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Community Social Capital and Board Advising: Evidence from the Structure of Board Committees

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We investigate how community social capital, captured by the strength of cooperative norms and social networks within a geographical community, affects the internal structure of corporate boards. We find that firms headquartered in high-social-capital US counties have a more advising-intensive board structure, as they are more likely to set up specialized advisory committees and appoint more advisory directors. These findings are robust to endogeneity concerns and a battery of sensitivity tests. Our mediation analysis shows that the increased board advising intensity, induced by community social capital, reduces investment inefficiency. We further reveal that community social capital reduces board monitoring intensity and directors' monitoring efforts. Overall, our results are consistent with the argument that community social capital serves as a societal monitoring mechanism to reduce firms' need for board monitoring, and, hence, firms' boards located in high-social-capital communities focus more on advising.

Introduction

Community social capital, captured by the confluence effects arising from the cooperative norms and the density of associational networks in a geographical community, is an important construct across various disciplines, including sociology, economics, and management.[1] As individuals are susceptible to social influences in the geographical areas in which they reside, community social capital helps to build trust, reciprocity, information sharing, and cooperation, thus encouraging honest dealings and discouraging individuals' unethical behaviours (Coleman, 1988; La Porta *et al.*, 1997).[2] A burgeoning literature shows that community social capital matters in the corporate setting, as corporate managers are individuals subject to the influence of social capital in the community where their firms are headquartered (Jha and Chen, 2014). Managers' self-interested behaviours are contrary to the prescribed values of cooperative norms, and dense social networks

[1]Prior studies in these disciplines have found that community social capital reduces the crime rate (Buonanno et al., 2009), enhances local and national governmental performance (Knack, 2002), and facilitates economic growth (Knack and Keefer, 1997).

[2]For instance, Hong et al. (2004) and Hong et al. (2005) show that social interactions in local geographical areas affect stock-market participation and fund managers' trading behaviours. Pirinsky and Wang (2006) observe strong co-movement in the stock returns of companies headquartered in the same geographic area due to the trading patterns of local residents. A large number of previous studies, including Coleman (1988), Elster (1989), Guiso et al. (2004) and Spagnolo (1999), have found that strong cooperative norms and dense social networks in a community foster an environment that constrains narrow and self-interested behaviours and limits opportunistic behaviours.

compel individuals to comply with the codes of conduct associated with cooperative norms (Coleman, 1988). Therefore, community social capital disciplines managers and alleviates agency issues (Gao, Li and Lu, 2021; Gupta, Raman and Shang, 2018; Hoi, Wu and Zhang, 2019), an important responsibility of the board of directors. However, we still know little about how community social capital affects the functioning of corporate boards.

The board of directors, as an integral element, performs both monitoring and advising duties (Adams and Ferreira, 2007). The monitoring function of the board oversees the management and guards against harmful conduct, while the advising function of the board guides the management to apply appropriate strategies and approves major expenditures (Adams, Hermalin and Weisbach, 2010). Although monitoring the management is essential for firm success, excessive board monitoring can be counterproductive. Increased focus on board monitoring not only comes at a substantial cost to board advising but also weakens the CEO's perception of board support (Adams and Ferreira, 2007; Hillman and Dalziel, 2003), which leads to managerial myopia and poor performance (Faleye, Hoitash and Hoitash, 2011). While antecedents for effective board monitoring have been well established, the optimum way to structure the board for effective advising remains an essential but understudied issue. Randøy and Jenssen (2004) claim that board monitoring becomes less demanding, and even redundant, when external governance mechanisms discipline managers. Adams and Ferreira (2007) contend that, theoretically, a friendly board that does not monitor too much but focuses on advising is more optimal when other governance mechanisms exist. Therefore, we conjecture that firms headquartered in areas with higher levels of social capital can assemble a more advising-intensive board to avoid the adverse consequences of excessive monitoring and improve board efficiency.

To test our conjecture, we empirically explore the effect of social capital at the county level in the United States on board advising intensity for firms headquartered in the county. Using a sample of 12,174 firm-year observations from S&P 1500 firms over the period 2000–2018, we find that firms headquartered in counties with higher levels of social capital are more likely to set up specialized advisory committees and appoint more directors devoted to advising, suggesting a positive relationship between community social capital and board advising intensity.

According to Adams, Hermalin and Weisbach (2010), advisory directors offer strategic advice about the firm's investment opportunities. Firms that receive better advice are expected to invest wisely and efficiently (Kim, Mauldin and Patro, 2014). Our mediation analysis confirms that board advising intensity mediates the relationship between community social capital and firm investment efficiency. In other words, the increased board advising intensity, induced by higher levels of community social capital, results in more efficient firm investments, suggesting that community social capital improves board advising efficiency.

We then conduct several tests to underpin the argument that community social capital reduces board monitoring need and allows for more advising. First, we corroborate previous studies by showing that community social capital reduces discretionary accruals, CEO compensation, and costs of equity. Second, we find that firms in high-social-capital counties appoint fewer monitoring directors and are less likely to form a monitoring-intensive board. Third, we use board meeting attendance as a proxy for directors' efforts (Masulis and Mobbs, 2014) and show that community social capital significantly increases meeting absence among directors holding monitoring duties, but not among those specializing in advising. Collectively, these results provide strong evidence that board monitoring is less demanding for firms in high-social-capital counties, and suggest that the board may shift its focus from monitoring to advising.

To further strengthen our premise, we conduct two cross-sectional analyses to examine whether a firm's need for board monitoring plays a role in the positive relationship between community social capital and board advising intensity. As the firm's need for board monitoring is further reduced by the external market monitoring (Guo, Lach and Mobbs, 2015; Randøy and Jenssen, 2004), we find that the observed relationship is more prominent for firms covered by more analysts and for firms operating in highly competitive industries. The cross-sectional variation evidence further confirms the importance of reduced board monitoring needs in the interplay between community social capital and board advising intensity.

We also investigate an alternative interpretation of our results. Specifically, higher levels of community social capital develop trust and dense networks, which are considered valuable resources for strategic advising. As a result, the board can take advantage of these resources and strengthens its advising intensity. This alternative interpretation suggests a direct effect of community social capital on board advising, while our premise and previous results suggest an indirect effect of community social capital on board advising through a reduction in board monitoring. While our premise is consistent with the agency theory perspective of community social capital and board advising (Adams and Ferreira, 2007; Hoi, Wu and Zhang, 2019; Masulis and Mobbs, 2014), the alternative explanation is consistent with resource dependence theory, which argues that the board responds to the external environment and changes its composition directly (Hillman, Withers and Collins, 2009; Loasby, Pfeffer and Salancik, 1979). We do not consider the two interpretations to be mutually exclusive, as Hillman and Dalziel (2003) contend that board function can be explained by integrating the two perspectives. We perform a path analysis that supports our view. We find that community social capital is positively related to board advising intensity when board monitoring is held constant, confirming the direct effect. However, community social capital also indirectly improves board advising intensity through its effect on reducing board monitoring after taking into account its direct effect. Thus, both paths contribute to the positive relationship between community social capital and board advising intensity. However, because excessive board monitoring leads to inferior performance (Faleye, Hoitash and Hoitash, 2011), the indirect path is important for firm success.

Our main results hold when addressing the endogeneity concerns with the instrumental variable (IV) approach, the propensity score-matching (PSM) technique, and difference-in-differences (DiD) analysis, suggesting that our results are causal instead of correlational. The results also survive a battery of robustness tests relating to omitted variables and alternative measures of community social capital and advisory directors.

We first contribute to the limited research exploring the dynamics of the optimal internal structure of board committees (Chen and Wu, 2016; Faleye, Hoitash and Hoitash, 2013). As we show that community social capital is a key factor influencing internal board structure regarding committee setup and director assignments, we conform to the notion that optimal board structure depends on a firm's operating environment (Boone *et al.*, 2007; Coles, Daniel and Naveen, 2008). Second, we elaborate on the emerging literature on the dual role of board functions. We confirm that community social capital improves monitoring outcomes (e.g. mitigates earnings management and rent extraction) and show that the increased board advising intensity induced by community social capital enhances board advising effectiveness (e.g. reduces investment inefficiency). Third, we highlight the importance of recognizing the heterogeneity of independent directors sitting on different board committees (Faleye, Hoitash and Hoitash, 2011; Zalata *et al.*, 2019). By examining independent directors sitting on monitoring and advisory committees, rather than treating all independent directors homogenously, we add to the research that explores the different roles played by independent directors (Faleye, Hoitash and Hoitash, 2011, 2013). Fourth, we extend the theoretical development of Adams and Ferreira (2007) by answering the call to investigate circumstances in which a friendly board that does not monitor excessively but that focuses on advising is optimal. To the best of our knowledge, this study is the first to investigate the interactions between external monitoring mechanisms (e.g. community social capital) and the subordinate board structure regarding advising. Our findings suggest that firms can alleviate the competing tensions between board monitoring and advising when considering the community social capital surrounding their headquarters.

Theoretical background

Community social capital and opportunistic behaviours

The theoretical foundation of social capital was first systematically developed by Coleman (1988), who defines social capital as a variety of entities generated by trust, information, norms, obligations, and effective sanctions that facilitate individual or group actions. Coleman (1988) further perceives the use of social capital as a theoretical strategy that involves taking rational action but rejects extreme individualistic premises.

Since then, social theorists have developed various operating definitions of social capital and

argue that social capital encourages honest dealing and deters opportunistic behaviours (Adler and Kwon, 2002; Scrivens and Smith, 2013). Because the secular norms and networks are at the core of social capital, two approaches are commonly adopted in previous studies. In the 'norms' approach, Putnam (1993) sees social capital as the tendency of people within a group to collaborate to achieve socially productive outcomes and emphasizes the norms of reciprocity and trustworthiness that arise from connections between individuals. Fukuyama (2001) argues that social capital is the existence of a common set of informal values or norms shared among members of a group, which allows for cooperation. In the 'network' approach, social capital is modelled as a set of networks from which efficient information sharing and better communication are derived (Coleman, 1988; Lin, 1999; Payne *et al.*, 2011). Given that individuals need to maintain a moral self-concept (Mazar, Amir and Ariely, 2008), dense social networks intensify the costs and the punishment of unethical and opportunistic behaviours (Coleman, 1994; Spagnolo, 1999).[3] As a result, repeated interactions within a dense network promote greater trust among its members over time and foster the norms of cooperation and honesty (Coleman, 1988; Fischer and Pollock, 2004; Fukuyama, 2001; Putnam, 1995a; Uzzi, 1996).

Economists, however, criticize the lack of conceptual and analytical frameworks in social capital, as it is difficult to disentangle the effects of cooperative norms and social networks (Sobel, 2002). Because individual behaviours are influenced by the community, economists characterize social capital as a community-level attribute that collectively reflects individuals' behaviours, beliefs, and values (Rupasingha, Goetz and Freshwater, 2006). Therefore, economics studies often do not distinguish between social norms and networks but instead adopt the approach advocated by Knack and Keefer (1997), Woolcock (1998), and Guiso, Sapienza and Zingales (2004) to define social capital as the environmental element that jointly captures the confluence effects of cooperative norms and dense networks within a geographical community, a definition that we follow in this study.

Board committee reforms, monitoring, and advising

Agency theory posits that, owing to the separation of ownership and control, managers tend to engage in self-interested, opportunistic behaviours that benefit themselves but at the cost of the shareholders (Jensen and Meckling, 1976). Shareholders thus appoint a board of directors to discipline managers and protect their interests. Given that board committees drive the functioning of the board (Adams, Ragunathan and Tumarkin, 2015; Kesner, 1988; Klein, 1998), regulators in the United States have gradually turned their attention to the composition of board committees in relation to monitoring.[4] After several major accounting scandals in the early 2000s, the Securities and Exchange Commission (SEC) passed the Sarbanes–Oxley Act (SOX) in 2002 in order to scrutinize board monitoring. This Act mandates firms to set up several monitoring committees – namely the audit, compensation, governance, and nomination committees, which are composed solely of independent directors.[5]

Early research, including Fama and Jensen (1983), acknowledges that the board also has an advising role as they provide counsel to the CEO, set strategy, and approve major expenditures. However, it was not until 2004 that the Corporate Director's Guidebook of the American Bar Association explicitly recognized advising as one of the two basic functions of the board (Adams, 2010). The advising role of the board guides the management to formulate strategies and assists with decision making (Faleye and Hoitash

[3]These costs include external social sanctions (e.g. social ostracism and stigmatization; Coleman, 1988; Posner, 2000; Uhlaner, 1989) and internal psychological costs resulting from increased negative moral sentiments (e.g. anxiety, guilt, and shame; Elster, 1989; Higgins, 1987).

[4]The Securities and Exchange Commission (SEC) began to require firms to establish an audit committee composed of outside directors in 1940 (Birkett, 1986), and to mandate firms to disclose audit committee composition in the 1970s (Reeb and Upadhyay, 2010).

[5]In response to SOX, major US stock exchanges (i.e. the New York Stock Exchange [NYSE], and Nasdaq) also issued requirements regarding board committees. The NYSE Listed Company Manual Section 303A.03 requires complete independence of audit, compensation, nominating, and governance committees. Nasdaq requires complete independence of these major committees or independent directors to oversee the executive compensation and requires a majority of independent directors to select or recommend director nominees if such committees do not exist.

and Hoitash, 2011). However, intensive board monitoring weakens board advising, as it creates an information conflict between the management and the board (Adams and Ferreira, 2007). Because managers are concerned that information disclosed to the board can be used to monitor their behaviours, they become reluctant to share key strategic information with a board that monitors intensively. Consequently, the lack of valuable information provided to the board weakens strategic advising and reduces shareholder value. Adams and Ferreira (2007) developed a 'Theory of Friendly Boards', arguing that enhancing the advising function of the board by forming a management-friendly board, where managers are more willing to share information with directors, unambiguously increases shareholder value. Despite the importance of the theoretical construct on board advising, regulators in the United States have not imposed any requirement on firms to establish advisory committees. To date, shareholders have the discretion to set up committees that are advisory in nature. For example, Morgan Stanley set up a technology committee to advise the management on Big Data technologies in stock trading, but not all firms have a technology committee.

Empirical literature review and hypotheses development

As previously discussed, the board of directors has monitoring and advising duties. Many prior studies adopt an 'inside-outside' approach to proxy for the strength of board monitoring and advising. It follows that outside directors contribute mainly to the monitoring function, because they are independent of the management, while inside directors primarily perform the advising duty, because they have more firm-specific knowledge (Duchin, Matsusaka and Ozbas, 2010; Lehn, Patro and Zhao, 2009; Linck, Netter and Yang, 2008). However, Baldenius, Melumad and Meng (2014) conclude that the 'inside-outside' approach oversimplifies the role of independent directors and leads to inconclusive empirical evidence.[6]

The emerging literature has shifted the focus from the 'inside-outside' approach towards a holistic understanding of board committees when evaluating board monitoring and advising intensity. Because the board sets up committees that are either of an advising or of a monitoring nature to address firms' specific needs (Klein, 1998), Faleye, Hoitash and Hoitash (2011) propose that observing board committees is a better way to proxy for the strength of board monitoring and advising. Faleye, Hoitash and Hoitash (2011) show that a monitoring-intensive board, where the majority of independent directors are allocated to monitoring committees, results in significantly weaker strategic advising and greater managerial myopia. Consistent with the theoretical prediction in Adams and Ferreira (2007), Faleye , Hoitash and Hoitash (2011) confirm that the costs of weaker advising outweigh the benefits of intensive monitoring, as firm value is significantly lower for those with monitoring-intensive boards.

