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Abstract

We investigate whether social capital affects tax avoidance activities. Using a sample of 52,962 firm-year observations over the 1990-2014 period, we document that social capital is significantly and negatively associated with tax avoidance. Specifically, we find that higher social capital reduces the propensity to undertake tax sheltering activities. This result is robust to using different proxies for tax avoidance as well as to including controls for CEO characteristics, and quality of corporate governance. Our evidence is consistent with the idea that: i) managers regard corporate tax payments as a socially responsible action and ii) the social environment in which firms operate affects corporate decisions.

Keywords: Social capital; Social norm; Tax avoidance; Tax aggressiveness.

JEL Classification: H26, M41, Z13

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1. Introduction

Social capital is defined, in economics and sociology literature, as a shared set of believes that facilitates norm-consistent behaviors and constrains norm-deviant behaviors. Social capital facilitates honest dealings among parties in transactions by imposing a reputational loss on parties that are dishonest. Consistent with this argument, extant research suggests that social capital is negatively associated with opportunistic behaviors, property crimes, and transaction costs (La Porta et al., 1997; Guisio et al., 2004; Buonanno et al., 2009). Moreover, building on social norm and legitimacy theories, prior literature shows that the level of social capital of the geographical area in which a firm is located affects corporations' decisions. This is because firms seek to establish congruence between their activities and the norms of acceptable behavior in the larger social system of which they are a part (Downling and Pfeffer 1975). In line with these arguments, Jha and Chen (2015) document that firms headquartered in high social capital regions are trustworthy in the eyes of their auditors, while Jha (2013) and Jin et al. (2015) show that they have better quality financial reports.

We aim at contributing to the emerging literature that links a community's social capital to the economic decisions of local corporations headquartered in that community by focusing on a more controversial issue. Specifically, we analyze whether the level of social capital of the region in which a firm is headquartered affects its tax avoidance activities.

Recent anecdotal and academic evidence points toward a fervid debate around

corporate tax payments. Some stakeholders of public companies consider tax avoidance as a socially irresponsible and illegitimate activity (Lanis and Richardson, 2012) while others deem corporate tax payments as detrimental to social welfare because they hurt innovation, production, job creation, and economic development (Devis et al., 2016).

Christensen and Murphy (2004, p. 37) argue that paying taxes is the most fundamental way in which firms engage with the broader society and Lanis and Richardson (2012) add that managerial actions aimed at solely minimizing corporate taxes through tax aggressive activities involve significant ethical issues. Thus, if companies do not pay a "fair share'' of corporate taxes to the government, to ensure the financing of public goods, they avoid a social obligation (Freedman, 2003; Freise et al., 2008). On the other hand, some authors (see Davis et al., 2016) point out that tax payments reduce firms' net income, which in turn makes it more difficult for firms to have a positive impact on society through infrastructure investment and job creation, as well as by improving the income level of the community through employee salaries and payments to suppliers. This viewpoint is supported by research in economics that shows how corporate taxes tend to decrease investment and entrepreneurship (Hines, 2006; Djankov, 2008).

In this paper, we combine these two perspectives on tax avoidance with prior research on social capital and investigate whether social capital constrains firms' tax avoidance activities. The direction of the relation between social capital and tax avoidance depends on whether managers consider tax avoidance as a socially responsible practice. Given the presence of contrasting theories on the desirability of corporate tax avoidance policies, we tackle this research question from an empirical viewpoint.

We use Wilson's (2009) tax sheltering probability to capture the incidence of tax avoidance practices and we measure social capital at the county level using publicly available data from the Northeast Regional Centre for Rural Development (NRCRD) at the Pennsylvania State University. Using a large sample of 52,962 firm-year observations over the period 1990-2014, we document that firms headquartered in areas with high social capital engage significantly less in tax avoidance activities. This is consistent with the idea that, on average, managers regard corporate tax payments as a socially responsible action. Specifically, our results suggest that, in order to establish congruence between the social values implied by their companies and the norms of acceptable behavior required by the social system of which they are a part, managers of firms incorporated in regions with high social capital are less likely to engage in activity aimed at reducing corporate tax payments. This result is robust to using different proxies for tax avoidance as well as to controlling for State fixed effects to eliminate possible confounding trends due to different taxation systems among U.S. States. Moreover, conclusions are not affected by including controls for CEO characteristics (such as career concerns and gender), and quality of corporate governance. In additional analyses we show that the negative effect of social capital on tax avoidance is significantly stronger in regions with high religiosity, in well performing firms, which do not have pressure to engage in tax planning to boost earnings, and in the presence of lower CEO incentive compensation. Overall results reported in the paper provide solid evidence that the level of social capital of the area in which a company is headquartered constraints its tax avoidance activities.

Our paper contributes to the literature in several ways. First, we extend research on social capital (Jha and Chen, 2015; Jha, 2013; Jin et al., 2015; Guiso et al. 2004; Jha and Cox, 2015) and, more broadly, research on the effect of the social environment on managerial decisions (Hilary and Hui 2009, McGuire et al. 2012, Callen et al. 2016; Chircop et al., forthcoming). Together with Jha and Chen (2015), this study is among the few in accounting, finance, and business literature to examine the role of social capital on the firms' behavior. Second, we make an important contribution to tax avoidance literature by showing that the social capital of the region where the firm is headquartered affects tax avoidance activities. In doing so we enrich our knowledge of the determinants of corporate tax avoidance and corroborate preliminary findings that the social environment plays a role in tax planning decisions (Boone et al., 2013). Third, we contribute to the recent debate on companies' perception of the desirability of tax avoidance activities from a social viewpoint (Davis et al. 2016). Although results in Davis et al., (2016) cast doubt on the idea that the payment of corporate taxes is considered socially ethical and responsible, we find evidence that in geographic areas in which trust and altruism are predominant, firms engage less in tax avoidance activities. Our results suggest that paying a fair amount of taxes is the socially responsible thing for companies to do.

The paper proceeds as follows. Section 2 reviews relevant literature and develops our research hypothesis; Section 3 presents the research design, sample selection and descriptive statistics; Section 4 discusses our main findings; Section 5 presents sseveral robustness tests; Section 6 introduces further analyses in which we conduct a series of cross-sectional tests and Section 7 concludes.

2. Literature Review and Hypothesis Development

2.1 Social Capital

Social capital refers to norms and networks that facilitate collective actions (Woolcock, 2001). This definition combines two distinct but complementary views of social capital: the economics view that defines social capital as a "norm" inducing cooperative and efficient behaviour within a social structure through trust (Guisio et al., 2004; Portes, 1998; Fukuyama, 1997) and the management view that models social capital as a set of "networks" that benefit participants (Coleman, 1990; Lin, 2001; Payne et al., 2011).

These two approaches are strictly related to each other. Fukuyama (1997) notes that in a dense network, there are repeated activities in which people rely on each other. Over time, this leads to a societal code of conduct that encourages the propensity to honor obligations and develop mutual trust. Portes (1998) argues that, over time, these morals get passed from one generation to another and get internalized into society. Consequently, people feel obliged to behave in a certain way. Social capital facilitates honest dealings among parties in transactions by imposing a reputational loss on parties that are dishonest. Coleman (1990) and Spagnolo (1999) posit that a strong social network enhances the punishment for deviant behavior and encourages good behavior. In high-social capital communities people trust each other more because the network in their community provides a better opportunity to punish deviants. At the same time, in these communities' people may rely more on others' keeping their promises because of the moral attitude imprinted with education (Guisio et al., 2004).

