What if God Was One of Us?

Faith and CEO Decision-making

Washington University in St. Louis || Olin Business School

Matthew Ayanian
BSBA 2015: Finance, Healthcare Management

Mathias Gesser
BSBA 2015: Economics, History

Michael Lory
BSBA 2015: Marketing, Entrepreneurship, Psychology

Michael Postetter
BSBA 2015: Finance, Political Science

ABSTRACT: Previous research in the field of financial economics has demonstrated a link between the personal characteristics of executives and corporate decision-making. Some of this work has suggested a relationship between religious affiliation and attitudes towards risk, which may influence financial policy choices such as leverage and dividend yield. Our team explores how a chief executive's religiosity affects decision-making in a corporate environment. We expand on previous studies by including a range of firm-level indicators that reflect investment decisions, financial policies and market performance. Our analysis relies on a sample of non-financial firms from the 2002 S&P 1500 Super Composite Index, whose performances we track until 2014. Since there are no official databases specifying CEO faith, we use county-level rates of religious adherence in each CEO's place of education and location of corporate headquarters as a proxy for CEO religiosity. Although several of the religiosity variables assessed in this study proved to be statistically significant across our models, such as Judaism and Eastern Orthodoxy, the majority of our findings proved to be both economically and statistically insignificant. We did see, however, that our findings became more significant when we restricted our sample to only include the smallest third of S&P 1500 firms, indicating that CEO religious characteristics are increasingly influential within more intimate corporate environments.

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Introduction

Religion is much more than just a congregation of like-minded individuals who happen to share a similar set of beliefs and follow a list of core tenets. For many, religion is a way of life that heavily guides day-to-day decision-making. Eighty percent of the United States population reports as being affiliated with a religion (Bindley, 2013). There are over 240 million people in the United States that incorporate religion into their lives, and research has shown that the spirituality phenomenon is present in many aspects of corporate America (Ashmos and Duchon, 2000). Our group wondered whether religion influences those in positions of power within corporate environments, notably chief executive officers (CEOs).

Countless researchers have investigated how personal characteristics influence managerial decisions within an organization, ranging from past military experience (Benmelech and Frydman, 2014), to political affiliation (Eisenhardt and Bourgeois, 1988), to age (Smith, et al., 2013), to gender (Faccio et al., 2012; Francis et al., 2014). While some research explores the links between religion and policymaking, the majority of such research focuses on ethical decision-making and leadership management. One notices an apparent lack of research assessing the effects of religiosity on financial decision-making for CEOs. We hope to fill this void by building upon this small but growing area of investigation, expanding the scope of such research to add relevance and understanding as to how religiosity impacts the decision-making processes of CEOs.

Religion and Ethics

The intersection of religion and business has been of great interest to researchers for nearly a century, yet the majority of those researchers focused on the affective relationship that religion has on social responsibility and ethics in a business environment (Donham, 1927). Many years later, the majority of research in this area still focuses on ethical behavior and its relation to religion. Most research argues that individuals who are religiously affiliated are inherently more ethical due to the generally conservative and traditional nature of their religious belief systems (McMahon, 1985; Orwig, 2002). Religious precepts passed along within congregations are seen

as primarily ethically conservative, keeping the best interests of fellow individuals in mind. This is related to our project since such principles may translate to CEOs, as their decisions have the ability to impact fellow employees, investors, and the public (Pava, 1998). Research has also looked at how the strength of an individual's religious affiliation, or religiosity, affects their ethical behavior. Generally speaking, those that self report as being highly religious, those that have practiced their faith for an extend period of time, and those with a higher frequencies of attendance at their respective religious institutions are not only more ethical in their business decisions, but much less accepting of unethical actions (Wong, 2008). A subset of individuals have even been shown to be more concerned with making ethical decisions than profitable ones, due to their strict adherences to their religious beliefs.

However, a select subset of the relevant literature diverges from this narrative, asserting that the effects of an individual's religiosity on ethical behavior may not be entirely attributed to the strength of religiousness or frequency of attendance. This literature posits that religious role expectations-- referring to the notion of self-identity, or how an individual's religion may transmit certain expectations onto one's behaviors and actions-- is what may lead to ethical decision-making (Weaver and Agle, 2002). These researchers also show that the salience of an individual's religion and their reasons for adhering to it, rather than any specific tenets or level of attendance at religious services, is what drives ethical and unethical behavior. There has been limited support for this line of analysis as most prior research has found contradicting results. The divergence here rests with the definition of what is mediating this conservatism lens; some see religious tenets and belief systems as the primary factor (Donham, 1927; McMahon, 1985), some see frequency of attendance as more important than an individual's religious beliefs (Noussair et al., 2013), and others differ entirely, relating it to an internal state of expectations (Weaver and Agle, 2001). Regardless, all research agrees that religious conservatism has the strongest impact on ethical decisions and behaviors.

Religion and Leadership

Religion and leadership is another major area of research concerning religion in a corporation. There has been widespread interest on the topic of spirituality and religion as it

relates to leadership, as well as how such a relationship functions within a corporate entity (Neal and Biberman, 2003). This interest arises from the desire for businesses to have the best leaders running their organizations, as there is often a correlation between good leaders and higher performing firms with large profits (Anderson, 2013; Zenger et al., 2010; Zigarmi et al., 2009).

