

# Religiosity and Corporate Social Responsibility<sup>☆</sup>

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## Abstract

This paper examines the hypothesis that religious firms are more socially responsible. By utilizing a novel measure of religiosity that reflects firm-level adherence to Christian values, we find that religiousness is positively associated with the CSR performance of large U.S. firms after controlling for county-level religiosity and various firm characteristics. Specifically, religious firms have better social and environmental responsibility scores and the documented positive relationship is particularly strong with respect to product responsibility, lower emissions, and responsible use of resources. Overall, our empirical findings suggest that faith-driven corporate policies and values may encourage socially responsible behavior.

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## **1. Introduction**

Is corporate social responsibility (CSR) influenced by religious values? Religion has a long-reaching influence on the lives, choices and values of individuals, communities and organizations around the world, and evidence of its influence on corporate decisions and outcomes has also been documented in recent literature. Most notably, external religious influences from the community, and personal beliefs of executives have been shown to shape organizational behavior, ranging from reducing risk-taking to mitigating earnings management (Hilary and Hui 2009; Du et al. 2015). Since higher religiosity is associated with moral values, and being more lawful and risk averse (Adhikari and Agrawal 2016; Boone et al. 2012), it may also steer a company toward CSR. In this paper, we investigate firm-specific religious signalling as a potential factor influencing its corporate social performance.

Socially responsible corporate behavior can be explained by a number of theoretical drivers. Juxtaposing Friedman's shareholder doctrine (1970), Freeman's (1984) stakeholder theory argues that the success of a corporation is reliant on its ability to manage the expectations of multiple parties of interest (stakeholders), including its employees, customers, suppliers, the extended community and even the government. Similarly, the legitimacy theory developed by Dowling and Pfeffer (1975) asserts that a company's actions need to conform to societal norms in order for it to maintain the right to operate in its community. Socially responsible behavior can therefore be considered a necessary step in appeasing a large number of ancillary stakeholders, and in the legitimization of the business's operations. From this perspective, CSR is likely to be at least partially driven by an adherence to the ethical values upheld by the community.

Building on these theories, we can presume that attitudes to CSR would be connected to religiosity. Religious individuals have been shown to expect more socially responsible behavior in several geographically distinct communities (Brammer et al. 2007; Ramasamy et al. 2010; Schouten et al. 2014, Wu et al. 2016). Moreover, firms located in more religious regions and subject to a greater influence of theistic adherents are less risk-taking, and more likely to follow stricter standards of CSR (Harjoto and Rossi 2019; Chantziaras et al. 2020). Considering the firm and its internal culture to be a microcosm of the society at large, internalized religious values and degrees of adherence would be expected to have similar effects on socially responsible behaviors. In this paper, we examine the hypothesis that religiosity influences CSR using a sample of US publicly-listed firms over the period 2012-2020.

One source of concern in the research on the effects of religious influence is the inconsistency in the variables used for firm religiosity. The degree of religious influence is often proxied by a geographical measure of religiosity, such as the proximity of the business headquarters to places of congregation and worship (Du et al. 2014), or the concentration of religious adherents in the surrounding region (Cui et al. 2015; Adhikari and Agrawal 2016; Rossi et al. 2019; Chantziaras et al. 2020). These measures are indirect proxies, plagued by a multitude of potentially confounding factors, and may not be an accurate representation of a firm's internal culture and religious stance. In other cases, firm religiosity is determined by the personal religious views of the CEO (Adhikari and Agrawal 2016; Harjoto and Rossi 2019; Chen et al. 2021). While alleviating the problem of inference, using CEO data overestimates the role of executive decision-making on corporate culture. This paper employs a novel measure of firm-level religiosity, and feasibly advocates for the replacement of crude proxies with detailed, multidimensional variables to represent elements of firm culture.

This study uses data from the Faith Equality Index (FEI) as a measure of firm-level religiosity. Published by an independent organization, the FEI takes into account corporate behavior and track record on several contemporary religious issues. Firms are awarded points if their opinions and/or actions support a biblically orthodox viewpoint of these issues. These FEI scores, unlike other inference based firm-specific measures such as CEO religiosity, are a direct outcome of religiously motivated behavior. Moreover, unlike regional measures of religiosity such as the proportion of adherents within a county, the FEI scores are able to uniquely identify attitudes toward religion for the firms in our sample. A more detailed description of the FEI score and its composite criteria is presented in Section 2.

In our empirical analysis, the effects of firm-level religiosity on overall CSR, and various categories within the Environmental and Social pillars, are examined through multivariate, fixed-effects regressions. Specifically, the ESG Score, and subsequently the Environment and Social pillar scores are regressed on the FEI Score, while controlling for board- and firm-specific characteristics, and industry and year fixed effects. At the same time, the dependent variables are also regressed on the county-level measure of religiosity previously used in literature (Cui et al. 2015; Wu et al. 2016; Chantziaras et al. 2020) to compare the effectiveness of internal and external religious influences on CSR. Finally, an interaction of firm- and county-level religiosity is used as the explanatory factor to explore the mediating effects of regional influences on the relationship between religiosity and CSR. Several robustness tests are performed in order to corroborate our findings. Notably, Lewbel's (2012) instrumental variable approach is utilized to alleviate concerns of endogeneity and reverse-causality.

The results of this study indicate that higher firm-specific religiosity is significantly positively associated with CSR. Specifically, the source of the positive relationship with the ESG

score is determined to be religiosity's significant and positive effects on the Environment and Social pillars. These results are broadly in line with studies that investigate geographical influences of religiosity, or the impact of the CEO's personal religious adherence on CSR (Schouten et al. 2014; Harjoto & Rossi 2019; Su 2019; Chantziaras et al. 2020). The previously studied relationship between county religiosity and CSR is shown to be weaker in magnitude and significance than that between firm-level religiosity and CSR. Furthermore, we shed light on the dynamics between geographical influences and firm-specific religiosity by performing an interaction analysis. The effects of county religiosity do not survive those of firm-level religiosity, and do not have any incremental effect beyond that captured by internal religiosity.

The contributions of our paper to extant literature are twofold. First, we augment the findings of prior studies examining the effects of religion on corporate outcomes in general (Hope 2003; Hilary and Hui 2009; Dyreng et al. 2012; McGuire et al. 2012), and CSR in particular (Wu et al. 2016; Chantziaras et al. 2020). Since a literary consensus has not been established on the relationship between religion and CSR, this research should provide important new insights for the discussion. Second, prior studies do not distinguish conclusively between external and internal measures of religiosity. Adopting demographic or CEO characteristics at the firm level necessitates extensive measures to mitigate endogeneity concerns. Meanwhile, foregoing indirect measures also mitigates the problem of confounding factors. More importantly, we are able to demonstrate the duality of the effects of communal and internalized religiosity.

The remainder of this paper is organized as follows. Section 2 discusses the relevant literature and presents the development of our hypothesis. Section 3 describes our data, presents sample statistics and introduces the methodology. Section 4 presents the results of the multivariate

analyses. The results of the Lewbel (2012) instrumental variable regressions are described in Section 5, and Section 6 concludes the paper.

