.F. and Jensen, M.C., 1983, "Separation of ownership and control," Journal of Law & Economics 26: 301–25.

Farnum, R., 1990, "Prestige in Ivy League: Meritocracy at Columbia, Harvard and Penn: 1870-1940," Dissertation available from ProQuest

Farrell, K.A. and Hersch, P.L., 2005, "Additions to corporate boards: The effect of gender," Journal of Corporate Finance 11: 85–106

Fee, C.E., Hadlock, C.J. and Pierce, J.R., 2013, "Managers with and without style: Evidence using exogenous variation," Review of Financial Studies, 26: 567-601

Feenstra, R., 1996. "NBER Trade Database, Disk1: U.S. Imports, 1972–1994: Data and Concordances," NBER Working Paper No. 5515

Fehr, E. and Schmidt, K.M., 1999, "A theory of fairness, competition and cooperation," Quarterly Journal of Economics 114: 817–868

Fernández, R., 2008, "Culture and Economics," New Palgrave Dictionary of Economics.

_____., 2011, "Does Culture Matter?," in Benhabib, J., Jackson M.O. and Bisin O., editors, Handbook of Social Economics, Vol. 1A, North-Holland.

Fernández, R. and Fogli A., 2006, "Fertility: The Role of Culture and Family Experience," Journal of the European Economic Association 4(2–3), 552–561.

_____, 2009, "Culture: An Empirical Investigation of Beliefs, Work, and Fertility," American Economic Journal: Macroeconomics, 1(1), 146–177.

Ferris, S.P., Jagannathan, M. and Pritchard, A.C., 2003, "Too busy to mind the business? Monitoring by directors with multiple boards appointments," Journal of Finance 58: 1087-1112

Fich, E., 2005, "Are some outside directors better than others? Evidence from directors appointments by Fortune 1000 firms," Journal of Business 78: 1943-1971

Fich, E.M. and Shivdasani, A., 2006, "Are busy boards effective monitors?" Journal of Finance 61: 689–724

_____, A., 2007, "Financial fraud, director reputation, and shareholder wealth," Journal of Financial Economics 86: 306–336.

Field, L., Lowry, M. and Mkrtchyan, A., 2013, "Are busy boards detrimental?" Journal of Financial Economics 109: 63–82

Financial Stability Board., 2014, Guidance on Supervisory Interaction with Financial Institutions on Risk Culture, April 7 2014. http://www.financialstabilityboard.org/wp-content/uploads/140407.pdf

Fiske, A.P., 1991, "Structures of Social Life: The Four Elementary Forms of Human Relations," Free Press, Macmillan

Frank, M., and Goyal, V.K., 2007, "Corporate leverage: How much do managers really matter?" University of Minnesota and Hong Kong University of Science and Technology working paper

Gary, S. and Nowland, J., 2013, "Is prior director experience valuable?" Accounting and Finance 53: 643-666

Giavazzi, F., Petkov, I., and Schiantarelli F., 2014, "Culture: Persistence and Evolution," Working Paper

Gibbons, R. and Murphy, K.J., 1992, "Optimal incentives contract in the presence of career concerns: Theory and Evidence," Journal of Political Economy 100, 468-505

Giuliano, P., 2007, "Living Arrangements in Western Europe: Does Cultural Origin Matter?," Journal of the European Economic Association 5, 927–952

Glazer N. and D.P. Moynihan. "Beyond the melting pot: the Negroes, Puerto Ricans, Jews, Italians, and Irish of New York City," Cambridge, MA: MIT Press, 1970 (1963)

Gneezy, U., Leonard, K.L. and List J.A., 2009, "Gender difference in competition: Evidence from a matrilineal and a patriarchal Society," Econometrica, 77, 1637-1664.

Gouldner, A.W., 1960, "The norm of reciprocity: A preliminary statement," American Sociology Review 25, 161–178

Graham, J. R., Li, S., and Qiu, J. 2012. "Managerial attributes and executive compensation," Review of Financial Studies 25:144–86

Griffin, D., Guedhami, O., Kwok, C.C.Y., Li, K., Shao L., 2015, "National culture, corporate governance practices, and firm performance," Working Paper

Grove, H., Patelli, L., Victoravich, L.M., and Xu, P. 2011. "Corporate governance and performance in the wake of the financial crisis: Evidence from US commercial banks," Corporate Governance: An International Review 19: 418-436

Grund, C. and Westergaard-Nielsen, N., 2008, "Age structure of the workforce and firm performance," International Journal of Manpower, 29(5): 410-422

Guadalupe, M. and Wulf J., 2010, "The flattening firm and product market competition: the effect of trade liberalization on corporate hierarchies," American Economic Journal: Applied Economics 2, 105–127

Guiso, L., Sapienza, P., and Zingales, L., 2006, "Does Culture Affect Economic Outcomes?" Journal of Economic Perspectives 20(2), 23–48.