Owing to the information conflict, weak advising also poses a threat to boards whose directors perform both monitoring and advising duties (Adams and Ferreira, 2007). Faleye, Hoitash and Hoitash (2013) argue that it is vital for the board to separate committees specializing in advising from those performing monitoring duties, because the separation alleviates information conflict and serves as a substitute for a commitment to not use the revealed information against the CEO (Laux and Laux, 2009). Zalata *et al.* (2019) show that directors appointed to monitoring committees mitigate managerial opportunism, but those appointed to advisory committees do not, confirming that directors serving on advisory committees are minimally involved in monitoring activities. As information conflicts are alleviated by separating advising and monitoring committees, Faleye, Hoitash and Hoitash (2013) show that firms with specialized advisory directors enjoy enhanced advising performance and have higher shareholder value.

[6]The 'inside-outside' approach ignores two important facts. First, independent directors can acquire firm-specific information through board meetings and interaction with the management or other directors, to contribute to the advising function (Brickley and Zimmerman, 2010; Hillman and Dalziel, 2003). Second, prior studies have acknowledged that the independent director is a valuable source of expertise, as independent directors with specific characteristics and backgrounds can help the firm to achieve superior performance (Dalton et al., 1999; Hermalin and Weisbach, 1988; Yermack, 1996). Hence, independent directors not only can monitor managers but also can provide strategic advice (Bhagat and Black, 1999; Chen et al., 2020).

'Friendly board theory' acknowledges that excessive board monitoring impedes information exchange between the CEO and the board, while a friendly board that does not monitor too much receives more valuable information and is better at advising (Adams and Ferreira, 2007). However, the 'friendly board theory' also argues that, in order for a management-friendly board to be optimal, other governance mechanisms need to pick up the slack of board monitoring (Adams and Ferreira, 2007), as managers may still engage in opportunistic behaviours that hurt shareholder value without being disciplined by other governance mechanisms. Prior research, including Cremers, Nair and Peyer (2008), Ferreira, Ferreira and Raposo (2011), and Guo, and Lach and Mobbs (2015), shows that external governance mechanisms, including stock price informativeness, market competition, and takeover threats, substitute for the internal governance imposed by directors. Therefore, strong external monitoring mechanisms provide a prerequisite for the board to reduce its internal monitoring and improve its advisory capacity. However, the current empirical literature has not systemically linked the strength of external monitoring mechanisms to the intensity of board advising.

Community social capital is a societal monitoring mechanism identified in a growing body of literature. Prior research shows that community social capital deters opportunistic corporate practices, such as auditing misconduct (Jha and Chen, 2014), tax avoidance (Hasan *et al.*, 2017a), and conflicts between shareholders and debtholders (Hasan *et al.*, 2017b), because corporate decisions are made by executives who are disciplined by the social capital surrounding corporate headquarters (Bertrand and Schoar, 2003; Hilary and Hui, 2009). Since agency issues are caused by managerial opportunism and represent a violation of the trust vested by shareholders, social capital can mitigate this principal–agent problem. Indeed, Gupta, Raman and Shang (2018) document a negative relationship between the social capital of the county where the firm resides and the cost of equity, as equity holders require lower returns for firms with less severe agency issues. Gao, Li and Lu (2021) find evidence suggesting that community social capital induces managers to use corporate resources more efficiently. Hoi, Wu and Zhang (2019) conclude that high community social capital mitigates the agency issue by restraining managerial rent extraction. These studies demonstrate that community social capital is an external monitoring mechanism that ameliorates agency conflicts.

The monitoring role of community social capital suggests that the firm's need for board monitoring is low when community social capital already serves as an incremental monitoring mechanism that reduces the agency issue (Hoi, Wu and Zhang, 2019). Based on the 'friendly board theory' (Adams and Ferreira, 2007), we conjecture that shareholders would increase board advising intensity when community social capital is high to prevent information conflicts and sustain efficient advising. We therefore develop our first hypothesis (H1) as follows:

H1: Firms headquartered in high-social-capital regions are associated with greater board advising intensity.

Because the majority of independent directors are full-time employees of other firms, the board takes a more hands-off approach when performing the advising duties. Thus, directors rely on the firm-specific information provided by the CEO to make advising decisions (Adams and Ferreira, 2007). Therefore, the advisory performance depends on the completeness of the information that the management provides (Armstrong, Guay and Weber, 2010). According to the 'friendly board theory', a board that does not monitor too much receives more valuable information and is better at advising (Adams and Ferreira, 2007). If community social capital promotes a friendly board that separating advising committees from monitoring committees, managers will be more willing to provide valuable information to advisory directors that soley serve on advising committees (Faleye, Hoitash and Hoitash, 2013). The more firm-specific knowledge the management shares, the better the board's advisory performance will be. Because advisory directors guide the CEO to set strategy and approve major expenditures (Adams, Hermalin and Weisbach, 2010), we should expect firms that receive better advice from the board to invest wisely and have lower levels of investment inefficiency (Kim, Mauldin and Patro, 2014). Therefore, we develop our second hypothesis (H2) as follows:

H2: The increased board advising intensity induced by community social capital results in lower investment inefficiency.

Data and research design

Data source

Our sample consists of S&P 1500 firms for the period 2000–2018, excluding firms from the financial (SIC 6000–6999) and utility (SIC 4900–4999) sectors.[7, 8] We manually tracked firm headquarter counties during the sample period using the address information stated in firm 10-K filings from the SEC Electronic Data Gathering, Analysis, and Retrieval (EDGAR) database. Firms headquartered outside the United States were excluded. We used the Federal Information Processing Standards (FIPS) codes for each firm headquartered in the county to match county-level data. The social capital index for each county was constructed using data from the Northeast Regional Center for Rural Development (NRCRD). We collected county-level economic outputs and demographic profiles from the Bureau of Economic Analysis (BEA) and the United States Census Bureau. Firm fundamental variables are retrieved from Compustat, stock market price data are from CRSP, directors' committee assignments are from BoardEx, and director meeting attendance is from Institutional Shareholder Services (ISS). Our final sample consists of 1,281 unique firms and 12,174 firm-year observations.

Variables used in the study

Dependent variables. Following Reeb and Upadhyay (2010), Faleye, Hoitash and Hoitash (2011), and Faleye, Hoitash and Hoitash (2013), we define finance, investment, strategy, acquisitions, science and technology, and executive committees as advisory committees, while audit, compensation, nominating, and governance committees are considered to be monitoring committees.[9] Advisory_Committee is a dummy variable that equals one if the firm sets up at least one advisory committee, and zero otherwise. N_Advisory_Committee is the logarithm transformation of the number of advisory committees in a firm plus one. Following Faleye, Hoitash and Hoitash (2013), we define independent directors who sit on at least one of the advisory committees but do not serve on any monitoring committee to be advisory directors. Advisory_Director_Ratio is the ratio of the number of advisory directors to the total number of independent directors.[10]

Main independent variable. SC_Index. Following Hoi, Wu and Zhang (2019), we define community social capital as the joint effect of cooperative norms and social networks within a US county. Following Rupasingha, Goetz and Freshwater (2006), we measure community social capital (SC_Index) as the first principal component of the voter turnout for the presidential election (Pvote), census mail response rate (Pespn), the aggregate number of social organizations (Assn), and the number of not-for-profit organizations (Nccs) for each county provided by the NRCRD. The NRCRD provides data only for 1997, 2005, 2009, and 2014 over our sample period.[11] We therefore follow Hoi, Wu and Zhang (2019) to backfill the missing data using the available SC_Index from the

[7]We start from 2000 because data prior to 2000 are limited in *BoardEx*.

[8]Prior research provides inconclusive evidence on the long-term presence of social capital in societies (Paxton, 1999; Putnam, 1995). Researchers argue that the inconclusive evidence is mainly due to the lack of reliable data on measuring social capital (Rupasingha et al., 2006). Rupasingha et al. (2006) are the first to develop the most reliable measure of social capital that captures both cross-sectional and time-series variations in social capital based on US county-level data. The method is widely adopted in academic studies, including Hasan et al. (2017b) and Hoi et al. (2019). We, therefore, chose the US context for our study.

[9]To identify committees devoted to the advising function and minimally involved in the monitoring function, committees that share both monitoring and advising responsibilities, such as the audit and finance committee, are considered monitoring committee, as in Faleye et al. (2013).

[10]Following Faleye et al. (2013), we focus on independent directors, because inside directors do not typically serve on board committees (Chen and Wu, 2016). In robustness tests, we use two alternative definitions of advisory directors that consider both independent and insider directors with advising duties as advisory directors.

[11]The NRCRD reports the data for 1997 in a different data set from the data for 2005, 2009, and 2014. To be consistent with the data reported after 2005, we follow Hasan et al. (2017b) to adjust the values of *Assn*- in 1997 by keeping only the 10 types of social organizations and using the trend method to adjust *Nccs* in 1997. Detailed procedures can be found in the appendix of Hasan et al. (2017b).

most recent preceding period.[12] A higher level of SC_Index corresponds to a stronger social capital of the county.

Control variables. Based on previous literature, including Coles, Daniel and Naveen (2008), Linck, Netter and Yang (2008), Ferreira, Ferreira and Raposo (2011), Hasan *et al.* (2017b), and Knyazeva, Knyazeva and Masulis (2013), we employ five sets of control variables, covering firm operation complexity, information costs, CEO entrenchment, governance structure, and geographic factors. Firm_Size, Firm_Age, Leverage and N_Segments are proxies for firm operation complexity. Information costs are measured by Market-to-Book, R&D, and Return_Volatility. We then include CEO_Tenure, CEO_Ownership, and CEO_Duality to control for CEO entrenchment. Governance structure is measured by Institutional_Ownership, Blockholder_Ownership and Board_Independence. Geographic factors include Local_Director_Pool, Per_Capita_Income, Population_Growth, Population_Density, Education, Religiosity, and County_Median_Age. Detailed variable construction can be found in Table A1 in the Appendix.

Research design

We use the following empirical specification to test H1:

$$Advising\_Intensity_{i,t+1} = \alpha + \beta_1 SC\_Index_{j,i,t} + \sum \delta Controls_{j,i,t} + \lambda_k + \lambda_{t+1} + \varepsilon_{i,t+1}, \quad (1)$$

where $Advising\_Intensity_{i,t+1}$, represents Advisory_Committee, N_Advisory_Committee, or Advisory_Director_Ratio for firm i at time t+1. We adopt the probit model to estimate Eq. (1) when the dependent variable is Advisory_Committee, and the ordinary least squares (OLS) model to estimate Eq. (1) when the dependent variable is N_Advisory_Committee or Advisory_Director_Ratio. The main variable of interest, $SC\_Index_{j,i,t}$, is the estimated social capital index for county j where firm i is headquartered at time t. $Controls_{j,i,t}$ is a vector of the five sets of variables described in the previous section. λ_k and λ_{t+1} are industry and year dummies, respectively. Industry is defined by the two-digit Standard Industrial Classification (SIC) codes. H1 predicts a positive and statistically significant coefficient on community social capital (β_1).

We perform a mediation analysis to test H2. The intuition behind the mediation analysis is illustrated in Figure 1. Path ABC represents the total effect of the treatment (community social capital) on the outcome (investment inefficiency), which can be decomposed into direct and indirect effects. Path A corresponds to the effect of the treatment on the mediator (board advising intensity), and Path B demonstrates the effect of the mediator on the outcome. Paths A and B constitute the indirect effect (mediating effect) of community social capital on investment inefficiency, while Path C shows the direct effect of community social capital on investment inefficiency.

We then follow Baron and Kenny (1986) and Li, Pryshchepa and Wang (2021) to estimate the following structural equation models to test the mediation effect:

$$Inefficiency_{i,t+n} = \alpha_1 + \beta_1 SC\_Index_{j,i,t} + \sum \varphi Controls_{j,i,t} + \varepsilon 1_{i,\,t+n}, \quad (2)$$

$$Advising\_Intensity_{i,t+n} = \alpha_2 + \beta_2 SC\_Index_{j,i,t} + \sum \gamma Controls_{j,i,t} + \varepsilon 2_{i,\,t+n}, \quad (3)$$

$$Inefficiency_{i,\,t+n} = \alpha_3 + \beta_3 SC\_Index_{j,i,t} + \pi_1 Advising\_Intensity_{j,i,t+1} + \sum \varphi Controls_{j,i,t} + \varepsilon 3_{i,\,t+n}, \quad (4)$$

where Inefficiency is the industry-adjusted investment inefficiency estimated from the Richardson (2006) model. Detailed explanations of the Richardson (2006) model are presented in the Internet Appendix IA. The total effect of SC_Index on Inefficiency (β_1) can be decomposed into the direct effect of SC_Index on Inefficiency (β_3) and the mediation effect ($\beta_2 \times \pi_1$) through Advising_Intensity. Because the total effect (β_1) can be obtained as $\beta_3 + \beta_2 \times \pi_1$, only Eq. (3) and Eq. (4) need to be estimated. Since Inefficiency is

[12]For example, we backfill the social capital data for each county from 2000 to 2004 with the estimated *SC_Index* from 1997. We also adopt several alternative proxies for social capital in our robustness tests.

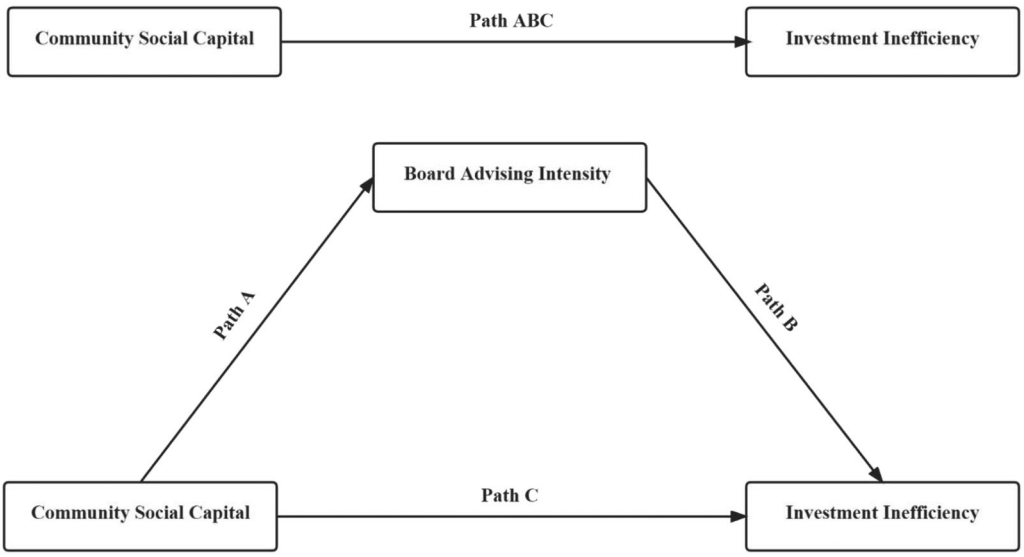

Figure 1. Mediation analysis. This figure depicts the intuition behind the mediation analysis. Path ABC represents the total effect of the treatment (community social capital) on the outcome (investment inefficiency). Path A corresponds to the effect of the treatment on the mediator (board advising intensity), and Path B demonstrates the effect of the mediator on the outcome. Paths A and B comprise the indirect effect of community social capital on investment inefficiency, while Path C shows the direct effect of community social capital on investment inefficiency

an inverse measure of investment efficiency, H2 proposes that community social capital increases board advising intensity, which in turn reduces investment inefficiency. We therefore expect negative and significant $\beta_2 \times \pi_1$.[13]

Empirical results and discussions

Summary statistics

Table 1 presents the descriptive statistics of the main variables. SC_Index has a mean value of −0.575, similar to that (−0.54) reported in Hasan *et al.* (2017b). Figure 2 depicts the average SC_Index for contiguous US geographical areas during our sample period. A darker shade reflects a higher level of community social capital. The figure is consistent with the official annual figures provided by the NRCRD, as the community social capital is higher in upper Midwest and Northwest counties but lower in Southwest and Southeast counties.