## **2. Related Literature and Hypothesis Development**

The major religions of the world all provide guidelines to their adherents concerning ethical behavior, and their followers are familiar to some extent with the principles of fidelity to these guidelines. The influence exerted by religious adherence can be argued to prompt change through two main channels. First, religious beliefs can ostensibly foster a strong sense of personal ethics via conscientiousness and guilt, spurring charity, compassion and humility (Black and London 1966; Miller and Hoffman 1995; Diaz 2000; Dyreng et al. 2012). It must be noted however, that the evidence on the effects of religious beliefs on individual ethics and morality is not conclusive, and the relationship can be confounded by personal characteristics like gender, age, and education. Second, world religions exert significant moral authority and institutional power, allowing them to shape public values, attitudes, policies, and regulation (Tucker and Grim 2001). In tandem, these two channels increase the likelihood that religious beliefs not only influence otherwise secular institutions, but also that they align organizational behavior with legitimizing principles.

Not surprisingly, the effects of religion on economic institutions have been studied across many regions encompassing several different theologies. Significant disparity has been found across religions in the attitudes towards CSR that they influence (Brammer, Williams and Zinkin 2007). For instance, while the proximity to Buddhist monasteries has been shown to reduce the polluting behavior of firms in China (Du et al. 2014; Su 2019), the reverse has been documented for U.S. firms, citing the “dominion” worldview of Christian theology as a deterrent to

environmental ethics (Cui, Jo and Velasquez 2015). Likewise, the significantly different attitudes in Buddhist samples toward social issues like charity are attributed to the Buddhist principles of detachment (Brammer, Williams and Zinkin 2007). Consequently, discussions of religious influence on organizational behavior should be distinctively contextualized.

In Christianity, ethics features as a prominent medium of religious influence in business and managerial decision-making. Christian theology has been cited as the primary source of inspiration for modern day business ethics (De George 1987). One of the earlier examples of socially responsible investment practices can be traced back to the Religious Society of Friends, a Methodist group of Christians led by John Wesley in the 1700's. Members of the group, more commonly known as Quakers, refused to profit at the expense of another's wellbeing, eschewing usury, slave trading, gambling, and industries using of toxic materials (Sparkes 2003). Moreover, adherence to Christianity has been shown to affect attitudes toward CSR, specifying the avenues of social responsibility, and these attitudes can be categorized as financial or economic, ethical, and philanthropic or altruistic (Schouten et al. 2014). Roman Catholics have demonstrated a higher priority for social issues, supporting charities and community projects, upholding workplace equality, and reducing human rights abuses (Brammer et al. 2007). Schouten et al. (2014) corroborate these results using survey data from a sample of Dutch executives, where religious adherence was shown to be positively associated with charity, and negatively associated with diversity. Since Christian religiosity was found to have opposing effects on attitudes toward separate facets of CSR, the combined effects on overall CSR behavior was negligible (Schouten et al. 2014).

Additional research on the effects of Christian influence supports a positive relationship between religiosity and CSR. Studies by Arli and Tjiptono (2018), Ibrahim et al. (2008), and

Conroy and Emerson (2004) utilize survey data on Christian participants and show that attitudes of consumers, students, and managers toward CSR and ethics are influenced by intrinsic and extrinsic religiosity, and that these influences are moderated by individual characteristics. In institutional settings, religiosity has been associated with a higher performance in multiple dimensions of CSR. In a large sample of US firms, Cui et al (2019) demonstrate that Catholic and mainland Protestant religiosity is linked with increased corporate community involvement initiatives. In a separate analysis on U.S. banks, Adhikari and Agrawal (2016) document that external religious influences are associated with lower stock option compensations, which lessen the severity of agency concerns.

While religion may not impact all dimensions of CSR equally, it has been shown to play an important role in the overall social responsibility of the firm. Extant literature has shown that county religiosity can substitute for the role of corporate governance and anti-takeover defences in alleviating agency conflict in US firms. (Chintrakarn et al. 2017). More recently, Chantziaras et al. (2020) studied the effects of religious influence on CSR in the context of the US banking industry, and documented a positive relationship between the two variables. Religion is therefore a consequential factor in the implementation of corporate social performance and sustainability. Building on these literature, we hypothesize a positive relationship between firm-level religiosity and CSR. Moreover, the expected link between the two variables should be reflected in one or more categories of CSR.

H1: Firm-level religiosity is positively associated with overall CSR, and the firm's environmental and social performance.

Since this study employs a firm-specific measure of religiosity that is novel to the literature, it is prudent to consider the interaction between external and internal religious



influences. The culture and demographic characteristics of a firm's geographic location have been shown to not only impact its internal culture and decision-making (Adams, Licht and Sagiv 2011; Christie et al. 2003; Palazzo 2002; Matten et al. 2004), but also play a mediating role on established causal and non-causal effects (Guiso et al. 2006; Shi and Veenstra 2020; Fatmy et al. 2021). Consequently, while external influences such as county religiosity can be presumed to affect both firm-specific religiosity and CSR, it can also change the way that firm religiosity affects CSR, as evidenced by Chen et al. (2021). Therefore, we study the moderating role of external religiosity by using an interaction of firm-level and county-level religiosity as independent variables. Moreover, maintaining the assertion that it is worth studying firm-specific characteristics, we hypothesize the effects of firm-level religiosity to persist beyond those of county-level religiosity.

H2. The relationship between firm-level religiosity and CSR is significant independent of the influences of regional moderating factors

### **3. Data**

For the purposes of this study, we use data from i) Faith Driven Consumers, an independent organization that publishes the Faith Equality Index (FEI), rating household name brands on specific religious policies and actions, ii) Thomson Reuters's Refinitiv database, which provides us with ESG scores, the Environment, and the Social pillar scores, and ESG category scores as proxies for firm-level CSR, and iii) Thomson Reuters Eikon, the source of our data for firm and board characteristics. Our sample consists of 109 publicly traded US firms observed over a period of nine years (2012-2020), providing 789 firm-year observations.

### 3.1 Religiosity

We use the Faith Equality Index (FEI) as a novel measure of firm-specific religiosity. The FEI scores are obtained through a report published by the Faith Driven Consumers, an independent religious organization which claims to assist 41 million Americans in making faith-driven choices at work and in the marketplace. The report does not acknowledge affiliation to any specific denomination of the Christian faith, but instead simply proclaims support for a ‘biblically orthodox’ worldview. Each of the featured firms is assigned a score from 0-100, based on firm-level religious policies and actions regarding contemporary Christian issues in American society. The criteria of the score, detailed in Table 1, ranges from the recognition of religious identity and expression as an overall part of corporate diversity to biblically compatible views on the subjects of abortion, stem-cell research, euthanasia, sexuality, gender, marriage, and family.