Prior research has established that when used properly, religion can have enriching and enhancing effects on an individual's ability to lead. There have been many frameworks developed for understanding leadership and all of its effective qualities, and researchers have only just started to incorporate religion into their understanding. Some research asserts that there is a potential for a meta-framework that relates theological and normative analyses (Worden, 2005). That is, there may be mediating factors that allow for the connection of religion and decision-making based upon individual opinion and biases that permeate most leadership frameworks. Beyond this, literature has evaluated the potential for religious leadership to have a trickling down effect, where the leadership styles and policymaking penetrates throughout an entire organization (Phipps, 2012). Strategic leadership choices of CEOs may also include their decisions over the hierarchy and autonomy of the organizational structure (Senger, 1970). Overall, research has found substantive links between an individual's religion and the decisions she/he makes in leadership roles. Unfortunately, the majority of studies in the field look primarily at Christians, as they constitute upwards of 75% of the United States religious population (Harper, 2012).

Religion and Decision-Making

This evolving area of research attempts to pinpoint whether an executive's religion has an impact on the financial decisions they make for their firm. Research in this area has focused on bringing into discussion each CEO's religious affiliation and her/his financial decisions. However, due to the lack of data on self-reported CEO religion, proxies had to be established in order to best determine strength of religious adherence. Religiosity, or rate of adherence to a religious denomination, is the metric used by most of these past papers, which relies on county-level data of the firm's headquarters. Research in this area has analyzed the differences between sects of Christianity, mainly Catholicism and Protestantism. The authors looked at how certain

financial and investment metrics varied with religious CEOs, looking at variables such as leverage, debt issuance, and equity issuance (Baxamusa and Jalal, 2014a; Baxamusa and Jalal 2014b; Hilary and Hui, 2009). The issue with this literature is that their results varied depending on the metrics used in their study.

One study showed that Protestant religious affiliation leads to lower leverage and less frequent debt issuances, also having significant effect on the firms' adjustment speeds towards their target capital structure (Baxamusa and Jalal, 2014b). Another study showed that Catholic CEOs are more conservative than Protestant CEOs due to maintaining lower leverage, issuing debt less frequently, increasing diversification, investing less in both capital expenditure and R&D, and owning less stocks of the firms (Baxamusa and Jalal, 2014a). A final study found that, for firms located in counties with higher levels of religiosity, CEOs displayed lower degrees of risk exposure as measured by variances in equity returns, or returns on assets, and exhibited a lower investment rate (Hilary and Hui, 2009). An interesting note with respect to this study is that CEOs appear to be more likely to join a firm that has aligns with her/his own religious views.

A select number of similar studies have looked into this interaction of religion and executive decision-making, but from a more conceptual and qualitative perspective. Research has investigated whether a CEO's religion actually impacts their decisions, or if they are able to separate their culture and religious affiliation from their professional life (Vasconcelos, 2009). These researchers discovered that, regardless of an executive's intentions, religion often does influence their decision-making. Also, there was a cross-cultural study conducted to determine the generalizability of previous research in this area (Callen et. al, 2011). They discover that negative economic activities, such as tax evasion, are mediated by religion, and unlike in the United States, earnings management is unrelated to religiosity or specific religious denominations.

There is also a small subset of literature that looks at how a manager's religion affects accounting and financial reporting metrics (McGuire et al., 2010). The authors find that there are fewer irregularities in financial reporting of firms with religious CEOs as they tend to be less accepting of immoral behavior, falling in line with prior research into this area of business ethics

(McMahon, 1985; Orwig, 2002; Wong, 2008). However, McGuire et al. (2010) are more interested in the affective nature of the relationship between CEO religion and their geographic surroundings. They find that firms headquartered in areas with strong religious norms see less financial reporting irregularities. Additionally, they find a positive relationship between religiosity and real earnings management, showing that managers in religious geographic areas are more likely to use real earning management over accruals manipulation.

The major limitation in this area, beyond the lack of a clean dataset, is the use of county-level firm headquarters as a proxy to determine religiosity. It should be noted that acquiring data on individual CEO religious affiliations is not possible with the information currently available, yet it seems that a proxy for this should extend beyond a firm's headquarters, as other formative personal experiences, such as college attendance, may better explain CEO decision making. Additionally, much of the prior research in the field omits religions outside of Catholicism and Protestantism. By only analyzing Catholics and Protestants, researchers have limited the scope and generalizability of their findings. While those are by the far the largest religions in the United States (Miller, 2008), there are other sects within Christianity and other religious groups that represent the religious character within the U.S.

Data

To determine whether or not religion affects CEO decision-making, we initially hoped to construct a dataset containing religious affiliation for S&P 1500 CEOs. Unfortunately, even the most comprehensive dataset we looked at, *Marquis Who's Who*, only contained religious affiliations for 10% - 15% of S&P 1500 CEOs. Even more problematic was the self-reported nature of this database, as this introduced a great deal of sampling bias. CEOs who did disclose their religious affiliation likely differed systematically from the non-reporting CEOs.

Because of the problems associated with assembling a dataset of actual CEO religious affiliation, we instead formulated a set of proxies for CEO religious affiliation using county-level religiosity data. As mentioned in the previous section, past literature has also used county-level

religiosity statistics to create religion proxies, so we felt this was one of our best alternatives to having actual CEO religion data.