Extant research also shows that social capital is negatively associated with opportunistic behavior, such as lower corruption (La Porta et al., 1997), lower property crime (Buonanno et al., 2009), and lower transaction costs (Guisio et al., 2004). Moreover, social capital induces individuals to divert fewer resources to protecting themselves from criminal violation of their property rights (Knack and Keefer, 1997).

Social capital does not only affect individuals' behaviour but it is also likely to influence corporations' decisions. Indeed, both legitimacy and social norm theory support the view that the level of social capital of the geographical area in which a firm is located affects the firm's behavior. Specifically, the legitimacy theory suggests that there is a need for firms to establish 'congruence between the social values associated with or implied by [organizational] activities and the norms of acceptable behavior in the larger social system of which they are a part' (Downling and Pfeffer 1975, p. 122). The social norm theory, instead, posits that the norms of the local population in which the organization is established will influence management since the local population is an important element of the environment in which managers live and operate (Kohlberg, 1984; Sunstein, 1996, Cialdini and Goldstein, 2004 and McGuire et al., 2011). Moreover, such influence on management is amplified by the need of organizations to maintain organizational legitimacy. Consistent with these arguments extant research provides robust evidence that organizations headquartered in high social capital regions are trustworthy in the eyes of their auditors (Jha and Chen, 2015), have better quality financial reports (Jha, 2013; Jin et al., 2015), are less likely to issue a restatement (Jin et al., 2005), have better access to credit (Guiso et al., 2004), and exhibit a higher level of CSR (Jha and Cox, 2015).

Building on social capital research that portrays firms headquartered in areas with high social capital as more altruistic and honest, in this paper we focus on a more controversial issue: does social capital constrain firms' tax avoidance activities?

2.2 Social Capital and Tax Avoidance

Although the amount of tax paid by companies is not entirely voluntary, managers do make choices regarding the extent to which their firms engage in tax planning activities aimed at reducing tax payments (Davis et al., 2016). Prior research shows that firm-level characteristics such as capital structure, foreign operations, firm performance (Rego, 2003; Gupta and Newberry, 1997), compensation incentives (Rego and Wilson, 2012; Phillips, 2003; Desai and Dharmapala, 2006) as well as ownership structures (Klassen, 1997; Chen et al, 2010; McGuire et al., 2011) have a significant impact on corporate tax avoidance. [1] However, despite these findings we still have an incomplete understanding of why some firms are more tax aggressive than others (Shackelford and Shelvin, 2001; Shelvin, 2007). In this paper, we argue that a possible unexplored determinant of tax avoidance is the level of social capital of the geographic location where the firm is headquartered. The direction of the relation between social capital and tax avoidance depends on whether managers consider tax avoidance as a socially responsible activity. There is a debate around the desirability of corporate tax payments from a social viewpoint, with evidence suggesting that some stakeholders consider tax avoidance as a socially irresponsible and illegitimate activity (Lanis and Richardson, 2012), while others deem corporate tax payments as potentially detrimental to social

[1] For an extensive review of accounting and finance studies on tax research refer to Hanlon and Heitzman (2010)

welfare

Christensen and Murphy (2004, p. 37) claim that "tax revenues are the lifeblood of the social contract" and that paying taxes is perhaps the most fundamental way in which firms engage with the broader society. Managerial actions aimed at solely minimizing corporate taxes through tax aggressive activities involve significant ethical issues (Lanis and Richardson, 2012). Indeed, when a company engages in tax avoidance policies pursued to maximize post-tax income, it is viewed as not paying its ''fair share'' of corporate taxes to the government to ensure the financing of public goods (Freedman, 2003; Freise et al., 2008). Avoiding tax is thus avoiding a social obligation. Tax avoidance can make a company vulnerable to accusations of greed and selfishness, damaging its reputation and destroying the public's trust. [2] Consistent with this view, Lanis and Richardson (2012) argue that tax avoidance should be considered socially irresponsible as it clearly violates acceptable social norms. By not engaging in tax avoidance, a company can gain legitimacy within society and maintain good-standing with the tax authority by complying with and following the underlying spirit of the tax law (Christensen and Murphy, 2004; Ostas, 2004; Rose, 2007). From this perspective, given the altruistic and honest behaviors promoted and facilitated by social capital, we would expect a negative association between social capital and firms' tax avoidance activities.

An alternative perspective is provided by Davis et al. (2016). Specifically, Davis et al. (2016, p. 52) claim that firms may "view paying taxes as detracting from social

[2] Margaret Hodge, the U.K chairman of Public Accounts Committee, recently accused Google, Amazon and Starbucks of siphoning profits away from Britain by using a complex web of accounting strategies that are labelled as cynical and unjust. Hodge said: "We are not accusing you of being illegal, we are accusing you of being immoral." Starbucks' royalty rate used to be 6% of sales, but was recently reduced to 4.7% after being challenged by the UK tax authorities.

welfare because tax payments reduce innovation, job growth, and economic development". The underlying idea is that as net income increases, a firm is more likely to have a positive impact on society through infrastructure investment and job creation, as well as by improving the income level of the community through employee salaries and payments to suppliers (Davis et al., 2016). This argument is in line with theoretical and empirical studies in economics that show that corporate taxes tend to decrease investment and entrepreneurship (Hines, 2006; Djankov, 2008) and it is reinforced by research showing that the private sector uses resources more efficiently than the public sector (McGee, 2010 and Lantos, 2001). Thus, keeping resources in corporations is seen as beneficial to society (McGee, 2010). If companies consider engaging in tax avoidance activities as a means to promote social welfare through increased innovation, job growth and economic development, we would expect to observe a positive association between social capital and corporate tax avoidance.

Given the presence of contrasting theories on the desirability of corporate tax avoidance policies from a social welfare viewpoint, we posit the following non-directional hypothesis:

H1: Social capital is associated with corporate tax avoidance

3. Research design, sample selection and descriptive statistics

3.1 Measuring tax avoidance

Given our focus, we are interested in capturing aggressive tax avoidance practices. Some prior literature has used actual identified instances of aggressive tax

behaviour. For example Mills (1998) and Mills and Sansing (2000) have used IRS tax audit adjustments as proxies for non-complicance, Lisowsky (2010) and Lisowsky et al. (2013) have used firms' Form 8886 or IRS Schedule M-3 to identify disclosures relating to tax sheltering, while Graham and Tucker (2006) have used public disclosures of tax sheltering. Studies based on such approaches for the identification of extreme tax avoidance, while providing a clean identification strategy, are suscptible to selection bias and endogeneity issues (Hanlon and Heitzman, 2010).

