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Religion, Corporate Governance, and Executive Compensation*

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Abstract

We investigate how regional variation in religiosity and the prevalent religious denomination in a U.S. state where a company is headquartered are associated with the level and structure of executive compensation. We document a substantial compensation premium in executives working at firms headquartered in U.S. states with a high proportion of Catholics and conversely a discount in states with a high proportion of Protestants. We provide evidence suggesting that these findings are not caused by heterogeneous demand for executives' effort, managerial ability, or social skills. Our results are consistent with the "Catholic premium" and the "Protestant discount" being associated with the adherence to different social values that have implications for corporate governance quality and for managerial entrenchment. Our results highlight the importance of social values for economic activity and for contracting between economic agents.

1. Introduction

Research literature in social economics has long argued that social values and norms affect economic behavior and business activity (e.g. Altonji and Blank, 1999; Levitt, 2004). Religion constitutes an institutionalized set of beliefs reflecting a coherent system of fundamental values derived from divine authority (Clarke and Byrne, 1993). As such religion constitutes one of the most influential institutions that shape people's values and perceptions (Beckford, 2003; McGuire, 2008). These values and perceptions are in turn likely to influence social and economic interaction. Hence, it is important to study how religion influences economic behavior and contracting. For instance, Iannaccone (1998) suggests:

> *"studies of religion promise to enhance economics at several levels: generating information about a neglected area of 'nonmarket' behavior; showing how economic models can be modified to address questions about belief, norms and values; and exploring how*

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> *religion (and, by extension, morals and culture) affects economic attitudes and activities of individuals, groups and societies".* (Abstract)

Prior research provides ample evidence on how religion affects various aspects of economic activity. Religious beliefs and church attendance influence the economic growth (Barro and McCleary, 2003), the level of religiosity in a country impacts on risk aversion and investment rate (Hilary and Hui, 2009). Religion and religiosity also affect the propensity to develop one's intellectual capital through education (Cohen-Zada and Sander, 2008; Anderson, 1988; Glaeser and Sacerdote, 2008), and the density of one's social network (Lim and Putnam, 2010). In addition, locally prevalent religion conditions the nature of interaction between economic agents as it affects the degree of creditor protection (Stulz and Williamson, 2003), the preference for the structure of corporate boards (Volonté, 2015), and the way firms communicate with their customers through marketing activities (Fam, Waller, and Erdogan, 2004).

Due to its impact on social norms religion likely influences several vital personal traits such as the entrepreneurial spirit, risk tolerance, social skills and honesty that may significantly influence one's desirability in a labor market. These desirable professional characteristics tend to affect the value a firm derives from its employees. Hence, it is plausible to expect that religion affects wages. Past studies indeed document wage differences for several religious denominations. Chiswick (1983), Tomes (1985), and Steen (1996, 2004) provide evidence on a wage premium for Jewish males. Ewing (2000), Steen (2004), and Pitts, Mia, and Henry (2011) examine whether being raised in predominantly Catholic regions affects the wage one eventually earns. They document a significant Catholic wage premium and they attribute the finding to the greater investment in one's human capital in Catholic regions and to the positive signal Catholic education conveys about one's discipline, honesty, trustworthiness, and motivation.

However, the results on the impact of religion on economic activity and on wage premiums in particular are sensitive to the data sample and methodology choices. Berggren and Bjørnskov (2011) document a negative association between the level of trust and the share of a population who self-report to consider religion important in their daily life. Furthermore, in contrast to the U.S. evidence Tomes (1983, 1985) fails to find a Jewish wage premium in Canadian data and he concludes that in Canada return to human capital is greater for Protestants than for Catholics. Similarly, Cantoni (2015) finds no effect of Protestantism on economic growth.

The inconsistencies in the empirical findings may be driven by the difficulty to control for confounding characteristics in standard labor economic studies. Some regions may offer predominantly low-skilled jobs that attract less qualified workforce and pay lower wages. For example, the regions in the North-Eastern United States that is often referred to as the "Rust Belt" is dominated primary industries that demand a significant amount of unskilled labor. If these regions are chiefly populated by adherents of certain religious denomination their lower wages may be falsely attributed to their religion rather than to their skill or to the type of job they perform. Furthermore, wage levels in many less skilled jobs are significantly affected by local trade unions.

In regions where the bargaining power of trade unions is high wage levels may be higher irrespective of the social or religious concerns.

We extend prior research on the association between religion and wages by analyzing the relationship with the use of a sample of corporate top executives. Using this data sample is advantageous for several reasons. First, the observations are fairly homogeneous in terms of the types of job individual executives perform. Firm executives, and in particular the chief executive officers (CEOs) and the chief financial officers (CFOs), provide rather similar managerial services to the firm. Thus, the benefits firms derive from their work and that should determine their wage levels are more comparable than the one of common employees who may perform vastly different tasks requiring various skills. Second, the determinants of executive compensation are well established in the corporate finance literature, which allows us to control for a wide range of observable executive-related, firm-related, and performance-related characteristics. Comparable data are typically not available for lower-rank employees. Third, executive compensation is set in a relatively competitive labor market that is largely unconstrained by regulation or collective bargaining. Hence, we expect executives' wages to be shaped chiefly by economic rather than political considerations. Fourth, U. S. public firms are obliged to provide extensive disclosure about top executive remuneration, which allow us to obtain an extensive data set covering individual managers that is unlikely to be affected by the sample selection bias.

We document a significant discount in remuneration of executives who work for firms headquartered in U.S. states where a high proportion of citizens are registered as religious adherents. This wage discount, however, is not homogeneous across various religious denominations. Executive compensation is *ceteris paribus* higher in states with a high proportion of citizens adhering to Catholicism (i.e. "Catholic states") and conversely it is lower in states with a high proportion of citizens adhering to Protestantism (i.e. "Protestant states"). We further show that the "Catholic premium" and the "Protestant discount" are not driven by regional variation in demand for managerial effort that would entail a different structure of compensation contracts, different composition of variable-to-fixed remuneration and different pay-for-performance sensitivity. In addition, we use a proxy for managerial competence based on Demerjian, Lev, and McVay (2012) approach using the data envelopment analysis (DEA) to capture the share of a firm's efficiency attributable to the ability of the management team and the number of seats a CEO holds on corporate boards of other firms to proxy for the quality of his or her social network. Using these measures we provide evidence that the religion-related differences in executive pay are unlikely to be caused by heterogeneous managerial ability and/or social skills.

In contrast, we find some support for the proposition that the wage differences arise due to variation in corporate governance quality that is associated with difference in prevailing social norms in the Catholic and the Protestant states. Our results suggest that in the Catholic states executive compensation is more sensitive to the quality of a firm's corporate governance and to the proportion of institutional ownership that likely help limiting managerial entrenchment. We conclude that the variation in corporate governance quality cannot fully explain the religion-related cross-sectional variation

in executive compensation. Nevertheless, the greater sensitivity of executive compensation in the Catholic states to the disciplining market forces suggests that the quality of corporate governance could be a part of the explanation of the "Catholic premium" and the "Protestant discount".

Our study contributes to the stream of research analyzing the importance of social norms and religion in particular on economic activity by providing evidence on the differential impact of Protestantism and Catholicism on executive compensation. Prior research shows that religiosity as such has multiple effects on economic activity, e.g. through its impact on work ethics (Carlin and Gervais, 2009) and risk aversion (Hilary and Hui, 2009). Past research also shows that religiosity impacts on the principal-agent relationship in a firm. Firms located in more religious regions are less likely to be the target of class action securities lawsuits, to backdate stock options, to overpay top executives, to aggressively manage earnings, to restate earnings, and to report earnings that significantly deviate from expectations (Grullon, Kanatas, and Weston, 2009; Dyreng, Mayew, and Williams, 2012). We extend Grullon, Kanatas, and Weston's (2009) result on the pay discount in religious and in Protestant regions by exploiting the differences between Protestantism and Catholicism, which allows us to explore the underlying factors associated with the relationship.

Past research identifies stark differences in the impact of various religion types on the principal-agent relationships in a firm. Stulz and Williamson (2003) show that the creditor protection in Catholic countries is weaker than in Protestant countries and they argue that the country's principal religion better explains the cross-sectional variation in creditors rights that other cultural, legal, or economic factors. Volonté (2015) argues that firms located in Protestant (Catholic) Swiss cantons tend to have two-tier (one-tier) boards that help prevent the concentration of power that occur in one-tier boards. We extend this stream of research by documenting the "Catholic premium" and the "Protestant discount" in executive compensation and by providing evidence that they are unlikely to be explained by cross sectional differences in the demand for managerial effort, managerial talent, and/or managerial social connections.

The remainder of the paper is organized as follows. Section 2 reviews prior literature and it specifies the hypotheses. In section 3 we discuss the methodology and the data sample. Section 4 presents the empirical results and Section 5 concludes.

2. Literature and Hypotheses

2.1 Overall Religiosity

Religion constitutes one of the most influential institutions that affect people's values and social norms (Beckford, 2003; McGuire, 2008). By institutionalizing a common set of beliefs based on a coherent system of fundamental values and by taking an authoritative position on what kind of human behavior is desirable and what is not religion has an inherent ambition to shape human activity and social interaction. Hence, it is plausible to expect that religion also affects economic phenomena. Indeed, research examining the association between religion and economics dates back to Smith (1776) who discusses the connection between clergy and economic development.

Prior studies identify a number of economic aspects affected by religion and religiosity. Researchers argue that religion has a favorable impact on economic development by promoting trust between economic agents and thereby facilitating contracting and economic coordination (Fukuyama 1995). Guiso, Sapienza, and Zingales (2003) provide evidence that religiosity is positively associated with social attitudes conducive to economic growth despite of greater racial discrimination at workplace and less favorable perception of working women. Not all aspects of religion have a positive impact on economic activity. Barro and McCleary (2003) document a positive association between religious beliefs and economic growth, but a negative association between church attendance and economic growth. They argue that stronger religious beliefs stimulate economic growth because belief in afterlife incentivizes trustworthy behavior, which facilitates economic coordination and enhances productivity. In contrast, greater church attendance signifies greater use of scarce economic resources for the religious exercise that could alternatively be used elsewhere.

Hilary and Hui (2009) study the impact of religiosity on business decisions at the firm level. Consistent with Miller and Hoffmann (1995) and Osoba (2003) who document higher levels of risk aversion in more religious individuals Hilary and Hui (2009) show that firms located in highly religious regions exhibit lower degree of risk exposure as measured by the variability of a firm's stock returns and operating profitability. The authors also show that firms in more religious counties are more conservative in their investment policies, they invest less, they grow less, and financial markets react more positively when they announce new investments. As a firm's risk profile, growth, and profitability tend to affect executive compensation we expect local religiosity at the firm headquarters to have a systematic impact on the top management's remuneration.

