Does Informal Governance Matter to Institutional Investors? Evidence from Social Capital

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January 15, 2023

Abstract

We find a positive association between institutional ownership and social capital. The social norms in a region, while not imposed by businesses or laws, play a monitoring role that disciplines managers from self-serving behaviors. The resulting trustworthiness, through its mitigation of agency problems, drives the investment preferences of institutions. Our subsample analyses based on information asymmetry and financial performance support this inference. Further, the positive association is evident for transient investors and quasi-indexers but not for dedicated institutional investors. Overall, our study underscores the impact of informal governance on institutions' investment decisions.

JEL Classification: A13, G23, G39, M14
Keywords: Agency costs, institutional investors, monitoring, social capital

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1 Introduction

Over the last few decades, institutional investors have played an increasingly important role in the investment community: While institutions owned 28% of the equity market in the US in 1970, this number climbed to approximately 78% by 2017 (Bennett et al., 2003; Francis et al., 2021). Given the rapid rise of this investor class and the enormous amount of assets under their management, institutions' investment decisions have a tremendous impact on the well-being of millions of households and, as a result, have drawn broad interest from academics and practitioners alike.[1]

Numerous attempts have been made to understand the factors that drive institutional ownership (e.g., Falkenstein, 1996; Coval and Moskowitz, 1999; Gompers and Metrick, 2001; Bennett et al., 2003; Grinstein and Michaely, 2005; Krueger et al., 2020). One important stream in this literature is focused on institutions' preferences for corporate governance (Ferreira and Matos, 2008; Leuz et al., 2009; Chung and Zhang, 2011). Unlike individual investors, institutions are considered fiduciaries and are thus required by laws and regulations to exercise prudence when making investment decisions on behalf of their clients.[2] In fulfilling their fiduciary duty, institutional investors tend to gravitate towards firms with superior governance quality, as such firms are less likely to be plagued with agency problems that may be detrimental to investors' wealth. By investing in well-governed firms, institutional investors may effectively reduce monitoring costs, which is particularly relevant to those holding large portfolios where active external monitoring can be costly. Empirical research offers evidence that firms' institutional ownership is indeed positively associated with various measures of corporate governance, such as disclosure practices (Bushee and Noe, 2000), shareholder voting rights (Li et al., 2008), and investor protections (Leuz et al., 2009).[3]

[1] BlackRock, for example, had $8.68 trillion total assets under management as of the end of 2020 (https://www.blackrock.com/corporate/investor-relations/2020-annual-report/financial-highlights).

[2] For details of the prudent-man rule, see Del Guercio (1996).

[3] Field survey results also support this postulation. According to a McKinsey & Company Investor

It is worth noting that most of the governance structures examined in this literature are formal mechanisms that are implemented either by the firm or by the legal system. Their enforceability allows them to effectively mitigate agency problems. However, just as virtually all contracts are incomplete (Williamson, 1979; Grossman and Hart, 1986; Hart and Moore, 1990), it is extremely difficult, if not impossible, for a firm or a legal entity to foresee and specify every possible agency problem that may arise in the future when designing a governance system ex ante. In addition, as noted in recent research, intensive monitoring may exert excessive pressure on firms' short-term performance, which in turn may lead to myopic behavior by the management (Faleye et al., 2011; He and Tian, 2013; Chemmanur and Tian, 2018). Therefore, while effective, formal governance devices have their limitations and may not always provide shareholders with the intended benefits. As such, when making investment decisions, investors are inevitably subject to information asymmetry and often must rely on a leap of faith (Guiso et al., 2008).

In this study, we depart from the existing literature and investigate whether and how the sense of trust manifested in social environments, as opposed to corporate or legal governance structures, may influence institutions' decision-making by studying the empirical relation between institutional ownership and social capital. The notion of social capital has garnered much attention in recent years, as several influential studies noted its impact on economic growth (Knack and Keefer, 1997; Zak and Knack, 2001; Guiso et al., 2009). The core idea is that social norms and networks help facilitate collective action, cooperation, and trust in a society (Fukuyama, 1997; Woolcock, 2001; Guiso et al., 2004, 2008; Hasan et al., 2021). Since social interactions are not typically governed by laws, social capital can be viewed as a form of *informal* contract that stipulates a set of acceptable behaviors that local residents are expected to conform to, and violations of such may incur reputational costs and

Opinion Survey in 2000 of more than 200 institutional investors, over 80% of the respondents indicate that they are willing to pay a premium on well-governed firms (https://www.oecd.org/daf/ca/corporategovernanceprinciples/1922101.pdf).

social sanctions (Mead, 1934; Uhlaner, 1989). Along this line of thinking, prior research has provided evidence that firms surrounded by richer social capital exhibit less opportunistic and self-serving tendency. In particular, firms located in high social capital regions are associated with superior corporate social responsibility (Jha and Cox, 2015), less corporate tax avoidance (Hasan et al., 2017b), more restrained CEO compensation (Hoi et al., 2019), higher financial reporting quality (Jha, 2019), and more efficient usage of corporate resources (Gao et al., 2021). These studies indicate that managers of firms located in high social capital regions tend to behave in an ethical and altruistic fashion. In other words, the social norms in a region, while not imposed by businesses or laws, play a monitoring role that disciplines the manager from self-serving behavior.[4]

Importantly, the perceived trustworthiness of firms in high social capital areas may substantially mitigate stakeholders' concerns regarding agency problems, thus bringing an array of benefits to such firms. These include reduced audit fees (Jha and Chen, 2015), lower costs of capital (Hasan et al., 2017a; Gupta et al., 2018), less need for debt monitoring (Huang and Shang, 2019), mitigated IPO underpricing (Li et al., 2019), and a more motivated workforce (Gupta et al., 2020). Considering the prevalence of agency problems in economic activities, as well as institutions' preferences for high quality governance (Bushee and Noe, 2000; Li et al., 2008; Chung and Zhang, 2011), the perception of alleviated agency problems through trust may make firms in high social capital areas more attractive to institutions. Based on the proceeding discussions, we hypothesize that firms' institutional ownership is positively associated with the level of social capital in firms' headquarters locations.[5]

[4]To strengthen the foundation of evidence provided at the corporate level, it is worth noting that numerous studies have shown that social capital can effectively curb individuals' unethical behavior. Buonanno et al. (2009), for example, document an inverse relation between social capital and crime rates. More recently, Bai et al. (2021) show that financial advisors living in areas with higher social capital are less likely to engage in financial misconduct, while Clark et al. (2021) report a negative effect of social capital on consumer default rates.