To address such limitations, using publicly disclosed sheltering cases, Wilson (2009) developed several empirical models which predict the degree to which firms engage in tax sheltering activities. These models predicting the incidence of tax sheltering have been validated by Kim et al. (2011) and Rego and Wilson (2012). Further, tax sheltering as predicted by Wilson (2009) models has been found to be associated with stock price crash risk (Kim et al. 2011) and the sensitivity of manager's compensation to stock return volatility (Rego and Wilson, 2012). Following, Hoi et al. (2013) and Kim et al. (2011) we use the following model, which corresponds to the model reported in Table 5, Column 3 of Wilson (2009), to calculate the propensity to engage in tax avoidance activities for each firm year in our sample.

$$SHELTER\_PROBAB_{it} = -4.86 + 5.20\ x\ BTD_{it} + 4.08\ x\ DA_{it} - 0.41\ x\ LEV_{it} + 0.76\ x\ AT_{it} + 3.51\ x\ ROA_{it} + 1.72\ x\ Foreign\ Income_{it} + 2.43\ x\ R\&D_{it} \quad (1)$$

where, *SHELTER_PROBAB* is the propensity of a firm to undertake tax sheltering activities; *BTD* is the book-to-tax difference; *DA* is discretionary accruals from a modified cross-sectional Jones Model, *AT* is the log of total assets; *ROA* is return on assets; *Foreign Income* is an indicator variable which equals 1 for years in which the firm reports foreign income, and 0 otherwise; and *R&D* is research and development expenditure scaled by lagged total assets. All variables are described in greater detail in Appendix 1. We use the standardized transformation of *SHELTER_PROPBAB, SHELTER,* in our empirical analyses.

3.2 Measuring social capital

As our measure of social capital we use the social capital index developed by Rupasingha and Goetz (2008), which is publicly available at the Northeast Regional Center for Rural Development (NERCRD).[3] The authors use two measures of social norms and two measures of networks, and use the first component of a principle component analysis as the social capital index at the county level. The two measures of social norms used are voter turnout in presidential elections and the census response rate, while the two measures of network used are the number of social and civic associations and the number of nongovernmental organisations. The higher the social capital index in a county the higher the trust in that particular county. Rupasingha and Goetz (2008)'s measure of social capital 'is the most comprehensive measure of social capital at the county level' (Jha and Chen 2015, p.617) and has been used in numerous studies among which Deller and Deller (2010), Hopkins (2011) and Jha and Chen (2015). Given that the

[3] The Social Capital index for years 1990, 1997, 2005 and 2009 is available at the Northeast Regional Center for Rural Development (NERCRD) website: http://aese.psu.edu/nercrd/community/social-capital-resources

social capital index is available for 1990, 1997, 2005 and 2009, similar to Jha and Chen (2015), we interpolate and extrapolate the index for missing sampled years. Further details on this measure are available in Appendix 1.

3.3 Empirical model

To study the association between social capital and tax avoidance we use a multivariate OLS model in which the dependent variable is *SHELTER* and the main independent variable of interest is social capital (*SK)* (Equation 2). The coefficient of interest is β_1 which indicates the direction and magnitude of the association between social capital and tax avoidance.

$$SHELTER_{it} = \alpha_i + \beta_1 SK_{it} + \sum \beta_k Controls_{it} + \varepsilon_{it} \quad (2)$$

where, *Controls* refers to the vector of variables included in the baseline regression to control for different firm characteristics which prior literature (e.g. Gupta and Newberry, 1997; Rego, 2003; Graham and Tucker, 2006; Frank et al., 2009; Wilson, 2009) have shown to be significantly associated with tax avoidance. Specifically, we control for discretionary accruals (*DA*) which have been shown to be positively related to aggressive tax avoidance (Frank et al., 2009); institutional ownership (*IO*) to capture the impact of corporate governance on tax avoidance (Desai and Dharmapala, 2009); profitability (*ROA, NOL* and *CHG_NOL);* liquidity (*CASH*); firm size (*EMP* and *SIZE)*; growth opportunities (*CHG_SALE* and MB); leverage (*LEV)*; and other firm charcteristics (*FI,*

PPE, INTANG EQINC and *R&D).* Further, to ensure that our measure of social capital does not capture the effect of other county characteristics on tax avoidance we control for the percentage of the county population over 25 years of age with a university degree (*EDU*); the median household income for the county (*INC*)*;* the within county poverty rate (*POV);* and the county population (*POP).* All varaibles are defined in greater detail in Appendix 1. Further, we include year fixed effects and use 2-digit SIC codes to control for industry fixed effects. Finally, we cluster standard errors by year. To mitiage any impact outliers might have on our results we winsorize all continuous variables at the 5% level over all observations in our sample.

3.4 Sample

Our sample period consists of firm years for the period 1990 to 2014. We start in 1990 as it is the first year for which we have social capital index data. We start with 153,938 firm year observations for which we have county and state information. Similar to Jha and Chen (2015) we drop utilities (7,216 observations) and financials (16,898 observations). Subsequently, we drop observations for which data to calculate all independent variables is not available and observations for which data to calculate *SHELTER* is not available (2,037 observations) and end up with a final sample of 52,962 observations for 7,785 firms. As shown in Table 1, we have a similar number of observations in each year of our sample period, with the highest (lowest) number of observations in 1998 (2011) with 2,506 (1,762) observations.

<<Insert Table 1 around here>>

3.5 Descriptive statistics

Table 2 show the descriptive statistics for the variables used in our empirical model. These results are generally in line with prior literature. Specifically, *SK* for our sample has a mean of -0.58 and a standard deviation of 0.81. The corresponding figures in Jha and Chen (2015) are -0.50 and 0.91, respectively. In Table 3, we present the Pearson correlation matrix for the variables used in the empirical model. These univariate statistics suggest that social capital is negatively associated with tax avaoidance as evident from the significant (at the 5% level) negative correlation between *SK* and *SHELTER*. Further *SK* is significantly negatively correlated with *DA, LEV, NOL, FI* and *R&D* suggesting that companies with high social capital are less risky. Further, high social capital firms tend to be smaller, as evident by the negative correlation between *SK* and both *SIZE* and *EMP,* and undertake less investment, as evident by the negative correlation between *SK* and *PPE* and *INTANG*. Finally, the positive correlation between *SK* and both *ROA* and *EQINC* suggest that high social capital firms tend to be better performing and have higher equity income.

<<Insert Tables 2 and 3 around here>>

4. Main Findings

Table 4 shows the results when we run Equation 2 for our sample. We find that social capital is significantly and negatively associated with tax avoidance. Specifically, we find that higher social capital decreases the propensity to undertake tax sheltering

activities. This association is evident from the negative coefficiet, significant at the 1% level, on *SK*. Looking at the magnitude of the coefficient on *SK,* results reported in Table 4 suggest that a one-standard deviation increase in *SK* results in a 126 basis points decrease in the propensity to undertake tax sheltering activities, *SHELTER.*[4] Findings reported in Table 4 provide evidence that the social environment in which firms operate affects managerial decisions. Specifically, the negative association between tax avoidance and social capital indicates that corporate tax payments are generally regarded as a desirable outcome from a social viewpoint, and when firms are incorporated in geographical areas that promote honest and altruistic behaviors they engage less in activities aimed at minimizing corporate taxes.