Prior research suggests that religiosity affects economic contracting in labor markets. Carlin and Gervais (2009) develop a model that studies how managers' work ethics impacts on employment contracts and corporate behavior. They suggest that inherent work ethics constrains managerial opportunism, which affects the conventional trade-off relevant for designing compensation contracts. The authors argue that in firms hiring from a virtuous pool of agents less variable compensation is needed to incentivize managers because they have greater inherent motivation to make effort. This suggests that a greater proportion of executive compensation can be fixed, which reduces a firm's cost of risk-sharing. In line with the main prediction of this model empirical research documents a negative association between intrinsic and extrinsic (i.e. monetary) motivation (Deci, 1975; Kreps, 1997; James Jr., 2005).

Following prior research (Deci, 1975; Kreps, 1997; James Jr., 2005) we argue that religion likely has a favorable impact on work ethics and intrinsic motivation, which implies lower required levels of monetary compensation. We expect this tendency to apply for the labor market of top executives as their motivation is likely to be driven by similar factors as the motivation of other employees. Hence, we expect a negative association between religiosity rate prevalent in the state where a firm is headquartered and top executives' remuneration in these firms.

Hypothesis 1: There is a negative association between religiosity and executive compensation.

2.2 Religious Denominations

Past research shows that different religious denomination vary in their impact on social norms. In his seminal work in sociology, Weber's (1922) proposes that Protestant work ethics constitutes the underlying reason for the economic prosperity in the Protestant regions. He argues that Protestantism is associated with a greater emphasis on individualism and on responsibility for one's actions. These social values promote harder work and encourage saving, both of which contribute to economic growth and prosperity. Becker and Woessmann (2009) further develop the idea by suggesting that Protestantism may also be associated with greater investment to human capital due to the instruction to independently read and interpret the Bible, which promotes literacy and cultivates critical thinking. The authors test the proposition using data from nineteenth-century Prussia where the rate of adoption of Protestantism differed across counties. They conclude that Protestant ethics had a favorable impact both directly through stronger work ethics and indirectly due to its favorable impact on achieved education.

We therefore expect Protestantism to be associated with social norms that promote work ethics and interpersonal trust, both of which imply less need for extrinsic monetary motivation to align managers' and owners' interests. Greater intrinsic motivation of executives working in Protestant states implies less need for monetary motivation to induce the level of effort desired by the owners (Deci, 1975; Kreps, 1997; James Jr., 2005). Hence, we expect owners rationally choose lower levels of executive compensation in companies headquartered in the Protestant regions.

Hypothesis 2a: There is a negative association between the rate of adherence to Protestantism and executive compensation.

In contrast to the Protestant ethics that seems to be conducive of economic cooperation, in relation to Catholicism may have an adverse effect on values that facilitate contracting. Landes (1998) argues that historically the culture of intolerance resulting from intensive adherence to the Catholic religion in Spain was the primary reason the country's stalled economic development in the 16th and 17th century. Putnam (1994) suggests that the strong Catholic tradition in the South of Italy leads to the lack of trust towards others, which undermines economic activity. The author argues that the traditional Catholic religion emphasizes the vertical bond with the Church and it weakens the horizontal bond with fellow citizens. Inglehart, Basanez, and Moreno (1998) provide empirical evidence consistent with this theory.

This implies that in Catholic regions one can expect lower levels of intrinsic motivation (Deci, 1975; Kreps, 1997; James Jr., 2005), which create a need to use higher levels of monetary remuneration to induce the desired levels of managerial effort. In addition, the potentially weaker work ethics in Catholic states may be associated with more pervasive managerial entrenchment that may lead to the corporate board capture and *ceteris paribus* to a higher executive pay. In line with the above two arguments we formulate the following hypothesis.

Hypothesis 2b: There is a positive association between the rate of adherence to Catholicism and executive compensation.

2.3 Corporate Governance

Prior research suggests that much of the differences between Catholic and Protestant regions are associated with the country's legal origin and its effect on corporate governance. La Porta et al. (1997) distinguish between mostly Protestant common-law countries that typically have more efficient corporate governance systems and better investor protection and predominantly Catholic code-law countries with poorer corporate governance and weaker investor protection. Stulz and Williamson (2003) show that a country's principal religion predicts creditor rights better than conventional variables such as income per capita, openness to international trade, language, or legal system origin. Volonté (2015) documents differences in corporate governance quality in Catholic and Protestant cantons in Switzerland. He finds that firms located in Protestant cantons are more likely to have more independent corporate boards that perform tighter management oversight. This finding is consistent with the notion that the greater emphasis on individual accountability in Protestant states prevents collusion between the board of directors and firm management, which leads to more effective monitoring and limits managerial entrenchment. In a similar vein Grullon, Kanatas, and Weston (2009) find significant differences between Catholic and Protestant regions in various forms of corporate misconduct such as stock options backdating and earnings management.

In line with prior research we argue that weaker corporate governance invites managerial entrenchment (Shleifer and Vishny, 1997; Bebchuk, Cohen, and Ferrell, 2009). Entrenched managers take advantage of the agency conflict and they exert influence over their compensation packages pushing the remuneration levels above the economically efficient levels (Core, Holthausen, and Larcker, 1999; Bebchuk and Fried, 2003). We expect the risk of this kind of misuse of managerial power to be more likely in Catholic regions. Hence, we expect that in Catholic regions executive compensation is more sensitive to the quality of corporate governance as more efficient corporate governance systems are needed to constrain the potential misuse of managerial power in Catholic states. Based on this line of reasoning we formulate the following hypothesis.

Hypothesis 3: In Catholic states executive compensation is more sensitive to corporate governance quality.

3. Research Design

3.1 Methodology

We test our main hypothesis using the following regression specification:

$$Compensation_{it} = b_0 + b_1\, Religion_{it} + \Sigma\, b_k\, Control_{kit} + \Sigma\, b_l\, YFE_{lit} + e_{it} \qquad (1)$$

We use the total direct compensation (*lnComp*) for a firm *i* in the year *t* as the

main dependent variable. Following prior research (Roulstone 2003; Gabaix and Landier 2008) we use the "TDC1" variable as provided by the ExecuComp that comprises the salary, bonus, restricted stock grants, stock option grants, long term incentives, and other annual compensation. We adjust TDC1 for inflation using the average value of the US CPI for 1982–1984 as a baseline. As executive compensation can only take positive values we transform the measure by taking its natural logarithm to obtain a variable with a distribution close to normal. We Winsorize the log-transformed variable at top and bottom 1 percent. Correspondingly we compute three components of executive compensation - salary (*lnSalary*), bonus (*lnBonus*), and other direct compensation (*lnOtherComp*). To approximate the proportion of variable-to-fixed compensation we compute the ratio of bonus to base salary (*Bonus-Salary*) and the ratio of the sum of bonus and other direct compensation to base salary (*Var-Salary*).

Our main explanatory variables are proxies of religiosity based on the proportion of citizens in individual U.S. states that are registered as adherents to individual religious denominations. *Relig* measures the total number of adherents to any religious denomination as a proportion of the total state population, *Christ* captures the proportion of Christians in total population, *Cathol* measures the proportion of Catholics, *Protest* the proportion of Protestants, and *Prot-Cath* captures the ratio of the number of Catholics to the number of Protestants in a given state. Furthermore, we use an indicator variable *Bible* that is equal to 1 for firms headquartered in "Bible Belt" states and 0 otherwise. "Bible Belt" comprises traditionally religious mostly Protestant states in South-Eastern U.S.A. - Alabama, Arkansas, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, and Texas.

As control variables we use several executive-based, firm-based, and performance-based measures identified in prior research to be associated with executive compensation. *CEO* (*CFO*) are indicator variables that take the value of 1 if in a given fiscal year an executive is the firm's CEO (CFO) and 0 otherwise. We include an indicator variable for female executives (*Female*) as Bertrand and Hallock (2001), Gayle, Golan, and Miller (2012), Carter, Franco, and Gine (2014), and Newton and Simutin (2015) find significant differences in compensation between males and females. We measure executive tenure at the firm (*Tenure*) because more senior executives earn on average higher compensation (Finkelstein and Hambrick, 1989).

Prior research suggests that executives tend to earn higher compensation when working for larger and faster growing firms (Hartzell and Starks, 2003; Gabaix and Landier, 2008). We measure firm size by the natural logarithm of a firm's market capitalization (*lnME*), which is the product of the number of shares outstanding and the closing stock price on the last trading day of the fiscal year. We also include an accounting-based measure of firm size defined as the natural logarithm of a firm's total revenues (*lnSales*). We measure firm growth by the annual rate of growth in total revenues (*gSales*) defined as the ratio of total dollar sales for fiscal year t over total sales for the previous fiscal year minus 1.

We control for firm performance because Hartzell and Starks (2003), Roulstone (2003), Chang, Dasgupta, and Hilary (2010), and Nguyen and Nielsen (2014) document that executives at better-performing stocks earn higher compensation. We use a firm's operating profitability measured by its return on assets (*ROA*) defined as

the ratio of income before extraordinary items to book value of total assets. Furthermore, we control for a firm's excess stock return (*ExRet*) defined as the difference between the dividend-adjusted return on a firm's stock and the return on the Standard and Poor's (S&P) 500 Index returns over the firm's fiscal year. Prior research also shows that firms compensate executives for higher business risk (Roulstone 2003), which we approximate by a firm's standard deviation of daily stock returns over the fiscal year (*StdevRet*).

As executive compensation may be sensitive to the economic cycle we include year fixed effects (*YFE*) to capture trends in the labor market over time. We argue that systematic differences in firm characteristics across industries should mostly be captured by variables that we use as controls in our regressions (e.g. *ROA, gSales, ExRet, StdevRet*). We do not include industry fixed effects in the reported results because the severity of the agency problem may systematically differ across industries (e.g. due to the degree of transparency, intensity of competition, comparability of firm performance, etc.). We argue that religion is associated with executive pay because it has an impact on the severity of the agency problem. Hence, including industry fixed effects would take away some of the treatment effect. Nevertheless, as a robustness check we also include industry fixed effects (*IFE*) based on Fama and French (1997) classification of firms into 49 industries. The inclusion of the *IFE* does not materially affect our results (not tabulated, the results are available upon request). [1]We Winsorize all continuous variables at top and bottom 1 percent. Furthermore, we acknowledge that in our panel data residuals of individual executives may be correlated due to omitted personal characteristics we cannot control for, such as executives' honesty. To adjust for the correlation, we cluster standard errors at the executive level.