[5]We acknowledge that it is also possible that we may not observe any significant relation between institutional ownership and social capital. The reason is that institutions are sophisticated investors who are able to engage in effective monitoring (Shleifer and Vishny, 1986; Smith, 1996; McCahery et al., 2016). Prior

Consistent with what we expect, empirical analyses provide strong evidence of a positive association between social capital and institutional ownership, suggesting that social capital is a crucial environmental attribute valued by institutions. This empirical association holds across different investor legal types (i.e., bank trusts, insurance companies, investment firms, and independent advisors) and is robust to employing various model specifications and alternative proxies. To alleviate endogeneity concerns, we adopt an instrumental variable approach. Specifically, we rely on two alternative instruments, namely historical racial segmentation and Confederate state membership, in the first stage regression to predict the level of social capital, which in turn is used in the second stage regression to estimate firms' institutional ownership. Our baseline result remains robust.

To better understand the role of trust in institutions' investment decisions, we conduct two sets of subsample analyses. The first focuses on the level of information asymmetry. To the extent that opacity renders managerial actions less discernible and thus may exacerbate agency problems, investors may have to rely on subtle and intangible clues, such as the trustworthiness of managers and businesses, to guide their investment decisions. Put differently, if trust indeed helps alleviate institutional investors' concerns with regard to agency problems, the effect should be more pronounced when information asymmetry is more severe. Our results support this proposition: The impact of social capital on institutional ownership is amplified for firms with lower stock liquidity, smaller sizes, more discretionary accruals, and lower quality auditors.

Our second set of subsample analyses is based on firm performance. Despite the possibility of sacrificing long-term value, institutional investors are often compelled to place

research documents that they can exert direct influence on their portfolio firms via channels such as executive compensation Hartzell and Starks (2003), acquisition decisions (Chen et al., 2007), and innovation (Aghion et al., 2013). Even if they choose not to play an active monitoring role, institutions may still discipline the management with the threat of exit (Admati and Pfleiderer, 2009; Edmans, 2009; Edmans and Manso, 2011). As such, the ability and power to impose governance may marginalize the importance of social trust to institutional investors. Therefore, the relation between social capital and institutional ownership is ultimately an empirical one.

emphases on current earnings to demonstrate prudence in their investing strategies (Porter, 1992; Bushee, 2001). Given that trust is especially pertinent during times of weakness and crisis (Lins et al., 2017; Albuquerque et al., 2020), investors may be more tolerant to financially vulnerable firms if they are deemed trustworthy, as their current underperformance is less likely attributable to agency issues. Our findings are in line with this view: The positive relation between social capital and institutional ownership is more pronounced for firms with lower interest coverage ratios, shorter distances-to-default, lower z-scores, and lower ROAs. Overall, the subsample results lend further support to the notion that institutional investors are attracted to firms that are well governed by local social norms, particularly in opaque environments and among firms with weak financial performance.

In addition, we examine whether the effect of social capital on institutional ownership depends on institutional investors' investment styles. Bushee (1998, 2001) classifies institutional investors into three distinct categories: Transient investors, quasi-indexers, and dedicated investors. Transient investors typically take small positions in numerous firms and have high portfolio turnover. They are generally short-term oriented and base trading decisions on information such as current earnings. As the information released by firms surrounded by higher social capital is deemed more credible (Pevzner et al., 2015; Jha, 2019), the sense of trust derived from social norms may be an important factor in the investment decisions made by transient investors. Quasi-indexers are passive investors that are characterized with highly diversified portfolios and low portfolio turnovers. Given the substantial costs associated with information acquisition and active monitoring for this type of investors, social capital may also influence quasi-indexers' decision-making. Dedicated investors, however, are known for taking concentrated positions in a relatively small number of firms over a long horizon. This investment strategy allows for actively monitoring the firms in their portfolio, making the perceived trustworthiness of firms less important to dedicated investors. Consistent with these propositions, we find that, while social capital is a significant determinant of

holdings by transient investors and quasi-indexers, its effect on the ownership of dedicated investors is not statistically significant.

Our study makes several contributions. First, we join the discussion on factors that contribute to institutional investment decisions (Falkenstein, 1996; Coval and Moskowitz, 1999; Gompers and Metrick, 2001; Bennett et al., 2003; Grinstein and Michaely, 2005; Krueger et al., 2020). In particular, we add to the stream of studies that underscores institutions' preferences for strong formal governance structures (Bushee and Noe, 2000; Ferreira and Matos, 2008; Li et al., 2008; Leuz et al., 2009; Chung and Zhang, 2011). Our results complement existing research and suggest that informal governance imposed by social environments may also be of value to institutional investors.

Second, we extend the rapidly growing literature that examines the economic importance of social capital (Knack and Keefer, 1997; Zak and Knack, 2001; Guiso et al., 2009). Given that contracts are inherently incomplete in financial transactions and agency problems are often pervasive (Williamson, 1979; Grossman and Hart, 1986; Hart and Moore, 1990), trust engendered from local social norms can help alleviate different forms of frictions in the economy (Jha and Chen, 2015; Hasan et al., 2017a,b; Gupta et al., 2018, 2020). Our results show that the variation in social capital across US counties has important implications on firms' investor base, which may be a potential mechanism behind the documented benefits of social capital. On a broader scale, this paper also relates to the extant literature on the empirical relations between geographic characteristics and financial markets (e.g., Malloy, 2005; Uysal et al., 2008; John et al., 2011; Francis et al., 2016; Huang et al., 2021).