Advisory_Committee has a mean of 0.405, indicating that 40.5% of the firm-year observations have at least one advisory committee within the board. The mean value of N_Advisory_Committee is 0.320. However, the median value is zero for both Advisory_Committee and N_Advisory_Committee, suggesting that most firms do not set up advisory committees. The mean (median) value of Advisory_Director_Ratio shows that only 7.9% (0.000) of the independent directors specialize in advising. These findings are congruent with Faleye, Hoitash and Hoitash (2013), who show that most firms do not have independent directors solely serving the advising role. In the correlation matrix reported in Internet Appendix IB.1, SC_Index is positively related to all three board advising intensity measures (Advisory_Committee, N_Advisory_Committee and Advisory_Director_Ratio).

The effect of community social capital on board advising intensity

Figure 3 visually displays the main findings of this paper. When firms are sorted into quartiles according to the social capital of the county in which they reside, we find that the values for all three board intensity measures increase with community social capital. Specifically, the average value of Advisory_Committee (N_Advisory_Committee and Advisory_Director_Ratio) is 0.362 (0.281 and

[13]The standard error and z-statistics for the mediation effect ($\beta_2 \times \pi_1$) are computed by following Sobel (1982).

Table 1. Summary statistics

Variable	N	Mean	Std	P25	Median	P75
SC_Index	12,174	−0.575	0.749	−1.119	−0.509	−0.064
Advisory_Committee	12,174	0.405	0.491	0.000	0.000	1.000
N_Advisory_Committee	12,174	0.320	0.405	0.000	0.000	0.693
Advisory_Director_Ratio	12,174	7.907	11.234	0.000	0.000	15.789
Firm_Size	12,174	7.485	1.489	6.440	7.353	8.430
Firm_Age	12,174	24.882	15.772	12.000	20.000	37.000
Leverage	12,174	0.518	0.321	0.314	0.479	0.653
N_Segments	12,174	2.500	1.632	1.000	2.000	4.000
Market-to-Book	12,174	3.354	5.165	2.127	3.382	5.471
R&D	12,174	0.052	0.092	0.000	0.010	0.072
Return_Volatility	12,174	0.108	0.060	0.069	0.094	0.131
CEO_Tenure	12,174	7.423	7.187	2.000	5.000	10.000
CEO_Ownership	12,174	0.020	0.049	0.001	0.004	0.013
CEO_Duality	12,174	0.508	0.500	0.000	1.000	1.000
Institutional_Ownership	12,174	0.693	0.303	0.624	0.805	0.901
Blockholder_Ownership	12,174	0.262	0.135	0.160	0.250	0.347
Board_Independence	12,174	0.777	0.126	0.714	0.800	0.875
Local_Director_Pool	12,174	4.785	1.227	3.951	5.124	5.687
Per_Capita_Income	12,174	10.845	0.324	10.622	10.810	11.021
Population_Growth (%)	12,174	0.941	1.012	0.232	0.802	1.461
Population_Density	12,174	7.210	1.082	6.626	7.236	7.664
Religiosity (%)	12,174	57.218	11.892	46.692	57.704	65.205
Education (%)	12,174	34.461	10.388	27.164	32.300	43.472
County_Median_Age	12,174	36.809	2.896	34.800	36.600	38.600

This table presents the number of observations (N), the mean (Mean), the standard deviation (Std), the 25th percentile (P25), the median (Median) and the 75th percentile (P75) for the main variables used in this study. The sample consists of 12,174 firm-year observations for the period between 2000 and 2018. SC_Index is the county-level social capital measure based on data from the Northeast Regional Center for Rural Development. Advisory_Committee is a dummy variable that equals one if the firm sets up at least one specialized advisory committee, and zero otherwise. N_Advisory_Committee is the natural logarithm of the number of advisory committees within the board in a given year plus one. Advisory_Director_Ratio is the ratio of the number of advisory directors scaled by the total number of independent directors. Detailed variable definitions are given in Table A1 in the Appendix. All continuous variables are winsorized at the 1st and the 99th percentiles to eliminate the influence of outliers.

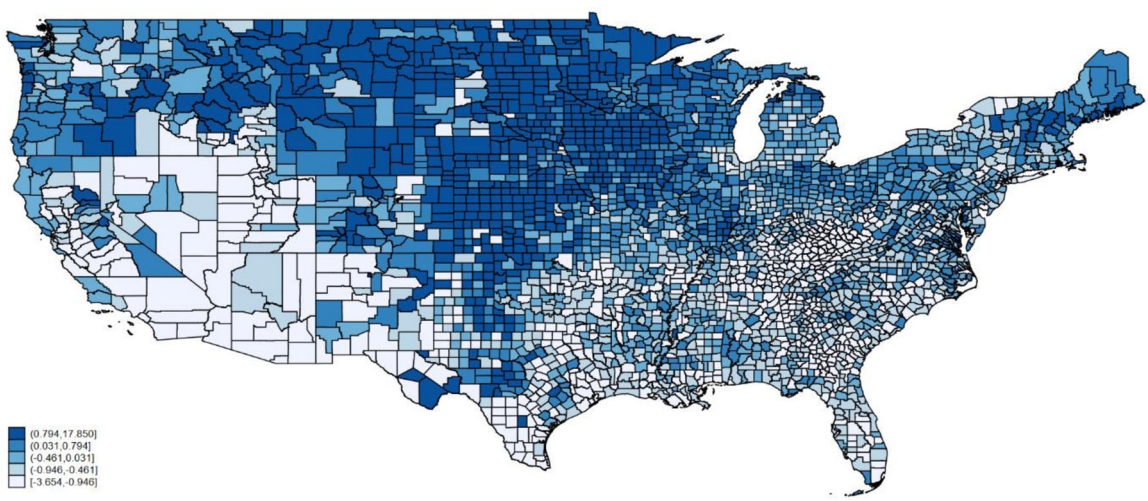

Figure 2. Geographical distribution of community social capital. This figure depicts the average county-level community social capital index of 1997, 2005, 2009 and 2014 for contiguous US geographical areas. A darker shade reflects a higher level of community social capital, and a lighter shade represents a lower level of community social capital [Colour figure can be viewed at wileyonlinelibrary.com]

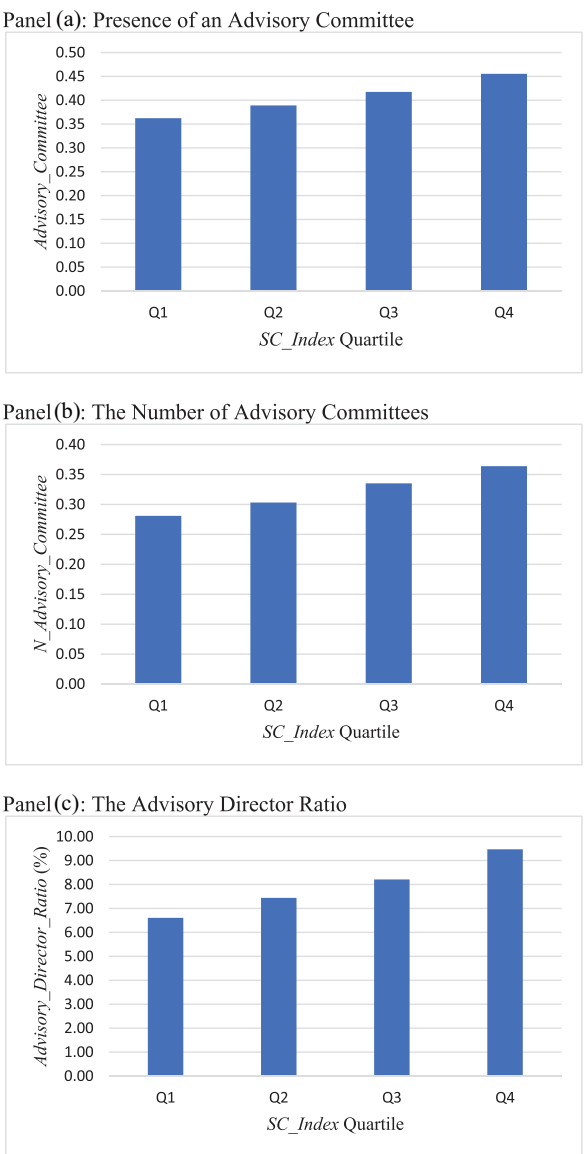

Figure 3. Board advising intensity. This figure depicts the mean value for Advisory_Committee, N_Advisory_Committee, and Advisory_Director_Ratio based on SC_Index quartiles in panels (a), (b), and (c), respectively. Q1 represents the bottom quartile, and Q4 represents the top quartile. Detailed variable definitions are given in Table A1 [Colour figure can be viewed at wileyonlinelibrary.com]

6.606) for firms in the bottom SC_Index quartile (Q1). This value, however, increases to 0.455 (0.364 and 9.470) for firms in the highest SC_Index quartile (Q4), implying that firms set up more advisory committees and allocate more directors to specialize in advising when the social capital surrounding their headquarters is high.[14]

Table 2 presents the multivariate baseline regression analysis on the effect of community social capital on the board advising intensity by estimating Eq. (1). Column (1) presents results from the probit model where the dependent variable is Advisory_Committee. As expected, the coefficient on SC_Index is positive (0.091) and highly significant ($p < 0.000$), suggesting that firms residing in high-social-capital counties are more likely to set up committees that specialize in advising. Columns (2) and (3) present the OLS regression results when the dependent variable is N_Advisory_Committee and Advisory_Director_Ratio, respectively. The positive and significant coefficients on SC_Index present clear evidence that higher community social capital is related to more advisory committees within the board and more directors that specialize in advising. The effect of community social capital is also economically significant. For example, an interquartile increase in SC_Index leads to a 9.92% increase in the number of advisory committees and a 19.24% increase in the ratio of advisory directors from their mean.[15] Consistent with H1, our findings support the view that higher levels of community social capital result in a more advising-intensive board. Our results also support the theoretical prediction from Adams and Ferreira (2007), which posits that the board should focus on advising when external governance mechanisms discipline the managers.

[14]The increase from Q1 to Q4 for all three board advising intensity variables is statistically significant at the 1% level.

[15]The 25th (75th) percentile of social capital is –1.119 (−0.064). For N_Advisory_Committee in Column (2), an interquartile increase in social capital leads to a 0.033 [= (−0.064 – (–1.119)) × 0.031] increase in the logarithm of the number of advisory committees. Given that the mean value of the number of advisory committees without logarithm is 0.504, an interquartile increase in social capital increases the number of advisory committees to 0.554 [=exp(ln(1 + 0.504) + 0.033) – 1], representing a 9.92% increase from its mean. For Advisory_Director_Ratio in Column (3), an interquartile increase in social capital leads to a 1.522 [= (−0.064 – (–1.119)) × 1.441] increase in the ratio of advisory director. With a mean value of 7.907 of Advisory_Director_Ratio, the 1.522 increase represents a 19.24% (=1.522/7.907) increase from its mean.

Table 2. The effect of community social capital on board advising intensity

Dep. var.	(1) Advisory_Committee	(2) N_Advisory_Committee	(3) Advisory_Director_Ratio
SC_Index	0.091***	0.031***	1.441***
	(0.026)	(0.007)	(0.202)
Firm_Size	0.121***	0.048***	0.952***
	(0.011)	(0.003)	(0.083)
Firm_Age	0.464***	0.128***	3.329***
	(0.023)	(0.006)	(0.180)
Leverage	0.157***	0.035***	1.282***
	(0.042)	(0.011)	(0.303)
N_Segments	0.082***	0.018***	0.310*
	(0.021)	(0.006)	(0.175)
Market-to-Book	−0.002	−0.000	0.008
	(0.001)	(0.000)	(0.010)
R&D	−0.023	−0.037	0.796
	(0.185)	(0.041)	(1.318)
Return_Volatility	−0.255	−0.097	−1.161
	(0.266)	(0.066)	(1.946)
CEO_Tenure	0.015	0.001	0.040
	(0.016)	(0.004)	(0.114)
CEO_Ownership	−0.018***	−0.003***	−0.164***
	(0.003)	(0.001)	(0.018)
CEO_Duality	0.049*	0.019***	0.717***
	(0.026)	(0.007)	(0.197)
Institutional_Ownership	−0.083**	−0.029***	−0.489
	(0.042)	(0.011)	(0.318)
Blockholder_Ownership	−0.385***	−0.125***	−2.237***
	(0.106)	(0.026)	(0.775)
Board_Independence	0.750***	0.212***	6.042***
	(0.122)	(0.032)	(0.915)
Local_Director_Pool	0.089***	0.028***	0.876***
	(0.017)	(0.005)	(0.134)
Per_Capita_Income	−0.202**	−0.085***	−1.337**
	(0.083)	(0.022)	(0.624)
Population_Growth	0.046***	0.011**	0.315**
	(0.018)	(0.005)	(0.130)
Population_Density	0.058***	0.014***	0.250*
	(0.017)	(0.005)	(0.129)
Religiosity	0.001	0.000	−0.008
	(0.001)	(0.000)	(0.009)
Education	−0.013***	−0.002***	−0.065***
	(0.002)	(0.001)	(0.019)
County_Median_Age	0.755***	0.227***	3.852**
	(0.238)	(0.065)	(1.797)
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Constant	−4.187***	−0.714***	−17.600**
	(1.029)	(0.277)	(8.016)
Observations	12,174	12,174	12,174
Pseudo/Adj R-squared	0.138	0.199	0.166

This table presents the regression analysis for the effect of community social capital on board advising intensity. The dependent variables in Columns (1) through (3) are Advisory_Committee, N_Advisory_Committee, and Advisory_Director_Ratio, respectively. Advisory_Committee is a dummy variable that equals one if the firm sets up at least one specialized advisory committee, and zero otherwise. N_Advisory_Committee is the natural logarithm of the number of advisory committees within the board in a given year plus one. Advisory_Director_Ratio is the ratio of number of advisory directors scaled by the total number of independent directors. SC_Index is the county-level social capital measure based on data from the Northeast Regional Center for Rural Development. Column (1) uses the probit model, and Columns (2) and (3) are OLS models. Detailed variable definitions are given in Table A1 in the Appendix. All continuous variables are winsorized at the 1st and the 99th percentiles to eliminate the influence of outliers. Each column includes year and 2-digit SIC dummies. The standard errors are presented in parentheses and are clustered at the county level to control for potential correlation in the error terms. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

The mediating effect of board advising intensity

Because community social capital results in a more advising-intensive internal board structure, we perform a mediation analysis to test whether increased advising intensity can reduce investment inefficiency.

Results from the mediation analysis are presented in Table 3. Panel A presents the results from the structural equations. Specifically, Columns (1), (3), and (5) examine Path A by estimating Eq. (3) and show that community social capital is positively related to board advising intensity, consistent with our main findings. Columns (2), (4), and (6) examine Paths B and C by estimating Eq. (4) and show that both community social capital and board advising intensity are negatively related to investment inefficiency (Inefficiency). These results suggest that, after taking into account the direct effect of community social capital on investment inefficiency, community social capital can also indirectly reduce investment inefficiency through its effect on increasing board advising intensity. Panel B presents and tests the significance of the indirect effect using Baron and Kenny's (1986) approach and shows that the mediating effect that operates through Advisory_Committee (N_Advisory_Committee and Advisory_Director_Ratio) is −0.034 (−0.043 and −0.048), accounting for 5.52% (7.08% and 7.88%) of the total effect of SC_Index on Inefficiency. The z-statistics suggest that these indirect effects are statistically significant at the 1% level. These results are also illustrated in Figure 4. Overall, the mediation analysis supports H2 and confirms that the increased board advising intensity, driven by community social capital, leads to reduced investment inefficiency.