After providing empirical evidence for our main test we examine several conditioning variables (*Condition*) that likely affect the relationship between religiosity and executive remuneration. We examine the interaction terms between the conditioning variables and our proxies for religion to see whether the association between religion and executive compensation is stronger or weaker when a given conditioning variable is high or low. We use the following specification:

$$Compensation_{it} = b_0 + b_1\, Religion_{it} + b_2\, Condition_{it} + b_3\, Religion_{it}\, Condition_{it} + \Sigma\, b_k\, Control_{kit} + \Sigma\, b_l\, YFE_{lit} + e_{it}\,. \quad (2)$$

We consider several conditioning variables. We use Demerjian, Lev, and McVay's (2012) managerial ability score (*Ability*) as a proxy of managerial competence. The measure uses the data envelopment analysis (DEA) to capture how successful a firm's management team is in turning productive resources into revenues. The score represents the share of firm efficiency not attributable to firm-specific factors, thus likely attributable to the ability of the management team. The *Ability* score is provided on the annual basis for years between 1980 and 2012. We use the number

[1]As both the level of reginal religiosity and executive compensation are rather stable over time we cannot exploit time-series variation in the two measures and include state, firm, or executive fixed-effects. Nevertheless, we cluster the standard errors at the executive level to avoid over-reporting the test statistics.

of seats a CEO holds on corporate boards of other firms in a given year (*ExtSeats*) as a proxy for the quality of his or her social network. The *ExtSeats* variable is computed on the annual basis for years between 1990 and 2012. Outside board membership is an earmark of social status and recognition among executives' peers (Kaplan and Reishus 1990) and it provides a platform for keeping in contact with influential business people. We therefore expect *ExtSeats* to reflect how well a CEO is connected with the business community.

We use the corporate governance index (G-Index) based on Gompers, Ishii, and Metrick (2003) as a proxy for a firm's corporate governance quality. We transform the index by dividing it by the total number of 24 categories it consists of, by multiplying the result by -1, and by adding 1 so that the resulting transformed measure (*NegGix*) ranges from 0 to 1 with higher values representing better corporate governance. Finally, we use the percentage institutional ownership (*InstOwn*) as a proxy for the quality of owners' bargaining power vis-a-vis the management team. Past research shows that institutional investors concentrate higher ownership stakes and so they have greater incentive to play an active role in exercising their shareholder rights (Gillan and Starks 2000; Romano 2001). Furthermore, institutional investors tend to be more sophisticated than individual investors, which helps them to efficiently monitor the problems stemming from the agency conflict between the owners and managers (Bushee 1998; Collins, Gong, and Hribar 2003). Hence, we expect institutional investors to put greater disciplining pressure on the firm management, to reduce managerial entrenchment, and to negotiate managerial pay more efficiently.

We also investigate how sensitive an executive's compensation is on the value he or she creates for the firm owners. Following Jensen and Murphy (1990) we examine the pay-for-performance sensitivity with the use of the following regression specification:

$$DiffComp_{it} = b_0 + b_1\, Religion_{it} + b_2\, dWealth(y_0)_{it} + b_3\, dWealth(y\text{-}1)_{it} + b_4\, Religion_{it} \cdot dWealth(y_0)_{it} + b_5\, Religion_{it} \cdot dWealth(y\text{-}1)_{it} + \Sigma\, b_k\, Control_{kit} + \Sigma\, b_l\, YFE_{lit} + e_{it} \quad (3)$$

where *DiffComp* represents an annual increase in total executive compensation, and $dWealth(y_0)$ and $dWealth(y\text{-}1)$ represent the current and past year's change in shareholder wealth defined as annual stock returns multiplied by inflation-adjusted firm value of equity in the beginning of a fiscal year. Finally, we use the following specification to examine performance-related executive turnover:

$$Stay_{it} = b_0 + b_1\, Religion_{it} + b_2\, dWealth(y_0)_{it} + b_3\, dWealth(y\text{-}1)_{it} + b_4\, Religion_{it} \cdot dWealth(y_0)_{it} + b_5\, Religion_{it} \cdot dWealth(y\text{-}1)_{it} + \Sigma\, b_k\, Control_{kit} + \Sigma\, b_l\, YFE_{lit} + e_{it} \quad (4)$$

where *Stay* is an indicator variable defined in case a firm is included in the data sample both in the current and in the following year and that is equal to 1 when an executive retains his or her job in a given firm in the upcoming fiscal year and 0 otherwise. We provide a detailed definition of all variables in Table 1.

3.2 Data Sample

We collect our data on executive compensation and on executive characteristics (e.g. *CEO*, *CFO*, *Female*, *Tenure*) from ExecuComp, which covers (S&P) 1500 constituents over the period between period is 1992 and 2012. We obtain data on religiosity from Association of Religion Data Archives (ARDA) 2010 survey. We assume aggregate religious preferences remain fairly stable over time so we use the survey results for all our sample years. We source accounting data from Compustat Annual File, and financial market data on stock returns and market values from CRSP Daily. We obtain data on corporate board directorships from the RiskMetrics Directors Database formerly provided by the Investor Responsibility Research Center Institute (IRRC). We merge the IRRC data with ExecuComp data using the first name and the last name of an executive dropping expressions like "I", "Jr.", "Sr.", etc. Wherever possible we verify the match using information on executives' gender and age.

Table 1 Variables Definitions

Variable	***Definition***
Executive Compensation	
lnComp	Natural logarithm of inflation-adjusted value of the executive's total compensation that comprises salary, bonus, restricted stock grants, stock option grants, long-term incentives, and other annual compensation.
lnSalary	Natural logarithm of inflation-adjusted value of the executive's base salary.
lnBonus	Natural logarithm of inflation-adjusted value of the executive's bonus.
lnOtherComp	Natural logarithm of inflation-adjusted value of other direct compensation, which is computed as *Comp – Salary – Bonus*.
Bonus-Salary	The ratio of *Bonus* to *Salary.*
Var-Salary	The ratio of (*Bonus* and *OtherComp*) to *Salary.*
DiffComp	The annual increase in *Comp*.
Stay	Indicator variable defined in case a firm is included in the data sample both in the current and in the following year and that is equal to 1 when an executive retains his or her job in a given firm in the upcoming year and 0 otherwise.
Religion	
Bible	Indicator variable equal to 1 for firms headquartered in "Bible Belt" states and 0 otherwise. "Bible Belt" comprises traditionally religious states in South-Eastern U.S.A. - Alabama, Arkansas, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, and Texas.
Relig	The number of adherents of any denomination as a proportion of the total state population.
Christ	The number of Christians as a proportion of the total state population.
Cathol	The number of Catholics as a proportion of the total state population.
Protest	The number of Protestants as a proportion of the total state population.
Prot-Cath	The proportion of Catholics to Protestants in a given state.
Relig	The number of adherents of any denomination as a proportion of the total state population.
Conditional Variables	
Ability	The managerial ability score from Demerjian, Lev, and McVay (2012).
ExtSeats	The number of seats a CEO holds on corporate boards of other firms.
NegGix	The inverse corporate governance index (G-Index) based on Gompers, Ishii and Metrick (2003). We transform the index by dividing it by 24, multiplying it by -1 and adding 1. The measure ranges from 0 to 1 with higher values representing better corporate governance.
InstOwn	The percentage institutional ownership.

dWealth	The change in shareholder wealth defined as annual stock returns multiplied by inflation-adjusted firm value of equity in the beginning of a fiscal year.
Control Variables	
CEO	A dummy variable equal to 1 if the *ExecuComp* annual CEO indicator equals 1 or the executive has the highest pay for a firm-year and the executive's job title includes 'CEO' or 'Chief Executive Officer', and 0 otherwise.
Female	A dummy variable equal to 1 if the *ExecuComp* gender variable is equal to female, and 0 otherwise.
Tenure	The number of years an executive has worked for the company. We re-set the year counter if the executive is re-employed by the company after more than two years.
lnME	Natural logarithm of the market value of equity measured as the number of shares outstanding multiplied by the stock price at the end of the fiscal year.
lnSales	Natural logarithm of net sales for the fiscal year.
gSales	Sales growth in the past five years. We use at min. three years of sales data to calculate the variable.
ROA	Return on assets, which is the ratio of operating income after depreciation divided by total assets.
ExRet	Excess stock returns computed as the return on company stock over the fiscal year less the CRSP value-weighted market return.
StdevRet	Standard deviation of daily excess returns calculated over the fiscal year.
YFE	Year fixed-effects.

Notes: The table reports definitions of variables used in the study.

Following Yermack (2006), we exclude financial firms (SIC codes 6000–6999) as their distinctive operating characteristics complicate their comparability with conventional firms. We drop firm-years where the Comp is negative as well as distressed firms with negative book value of equity as they are likely to be run by crisis managers that may be compensated based on different criteria relative to normally performing firms. Our final sample consists of 167,797 observations with non-missing positive *lnComp*.

Table 2 shows sample descriptive statistics. The distribution of *lnComp* before the logarithmic transformation is highly skewed with mean (median) of 1.028 (0.533) million USD. These values are comparable to those documented in prior studies (e.g. Carter, Franco, and Gine, 2014). On average, executives receive bonus equal to 51.8 percent of their base salary as well as other direct compensation equal to 344.3 percent (i.e. 396.0 percent - 51.8 percent) of the base salary. As expected the distribution of these values are also highly skewed and the median values are markedly lower (26.9 percent and 203.6 percent respectively). 17.3 percent of sample executives are CEOs, 5.7 percent are women, mean tenure is 4.7 years, and an average executive has a 86.1 percent chance to retain his or her job in the upcoming year. Panel B of Table 2 shows that CEOs earn approximately 2.101 million USD per annum, CFOs 0.806 million USD, and other executives 0.803 million USD. The univariate statistics also suggests that on average females earn less than males (0.809 million USD relative to 1.041 million USD). Finally, consistent with our expectations Panel B of Table 2 provides preliminary evidence that executives in "Bible Belt" states earn less than elsewhere (0.951 million USD relative to 1.049 million USD). Table 2 also shows that on average mean (median) *gSales* is 14.2 (9.2) percent, mean (median) *ROA* is 9.0 (9.1) percent and mean excess stock return is 7.8 (-0.6) percent. Approximately 34.9 percent of equity ownership is institutional.