*(Insert Table 1 here)*

In addition to the FEI, the regional measure of religiosity employed in our analysis as a comparison to firm-specific religiosity and as an interaction variable is county-level religiosity. Following the precedence set by several studies (e.g. Callen & Fang 2015; Jiang et al. 2018; Chantziaras et al. 2020), county-level data of religious adherents is obtained from the Religious Congregations and Membership Studies (RCMS). Regional religiosity is then measured as the ratio of religious adherents to the total population of the county of the firm’s headquarters, and the variable *County Religiosity* is constructed as the mean-centered form of this ratio. Centering

the county-level measure of religiosity on the mean facilitates the interpretation of coefficients obtained in the interaction analysis.

### 3.2 CSR

Corporate Social Responsibility (CSR) is measured by the Environmental, Social and Governance (ESG) Ratings obtained from Refinitiv's ASSET4 database. According to Refinitiv, the ESG score, ranging from 0-100, is based on publicly reported and verifiable data on 450 company-level metrics of CSR, and represents the overall social responsibility of the firms. Additionally, the Social and Environmental dimensions of CSR are studied separately, using Refinitiv scores for the Environment and Social pillars. The seven categories of ESG across the Environmental and Social pillars are also studied as dependent factors, and these include Workforce, Human Rights, Community, Product Responsibility, Environmental Innovations, Emissions and Resource Use.

These categories cover the following themes of socially responsible behavior: *Workforce* covers themes of diversity, inclusivity, career development and training, working conditions, and health and safety; *Human Rights* keeps track of the corporate record on human rights abuses in developing nations; *Product Responsibility* covers themes of responsible marketing, product quality and data privacy; *Community* represents the company's commitment to being a good corporate citizen and protecting public health; *Environmental Innovations* measures product innovation, green revenues, R&D, and capital expenditures; *Emissions* measures industrial emissions and waste, accounting for biodiversity and the presence of Environmental Managements Systems; and *Resource Use* tracks the use of water and energy, accounting for sustainable packaging and the environmental supply chain of the firm.

### 3.3 Control Variables

The choice of controls is motivated by the precedents set by prior literature. Specifically, firm size, profitability and market to book value can demonstrably influence CSR scores (Cronqvist & Yu 2017; Edmans 2012; Hong, Kubik & Scheinkman 2012; McGuire, Newton, Omer & Sharp 2012). Altogether, our control variables include *Size*, the natural logarithm of total assets, *Return on Assets*, the ratio of net income to total assets, *Leverage*, the ratio of total debt to total assets, *Market to Book value*, the ratio of market capitalization to the book value of equity, *Sales Growth*, the annual change in sales, *Board Size*, the number of members on the board of directors, *Board Diversity*, the percentage of female board members, and *Board Independence*, the percentage of independent board members. Industry dummies are constructed using Fama-French industry classifications. The firm- and board-specific characteristics used as control variables in this study are obtained from Thompson Reuters.

### 3.4 Descriptive Statistics and Correlations

The descriptive statistics, namely the mean, median, 25<sup>th</sup> percentile, 75<sup>th</sup> percentile, and the standard deviation of these variables are displayed in Table 2.

*(Insert Table 2 here)*

While the FEI score can range from 0 to 100, none of the firms assessed by the report meet all the criteria of a faith-driven corporation. In fact, most of the firms cannot be considered highly religious by these standards, as demonstrated by the distribution of the sample, and an average FEI score of 31.42 points. County religiosity in our sample has a wider range – the lowest at around 34%, and the highest around 97% – and is more evenly distributed. Meanwhile, the firms assessed by the Faith Driven Consumers have an average overall ESG score of 63.1, and average Environment and Social pillar scores of 60.1 and 65.9 respectively. These firms have a slightly higher overall CSR performance, and Environmental and Social performance, than a sample of indiscriminately selected US firms (Demers et al. 2021; Zanin 2021). The firms in our sample are also large (with median total assets of \$33.7 billion), have relatively high leverage (with a median debt to assets ratio of 0.28), and have relatively low market values (with median MTBV of 2.78).

*(Insert Table 3 here)*

Table 3 reports the pairwise correlation coefficients for the FEI score, three main dependent variables (ESG Score, and the Environment score and the Social score) and all control variables. The FEI score is not significantly correlated with any of our three dependent variables: the ESG score, the Environmental pillar score, or the Social pillar score. In addition, the correlation coefficient of firm- and county-level religiosity is only 0.12, suggesting that the regional measure is not a good predictor of internal corporate culture within our sample. Firm-specific religiosity is also negatively correlated with firm size, board size and board diversity. Consistent with the prior findings, firm size, board size, board diversity and board independence are significantly positively correlated with the ESG scores, while leverage is significantly negatively correlated with them.

None of the correlation coefficients have a sufficiently large magnitude to warrant concerns of multi-collinearity.

## 4. Empirical Analysis

### 4.1 The Empirical Setup

In order to study the relationship between firm-level religiosity and CSR, we regress the ESG score and its pillar and category scores on the FEI score in successive regressions employing least squares fixed effects estimation. The empirical setup used to test the first hypothesis is defined by the following equation:

$$\ln(\mathbf{CSR}) = \beta_0 + \beta_1 \ln(\mathbf{FEI\ Score}) + \beta_{4-8} (\mathbf{Firm-Specific\ Controls}) + \beta_{9-11} (\mathbf{Board\ Characteristics}) + \mu + \lambda + \varepsilon \quad \text{Equation (1)}$$

where the dependent variable, CSR, is the natural log of the ESG score, the Environment and Social pillar scores, and the 7 category scores within the Environment and Social pillars (namely, Workforce, Human Rights, Community, Product Responsibility, Environmental Innovation, Emissions and Resource Use) in separate iterations. Firm-specific controls include *Size*, the natural log of total assets, *ROA*, the ratio of net income to total assets, *Leverage*, the ratio of total debt to total assets, *MTBV*, the ratio of market to book value, and *Sales Growth*, the annual change in sales, while board characteristics include *Board Size*, the number of members on the board of directors, *Board Diversity*, the percentage of female members on the board of directors, and *Board Independence*, the percentage of independent members on the board of directors.  $\mu$  represents the inclusion of industry fixed effects, defined by each of the five Fama French industry

classifications, and  $\lambda$  represents the inclusion of year fixed effects. Finally, the standard errors are adjusted for heteroscedasticity and clustered by firm.