In line with expecations we find a significant positive association between independent variables that proxy for both risk and complexity, and *SHELTER.* Specifically, we find that *DA, LEV, NOL, FI* and *INTANG* are all significantly and positively associated with our dependent variable. We also find that, as evident by the significant and positive coefficients on *SIZE* and *EMP,* the larger the company the higher the incidence of undertaking tax sheltering activities. Further, the significant and negative coefficients on *CASH, ROA* and *CHG_SALE* suggest that better firm performance is associated with less tax sheltering activities.

<<Insert Table 4 around here>>

5. Robustness Tests

[4] Economic significance is calculated as (0.805 x -0.016 x 100)=1.26%

We subject our results to a series of robustness tests. First, to ensure that our results are not driven by the choice of proxy used to measure tax avoidance, we substitute *SHELTER* in Equation 2 with two alternative proxies for tax avoidance. Second, given that state idiosyncratic characteristics such as state levelled taxes and state institutions may influence the relationship between social capital and tax avoidance we add state fixed effects to Equation 2. Third, we include additional controls in Equation 2 to examine the robustness of our results when we control for CEO characteristics and corporate governance.

5.1 Alternative measures of tax avoidance

To ensure that our results are not driven by our selection of proxy for tax avoidance, we substitute *SHELTER* with two other commonly used proxies for tax avoidance. Our first alternate proxy to *SHELTER* is the Desai and Dharmapala (2006) discretionary book-tax difference, *DD_BT*. The second alternate proxy to *SHELTER* is the cash effective tax rate, *CETR,* which captures the consequences of tax avoidances practices. These proxies are described in greater detail in Appendix 1. A large (small) *DD_BT (CETR)* suggests greater incidence of tax avoidance activities. Given this, when we substitute these alternative measures with *SHELTER* in Equation 2 we expect a significant negative (positive) coefficient on *SK* when *DD_BT (CETR)* is the dependent variable. In this analysis we lose a number of observations due to missing data required to construct the alternate proxies for tax avoidance.

Consistent with results reported in Table 4, Table 5 shows a significant negative (positive) coefficient on *SK* when *DD_BT (CETR)* is the dependent variable. Specifically,

the negative association between *SK* and *DD_BT* is signficant at the 5% level while the positive association between *SK* and *CETR* is significant at the 1% level. These results suggest that the observed negative relationship between social capital and tax avoidance is not driven by the choice of proxy for tax avoidance.

<<Insert Table 5 around here>>

5.2 State fixed effects

The multileveled U.S. government system entails that taxes are levied at both the central ('federal') and lower levels of government ('state'). Prior academic literature (e.g. Keen and Kotsogiannis, 2002; Devereux et al., 2007) has shown that the interaction between taxes levelled at different levels of government leads to externalities which have real economic effects on firms. To try to address the presence of such externalities and the impact of the hetereogenous nature of the state level regulatory framework on our results, we introduce in Equation 2 state fixed effects. Table 6 shows the results of this analysis. In line with our prior results, we find a negative and significant (at the 1% level) association between social capital and tax avoidance suggesting that our prior results are not driven by differences in the regulatory framework at the state level.

<<Insert Table 6 around here>>

5.3 Additional controls

To ensure that our measure of social capital is not capturing attributes of the sampled firms' CEO we introduce variables in our model to control for CEO career concerns and gender. These controls are important since Dyreng et al. (2010) suggest that CEOs influence firm tax avoidance activity. Moreover, prior literature has established a link between CEO attributes and corporate risk taking (e.g. Serfling, 2014; Faccio et al., 2016; Sila et al. 2016). Given that tax avoidance activities are inherently risky, since if identified may lead to regulatory and public sanctions, if social capital captures these CEO attributes, it may bias our results. We introduce in Equation 2 CEO age (*AGE*) to proxy for CEO career concerns and an indicator variable (*FEMALE*) which takes the value of 1 if the CEO is a female and 0 otherwise. Table 7 shows the results of this analysis. Specifically, we find that the relationship between social capital and tax avoidance is robust to controlling for CEO attributes as evident by the significant and negative coefficient on *SK*. Since CEO characteristics are only available for a sub-sample of firms, results reported in Table 7 are based on a significantly smaller sample.

<<Insert Table 7 around here>>

A firm characteristic which may also be influenced by the norms in which the company operates is corporate governance. Specifically, the same norms which influence the social capital of the firm may also influence the corporate governance of the firm. Moreover, prior literature has found mixed results on the association between firm corporate governance and tax avoidance activity (e.g. Minnick and Noga, 2010; Rego and

Wilson, 2012; Robinson et al., 2012; Armstrong et al., 2015). To ensure that social capital is not caputring characteristics of the corporate governance of the firm, we adjust Equation 2 to control for corporate governance. We use data from MSCI ESG KLD STATS about the total number of corporate governance strengths and controversies to construct an indicator variable, *HIGH_CGOV,* which takes the value of 1 of the net number of corporate governance strengths is above the sample median and 0 otherwise. As shown in Table 8, we find that the previously observed relationship between social capital and tax avoidance is robust to the inclusion of a control for corporate governance. Also in this case, limited data availability significantly reduces the sample.

<<Insert Table 8 around here>>

6. Further analyses

In this section we extend our results and conduct a series of cross-sectional tests to identify the settings in which the negative relationship between social capital and tax avoidance is strongest.

6.1 Religiosity

Prior literature has established a link between religious adherence of the area in which the company is headquartered and operates, and lower risk taking (Hilary and Hui, 2009; Li et al., 2013; Adhikari and Aggrawal, 2016, Chircop et al., 2016). For example, companies operating in religious areas have lower incidences of financial reporting irregularities and lower earnings management (Kanagaretnam et al., 2015; Lievenbruck

and Schmid, 2014; McGuire et al., 2011: Dyreng et al., 2012). Given this, we expect that the influence of social capital on tax avoidance should be stronger in religious areas, where religious norms complement norms related to trust perpetuated by high social capital.

To be able to examine whether the relationship between social capital and tax avoidance varies in the presence of high religiosity, we use data from the American Religion Data Archive (ARDA) survey to construct a measure of religiosity. Specifically, we use the percentage of the population who are members of a religious denomination in the county in which the company is headquartered. Subsequently, we construct an indicator variable, *REL,* which takes the value of 1 for those firms for which our measure of religiosity is above median and 0 otherwise. We interact *SK* with *REL* to examine the impact of high religiosity on the association between social capital and tax avoidance.

We show the results of this analysis in Table 9. Specifically, we find that the incremental effect of high religiosity on the relationship between *SK* and *SHELTER* is significant and negative. This result suggests that the negative relationship between social capital and tax avoidance is signficantly stronger in the presence of high religiosity.

<<Insert Table 9 around here>>

6.2 Firm performance

Univariate results shown in Table 3 suggest that there is a significant positive correlation between *SK* and *ROA* suggesting a positive relationship between social capital and firm performance. Firms with high levels of performance have possibly lower

incentives to undertake risky tax avoidance activities. In a similar vein, Goh et al. (2016) find that firms undertaking tax avoidance practices have lower cost of capital thus less need to sustain a high return on assets. This discussion suggests that the negative relationship between social capital and tax avoidance should be stronger in high performance companies.