Third, we advance the ongoing efforts in the field that explore the role of trust in shaping investor behavior and facilitating capital allocation efficiency. Earlier studies suggest that investors' (un)willingness to take risk, to a large extent, hinges on the amount of trust that prevails in the society (Guiso et al., 2008; Massa et al., 2022). In a low-trust environment, they feel vulnerable and are concerned about being deceived (Giannetti and Wang, 2016;

Gurun et al., 2018). This, in turn, may result in insufficient supply of capital, leading to firms with promising projects unable to obtain necessary funding at reasonable costs. As institutions have risen to become arguably the most important class of investors, our research offers policymakers an additional perspective when considering social programs that aim to foster trust within communities.[6]

The remainder of the paper proceeds as follows: Section 2 describes the sample selection process and introduces the key variables used in this study. Section 3 presents detailed analyses and the empirical results. Section 4 concludes.

2 Data and Sample

2.1 Variables

2.1.1 Social Capital

In line with previous studies such as Fukuyama (1997), Guiso et al. (2004), and Woolcock (2001), we view social capital as the level of trust engendered from societal norms and networks that facilitate collective actions, beliefs, and shared values. The empirical measure that we employ to capture social capital is the time-variant, county-level measure of Rupasingha et al. (2006), which can be publicly obtained from the Northeast Regional Center for Rural Development (NERCRD) at Pennsylvania State University.[7] The authors construct the measure by conducting a principal component analysis (PCA) on four county-level variables including (i) the number of social or civic association/establishments, (ii) county population, (iii) presidential election voter turnout, (iv) census participation, and (v) the number

[6] See, for instance, the Social Capital Project launched by the US Congress Joint Economic Committee in 2017 to study the significance of a variety of social relationships (https://www.jec.senate.gov/public/index.cfm/republicans/socialcapitalproject).

[7] The NERCRD is housed in the Department of Agricultural Economics, Sociology, and Education, College of Agricultural Sciences, Pennsylvania State University (https://aese.psu.edu/nercrd). The RGF index can be downloaded at the URL https://aese.psu.edu/nercrd/community/social-capital-resources.

of non-profit, non-governmental organizations.[8] The NERCRD provides data on the estimated stock of social capital for 1990, 1997, 2005, 2009, and 2014 in each US county. For the years without RGF index coverage, we use the latest available value to measure their social capital (e.g., the 1997 version of the RGF index is used for years 1997–2004). As a result, the social capital value of a county remains the same until a new NERCRD update becomes available.

[Insert Figure 1 about here.]

In Figure 1, we present the distribution of social capital among counties in the US based on the 2014 version of the data, with the darkness of shades indicating the quartile rank of the level of social capital. Consistent with prior research (e.g., Putnam, 2001; Rupasingha et al., 2006; Hasan et al., 2017a,b), the graph shows that social capital is more abundant in the Midwestern and Northeastern regions and is relatively scarce in the southern part of the country. The wide variations in the level of social capital across US counties thus allow us to empirically examine the relation between social capital and institutional ownership.

2.1.2 Institutional Ownership

Data on institutional ownership are from the Institutional Holdings File of Thomson Reuters (TFN). The file contains quarterly information regarding the Form 13F filings of common stock holdings and transactions by institutional investment managers with assets under management (AUM) of at least $100 million.[9]

[8]The US Census Bureau covers Items (i), (ii), and (iv); Item (iii) is sourced from Dave Leip's Atlas of US Presidential Elections (https://uselectionatlas.org/); Item (v) is based on information from the National Center for Charitable Statistics of the Urban Institute (https://nccs.urban.org/).

[9]Since the Securities Exchange Act of 1934, institutional investment managers with assets under management (AUM) of $100 million or more on the last trading day of any month in a calendar year (based on aggregate fair market value) are required to file holdings and transactions information using Form 13F with the US Securities and Exchange Commission (SEC) for the end of that year, as well as for the first three calendar quarters of the following year.

In each year t in our sample, the institutional ownership of firm i, which we denote as IO_{it}, is calculated as the portion of its equity being held by institutional investors at the end of the year.[10] Per earlier studies such as Grinstein and Michaely (2005), institutional investment managers without 13F filings (and hence not covered by the TFN database) are likely cases where the managers are simply not subject to SEC reporting requirements. Therefore, we set the institutional ownership of firms whose equity holdings are not associated with any TFN-covered investment managers to 0%. Further, in situations where firms have larger numbers of shares being held by institutions than their total shares outstanding, we set $\text{IO}_{it} = 100\%$ to make economic sense.[11]

2.1.3 Other Variables

To mitigate the concern that the relationship between social capital and institutional ownership, if any, may be driven by confounding factors, we control for a variety of firm and geographic characteristics in regression analyses. Our firm-level control variables include firm size, firm age, market-to-book ratio, profitability, tangibility, firm leverage, advertising expense, R&D expense, dividends, stock returns, returns volatility, stock turnover, and stock price. The selection of our control variables are based on studies that illustrate institutional investors' preferences for various firm and stock characteristics.

For instance, institutional investors have been shown to prefer firms with larger size, higher turnover, and higher share price, which are related to liquidity and transactions costs (e.g., Bennett et al., 2003; Falkenstein, 1996; Gompers and Metrick, 2001). Firm age, dividend payout, and stock volatility further proxy for prudence and visibility as discussed in Section 1 (Del Guercio, 1996; Grinstein and Michaely, 2005; Grullon et al., 2004). Institu-

[10] In our robustness checks, we also consider the mean of the quarterly reported 13F shareholdings during a reporting year and obtain qualitatively similar results. See Section 3.5.1.

[11] In unreported analyses, we find that our empirical results remain qualitatively unchanged if we exclude observations whose institutional ownership is either missing or greater than 100%.

tional investors are also known to hold shares of firms with stronger past market performance (Falkenstein, 1996). We therefore control for annual stock returns and market-to-book ratio (Fama and French, 1992; Jegadeesh and Titman, 1993), as well as profitability and growth opportunity (e.g., tangibility, R&D, and advertising). Lastly, there is documentation of institutional ownership being negatively associated with leverage (Michaely and Vincent, 2013). The construction of these control variables is based on data from the Compustat and CRSP (Center for Research in Security Prices) databases. The detailed definition of each variable can be found in Table AI.

In addition to the aforementioned firm characteristics, we also consider a set of covariates that capture geographic characteristics, including county-level per capita income, population (as well as its density and growth), and religiosity. These additional controls allow us to isolate the effect of social capital from those of other geographic and demographic factors that may influence institutional ownership.