The effect of community social capital on board monitoring needs

We develop our hypothesis based on the 'friendly board theory' (Adams and Ferreira, 2007) and the premise that community social capital reduces board monitoring needs, allowing firms in high-social-capital areas to assemble an advising-intensive board. In this section, we strengthen this argument by confirming the negative effect of community social capital on board monitoring needs.

The disciplining effect of community social capital on managers' opportunistic behaviours is extensively documented in the literature (Gupta, Raman and Shang, 2018; Hoi, Wu and Zhang, 2019; Jha, 2019). Notwithstanding the prior evidence, we corroborate the notion that community social capital reduces agency issues by examining its effect on discretionary accruals, CEO compensation, and costs of equity in Internet Appendix IB.2. Consistent with prior studies, we find evidence suggesting that community social capital reduces agency issues. Because monitoring the management to alleviate agency issues is one of the two primary responsibilities of the board of directors (Adams, Hermalin and Weisbach, 2010), less severe agency issues suggest a lower board monitoring need (Randøy and Jenssen, 2004).

Next, we directly test our premise by examining the effect of community social capital on board monitoring intensity and director meeting attendance. We follow Faleye, Hoitash and Hoitash (2011) to proxy for board monitoring intensity and test the effect of community social capital on board monitoring intensity in Panel A of Table 4. The coefficients of SC_Index are negative and statistically significant for Monitoring_Director_Ratio (−0.025, $p < 0.000$) and Monitoring_Intensive_Board (−0.088, $p < 0.000$), suggesting that firms in high-social-capital counties appoint fewer monitoring directors and are less likely to assemble a monitoring-intensive board. Panel B shows the effect of community social capital on director meeting attendance, a proxy for directors' efforts (Masulis and Mobbs, 2014). A director is considered to have an attendance problem if he/she attends less than 75% of board meetings in the year. The coefficient on SC_Index is positive and statistically significant for Monitor_Attendance_Problem (0.115, $p < 0.000$) and Monitor_Attendance_Problem_Ratio (0.186, $p < 0.000$) in Columns (1) and (2), but is negative, albeit statistically insignificant, for Advisor_Attendance_Problem (−0.000) and Advisor_Attendance_Problem_Ratio (−0.032) in Columns (3) and (4), suggesting that higher levels of social capital cause more monitoring directors to miss board meetings, but that this is not the case for advisory directors.[16] Thus, the reduced efforts from the monitoring directors suggest that the

[16]Director meeting attendance data were obtained from ISS. Unfortunately, ISS does not provide director board

Table 3. Mediating effect of board advising intensity on investment inefficiency

Panel A: Results from the structural equations						
Dep. var.	(1) Advisory_ Committee	(2) Inefficiency	(3) N_Advisory_ Committee	(4) Inefficiency	(5) Advisory_ Director_Ratio	(6) Inefficiency
SC_Index	0.033***	−0.580***	0.031***	−0.571***	1.182***	−0.566***
	(0.007)	(0.154)	(0.005)	(0.154)	(0.159)	(0.154)
Advisory_Committee		−1.020***				
		(0.202)				
N_Advisory_Committee				−1.406***		
				(0.255)		
Advisory_Director_Ratio						−0.041***
						(0.009)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	12,174	12,174	12,174	12,174	12,174	12,174
Panel B: Mediating effects						
Indirect effect - SC_Index × Advising_Intensity		−0.034***		−0.043***		−0.048***
Sobel z-statistics for the indirect effect		−3.48		>−3.94		−3.95
Direct effect		−0.580		−0.571		−0.566
Total effect		−0.614		−0.614		−0.614

This table presents results for the mediating effect of board advising intensity on the relationship between community social capital and firm investment inefficiency. Panel A presents results from the structural equations. Columns (1), (3), and (5) estimate Eq. (3) when the dependent variable is Advisory_Committee, N_Advisory_Committee, and Advisory_Director_Ratio, respectively. Columns (2), (4), and (6) estimate Eq. (4) when the mediator is Advisory_Committee, N_Advisory_Committee, and Advisory_Director_Ratio, respectively. Inefficiency is the industry-adjusted investment inefficiency estimated from Richardson's (2006) model. Advisory_Committee is a dummy variable that equals one if the firm sets up at least one specialized advisory committee, and zero otherwise. N_Advisory_Committee is the natural logarithm of the number of advisory committees within the board in a given year plus one. Advisory_Director_Ratio is the ratio of the number of advisory directors scaled by the total number of independent directors. SC_Index is the county-level social capital measure based on data from the Northeast Regional Center for Rural Development. Detailed variable definitions are given in Table A1 in the Appendix. All continuous variables are winsorized at the 1st and the 99th percentiles to eliminate the influence of outliers. Each column includes the same set of control variables as in Table 2. Panel B presents the total, direct, and indirect effects. The indirect effect is tested with Sobel (1982) z-statistics. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

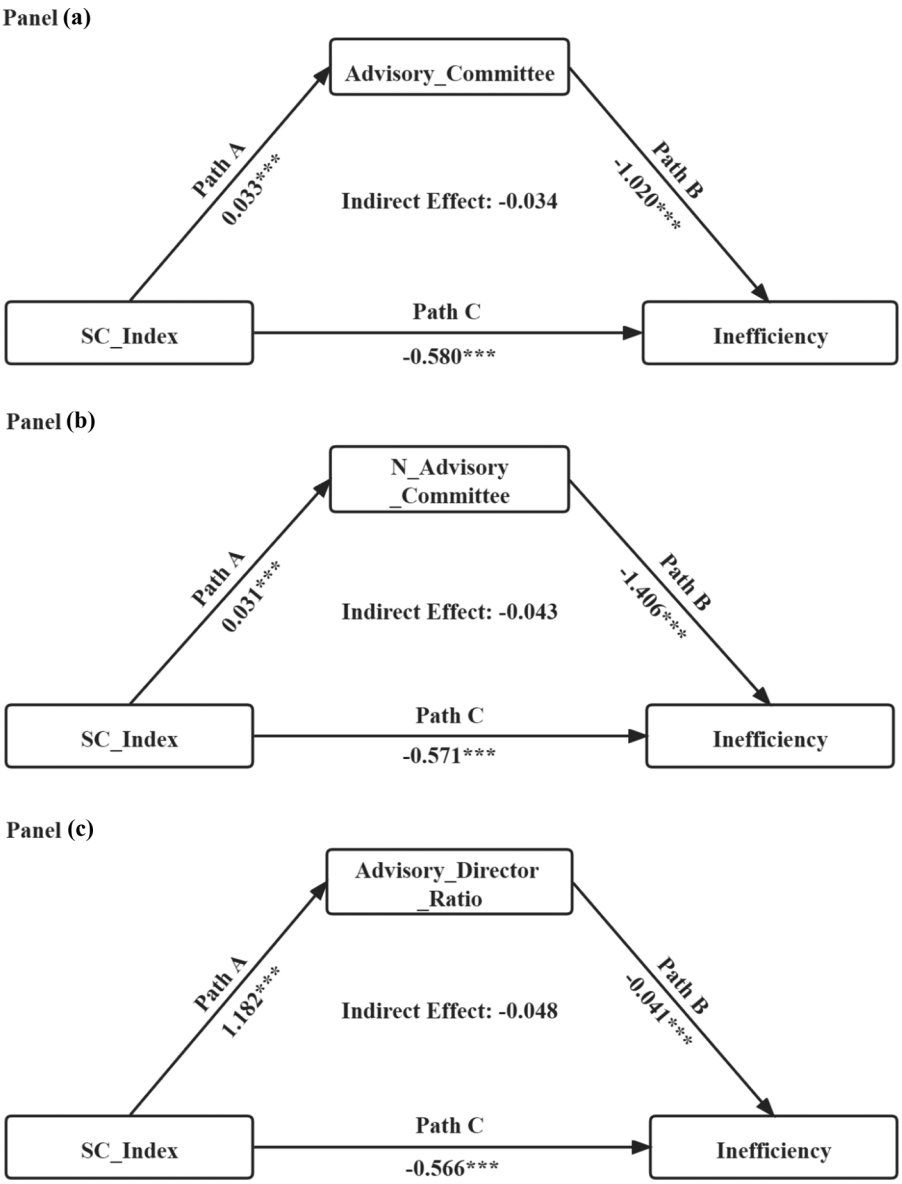

Figure 4. Mediation results. This figure presents the mediating effect of board advising intensity on the relationship between community social capital (SC_Index) and firm investment inefficiency (Inefficiency). Panels (a), (b) and (c) show the mediating effect that operates through Advisory_Committee, N_Advisory_Committee and Advisory_Director_Ratio, respectively

assignments other than the audit, compensation, nominating, and governance committees, which makes it extremely difficult to accurately identify advisory directors from ISS data. Following Faleye et al. (2011) and Zalata et al. (2019), we assume that independent directors that are not classified as monitoring directors are advisory directors in this test only. We then examined board attendance using the director-year data from ISS. The results reported in Internet Appendix IB.3 also confirm that monitoring directors from firms in high-social-capital counties are more likely to have an attendance issue, but advisory directors are not.

directors perceive that the firm's need for board monitoring is low when their firms are headquartered in high-social-capital counties.[17]

[17]Our results do not necessarily suggest that monitoring directors violate professional guidance, which requires them to monitor the management closely. Instead, it indicates that the extent of monitoring depends on the social capital surrounding their firm's headquarters.

Table 4. The effect of community social capital on board monitoring needs

Panel A. The effect of community social capital on board monitoring intensity		
Dep. var.	(1) Monitoring_Director_Ratio	(2) Monitoring_Intensive_Board
SC_Index	−0.025***	−0.088***
	(0.005)	(0.025)
Firm_Size	−0.047***	−0.217***
	(0.002)	(0.012)
Firm_Age	0.003	0.056***
	(0.004)	(0.021)
Leverage	−0.015*	−0.018
	(0.008)	(0.040)
N_Segments	−0.002	0.010
	(0.004)	(0.022)
Market-to-Book	−0.001**	−0.003**
	(0.000)	(0.001)
R&D	−0.148***	−0.801***
	(0.029)	(0.166)
Return_Volatility	−0.007	0.046
	(0.045)	(0.243)
CEO_Tenure	−0.003	−0.011
	(0.003)	(0.014)
CEO_Ownership	0.000	0.002
	(0.001)	(0.003)
CEO_Duality	0.013**	0.028
	(0.005)	(0.028)
Institutional_Ownership	0.004	−0.050
	(0.008)	(0.042)
Blockholder_Ownership	0.006	0.096
	(0.018)	(0.099)
Board_Independence	−0.394***	−1.623***
	(0.023)	(0.120)
Local_Director_Pool	−0.011***	−0.059***
	(0.003)	(0.016)
Per_Capita_Income	0.018	0.100
	(0.015)	(0.078)
Population_Growth	0.008***	0.021
	(0.003)	(0.017)
Population_Density	0.002	0.024
	(0.003)	(0.016)
Religiosity	0.000**	0.001
	(0.000)	(0.001)
Education	−0.000	−0.001
	(0.000)	(0.002)
County_Median_Age	0.075*	0.533**
	(0.042)	(0.221)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Constant	0.694***	−0.126
	(0.186)	(1.009)
Observations	12,174	12,174
Pseudo/Adj R-squared	0.152	0.089

Table 4. (Continued)

Panel B. The effect of community social capital on director meeting attendance				
Dep. var.	(1) Monitor_Attendance_ Problem	(2) Monitor_Attendance_ Problem_Ratio	(3) Advisor_Attendance_ Problem	(4) Advisor_Attendance_ Problem_Ratio
SC_Index	0.115***	0.186***	−0.000	−0.032
	(0.039)	(0.067)	(0.057)	(0.057)
Ave_Director_Age	−0.843*	−1.633**	−1.039	−1.481*
	(0.469)	(0.820)	(0.676)	(0.867)
Ave_Director_Tenure	0.002	0.025	0.092	0.085
	(0.075)	(0.129)	(0.104)	(0.116)
US_Director_Ratio	0.008	0.015	−0.206	−0.288
	(0.144)	(0.182)	(0.227)	(0.226)
Female_Director_Ratio	−0.239	−0.702*	0.104	−0.032
	(0.302)	(0.395)	(0.457)	(0.465)
Board_Size	0.004**	0.010	0.003**	0.002
	(0.002)	(0.009)	(0.002)	(0.002)
Ave_N_Outside_ Directorships	0.115**	0.186**	0.082	0.095
	(0.051)	(0.088)	(0.079)	(0.089)
Institutional_Ownership	0.086	0.106	0.071	0.039
	(0.079)	(0.121)	(0.115)	(0.118)
Blockholder_Ownership	0.155	0.295	0.075	0.063
	(0.197)	(0.339)	(0.293)	(0.345)
Board_Independence	−0.124	−0.771	−1.908***	−1.790***
	(0.239)	(0.488)	(0.319)	(0.432)
ROA	0.154	0.006	−1.074***	−0.851**
	(0.258)	(0.439)	(0.389)	(0.377)
Firm_Size	0.061***	0.059*	0.090***	0.065**
	(0.021)	(0.034)	(0.031)	(0.031)
Firm_Age	−0.038	−0.109	−0.215***	−0.194***
	(0.047)	(0.083)	(0.064)	(0.069)
Market-to-Book	−0.002	0.001	0.000	0.001
	(0.003)	(0.005)	(0.004)	(0.005)
R&D	0.507	0.665	−1.310*	−1.322**
	(0.352)	(0.688)	(0.727)	(0.557)
Return_Volatility	0.815*	2.155**	−0.605	−0.057
	(0.480)	(0.997)	(0.743)	(0.854)
Per_Capita_Income	−0.073	0.107	−0.355	−0.413
	(0.177)	(0.279)	(0.255)	(0.286)
Population_Growth	3.553	3.193	−6.390	−8.831**
	(3.093)	(5.606)	(4.316)	(4.297)
Population_Density	0.010	−0.037	0.014	0.010
	(0.033)	(0.052)	(0.046)	(0.051)
Religiosity	−0.000	0.052	0.298	0.320
	(0.207)	(0.375)	(0.311)	(0.341)
Education	0.005	0.007	0.019***	0.023***
	(0.005)	(0.008)	(0.007)	(0.008)
County_Median_Age	−0.106	−0.696	0.124	−0.064
	(0.433)	(0.665)	(0.650)	(0.691)
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Constant	2.679	9.924**	5.811	12.082***
	(2.468)	(4.131)	(3.879)	(4.370)
Observations	9137	9137	9137	9137
Pseudo/Adj R-squared	0.063	0.030	0.120	0.018

Table 4. (Continued)

This table presents the regression analysis for the effect of community social capital on board monitoring needs. Panel A presents the results for board monitoring intensity. The dependent variables in Columns (1) and (2) are Monitoring_Director_Ratio and Monitoring_Intensive_Board, respectively. Monitoring_Director_Ratio is the number of monitoring directors to the total number of independent directors. Monitoring_Intensive_Board is a dummy variable that equals one if the majority of independent directors are monitoring directors. Column (1) uses OLS models, and Column (2) uses the probit model. Panel B presents the results for director meeting attendance. The dependent variables in Columns (1) through (4) are Monitor_Attendance_Problem, Monitor_Attendance_Problem_Ratio, Advisor_Attendance_Problem, and Advisor_Attendance_Problem_Ratio, respectively. Monitor_Attendance_Problem is a dummy variable that equals one if at least one of the monitoring directors of the firm attends less than 75% of the board meetings during a year, and zero otherwise. Monitor_Attendance_Problem_Ratio is the ratio of the number of monitoring directors of the firm that attend less than 75% of the board meeting during a year to the total number of monitoring directors. A monitoring director is an independent director sitting on at least two monitoring committees (audit, compensation, and nominating/governance committees). Advisor_Attendance_Problem is a dummy variable that equals one if at least one of the advisory directors of the firm attends less than 75% of the board meeting during a year, and zero otherwise. Advisor_Attendance_Problem_Ratio is the ratio of the number of advisory directors of the firm that attend less than 75% of the board meeting during a year to the total number of advisory directors. Columns (1) and (3) use the probit models, and Columns (2) and (4) use OLS models. SC_Index is the county-level social capital measure based on data from the Northeast Regional Center for Rural Development. Detailed variable definitions are given in Table A1 in the Appendix. All continuous variables are winsorized at the 1st and the 99th percentiles to eliminate the influence of outliers. Each column includes year and 2-digit SIC dummies. The standard errors are presented in parentheses and are clustered at the county level to control for potential correlation in the error terms. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Taken together, the results from this section conform with the previous literature in showing that higher levels of community social capital reduce the agency issue (Gupta, Raman and Shang, 2018; Hoi, Wu and Zhang, 2019), and that the need for board monitoring is low (Randøy and Jenssen, 2004). The reduced board monitoring need for firms in high-social-capital counties reduces monitoring intensity and suggests that our findings are due to the board shifting its focus from monitoring to advising.