To examine this relationship, we transform *ROA* in an indicator variable, *HIGH_ROA* which takes the value of 1 if above the sample median, and 0 otherwise. We interact this indicator variable with *SK* to measure the incremental effect of high performance. We show the results of this analysis in Table 10. In line with our expectations we find, that the negative relationship between *SK* and *SHELTER* is stronger for firms with high profitability.

<<Insert Table 10 around here>>

6.3 Incentive-based compensation

Prior literature (e.g. Rajgopal and Shevlin, 2002; Low, 2009) has established a positive relationship between equity based compensation and risk taking. Specifically, it has been found that firm risk taking increases with the CEO's compensation sensitivty to changes in stock price. Moreover, Rego and Wilson (2012 p.806) find 'that greater equity risk incentives are associated with higher tax risk'. Given this, we predict that the observed negative relationship between social capital and tax avoidance should be stronger when the CEO compensation is less sensitive to stock prices. In these instances

engaging in tax avoidance activities is not only seen negatively by society, but the CEO has also less personal incentives to undertake tax avoidance practices.

To examine this prediction, we construct an indicator variable, *HIGH_CASHCOMP*, which takes the value of 1 if the ratio of cash compensation (the sum of salary and bonus payments) to total compensation is above the sample median and 0 otherwise. We also interact *SK* with *HIGH_CASHCOMP* to study whether the relationship between social capital and tax avoidance is incrementally negative in the presence of high CEO cash compensation.

Table 11 shows the results of this analysis. In line with our predictions, we find that the interaction term is negative and significant (at the 10% level) suggesting that the previously observed negative relationship between social capital and tax avoidance is stronger when CEO compensation is less sensitive to stock volatility. Interestingly, we find that the negative coefficient on *SK* stays signficant suggesting that social capital constrains tax avoidance activities irrespective of CEO compensation structure.

<<Insert Table 11 around here>>

7. Conclusion

This paper investigates whether the level of social capital of the region in which a firm is headquartered affects its tax avoidance activities. Social capital can be defined as the mutual trust in society and literature shows that firms headquartered in high social capital regions are trustworthy in the eyes of their auditors (Jha and Chen, 2015), have better quality financial reports (Jha, 2013; Jin et al., 2015), less likelihood of restatement (Jin et al., 2005), better access to credit (Guiso et al., 2004), and exhibit higher level of

corporate social responsibility (Jha and Cox, 2015). Recent research suggests that some stakeholders of public companies consider tax avoidance as a socially irresponsible and illegitimate activity (Lanis and Richardson, 2012; Hodge, 2013) while others deem corporate tax payments as detrimental to social welfare because they hurt innovation, production, job creation, and economic development (Devis et al., 2016). Building on this debate, we use a sample of 52,962 firm-year observations over the period 1990-2014 to empirically investigate the relationship between social capital and tax avoidance.

Consistent with the idea that managers consider corporate tax payments as a socially responsible action, we find robust evidence that firms headquartered in areas with high social capital engage significantly less in tax avoidance activities. This result is robust to using different proxies of tax avoidance, to controlling for CEO's characteristics and quality of corporate governance, and to including state fixed effects in the regression models. Moreover, in subsequent cross-sectional tests, we document that the negative impact of social capital on tax avoidance is stronger in the presence of high religiosity, high corporate performance and lower sensitivity of CEO's compensation to stock volatility. Results documented in the paper are both statistically and economically significant: estimates from our main model indicate that a one-standard deviation increase in social capital results in a 126 basis points decrease in the propensity to undertake tax sheltering activities.

This paper extends research on social capital (Jha and Chen, 2015; Jha, 2013; Jin et al., 2015; Guiso et al. 2004; Jha and Cox, 2015) and improves our understanding of the effect of the social environment on managerial decision (Hilary and Hui 2009, McGuire et al. 2012, Callen et al. 2016; Chircop et al., 2016). Importantly, by studying the relation

between social capital and tax avoidance, we add to the recent debate on companies' perception of the desirability of tax avoidance activities from a social viewpoint (Davis et al. 2016). By documenting that firms headquartered in regions with high levels of trust and altruism engage less in tax avoidance activities, this study corroborate the idea that paying a fair amount of taxes is perceived as socially responsible.

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Appendix 1: Variable Definition

Variable	Definition
SHELTER	We use Wilson's (2009) sheltering probability to proxy for tax avoidance. We use the regression model reported in Wilson (2009, Table 5, Column 3). The sheltering probability equation is: $$SHELTER\_PROB_{it} = -4.86 + 5.20\ x\ BTD_{it} + 4.08\ x\ DA_{it} - 0.41\ x\ LEV_{it} + 0.76\ x\ AT_{it} + 3.51\ x\ ROA_{it} + 1.72\ x\ Foreign\ Income_{it} + 2.43\ x\ R\&D_{it}$$ where $SHELTER\_PROB_{it}$ is the sheltering probability for firm i in year t; BTD_{it} is the book-tax difference measure (Kim et al., 2011); DA_{it} is discretionary accruals from the performance-adjusted modified cross-sectional Jones Model; LEV_{it} is firm leverage; AT_{it} is the log of total assets for firm i in year t; ROA_{it} is return on assets; $FOREIGN\ INCOME_{it}$ is an indicator variable equal to 1 for firm-years that report foreign income, and 0 otherwise; and $R\&D_{it}$ is the research and development expense ratio. Following Kim et al. (2011), we define *BTD* as book income less taxable income scaled by lagged assets (*AT*). Book income is pretax income (*PI*) in year t. Taxable income is the sum of current federal tax expense (*TXFED*) and current foreign tax expense (*TXFO*) divided by the statutory tax rate and then subtracting the change in net operating loss carry forwards (*TLCF*) in year t. When current federal tax expense is missing, then total current tax expense is calculated by subtracting deferred taxes (*TXDI*), state income taxes (*TXS*), and other income taxes (*TXO*) from total income taxes (*TXT*) in year t. We use the standardized transformation of the variable.
DD_BT	*DD_BT* is equal to $\mu_i + \varepsilon_{it}$ from the following firm fixed-effect regression: $BT_{it} = \beta_1 TA_{it} + \mu_i + \varepsilon_{it}$ where BT_{it} is the Manzon and Plesko (2002) book-tax difference measure; TA_{it} is Dechow et al. (1995) total accruals measure for firm i in year t, scaled by the lagged total assets; μ_i is the average value of the residual for firm i over the sample period; and ε_{it} is the difference between the residual in year t and firm i's average residual. *BT* is defined as (U.S. domestic financial income – U.S. domestic taxable income/ Income taxes (State) - Income taxes (Other) - Equity in Earnings)/lagged assets = (*PIDOM* - *TXFED*/Statutory tax rate - *TXS* - *TXO* - *ESUB*)/$AT_{t\ 1}$. following line with prior literature, (e.g., Desai and Dharmapala ,2006), and include only firm-years with positive *TXFED*.
CETR	*CETR* is defined as cash tax paid (*TXPD*) divided by pre-tax book income (*PI*) less special items (*SPI*). *CETR* is set as missing when the denominator is 0 or negative. *CETR* is truncated to take a value between 0 and 1.
SK	*SK* is social capital measured at the county level and publicly available from the Northeast Regional Centre for Rural Development http://aese.psu.edu/nercrd/community/social-capital-resources. Missing values for years in our sample period are filled by inter/extra polation.