Table 2 Descriptive Statistics

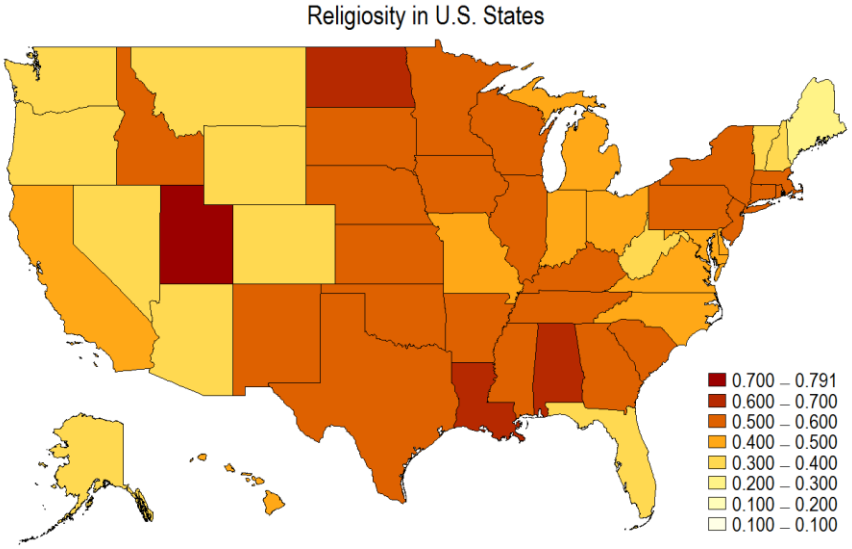
	N	*mean*	*sd*	*p25*	*p50*	*p75*
Panel A - All Observations						
Comp	167 797	1 027.964	1 449.344	275.400	533.041	1 111.131
lnComp	167 797	6.361	1.022	5.618	6.279	7.013
BonusSalary	167 797	0.518	1.223	0.000	0.269	0.719
VarSalary	167 797	3.960	12.374	0.931	2.036	4.013
Stay	167 797	0.861	0.346	1.000	1.000	1.000
Relig	164 327	0.494	0.068	0.450	0.512	0.553
Christ	163 231	0.451	0.076	0.399	0.467	0.518
Cathol	164 327	0.216	0.104	0.134	0.204	0.276
Protest	163 231	0.234	0.116	0.124	0.218	0.332
Ability	151 737	0.015	0.136	-0.073	0.004	0.091
ExtSeats	167 797	0.117	0.428	0.000	0.000	0.000
NegGix	88 537	0.616	0.109	0.542	0.625	0.708
InstOwn	167 040	0.353	0.408	0.000	0.000	0.794
CEO	167 797	0.173	0.378	0.000	0.000	0.000
Female	167 797	0.057	0.231	0.000	0.000	0.000
Tenure	167 797	4.711	3.466	2.000	4.000	6.000
lnME	156 613	7.148	1.586	6.024	6.997	8.144
lnSales	166 815	7.017	1.639	5.929	6.967	8.092
gSales	157 545	0.143	0.206	0.032	0.094	0.195
ROA	166 964	0.091	0.103	0.052	0.091	0.142
ExRet	149 823	0.078	0.524	-0.224	-0.004	0.252
StdevRet	155 281	0.026	0.013	0.017	0.023	0.032
Panel B - Data Partitions						
Comp | CEO = 1	29 028	2 100.893	2 199.162	623.996	1 288.246	2 692.313
Comp | CFO = 1	23 437	806.430	971.582	292.891	517.903	941.550
Comp | Other	115 332	802.936	1 138.762	241.957	445.363	878.214
Comp | Female = 1	9 504	809	1 146	236	446	886
Comp | Female = 0	158 293	1 041.109	1 464.524	278.256	539.125	1 127.954
Comp | Bible = 1	36 848	952	1 336	268	509	1 028
Comp | Bible = 0	130 949	1 049.448	1 478.844	277.865	540.247	1 137.668

Notes: The table shows descriptive statistics for the key variables. Panel A is based on the entire sample, Panel B is based on data partitions based on the executive type (CEO, CFO, other), executive gender (female, male), and company location (in "Bible Belt" states, elsewhere). Number of observations (*N*), pooled-sample mean (*mean*), standard deviation (*sd*), first quartile (*p25*), median (*p50*), third quartile (*p75*) for variables used in the study. All continuous variables but for stock returns Winsorized at top and bottom 1 per cent. Variable definitions in Table 1.

Figure 1 represents graphically *Relig* in individual U.S. States. *Relig* ranges from 27.6 percent in Maine to 79.1 percent in Utah (not tabulated). Table 2 shows that

mean (median) *Relig* is states where firms are headquartered is 0.494 (0.450). The most religious areas correspond to the "Bible Belt" states in the South-East, the Western states of the American Midwest and some of the founding states in the North. In contrast, some of the least religious states are located in the North-West of the U.S.A.

Figure 1 Religiosity in U.S. States



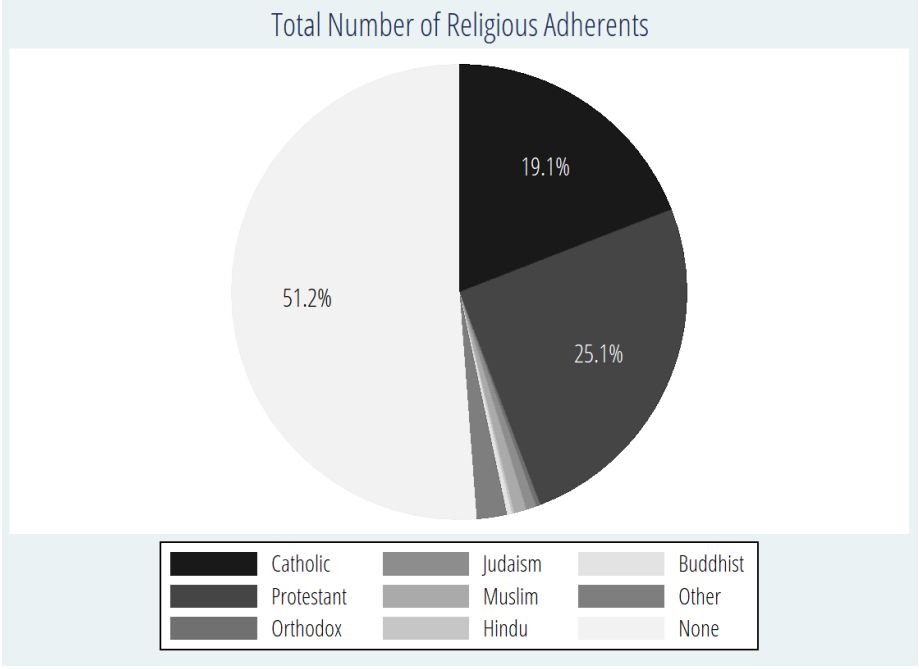
Notes: The figure shows religiosity in individual U.S. states measured by the proportion of adherents of any denomination as a proportion of the total state population (*Relig*).

Figure 2 shows the decomposition of *Relig* into various religious denominations. The Figure shows that slightly less than half of U.S. citizens adhere to one of the religious denominations. Christians constitute the most populous religious groups that includes the Protestants representing 25.1 percent of the population, the Catholics representing 19.1 percent, and the Orthodox who constitute 0.3 percent of the population. Only a fraction of U.S. citizens adhere to one of the remaining religious denominations. Jews constitute 0.7 percent of the population, Muslims 0.8 percent, Hindu 0.2, and Buddhists 0.3 percent. Due to the prominence of Christianity in our sample we concentrate the remaining analysis on this religious denomination and on its two main subcomponents - Catholicism and Protestantism.

Table 3 shows correlations for the key variables of our analysis. The Pearson's correlation coefficients are shown below the main diagonal and the Spearman's rank correlations above the main diagonal. The coefficients are based on non-missing observations for all variables with all continuous variables but for stock returns being Winsorized at top and bottom 1 per cent. In line with our hypotheses 1, 2a, and 2b we observe a negative Pearson correlation between *lnComp* and *Relig* (corr -0.009, p-value 0.011) as well as a negative correlation between *lnComp* and *Protest* (corr -0.093, p-value 0.000), but a positive correlation between *lnComp* and *Cathol* (corr

0.086, p-value 0.000). We also observe a positive correlation between *lnComp* and *Ability* (corr 0.045, p-value 0.000), which suggests that more competent executives are paid more. There is a strong positive correlation between *lnComp* and *ExtSeats* (corr 0.278, p-value 0.000), which suggests that executives are compensated for the quality of their social network. The table shows a negative correlation between *lnComp* and *NegGix* (corr -0.068, p-value 0.000) suggesting that executives receive lower pay in firms with good corporate governance and a positive correlation between *lnComp* and *InstOwn* (corr 0.103, p-value 0.000) indicating that institutional investors are better able to hire executives who they are ready to pay more.

Figure 2 Religious Denominations



Notes: The figure shows the proportion of total number of adherents to various religious denominations in the U.S.A.

Table 3 shows correlations for the key variables of our analysis. The Pearson's correlation coefficients are shown below the main diagonal and the Spearman's rank correlations above the main diagonal. The coefficients are based on non-missing observations for all variables with all continuous variables but for stock returns being Winsorized at top and bottom 1 per cent. In line with our hypotheses 1, 2a, and 2b we observe a negative Pearson correlation between *lnComp* and *Relig* (corr -0.009, p-value 0.011) as well as a negative correlation between *lnComp* and *Protest* (corr -0.093, p-value 0.000), but a positive correlation between *lnComp* and *Cathol* (corr 0.086, p-value 0.000). We also observe a positive correlation between *lnComp* and

Ability (corr 0.045, p-value 0.000), which suggests that more competent executives are paid more. There is a strong positive correlation between *lnComp* and *ExtSeats* (corr 0.278, p-value 0.000), which suggests that executives are compensated for the quality of their social network. The table shows a negative correlation between *lnComp* and *NegGix* (corr -0.068, p-value 0.000) suggesting that executives receive lower pay in firms with good corporate governance and a positive correlation between *lnComp* and *InstOwn* (corr 0.103, p-value 0.000) indicating that institutional investors are better able to hire executives who they are ready to pay more.