2.2 Sample and Descriptive Statistics

Our sample covers firms in the CRSP-Compustat intersection (CCM) over the sample period of 1980–2019. To be included in the sample, a firm must have positive book value of assets and positive sales in a given year. Observations without sufficient data to construct the control variables are dropped. Further, firms with SIC codes from 4900 to 4999 (utility firms) and from 6000 to 6999 (financial firms) are excluded, as the observed fundamentals of firms in these industries can be due to regulatory reasons instead of the economic ones that we are interested in (e.g., Fama and French, 1992).

Our final sample consists of 127,166 firm-year observations, with a total of 12,982 unique firms. To alleviate the potential effects from outliers, we winsorize our variables at the 1st and 99th percentiles . In Table I, we report the descriptive statistics of variables used in the main analyses of this study.

[Insert Table I about here.]

We see from the table that firm-level total institutional ownership is 31.6% and 20.8% at the mean and median, respectively. The skewed pattern is consistent with that shown in prior studies of comparable samples (Francis et al., 2021, e.g.,). The mean and median of the RGF index, our primary explanatory variable that proxies for social capital, are -0.402 and -0.443, respectively. The summary statistics of the control variables are also largely consistent with those reported in prior studies.

3 Analyses

3.1 Institutional Ownership and Social Capital

Prior research has demonstrated that regional social capital plays a monitoring role that disciplines managers from self-serving behaviors and thus mitigates agency problems without the need of alternative, formal channels such as contracts or regulations (see, e.g., Gao et al., 2021; Hasan et al., 2017b; Hoi et al., 2019; Jha and Cox, 2015; Jha, 2019). Put differently, to the extent that managers who reside in regions of high social capital tend to conform to higher ethical standards and are thus less likely to pursue private benefits at the cost of investors, social capital serves as a form of external governance. Compared to other widely recognized governance mechanisms such as board independence, product market competition, and the takeover market (Weisbach, 1988; Giroud and Mueller, 2011; Gompers et al., 2003; Bebchuk et al., 2009; Cain et al., 2017), however, the disciplinary effect of social capital comes through an informal channel, i.e., societal norms.

We argue that this additional dimension of implicit governance may be valuable to institutional investors, as prior studies find that institutions exhibit a strong preference for firms with superior governance quality (Bushee and Noe, 2000; Li et al., 2008; Leuz et al., 2009).

Therefore, all else equal, we expect firms that are located in regions with higher levels of social capital to be associated with greater institutional ownership.

Our first set of models explores this hypothesis. The estimations of institutional ownership follow the functional form below:

$$\mathrm{IO}_t = \beta_{\mathrm{RGF}}\mathrm{RGF}_t + \mathbf{X}_t B_{\mathbf{X}} + \epsilon_t, \tag{1}$$

where IO is the vector of firm-level end-of-year institutional ownership, measured as the proportion of outstanding shares owned by institutional investors for each firm, and RGF is the vector of county-level social capital index values based on Rupasingha et al. (2006). $\mathbf{X}$ denotes the matrix of control variables discussed earlier in Section 2.1.3. ϵ is the vector of errors. Lastly, β_{RGF} and B represent the estimated coefficients for the explanatory variable of interest, social capital, and the control variables matrix, respectively. To ensure that our result is not driven by unobserved macroeconomic factors or time-invariant industry and geographic characteristics, we include year, industry (based on the two-digit SIC code), and county fixed effects in all regressions. In addition, we employ robust standard errors clustered by county to account for potential correlation between firms located in the same region.

We report results from a series of estimations based on Equation (1) in Panel A of Table II. With institutional ownership being the dependent variable, Model 1 includes the RGF index as the sole explanatory variable, whereas Models 2 through 4 gradually introduce firm-level controls, stock market controls, and county-level controls. To the right of each estimated regression coefficient, its p-value is reported in parentheses. Throughout the paper, ***, **, and * denote the statistical significance for the corresponding estimated coefficient at the 1%, 5%, and 10% levels, respectively.

[Insert Table II about here.]

As shown, the coefficient estimate on the primary explanatory variable, the RGF Index for county-level social capital, is consistently positive and statistically significant across all specifications. Notably, as additional control variables are added to the model, the magnitude of the coefficient estimate on RGF Index remains virtually unchanged. In addition, the effect of social capital on institutional ownership is economically meaningful. Using the full model (Model 4) as an example: The estimated coefficient for the RGF index of 0.018 implies that, for the average firm in our sample, a one-standard-deviation increase in the county-level social capital measure is associated with an approximately 5.5% increase in institutional ownership. The documented relation between social capital and institutional ownership thus provides support to the notion that the informal governance imposed through social norms is attractive to institutional investors.

In Panel B of the same table, we examine whether the above base findings are specific to certain legal types of institutional investors. We focus on four major types of institutions, namely (i) bank trusts, (ii) insurance companies, (iii) investment firms, and (iv) independent advisors. Among them, the predominant one is the independent advisors category; the average proportion of a firm's outstanding shares owned by this type is 12.20%. Due to space concerns, further information on the detailed breakdown of institutional ownership by investor type is unreported but available upon request. In Models 1, 2, 3, and 4 of the Panel, we reestimate Equation (1) using the shareholdings of bank trusts (abbreviated as BNK), insurance companies (INS), investment firms (INV), and independent advisors (IIA), respectively. The same set of control variables included in Model 4 of Panel A, as well as year, industry, and county fixed effects, is included in all estimations.[12]

The coefficient estimate on the county-level social capital index continues to be positively

[12]We thank Brian Bushee for sharing his institutional investor legal types data, which can be accessed at https://accounting-faculty.wharton.upenn.edu/bushee/. As of the latest drafting of this paper, the data is available for 1981–2018, hence contributing to the overall smaller sample size in Panel B when compared to Panel A in Table II.

significant at conventional levels across all models. This finding indicates that our base results of a positive association between institutional ownership and social capital hold across all major legal types of institutional investors, which further underscores institutions' preference for firms that are governed by social norms.[13]

3.2 Addressing Endogeneity

In this section, we use an instrumental variable (IV) approach to address the concern that certain omitted variable(s) may drive the observed relation between social capital and institutional ownership that we have thus far established. In this setting, our main social capital measure, the RGF index, is considered endogenous, and is instrumented by (i) historical racial segmentation or (ii) membership of the Confederate States of America during the American Civil War in the first stage regression. The fitted social capital value is then used in the second stage regression to estimate institutional ownership.