In order to gather data on county religiosity, we utilized the Association of Religion Data Archives (ARDA) database. The ARDA researchers gathered data from every religious congregation in the U.S. in 2010. This compiled data displays religious adherence rates for 236 religions broken down by U.S. County. In order to simplify our analysis, we devised six religious categorizations: Catholicism, Mainline Protestant, Conservative Protestant, Eastern Orthodoxy, Judaism and NONES.[1] The "NONES" group is made up of agnostics, atheists and non-believers. In narrowing the scope of our analysis, many religions were excluded, such as Muslim, Hindu and Buddhist. However, these excluded religions displayed consistently low adherence across counties, so we did not feel that their exclusion would have a large impact on our analysis.

In formulating specific proxies for actual CEO religion, our aim was to use formative experiences from the CEOs' lives. We decided to use county-level religiosity of the CEOs place of schooling (undergraduate and graduate schools) and firm headquarter locations as proxies for CEO religion. We would have also liked to include CEO birthplace as a proxy, as this is a highly formative time in one's life, yet we were unable to gather sufficient data on CEO birthplace.

To help explain how the religious proxies were used in our analysis, **Table 1** below displays an excerpt from our data of the county-level religiosity statistics for Tim Cook, the current CEO of Apple Inc. The HQ data demonstrates each denomination's religious prominence as a percentage of the total religiosity for the county in which Apple's headquarters is located. Below HQ religiosity is the religiosity for the county where Cook attended college. Since Cook attended both Auburn University (undergrad), and Duke University (graduate), we took an average of the religiosity of each of these respective counties in order to come up with Cook's overall college religiosity percentages. We used this averaging method for every CEO who attended multiple higher education schools. In doing a simple average, we made the assumption that each university provided an equally formative experience for the CEO in question. Finally, it

[1] We would like to extend special thanks here to Professor Leigh E. Schmidt, the Acting Director

is worth noting that the percentages for HQ and College religious adherence do not add up to 100% due to the fact that we excluded several smaller religions. However, we found that our six religious categories accounted for a great deal of the total religious adherence – generally over 90% of the adherence in each county.

***Table 1**: Tim Cook's County Level HQ and College Religiosity Data*

HQ Catholic	*HQ Mainline Protestant*	*HQ Conservative Protestant*	*HQ Eastern Orthodoxy*	*HQ Jewish*	*HQ NONES*
25.11%	**2.62%**	**8.47%**	**0.30%**	**0.68%**	**56.44%**
College Catholic	*College Mainline Protestant*	*College Conservative Protestant*	*College Eastern Orthodoxy*	*College Jewish*	*College NONES*
4.02%	**15.26%**	**34.13%**	**0.09%**	**0.64%**	**44.19%**

The summary statistics for our county-level religious variables are displayed in **Table 2**. We pulled data on firm headquarters and CEO college from Capital IQ. Of the religious categories, Catholicism has the highest level of adherence with Conservative Protestantism and Mainline Protestantism having the second and third highest levels of adherence.

***Table 2**: Religiosity Summary Statistics*

	Observations	***Mean***	***Std. Dev.***
HQ Catholicism	12,355	22.00%	12.55%
HQ Mainline Protestantism	12,355	7.96%	5.01%
HQ Conservative Protestantism	12,355	13.93%	10.11%
HQ Eastern Orthodoxy	12,355	0.46%	0.41%
HQ Judaism	12,355	1.11%	1.41%
HQ NONES	12,355	50.10%	12.08%
College Catholicism	9,148	22.30%	12.34%
College Mainline Protestantism	9,148	8.21%	5.39%
College Conservative Protestantism	9,148	13.39%	9.48%
College Eastern Orthodoxy	9,148	0.49%	0.41%
College Judaism	9,148	1.01%	1.25%
College NONES	9,148	50.77%	10.61%

In order to formulate our list of CEOs, we gathered data on firms in the 2002 S&P 1500 Index, tracking them forward through 2014. This list of firms was generated using ExecuComp. After removing financial and insurance firms (SIC codes 60-69), we were left with 1,269 unique firms. Since many of these firms had multiple CEOs during the 12-year span that we tracked, our dataset contained 2,592 unique CEOs.

In addition to the college and HQ variables, we also gathered CEO characteristic control variables for our analysis. These additional control variables were gathered from ExecuComp and are displayed in **Table 3**.

***Table 3**: CEO Characteristics Summary Statistics*

	Observations	***Mean***	***Std. Dev.***	***Min***	***Max***
CEO Compensation *(thousands)*	12,317	5,801.20	7,230.53	0	141,808.70
CEO Tenure *(years)*	12,355	11.34	7.94	1.00	54.03
Gender	12,355	0.97	-	0	1.00
Age	12,349	61.67	7.5	35	99

Since we are interested in assessing the links between religiosity and CEO decision-making, we also gathered firm financial data from Compustat. We divided this data into two categories: financial policy measures and firm performance metrics. Financial policy measures are areas that the CEO can control to some degree with his/her decision-making. These measures include dividend yield, book leverage, R&D Expense, Cash Acquisition Expenditure, and Capital Expenditure. Conversely, firm performance metrics consisted of outcome variables that a CEO has less influence over, such as EBITDA, Tobin's Q, and sales. It is also worth noting that we included industry SIC codes in our regressions in order to control for systematic differences in financial policy between industries. The summary statistics for our financial policy measures and firm performance metrics are shown in **Table 4** and **Table 5** respectively.