We test the second hypothesis by employing an alternate specification of Equation (1) to determine the interaction of geographical and internal religious influences. *County Religiosity*, the percentage of religious adherents in the county headquarters centered about the mean, is interacted with the FEI score, and these interaction terms constitute the explanatory factor in the second set of regressions. All other elements of the original estimation are preserved in this alternate specification, which is denoted by Equation (2). Finally, the effects of *County Religiosity* as the sole explanatory factor are studied alongside the regressions that use the *FEI Score*, and an interaction of *County Religiosity* and the *FEI Score*, to facilitate comparison between the two variables.

$$\begin{aligned} \ln(\mathbf{CSR}) = & \beta_0 + \beta_1 \ln(\mathbf{FEI Score}) + \beta_2 \mathbf{County-Rel} + \beta_3 (\mathbf{County-Rel} \times \mathbf{FEI score}) \\ & + \beta_{4-8} (\mathbf{Firm-Specific Controls}) + \beta_{9-11} (\mathbf{Board Characteristics}) + \mu + \lambda + \varepsilon \end{aligned}$$

Equation (2)

#### 4.2 Results for CSR

The results of these sets of regressions are displayed in Table 4. Column I for each dependent variable tabulates the results of the regressions where the *ESG Score*, the *Environment Score* and *Social Score* are regressed on *County Religiosity* as the sole explanatory factor and proxy for religiosity. Within our sample, the religiosity of the headquarter county is positively associated with CSR, but this association is only significant for the Social pillar of CSR. Specifically, a standard deviation increase in the percentage of religious adherents in the county of the firm's

headquarters is associated with a 7.8% higher performance in the Social pillar. These results corroborate the expectations formed by the findings of prior studies (Schouten et al. 2014; Cui et al. 2019; Chantziaras et al. 2020). Specifically, social concerns are expected to have greater significance for firms located in more religious counties for our Christian American sample, while environmental concerns are not likely to be positively related to religiosity at all based on previously documented CSR attitudes and behavior (Brammer et al. 2007; Cui, Jo and Velasquez 2015).

*(Insert Table 4 here)*

In Column II, the independent variable is replaced by the firm-specific measure of religiosity, the natural logarithm of the *FEI Score*. Firm religiosity has a positive and significant relationship with overall ESG, and with both the Social and Environmental pillar scores. More precisely, a one standard deviation increase in the FEI is associated with an increase in the ESG score of 2.22%. This positive relationship is consistent with the findings of prior studies with differing samples and measures of religiosity (Chantziaras et al. 2020; Harjoto and Rossi 2019). For Environmental scores, a standard deviation increase in the FEI is matched by an increase of 5.02%, whereas Social scores increase by 1.66%. These coefficients are in stark contrast to the ones obtained when using county-level religiosity as an explanatory factor, suggesting that the *FEI Score* characterizes a dimension of firm-specific religiosity previously not captured by regional measures.

To test the second hypothesis, the regressions are repeated using the interaction of *FEI Score* and *County Religiosity* as the independent variables of interest. The results of these



regressions are tabulated in Column III for each dependent variable in Table 4. The coefficients of the *FEI Score* are consistent with those displayed in Column II. Specifically, a one standard deviation increase in firm religiosity is associated with a 2.02% increase in the overall ESG scores, a 4.72% increase in the Environmental pillar score, and a 1.34% increase in the Social pillar score in less religious counties. Meanwhile, the interaction coefficients obtained across all regressions confirm our hypothesis that regional differences in religiosity do not have any incremental effect on CSR over and above the influence of firm-specific religiosity. In addition, the coefficients of the interaction terms are negative but insignificant, suggesting that there are no differences in the relationship between firm-level religiosity and CSR across more and less religious counties.

#### *4.3 Results for CSR Subcategories*

To further identify the source of the positive influence of firm-level religiosity on ESG and its pillar scores, we repeat the regressions specified by Equation (1) for all category scores, namely Workforce, Human Rights, Community, Product Responsibility, Environmental Innovation, Emissions, and Resource Use. The results of the regressions on these seven dependent variables are displayed in columns I through VII in Panel A of Table 5.

*(Insert Table 5 here)*

Notably, specific categories within the ESG score are significantly associated with firm-level religiosity. Within the social pillar, Human Rights, Community and Product Responsibility are the three categories with significantly positive coefficients of the *FEI score*. From this, we can infer that more religious firms are likely to display greater commitment to being a good corporate citizen, protecting public health, respecting business ethics and fundamental human

rights, producing quality goods and services, integrity and data privacy. Within the Environment pillar, both the *Emissions* and the *Resource Use* categories have significant, positive coefficients for the variable for firm-level religiosity. A standard deviation's increase in the *FEI score* is associated with 5.41% increase in Emissions and Waste Management, and a 7.09% increase in Resource Use, suggesting that more religious firms pollute less and adopt more sustainable practices with regards to natural and community resources. While the positive effects of religiosity on Environmental responsibility have not been previously documented in Christian samples, the link between religiosity and risk-averseness (Boone et al. 2013; Jiang et al. 2015) can be considered one of the likely drivers of compliance to environmental regulations.

The effects of the interaction of firm- and county-level religiosity on the categories within ESG are studied next, and the results of these regressions are reported in Panel B of Table 5. The coefficient estimates of the interaction terms are significant in regressions for *Product Responsibility* within the Social pillar of CSR, and *Emissions* and *Resource Use* within the Environmental pillar. More religious firms headquartered in less religious counties produce higher quality goods and services, engage in more responsible marketing practices, and are generally more likely to safeguard customer interests with regards to health, safety and data privacy. The relationship between firm-level religiosity and *Product Responsibility* is also significantly weaker in more religious counties. On the other hand, while firm-level religiosity is negatively associated with both polluting and the wasteful use of natural and community resources, county religiosity does not influence these relationships. Overall, the mediating effect of regional religiosity can only be observed on one specific category with the Social pillar of CSR, namely Product Responsibility.

## 5. Additional Tests

### 5.1 Instrumental Variable Regressions

In order to mitigate concerns regarding endogeneity and reverse causality, we perform instrumental variable (IV) regressions for the dependent variables ESG score, Environment score and Social score. Owing to the difficulty in obtaining an instrumental variable for firm-level religiosity that is also sufficiently detached from CSR, we adopt the heteroscedasticity-based instrument methodology proposed by Lewbel (2012), and applied in several studies published since (Emran and Hou, 2013; Eichengreen and Panizza, 2016; Mishra and Smyth, 2015; Cheng and Smyth, 2015; Gong et al. 2018; Mavis et al. 2020; Hasan et al. 2022, etc.). Specifically, Lewbel's (2012) instrumental variables are generated using the product of the mean-centered forms of existing exogenous variables and the residuals from the "first-stage" regression. The results of these heteroscedasticity-based IV tests are reported in Table 6.

Insert Table 6 here

Column I of Table 6 reports the results of the first-stage of the Lewbel IV regression. It should be noted that the displayed coefficients in Column I are obtained for the Lewbel-adjusted versions of the control variables, following the methodology described above. The Lewbel method provides a statistically robust set of instruments according to the results of the reported diagnostic tests. The Kleibergen-Paap rk Wald F Statistic is 182.964 (with a 10% maximal IV size of 16.38), rejecting the null hypothesis of weak identification (Stock-Yogo 2005). The Kleibergen-Paap rk LM Statistic of 68.367 has a p-value  $< 1\%$ , rejecting the hypothesis of underidentification, and

similarly, a Hansen J Statistic of 5.760 invalidates the hypothesis of overidentification. The results of the IV regressions using heteroscedasticity-based augmentations of the external instruments (Column II) are consistent with the results of the main analysis, strengthening the argument that firm-level religiosity has a significant, positive impact on CSR.