Our first instrument is the degree of racial segmentation in a given state in 1960, which is calculated as one minus the Herfindahl index of the black and non-black populations. This calculation results in a measure where higher values indicate greater levels of racial heterogeneity. The choice of this instrumental variable is motivated by earlier studies that document lower social activities participation in racially fragmented societies (Alesina and La Ferrara, 2000). Importantly, for our purpose of addressing endogeneity concerns, regional racial diversity calculated using information back in 1960 should more purely reflect historical segregation and thus is unlikely to influence firms' institutional ownership through channels other than social capital. Based on evidence provided in existing literature, we expect racial

[13]There is a catch-all category for all other legal types, such as corporate (private) pension funds (CPS; mean ownership 0.13%), public pension funds (PPS; 0.59%), university and foundation endowments (UFE; 0.04%), and miscellaneous (MSC; 0.47%). Due to its relatively minuscule representation in the sample as well as the misclassification issue noted in Chen et al. (2007), we do not report the regression result for this investor type. In untabulated analysis, the coefficient estimate on RGF is statistically insignificant in predicting the proportion of firms' equity owned by investors in this category.

segmentation to be negatively associated with social capital.

We employ the Confederacy membership during the American Civil War as an alternative instrument for social capital. The Confederate States of America (CSA, often referred to simply as the Confederacy) is an unrecognized breakaway government entity from the United States (the Union) that existed between 1861 and 1865, during the presidency of Abraham Lincoln. The causes that led to their secession are historically and politically complex, but most have identified conflicting views regarding slavery as the key trigger. As a result, Confederacy membership instruments for weak social capital in the sense that tighter connections among people would more likely threaten the structure of power that is needed to maintain a slavery system (see Putnam, 2001). The preceding discussions thus suggest a negative association between social capital and Confederacy membership in the 19th century. In addition, as with the case for historical racial segmentation, Confederate membership should also satisfy the exclusion condition of a valid instrument as state-level slavery policies adopted more than a hundred years ago should not directly impact the institutional ownership of firms today.

Equipped with these instruments, we formally express the first stage estimation as

$$\text{RGF}_t = \mathbf{Z}_t\Lambda + \mathbf{X}_t\Theta + u_t, \tag{2}$$

where social capital, RGF, is treated endogenously and estimated using one of the instruments described above (i.e., racial heterogeneity in 1960 or Conferate States membership during 1861–1865). $\mathbf{Z}$ and $\mathbf{X}$ represent the IV and all other covariates, respectively, and Λ and Θ are the corresponding estimated coefficients. u denotes the vector of first-stage errors. The predicted values of social capital, $\widehat{\text{RGF}}$, from the first stage are then used in the second

stage to estimate institutional ownership:

$$\mathrm{IO}_t = \beta_{\widehat{\mathrm{RGF}}} \widehat{\mathrm{RGF}}_t + \mathbf{X}_t B_{\mathbf{X}} + \epsilon_t, \tag{3}$$

where $\mathbf{X}$ and ϵ are the matrix of control variables and the vector of error terms, respectively, as in Equation (1). β and B are the estimated coefficients for the predicted values of social capital and the matrix of regression covariates, respectively.

We report the results obtained from the two sets of two-stage estimations in Table III. Panel A presents the IV estimator using racial segmentation as the instrument for social capital and Panel B presents that using the Confederate States membership. We include year and industry (based on the two-digit SIC code) fixed effects and report the coefficient estimates using robust errors clustered by county.

[Insert Table III about here.]

In both panels, the first-stage estimation of social capital is reported on the left and the second-stage estimation of institutional ownership using the fitted values of social capital from the first stage is reported on the right. In the last row of each panel, we report the robust F-statistics from the first stage estimations.[14]

From the first-stage models, as expected, we see that social capital is negatively associated with both racial segmentation and Confederate State membership. Importantly, in both second-stage institutional ownership models, we obtain positive coefficient estimates for the fitted social capital values. In sum, after addressing potential endogeneity concerns, we continue to find a positive association between social capital and institutional ownership, which lends additional support to our baseline results.

[14]Per earlier studies including Hall et al. (1996) and Stock et al. (2002), the F-stats of over 10 in both models ensure the reliability of inferences based on the two-stage estimators.

3.3 Subsample Analyses

Thus far, we have demonstrated a positive association between social capital and institutional ownership. We also see that our base results continue to hold after addressing endogeneity through IV estimations that utilize findings documented in prior literature (e.g., Alesina and La Ferrara, 2000; Putnam, 2001). In this section, we conduct two sets of subsample analyses to strengthen the validity of our inferences regarding the base results. The first is based on firms' information environments, while the second is based on their financial performance.

3.3.1 Information Asymmetry

With regards to the role played by firms' information environments in the relation between social capital and institutional ownership, we argue that if social capital indeed affects institutional investors' stock selection decisions through the "soft" governance it provides, then the effect that we document in the base results should be more pronounced for firms that have higher levels of information asymmetry. The rationale behind this conjecture is that agency problems and adverse selection problems are more likely to arise in high information asymmetry environments. Moral standards imposed by local social norms (i.e., the trustworthiness of managers residing in high social capital regions), however, may be able to alleviate agency related concerns, especially when the access to information by investors is limited. In other words, the trust placed on the manger should be more meaningful when investors face greater information barriers. This view is consistent with that of Lins et al. (2017), who find that the trust between a firm and its investors is particularly valuable during the financial crisis of 2007–2008.

To formally test this proposition, we categorize our sample firms into groups of high vs. low information asymmetry depending on how they compare to the sample median along four different measures. The first is stock illiquidity, as financial securities tend to be less efficiently priced when liquidity is low (Amihud, 2002; Easley et al., 1996; Welker, 1995).