DA	Absolute value of discretionary accruals for firm i, year t, where discretionary accruals are computed using the modified Jones model including lagged PPE as an additional independent variable;
IO	Institutional ownership for firm i, year t, defined as the fraction of a firm's outstanding shares owned by institutional investors;
CASH	Cash holding for firm i, year t, defined as cash and marketable securities (*CHE*) divided by lagged assets (*AT*);
ROA	Return on assets for firm i, year t, measured as operating income (*PI - XI*) scaled by lagged assets (*AT);*
LEV	Leverage for firm i, year t, measured as long-term debt (*DLTT*) scaled by lagged assets (*AT*);
NOL	A dummy variable coded as 1 if loss carry forward (*TLCF*) for firm i is positive as of the beginning of the year t;
CHG_NOL	Change in loss carry forward (*TLCF*) for firm i, year t, scaled by lagged assets (*AT*);
FI	Foreign income (*PIFO*) for firm i, year t, scaled by lagged assets (*AT*). Missing values in PIFO are set to 0;
PPE	Property, plant, and equipment (*PPENT*) for firm i, year t, scaled by lagged assets (*AT*);
INTANG	Intangible assets (*INTAN*) for firm i, year t, scaled by lagged assets (AT);
EQINC	Equity income in earnings (*ESUB*) for firm i, year t, scaled by lagged assets (*AT*);
R&D	Research and development expense ratio for firm i, year t, measured as research and development expense (*XRD*) scaled by lagged assets (*AT*). Missing values in *XRD* are set to 0;
EMP	The natural logarithm of the number of employees (*EMP*) for firm i, year t;
CHG_SALE	Changes in sales (*SALE*) scaled by lagged sales for firm i, year t;
SIZE	The logarithm transformation of the market value of equity (*PRCC_F*CSHO*) for firm i at the beginning of year t; and
MB	Market-to-book ratio for firm i, at the beginning of year t, measured as market value of equity (*PRCC_F*CSHO*), scaled by book value of equity (*CEQ*).
EDU	Percentage of people 25 years and above who have a bachelor's, postgraduate or professional degree in the county. Data from US Census Bureau. Missing data for years in our sample period derived by inter/extra polation.
INC	Median household income in county. Data from US Census Bureau. Missing data for years in our sample period derived by inter/extra polation.
POV	People of all ages in poverty in county expressed as a percentage. Data from US Census Bureau. Missing data for years in our sample period derived by inter/extra polation.
POP	An indicator variable which takes the value of 1 if the population for the county is above the sample median and 0 otherwise. Data on county resident population from US Census Bureau. Missing data for years in our sample period derived by inter/extra polation.

Table 1: Sample distribution

This table shows the distribution of observations over the sample period, 1990-2014.

Year	No.	Percent	Cum.
1990	2,378	4.49	4.49
1991	2,371	4.48	8.97
1992	2,318	4.38	13.34
1993	2,157	4.07	17.42
1994	2,123	4.01	21.42
1995	2,143	4.05	25.47
1996	2,329	4.40	29.87
1997	2,450	4.63	34.49
1998	2,506	4.73	39.23
1999	2,416	4.56	43.79
2000	2,415	4.56	48.35
2001	2,321	4.38	52.73
2002	2,203	4.16	56.89
2003	2,132	4.03	60.92
2004	2,050	3.87	64.79
2005	2,029	3.83	68.62
2006	1,984	3.75	72.36
2007	1,928	3.64	76.00
2008	1,888	3.56	79.57
2009	1,824	3.44	83.01
2010	1,772	3.35	86.36
2011	1,762	3.33	89.69
2012	1,799	3.40	93.08
2013	1,848	3.49	96.57
2014	1,816	3.43	100
Total	52,962	100	

Table 2: Descriptive statistics

This table shows the descriptive statistics for the variables used in the empirical analysis over the sample period, 1990-2014. All variables are defined in Appendix 1.

Variable	n	p25	mean	p50	p75	sd
SHELTER	52962	-0.501	0.000	-0.433	-0.102	1.000
SK	52962	-1.222	-0.584	-0.579	0.051	0.805
DA	52962	0.030	0.165	0.076	0.184	0.225
IO	52962	0.000	0.238	0.040	0.473	0.300
CASH	52962	0.028	0.198	0.103	0.293	0.225
ROA	52962	-0.089	-0.030	0.048	0.130	0.271
LEV	52962	0.000	0.175	0.098	0.284	0.204
NOL	52962	0.000	0.592	1.000	1.000	0.491
CHG_NOL	52962	0.000	0.087	0.000	0.055	0.228
FI	52962	0.000	0.008	0.000	0.000	0.018
PPE	52962	0.088	0.274	0.201	0.390	0.234
INTANG	52962	0.000	0.129	0.035	0.201	0.180
EQINC	52962	0.000	0.019	0.000	0.000	0.070
R&D	52962	0.000	0.053	0.000	0.072	0.089
EMP	52962	4.963	6.613	6.636	8.269	2.161
CHG_SALE	52962	-0.035	0.133	0.079	0.234	0.317
SIZE	52962	3.224	4.899	4.885	6.534	2.167
MB	52962	1.071	2.814	1.965	3.572	2.879
EDU	52962	25.567	32.234	30.500	39.220	9.284
INC	52962	10.563	10.760	10.746	10.962	0.276
POV	52962	7.100	10.866	10.300	14.200	4.673
POP	52962	0.000	0.496	0.000	1.000	0.500

Table 3: Correlation matrix

This table shows the Pearson correlation matrix for the variables used in the empirical analysis over the sample period, 1990-2014. All variables are defined in Appendix 1.