***Table 4**: Financial Policy Summary Statistics*

	Observations	***Mean***	***Std. Dev.***	***Min***	***Max***
Dividend Yield *(%)*	12,208	1.28	1.73	0	8.92
Book Leverage *(% assets)*	12,316	22.83	17.62	0	79.68
R&D Expense *(% sales)*	12,311	4.43	8.79	0	53.17
Cash Acq Expenditure (*% assets)*	12,318	2.32	5.37	0	30.98
Capital Expenditure *(% assets)*	12,303	4.75	4.20	.30	22.97

Table 5: Firm Performance Summary Statistics

	Observations	***Mean***	***Std. Dev.***	***Min***	***Max***
EBITDA (% assets)	12,303	12.75	8.80	-19.98	38.32
Tobin's Q	12,164	1.69	1.08	.02	5.92
Ln (Sales)	12,311	7.66	1.58	0	13.07

Before running our regressions, we generated correlations matrices to check for instances of multicollinearity between our CEO characteristics and firm financial variables. Multicollinearity occurs when two or more variables are highly correlated, which can negatively impact the explanatory power (coefficient and statistical significance) of the collinear variables. Therefore, when two variables displayed a correlation above .7, we removed one of the variables from the regression. While the religiosity variables displayed several correlations above .45 the correlations were not high enough to cause us to consider removing any of the variables from the model. Conversely, as can be seen in **Table 7**, several of the financial variables were highly correlated, causing us to exclude some of these variables from our analysis. Our choice of variables is discussed in further depth in our methodology section.

Table 6*: Religious Proxy Variable Correlation Matrix*

	HQCath	HQProt	HQConProt	HQEastOrth	HQJew	HQNONES	CollCath	CollProt	CollConProt	CollEastOrth	CollJew	CollNONES
HQCath	1											
HQProt	-.312	1										
HQConProt	-.471	.332	1									
HQEastOrth	.500	-.209	-.232	1								
HQJew	.352	-.120	-.273	.534	1							
HQNONES	-.455	-.215	-.340	-.263	-.161	1						
CollCath	.194	-.115	-.215	.104	.089	-.014	1					
CollProt	-.100	.190	.146	-.043	-.034	-.054	-.347	1				
CollConProt	-.154	.129	.300	-.104	-.090	-.087	-.575	.263	1			
CollEastOrth	.148	-.092	-.148	.169	.100	-.039	.654	-.259	-.370	1		
CollJew	.107	-.066	-.114	.120	.136	.007	.368	-.198	-.304	.499	1	
CollNONES	-.053	.039	-.012	-.004	.001	.092	-.451	-.156	-.190	-.367	-.156	1

Table 7: Firm Financial Variable Correlation Matrix

	atl1	totaldebt	AdjEarnings	EBIT	EBITDA	R&D Dummy	R&D expense	CAPEX	CashAcq	booklev	mktlev	divyield	divpayratio	tobinQ	AssetTang	lnSale	lnAssets
atl1	1																
totaldebt	.892	1															
AdjEarnings	.026	-.007	1														
EBIT	.014	-.022	.805	1													
EBITDA	.007	-.031	.743	.955	1												
R&D Dummy	.039	.015	-.047	-.069	-.086	1											
R&D expense	-.047	-.043	-.285	-.307	-.304	.505	1										
CAPEX	.016	-.007	.111	.136	.279	-.279	-.196	1									
CashAcqExp	-.050	-.023	.023	.043	.014	.081	.066	-.120	1								
booklev	.113	.178	-.200	-.107	-.099	-.205	-.181	.032	.023	1							
mktlev	.132	.179	-.338	-.297	-.287	-.265	-.255	.014	-.034	.803	1						
divyield	.179	.135	.047	.061	.043	-.152	-.230	.021	-.082	.211	.239	1					
divpayratio	.104	.082	.132	.097	.080	-.086	-.139	.014	-.045	.088	.051	.528	1				
tobinQ	-.108	-.114	.382	.460	.445	.229	.306	.037	.033	-.495	-.702	-.222	-.052	1			
AssetTang	.053	.031	.030	.001	.115	-.426	-.341	.678	-.159	.272	.319	.230	.157	-.242	1		
lnSale	.452	.287	.255	.293	.266	-.147	-.362	.065	-.049	.203	.208	.271	.160	-.201	.153	1	
lnAssets	.506	.342	.189	.180	.146	-.108	-.225	.084	-.030	.297	.288	.297	.186	-.231	.235	.911	1

Empirical Methods

In order to investigate the effects of religion on CEO decision-making, we constructed a series of iterative econometric models. We began by running several OLS regressions, adding and removing variables at each stage to view changes in the relationship between our dependent variables and our independent variables of primary interest (the college and HQ religiosity variables). After running our base model, we first removed the variables controlling for firm financial performance and then we removed all variables controlling for firm characteristics, such as SIC codes. After running these iterative OLS regressions, we divided our sample into thirds based on firm size (as measured by total assets) and re-ran our primary OLS model within each sample. Finally, we implemented a fixed effects model to identify time independent variation within firms in our sample that may have been correlated with our independent variables.