## **5.2 Robustness tests**

Several robustness tests are used to further establish the validity of our empirical results their implications. First, the source of the relationship with CSR is further scrutinized within the quartiles of the FEI to determine the variability of the effects discovered in the main regression across different levels of religiosity. Two dummy variables are constructed to represent the inclusion of a firm in the upper and lower quartile of the FEI score respectively, and these two variables are included in place of the independent variable of interest in the regression modelled by equation (1). The coefficient estimates (untabulated) reveal that low firm religiosity is significantly and negatively related to CSR, whereas the dummy representing high religiosity has no significant effects whatsoever. These findings are consistent across all three dependent variables: the ESG score, the Environment score and the Social score. Therefore, lower CSR among firms in the bottom quartile of the FEI can be attributed as the main driver of the observed positive relationships in the main regressions.

Next, we address concerns regarding the distribution of the FEI score. While the scores may theoretically range from 0 to 100, the firms in our sample have a minimum FEI score of 11, and a maximum of 60. A rank ordered variable for religiosity is constructed using the FEI score of each firm, and replaces the independent variable in equation (1). This variable provides greater range and variation, and because the FEI is discrete, does not compromise continuity. The

(untabulated) results of the regressions of the ESG score, the Environment score and the Social score respectively on the rank ordered variable are consistent in magnitude and significance with the results reported in Table 4.

Third, state-level corruption has recently been shown to play a mediating role on the relationship between religiosity and CSR. Chantziaras et al. (2020) find that corruption may weaken the positive effects of religiosity on the CSR reporting within US banks. Following their methodology, a corruption variable is constructed as the number of convictions of corrupt public officials adjusted by the state population. This variable is first used as an additional control in regressions based on equation (1), and subsequently as the interacting variable in regressions based on equation (2). The (untabulated) results of these regressions confirm that the significant positive coefficients of the FEI score persist in the presence of corruption controls, and that the positive relationship between firm-specific religiosity and CSR is independent and not influenced by the interaction of corruption.

Lastly, our findings are demonstrated to be robust to unobserved regional variations. The interactions of county-level religiosity and state-level corruption are both external factors that have been accounted for separately. In order to demonstrate that state and county-level effects do not dilute the effects of firm-level religiosity, the regressions specified by equation (1) are repeated with the inclusion of state and county dummies respectively. The (untabulated) coefficient estimates from these regressions are consistent with the estimates reported in Tables 4 and 5. The effect of firm-level religiosity on the firm's ESG score, Environment score, Social score and several category scores remains positive and significant at least at the 5% level in the presence of state- and county-fixed effects. Overall, the analyses described in this section support

the presented empirical evidence and strengthen the arguments that firm-specific religiosity increases CSR (H1), and that this relationship is significant regardless of regional influences (H2).

## 6. Conclusions

This paper examines the link between firm religiosity and corporate social responsibility, and the moderating effects of regional religiosity on this link. Specifically, we argue that religious firms have higher overall CSR, and that this relationship is persistently significant when accounting for the influence of the religious climate of the headquarter county. In addition, we estimate the effects of firm-level religiosity on the Environment and Social and pillars of CSR, and on the 7 broad categories within these pillars. Finally, our methodology and findings are strengthened with instrumental variable regressions estimated using Lewbel's (2012) econometric models, and with several additional tests that demonstrate the robustness of the empirical results.

We use a novel, firm-specific measure of religiosity in this study. Firm religiosity is measured by the FEI score, a rating published by the independent organization Faith Driven Consumers, representing the interests of American Christians who wish to live up to a biblically orthodox worldview. The index comprises a scorecard consisting of multidimensional criteria that are specific to the internalized and acknowledged religiosity of each company, and that purposefully represent contemporary religious issues in the U.S. For this reason, we argue that the FEI is a significantly more comprehensive and effective measure of firm-level religiosity.

We use panel regressions with industry- and year-fixed effects to estimate the effects of a firm's religiosity (the *FEI Score*) on its CSR (the *ESG Score*, the *Environmental Score*, and the *Social Score*). Our results indicate that firm religiosity is positively associated with CSR.

Moreover, consistent with prior literature (Brammer et al. 2007; Schouten et al. 2014), we find religiosity to have varying effects on each of the pillars and categories within ESG. In particular, firm religiosity is significantly and positively associated with the Environmental and Social dimensions, as well as the Human Rights, Community, Product Responsibility, Emissions and Resource Use subcategories. In addition, we use the interaction of the *FEI Score* and *County Religiosity* to determine the moderating effects of the religiosity in the headquarter county on the religion-CSR relationship. We find that external religious influences do not significantly alter the relationship between overall ESG or the Environmental and Social pillars. However, a weakly negative moderating effect of county religiosity is detected on the effects of firm-level religiosity and *Product Responsibility*, the criteria representing responsible marketing and the priority of customer wellbeing.

Importantly, this study documents a stronger relationship between firm-level religiosity and CSR than between county-level religiosity and CSR. The nature of the relationship also varies across the two pillars of CSR for both firm- and county-level variables, suggesting that the FEI Score is a sufficiently independent if not arguably a more comprehensive measure of corporate religiosity. Overall, our results corroborate the theoretical and empirical evidence presented by previous studies supporting a positive link between Christian religious influence and ethical behavior in general, and CSR specifically, in the U.S. (Brammer et al. 2007; Chantziaras et al. 2020; Giacalone and Jurkiewicz 2003; Conroy and Emerson 2004; Wu et al. 2016), and contribute to the literature by establishing the precedence for using a multidimensional firm-specific measure of firm-religiosity.

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Table 1. Description of individual components of the composite Faith Index

Faith indicators	Description
<b>Faith-Compatible Corporate Actions</b>	<b>Company's actions that acknowledge, respect and comply with biblically orthodox teachings (30 points)</b>
(1)	Respect for, acknowledgment of, and compatibility with a comprehensive pro-life view on abortion, embryonic stem cell research and euthanasia (10 points)
(2)	Respect for, acknowledgement of, and compatibility with biblical teaching on sexuality, gender, marriage and family (10 points)
(3)	Promote or support wholesome images in marketing and culture while refraining from pornography, sexual immorality or the sexual exploitation of individuals, as viewed through a biblical lens (10 points)
<b>Corporate Competency in the Faith Driven Consumer Market Segment</b>	<b>Company's activities that demonstrate respect for, genuine welcome and celebration of faith driven consumers as well as their biblically orthodox values and worldview (20 points)</b>
(4)	Faith/religious identity and expression as a recognized category in the corporate diversity position (5 points)
(5)	Targeted recruiting efforts for both faith-driven employees and suppliers (5 points)
(6)	Faith-inclusive employee training, resources and accountability measures (10 points)
<b>Equal Application of Equal Protections</b>	<b>Creating a safe harbor inclusive of religious freedom and practice in the marketplace and workplace (20 points)</b>
(7)	A workplace Non-Discrimination Policy that includes explicit, enumerated protections for faith driven consumers/employees (5 points)
(8)	Offers an employer-sponsored Employee Resource Group for faith-driven employees (10 points)
(9)	An Equal Application of Equal Protection statement specifying that all enumerated groups are protected equally in practice with every other enumerated group (5 points)
<b>Public Commitment to Faith Driven Consumers</b>	<b>Demonstrating a company-wide public commitment to the faith driven consumer community (30 points)</b>
(10)	Initiate and maintain a specific welcoming campaign communicating respect for, genuine welcome and celebration of faith driven consumers and employees (5 points)
(11)	Engagement of and outreach to the faith driven consumer market segment including faith-compatible, wholesome advertising and marketing campaigns (10 points)
(12)	Use of the word "Christmas" in seasonal advertising (5 points)
(13)	Philanthropic support of biblically orthodox faith-driven organization(s) or event(s) (5 points)
(14)	Proactive public support for legislative, regulatory, and/or judicial protections for religious liberty including freedom of speech, association and expression (5 points)