	SHELTER	SK	DA	IO	CASH	ROA	LEV	NOL	CHG_NO	FI	PPE	INTANG	EQINC	R&D	EMP	CHG_SAI	SIZE	MB	EDU	INC	POV	POP
SHELTER	1.000																					
	.																					
SK	-0.009	1.000																				
	0.048																					
DA	-0.071	-0.078	1.000																			
	0.000	0.000																				
IO	0.296	0.039	-0.132	1.000																		
	0.000	0.000	0.000																			
CASH	-0.160	-0.054	0.132	-0.040	1.000																	
	0.000	0.000	0.000	0.000																		
ROA	0.208	0.076	-0.289	0.297	-0.110	1.000																
	0.000	0.000	0.000	0.000	0.000																	
LEV	0.191	-0.010	0.009	0.034	-0.274	-0.002	1.000															
	0.000	0.025	0.037	0.000	0.000	0.661																
NOL	0.025	-0.093	0.187	-0.112	0.112	-0.385	0.038	1.000														
	0.000	0.000	0.000	0.000	0.000	0.000	0.000															
CHG_NO	-0.163	-0.065	0.255	-0.208	0.189	-0.703	-0.027	0.275	1.000													
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000														
FI	0.329	-0.024	-0.020	0.257	0.004	0.234	-0.001	0.053	-0.140	1.000												
	0.000	0.000	0.000	0.000	0.423	0.000	0.746	0.000	0.000													
PPE	0.137	-0.015	-0.045	0.072	-0.280	0.160	0.358	-0.183	-0.118	-0.043	1.000											
	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000												
INTANG	0.204	-0.015	0.013	0.077	-0.122	0.050	0.222	0.129	-0.040	0.117	-0.190	1.000										
	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000											
EQINC	0.233	0.008	-0.033	0.100	-0.109	0.110	0.088	-0.035	-0.086	0.128	0.095	0.039	1.000									
	0.000	0.069	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000										
R&D	-0.157	-0.029	0.183	-0.096	0.473	-0.394	-0.172	0.241	0.373	-0.009	-0.291	-0.087	-0.110	1.000								
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.039	0.000	0.000	0.000									
EMP	0.620	0.074	-0.271	0.469	-0.280	0.491	0.219	-0.226	-0.389	0.321	0.224	0.199	0.191	-0.332	1.000							
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000								
CHG_SAI	-0.035	-0.029	0.088	-0.014	0.185	0.048	0.110	-0.003	0.038	0.006	0.124	0.137	-0.018	0.096	-0.033	1.000						
	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.497	0.000	0.209	0.000	0.000	0.000	0.000	0.000							
SIZE	0.675	-0.014	-0.143	0.492	0.002	0.360	0.117	-0.104	-0.226	0.372	0.122	0.228	0.189	-0.083	0.758	0.056	1.000					
	0.000	0.001	0.000	0.000	0.692	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000						
MB	0.042	-0.014	0.049	0.016	0.243	-0.030	-0.051	0.040	0.126	0.073	-0.038	0.030	-0.018	0.215	-0.031	0.201	0.251	1.000				
	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
EDU	0.095	0.254	0.083	0.018	0.222	-0.095	-0.076	0.209	0.083	0.094	-0.253	0.153	-0.038	0.208	-0.012	0.007	0.139	0.083	1.000			
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.112	0.000	0.000				
INC	0.061	-0.031	0.103	0.054	0.238	-0.112	-0.087	0.242	0.100	0.096	-0.269	0.166	-0.039	0.227	-0.044	0.000	0.127	0.064	0.671	1.000		
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.966	0.000	0.000	0.000			
POV	0.026	-0.165	-0.034	0.012	-0.143	0.047	0.068	-0.065	-0.046	-0.017	0.176	-0.050	0.059	-0.189	0.042	0.005	-0.011	-0.039	-0.345	-0.634	1.000	
	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.282	0.011	0.000	0.000	0.000		
POP	0.008	-0.312	0.020	-0.021	0.087	-0.038	-0.047	0.046	0.036	0.038	-0.081	0.010	-0.002	0.069	-0.037	0.017	0.022	0.025	0.075	0.009	0.271	1.000
	0.082	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.022	0.596	0.000	0.000	0.000	0.000	0.000	0.000	0.050	0.000	

Table 4: Main findings

This table shows the results for Equation 2 over the sample period, 1990-2014. All variables are defined in Appendix 1. Standard errors are clustered by year. *, ** and *** indicate significant at the 10%, 5% and 1% level respectively.

	SHELTER		
Variable	Coeff.	Sig.	T-value
SK	-0.016	***	-5.18
DA	0.156	***	6.83
IO	-0.234	***	-9.94
CASH	-0.223	***	-13.70
ROA	-0.297	***	-9.34
LEV	0.115	**	2.72
NOL	0.177	***	19.72
CHG_NOL	-0.015		-0.84
FI	4.246	***	26.49
PPE	-0.083	***	-3.31
INTANG	0.089	***	3.68
EQINC	1.006	***	16.08
R&D	-0.300	***	-5.68
EMP	0.149	***	13.77
CHG_SALE	-0.095	***	-8.48
SIZE	0.208	***	24.40
MB	-0.015	***	-7.07
EDU	0.005	***	23.66
INC	-0.075	***	-6.41
POV	0.001	*	2.04
POP	-0.005		-0.80
Constant	-0.925	***	-4.79
Industry F.E	Yes		
Year F.E	Yes		
S.E. clustered by year	Yes		
Observations	52962		
R-squared	0.572		
Adjusted R-squared	0.571		

Table 5: Alternative proxies for tax avoidance

This table shows the results for Equation 2 over the sample period, 1990-2014 when we substitute the dependent variable with alternative proxies for tax avoidance activity. All variables are defined in Appendix 1. Standard errors are clustered by year. *, ** and *** indicate significant at the 10%, 5% and 1% level respectively.

	DD_BT			CETR		
Variable	Coeff.	Sig.	T-value	Coeff.	Sig.	T-value
SK	-0.001	**	-2.49	0.005	***	4.68
DA	-0.006	**	-2.29	-0.004		-0.70
IO	0.000		-0.16	0.001		0.23
CASH	0.008	**	2.40	-0.028	***	-4.76
ROA	0.099	***	9.87	0.104	***	8.47
LEV	0.001		0.19	-0.039	***	-6.48
NOL	0.009	***	9.30	-0.092	***	-28.74
CHG_NOL	-0.032	***	-3.30	0.074	***	6.86
FI	-0.132	***	-4.76	-0.126	*	-2.04
PPE	-0.001		-0.20	-0.056	***	-8.87
INTANG	0.009	**	2.33	0.004		0.47
EQINC	-0.009	**	-2.27	-0.024	**	-2.70
R&D	-0.015		-1.48	-0.229	***	-12.90
EMP	0.001		1.58	0.009	***	9.61
CHG_SALE	-0.013	***	-3.80	-0.057	***	-9.95
SIZE	-0.002	***	-3.43	0.004	***	4.43
MB	-0.001	***	-5.07	-0.003	***	-5.67
EDU	0.000		0.58	0.000	***	-3.14
INC	-0.002		-0.52	-0.003		-0.41
POV	0.000		-1.14	0.000		1.37
POP	0.001		1.54	0.005	***	2.96
Constant	0.115	**	2.34	0.152	*	1.89
Industry F.E		Yes			Yes	
Year F.E		Yes			Yes	
S.E. clustered by year		Yes			Yes	
Observations		13082			30725	
R-squared		0.083			0.216	
Adjusted R-squared		0.076			0.214	

Table 6: State fixed effects

This table shows the results for Equation 2 over the sample period, 1990-2014 when we include state fixed effects. All variables are defined in Appendix 1. Standard errors are clustered by year. *, ** and *** indicate significant at the 10%, 5% and 1% level respectively.

	SHELTER		
Variable	Coeff.	Sig.	T-value
SK	-0.029	***	-5.76
DA	0.153	***	6.81
IO	-0.230	***	-9.85
CASH	-0.214	***	-13.55
ROA	-0.287	***	-9.40
LEV	0.111	**	2.69
NOL	0.180	***	19.88
CHG_NOL	-0.014		-0.79
FI	4.153	***	24.95
PPE	-0.094	***	-3.92
INTANG	0.087	***	3.46
EQINC	0.996	***	16.19
R&D	-0.182	***	-3.53
EMP	0.152	***	13.89
CHG_SALE	-0.097	***	-8.89
SIZE	0.209	***	24.73
MB	-0.015	***	-7.17
EDU	0.005	***	14.92
INC	-0.124	***	-7.81
POV	-0.001		-1.03
POP	-0.014	*	-1.78
Constant	-0.416		
Industry F.E	Yes		
Year F.E	Yes		
State F.E.	Yes		
S.E. clustered by year	Yes		
Observations	52962		
R-squared	0.578		
Adjusted R-squared	0.576		

Table 7: CEO attributes

This table shows the results for Equation 2 over the sample period, 1990-2014 when we include controls for CEO attributes. All variables are defined in Appendix 1. Standard errors are clustered by year. *, ** and *** indicate significant at the 10%, 5% and 1% level respectively.