(1) $Y_{i,t} = \gamma_1 Year + \gamma_2 Age_i + \gamma_3 Gender_i + \beta_1 Comp_{i,t} + \beta_2 Tenure_{i,t} + \beta_3 HQ_i + \beta_4 College_i + \gamma_4 Industry\ ID_i + \beta_5 Financial\ Metrics_{i,t} + \varepsilon_{i,t}$

(2) $Y_{i,t} = \gamma_1 Year + \gamma_2 Age_i + \gamma_3 Gender_i + \beta_1 Comp_{i,t} + \beta_2 Tenure_{i,t} + \beta_3 HQ_i + \beta_4 College_i + \gamma_4 Industry\ ID_i + \varepsilon_{i,t}$

(3) $Y_{i,t} = \gamma_1 Year + \gamma_2 Age_i + \gamma_3 Gender_i + \beta_1 Comp_{i,t} + \beta_2 Tenure_{i,t} + \beta_3 HQ_i + \beta_4 College_i + \varepsilon_{i,t}$

Regression (1) is our base OLS model with a dependent variable, *Y* for firm ***i*** at time ***t***. As discussed previously, our dependent variables of interest fell into two categories: CEO financial policies and firm performance indicators. The financial policies we analyzed included R&D expense, dividend yield, book leverage, cash acquisition expense, and cash expenditures. The firm performance indicators included EBITDA, Tobin's Q, and total firm sales. We include a year dummy, γ_1 , as well as dummy variables for CEO age and gender. Other CEO control variables include compensation and tenure. The parameter β_3 and β_4 measure our religiosity variables of interest: county religiosity levels of firm headquarters and CEO college. γ_4 is a control variable for SIC industry ID and β_5 represents the various financial performance metrics we include. For the firm financial variables, we consulted our correlation matrix to avoid any multicollinearity issues between multiple independent variables and the dependent variable. For example, when we ran our regressions for EBITDA, we excluded from our model the other financial control variables that correlated highly with firm earnings (Adjusted Earnings and EBIT).

Equation (2) is similar in form to model (1), without any of the financial controls. **Equation (3)** further isolates our religiosity variables by removing industry ID. We found these to be necessary steps in our econometric process since it would allow us to view the relationship between the religiosity variables and the dependent variables without interference from firm controls. Although we do not extrapolate any takeaways from either of these models, we do consider them to be important robustness checks for our coefficients.

Following these regressions, we returned to regression (1), this time dividing our data into thirds based on firm size. Using this technique, we hoped to investigate the relationship

between a CEO's personal characteristics, such as her/his religiosity, and a CEO's working environment. It makes sense that an individual could have more sway in an intimate work environment, making her/his personal traits more influential to the firm as a whole.

$$(4)\quad Y_{i,t} = \alpha_i + \gamma_1 Year + \gamma_2 Age_i + \gamma_3 Gender_i + \beta_1 Comp_{i,t} + \beta_2 Tenure_{i,t} + \beta_3 HQ_i + \beta_4 College_i + \gamma_4 Industry\ ID_i + \beta_5 Financial\ Metrics_{i,t} + \boldsymbol{u}_{i,t}$$

Equation (4) marks our final functional form, which relies on the same regression used in (1) but instead using a fixed effects technique, holding the firm fixed. In this model, $\boldsymbol{\alpha_i}$ represents the time invariant estimator that controls for unobservable differences between firms while $\boldsymbol{u_i}$ represents the idiosyncratic effect, which varies across both time and firm.

Discussion of Results

Overall, the religiosity variables in the regression outputs showed either a lack of statistical significance or inconsistent economic significance. The coefficients throughout all regressions for all of our variables of interest were small. The highest outlier coefficients indicate a 1.5% change in the dependent variable for a 1% change in the independent variable of interest. This is to be expected as overarching firm characteristics would be larger drivers of the decision and performance variables we discuss, and CEO characteristics would be secondary drivers of these variables at best. For the sake of this discussion, any coefficient under a 0.1% value was considered economically insignificant. We looked at three different statistical significance levels, $P < 0.01$, $P < 0.05$ and $P < 0.1$, the last of which would only be considered significant in terms of checking for the robustness of other regressions.

There was no consistent statistical significance for the *Catholic* variable in either HQ or college location for any of the five decision variables. The one outlier to this finding was R&D expense in small firms which showed a roughly 0.1% increase for every 1% increase in catholic religiosity within the HQ county. This alone is not enough to make a substantive statement about the Catholicism variables.

Similar results were found for *Conservative Protestants*. While there was consistent significance for the HQ variable throughout the regressions the economic impact of these variables was rarely over 0.05% change for a 1% change in the number of Conservative Protestants in the county. The college variables did not show consistent statistical significance in any of the decision variables. There is again one exception to this in *Book leverage* where the economic coefficient is consistently above positive 0.1% and is consistently significant. Even with the findings in book leverage it is difficult to make a blanket statement about the effect of the Conservative Protestant variable on the overall decisions of an executive.