Table 3 Correlation Matrix

	ln Comp	Relig	Cathol	Protest	Ability	Ext Seats	Neg Gix	Inst Own	CEO	Female	Tenure	ln ME	ln Sales	g Sales	ROA	Ex Ret	Stdev Ret
	corr/p	corr/p	corr/p	corr/p	corr/p	corr/p	corr/p	corr/p	corr/p	corr/p	corr/p	corr/p	corr/p	corr/p	corr/p	corr/p	corr/p
lnComp		-0.014	0.088	-0.097	0.056	0.280	-0.082	0.101	0.351	-0.039	0.201	0.612	0.519	0.106	0.158	0.132	-0.195
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Relig	-0.009		0.335	0.209	0.003	0.009	-0.051	-0.017	0.001	-0.009	-0.001	0.013	-0.003	-0.032	0.019	0.007	-0.041
	(0.012)		(0.000)	(0.000)	(0.433)	(0.013)	(0.000)	(0.000)	(0.821)	(0.018)	(0.819)	(0.001)	(0.441)	(0.000)	(0.000)	(0.060)	(0.000)
Cathol	0.086	0.289		-0.719	-0.044	0.008	0.025	0.009	-0.000	0.034	-0.036	0.078	-0.026	-0.007	-0.010	0.011	0.000
	(0.000)	(0.000)		(0.000)	(0.000)	(0.035)	(0.000)	(0.014)	(0.991)	(0.000)	(0.000)	(0.000)	(0.000)	(0.040)	(0.008)	(0.002)	(0.919)
Protest	-0.094	0.301	-0.766		0.054	0.012	-0.107	-0.011	0.001	-0.043	0.038	-0.063	0.065	-0.049	0.049	0.002	-0.091
	(0.000)	(0.000)	(0.000)		(0.000)	(0.001)	(0.000)	(0.002)	(0.789)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.638)	(0.000)
Ability	0.046	-0.008	-0.028	0.036		0.008	-0.036	0.000	0.004	0.014	0.067	0.123	0.054	0.204	0.418	0.070	-0.079
	(0.000)	(0.028)	(0.000)	(0.000)		(0.038)	(0.000)	(0.942)	(0.260)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ExtSeats	0.278	0.019	0.004	0.011	0.003		-0.052	0.020	0.314	0.007	0.212	0.183	0.187	-0.024	0.041	-0.003	-0.088
	(0.000)	(0.000)	(0.317)	(0.003)	(0.485)		(0.000)	(0.000)	(0.000)	(0.050)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.436)	(0.000)
NegGix	-0.069	-0.067	0.033	-0.097	-0.022	-0.052		0.019	0.000	0.017	-0.012	-0.111	-0.211	0.174	-0.001	-0.022	0.218
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		(0.000)	(0.894)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.796)	(0.000)	(0.000)
InstOwn	0.103	-0.021	0.013	-0.014	0.017	0.003	0.010		0.008	0.061	0.179	0.127	0.007	0.047	-0.054	0.113	-0.008
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.375)	(0.004)		(0.025)	(0.000)	(0.000)	(0.000)	(0.070)	(0.000)	(0.000)	(0.000)	(0.023)
CEO	0.367	0.001	-0.000	0.001	0.003	0.293	0.001	0.008		-0.070	0.243	0.009	0.002	0.002	0.007	0.005	-0.001
	(0.000)	(0.887)	(0.993)	(0.737)	(0.371)	(0.000)	(0.869)	(0.025)		(0.000)	(0.000)	(0.018)	(0.618)	(0.507)	(0.043)	(0.137)	(0.687)
Female	-0.042	-0.010	0.033	-0.042	0.010	0.001	0.017	0.059	-0.070		-0.044	-0.001	-0.010	0.005	0.012	-0.008	0.020

	(0.000)	(0.004)	(0.000)	(0.000)	(0.005)	(0.798)	(0.000)	(0.000)	(0.000)		(0.000)	(0.782)	(0.004)	(0.131)	(0.001)	(0.035)	(0.000)
Tenure	0.211	0.001	-0.035	0.042	0.059	0.194	-0.016	0.215	0.262	-0.047		0.091	0.061	0.018	0.068	0.038	-0.016
	(0.000)	(0.758)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
lnME	0.614	0.021	0.075	-0.061	0.083	0.180	-0.085	0.126	0.008	-0.002	0.096		0.762	0.160	0.345	0.199	-0.435
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.029)	(0.553)	(0.000)		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
lnSales	0.517	0.023	-0.046	0.067	0.019	0.178	-0.181	0.017	0.001	-0.010	0.067	0.780		-0.011	0.164	0.051	-0.430
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.738)	(0.008)	(0.000)	(0.000)		(0.003)	(0.000)	(0.000)	(0.000)
gSales	0.119	-0.066	0.016	-0.065	0.189	-0.023	0.180	0.034	0.002	0.006	-0.026	0.128	-0.033		0.248	0.038	0.150
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.631)	(0.108)	(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)
ROA	0.152	0.027	-0.027	0.059	0.392	0.035	-0.014	-0.029	0.005	0.015	0.054	0.342	0.224	0.108		0.191	-0.279
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.151)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		(0.000)	(0.000)
ExRet	0.112	-0.002	0.017	-0.016	0.063	-0.016	0.015	0.090	0.004	-0.009	0.023	0.143	-0.008	0.060	0.142		-0.062
	(0.000)	(0.598)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.264)	(0.015)	(0.000)	(0.000)	(0.025)	(0.000)	(0.000)		(0.000)
StdevRet	-0.152	-0.070	0.035	-0.096	-0.088	-0.071	0.200	-0.009	-0.000	0.019	-0.046	-0.408	-0.410	0.207	-0.365	0.056	
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.012)	(0.955)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	

Notes: The table shows Pearson's correlation coefficients below the main diagonal, Spearman's rank correlations above the main diagonal. P-values in brackets below coefficients. Based on non-missing observations for all variables. All continuous variables but for stock returns Winsorized at top and bottom 1 per cent. Variable definitions in Table 1.

4. Results

4.1 Main Findings

Table 4 shows that prevailing religiosity of citizens in states where a firm is headquartered is strongly associated with executive compensation. Furthermore, the table shows that there are important differences between religious denominations. Model 1 of Table 4 uses the indicator variable *Bible* that is equal to 1 in traditionally religious mostly Protestant "Bible Belt" states in the South-Eastern U.S.A. The slope coefficient for *Bible* is negative and highly significant (-0.045, t-stat -5.20) indicating that in the "Bible Belt" states executives earn approximately 4.4 percent (i.e. *exp*(0.045) - 1) less relative firms of comparable characteristics headquartered in other states. In Model 2 we approximate religiosity with the variable *Relig* that captures the percentage of religious adherents to any denomination in the total state population. Consistent with Hypothesis 1 the slope coefficient at *Relig* is significantly negative (-0.196, t-stat -3.49), which indicates that executives are paid less in religious states. In Model 3 we use variable *Christ* that measures the proportion of Christians in the state's total population. Again, we observe a significantly negative slope coefficient (-0.243, t-stat -4.76). Hence, we conclude that in general greater religiosity is associated with lower executive pay.

Table 4 also shows that various religions differ in their correlation with executive compensation. We divide Christians into two groups: the Catholics (*Cathol*) and the Protestants (*Protest*). When including both variables in Model 4 we observe a negative coefficient at *Protest* (-0.407, t-stat -8.06), but a positive coefficient at *Cathol* (0.179, t-stat 3.33), which is consistent with our predictions in Hypotheses 2a and 2b. We refer to the two findings as the "Protestant discount" and the "Catholic premium" in executive compensation. In Model 5 of Table 4 we integrate the relative prevalence of Catholic and Protestant belief into one measure (*Prot-Cath*) that captures the ratio of Protestants to Catholics in a given state. As expected this measure has a negative and highly significant impact on executive compensation (coef. -0.013, t-stat -11.31) underscoring the differential impact of the two religious denominations.

Having provided empirical evidence in support of our Hypotheses 1, 2a, and 2b we now proceed with our analysis in three steps. First, to evaluate the consistency of our findings we partition our data sample based on executive types and compensation components and we analyze the relationship between religion and executive compensation in each of the partitions. Second, we provide evidence that is inconsistent with alternative explanations based on (i) the differences in demand for managerial effort in Catholic and Protestant states, (ii) the differences in demand for managerial ability, and (iii) the differences in demand for managers' social skills. Finally, we provide evidence in support of Hypothesis 3 that suggests that the "Catholic premium" is associated with variation in corporate governance quality that is related to managerial entrenchment and on the efficiency of compensation bargaining between firm owners and the managers.

Table 4 Main Findings

	lnComp	*lnComp*	*lnComp*	*lnComp*	*lnComp*
	coef/t	*coef/t*	*coef/t*	*coef/t*	*coef/t*
Intercept	2.656***	2.741***	2.755***	2.715***	2.677***
	(96.85)	(72.43)	(78.04)	(78.53)	(95.66)
Bible	-0.045***				
	(-5.20)				
Relig		-0.196***			
		(-3.49)			
Christ			-0.243***		
			(-4.76)		
Cathol				0.179***	
				(3.33)	
Protest				-0.407***	
				(-8.06)	
Prot-Cath					-0.013***
					(-11.31)
CEO	0.897***	0.895***	0.896***	0.894***	0.895***
	(84.21)	(83.57)	(83.39)	(83.76)	(83.51)
Female	-0.084***	-0.083***	-0.084***	-0.093***	-0.087***
	(-5.82)	(-5.71)	(-5.75)	(-6.43)	(-6.00)
Tenure	0.018***	0.018***	0.018***	0.018***	0.018***
	(15.11)	(14.96)	(14.88)	(15.35)	(15.13)
lnME (y-1)	0.321***	0.325***	0.325***	0.313***	0.320***
	(81.29)	(81.27)	(81.25)	(77.02)	(79.83)
lnSales (y-1)	0.118***	0.114***	0.115***	0.126***	0.119***
	(30.59)	(29.53)	(29.52)	(32.04)	(30.56)
gSales (y-1)	0.244***	0.234***	0.237***	0.244***	0.243***
	(13.36)	(12.78)	(12.91)	(13.39)	(13.29)
ROA (y-1)	-0.234***	-0.235***	-0.239***	-0.198***	-0.221***
	(-6.36)	(-6.31)	(-6.45)	(-5.37)	(-5.96)
ExRet (y-1)	0.066***	0.064***	0.063***	0.067***	0.065***
	(14.89)	(14.26)	(14.02)	(14.91)	(14.39)
StdevRet (y-1)	11.489***	11.587***	11.491***	11.064***	11.409***
	(35.15)	(35.28)	(34.88)	(33.63)	(34.59)
YFE	yes	yes	yes	yes	yes
Number of observations	146 594	144 162	143 120	143 120	143 120
Adjusted R2	0.521	0.520	0.521	0.525	0.523

Notes: The table shows the association between religiosity (*Bible, Relig*) or the rate of adherence to various religious denominations (*Christ, Cathol, Protest, Prot-Cath*) and executive compensation. Column labels show the dependent variable. Variable definitions in Table 1. All continuous variables Winsorized at top

and bottom 1 per cent. Reported *t-statistics* in parentheses based on clustered standard errors at the executive level. ***, **, * indicate statistical significance at 1%, 5%, and 10% level respectively.

4.2 Data Partitions

In Table 5 we distinguish between different executive types and between various components of executive compensation. The left panel of Table 5 analyzes the determinants of executive compensation separately for the CEOs, the CFOs, and for the other executives. All the three slope coefficients for *Cathol* are positive and they are significant for CEOs in Model 1 (coef. 0.420, t-stat 2.77) and for other executives in Model 3 (coef. 0.118, t-stat 2.04). All the three slope coefficients for *Protest* are negative and significant at 10 percent level or better. The finding that the "Catholic premium" and the "Protestant discount" are fairly consistent across executive types increases confidence that the results are not driven by unusual data characteristics and instead they likely capture the effect of fundamental factors.