This table provides the description 14 individual components of the Faith Consumer Index (100 points in total). Individual components are organized in 4 groups: (i) Faith-comparable corporate actions (30 points), (ii) Corporate competency in the faith driven consumer market segment (20 points), (iii) Equal application of equal protection (20 points), and (iv) Public commitment to faith drive consumers (30 points).

Table 2  
Descriptive Statistics

	25th	Median	Mean	75th	St. Dev	No. of Observations
<b><i>FEI Score</i></b>	26.00	31.00	31.42	37.00	8.36	1364
<b><i>County Religiosity</i></b>	0.46	0.56	0.56	0.66	0.11	1463
<b><i>ESG Metrics</i></b>						
ESG Score	53.44	68.27	63.10	77.15	19.86	1190
Environment Pillar	43.86	69.17	60.11	82.22	27.77	1182
Social Pillar	53.16	68.96	65.91	82.54	20.58	1182
Workforce	51.98	74.78	68.15	88.41	24.89	1190
Human Rights	16.67	54.08	49.50	80.85	33.81	1182
Community	70.48	88.43	81.22	95.78	19.32	1190
Product Responsibility	34.49	71.20	62.02	87.92	29.54	1182
Environmental Innovation	0.00	36.60	37.41	72.97	34.47	1182
Emissions	41.99	74.52	63.55	89.71	31.57	1182
Resource Use	52.04	79.99	67.77	92.13	31.52	1182
<b><i>Control Variables</i></b>						
Size	6510	33700	107000	118000	243000	1366
ROA	0.02	0.05	0.05	0.08	0.19	1361
Leverage	0.16	0.29	0.33	0.44	0.27	1366
Sales Growth	-0.02	0.03	-0.01	0.07	0.31	1092
MTBV	1.47	2.78	6.66	5.36	17.21	1133
Board Size	10.00	12.00	11.80	13.00	2.52	1189
Board Diversity	15.38	22.22	22.48	30.00	10.92	1189
Board Independence	73.33	84.61	78.64	90.91	17.41	1188

This table reports the summary statistics for the sample of US firms studied over the period 2012-2020. The *FEI Score* is a measure of firm-level religiosity, while *County Religiosity* is the percentage of adherents of the headquarter county's population. The *ESG Score* is the proxy for a firm's CSR activity, and the pillar and category scores studied all correspond to either the Environment Pillar or the Social Pillar. The control variables are defined as follows: *Size* is a firm's total assets (in million USD), *ROA* is the ratio of net income to total assets, *Leverage* is the ratio of total debt to total assets, *Sales Growth* is the annual change in sales, *MTBV* is the ratio of market value to the book value of equity, *Board Size* is the number of members on the firm's board of directors, *Board Diversity* is the percentage of female members on the board of directors, and *Board Independence* is the percentage of independent directors on the board.

Table 3

## Correlation Matrix

		(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)	(xi)	(xii)
(i)	FEI Score												
(ii)	County Religiosity	0.23 *											
(iii)	ESG Score	-0.02	0.07										
(iv)	Environment Pillar	-0.04	0.03	0.83 *									
(v)	Social Pillar	-0.06	0.13 *	0.93 *	0.76 *								
(vi)	Size	-0.30 *	-0.01	0.44 *	0.45 *	0.46 *							
(vii)	ROA	0.02	0.03	0.11 *	0.02	0.07 *	0.16 *						
(viii)	Leverage	0.02	-0.02	-0.15 *	-0.19 *	-0.11 *	-0.39 *	-0.20 *					
(ix)	Sales Growth	0.01	-0.02	0.02	-0.01	0.02	0.06	0.38 *	-0.14 *				
(x)	MTBV	0.01	-0.01	-0.03	-0.06	-0.04	-0.16 *	0.17 *	0.26 *	-0.01			
(xi)	Board Size	-0.08 *	0.08 *	0.30 *	0.28 *	0.31 *	0.40 *	-0.04	-0.11 *	0.01	-0.04		
(xii)	Board Diversity	-0.13 *	-0.04	0.25 *	0.17 *	0.24 *	0.08 *	0.05 *	0.04	-0.03	0.07	0.16 *	
(xiii)	Board Independence	-0.07	0.13 *	0.23 *	0.16 *	0.23 *	0.05	0.13 *	-0.05	-0.03	0.08 *	-0.01	0.44 *

This table reports pairwise correlation coefficients for the firm-level measure of religiosity, the *FEI Score*, the measure of regional religiosity, *County Religiosity*, the ESG Score, the Environmental and Social pillar scores, and all remaining independent variables. The control variables are as follows: *Size* is the natural logarithm of total assets, *ROA* is the ratio of net income to total assets, *Leverage* is the ratio of total debt to total assets, *Sales Growth* is the annual change in sales, *MTBV* is the ratio of market capitalization to the book value of equity, *Board Size* is the number of members on the board of directors, *Board Diversity* is the percentage of female members on the board of directors and *Board Independence* is the percentage of independent directors on the board. All continuous control variables are winsorized at the 1% and 99% levels respectively. \* denotes statistical significance at the 1% level.