Stock illiquidity, following Amihud (2002), is computed as the ratio of absolute value of daily stock return to daily dollar volume averaged over the fiscal year. The second measure for information asymmetry is firm size, as prior literature documents that smaller firms are less transparent and, as a result, are associated with more severe information asymmetry problems. The third proxy that we use is discretionary accruals. Dechow and Dichev (2002) and Dechow et al. (1995), for instance, show that firms with a larger degree of accrual-based earnings management bear more concerns regarding information asymmetry. The final information asymmetry measure is a dummy variable that is equal to one if the firm is audited by an "expert" auditor, and zero otherwise. The external auditor of a firm is considered an expert if the auditor audits at least 20% of sales in a given year in the client's industry (defined by the three-digit SIC code; see Robin et al., 2017).

Using these proxies, we create indicator variables to differentiate between firms of relatively high vs. low information asymmetry problems. The indicator variables are then used to interact with the social capital variable, such that our estimations become:

$$\mathrm{IO}_t = \sum_{\mathrm{n\ =\ Low,\ High}} \beta_{\mathrm{RGF},n}(\iota_n \times \mathrm{RGF}_t) + \mathbf{X}_t B_{\mathbf{X}} + \epsilon_t, \tag{4}$$

where ι is the indicator for high or low information asymmetry. The vectors IO, RGF, ϵ, the matrix $\mathbf{X}$, and the estimated coefficients β and B are as previously defined. The results of these models are reported in Table IV.

[Insert Table IV about here.]

Consistent with our prediction, our results show that the positive association between social capital and institutional ownership is indeed amplified in cases where firms are subject to more severe information asymmetry problems. This pattern holds for each of our empirical proxies for information asymmetry. Specifically, the coefficient estimate on the social capital index is statistically more significant and is larger in economic magnitude for firms with lower

stock market liquidity (Model 1), firms that are smaller in size (Model 2), firms that use more discretionary accruals (Model 3), and firms audited by lower quality auditors (Model 4). These results are consistent with our argument that the informal disciplinary function of social norms is particularly important to institutions when information asymmetry problems are more severe.

3.3.2 Firm Performance

We now turn to examining subsamples based on firm performance. The rationale behind this analysis is that trust, as we argue, is especially pertinent during times of weakness and crisis (Lins et al., 2017; Albuquerque et al., 2020). With trust, investors may be more tolerant of firms enduring inferior performance than otherwise, as they may more likely view underperformance as a temporary phenomenon that is not necessarily attributable to agency issues.

[Insert Table V about here.]

We consider four measures for firm performance: Interest coverage ratios, distance-to-default, z-score, and return on assets (ROA). Detailed definitions for these variables are provided in Table AI. The first three performance measures capture financial distress risk and the fourth investment returns. The model specification here is identical to that presented in Equation (4), now with ι indicating the high and low firm performance observations. We present the results in Table V. In Models 1, 2, 3, and 4 of the table, we see that the positive association between social capital and institutional ownership is more pronounced for firms with lower interest coverage ratios, shorter distances-to-default, lower z-scores, and lower ROAs, respectively. The evidence that the positive association between social capital and institutional investment is concentrated among firms with weak performance indicates that the informal governance imposed by social norms may help mitigate investors' concerns with

regard to underperformance caused by agency problems and thus increase their tolerance for failure.

Taken together, the two sets of subsample analyses allow us to better understand the role of trust in institutional investment decisions. Importantly, they lend further support to our hypothesis and strengthen our arguments that institutional investors are attracted to firms that are well governed by local social norms, particularly in opaque environments and among firms with weak financial performance.

3.4 Investor Heterogeneity

In this section, we further examine the empirical relation between social capital and institutional ownership based on institutions' investing styles. In particular, we rely on Bushee's (1998, 2001) classification and categorize institutions into (i) transient investors, (ii) quasi-indexers, and (iii) dedicated investors.

Transient investors, by definition, hold small positions in numerous firms and have high portfolio turnover. They are generally short-term oriented, lack focus on particular individual firms, and base trading decisions on a limited amount of information such as current earnings. As information released by firms in areas of higher social capital may be more accurate and reliable (Jha, 2019), the informal governance provided by social capital may be attractive to these investors.

Quasi-indexers are passive investors that are characterized also by highly diversified portfolios, albeit low portfolio turnovers. As such, it may be costly for them to actively gather information or diligently monitor managers. Including firms with better "soft" governance in their portfolio may effectively reduce the monitoring costs for these investors. Therefore, quasi-indexers may exhibit preferences for stocks of firms located in high social capital areas.

Dedicated investors are known for taking concentrated positions in a relatively small number of firms with long holding periods. The longer-term, larger, and more concentrated

holdings in their portfolio allow dedicated investors to actively monitor the managers and to be more focused on the long-term performance. Compared to the other aforementioned two types of institutional investors (i.e., transient and quasi-index), dedicated investors are likely more motivated to gather information and impose active monitoring on firms in their portfolios. Such close monitoring, as a result, may make alternative governance mechanisms such as social environments less important for these investors.

We investigate these conjectures by estimating the institutional ownership by each of the three categories of investors based on Bushee's (1998, 2001) investor classification.[15] To formally test the differences between the effects of social capital on each type of institutional shareholding, the three categories of ownership are simultaneously estimated. We report the results in Table VI. Models 1, 2, and 3 present estimations for transient investors, quasi-indexers, and dedicated investors, respectively. We find results that are consistent with our propositions. While social capital is a significant determinant of holdings by transient investors and quasi-indexers, its effect on the ownership of dedicated investors is not statistically significant.

[Insert Table VI about here.]

We further perform χ^2 tests to confirm the statistical differences among the estimated coefficients for social capital across the three models. The test statistics are reported at the bottom of Table VI. Given the distinctive styles of the three types of institutional investors with regard to their incentives and capability to monitor, the evidence presented in Table VI sheds additional light on the informal governance role of social norms. Indeed, the χ^2 statistics indicate that the estimated coefficient of social capital for dedicated ownership

[15] We thank Brian Bushee for generously sharing his Institutional Investor Classification Data (https://accounting-faculty.wharton.upenn.edu/bushee). Similar to the institutional legal types employed earlier in Panel B of Table II, data on institutional classification is available for 1981–2018 at the time of our drafting.