In the right panel of Table 5 we distinguish between three components of total compensation - the salary, the bonus, and other direct compensation. Again all the three slope coefficients for *Cathol* are positive and they are significant for *lnSalary* in Model 4 (coef. 0.214, t-stat 6.10) and for *lnOtherComp* in Model 6 (coef. 0.467, t-stat 4.37). In contrast, the three slope coefficients for *Protest* are negative and significant at 5 percent level or better. Thus, we consistently also observe the "Catholic premium" and the "Protestant discount" in all three compensation components. This suggests that the opposite effects Catholicism and Protestantism have on executive compensation likely reflect a systematic pattern that can be driven by fundamental differences in values the two religious denominations uphold, which merits further analysis of the underlying causes.

Table 5 Data Partitions

	lnComp | CEOs	***lnComp | CFOs***	***lnComp | Others***	***lnSalary***	***lnBonus***	***lnOther Comp***
	coef/t	*coef/t*	*coef/t*	*coef/t*	*coef/t*	*coef/t*
Intercept	3.089***	2.676***	2.752***	3.684***	1.253***	-0.607***
	(31.04)	(20.98)	(71.85)	(168.77)	(22.05)	(-8.74)
Cathol	0.420***	0.151	0.118**	0.214***	0.066	0.468***
	(2.77)	(1.38)	(2.04)	(6.10)	(0.71)	(4.37)
Protest	-0.261*	-0.445***	-0.433***	-0.145***	-0.285***	-0.195**
	(-1.82)	(-4.22)	(-7.95)	(-4.39)	(-3.31)	(-1.99)
CEO				0.615***	0.982***	1.022***
				(91.67)	(58.87)	(49.91)
Female	0.045	-0.062**	-0.106***	-0.035***	-0.136***	-0.126***
	(0.73)	(-2.13)	(-6.56)	(-3.68)	(-5.08)	(-4.44)
Tenure	-0.008***	0.010***	0.026***	0.024***	0.022***	0.012***
	(-2.88)	(4.00)	(17.53)	(32.06)	(9.07)	(5.81)
lnME (y-1)	0.301***	0.324***	0.315***	0.074***	0.137***	0.549***
	(27.15)	(37.86)	(69.72)	(29.32)	(19.90)	(67.39)

lnSales (y-1)	0.172***	0.110***	0.119***	0.134***	0.283***	0.091***
	(15.86)	(13.60)	(26.77)	(56.51)	(40.52)	(11.91)
gSales (y-1)	0.063	0.207***	0.290***	-0.064***	0.170***	0.422***
	(1.16)	(5.82)	(13.97)	(-5.71)	(6.07)	(12.59)
ROA (y-1)	-0.205*	-0.283***	-0.182***	-0.203***	0.250***	-0.565***
	(-1.88)	(-3.65)	(-4.45)	(-9.13)	(4.08)	(-7.60)
ExRet (y-1)	0.092***	0.055***	0.062***	-0.002	0.145***	0.063***
	(7.77)	(5.62)	(11.40)	(-0.74)	(20.97)	(6.29)
StdevRet (y-1)	7.529***	9.979***	12.040***	1.885***	4.963***	17.885***
	(8.43)	(14.81)	(31.58)	(9.17)	(8.55)	(25.68)
YFE	yes	yes	yes	yes	yes	yes
Number of observations	25 208	20 434	97 478	142 850	88 390	140 381
Adjusted R2	0.461	0.517	0.446	0.524	0.379	0.341

Notes: The table shows the association between the rate of adherence to Catholicism and Protestantism and executive compensation separately for CEOs, CFOs, and the other executives (Left Panel) and for the three compensation components (*lnSalary, lnBonus, lnOtherComp*) (Right Panel). Column labels show the dependent variable. Variable definitions in Table 1. All continuous variables Winsorized at top and bottom 1 per cent. Reported *t-statistics* in parentheses based on clustered standard errors at the executive level. ***, **, * indicate statistical significance at 1%, 5%, and 10% level respectively.

4.3 Managerial Effort

We start our analysis of alternative explanations for our findings by examining the evidence on potential systematic differences in demand for managerial effort in Catholic and Protestant states. Economic theory suggests that to induce greater managerial effort firm owners structure compensation contracts in a way that makes managerial compensation dependent on firm performance. Nevertheless, firm performance does not only depend on managerial effort but also on external factors that are beyond managerial control (i.e. chance). Hence, increasing the variable component of executive compensation increases managers' uncertainty about their future compensation. Managers are typically assumed to be risk averse and so when their future payoffs are tied to firm performance they require higher expected pay to compensate for the increased risk. If firm owners in Catholic states have a higher demand for managerial effort than in Protestant states, the "Catholic premium" and the "Protestant discount" may simply reflect a compensation for the different structure of compensation contracts designed to induce different effort levels. We refer to this possibility as the "induced effort" explanation.

To investigate the empirical support for this potential explanation we first revisit the results reported in right panel of Table 5. We note that the "Catholic premium" and the "Protestant discount" are most pronounced in the base salary component. This is inconsistent with the "induced effort" explanation, which implies that the effect should concentrated in the variable components of executive compensation. If owners in Catholic (Protestant) states demand greater (lower) managerial effort we would expect them to grant managers on average higher (lower) bonus (*lnBonus*) and perhaps also higher (lower) other direct compensation

(*lnOtherComp*) that includes grants of restricted equity and executive stock options. The weak result for *Cathol* in Model 5 of Table 5 seems to be inconsistent with these predictions and so it seems unlikely that the *ceteris paribus* higher (lower) executive compensation in Catholic (Protestant) states is driven by differences in the structure of the compensation contracts in Catholic (Protestant) states aimed at inducing greater (lesser) effort.

In Table 6 we investigate the relative magnitude of the variable and fixed compensation components. If the owners structure compensation contracts to induce greater managerial effort we expect the variable component of executive compensation to be larger relative to the fixed component. We consider the base salary (*Salary*) to clearly represent the fixed part of executive compensation and the bonus (*Bonus*) to clearly belong the variable part. The other direct compensation (*OtherComp*) includes both a variable and a fixed pars and therefore it cannot be easily classified into the former or the latter. We therefore define two variables that capture the importance of the variable component. *Bonus-Salary* measures the proportion of bonus to the base salary and *Var-Salary* uses the sum of *Bonus* and *OtherComp* divided by *Salary* as a proxy for the prominence of the variable compensation component.

Table 6 Compensation Structure

	Bonus-Salary	***Bonus-Salary***	***Var-Salary***	***Var-Salary***
	coef/t	*coef/t*	*coef/t*	*coef/t*
Intercept	-0.111*	-0.112*	-8.673***	-9.152***
	(-1.67)	(-1.88)	(-18.02)	(-18.01)
Relig	-0.429***		-4.068***	
	(-4.11)		(-5.45)	
Cathol		-0.403***		-2.727***
		(-3.98)		(-4.11)
Protest		-0.487***		-3.870***
		(-5.16)		(-6.59)
CEO	0.161***	0.161***	2.375***	2.382***
	(8.88)	(8.86)	(9.93)	(9.90)
Female	-0.045***	-0.047***	-0.436***	-0.462***
	(-3.49)	(-3.62)	(-3.53)	(-3.74)
Tenure	-0.005***	-0.005***	-0.107***	-0.106***
	(-3.00)	(-2.93)	(-5.93)	(-5.83)
lnME (y-1)	0.052***	0.049***	1.736***	1.702***
	(7.52)	(7.32)	(25.82)	(25.67)
lnSales (y-1)	0.056***	0.058***	-0.197***	-0.166**
	(11.41)	(11.96)	(-3.07)	(-2.57)
gSales (y-1)	0.107***	0.107***	2.961***	2.997***
	(3.57)	(3.58)	(7.78)	(7.86)
ROA (y-1)	0.324***	0.331***	-2.302***	-2.235***

	(6.46)	(6.50)	(-4.06)	(-3.89)
ExRet (y-1)	0.098***	0.100***	0.455***	0.467***
	(12.32)	(12.40)	(4.92)	(5.04)
StdevRet (y-1)	2.011***	1.805***	87.549***	85.974***
	(3.74)	(3.36)	(15.28)	(15.10)
YFE	yes	yes	yes	yes
Number of observations	144 253	143 208	144 253	143 208
Adjusted R2	0.070	0.070	0.052	0.052

Notes: The table shows the association between the rate of adherence to Catholicism and Protestantism and the proportion of variable compensation relative to the base salary. Column labels show the dependent variable. Variable definitions in Table 1. All continuous variables Winsorized at top and bottom 1 per cent. Reported *t-statistics* in parentheses based on clustered standard errors at the executive level. ***, **, * indicate statistical significance at 1%, 5%, and 10% level respectively.

Table 6 shows that despite of the different definitions both variables yield similar results, which suggests that they capture a similar underlying construct. Greater religiosity is associated with less intensive use of variable compensation both when approximated with *Bonus-Salary* in Model 1 (coef. -0.429, t-stat -4.11) and with *Var-Salary* in Model 3 (coef. -4.068, t-stat -5.45). This result per se could potentially contribute to explaining the on average lower executive compensation in more religious states documented in Model 2 of Table 4. Nevertheless, when distinguishing between Catholicism and Protestantism we observe that both the coefficient at *Cathol* and *Protest* are negative and significant both in Model 2 and in Model 4, which is inconsistent with the positive documented effect of Catholicism and the negative effect of Protestantism. Hence, in line with our previous tentative conclusion this result also suggests that the structure of executive compensation contracts is an unlikely reason for the differences in executive pay between Catholic and Protestant states.

To formally evaluate the "induced effort" explanation we measure the differences across Catholic and Protestant states in pay-for-performance sensitivity and in conditional executive turnover. Following Jensen and Murphy (1990) we examine the pay-for-performance sensitivity by regressing the annual increase in total executive compensation (*DiffComp*) on the current and past change in shareholder wealth *dWealth*(*y*0) and *dWealth*(*y*-1). We note that as expected *dWealth* is correlated with the alternative performance measures suggesting that better performing firms create greater shareholder wealth (not tabulated). In Table 7 we thus exclude the other firm performance measures (*ExRet, ROA*) to avoid multi-collinearity and to fully capture the effect of firm performance in *dWealth*. We interact the lagged and contemporaneous *dWealth* with *Cathol* and *Protest* to see if executive pay in Catholic (Protestant) states is more (less) sensitive to past and present creation of shareholder wealth. Positive interaction terms would indicate higher sensitivity of executive compensation to firm performance, which would suggest more risky compensation contracts.

As expected, in Model 1 of Table 7 we observe highly positive slope coefficients at the main effects for both *dWealth*(*y*0) (coef. 184,569, t-stat 15.29) and *dWealth*(*y*-1) (coef. 147,820, t-stat 11.56), which suggests that the current and the past

shareholder value creation is associated with increased executive compensation. However, consistent with the results on the composition of executive compensation reported in Table 6, we fail to observe systematic differences in pay-for-performance sensitivity between Catholic and Protestant states. In Model 2 of Table 7 all the interactions are either negative or insignificant, which suggests that if anything executive compensation is less sensitive to performance both in Catholic and Protestant states and which is inconsistent with the "induced effort" explanation.