Table 4

## Multivariate Regressions: ESG and Firm-level Religiosity

	ESG			Environmental			Social		
	I	II	III	I	II	III	I	II	III
Constant	-0.461 (-0.84)	-1.687 ** (-2.08)	-1.568 * (-1.86)	-5.505 *** (-3.75)	-8.302 *** (-4.05)	-7.987 *** (-3.75)	-0.113 (-0.25)	-1.116 * (-1.94)	-0.780 (-1.42)
FEI Score		0.266 ** (2.39)	0.252 ** (2.14)		0.601 ** (2.26)	0.565 ** (2.09)		0.199 ** (2.39)	0.161 * (1.97)
County Religiosity	0.285 (0.97)		0.910 (0.28)	0.697 (1.17)		2.631 (0.40)	0.536 *** (2.90)		2.739 (1.20)
FEI x County Religiosity			-0.216 (-0.23)			-0.647 (-0.33)			-0.671 (-0.96)
Size	0.139 *** (6.39)	0.151 *** (6.50)	0.149 *** (6.31)	0.290 *** (5.19)	0.318 *** (5.40)	0.313 *** (5.28)	0.125 *** (6.56)	0.137 *** (7.08)	0.131 *** (6.84)
ROA	1.283 (1.62)	1.323 * (1.74)	1.325 * (1.72)	1.559 * (1.73)	1.770 ** (2.00)	1.728 * (1.96)	0.485 (1.43)	0.574 * (1.67)	0.530 (1.60)
Leverage	-0.068 (-0.34)	-0.062 (-0.31)	-0.058 (-0.29)	-0.322 (-0.77)	-0.320 (-0.77)	-0.308 (-0.72)	0.095 (0.58)	0.078 (0.44)	0.091 (0.55)
Sales Growth	-0.116 * (-1.84)	-0.118 ** (-1.87)	-0.112 * (-1.78)	-0.414 ** (-2.24)	-0.426 ** (-2.30)	-0.407 ** (-2.21)	-0.087 ** (-2.08)	-0.103 ** (-2.28)	-0.082 * (-1.96)
MTBV	0.001 (0.17)	0.001 (0.36)	0.001 (0.30)	-0.001 (-0.26)	0.001 (-0.13)	-0.001 (-0.16)	-0.001 (-0.08)	0.001 (0.19)	0.001 (0.07)
Board Size	0.031 ** (2.50)	0.033 *** (2.84)	0.032 *** (2.63)	0.086 *** (3.23)	0.093 *** (3.67)	0.089 *** (3.45)	0.032 *** (2.62)	0.036 *** (3.03)	0.032 *** (2.73)
Board Diversity	0.003 * (1.41)	0.004 * (1.67)	0.004 * (1.79)	0.003 (0.63)	0.005 (0.92)	0.006 (0.99)	0.002 (0.99)	0.002 (1.03)	0.002 (1.24)
Board Independence	0.005 ** (2.14)	0.005 ** (2.06)	0.005 ** (2.10)	0.010 ** (2.09)	0.010 ** (2.14)	0.010 ** (2.07)	0.006 *** (4.01)	0.006 *** (3.65)	0.006 *** (3.92)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.496	0.514	0.516	0.414	0.431	0.436	0.576	0.572	0.588
F-Statistic	6.40 ***	7.24 ***	6.77 ***	3.81 ***	4.29 ***	3.95 ***	8.69 ***	9.96 ***	13.11 ***
No. of Observations	797	797	797	789	789	789	789	797	789

This table reports the results of the multivariate regressions performed as specified by Equation (1). The dependent variables are the *ESG Score* and the *Environmental* and *Social* pillar scores obtained from Thomson Reuter's Refinitiv database. The independent variable, the natural logarithm of *FEI score*, represents



firm-level religiosity, while regional religiosity, measured as the mean-centered form of the ratio of religious adherents to the headquarter county's population, is represented by *County Religiosity*. Column I for each dependent variable reports the results when we use the county-level measure of religiosity as the main explanatory variable. Column II reports the results of the regression when religiosity is represented by the firm-level measure. Finally, in Column III, each dependent variable is regressed on an interaction of firm-level and county-level religiosity. The control variables include *Size*, the natural logarithm of total assets, *ROA*, the ratio of net income to total assets, *Leverage*, the ratio of total debt to total assets, *Sales Growth*, the annual change in net sales, *MTBV*, the ratio of market capitalization to the book value of equity, *Board Size*, the number of members on the board of directors, *Board Diversity*, the percentage of female board members, and *Board Independence*, the percentage of independent board members. The t-statistics (in parenthesis) are based on robust standard errors which are adjusted for heteroscedasticity and within-firm clustering. \*\*\*, \*\* & \* denote statistical significance at the 1%, 5% and 10% levels respectively.

Table 5.

## Multivariate Regressions: ESG Categories and Firm-Level Religiosity

PANEL A – Linear Regressions									
	Workforce	Human Rights	Community	Product Responsibility	Environmental Innovation	Emissions	Resource Use		
Constant	-2.249 ** (-2.52)	-12.928 *** (-4.66)	1.585 ** (2.30)	-4.425 *** (-3.40)	-12.068 *** (-4.13)	-9.845 *** (-4.20)	-11.547 *** (-4.42)		
FEI Score	0.176 (1.26)	0.659 * (1.71)	0.199 * (1.83)	0.437 ** (2.24)	-0.271 (-0.60)	0.648 ** (2.20)	0.849 ** (2.37)		
Size	0.190 *** (6.05)	0.456 *** (5.64)	0.046 ** (2.13)	0.199 *** (4.76)	0.532 *** (6.33)	0.365 *** (5.03)	0.377 *** (4.92)		
ROA	1.972 * (1.70)	3.709 *** (2.64)	1.017 (0.96)	1.321 * (1.74)	1.932 (1.15)	2.686 ** (2.19)	1.850 (1.58)		
Leverage	-0.157 (-0.45)	0.049 (0.06)	-0.126 (-0.56)	0.594 ** (2.00)	-0.611 (-0.84)	-0.030 (-0.06)	-0.551 (-0.86)		
Sales Growth	-0.057 (-0.99)	-0.585 (-1.53)	0.037 (0.52)	-0.274 *** (-2.69)	-0.184 (-0.65)	-0.531 *** (-2.96)	-0.318 (-1.24)		
MTBV	0.001 (1.55)	-0.003 (-0.92)	0.001 (0.84)	-0.002 (-0.95)	0.006 (1.49)	-0.001 (-0.43)	-0.001 (-0.24)		
Board Size	0.038 ** (2.54)	0.088 ** (2.27)	0.033 *** (2.81)	0.055 ** (2.22)	0.152 *** (3.93)	0.093 *** (2.88)	0.111 *** (3.39)		
Board Diversity	0.009 ** (2.53)	0.007 (0.76)	0.006 ** (2.17)	-0.004 (-0.98)	0.007 (0.61)	0.008 (1.22)	0.006 (0.87)		
Board Independence	0.004 (0.99)	0.006 (1.05)	0.006 * (1.95)	0.006 ** (2.25)	0.004 (0.58)	0.011 * (1.89)	0.018 ** (2.54)		
R-Squared	0.358	0.409	0.283	0.378	0.404	0.402	0.432		
F-Stat	7.81 ***	5.65 ***	3.84 ***	9.27 ***	10.25 ***	3.89 ***	3.96 ***		
No. Of Observations	797	789	797	789	789	789	789		