	SHELTER		
Variable	Coeff.	Sig.	T-value
SK	-0.065	***	-8.58
FEMALE	0.036		1.21
AGE	-0.081	**	-2.43
DA	0.069	**	2.60
IO	-0.210	***	-16.47
CASH	0.228	***	5.05
ROA	-0.717	***	-9.20
LEV	0.436	***	7.57
NOL	0.160	***	16.85
CHG_NOL	0.112		0.95
FI	0.228		1.10
PPE	-0.176	***	-5.19
INTANG	0.117	**	2.27
EQINC	0.595	***	10.51
R&D	0.650	***	3.32
EMP	0.384	***	22.57
CHG_SALE	0.016		0.51
SIZE	0.506	***	21.46
MB	-0.045	***	-10.74
EDU	0.010	***	20.23
INC	-0.030		-0.94
POV	0.008	***	7.33
POP	-0.016		-1.29
Constant	-4.110	***	-8.37
Industry F.E	Yes		
Year F.E	Yes		
S.E. clustered by year	Yes		
Observations	15365		
R-squared	0.731		
Adjusted R-squared	0.729		

Table 8: Corporate governance

This table shows the results for Equation 2 over the sample period, 1990-2014 when we include controls for corporate governance. All variables are defined in Appendix 1. Standard errors are clustered by year. *, ** and *** indicate significant at the 10%, 5% and 1% level respectively.

	SHELTER		
Variable	Coeff.	Sig.	T-value
SK	-0.062	***	-5.99
HIGH_CGOV	0.113	***	3.01
DA	0.021		0.50
IO	-0.186	***	-8.44
CASH	0.079		1.68
ROA	-0.849	***	-8.48
LEV	0.450	***	7.40
NOL	0.124	***	8.97
CHG_NOL	-0.200	***	-3.93
FI	0.269		0.96
PPE	-0.127	**	-2.74
INTANG	-0.017		-0.34
EQINC	0.620	***	8.93
R&D	-0.074		-0.37
EMP	0.318	***	17.75
CHG_SALE	0.067	**	2.27
SIZE	0.581	***	21.79
MB	-0.037	***	-9.42
EDU	0.010	***	10.42
INC	-0.100	***	-2.96
POV	0.004	***	3.21
POP	-0.050	***	-3.75
Constant	-4.059	***	-9.94
Industry F.E	Yes		
Year F.E	Yes		
S.E. clustered by year	Yes		
Observations	12686		
R-squared	0.748		
Adjusted R-squared	0.746		

Table 9: Religiosity

This table shows the results for Equation 2 over the sample period, 1990-2014 when we interact social capital with religiosity All variables are defined in Appendix 1. Standard errors are clustered by year. *, ** and *** indicate significant at the 10%, 5% and 1% level respectively.

	SHELTER		
Variable	Coeff.	Sig.	T-value
SK*REL	-0.029	***	-4.83
SK	-0.003		-0.68
REL	0.003		0.67
DA	0.155	***	6.87
IO	-0.233	***	-9.95
CASH	-0.221	***	-13.38
ROA	-0.297	***	-9.38
LEV	0.115	**	2.73
NOL	0.177	***	19.71
CHG_NOL	-0.015		-0.84
FI	4.242	***	26.35
PPE	-0.082	***	-3.31
INTANG	0.090	***	3.72
EQINC	1.003	***	16.26
R&D	-0.285	***	-5.55
EMP	0.149	***	13.73
CHG_SALE	-0.095	***	-8.52
SIZE	0.209	***	24.41
MB	-0.015	***	-7.06
EDU	0.005	***	24.61
INC	-0.082	***	-7.36
POV	0.000		0.66
POP	-0.002		-0.38
Constant	-0.870	***	-4.70
Industry F.E	Yes		
Year F.E	Yes		
S.E. clustered by year	Yes		
Observations	52962		
R-squared	0.572		
Adjusted R-squared	0.571		

Table 10: Corporate performance

This table shows the results for Equation 2 over the sample period, 1990-2014 when we interact social capital with corporate performance All variables are defined in Appendix 1. Standard errors are clustered by year. *, ** and *** indicate significant at the 10%, 5% and 1% level respectively.

	SHELTER		
Variable	Coeff.	Sig.	T-value
SK*HIGH_ROA	-0.045	***	-6.79
SK	-0.005		-1.38
HIGH_ROA	-0.095	***	-8.89
DA	0.188	***	7.90
IO	-0.241	***	-10.39
CASH	-0.248	***	-14.48
LEV	0.122	**	2.60
NOL	0.188	***	18.44
CHG_NOL	0.146	***	6.89
FI	4.101	***	24.69
PPE	-0.093	***	-3.34
INTANG	0.083	***	3.52
EQINC	0.991	***	15.71
R&D	-0.173	***	-3.98
EMP	0.141	***	14.06
CHG_SALE	-0.101	***	-9.84
SIZE	0.210	***	25.89
MB	-0.014	***	-7.00
EDU	0.005	***	22.36
INC	-0.083	***	-7.16
POV	0.001	*	1.74
POP	-0.005		-0.81
Constant	-0.811	***	-4.15
Industry F.E	Yes		
Year F.E	Yes		
S.E. clustered by year	Yes		
Observations	52962		
R-squared	0.57		
Adjusted R-squared	0.57		

Table 11: CEO compensation

This table shows the results for Equation 2 over the sample period, 1990-2014 when we interact social capital with CEO compensation All variables are defined in Appendix 1. Standard errors are clustered by year. *, ** and *** indicate significant at the 10%, 5% and 1% level respectively.

	SHELTER		
Variable	Coeff.	Sig.	T-value
SK*HIGH_CASHCOMP	-0.022	*	-1.95
SK	-0.050	***	-5.68
High_CASHCOMP	-0.176	***	-13.21
DA	0.065	**	2.48
IO	-0.208	***	-18.41
CASH	0.190	***	4.87
ROA	-0.695	***	-9.17
LEV	0.413	***	7.44
NOL	0.145	***	16.03
CHG_NOL	0.103		1.03
FI	-0.018		-0.09
PPE	-0.174	***	-5.57
INTANG	0.082		1.58
EQINC	0.585	***	12.30
R&D	0.547	***	2.98
EMP	0.383	***	21.99
CHG_SALE	0.023		0.80
SIZE	0.479	***	20.84
MB	-0.045	***	-10.95
EDU	0.010	***	17.67
INC	-0.028		-0.87
POV	0.007	***	7.14
POP	-0.018		-1.47
Constant	-4.208	***	-10.77
Industry F.E	Yes		
Year F.E	Yes		
S.E. clustered by year	Yes		
Observations	15906		
R-squared	0.733		
Adjusted R-squared	0.732		