We argue that besides tying managerial pay to firm performance, owners can also increase executives' incentives to make effort by increasing the likelihood of their dismissal when the firm under their management underperforms. Hence, performance-dependent executive turnover can be seen as another manifestation of risk embedded in executive employment contracts. The right panel of Table 7 shows the results from Probit models that analyze the likelihood of the termination of executive employment contracts after poor firm performance. Similarly to the pay-for-performance sensitivity tests our focus is on the interaction terms between the current and past changes in shareholder wealth *dWealth*(y0) and *dWealth*(y-1) and our proxies of religiosity (*Cathol* and *Protest*). All the four interaction terms in Model 4 of Table 7 are negative and insignificant. Hence, we find no evidence that executives in either Catholic or Protestant states are more likely to lose their jobs as a consequence of poor firm performance. Taken together, these results are inconsistent with the notion that the higher executive pay in Catholic states compensates executives for higher risk they face due to greater risk of their compensation contracts.

Table 7 Performance Sensitivity

	DiffComp	***DiffComp***	***Stay***	***Stay***
	coef/t	*coef/t*	*coef/t*	*coef/t*
Intercept	97.452***	48.589*	6.526	6.499***
	(3.83)	(1.81)	.	(61.50)
dWealth(y0)	184 569.717***	358 887.396***	65.241***	135.198**
	(15.29)	(4.54)	(7.51)	(2.36)
dWealth(y-1)	147 820.912***	180 204.532**	60.996***	113.091*
	(11.56)	(2.23)	(6.59)	(1.85)
Cathol		103.979***		-0.101
		(3.78)		(-1.60)
Protest		138.091***		0.134**
		(5.91)		(2.32)
*dWealth(y0) * Cathol*		-393 195.779**		-185.807
		(-2.08)		(-1.33)
*dWealth(y-1) * Cathol*		62 516.735		-76.605
		(0.32)		(-0.52)
*dWealth(y0) * Protest*		-353 954.727**		-132.101
		(-2.15)		(-1.08)

*dWealth(y-1) * Protest*		-224 178.320		-145.497
		(-1.33)		(-1.11)
CEO	56.860***	54.708***	0.720***	0.720***
	(8.09)	(7.75)	(45.07)	(44.42)
Female	13.138*	14.797**	-0.049***	-0.051***
	(1.83)	(2.04)	(-2.86)	(-2.94)
Tenure	0.309	0.393	-0.028***	-0.028***
	(0.42)	(0.54)	(-20.03)	(-19.87)
lnME (y-1)	-18.451***	-18.969***	-0.019***	-0.014***
	(-6.08)	(-6.19)	(-4.30)	(-3.15)
lnSales (y-1)	4.690**	4.505*	-0.034***	-0.037***
	(2.06)	(1.93)	(-7.75)	(-8.16)
StdevRet (y-1)	-2 140.679***	-1 996.177***	-6.407***	-6.185***
	(-7.72)	(-7.26)	(-15.39)	(-14.51)
YFE	yes	yes	yes	yes
Number of observations	115 595	112 957	166 866	162 899
Adjusted R2	0.020	0.020	0.052	0.052

Notes: The table shows the pay for performance sensitivity of executive compensation and performance related executive turnover conditional on the rate of adherence to Catholicism and Protestantism. Column labels show the dependent variable. Variable definitions in Table 1. All continuous variables Winsorized at top and bottom 1 per cent. Reported *t-statistics* in parentheses based on clustered standard errors at the executive level. ***, **, * indicate statistical significance at 1%, 5%, and 10% level respectively.

4.4 Managerial Ability

We next turn our attention to the second potential explanation, namely that the differences in executive compensation between the Catholic and the Protestant states are driven by various demand for managerial ability. Naturally, managerial ability should ultimately translate into superior firm performance so it should be related in the relevant control variables that we use in our regressions (e.g. *ROA*, *ExRet*). Nevertheless, as previously noted firm performance is driven both by managerial ability and by chance. Thus potentially, the noise in the firm performance proxies may cause the effect of managerial ability not to be fully controlled for. Hence, systematic differences in managerial ability and ultimately in firm performance across states may contribute to the "Catholic premium" and the "Protestant discount". When considering simple correlations Table 3 shows that firm in Catholic (Protestant) states exhibit higher (lower) *ExRet* but lower (higher) *ROA* and so few conclusions on performance differences can be inferred from the correlation matrix.

We approximate executives' managerial ability with Demerjian, Lev, and McVay's (2012) managerial ability score (*Ability*) that uses the data envelopment analysis (DEA) to measure how successful the management team is in turning productive resources into revenues. Table 3 documents a positive correlation between *Ability* and *lnComp* (0.046, p-value 0.000), which is consistent with the notion that more competent managers earn a higher pay. Table 3 also shows that the correlation

between *Ability* and *Cathol* is negative (-0.028, p-value 0.000) and the correlation between *Ability* and *Protest* is positive (0.036, p-value 0.000), which is inconsistent with the higher (lower) managerial competence in Catholic (Protestant) states.

The regression results that include *Ability* are reported in the left panel of Table 8. For the sake of better comparability, we base all the results reported in Table 8 only on observations of CEOs whose ability likely has the greatest impact on firm performance. Note that consistent with the simple correlations in Table 3, the main effect of *Ability* is positive in all three regression models in the left panel of Table 8 and in Model 2 it approaches significance (coef. 0.136, t-stat 1.71). This suggests that more competent executives are paid more even after controlling for recent firm performance (*ExRet*, *ROA*).

Table 8 Managerial Ability

	lnComp | CEOs	***lnComp | CEOs***	***lnComp | CEOs***	***lnComp | CEOs***	***lnComp | CEOs***	***lnComp | CEOs***
	coef/t	*coef/t*	*coef/t*	*coef/t*	*coef/t*	*coef/t*
Intercept	3.368***	3.332***	3.325***	3.230***	3.183***	3.153***
	(30.97)	(32.63)	(32.44)	(30.56)	(32.14)	(31.44)
Ability (y-1)	0.126	0.136*	0.546			
	(1.57)	(1.71)	(1.24)			
ExtSeats				0.085***	0.085***	0.185**
				(6.39)	(6.51)	(2.36)
Relig	-0.089			-0.077		
	(-0.53)			(-0.49)		
Cathol		0.374**	0.387**		0.406***	0.461***
		(2.34)	(2.40)		(2.71)	(2.73)
Protest		-0.323**	-0.299**		-0.279**	-0.200
		(-2.17)	(-1.99)		(-1.97)	(-1.30)
*Cathol * Ability (y-1)*			-0.553			
			(-0.53)			
*Protest * Ability (y-1)*			-1.264			
			(-1.26)			
*Cathol * ExtSeats*						-0.176
						(-1.00)
*Protest * ExtSeats*						-0.252
						(-1.37)
Female	0.055	0.036	0.037	0.041	0.024	0.024
	(0.85)	(0.55)	(0.56)	(0.67)	(0.40)	(0.39)
Tenure	-0.010***	-0.009***	-0.009***	-0.010***	-0.009***	-0.009***
	(-3.54)	(-3.23)	(-3.23)	(-3.53)	(-3.23)	(-3.21)
lnME (y-1)	0.319***	0.304***	0.304***	0.310***	0.296***	0.296***

	(29.43)	(27.49)	(27.62)	(28.33)	(26.60)	(26.62)
lnSales (y-1)	0.155***	0.168***	0.167***	0.153***	0.166***	0.166***
	(14.15)	(15.14)	(15.16)	(14.39)	(15.37)	(15.36)
gSales (y-1)	0.018	0.030	0.027	0.070	0.085	0.085
	(0.32)	(0.54)	(0.49)	(1.29)	(1.57)	(1.59)
ROA (y-1)	-0.549***	-0.489***	-0.496***	-0.232**	-0.180*	-0.180*
	(-4.84)	(-4.36)	(-4.41)	(-2.11)	(-1.65)	(-1.66)
ExRet (y-1)	0.096***	0.101***	0.101***	0.090***	0.095***	0.095***
	(8.07)	(8.45)	(8.45)	(7.63)	(8.00)	(8.01)
StdevRet (y-1)	4.760***	4.300***	4.307***	8.082***	7.582***	7.598***
	(5.22)	(4.72)	(4.74)	(9.12)	(8.54)	(8.55)
YFE	yes	yes	yes	yes	yes	yes
Number of observations	23 309	23 168	23 168	25 384	25 208	25 208
Adjusted R2	0.461	0.467	0.467	0.458	0.464	0.464

Notes: The table shows the association between the rate of adherence to Catholicism and Protestantism and executive compensation conditional on managerial ability (Left Panel) and the quality of his/her social network (Right Panel). Column labels show the dependent variable. Variable definitions in Table 1. All continuous variables Winsorized at top and bottom 1 per cent. Reported *t-statistics* in parentheses based on clustered standard errors at the executive level. ***, **, * indicate statistical significance at 1%, 5%, and 10% level respectively.

Model 1 of Table 8 shows that including *Ability* in the regression specification attenuates the effect of *Relig* on executive compensation (coef. -0.089, t-stat -0.53). Nevertheless, we do not observe a systematic moderating effect of *Ability* on the differential impact of Catholic and Protestant religion on executive compensation. In Model 2 that employs *Ability* as an additional control variable the slope coefficient at *Cathol* remains significantly positive (coef. 0.374, t-stat 2.34) and the slope coefficient at *Protest* remains significantly negative (coef. -0.323, t-stat 2.17), which suggests that the ability score and religiosity do not capture the same underlying construct. In Models 3 we include two interaction terms of *Ability* and *Cathol* as well as of *Ability* and *Protest*. Both interaction terms are negative and insignificant, which suggest that executive compensation is not more sensitive to managerial competence neither in the Catholic nor in the Protestant states. Furthermore, the main effect of *Cathol* (*Protest*) remain positive (negative) in Model 3, which again suggests that the direct measure of managerial ability does not neutralize the differential impact of the two religious denominations on executive compensation. Taken together, these results suggest that differences in managerial ability are unlikely to be the underlying reason for the "Catholic premium" and the "Protestant discount".

4.5 Social Skills

The right panel of Table 8 examines whether the association between Catholicism and Protestantism and executive pay is affected by the density of an executive's social network. Besides his/her superior managerial ability an executive can benefit the firm through his/her social connections that may facilitate negotiations

with the business partners. We therefore expect better connected executives to be in high demand and to be better paid. Furthermore, religions may plausibly differ in the value they attribute to social connections. If Catholics (Protestants) consider social connections more (less) important then well-connected executives should self-select to work in firms headquartered in Catholic (Protestants) states. Thus, the "Catholic premium" and the "Protestant discount" may represent a compensation of more (less) dense social networks of executives in Catholic (Protestants) states.