Cross-sectional analysis

In this section, we conduct several moderating tests on the interplay between community social capital and board advising intensity. If the positive effect of community social capital is more prominent when the firm operates in environments that are already subject to strict monitoring, then this provides further assurance that reduced board monitoring needs are the key to explaining our findings. In Table 5, we explore the interactive effect of external monitoring mechanisms imposed by financial analysts (Healy and Palepu, 2001) and market competition (Nickell, Nicolitsas and Dryden, 1997) that make board monitoring less demanding (Randøy and Jenssen, 2004). We create High_Coverage to indicate firms with above-median analyst coverage in each industry each year, and High_Competition for firms operating primarily in a competitive industry. We then interact SC_Index with the two dummy variables, respectively. The interaction term coefficients (SC_Index*High_Coverage and SC_Index*High_Competition) are positive and significant, suggesting a more prominent effect of community social capital on board advising intensity when strong external monitoring further reduces the firm's needs for board monitoring. Thus, results from Table 5 further confirm that the reduction in board monitoring needs is the key factor facilitating the positive relationship between community social capital and advising intensity.

Path analysis

So far, our premise and results are consistent with the agency theory perspective on community social capital, which states that community social capital reduces board monitoring intensity through its effect on reducing board monitoring needs and intensity. In this path, board monitoring is the mediator, and community social capital is perceived to have an indirect effect on board advising intensity through a reduction in board monitoring.

However, the resource dependence theory (Loasby, Pfeffer and Salancik, 1979) proposes that the board changes its composition by responding to the external environment, as the board's capital

Table 5. Cross-sectional analysis

Dep. var.	(1) Advisory_ Committee	(2) N_Advisory_ Committee	(3) Advisory_ Director _Ratio	(4) Advisory_ Committee	(5) N_Advisory_ Committee	(6) Advisory_ Director_ Ratio
SC_Index	0.068**	0.020***	1.178***	0.047*	0.020**	1.108***
	(0.028)	(0.007)	(0.205)	(0.027)	(0.008)	(0.218)
SC_Index∗High_Coverage	0.082**	0.039***	0.907***			
	(0.036)	(0.009)	(0.283)			
SC_Index∗High_Competition				0.178***	0.048***	1.337***
				(0.040)	(0.010)	(0.278)
High_Coverage	−0.029	−0.002	−0.000			
	(0.042)	(0.011)	(0.346)			
High_Competition				0.051	0.013	0.646*
				(0.047)	(0.013)	(0.352)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Constant	−4.209***	−0.713***	−17.542**	−4.354***	−0.769***	−19.048**
	(1.030)	(0.275)	(7.961)	(1.041)	(0.275)	(7.959)
Observations	12,174	12,174	12,174	12,174	12,174	12,174
Pseudo/Adj R-squared	0.138	0.201	0.167	0.139	0.201	0.167

This table presents the cross-sectional variations of the effect of community social capital on board advising intensity. The dependent variable in Columns (1) and (4) is Advisory_Committee, in Columns (2) and (5) it is N_Advisory_Committee, and in Columns (3) and (6) it is Advisory_Director_Ratio. Advisory_Committee is a dummy variable that equals one if the firm sets up at least one specialized advisory committee, and zero otherwise. N_Advisory_Committee is the natural logarithm of the number of advisory committees within the board in a given year plus one. Advisory_Director_Ratio is the ratio of the number of advisory directors scaled by the total number of independent directors. Columns (1) and (4) use the probit mode, and Columns (2), (3), (4) and (6) use OLS models. SC_Index is the county-level social capital measure based on data from the Northeast Regional Center for Rural Development. High_Coverage is a dummy variable that equals one if the number of analysts covering the firm is above the median in each industry each year, and zero otherwise. High_Competition is a dummy variable that equals one if the industry Herfindahl-Hirschman Index is below the sample median, and zero otherwise. Each column includes the same set of control variables as in Table 2, the year, and 2-digit SIC dummies. Detailed variable definitions are given in Table A1 in the Appendix. All continuous variables are winsorized at the 1st and the 99th percentiles to eliminate the influence of outliers. The standard errors are presented in parentheses and are clustered at the county level to control for potential correlation in the error terms. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

can bring resources (e.g. advice and counsel, links to other organizations) to minimize environmental dependence.[18] Given that trust and networks are the core components of community social capital, they may directly influence the board's capital regarding its advising capacity. For example, because the development of trust facilitates better information sharing that is essential for strategic advising (Kor and Sundaramurthy, 2009), managers in high-social-capital communities are influenced by the norms of trustworthiness and become more willing to share information with the board and more likely to trust and value external advice. In addition, the dense social network in high-social-capital communities may help to build the board's relational capital by increasing their social ties, which becomes a valuable resource for board advising. Therefore, in an environment where trust and networks are important, selecting directors who are trustworthy and can bring external resources will more effectively utilize directors' capital for board advising. As a result, shareholders may assemble a more advising-intensive board. Thus, the resource dependence perspective predicts a direct path from community social capital to board advising intensity.

To investigate the path through which community social capital affects board advising

[18]It is worth noting that community social capital is different from the board's capital. Community social capital comprises the environmental factors arising from social norms and networks that influence an individual's behaviours (Rupasingha et al., 2006), while the board's capital refers to directors' human capital (i.e. experience and expertise) and relational capital (i.e. network of ties to external contingencies) (Hillman and Dalziel, 2003).

Table 6. Path analysis

Panel A: Results from the structural equations				
Dep. var.	(1) Monitoring_ Director_Ratio	(2) Advisory_ Committee	(3) N_Advisory_ Committee	(4) Advisory_ Director_Ratio
SC_Index	−0.018***	0.028***	0.026***	0.994***
	(0.004)	(0.007)	(0.005)	(0.154)
Monitoring_Director_Ratio		−0.307***	−0.250***	−10.201***
		(0.016)	(0.013)	(0.371)
Controls	Yes	Yes	Yes	Yes
Observations	12,174	12,174	12,174	12,174

Panel B: Mediating effects				
Indirect effect - SC_Index × Monitoring_Intensive_Ratio	–	0.006***	0.005***	0.184***
Sobel z-statistics for indirect effect	–	4.733	4.740	4.815
Direct effect	–	0.028	0.026	0.994
Total effect	–	0.034	0.031	1.178

This table presents results from the mediating analysis to test the path through which community social capital affects board advising intensity. In this analysis, community social capital (SC_Index) is the treatment, board advising intensity (Advisory_Committee, N_Advisory_Committee, and Advisory_Director_Ratio) is the outcome, and board monitoring intensity (Monitoring_Director_Ratio) is the mediator. Panel A presents results from the structural equations. The dependent variable in Column (1) is Monitoring_Director_Ratio, and the dependent variables in Columns (2) to (4) are Advisory_Committee, N_Advisory_Committee, and Advisory_Director_Ratio, respectively. Monitoring_Director_Ratio is the ratio of the number of monitoring directors to the total number of independent directors. Advisory_Committee is a dummy variable that equals one if the firm sets up at least one specialized advisory committee, and zero otherwise. N_Advisory_Committee is the natural logarithm of the number of advisory committees within the board in a given year plus one. Advisory_Director_Ratio is the ratio of the number of advisory directors scaled by the total number of independent directors. SC_Index is the county-level social capital measure based on data from the Northeast Regional Center for Rural Development. Each column includes the same set of control variables as in Table 2. Detailed variable definitions are given in Table A1 in the Appendix. All continuous variables are winsorized at the 1st and the 99th percentiles to eliminate the influence of outliers. Panel B presents the total, direct, and indirect effects. The indirect effect is tested with Sobel's (1982) z-statistics. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

intensity, we adopt a mediating analysis and present the results in Table 6. We use Monitoring_Director_Ratio as the mediator.[19] The coefficients of SC_Index (the treatment) in Column (1) and Monitoring_Director_Ratio (the mediator) across Columns (2) to (4) are all significantly related to board advising intensity (the outcome), showing an indirect effect from community social capital to board advising intensity through board monitoring. Panel B of Table 6 tests the significance of the indirect effects with Sobel's (1982) statistics and it can be seen that the indirect effects are all statistically significant at the 1% level. In addition, Columns (2) to (4) in Panel A confirm that there is a direct effect from community social capital on all three measures of board advising intensity, as the coefficient on SC_Index is positive and significant when Monitoring_Director_Ratio is included in the regressions. Thus, firms in a high-social-capital community can also increase board advising intensity independently of the monitoring intensity.

Thus, the results support the agency theory perspective that community social capital indirectly affects board advising through its effects on reducing board monitoring, but also the resource dependence explanation that community social capital can directly affect board advising. The two effects are not mutually exclusive. This finding is consistent with Hillman and Dalziel (2003), who argue that integrating the two theories helps to explain findings in the research on boards of directors.[20]

[19] Faleye et al. (2013) argue that Advisory_Director_Ratio and Monitoring_Director_Ratio capture distinct functions of the board and that the two variables do not mirror each other.

[20] Hillman et al. (2009) argue that, although the agency theory is the predominant theory used in board of directors studies (Dalton et al., 2007; Johnson et al., 1996), the resource dependence theory provides an important

Despite the direct effect, we argue that the indirect effect is vital to board functioning and corporate governance reform. As Adams and Ferreira (2007) and Faleye, Hoitash and Hoitash (2011) show that excessive board monitoring hurts firm value, it is crucial for the board to reduce its monitoring intensity and increase board advising when external monitoring mechanisms already discipline the managers.[21]

Endogeneity

Unlike the case for monitoring committees, which are required by regulations, firms have the discretion to set up advisory committees. As a result, the presence of advisory committees may be a function of observable and non-observable characteristics that correlate with community social capital. In addition, if the corporate headquarters location is self-selected and endogenously determined, community social capital could also be endogenous. We allay the potential endogeneity concerns in this section.

We first address the endogeneity concerns with an IV approach using the firm's distance to the United States–Canada border (Border_Distance) as the instrument for community social capital, because Putnam (2001) claims that areas closer to the border have higher social capital. The first-stage result, presented in Column (1) of Table 7, confirms a negative relationship between Border_Distance and SC_Index.[22] The fitted value of community social capital (Fitted_SC_Index) is predicted, and its coefficient is positive and significant in the second-stage regressions in Columns (2) to (4).[23]

Next, we control for the observable differences in firm attributes for firms that reside in high- and low-social-capital counties by employing a PSM technique as in Hoi, Wu and Zhang (2019). We sort counties with SC_Index in the top (bottom) quartile into the high-social-capital (low-social-capital) group. High_Social_Capital is a dummy variable set to one for firms in high-social-capital counties and to zero for firms in low-social-capital counties. A propensity score is computed based on all firm-level controls in Eq. (1). We then match, without replacement, each firm located in high-social-capital counties with a unique firm residing in low-social-capital counties using the closest propensity score within the 1% caliper. The regression results based on the matched samples in Panel A of Table 8 show that firms in high-social-capital counties are more advising-intensive, confirming our baseline results. The balance tests of the matching variables in Panel B reveal no significant difference in any variables across the two groups, suggesting a good match of the PSM sample.[24]

We further address the endogeneity concern with a DiD analysis on firms that relocate headquarters to a different county.[25] Following Hasan *et al.* (2017b), we define a social-capital-changing relocation as one in which a firm moves its headquarters to another county, with at least two years of available data before and after the relocation.[26] We create a dummy variable, Increase_Relocation,

insight into board studies that have often been dwarfed by applications of agency theory.

[21]In addition, we decompose SC_Index into Cooperative_Norms and Social_Networks and show that the trust captured by Cooperative_Norms can significantly reduce the agency issue, suggesting that trust can also influence board advising through the indirect channel. Furthermore, we additionally control for directors' network size and confirm that greater directors' relational capital does not drive our results. We also test whether risk aversion that is correlated with religion can explain our findings, as prior research recognizes that religion can affect agency problems and the role of the board (Diaz, 2000; Miller, 2000). The results are discussed in Internet Appendices IB.4 to IB.6.

[22]We have three second-stage regressions, and therefore, three corresponding first-stage regressions. The first-stage regression results are very similar. For brevity, Column (1) of Table 7 reports only the corresponding first-stage results for Column (2).

[23]In addition, we follow Hasan et al. (2017b) by adding Racial_Diversity as an additional instrument for SC_Index in Internet Appendix IB.7. We continue to find that the fitted value of community social capital results in a more advisory-intensive board.

[24]In unreported tables, we find that the results remain robust when using sample median or tertile as the benchmark to define High_Social_Capital, lifting the no-replacement restriction or including county-level variables in the matching process.

[25]The DiD analysis can also address the concern that our results capture only the cross-sectional variations in community social capital owing to the lack of mobility of firm headquarters' locations.

[26]We removed firms with multiple relocations to avoid the confounding effect. We identified 145 relocation events that meet our requirements, of which 65 firms moved to counties with higher social capital and 80 firms relocated to counties with lower social capital. These relocations yielded 1,496 firm-year observations, of which 611 are from the pre-relocation period and 885 are from the post-relocation period.