_____., 2015, "The value of corporate culture," Journal of Financial Economics 117: 60-76

Gupta, A. and Raman, K., 2013, "Female CEOs," Working paper

Halford, J.T. and Hsu C.H.C., 2014, "Beauty is Wealth: CEO Appearance and Shareholder Value," Working paper

Hambrick, D.C. and Mason, P.A., 1984, "Upper echelons: The organization as a reflection of its top managers," Academy of Management Review 9: 193–206.

Harman, D., 1991, "The aging process: Major risk factor for disease and death," Proceedings of the National Academy of Sciences 88: 5360–5363

Heckman, J.J., 1979, "Dummy endogenous variables in a simultaneous equation system," Econometrica 46: 931-959

Hegde, S. and Zhou, T., 2014, "Accounting expertise of directors and accounting irregularities," Working paper.

Hermalin, B.E., and Weisbach, M.S., 1998, "Endogenously chosen board of directors and their monitoring of the CEO," American Economic Review 88: 96-118

Hillman, A.J., Cannella, A.A., and Paetzold, R.L., 2000, "The resource dependence role of corporate directors: Strategic adaption of board composition in response to environmental change," Journal of Management Studies 37: 235-256

Hofstede, G., 1980, "Culture's Consequences: International Differences in Work-Related Values," Beverly Hills, CA: Sage.

_____, 1991, "Cultures and Organizations: Software of the Mind," London, UK: McGrawHill.

_____,2001, "Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations across Nations," Thousand Oaks, CA: Sage

Hofstede, G., Hofstede, G.J., and Minkov M., 2010, "Cultures and organizations: software of the mind," 3rd Edition, USA: McGraw-Hill.

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

Jiraporn, P., Davidson, W. N., DaDalt, P., and Ning, Y., 2009, "Too busy to show up? An analysis of directors' absences," Quarterly Review of Economics and Finance, 49: 1159-1171

Johnson, C. and Rice T., 2008, "Assessing a decade of interstate bank branching," The Washington and Lee Law Review 65, 73-127.

Johnson, S.A., Ryan, H.E. and Tian, Y.S., 2009, "Managerial incentives and corporate fraud: The sources of incentives matter," Review of Finance 13: 115–145.

Kalmijn M., 1999, "Father Involvement in Childrearing and the perceived stability of marriage," Journal of Marriage and Family 61: 409-421

Kaplan, S., Klebanov, M., and Sorensen, M., 2012, "Which CEO characteristics and abilities matter?" Journal of Finance 67: 973-1003

Kaplan, S. and Reishus, D., 1990, "Outside directorships and corporate performance," Journal of Financial Economics 27: 389-410

Karporff, J.M., Lee, D.S., and Martin, G.S., 2008a, "The Cost to Firms of Cooking the Books," Journal of Financial and Qualitative Analysis 43: 581–612

_____, 2008b, "The consequences to managers for financial misinterpretation," Journal of Financial Economics 88: 193–215

Kedia, S. and Rajgopal, S., 2011, "Do the SEC's enforcement preferences affect corporate misconduct?" Journal of Accounting and Economics 51: 259–278

Khanna, V.S., Kim, E.H. and Lu, Y., 2015, "CEO connectedness and corporate frauds," Journal of Finance 70: 1203-1252

Kim, E.H. and Lu, Y., 2015, "Governance inside the executive suite and board independence," Working paper

Kothari, S. P. and Warner, J. B., 2005, "Econometrics of Event Studies," in Handbook of Corporate Finance: Empirical Corporate Finance, ed. B. E. Eckbo, Elsevier/NorthHolland

Knyazeva, A., Knyazeva, D. and Masulis, R.S., 2013, "The supply of corporate directors and board independence," Review of Financial Studies 26: 1561–1605

Kroszner, R.S. and Strahan P., 1999, "What drives deregulation? Economics and politics of the relaxation of bank branching restrictions," Quarterly Journal of Economics 114: 1437-1467