Measuring the density of one's social network is not trivial. We thus use the number of seats a CEO holds on corporate boards of other firms (*ExtSeats*) as a proxy. Outside board membership is an earmark of social status and recognition among one's peers (Kaplan and Reishus 1990) and it provides a platform for keeping in touch with influential business people. We therefore expect *ExtSeats* to reflect how well a CEO is connected in the business community. As expected, Table 3 shows a strong positive correlation between the number of outside directorships and executive compensation (0.278, p-value 0.000), which provides initial indication that well-connected CEOs are compensated for their social skills.

The right panel of Table 8 we formally investigate how social connectedness conditions the impact of religion on executive compensation. In line with the positive correlation between *ExtSeats* and *lnComp*, the main effect of *ExtSeats* is positive and significant in all three models in the right panel of Table 8. The results on *ExtSeats* show a pattern similar to *Ability* reported in the adjacent panel. In Model 4 including *ExtSeats* in the regression specification renders *Relig* insignificant (coef. -0.077, t-stat -0.49). In Model 5 that includes *ExtSeats* together with our two religiosity measures, *Cathol* remains positive and significant (coef. 0.406, t-stat 2.71) and *Protest* remains negative and significant (coef. -0.279, t-stat -1.97), which suggests that the the number of outside board seats does not impact on the differential impact of Catholicism and Protestantism on executive pay. Finally, in Model 6 we interact *ExtSeats* with *Cathol* and *ExtSeats* with *Protest*. Both interaction terms are negative and insignificant, which suggest that neither in Catholic nor in Protestant states firm owners value social connections higher than elsewhere. These results suggest that differences in the density of personal social network cannot explain the differential impact of the two religious denominations on executive compensation.

4.6 Corporate Governance

We now turn our attention to the third potential explanation based on corporate governance quality. Past research indicates that in Catholic regions managers are more entrenched due to the tendency towards social collusion and less stringent oversight. Managerial entrenchment tends to be associated with less efficient compensation bargaining and with rent extraction by the managers from the owners. Hence, higher executive compensation in Catholic states may result from the greater potential for rent extraction in these states. On the other hand, in Protestant states we expect greater transparency and more stringent corporate governance oversight, which can either lead to a selection of more principled managers and/or towards greater efficient in bargaining that ultimately lower executive pay.

We use two proxies for the corporate governance quality. We use the normalized inverted corporate governance index (*NegGix*) based on Gompers, Ishii, and Metrick (2003) and the proportion of institutional ownership (*InstOwn*). Past research shows that institutional investors concentrate higher ownership stakes and so they have greater incentive to play an active role in exercising their shareholder rights. Furthermore, institutional investors tend to be more sophisticated than individual investors, which helps them to efficiently monitor the problems stemming from the agency conflict between the owners and managers. Hence, we expect institutional investors to put greater disciplining pressure on the firm management, to reduce managerial entrenchment, and to negotiate managerial pay more efficiently.

Table 9 shows that the quality of corporate governance is indeed associated with executive compensation. In the left panel the slope coefficient at *NegGix* is negative and significant in all three models. This suggests that after controlling for executive-related, firm-related and performance-related characteristics firms with better corporate governance pay their executives less. This finding is consistent with the notion that better corporate governance reduces managerial entrenchment and leads to more efficient bargaining about executive compensation. Furthermore, including *NegGix* in the regression does not affect the explanatory power of our religiosity proxies. In Model 1 *Relig* remains negative and significant (coef. -0.167, t-stat -2.34), and in Model 2 *Cathol* is significantly positive (coef. 0.193, t-stat 2.81) and *Protest* is significantly negative (coef. -0.394, t-stat -6.14). However, when interacting *NegGix* with *Cathol* and with *Protest* in Model 3 we observe a significantly negative interaction terms both for *Cathol* (coef. -2.299, t-stat 3.73) and for *Protest* (coef. -2.075, t-stat 3.68). That implies that both in Catholic and Protestant states quality of corporate governance has a greater impact on executive pay than elsewhere. In Model 3 the main effect for *Cathol* remains positive and significant (coef. 1.612, t-stat 4.31) which suggests that the quality of corporate governance contributes to but cannot fully explain the higher pay of executives in Catholic states.

Table 9 Corporate Governance

	lnComp	***lnComp***	***lnComp***	***lnComp***	***lnComp***	***lnComp***
	coef/t	*coef/t*	*coef/t*	*coef/t*	*coef/t*	*coef/t*
Intercept	2.758***	2.767***	2.153***	2.737***	2.716***	2.707***
	(48.18)	(50.92)	(13.48)	(72.57)	(78.68)	(68.30)
NegGix (y-1)	-0.340***	-0.377***	0.618**			
	(-7.76)	(-8.58)	(2.41)			
InstOwn (y-1)				0.121***	0.119***	0.147***
				(10.01)	(9.95)	(3.32)
Relig	-0.167**			-0.187***		
	(-2.34)			(-3.34)		
Cathol		0.193***	1.612***		0.181***	0.264***
		(2.81)	(4.31)		(3.37)	(3.77)
Protest		-0.394***	0.888***		-0.406***	-0.436***

		(-6.14)	(2.59)		(-8.06)	(-6.77)
*Cathol * NegGix (y-1)*			-2.299***			
			(-3.73)			
*Protest * NegGix (y-1)*			-2.075***			
			(-3.68)			
*Cathol * InstOwn (y-1)*						-0.219**
						(-2.09)
*Protest * InstOwn (y-1)*						0.084
						(0.85)
CEO	0.907***	0.907***	0.907***	0.894***	0.894***	0.894***
	(70.64)	(70.97)	(71.07)	(83.85)	(84.04)	(84.07)
Female	-0.084***	-0.093***	-0.094***	-0.080***	-0.091***	-0.091***
	(-4.38)	(-4.91)	(-4.95)	(-5.48)	(-6.20)	(-6.22)
Tenure	0.019***	0.020***	0.020***	0.018***	0.018***	0.018***
	(12.90)	(13.26)	(13.32)	(15.27)	(15.66)	(15.64)
lnME (y-1)	0.335***	0.322***	0.321***	0.321***	0.309***	0.309***
	(67.09)	(63.35)	(63.22)	(79.65)	(75.43)	(75.43)
lnSales (y-1)	0.112***	0.123***	0.124***	0.118***	0.129***	0.128***
	(21.83)	(23.79)	(23.95)	(30.41)	(32.90)	(32.68)
gSales (y-1)	0.200***	0.222***	0.215***	0.227***	0.238***	0.237***
	(7.04)	(7.81)	(7.54)	(12.44)	(13.04)	(13.02)
ROA (y-1)	-0.052	-0.020	-0.015	-0.239***	-0.201***	-0.203***
	(-0.96)	(-0.37)	(-0.28)	(-6.45)	(-5.50)	(-5.54)
ExRet (y-1)	0.076***	0.079***	0.079***	0.065***	0.068***	0.067***
	(11.83)	(12.18)	(12.19)	(14.45)	(15.09)	(14.93)
StdevRet (y-1)	15.221***	14.652***	14.599***	11.811***	11.285***	11.233***
	(32.26)	(31.01)	(30.97)	(35.94)	(34.27)	(34.07)
YFE	yes	yes	yes	yes	yes	yes
Number of observations	85 078	84 471	84 471	144 162	143 120	143 120
Adjusted R2	0.527	0.532	0.532	0.521	0.526	0.526

Notes: The table shows the association between the rate of adherence to Catholicism and Protestantism and executive compensation conditional on the corporate governance quality (Left Panel) and the proportion of institutional ownership (Right Panel). Column labels show the dependent variable. Variable definitions in Table 1. All continuous variables Winsorized at top and bottom 1 per cent. Reported *t-statistics* in parentheses based on clustered standard errors at the executive level. ***, **, * indicate statistical significance at 1%, 5%, and 10% level respectively.

Finally, in the right panel of Table 9 we report the results for the proportion of institutional ownership (*InstOwn*). The main effects in all three models are positive and significant which suggests that institutional shareholders tend to hire competent executives who end up being better paid. Similarly to the *NegGix* including *InstOwn*

in Model 4 and Model 5 does not affect the sign and the significance of the religiosity proxies. Nevertheless, in Model 6 the interaction term between *Cathol* and *InstOwn* is negative and significant and in contrast the interaction term between *Protest* and *InstOwn* is insignificant. This suggests that in Catholic states institutional ownership has a greater impact on reducing executive compensation. This is consistent with the notion that institutional investors are more effective owners who are able to curb managerial rent extraction. In Catholic states where corporate slack is likely to be larger the disciplining role of institutional investors is particularly important for bringing executive pay closer to the economically efficient levels. Taken together these results suggest that variation in corporate governance quality cannot fully explain the "Catholic premium" and the "Protestant discount" in executive compensation. However, the negative interaction terms for the Catholic states suggest that corporate governance quality does contribute to the explanation of the two empirically documented phenomena.

5. Conclusion

In this paper we examine the association between religiosity and executive compensation. We document that top-level executives in firms headquartered in highly religious states receive a lower pay. We observe though that there are significant differences in the impact of various religious denominations. Specifically, in Catholic states executive compensation is *ceteris paribus* higher while in Protestant states it is lower. We examine three potential explanations for our findings. First, we consider the possibility that the differences in executive pay are driven by regional variation in demand for managerial effort that entails a different structure of compensation contracts that gives greater weight to the variable compensation component. Second, we consider differences in managerial ability and social skills as a potential explanation.

Finally, we examine corporate governance quality in Catholic and Protestant states to see if the differences in compensation can be affected by managerial entrenchment and less efficient compensation bargaining. We find little support for the former two explanations. Our results suggest that firm owners in Catholic and Protestant states do not demand greater managerial effort, managerial ability, or social skills. Hence, these factors are unlikely to be the underlying reasons for the documented pattern. In contrast, we find some support for the third explanation. We conclude that while variation in corporate governance quality cannot fully explain the variation in executive pay related to religion, the higher dependence of executive compensation on corporate governance quality and on institutional ownership in Catholic states suggests that the social norms associated with the two religion types are associated with the "Catholic premium" and the "Protestant discount".

Further insights about the underlying reasons for the differential association of Catholicism and Protestantism with executive compensation can be drawn from an international comparison. Prior research shows that prevailing religion and the legal tradition are systematically associated with the quality of corporate governance in various countries (La Porta, Lopez-de-Silanes, et al. 1997; La Porta and Lopez-de-

Silanes 1999). Hence, an international comparison could provide further support or challenge the proposition that our findings are likely driven by the corporate governance quality channel. We leave this investigation for future research.

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