Table 7. Instrumental variable two-stage least squares analysis

	First stage		Second stage	
	(1)	(2)	(3)	(4)
Dep. var.	SC_Index	Advisory_ Committee	N_Advisory_ Committee	Advisory_ Director_ Ratio
Fitted_SC_Index		0.202***	0.073***	2.724***
		(0.077)	(0.021)	(0.602)
Border_Distance	−0.194***			
	(0.005)			
Firm_Size	−0.037***	0.125***	0.049***	0.996***
	(0.004)	(0.011)	(0.003)	(0.085)
Firm_Age	0.068***	0.454***	0.125***	3.237***
	(0.007)	(0.023)	(0.006)	(0.173)
Leverage	0.073***	0.147***	0.031***	1.164***
	(0.014)	(0.042)	(0.011)	(0.324)
N_Segments	0.004	0.080***	0.017***	0.289*
	(0.007)	(0.021)	(0.006)	(0.162)
Market-to-Book	0.001*	−0.002	−0.000	0.008
	(0.000)	(0.001)	(0.000)	(0.011)
R&D	−0.227***	0.009	−0.025	1.183
	(0.057)	(0.175)	(0.044)	(1.291)
Return_Volatility	−0.482***	−0.209	−0.078	−0.583
	(0.084)	(0.253)	(0.066)	(1.908)
CEO_Tenure	−0.025***	0.018	0.002	0.073
	(0.005)	(0.015)	(0.004)	(0.113)
CEO_Ownership	0.000	−0.018***	−0.003***	−0.166***
	(0.001)	(0.003)	(0.001)	(0.021)
CEO_Duality	0.041***	0.044	0.018**	0.661***
	(0.009)	(0.027)	(0.007)	(0.209)
Institutional_Ownership	−0.028**	−0.081*	−0.029***	−0.468
	(0.014)	(0.042)	(0.011)	(0.319)
Blockholder_Ownership	−0.240***	−0.359***	−0.116***	−1.943**
	(0.034)	(0.102)	(0.026)	(0.771)
Board_Independence	0.240***	0.719***	0.201***	5.706***
	(0.039)	(0.120)	(0.031)	(0.905)
Local_Director_Pool	−0.331***	0.129***	0.043***	1.338***
	(0.005)	(0.031)	(0.008)	(0.241)
Per_Capita_Income	0.527***	−0.239***	−0.099***	−1.780**
	(0.030)	(0.092)	(0.024)	(0.691)
Population_Growth	−0.100***	0.063***	0.017***	0.508***
	(0.005)	(0.020)	(0.005)	(0.151)
Population_Density	0.043***	0.050***	0.011**	0.159
	(0.006)	(0.018)	(0.005)	(0.137)
Religiosity	0.006***	0.000	0.000	−0.017*
	(0.000)	(0.001)	(0.000)	(0.009)
Education	0.029***	−0.017***	−0.003***	−0.109***
	(0.001)	(0.004)	(0.001)	(0.027)
County_Median_Age	1.494***	0.501*	0.134*	0.956
	(0.079)	(0.287)	(0.076)	(2.199)
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Constant	−10.381***	−2.767**	−0.133	−1.121
	(0.341)	(1.399)	(0.395)	(11.484)
Observations	12,174	12,174	12,174	12,174
Pseudo/Adj R-squared	0.630	–	0.197	0.163

Table 7. (Continued)

This table presents the regression analysis of the instrumental variable approach. Column (1) presents estimates from the first-stage analysis, where the dependent variable is SC_Index. SC_Index is the county-level social capital measure based on data from the Northeast Regional Center for Rural Development. The instrument for SC_Index is Border_Distance, measured as the natural logarithm of the shortest distance between the firm's headquarter county and the US– Canada border. Columns (2) through (4) present the second-stage analysis. The dependent variables in Columns (2) through (4) are Advisory_Committee, N_Advisory_Committee, and Advisory_Director_Ratio, respectively. Advisory_Committee is a dummy variable that equals one if the firm sets up at least one specialized advisory committee, and zero otherwise. N_Advisory_Committee is the natural logarithm of the number of advisory committees within the board in a given year plus one. Advisory_Director_Ratio is the ratio of the number of advisory directors scaled by the total number of independent directors. Detailed variable definitions are given in Table A1 in the Appendix. All continuous variables are winsorized at the 1st and the 99th percentiles to eliminate the influence of outliers. Each column includes year and 2-digit SIC dummies. The standard errors are presented in parentheses and are clustered at the county level to control for potential correlation in the error terms. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

which equals one for firms relocated to counties with higher levels of social capital, and zero for firms relocated to counties with lower levels of social capital. Post_Relocation is a variable indicating years after relocation. The positive and statistically significant coefficients on the interaction term (Increase_Relocation*Post_Relocation) across Panel A of Table 9 indicate that firms that relocated to counties with higher levels of social capital increased their board advising intensity. These results give us more confidence in inferring the causal relationship of our findings. Panel B shows that differences in board advising intensity and firm characteristics are insignificant for firms in the two groups in the year prior to the headquarter relocation, suggesting that the parallel trend assumption of DiD analysis is likely to be met in our analysis.[27]

Collectively, results from this sub-section attenuate the endogeneity concern of our study and confirm that high community social capital drives up board advising intensity.

Robustness

We address the concern that omitted variables drive our results in Table 10. In Panels A and B, respectively, we include the State_GDP_per_Capita and Metro in Eq. (1) to address the concern that state-level and metropolitan factors may plague our findings.[28] Following Hoi, Wu and Zhang (2019), we capture the influence of unknown omitted county-level factors by additionally controlling for the median value of our dependent variables in Panel C. Unknown firm-level variables are captured by the long-window change-on-change analysis in Panel D.[29] In Panel E, we address the related concern that board structure among firms located in the same county might be correlated by replacing the corresponding firm-level variables with county-median values.[30] The positive and significant coefficients on SC_Index (or ΔSC_Index in Panel D) across all panels confirm that our main findings are robust to unobserved state-, metropolitan-, county-, and firm-level factors influencing internal board structure concerning advising intensity.

[27]We also obtain qualitatively similar results when addressing the endogeneity concerns with generalized method of moments (GMM) models. Results are reported in Internet Appendix IB.8.

[28]The related concern for controlling for the metropolitan setting is that firms headquartered in metropolitan areas enjoy agglomeration benefits such as lower communication and transportation costs and increased efficiency (Glaeser et al., 2010). It might be easier for firms to find suitable advisory directors.

[29]Because both the board structure and the social capital of each county are relatively stable, the standard county fixed-effect or firm fixed-effect model is inappropriate and not applicable (Griffin et al., 2021). Zhou (2001) and Roberts and Whited (2013) point out that the firm fixed-effect model exacerbates measurement error problems and results in biased estimates with slow-moving variables. Previous studies in community social capital, including Hasan et al. (2017b), Hoi et al. (2019) and Gupta et al. (2018), do not use the standard firm fixed-effect model. Chen and Wu (2016) recognize the lack of variations when studying board committees and insignificant results from standard firm fixed-effect models. Similar to the standard firm fixed-effect model, the change-to-change analysis removes time-invariant unobserved firm-level variables.

[30]As in Hoi et al. (2019), industry dummies are dropped from this test because average industry dummies in a county are meaningless.

Table 8. Propensity score matching analysis

Panel A: Regression analysis of the propensity score matching sample			
Dep. var.	(1) Advisory_Committee	(2) N_Advisory_Committee	(3) Advisory_Director_Ratio
High_Social_Capital	0.189**	0.067***	1.914***
	(0.077)	(0.021)	(0.597)
Firm_Size	0.175***	0.055***	1.098***
	(0.021)	(0.005)	(0.167)
Firm_Age	0.367***	0.100***	2.856***
	(0.044)	(0.011)	(0.316)
Leverage	0.366***	0.086***	1.919***
	(0.085)	(0.024)	(0.623)
N_Segments	−0.001	0.001	−0.207
	(0.041)	(0.011)	(0.310)
Market-to-Book	−0.002	−0.000	0.019
	(0.003)	(0.001)	(0.023)
R&D	0.832**	0.192**	4.273*
	(0.335)	(0.085)	(2.537)
Return_Volatility	−0.634	−0.169	−3.244
	(0.486)	(0.122)	(3.550)
CEO_Tenure	0.041	0.008	−0.052
	(0.029)	(0.007)	(0.202)
CEO_Ownership	−0.012**	−0.001	−0.101***
	(0.006)	(0.001)	(0.029)
CEO_Duality	0.039	0.010	0.102
	(0.054)	(0.013)	(0.385)
Institutional_Ownership	0.001	−0.007	−0.319
	(0.077)	(0.020)	(0.544)
Blockholder_Ownership	−0.540***	−0.130***	−3.562**
	(0.189)	(0.047)	(1.422)
Board_Independence	0.957***	0.302***	10.540***
	(0.229)	(0.057)	(1.651)
Local_Director_Pool	0.080**	0.028***	0.586**
	(0.032)	(0.008)	(0.251)
Per_Capita_Income	−0.747***	−0.197***	−4.736***
	(0.185)	(0.048)	(1.277)
Population_Growth	0.081***	0.019**	0.551**
	(0.031)	(0.008)	(0.228)
Population_Density	0.150***	0.032***	0.963***
	(0.038)	(0.010)	(0.262)
Religiosity	−0.007***	−0.001**	−0.032*
	(0.002)	(0.001)	(0.018)
Education	−0.010**	−0.002*	−0.034
	(0.004)	(0.001)	(0.032)
County_Median_Age	1.670***	0.388***	11.901***
	(0.477)	(0.126)	(3.452)
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Constant	−2.804	−0.327	−20.259
	(1.990)	(0.495)	(14.667)
Observations	3444	3444	3444
Pseudo/Adj R-squared	0.165	0.206	0.180

Table 8. (Continued)

Panel B: Balance test			
	High social capital	Low social capital	p-value
Firm_Size	7.338	7.378	0.404
Firm_Age	3.000	2.992	0.724
Leverage	0.526	0.519	0.573
N_Segments	0.656	0.661	0.847
Market-to-Book	4.716	4.649	0.824
R&D	0.050	0.046	0.176
Return_Volatility	0.112	0.111	0.704
CEO_Tenure	1.711	1.693	0.571
CEO_Ownership	1.990	1.956	0.832
CEO_Duality	0.505	0.516	0.540
Institutional_Ownership	0.677	0.684	0.477
Blockholder_Ownership	0.261	0.263	0.595
Board_Independence	0.767	0.770	0.540

This table presents the results from a propensity score matching analysis. Each firm located in a high-social-capital county is matched with a unique firm that resides in a low-social-capital county based on Firm_Size, Firm_Age, Leverage, N_Segments, Market-to-Book, R&D, Return_Volatility, CEO_Tenure, CEO_Ownership, CEO_Duality, Industry, and Year. The matching does not allow replacement and the propensity score has a caliper of 1%. Panel A presents the regression analysis using the matched sample. The dependent variables in Columns (1) through (3) are Advisory_Committee, N_Advisory_Committee, and Advisory_Director_Ratio, respectively. Advisory_Committee is a dummy variable that equals one if the firm sets up at least one specialized advisory committee, and zero otherwise. N_Advisory_Committee is the natural logarithm of the number of advisory committees within the board in a given year plus one. Advisory_Director_Ratio is the ratio of the number of advisory directors scaled by the total number of independent directors. Column (1) uses the probit model, and Columns (2) and (3) use OLS models. High_Social_Capital is a dummy variable that equals one for firms that reside in counties in the top quartile of social capital, and zero for firms that reside in counties in the bottom quartile of social capital. Panel B presents the balance tests between the two groups. Detailed variable definitions are given in Table A1 in the Appendix. All continuous variables are winsorized at the 1st and the 99th percentiles to eliminate the influence of outliers. Each column includes year and 2-digit SIC dummies. The standard errors are presented in parentheses and are clustered at the county level to control for potential correlation in the error terms. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

We also show that our results are robust to (1) alternative proxies for community social capital and advisory directors; (2) Poisson and negative binomial models for the non-negative integer dependent variable; (3) extracted principal factors as the independent variables; and (4) separated cooperative norms and social network components of community social capital. These results are reported and discussed in Internet Appendices IB.9 to IB.12, respectively.

Summary and conclusion

This study integrates two lines of research. The first one uncovers the role of community social capital in corporate settings and the second one explains the dynamics of board structure concerning committees. We find robust empirical evidence that firms headquartered in communities with higher levels of social capital are more likely to set up specialized advisory committees and appoint more advisory directors. The increased advising intensity of the board leads to improved investment efficiency.

We make several contributions to the literature. First, we add to the limited research that explores the dynamics of optimal internal board structure (Chen and Wu, 2016; Faleye, Hoitash and Hoitash, 2013) by investigating the impact of community social capital on advisory committees and directors. Building on the perspective that community social capital is a societal monitoring mechanism that alleviates the agency issue (Hoi, Wu and Zhang, 2019), we show that the social capital surrounding a firm's headquarters is a crucial factor influencing board internal structure regarding advising intensity. Our results refute the one-size-fits-all criterion that regulatory actions apply to board composition and conform with the notion that optimal board structure depends on the firm's operating environment (Boone *et al.*, 2007; Coles, Daniel and Naveen, 2008).

Second, we elaborate on the emerging literature on the dual role of board functions and board effectiveness. We confirm that community social

Table 9. Difference-in-differences analysis of firm headquarter relocation

Panel A: Regression analysis of the difference-in-differences sample			
Dep. var.	(1) Advisory_Committee	(2) N_Advisory_Committee	(3) Advisory_Director_Ratio
Increase_Relocation∗Post_Relocation	0.462***	0.095***	3.421***
	(0.127)	(0.031)	(0.879)
Increase_Relocation	0.281**	0.070**	2.083***
	(0.128)	(0.029)	(0.777)
Firm_Size	0.166***	0.039***	1.015***
	(0.040)	(0.009)	(0.267)
Firm_Age	0.592***	0.113***	2.857***
	(0.089)	(0.019)	(0.487)
Leverage	0.319**	0.062	1.243
	(0.147)	(0.039)	(0.944)
N_Segments	0.300***	0.070***	0.866*
	(0.082)	(0.018)	(0.485)
Market-to-Book	−0.001	0.001	−0.010
	(0.007)	(0.001)	(0.042)
R&D	1.247**	0.042	0.439
	(0.505)	(0.114)	(3.512)
Return_Volatility	0.156	0.119	4.203
	(0.798)	(0.179)	(5.092)
CEO_Tenure	−0.004	−0.002	−0.481
	(0.054)	(0.012)	(0.358)
CEO_Ownership	−0.024**	−0.003	−0.080
	(0.010)	(0.002)	(0.052)
CEO_Duality	0.122	0.017	1.452**
	(0.087)	(0.020)	(0.579)
Institutional_Ownership	−0.110	−0.013	−1.096
	(0.143)	(0.032)	(0.910)
Blockholder_Ownership	−0.635*	−0.068	−2.062
	(0.343)	(0.074)	(2.101)
Board_Independence	−0.454	−0.066	−2.078
	(0.389)	(0.085)	(2.227)
Local_Director_Pool	−0.272***	−0.038***	−1.406***
	(0.050)	(0.012)	(0.336)
Per_Capita_Income	0.255	−0.008	5.956***
	(0.281)	(0.067)	(1.913)
Population_Growth	0.082*	0.016	0.228
	(0.043)	(0.011)	(0.310)
Population_Density	0.226***	0.038***	0.591
	(0.053)	(0.013)	(0.395)
Religiosity	−0.008**	−0.001	−0.026
	(0.004)	(0.001)	(0.023)
Education	−0.022***	−0.003*	−0.098**
	(0.008)	(0.002)	(0.050)
County_Median_Age	−0.138	0.059	−4.525
	(0.732)	(0.169)	(5.205)
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Constant	−4.723	−0.465	−52.427**
	(3.114)	(0.727)	(22.218)
Observations	1367	1496	1496
Pseudo/Adj R-squared	0.172	0.259	0.228

Table 9. (Continued)

Panel B: Diagnostics of the sample firms			
	Increase relocation	Decrease relocation	p-value
Advisory_Committee	0.391	0.358	0.740
N_Advisory_Committee	0.435	0.415	0.870
Advisory_Director_Ratio	7.297	6.842	0.837
Firm_Size	7.024	7.375	0.277
Firm_Age	0.639	0.913	0.041
Leverage	3.020	3.247	0.954
N_Segments	0.483	0.496	0.819
Market-to-Book	3.793	4.533	0.414
R&D	0.071	0.040	0.125
Return_Volatility	0.107	0.105	0.887
CEO_Tenure	1.547	1.493	0.772
CEO_Ownership	0.982	2.188	0.165
CEO_Duality	0.348	0.434	0.387
Institutional_Ownership	0.814	0.790	0.539
Blockholder_Ownership	0.264	0.248	0.561
Board_Independence	0.809	0.807	0.919

This table presents the results from the difference-in-difference analysis on 145 firms with headquarter relocations, of which 65 firms moved to counties with higher social capital and 80 firms relocated to counties with lower social capital. Panel A presents the regression analysis using the sample with headquarter relocations. The dependent variables in Columns (1) through (3) are Advisory_Committee, N_Advisory_Committee, and Advisory_Director_Ratio, respectively. Advisory_Committee is a dummy variable that equals one if the firm sets up at least one specialized advisory committee, and zero otherwise. N_Advisory_Committee is the natural logarithm of the number of advisory committees within the board in a given year plus one. Advisory_Director_Ratio is the ratio of the number of advisory directors scaled by the total number of independent directors. Increase_Relocation is a dummy variable that equals one for firms moving to counties with higher social capital, and zero for firms that move to counties with lower social capital. Post_Relocation is a dummy variable that equals one for years after headquarters relocation. Panel B tests firm characteristics prior to the headquarter relocations for firms that experienced social-capital-increasing relocation and firms that experienced social-capital-decreasing relocation. Column (1) uses the probit model, and Columns (2) and (3) use OLS models. All columns include the same set of control variables as in Table 2. Detailed variable definitions are given in Table A1 in the Appendix. All continuous variables are winsorized at the 1st and the 99th percentiles to eliminate the influence of outliers. The industry is defined by the two-digit SIC codes. The standard errors are presented in parentheses and are clustered at the county level to control for potential correlation in the error terms. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

capital improves board monitoring effectiveness, as it reduces accounting manipulation and rent extraction. More importantly, we show that board advising intensity can mediate the relationship between community social capital and firm investment inefficiency, suggesting that increased board advising intensity, induced by community social capital, can improve board advisory effectiveness.