Kuhnen, C. and Chiao, J. Y., 2009, "Genetic Determinants of Financial Risk Taking," PLoS ONE 4(2)

Laderman, J.M., 1994, "Business Week's guide to mutual funds," McGraw-Hill

Landier, A., Sauvagnet J., Sraer, D., and Thesmar, D., 2013. "Bottom-up Governance," Review of Finance 17: 161-201

Lazear, E., 2004, "Balanced skills and entrepreurship," American Economic Review 94:208–11

Lee, P.M., and James, E.H., 2007, "She'-e-os: Gender effects and investor reactions to the announcements of top executive appointments," Strategic Management Journal 28: 227-241

Lee, J., Lee, K.J. and Nagarajan, N.J., 2014, "Birds of a feather: Value implications of political alignment between top management and directors," Journal of Financial Economics 112: 232–250

Li, K., Griffin, D., Yue, H. and Zhao, L., 2013, "How does culture influence corporate risk taking?" Journal of Corporate Finance, 23, 1-22

Li, M., Lu, Y., Phillips G.M., 2015, "CEO and the Product Market: When are powerful CEOs beneficial?" Working paper

Limbach, P. and Sonnenburg F., 2015, "CEO Fitness and Firm Value," Working paper

Lin, C., Ma, Y., Officer, M.S., and Zou H., 2013, "CEOs' military experience, agency costs and acquisition decisions," Working Paper

Liu, X., 2015, "Cultural origins and CEO incentive contracts," Working paper

Mace, M., 1971, "Directors, myth, and reality," Boston: Harvard Business School Press

Malmendier, U. and Nagel S., 2011, "Depression Babies: Do Macroeconomic Experiences Affect Risk Taking?" Quarterly Journal of Economics 126, 373–416

Malmendier, U., Tate, G., and Yan, J., 2011, "Overconfidence and early-life experiences: The effects of managerial traits on corporate financial policies," Journal of Finance 66: 1687-1733

Markus, H.R. and Kitayama S., 1991, "Culture and the self: Implications for cognition, emotion, and motivation," Psychological Review 98, 224–253

Masulis, R.W., and Mobbs, S., 2011, "Are all inside directors the same? Evidence from external directorships market," Journal of Finance 66:823-872

McCabe, D. L., Kenneth, D.B., and Linda, K.T., 2006. "Academic dishonesty in graduate business programs: Prevalence, causes, and proposed action," Academy of Management Learning & Education 5: 294-305

McSweeney, B., 2002, "Hofstede's model of national cultural differences and their consequences: A triumph of faith – a failure of analysis.," Human Relations 55, 89–118

Minton, B.A., Taillard, J.P. and Williamson, R., 2014, "Financial expertise of the board, risk taking and performance: Evidence from bank holding companies," Journal of Financial and Quantitative Analysis 49: 351–380.

Nonis, S., and Swift, C.O., 2001, "An examination of the relationship between academic dishonesty and workplace dishonesty: A multicampus investigation.," Journal of Education for Business, 76: 69–77

Office of the Comptroller of the Currency, 2014, "OCC Guidelines Establishing Heightened Standards for Certain Large Insured National Banks, Insured Federal Savings Associations, and Insured Federal Branches," Jan 11 2014, http://www.occ.gov/news-issuances/news-releases/2014/nr-occ-2014-4a.pdf

Pagnini, D.L. and Morgan S.P., 1990, "Intermarriage and Social Distance among US immigrants at the turn of the century," American Journal of Sociology 96: 405-432

Pan, Y., 2015, "The determinants and impact of executive-firm matches," Management Science, Forthcoming

Pan, Y., Siegel S., and Wang T.Y., 2014, "The Cultural Origin of Preferences: CEO Cultural Heritage and Corporate Investment," Working Paper

Perez-Gonzalez, F., 2006, "Inherited control and firm performance," American Economics Review 96: 1559-1588

Philippon, T. and Reshef, A., 2012. "Wages and human capital in the US finance industry: 1909 -2006," The Quarterly Journal of Economics 127: 1551-1609

Poirier, D.J., 1980, "Partial observability in bivariate probit models," Journal of Econometrics 12: 209–217.