(Model 3) is not only insignificant, but also statistically different from those for transient ownership (Model 1) and quasi-index ownership (Model 2).

We also observe from the first χ^2 test that the effects of social capital on transient ownership and quasi-indexer ownership, albeit both positive, are statistically and economically different. Specifically, the estimated coefficient of RGF in Model 1 for transient investors is less than half in magnitude of that in Model 2 for quasi-indexers, indicating that quasi-indexer shareholding is driven more strongly by social capital than transient ownership is. This is consistent with the work of Aghion et al. (2013), who document a positive association between institutional ownership and innovation output that is associated with dedicated and transient institutional investors. They suggest that dedicated investors likely contribute through significant voice and transient ones through strong exit options; in contrast, quasi-indexers likely have neither. As a result, from an investor's standpoint, quasi-indexers would exhibit greater reliance on existing governance mechanisms provided through social capital than transient investors.[16]

3.5 Robustness Checks and Other Issues

3.5.1 Alternative Proxies for Key Variables

We perform additional checks for our base results by employing alternative measures for our two key variables, i.e., social capital and ownership. The results are shown in Table VII, where Models 1 through 3 use different measures of social capital and Models 4 and 5 use

[16]We examine this point further by focusing on the investment horizons of institutions (e.g., Gaspar et al., 2005; Yan and Zhang, 2009). Following prior literature, we categorize total institutional ownership into short-term (SIO) and long-term (LIO) categories using investor churn rates. When simultaneously estimating both SIO and LIO using social capital, we find that the estimated coefficients for the RGF index are both positive and of similar magnitude across the two equations. A formal test of equality also reveals that the two are not statistically different. Intuitively, leaving the degree of diversification out by focusing only on investment horizons, the non-difference between SIO and LIO may at least be loosely attributed to the offsetting effect in portfolio characteristics of quasi-indexers (long-term and diversified; most strongly driven by social capital) and dedicated investors (long-term and concentrated; not driven by social capital). These supporting results are untabulated but available upon request.

different measures of institutional ownership.

[Insert Table VII about here.]

In Models 1 and 2, we use the state-level social capital and trust measures of Putnam (2000), respectively, as the key explanatory independent variable in place of the county-level RGF index of Rupasingha et al. (2006) used in the baseline results.[17] In Model 3, state-level voter turnout is used as an alternative measure for social capital.[18] Due to the nature of the dependent variables in Models 1 through 3, the standard errors of these models are clustered by state. The estimated coefficients for these alternative measures remain positively significant at conventional levels, providing continued empirical support to our hypothesis that social capital, even when captured through alternative proxies, positively drive institutional shareholdings.

In Model 4, to alleviate seasonality concerns over the course of each year, we use the mean ownership over the four calendar quarters of a 13-F reporting year (instead of the end-of-year of institutional ownership levels). Model 5 employs the breadth of institutional ownership, calculated as the natural log of the number of institutional shareholders, as the dependent variable in place of the percentage level of ownership. We find that the positive association between social capital and institutional ownership is robust to the alternative measures of the dependent variable.

3.5.2 Controlling for Alternative Governance Mechanisms

In this section, we control for several important governance mechanisms to further alleviate the concern that our results may be picking up the effects of alternative monitoring devices. These robustness checks are reported in Table VIII.

[17] These data are available at http://bowlingalone.com/. We thank Robert D. Putnam for sharing his data on the state-level social capital and trust measures.

[18] State-level voter turnout rates are obtained from http://www.electproject.org/home/voter-turnout/voter-turnout-data.

[Insert Table VIII about here.]

First, as it has long been recognized in the literature that product market competition plays an important role in mitigating agency problems (e.g., Alchian, 1950; Giroud and Mueller, 2011), we incorporate in Model 1 the level of market concentration, as captured by the HHI measure of Hoberg and Phillips (2016), in estimating institutional ownership. Second, building on the strand of literature that stresses the importance of financial analysts serving as effective information intermediaries and a powerful source of external monitoring (Yu, 2008; Chen et al., 2015; To et al., 2018), we control for analyst coverage, measured as the number of financial analysts following the firm in a given year, in our regression analysis in Model 2. Third, earlier studies suggest that firms with S&P 500 membership may be under greater scrutiny or monitoring by investors (e.g., Del Guercio, 1996; Denis et al., 2003). We address this possibility in Model 3. Fourth, since firms' exposure to hostile takeovers may have substantial value implications on shareholders (Gompers et al., 2003; Bebchuk et al., 2009), in Model 4 of Table VIII, we account for the hostile takeover index estimated by Cain et al. (2017). Further, litigation potentially plays a governing role in capital markets. For instance, studies have found that managers voluntarily disclose adverse news when litigation risk is high (Skinner, 1994, 1997; Francis et al., 1994). Other studies, such as Laux (2010), have found that a higher likelihood of litigation heightens director liability, which may in turn contribute to increased board oversight. Therefore, in Model 5, we control for the litigation risk measure used in Francis et al. (1994).

As reported in Table VIII, the inclusion of these additional governance factors does not affect the association between social capital and institutional ownership we established earlier: In all models, we see that the coefficient estimate on the RGF Index remains positive and statistically significant at the conventional levels. The economic magnitudes shown in these models are also similar to those reported in the baseline analyses (i.e., Panel A of Table II).

3.5.3 Persistence and Herding of Institutional Ownership

Lastly, we address the possibility that our results may simply be a byproduct of institutional shareholding characteristics. Gompers and Metrick (2001), for instance, show that holdings by institutional investors are highly persistent through time. If historically higher levels of such ownership occur in firms headquartered in areas of high social capital, the higher institutional ownership levels that we observe in the base estimations would not necessarily be a result of the current social capital stock but rather reflecting the persistence of past ownership patterns (or some earlier, non-contemporaneous level of social capital, for that matter). In untabulated results, we find that this is not the case. When controlling for the lagged level of institutional ownership, we continue to see a positive and significant association between social capital and contemporaneous ownership.