Third, we reveal the importance of investigating the heterogeneity of independent directors sitting on different board committees (Faleye, Hoitash and Hoitash, 2011; Zalata *et al.*, 2019). By showing the important role of independent directors on advisory committees, we shed light on research proxying for board monitoring and advising from the internal structure of board committees, rather than adopting the 'inside-outside' approach that treats independent directors on the board as a homogenous element.

Fourth, our investigation advances the theoretical view of Adams and Ferreira (2007) by showing that community social capital is an important factor in optimizing a friendly board. Specifically, we respond to the call from Adams and Ferreira (2007) to investigate circumstances in which external monitoring mechanisms substitute board monitoring for an advisory board to be optimal. We provide direct evidence showing that community social capital is an external monitoring mechanism that reduces board monitoring needs. We also confirm that an advising-intensive board for firms in high-social-capital areas is optimal as it can improve board advising effectiveness without impairing monitoring effectiveness.

Our findings have economic and policy implications regarding the optimal board structure. Shareholders face a trade-off when appointing directors to monitoring and advising duties, as the increased

Table 10. Omitted variables

Panel A: Omitted state-level factors			
Dep. var.	(1) Advisory_Committee	(2) N_Advisory_Committee	(3) Advisory_Director_Ratio
SC_Index	0.098***	0.033***	1.449***
	(0.026)	(0.007)	(0.205)
State_GDP_per_Capita	−0.415***	−0.107***	−0.433
	(0.148)	(0.041)	(1.191)
Controls	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Constant	-0.194	0.320	−13.420
	(1.751)	(0.482)	(14.133)
Observations	12,174	12,174	12,174
Pseudo/Adj R-squared	0.138	0.200	0.166
Panel B: Omitted metropolitan factors			
Dep. var.	(1) Advisory_Committee	(2) N_Advisory_Committee	(3) Advisory_Director_Ratio
SC_Index	0.048**	0.012***	0.610***
	(0.019)	(0.005)	(0.150)
Metro	0.435***	0.081***	2.245***
	(0.073)	(0.017)	(0.494)
Controls	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Constant	−4.855***	−0.849***	−21.349***
	(1.028)	(0.276)	(8.029)
Observations	12,174	12,174	12,174
Pseudo/Adj R-squared	0.140	0.201	0.167
Panel C: Omitted county-level factors			
Dep. var.	(1) Advisory_Committee	(2) N_Advisory_Committee	(3) Advisory_Director_Ratio
SC_Index	0.087***	0.031***	1.415***
	(0.026)	(0.007)	(0.200)
Median_Advisory_Committee	0.870***		
	(0.030)		
Median_N_Advisory_Committee		0.405***	
		(0.011)	
Median_Advisory_Director_Ratio			0.542***
			(0.014)
Controls	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Constant	−3.930***	−0.753***	−20.722***
	(0.186)	(0.043)	(1.290)
Observations	12,174	12,174	12,174
Pseudo/Adj R-squared	0.200	0.278	0.258

Table 10. (Continued)

Panel D: Omitted firm-level factors			
Dep. var.	(1) ΔAdvisory_Committee	(2) ΔN_Advisory_Committee	(3) Δadvisory_Director_Ratio
ΔSC_Index	0.058**	0.100***	2.049***
	(0.023)	(0.028)	(0.529)
Controls	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Constant	0.058	0.004	−1.594
	(0.054)	(0.063)	(1.116)
Observations	2,449	2,449	2,449
Pseudo/Adj R-squared	0.059	0.059	0.062
Panel E: County-median firm-level factors			
Dep. var.	(1) Advisory_Committee	(2) N_Advisory_Committee	(3) Advisory_Director_Ratio
SC_Index	0.068***	0.028***	1.284***
	(0.026)	(0.008)	(0.220)
Controls	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Constant	−2.928***	−0.372	−8.722
	(1.076)	(0.309)	(8.881)
Observations	12,174	12,174	12,174
Pseudo/Adj R-squared	0.042	0.097	0.092

This table presents the regression results controlling for the omitted state-, metropolitan-, county-, and firm-level factors. Panel A adds State_GDP_per_Capita to proxy for omitted state-level variables. Panel B adds a dummy variable, Metro, that equals one if the firm is located within a 250-km radius of a metropolitan area with a population of more than one million in the 2010 census to control for the effect of metropolitan settings. Panel C uses the median value of dependent variables to capture the influence of unknown county-level factors. Median_Advisory_Committee (Median_N_Advisory_Committee, Median_Advisory_Director_Ratio) is the median value of Advisory_Committee (N_Advisory_Committee, Advisory_Director_Ratio) for other S&P 1500 firms residing in the same county in a given year. Panel D presents the results of a long-window change-on-change analysis to remove time-invariant unobserved firm-level variables. The dependent variable is measured as the change from year t to t+5, while all independent variables are measured as the change from year t-6 to t-1. Panel E replaces all firm-level variables with the corresponding median variables for firms located in the same county in a given year. Industry dummies are dropped in Panel E, as it is not meaningful to use median industry dummies. Column (1) uses the probit model, and Columns (2) and (3) use OLS models. Each column includes the same set of control variables as in Table 2, the year and 2-digit SIC dummies. Detailed variable definitions are given in Table A1 in the Appendix. All continuous variables are winsorized at the 1st and the 99th percentiles to eliminate the influence of outliers. The standard errors are presented in parentheses and are clustered at the county level to control for potential correlation in the error terms. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

focus on one responsibility is often at the cost of the other (Masulis and Mobbs, 2014). Our findings suggest that firms can alleviate the competing tensions between board monitoring and advising by considering the social capital surrounding their headquarters. To corporate shareholders, we offer insights to help them maximize their values by allocating one of the scarcest corporate resources, directors' human capital, more effectively. The recent governance reform in the United States (i.e. SOX), which emphasizes the board's monitoring duties, can weaken its advising function and decrease shareholder value (Adams and Ferreira, 2007). To regulators, we provide valuable advice on how best to efficiently push governance reform that improves overall board effectiveness when board monitoring and advising duties are considered. In addition, both the academic and the popular press are concerned about the declining in social capital in the United States (Paxton, 1999; Putnam, 1995). To politicians, we highlight the important role of community social capital in the corporate world, and encourage them to consider developing social capital to enhance corporate wealth creation and economic development.

We are conscious of the limitations of our study, which suggest potential avenues for future research. First, it is possible that a board may reduce the number of monitoring committees and directors if the community's social capital is high. Because the BoardEx data date back to 2000, and the SOX act, which limits the board's discretion in setting board committees, was enacted in 2002, we do not have sufficient data to examine the impact of community social capital on the presence of monitoring committees before SOX. We do, however, infer the impact of community social capital on board monitoring intensity by examining the allocation of monitoring directors and their board meeting attendance. Further research can employ hand-collected board composition data before 2000 to directly examine the impact of community social capital on the presence of monitoring committees.

Second, social capital is a broad concept as it is the aggregate effects of multiple entities that are difficult to disentangle (Coleman, 1988; Sobel, 2002). Although we have shown that the impact of social capital on board advising intensity is not driven by any core social capital entity (e.g. cooperative norms, dense network, and director network size), certain non-core social capital entities could potentially have an individual impact on board advising intensity. Future research would benefit from developing reliable measures of each social capital entity to investigate which elements of social capital may affect board advising differently.

Despite these limitations, our paper demonstrates a positive impact of community social capital on board advising intensity. Our findings not only add a new element to the list of determinants of internal board structures but also contribute to an understanding of the board's trade-off between its monitoring and advising functions. Furthermore, we point to an important insight: that carefully designed board committees and director allocations are essential for board functioning.

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Conflict of interest

There are no conflicts of interest to declare.

Data availability statement

The data that support the findings of this study are publicly available from the sources noted in the text.

Appendix

Table A1. Variable definition

Variable	Definition	Source
SC_Index	First principal component from the principal component analysis based on votes cast for presidential election (Pvote), census mail responses (Pespn), the aggregate number of 10 types of social organizations (Assn) and the number of not-for-profit organizations (Nccs) of a county.	Northeast Regional Center for Rural Development (NRCRD)

Table A1. (Continued)

Variable	Definition	Source
Advisory_Committee	Dummy variable coded to one if the firm sets up at least one advisory committee, and zero otherwise. Finance, investment, strategy, acquisitions, science and technology and executive committees are classified as advising committees. Overlapping committees that have both monitoring and advising functions are not considered advisory committees and are classified as monitoring committees.	BoardEx
N_Advisory_Committee	Natural logarithm of the number of advisory committees within the board in a given year plus one.	BoardEx
Advisory_Director_Ratio	Number of advisory directors to the total number of independent directors. An advisory director is an independent director sitting on finance, investment, strategy, acquisitions, science and technology, or executive committees, but not sitting on audit, compensation, nominating, or governance committees.	BoardEx
Firm_Size	Natural logarithm of the book value of total assets.	Compustat
Firm_Age	Natural logarithm of the number of years that the firm has been recorded in COMPUSTAT plus one.	Compustat
Leverage	Long-term debt plus current liabilities, scaled by the book value of total assets.	Compustat
N_Segments	Number of business segments for the firm in a given year.	Compustat
Market-to-Book	Market value of equity to book value of equity.	Compustat
R&D	Maximum of research and development expenses and zero, scaled by the book value of total assets.	Compustat
Return_Volatility	Standard deviation of monthly stock return over the previous 12-month period.	CRSP
CEO_Tenure	Natural logarithm of CEO tenure in years plus one.	BoardEx
CEO_Ownership	Shares owned by the CEO to total shares outstanding.	ExecuComp
CEO_Duality	Dummy variable that equals one if the CEO is also the chairperson, and zero otherwise.	BoardEx
Institutional_Ownership	Fraction of shares held by institutional investors.	Refinitiv Institutional (13f) Holdings
Blockholder_Ownership	Fraction of shares held by institutional investors who own more than 5% of the firm's shares.	Refinitiv Institutional (13f) Holdings
Board_Independence	Fraction of board directors classified as independent.	BoardEx
Local_Director_Pool	Natural logarithm of one plus the number of non-financial firms headquartered within 100 km of the focal firm's headquarters.	Compustat
Per_Capita_Income	Natural logarithm of the income per capita of the county.	Bureau of Economic Analysis
Population_Growth (%)	Percentage of county population growth rate.	United States Census Bureau
Population_Density	Population per square mile of the county.	United States Census Bureau
Religiosity (%)	Percentage of residents in the county that adhere to organized religions.	Association of Religion Data Archives
Education (%)	Percentage of people who are 25 years old or above in the county with a Bachelor's degree or higher.	United States Census Bureau
County_Median_Age	Natural logarithm of the population median age in the county.	United States Census Bureau
Inefficiency	Industry-adjusted investment inefficiency estimated from the Richardson (2006) model.	Compustat
Monitoring_Director_Ratio	Number of monitoring directors to the total number of independent directors. A monitoring director is an independent director sitting on at least two monitoring committees (audit, compensation and nominating/governance committees).	BoardEx

Table A1. (Continued)

Variable	Definition	Source
Monitoring_Intensive_Board	Dummy variable coded to one if the majority of independent directors are monitoring directors. A monitoring director is an independent director sitting on at least two monitoring committees (audit, compensation, and nominating/governance committees).	BoardEx
Monitor_Attendance_Problem	Dummy variable that equals one if at least one of the monitoring directors of the firm attends less than 75% of the board meetings during a year, and zero otherwise. A monitoring director is an independent director sitting on at least two monitoring committees (audit, compensation and nominating/governance committees).	ISS
Monitor_Attendance_Problem_Ratio	Number of monitoring directors of the firm who attend less than 75% of the board meetings during a year, scaled by the total number of monitoring directors. A monitoring director is an independent director sitting on at least two monitoring committees (audit, compensation and nominating/governance committees).	ISS
Advisor_Attendance_Problem	Dummy variable that equals one if at least one of the advisory directors of the firm attends less than 75% of the board meetings during a year, and zero otherwise. An advisory director in this variable is defined as an independent director who is not a monitoring director. A monitoring director is an independent director sitting on at least two monitoring committees (audit, compensation and nominating/governance committees).	ISS
Advisor_Attendance_Problem_Ratio	Number of advisory directors of the firm who attend less than 75% of the board meetings during a year, scaled by the total number of advisory directors. An advisory director in this variable is defined as an independent director who is not a monitoring director. A monitoring director is an independent director sitting on at least two monitoring committees (audit, compensation and nominating/governance committees).	ISS
Ave_Director_Age	Natural logarithm of the average age of the board of directors.	ISS
Ave_Director_Tenure	Natural logarithm of the tenure of the board of directors plus one.	ISS
US_Director_Ratio	The ratio of US directors to the total number of board directors.	ISS
Female_Director_Ratio	The ratio of female directors to the total number of board directors.	BoardEx
Board_Size	Natural logarithm of the number of board directors.	BoardEx
Ave_N_Outside_Directorships	Average number of directorships the board of directors hold outside the focal firm.	ISS
ROA	Earnings before interests, taxes, depreciation and amortization, scaled by total assets.	Compustat
High_Coverage	Dummy variable that equals one if the number of analysts covering the firm is above the median in each industry each year, and zero otherwise.	I/B/E/S
High_Competition	Dummy variable that equals one if the industry Herfindahl-Hirschman Index is below the sample median, and zero otherwise.	Compustat
Low_Education	Dummy variable that equals one if the county's Education is below the sample median, and zero otherwise.	United States Census Bureau
High_Religiosity	Dummy variable that equals one if the county's Religiosity is above the sample median, and zero otherwise.	Association of Religion Data Archives
Border_Distance	Natural logarithm of the shortest distance between the firm's headquarter county and the US–Canada border.	EDGAR

Table A1. (Continued)

Variable	Definition	Source
High_Social_Capital	Dummy variable that equals one for firms residing in counties in the top quartile of social capital, and zero for firms residing in counties in the bottom quartile of social capital.	Northeast Regional Center for Rural Development (NRCRD)
Increase_Relocation	Dummy variable that equals one if the firm relocates to a county with higher social capital, and zero if the firm relocates to a county with lower or equal social capital.	EDGAR
Post_Relocation	Dummy variable that equals one in the year of headquarter relocation and afterwards, and zero for the years preceding the headquarter relocation.	EDGAR
State_GDP_per_Capita	Natural logarithm of per capita GDP of the state.	Bureau of Economic Analysis
Metro	Dummy variable that equals one if the firm is located within a 250-km radius of a metropolitan area with a population of more than one million in the 2010 census.	United States Census Bureau

References

Adams, R. B. (2010). Asking directors about their dual roles. Finance and Corporate Governance Conference.