Pool, V., Stoffman, N., Yonker, S., and Zhang H., 2015, "Do shocks to personal wealth affect risk-taking in delegated portfolios?," Working Paper

Portes, A and Rumbaut R.G., 2001, "The Second Generation and the Children of Immigrants Longitudinal Study," University of California Press and Russell Sage Foundation, CA: Berkeley

Povel, P., Singh, A. and Winton, R., 2007, "Booms, busts, and fraud," Review of Financial Studies 20: 1219–1254

Rice, T. and Strahan, P., 2010, "Does credit competition affect small firm finance?," Journal of Finance 65: 861-889

Rieger, M.O., M. Wang, M. and T. Hens, 2015, "Risk preferences around the World," Management Science 61: 637-648

Roberts, S., and Rosenberg, I., 2006, "Nutrition and aging: changes in the regulation of energy metabolism with aging," Physiological Reviews 86: 651–667.

Rose, C., 2007, "Does female board representation influence firm performance? The Danish evidence," Corporate Governance: An International Review 15: 403-413

Rosenstein, S., and Wyatt, J.G., 1997, "Inside directors, board effectiveness and shareholder wealth," Journal of Financial Economics 44: 229–250

Schaeck, K., Cihak, M., Maechler, A. and Stolz, S., 2012, "Who disciplines bank managers?" Review of Finance 16: 197–243

Schoenberg, R. and Reeves, R., 1999, "What determines acquisition activity within an industry?," European Financial Management 17: 93-98

Schwartz, S., 1994, Beyond individualism-collectivism: New cultural dimensions of values. Individualism and collectivism: Theory, method and applications. Sage, Newbury Park, California pp. 85–119.

Shivdasani, A., and Yermack, D., 1999, "CEO involvement in the selection of board members: An empirical analysis," Journal of Finance, 54: 1829-1853

Singh, V., Vinnicombe, S., and Johnson, P., 2001, "Women directors on top UK boards," Corporate Governance: An International Review 12: 479-488

Song, F., and Thakor, A.V., 2006, "Information control, career concerns, and corporate governance," Journal of Finance 61: 1845-96

Spolaore, E. and Wacziarg R., 2009, "The Diffusion of Development," Quarterly Journal of Economics 124: 469-529.

Stein, J., 1989, "Efficient capital market, inefficient firms: A model of myopic corporate behaviour," Quarterly Journal of Economics 104: 655–669.

Terjesen, S., Sealy, R., and Singh, V., 2009, "Women directors on corporate boards: A review and research agenda," Corporate Governance: An International Review 17: 320-337

Theil, H., 1971, "Principles of economics," New York: Wiley.

Trefler, D., 2004, "The long and short of the Canada–U.S. Free Trade Agreement," American Economic Review 94, 870–895.

Trompenaars, F., 1993, "Riding the Wave of Culture," The Economist Books

Van Essen, M., Engelen, P.J. and Carney, M., 2013, "Does good corporate governance help in a crisis? The impact of country- and Firm-level governance mechanisms in the European Financial crisis," Corporate Governance: An International Review 21: 201-224

Yang, T. and Zhao S., 2014, "CEO duality and firm performance: Evidence from an exogenous shock to the competitive environment," Journal of Banking and Finance 49: 534-552

Yim, S., 2013, "The acquisitiveness of youth: CEO age and acquisition behaviors." Journal of Financial Economics 108: 461-492

Wang, T.Y., 2013, "Corporate securities fraud: Insights from a new empirical framework," Journal of Law, Economics and Organization 29: 535–568

Wang, T.Y., Winton, A. and Yu, X., 2010, "Corporate fraud and business conditions: Evidence from IPOs," Journal of Finance 65: 2255–2292

Ward, A.J., Brown, J.A., and Rodriguez, D., 2009, "Governance bundles, firm performance, and the substitutability and complementarity of governance mechanisms," Corporate Governance: An International Review, 17(5): 646-660

Warner, J.B., Watts, R.L., and Wruck, K.H., 1988, "Stock prices and top management changes," Journal of Financial Economics, 20: 461-492

Weisbach, M.B., 1988, “Outside directors and CEO turnover,” Journal of Financial Economics 20, 431–460

Worthy, D.A., Gorlick, M.A., Pacheco, J.L., Schnyer, D.M., and Maddox, W.T., 2011. “With age comes wisdom: Decision-making in older and younger adults,” Psychology Science 22: 1375-1380

Zawel, M., 2005, “Untangling the Ivy League," College Prowler

Zingales, L., 2015, “The “cultural revolution” in finance," Journal of Financial Economics 117: 1-4