Within the *Mainline Protestant* group we again only find one of the five decision variables showing consistent results. There is no consistency within the college variable in terms of statistical significance, nor is there a consistently positive/negative sign for the coefficient. This lack of robustness is also seen in the HQ variable throughout most of the decision variables. The exception for the Mainline Protestant group is, like Catholic, in the R&D Expense variable where there are consistent negative coefficients of 0.15% or greater for the HQ variable. As before, it is hard to make a definitive statement about the effects of this variable on the decisions of the executive.

Significant Results

The *Jewish* and *Eastern Orthodoxy* variables showed greater significance across multiple variables and both within College and HQ location. This differs greatly from the three religion variables mentioned above and allows for further interpretation of the results.

For the *HQ Jewish* variable, there are consistently positive coefficients greater than 0.2% across the regressions for Book Leverage and consistent negative coefficients of larger than 0.2% for R&D expenditure. These R&D coefficients remain consistent in the College Jewish variable. It also shows consistent significant negative coefficients of around 0.1% for Cash Expenditure. The combination of higher debt along with lower R&D expenditure and lower cash expenditure is hard to interpret. Considering previous research, we initially considered these results for Judaism to stem from CEO risk aversion or risk tolerance (Noussair et.al., 2013). The higher book leverage may be explained by CEOs who are looking to raise capital in order invest in new

ventures for the firm, representing a higher degree of risk tolerance. However, this is not corroborated by the lower R&D and Cash Expenditure values, which would point toward higher risk aversion. Overall, the effects of the Jewish religiosity on CEO decision-making are largely inconclusive.

Eastern Orthodoxy saw the broadest set of significant findings. For the dividend yield regressions, the HQ religiosity coefficients were consistently between 0.2% and 0.4%. The Book leverage regressions showed values around 1.0% - 2.0% on both the College and HQ values. There was discrepancy here as the HQ religiosity coefficients were all negative, whereas the college variable values were always positive, making these results difficult to interpret. For R&D Expense there are consistently negative coefficients between 0.5% and 1.1%. For the Cash Expenditure regressions we again see negative coefficients for the HQ variable with values between 0.2 and 0.3%. Unlike Judaism, there is a more consistent picture shown through the variables for Eastern Orthodoxy. These variables together write a story that shows lower expenditure on the firm and more payback to the investors. In general, this could be seen as an indicator of higher risk aversion, though such a story depends on many other variables, such as R&D and cash expenditure options

Small vs. Large Firms

An interesting trend in our findings was the difference between the coefficients of small and large firms, both in their statistical and their economic significances. Across all five decision variables, there were more numerous variables at the $P < 0.01$ significance level and overall there were more significant values ($P < 0.1$) in general. Specifically for Cash Expenditure and R&D Expenditure, we see larger coefficients for both Jewish and Eastern Orthodoxy variables. This leads us to believe that the effects of religiosity are enhanced in smaller firms and mitigated in larger ones. Intuitively, this makes sense since one would expect an entrepreneur's personal characteristics to have a dramatic effect on the financial policy of the firm. Extending this logic to our findings, we are aware that the large size of the firms in our sample, all coming from the S&P 1500 super composite index, may complicate this story.

Performance Indicator Results

The results for our performance indicators were sporadic. Although EBITDA had the most robust findings and had large coefficients for the Eastern Orthodoxy variables, the statistical significance was inconsistent throughout the regressions for all the variables. This same theme continued through Tobin's Q and Ln (Sales), which we used to represent Total Sales. These proved to be even less robust in terms of both economical and statistical significance. As was seen in the financial policy variables the exception to this rule often came within the HQ Eastern Orthodoxy variable, which did show statistical and economic significance for Total Sales with coefficients consistently around 0.2%.

Limitations

Our attempt to better understand the links between a CEO's religiosity and her/his decision-making was limited by a variety of factors, the most noteworthy of which was our weak data source. It is difficult to argue that the proxies used in this study, religiosity levels at the county-level, are accurate representations of a CEO's true religious affiliation. The best we can say is that a given person is more likely to be a member of a certain religion if that religion is prominent in the counties in which she/he interacted (such as county of birthplace, of schooling, or of employment). Further, such an argument would be most accurate for the county in which an individual was born and raised; unfortunately, we only have data for place of schooling and corporate headquarters. Although we make the argument that College is a formative time in a person's life, there are formative periods that would more closely represent one's religious beliefs. Even more unfortunate was our group's inability to obtain a dataset with CEO religious affiliation.

Aside from data collection issues, there were also issues in the data that we were able to find. The county level religious data reported a non-religious ("NONES") rate of around 50%. According to a new research study done by the University of California, Berkley, the number of non-religious citizens in the United States has peaked at around 20%, up from the 5% it was in the 1930s and 1940s. When we asked the institution that developed the ARDA data set, Penn

State, about this trend, they cited non-response bias in during their data collection. Another issue was missing data on CEO education. In addition to the foreign schools we omitted from our sample, there were a number of CEOs who went to college in the U.S. for whom we could not find place of schooling.

Even though the ARDA data provides rates of adherence to specific religions, it is difficult to gauge the strength of an individual's religious affiliation. Previous literature in psychology has pointed to a connection between risk aversion in personal decision-making and religious adherence, noting that frequency of attendance at religious events is more important than the religious denomination.