Adams, R. B. and D. Ferreira (2007). 'A theory of friendly boards', *The Journal of Finance*, **62**, pp. 217–250.

Adams, R. B., B. E. Hermalin and M. S. Weisbach (2010). 'The role of boards of directors in corporate governance: a conceptual framework and survey', *Journal of Economic Literature*, **48**, pp. 58–107.

Adams, R. B., V. Ragunathan and R. Tumarkin (2015). 'Death by committee? An analysis of delegation in corporate boards', Working paper.

Adler, P. S. and S.-W. Kwon (2002). 'Social capital: prospects for a new concept', *Academy of Management Review*, **27**, pp. 17–40.

Armstrong, C. S., W. R. Guay and J. P. Weber (2010). 'The role of information and financial reporting in corporate governance and debt contracting', *Journal of Accounting and Economics*, **50**, pp. 179–234.

Baldenius, T., N. Melumad and X. Meng (2014). 'Board composition and CEO power', *Journal of Financial Economics*, **112**, pp. 53–68.

Baron, R. M. and D. A. Kenny (1986). 'The moderator–mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations', *Journal of Personality and Social Psychology*, **51**, p. 1173.

Bertrand, M. and A. Schoar (2003). 'Managing with style: the effect of managers on firm policies', *The Quarterly Journal of Economics*, **118**, pp. 1169–1208.

Bhagat, S. and B. Black (1999). 'The uncertain relationship between board composition and firm performance', *The Business Lawyer*, **54**, pp. 921–963.

Birkett, B. S. (1986). 'The recent history of corporate audit committees', *The Accounting Historians Journal*, **13**, pp. 109–124.

Boone, A. L., L. Casares Field, J. M. Karpoff and C. G. Raheja (2007). 'The determinants of corporate board size and composition: an empirical analysis', *Journal of Financial Economics*, **85**, pp. 66–101.

Brickley, J. A. and J. L. Zimmerman (2010). 'Corporate governance myths: comments on Armstrong, Guay, and Weber', *Journal of Accounting and Economics*, **50**, pp. 235–245.

Buonanno, P., D. Montolio and P. Vanin (2009). 'Does social capital reduce crime?' *The Journal of Law and Economics*, **52**, pp. 145–170.

Chen, K. D. and A. Wu (2016). 'The structure of board committees', *Academy of Management Proceedings*, **2016**, p. 13306.

Chen, S. S., Y. S. Chen, J. K. Kang and S. C. Peng (2020). 'Board structure, director expertise, and advisory role of outside directors', *Journal of Financial Economics*, **138**, pp. 483–503.

Coleman, J. S. (1988). 'Social capital in the creation of human capital', *American Journal of Sociology*, **94**, pp. S95–S120.

Coleman, J. S. (1994). *Foundations of Social Theory*. (First Harvard University Press paperback, Ser. Acls humanities e-book). Belknap Press of Harvard University Press.

Coles, J. L., N. D. Daniel and L. Naveen (2008). 'Boards: Does one size fit all?' *Journal of Financial Economics*, **87**, pp. 329–356.

Cremers, K. M., V. B. Nair and U. Peyer (2008). 'Takeover defenses and competition: the role of stakeholders', *Journal of Empirical Legal Studies*, **5**, pp. 791–818.

Dalton, D. R., C. M. Daily, J. L. Johnson and A. E. Ellstrand (1999). 'Number of directors and financial performance: a meta-analysis', *Academy of Management Journal*, **42**, pp. 674–686.

Dalton, D. R., M. A. Hitt, S. T. Certo and C. M. Dalton (2007). 'The fundamental agency problem and its mitigation', *Academy of Management Annals*, **1**, pp. 1–64.

Diaz, J. D. (2000). 'Religion and gambling in sin-city: a statistical analysis of the relationship between religion and gambling patterns in Las Vegas residents', *The Social Science Journal*, **37**, pp. 453–458.

Duchin, R., J. G. Matsusaka and O. Ozbas (2010). 'When are outside directors effective?', *Journal of Financial Economics*, **96**, pp. 195–214.

Elster, J. (1989). 'Social norms and economic theory', *Journal of Economic Perspectives*, **3**, pp. 99–117.

Faleye, O., R. Hoitash and U. Hoitash (2011). 'The costs of intense board monitoring', *Journal of Financial Economics*, **101**, pp. 160–181.

Faleye, O., R. Hoitash and U. Hoitash (2013). 'Advisory directors', Working paper.

Fama, E. F. and M. C. Jensen (1983). 'Separation of ownership and control', *The Journal of Law and Economics*, **26**, pp. 301–325.

Ferreira, D., M. A. Ferreira and C. C. Raposo (2011). 'Board structure and price informativeness', *Journal of Financial Economics*, **99**, pp. 523–545.

Fischer, H. M. and T. G. Pollock (2004). 'Effects of social capital and power on surviving transformational change: the case of initial public offerings', *Academy of Management Journal*, **47**, pp. 463–481.

Fukuyama, F. (2001). 'Social capital, civil society and development', *Third World Quarterly*, **22**, pp. 7–20.

Gao, Z., L. Li and L. Y. Lu (2021). 'Social capital and managers' use of corporate resources', *Journal of Business Ethics*, **168**, pp. 593–613.

Glaeser, E. L., S. S. Rosenthal and W. C. Strange (2010). 'Urban economics and entrepreneurship', *Journal of Urban Economics*, **67**, pp. 1–14.

Griffin, D., K. Li and T. Xu (2021). 'Board gender diversity and corporate innovation: international evidence', *Journal of Financial and Quantitative Analysis*, **56**, pp. 123–154.

Guiso, L., P. Sapienza and L. Zingales (2004). 'The role of social capital in financial development', *American Economic Review*, **94**, pp. 526–556.

Guo, L., P. Lach and S. Mobbs (2015). 'Tradeoffs between internal and external governance: evidence from exogenous regulatory shocks', *Financial Management*, **44**, pp. 81–114.

Gupta, A., K. Raman and C. Shang (2018). 'Social capital and the cost of equity', *Journal of Banking & Finance*, **87**, pp. 102–117.

Hasan, I., C. K. Hoi, Q. Wu and H. Zhang (2017a). 'Does social capital matter in corporate decisions? Evidence from corporate tax avoidance', *Journal of Accounting Research*, **55**, pp. 629–668.

Hasan, I., C. K. Hoi, Q. Wu and H. Zhang (2017b). 'Social capital and debt contracting: evidence from bank loans and public bonds', *Journal of Financial and Quantitative Analysis*, **52**, pp. 1017–1047.

Healy, P. M. and K. G. Palepu (2001). 'Information asymmetry, corporate disclosure, and the capital markets: a review of the empirical disclosure literature', *Journal of Accounting and Economics*, **31**, pp. 405–440.

Hermalin, B. E. and M. S. Weisbach (1988). 'The determinants of board composition', *The Rand Journal of Economics*, **19**, pp. 589–606.

Higgins, E. T. (1987). 'Self-discrepancy: a theory relating self and affect', *Psychological Review*, **94**, p. 319.

Hilary, G. and K. W. Hui (2009). 'Does religion matter in corporate decision making in America?', *Journal of Financial Economics*, **93**, pp. 455–473.

Hillman, A. J. and T. Dalziel (2003). 'Boards of directors and firm performance: integrating agency and resource dependence perspectives', *Academy of Management Review*, **28**, pp. 383–396.

Hillman, A. J., M. C. Withers and B. J. Collins (2009). 'Resource dependence theory: a review', *Journal of Management*, **35**, pp. 1404–1427.

Hoi, C. K., Q. Wu and H. Zhang (2019). 'Does social capital mitigate agency problems? Evidence from Chief Executive Officer (CEO) compensation', *Journal of Financial Economics*, **133**, pp. 498–519.

Hong, H., J. D. Kubik and J. C. Stein (2004). 'Social interaction and stock-market participation', *The Journal of Finance*, **59**, pp. 137–163.

Hong, H., J. D. Kubik and J. C. Stein (2005). 'Thy Neighbor's Portfolio: word-of-mouth effects in the holdings and trades of money managers', *The Journal of Finance*, **60**, pp. 2801–2824.

Jensen, M. C. and W. H. Meckling (1976). 'Theory of the firm: managerial behavior, agency costs and ownership structure', *Journal of Financial Economics*, **3**, pp. 305–360.

Jha, A. (2019). 'Financial reports and social capital', *Journal of Business Ethics*, **155**, pp. 567–596.

Jha, A. and Y. Chen (2014). 'Audit fees and social capital', *The Accounting Review*, **90**, pp. 611–639.

Johnson, J. L., C. M. Daily and A. E. Ellstrand (1996). 'Boards of directors: a review and research agenda', *Journal of Management*, **22**, pp. 409–438.

Kesner, I. F. (1988). ''Directors' characteristics and committee membership: an investigation of type, occupation, tenure, and gender', *Academy of Management Journal*, **31**, pp. 66–84.

Kim, K., E. Mauldin and S. Patro (2014). 'Outside directors and board advising and monitoring performance', *Journal of Accounting and Economics*, **57**, pp. 110–131.

Klein, A. (1998). 'Firm performance and board committee structure', *The Journal of Law and Economics*, **41**, pp. 275–304.

Knack, S. and P. Keefer (1997). 'Does social capital have an economic payoff? A cross-country investigation', *The Quarterly Journal of Economics*, **112**, pp. 1251–1288.

Knack, S. (2002). *Social capital and the quality of government: evidence from the states.(abstract)*. American Journal of Political Science, **46**, pp. 772–785.

Knyazeva, A., D. Knyazeva and R. W. Masulis (2013). 'The supply of corporate directors and board independence', *The Review of Financial Studies*, **26**, pp. 1561–1605.

Kor, Y. Y. and C. Sundaramurthy (2009). 'Experience-based human capital and social capital of outside directors', *Journal of Management*, **35**, pp. 981–1006.

La Porta, R., F. Lopez-de-Silanes, A. Shleifer and R. W. Vishny (1997). 'Legal determinants of external finance', *The Journal of Finance*, **52**, pp. 1131–1150.

Laux, C. and V. Laux (2009). 'Board committees, CEO compensation, and earnings management', *The Accounting Review*, **84**, pp. 869–891.

Lehn, K. M., S. Patro and M. Zhao (2009). 'Determinants of the size and composition of US corporate boards: 1935–2000', *Financial Management*, **38**, pp. 747–780.

Li, Z., O. Pryshchepa and B. Wang (2021). 'Financial experts on the top management team: Do they reduce investment inefficiency?' *Journal of Business Finance & Accounting*, pp. 1–38, https://doi.org/10.1111/jbfa.12575

Lin, N. (1999). 'Social networks and status attainment', *Annual Review of Sociology*, **25**, pp. 467–487.

Linck, J. S., J. M. Netter and T. Yang (2008). 'The determinants of board structure', *Journal of Financial Economics*, **87**, pp. 308–328.
Loasby, B. J., J. Pfeffer and G. R. Salancik (1979). 'The external control of organizations. a resource dependence perspective', *The Economic Journal*, **89**, pp. 969–969.
Masulis, R. W. and S. Mobbs (2014). 'Independent director incentives: Where do talented directors spend their limited time and energy?' *Journal of Financial Economics*, **111**, pp. 406–429.
Mazar, N., O. Amir and D. Ariely (2008). 'The dishonesty of honest people: a theory of self-concept maintenance', *Journal of Marketing Research*, **45**, pp. 633–644.
Miller, A. S. (2000). 'Going to hell in Asia: the relationship between risk and religion in a cross cultural setting', *Review of Religious Research*, **42**, pp. 5–18.
Nickell, S., D. Nicolitsas and N. Dryden (1997). 'What makes firms perform well?', *European Economic Review*, **41**, pp. 783–796.
Paxton, P. (1999). 'Is social capital declining in the United States? A multiple indicator assessment', *American Journal of Sociology*, **105**, pp. 88–127.
Payne, G. T., C. B. Moore, S. E. Griffis and C. W. Autry (2011). 'Multilevel challenges and opportunities in social capital research', *Journal of Management*, **37**, pp. 491–520.
Pirinsky, C. and Q. Wang (2006). 'Does corporate headquarters location matter for stock returns?', *The Journal of Finance*, **61**, pp. 1991–2015.
Posner, E. A. (2000). 'Law and social norms: the case of tax compliance', *Virginia Law Review*, **86**, pp. 1781–1820.
Putnam, R. (1993). 'The prosperous community: social capital and public life', *The American Prospect*, p. 13.
Putnam, R. (2001). 'Social capital: measurement and consequences', *Canadian Journal of Policy Research*, **2**, pp. 41–51.
Putnam, R. D. (1995). 'Tuning in, tuning out: the strange disappearance of social capital in America', *P.S: Political Science & Politics*, **28**, pp. 664–683.
Putnam, R. D. (1995a). 'Bowling alone: America's declining social capital', *Journal of Democracy*, **6**, pp. 65–78. Springer.
Randøy, T. and J. I. Jenssen (2004). 'Board independence and product market competition in Swedish firms', *Corporate Governance: An International Review*, **12**, pp. 281–289.
Reeb, D. and A. Upadhyay (2010). 'Subordinate board structures', *Journal of Corporate Finance*, **16**, pp. 469–486.
Richardson, S. (2006). 'Over-investment of free cash flow', *Review of Accounting Studies*, **11**, pp. 159–189.
Roberts, M. R. and T. M. Whited (2013). 'Endogeneity in empirical corporate finance'. *Handbook of the Economics of Finance*, **2** (Pa), pp. 493–572.
Rupasingha, A., S. J. Goetz and D. Freshwater (2006). 'The production of social capital in US counties', *The Journal of Socioeconomics*, **35**, pp. 83–101.
Scrivens, K. and C. Smith (2013). 'Four Interpretations of Social Capital: An Agenda for Measurement', OECD Statistics Working Papers, No. 2013/06, OECD Publishing, Paris, https://doi.org/10.1787/5jzbcx010wmt-en.
Sobel, J. (2002). 'Can we trust social capital?', *Journal of Economic Literature*, **40**, pp. 139–154.
Sobel, M. E. (1982). 'Asymptotic confidence intervals for indirect effects in structural equation models', *Sociological Methodology*, **13**, pp. 290–312.
Spagnolo, G. (1999). 'Social relations and cooperation in organizations', *Journal of Economic Behavior & Organization*, **38**, pp. 1–25.
Uhlaner, C. J. (1989). '"Relational goods" and participation: incorporating sociability into a theory of rational action', *Public Choice*, **62**, pp. 253–285.
Uzzi, B. (1996). 'The sources and consequences of embeddedness for the economic performance of organizations: the network effect', *American Sociological Review*, **61**, pp. 674–698.
Woolcock, M. (1998). 'Social capital and economic development: toward a theoretical synthesis and policy framework', *Theory and Society*, **27**, pp. 151–208.
Yermack, D. (1996). 'Higher market valuation of companies with a small board of directors', *Journal of Financial Economics*, **40**, pp. 185–211.
Zalata, A. M., C. G. Ntim, T. Choudhry, A. Hassanein and H. Elzahar (2019). 'Female directors and managerial opportunism: monitoring versus advisory female directors', *The Leadership Quarterly*, **30**, p. 101309.
Zhou, X. (2001). 'Understanding the determinants of managerial ownership and the link between ownership and performance: comment', *Journal of Financial Economics*, **62**, pp. 559–571.

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