PANEL B – Interaction of Firm- and County-Level Religiosity								
	Workforce	Human Rights	Community	Product Responsibility	Environmental Innovation	Emissions	Resource Use	
Constant	-2.263 ** (-2.15)	-11.768 *** (-4.40)	1.431 * (1.70)	-3.812 *** (-2.90)	-11.233 *** (-4.29)	-9.443 *** (-3.94)	-10.950 *** (-4.39)	
FEI Score	0.174 (1.05)	0.489 (1.32)	0.209 (1.62)	0.391 ** (2.08)	-0.372 (-0.94)	0.611 ** (2.07)	0.774 ** (2.15)	
County Religiosity	-1.084 (-0.24)	-0.848 (-0.08)	-3.139 (-0.95)	11.053 ** (2.32)	4.542 (0.32)	5.103 (0.64)	2.887 (0.27)	
FEI x County Religiosity	0.325 (0.24)	0.839 (0.28)	0.881 (0.93)	-3.083 ** (-2.15)	-0.978 (-0.27)	-1.364 (-0.57)	-0.581 (-0.18)	
Size	0.191 *** (5.70)	0.442 *** (5.42)	0.049 ** (2.08)	0.186 *** (4.55)	0.518 *** (6.32)	0.357 *** (4.95)	0.368 *** (4.95)	
ROA	1.986 * (1.72)	3.551 *** (2.63)	1.023 (0.99)	1.278 * (1.72)	1.883 (1.16)	2.659 ** (2.21)	1.794 (1.59)	
Leverage	-0.145 (-0.43)	0.152 (0.19)	-0.113 (-0.51)	0.579 ** (1.98)	-0.536 (-0.75)	-0.007 (-0.01)	-0.491 (-0.80)	
Sales Growth	-0.065 (-1.10)	-0.527 (-1.44)	0.021 (0.31)	-0.233 ** (-2.41)	-0.139 (-0.50)	-0.503 *** (-2.87)	-0.278 (-1.15)	
MTBV	0.001 (1.43)	-0.004 (-1.18)	0.001 (0.73)	-0.002 (-0.91)	0.006 (1.46)	-0.001 (-0.44)	-0.001 (-0.34)	
Board Size	0.037 ** (2.45)	0.073 * (1.88)	0.034 *** (2.75)	0.048 ** (2.00)	0.142 *** (3.58)	0.088 *** (2.75)	0.103 *** (3.10)	
Board Diversity	0.009 ** (2.67)	0.009 (1.03)	0.006 ** (2.31)	-0.004 (-0.98)	0.008 (0.70)	0.009 (1.30)	0.007 (0.99)	
Board Independence	0.004 (1.07)	0.005 (0.86)	0.006 ** (2.15)	0.006 ** (2.16)	0.003 (0.47)	0.011 * (1.81)	0.018 ** (2.58)	
R-Squared	0.358	0.428	0.288	0.396	0.409	0.405	0.438	
F-Stat	8.74 ***	5.73 ***	3.56 ***	8.40 ***	10.80 ***	3.94 ***	3.81 ***	
No. Of Observations	797	789	797	789	789	789	789	

This table reports the results of the multivariate regressions where the four component scores of the Social Pillar, and the three component scores of the Environmental Pillar are the dependent variables in Columns I through VII respectively. The independent variable, the natural logarithm of *FEI score*, represents

firm-level religiosity. Panel A reports the results of the regressions when these scores are regressed on the *FEI* Score, the measure of firm-level religiosity, following the estimation specified by Equation (1). Panel B reports the results of the regressions when the dependent variables are regressed on an interaction of the *FEI* Score and *County* Religiosity, the latter being the regional measure of religiosity within the headquarter county. The control variables include *Size*, the natural logarithm of total assets, *ROA*, the ratio of net income to total assets, *Leverage*, the ratio of total debt to total assets, *Sales Growth*, the annual change in net sales, *MTBV*, the ratio of market capitalization to the book value of equity, *Board Size*, the number of members on the board of directors, *Board Diversity*, the percentage of female board members, and *Board Independence*, the percentage of independent board members. The t-statistics (in parenthesis) are based on robust standard errors which are adjusted for heteroscedasticity and within-firm clustering. \*\*\*, \*\* & \* denote statistical significance at the 1%, 5% and 10% levels respectively.

Table 6

## Instrumental Variable Regressions

	First Stage	ESG Score	Environmental	Social
Constant	4.605 *** (12.53)	-1.613 * (-1.88)	-8.373 *** (-3.78)	-7.961 *** (-3.73)
FEI Score		0.233 ** (2.00)	0.620 * (1.76)	0.602 ** (2.00)
Size	0.171 ** (2.16)	0.152 *** (6.13)	0.318 *** (5.44)	0.302 *** (5.17)
ROA	3.493 ** (2.26)	1.369 * (1.73)	1.624 * (1.78)	1.651 * (1.81)
Leverage	-1.558 * (-1.96)	-0.052 (-0.26)	-0.328 (-0.79)	-0.329 (-0.79)
Sales Growth	-0.070 (-0.19)	-0.125 * (-1.91)	-0.424 ** (-2.34)	-0.413 ** (-2.18)
MTBV	0.008 *** (3.47)	0.001 (0.28)	-0.001 (-0.11)	-0.001 (-0.27)
Board Size	-0.054 (-1.19)	0.033 *** (2.69)	0.093 *** (3.58)	0.096 *** (3.68)
Board Diversity	0.019 * (1.97)	0.004 (1.64)	0.005 (0.85)	0.006 (1.04)
Board Independence	-0.021 ** (-2.48)	0.005 ** (2.03)	0.010 ** (2.10)	0.010 ** (2.10)
Industry dummies	No	Yes	No	Yes
Year dummies	No	Yes	No	Yes
R-Squared	0.439	0.515	0.416	0.427
F-Statistic	6.57 ***	6.95 ***	4.85 ***	5.21 ***
K-P rk LM Statistics	68.36			
K-P rk Wald F-test	184.78			
LIML Size of Nominal 10% Wald	16.38			
Hansen J Statistic	5.76			
No. of Observations	797	768	789	760

This table reports the results of instrumental variable regressions using adjustments for heteroscedasticity-based instruments (Lewbel, 2012; Baum and Schaffer, 2012). Column I reports the results of the “first stage” of the two step process, and the coefficients displayed are obtained for the Lewbel-adjusted versions of the variables in the left-hand column. These Lewbel-variables are regressed on the independent variable and measure of firm-level religiosity, *FEI Score*. Columns II, III & IV report the results of the “second stage” of Lewbel’s IV regressions for each dependent variable using the instrumented *FEI Score*. The control variables include *Size*, the natural logarithm of total assets, *ROA*, the ratio of net income to total assets, *Leverage*, the ratio of total debt to total assets, *Sales Growth*, the annual change in net sales, *MTBV*, the ratio of market capitalization to the book value of equity, *Board Size*, the number of members on the board of directors, *Board Diversity*, the percentage of female board members, and *Board Independence*, the

percentage of independent board members. The t-statistics (in parenthesis) are based on robust standard errors which are adjusted for heteroskedasticity and within-firm clustering. \*\*\*, \*\* & \* denote statistical significance at the 1%, 5% and 10% levels respectively.