There are also causes for concern with the results. The majority of the significant results generated by our regressions concerned the HQ variables. Although we have some significant results for the College religiosity variables, they are sparse in comparison to the HQ religiosity results. Our group questions the explanatory power of the HQ variables on CEO policymaking. One potential problem relates to within-firm spillover effects. For example, if firms in primarily Catholic counties perform in a consistently and significantly different manner than firms in primarily Jewish counties, it is difficult to attribute that difference to an individual CEO. In fact, it may be that the religiously driven variation between firms is a function of religiosity among lower level employees. Thus, it is difficult to attribute firm differences to CEO personal attributes solely based on HQ religiosity. Further, there are likely endogeneity issues with our HQ variables. Consider for a moment additional location-dependent differences between firms that could be attributed to a specific county. As the firms in our sample are very large, all coming from the S&P 1500 index, they tend to be headquartered in larger, more metropolitan areas. Further, regional effects may be explaining much of the variation captured by our religious HQ proxies. For example, Conservative Protestantism within the United States is highly concentrated in southern states. Thus, the HQ religiosity effects for Conservative Protestantism may be less attributable to religion, and more a result of social structures in the south. Finally, although the majority of firm-level policy choices occur at the corporate headquarters, most of the firms we included in our sample have locations all across the country. Thus, spillover effects from other

firm branches may mitigate the impact of religiosity in the county in which a firm is headquartered.

Future Research

Future research could build off the methodology and the results presented in this paper to more comprehensively assess the links between religion and CEO decision-making. First, a dataset containing accurately reported CEO religious affiliation would allow for a simpler and more convincing study. This dataset could be created by surveying CEOs annually in the S&P 1500, or by contacting companies individually to get information on religious affiliation. Considering the difficulty of constructing such a dataset, a more comprehensive set of proxies should be developed to more closely match a CEO's personal information and her/his religious affiliation (such as place of birth). Additionally, since CEO characteristics have been a growing body of research, it would be interesting to create interactionism studies, where religion and other demographic variables are tested together to see if religion interacts with other personal characteristics. For example, our regression on dividend yield generated significantly different results for men and women. Looking more into why women give a significantly different level of dividends to investors through a religious lens would provide greater understanding in this realm. This leads to a final recommendation for future research: assessing the reasons why there is such a disparity between the numbers of male and female CEOs. Roughly 3% of all the CEOs in our sample were women. As the multitude of barriers currently preventing women from fully integrating into corporate environments continue to degrade, it will become increasingly important to understand the differences between CEOs that may result from gender. Research has looked at women being more empathetic (Toussaint and Webb, 2005) and that women feel like they have more to prove in a business environment (Barron, 2003; Kumar, 2010). Had our sample contained a greater percentage CEOs who were women, we would have been able to expand our analysis and better assess the links between gender and religiosity in the workplace.

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Appendix

Appendix A

Divedend Yield	*OLS*	*Sample- Small*	*Sample- Large*
HQ Catholic	-.004* (.002)	-.012** (.003)	-.006 (.003)
HQ Mainline Protestant	.029** (.004)	.030** (.008)	.019* (.008)
HQ Conservative Protestant	-.009** (.002)	-.021** (.004)	-.004 (.004)
HQ Eastern Orthodoxy	.297** (.049)	.291** (.104)	.289** (.084)
HQ Jewish	-.025 (.014)	-.009 (.027)	.003 (.025)
College Catholic	-.003 (.002)	-.003 (.003)	-.009* (.004)
College Mainline Protestant	0 (.003)	0 (.006)	-.014* (.006)
College Conservative Protestant	.001 (.002)	.006 (.004)	-.005 (.004)
College Eastern Orthodoxy	0.009 (.056)	.206* (.094)	-.024 (.114)
College Jewish	0.024 (.015)	-.002 (.026)	.025 (.034)

Appendix B

R&D Expense	*OLS*	*Sample- Small*	*Sample- Large*
HQ Catholic	.043** (.007)	.104** (.018)	-.001 (.009)
HQ Mainline Protestant	-.162** (.016)	-.036 (.043)	-.149** (.021)
HQ Conservative Protestant	-.024** (.008)	-.034 (.021)	-.018 (.010)
HQ Eastern Orthodoxy	-.488* (.214)	.154 (.583)	-.639** (.227)
HQ Jewish	-.274** (.059)	-.627** (.149)	-.169* (.068)
College Catholic	-.019* (.008)	-.076** (.019)	.022* (.011)
College Mainline Protestant	-.053** (.014)	-.139** (.035)	-.029 (.016)
College Conservative Protestant	.005 (.009)	.015 (.022)	.026* (.011)
College Eastern Orthodoxy	.699 (.241)	2.099** (.525)	.305 (.307)
College Jewish	-.249** (.063)	-.505** (.146)	-.081 (.091)

Appendix C

Book Leverage	*OLS*	*Sample- Small*	*Sample- Large*
HQ Catholic	-.006 (.016)	-.157** (.036)	.046 (.024)
HQ Mainline Protestant	-.040 (.035)	.033 (.087)	-.059 (.059)
HQ Conservative Protestant	.116** (.018)	.021 (.044)	.118** (.027)
HQ Eastern Orthodoxy	-1.563** (.467)	-1.369 (1.185)	.243 (.625)
HQ Jewish	.549** (.129)	.746* (.304)	-.013 (.187)
College Catholic	-.028 (.019)	.020 (.039)	-.075* (.029)
College Mainline Protestant	.096** (.031)	.153* (.072)	.025 (.043)
College Conservative Protestant	-.060** (.020)	-.085 (.045)	-.057 (.030)
College Eastern Orthodoxy	.724 (.526)	1.859 (1.070)	.672 (.844)
College Jewish	-.088 (.138)	.191 (.298)	-.713** (.250)

Appendix D

Cash Acquisition Expense	*OLS*	*Sample- Small*	*Sample- Large*
HQ Catholic	.011 (.006)	.012 (.014)	.009 (.008)
HQ Mainline Protestant	.029* (.013)	.020 (.033)	.050* (.020)
HQ Conservative Protestant	-.005 (.007)	.027 (.017)	-.017 (.009)
HQ Eastern Orthodoxy	.052 (.174)	.259 (.453)	.184 (.213)
HQ Jewish	-.049 (.048)	.094 (.116)	-.088 (.064)
College Catholic	-.001 (.007)	-.001 (.015)	.020 (.010)
College Mainline Protestant	.010 (.011)	-.004 (.028)	.007 (.015)
College Conservative Protestant	-.011 (.007)	-.005 (.017)	.001 (.010)
College Eastern Orthodoxy	-.366 (.197)	-.327 (.409)	-.690* (.288)
College Jewish	.052 (.052)	.086 (.114)	.031 (.086)

Appendix E

Cash Expenditure	*OLS*	*Sample- Small*	*Sample- Large*
HQ Catholic	.010** (.003)	-.005 (.006)	.013* (.005)
HQ Mainline Protestant	-.018** (.007)	-.044** (.015)	-.013 (.013)
HQ Conservative Protestant	.010** (.004)	-.034** (.007)	.016* (.006)
HQ Eastern Orthodoxy	-.203* (.091)	-.630** (.120)	-.083 (.139)
HQ Jewish	.008 (.025)	.090 (.051)	.041 (.042)
College Catholic	.007 (.004)	.014* (.007)	.006 (.007)
College Mainline Protestant	0 (.006)	.015 (.012)	.005 (.010)
College Conservative Protestant	-.001 (.004)	.013 (.008)	-.007 (.007)
College Eastern Orthodoxy	-.149 (.103)	-.229 (.181)	-.519** (.188)
College Jewish	-.077** (.027)	-.108* (.050)	-.055 (.056)

Appendix F

EBITDA	*OLS*	*Sample- Small*	*Sample- Large*
HQ Catholic	.021** (.007)	.032 (.017)	.019* (.009)
HQ Mainline Protestant	.039* (.015)	.187** (.040)	-.036 (.023)
HQ Conservative Protestant	.007 (.008)	-.016 (.020)	.058** (.011)
HQ Eastern Orthodoxy	-.937** (.203)	-.394 (.548)	-.629* (.244)
HQ Jewish	.082 (.056)	-.463** (.140)	.137 (.073)
College Catholic	-.034** (.008)	-.037* (.018)	-.022 (.012)
College Mainline Protestant	-.032* (.013)	-.029 (.033)	.003 (.017)
College Conservative Protestant	-.026** (.009)	-.086** (.021)	.008 (.012)
College Eastern Orthodoxy	0.064 (.229)	.178 (.495)	.716* (.330)
College Jewish	-.075 (.060)	-.430** (.138)	.198* (.098)

Appendix G

Tobin's Q	*OLS*	*Sample- Small*	*Sample- Large*
HQ Catholic	-.002** (.001)	-.001 (.002)	0 (.001)
HQ Mainline Protestant	.002 (.002)	.001 (.005)	-.001 (.003)
HQ Conservative Protestant	0 (.001)	.004 (.002)	-.002 (.001)
HQ Eastern Orthodoxy	.005 (.023)	-.096 (.063)	0 (.028)
HQ Jewish	-.015* (.006)	.027 (.016)	.010 (.008)
College Catholic	.001 (.001)	.004 (.002)	-.002 (.001)
College Mainline Protestant	.004** (.002)	.012** (.004)	0 (.002)
College Conservative Protestant	0 (.001)	0 (.002)	-.003** (.001)
College Eastern Orthodoxy	-.043 (.026)	-.074 (.057)	-.029 (.038)
College Jewish	.005 (.007)	.030 (.016)	-.037** (.011)

Appendix H

lnSale	*OLS*	*Sample- Small*	*Sample- Large*
HQ Catholic	-.005** (.001)	-.002 (.002)	0 (.002)
HQ Mainline Protestant	-.001 (.003)	-.004 (.004)	-.015** (.004)
HQ Conservative Protestant	-.001 (.001)	0 (.002)	.006** (.002)
HQ Eastern Orthodoxy	.187** (.038)	-.047 (.054)	.036 (.044)
HQ Jewish	-.022* (.010)	.011 (.014)	.015 (.013)
College Catholic	.004* (.001)	.002 (.002)	.002 (.002)
College Mainline Protestant	.003 (.002)	.009** (.003)	.003 (.003)
College Conservative Protestant	0 (.002)	.005* (.002)	-.005* (.002)
College Eastern Orthodoxy	-.049 (.042)	.024 (.049)	-.216** (.060)
College Jewish	-.036** (.011)	-.029 (.014)	-.013 (.018)