Further, there is evidence that institutional shareholdings herd within industries (Choi and Sias, 2009; Sias, 2004). To ensure that the connection between social capital and contemporaneous ownership is not confounded by some industry-wide phenomenon, in an untabulated estimation, we control for the industry level mean of institutional ownership. We continue to observe qualitatively similar results with those presented in our base estimations.

4 Conclusion

We examine the empirical association between institutional ownership and social capital, and find that it is robustly positive. The relation remains strong after controlling for a battery of firm and demographic characteristics, as well as year, industry, and county fixed effects and holds across different investor legal types (i.e., bank trusts, insurance companies, investment firms, and independent advisors).

We argue that social capital plays a monitoring role that disciplines managers from self-serving behaviors. This monitoring mechanism is a result of the social norms in a region

and is not imposed by businesses or laws through costly channels. Importantly, through the mitigation of agency problems, social capital drives institutional investment preferences.

Our proposition is supported by additional analyses based on information asymmetry, financial performance, and investor styles. We also present evidence that the empirical association holds under the employments of various model specifications and alternative proxies, as well as when controlling for various possible alternative explanations.

Altogether, we identify social capital as an important environmental attribute that significantly influences institutional investment decisions. Given the rapid growth of institutional investors in recent years, our results offer some new insights into the facilitation of capital allocation efficiency and the stability of financial markets, while providing policy implications for the implementations of social programs that aim to foster trust in the society.

References

Admati, Anat R., and Paul Pfleiderer, 2009, The "Wall Street walk" and shareholder activism: Exit as a form of voice, *Review of Financial Studies* 22, 2645–2685.

Aghion, Philippe, John Van Reenen, and Luigi Zingales, 2013, Innovation and institutional ownership, *American Economic Review* 103, 277–304.

Albuquerque, Rui, Yrjo Koskinen, Shuai Yang, and Chendi Zhang, 2020, Resiliency of environmental and social stocks: An analysis of the exogenous Covid-19 market crash, *Review of Corporate Finance Studies* 9, 593–621.

Alchian, Armen A., 1950, Uncertainty, evolution, and economic theory, *Journal of Political Economy* 58, 211–221.

Alesina, Alberto, and Eliana La Ferrara, 2000, Participation in heterogeneous communities, *Quarterly Journal of Economics* 115, 847–904.

Altman, Edward I., 1968, Financial ratios, discriminant analysis and the prediction of corporate bankruptcy, *Journal of Finance* 23, 589–609.

Amihud, Yakov, 2002, Illiquidity and stock returns: Cross-section and time-series effects, *Journal of Financial Markets* 5, 31–56.

Bai, John, Chenguang Shang, Chi Wan, and Yijia Eddie Zhao, 2021, Social capital and individual ethics: Evidence from financial adviser misconduct, *Journal of Business Ethics* forthcoming.

Bebchuk, Lucian A., Alma Cohen, and Allen Ferrell, 2009, What matters in corporate governance?, *Review of Financial Studies* 22, 783–827.

Bennett, James A., Richard W. Sias, and Laura T. Starks, 2003, Greener pastures and the impact of dynamic institutional preferences, *Review of Financial Studies* 16, 1203–1238.

Bharath, Sreedhar T., and Tyler Shumway, 2008, Forecasting default with the merton distance to default model, *Review of Financial Studies* 21, 1339–1369.

Buonanno, Paolo, Daniel Montolio, and Paolo Vanin, 2009, Does social capital reduce crime?, *Journal of Law and Economics* 52, 145–170.

Bushee, Brian, 2001, Do institutional investors prefers near-term earnings over long-run value?, *Contemporary Accounting Research* 18, 207–246.

Bushee, Brian, and Chris Noe, 2000, Corporate disclosure practices, institutional investors, and stock return volatility, *Journal of Accounting Research* 38, 171–202.

Bushee, Brian J., 1998, The influence of institutional investors on myopic R&D investment behavior, *Accounting Review* 73, 305–333.

Cain, Matthew D., Stephen B. McKeon, and Steven Davidoff Solomon, 2017, Do takeover laws matter? Evidence from five decades of hostile takeovers, *Journal of Financial Economics* 124, 464–485.

Chemmanur, Thomas J., and Xuan Tian, 2018, Do antitakeover provisions spur corporate innovation? A regression discontinuity analysis, *Journal of Financial and Quantitative Analysis* 53, 1163–1194.

Chen, Tao, Jarrad Harford, and Chen Lin, 2015, Do analysts matter for governance? Evidence from natural experiments, *Journal of Financial Economics* 115, 383–410.

Chen, Xia, Jarrad Harford, and Kai Li, 2007, Monitoring: Which institutions matter?, *Journal of Financial Economics* 86, 279–305.

Choi, Nicole, and Richard Sias, 2009, Institutional industry herding, *Journal of Financial Economics* 94, 469–491.

Chung, Kee H., and Hao Zhang, 2011, Corporate governance and institutional ownership, *Journal of Financial and Quantitative Analysis* 46, 247–273.

Clark, Brian, Iftekhar Hasan, Helen Lai, Feng Li, and Akhtar Siddique, 2021, Consumer defaults and social capital, *Journal of Financial Stability* 53, 100821.

Coval, Joshua D., and Tobias J. Moskowitz, 1999, Home bias at home: Local equity preference in domestic portfolios, *Journal of Finance* 54, 2045–2073.

Dechow, Patricia M., and Ilia D. Dichev, 2002, The quality of accruals and earnings: The role of accrual estimation errors, *Accounting Review* 77, 35–59.

Dechow, Patricia M., Richard G. Sloan, and Amy P. Sweeney, 1995, Detecting earnings management, *Accounting Review* 70, 193–225.

Del Guercio, Diane, 1996, The distorting effect of the prudent-man laws on institutional equity investment, *Journal of Financial Economics* 40, 31–62.

Denis, Diane, John McConnell, Alexei Ovtchinnikov, and Yun Yu, 2003, S&P 500 index additions and earnings expectations, *Journal of Finance* 58, 1821–1840.

Easley, David, Nicholas M. Kiefer, Maureen O'Hara, and Joseph B. Paperman, 1996, Liquidity, information, and infrequently traded stocks, *Journal of Finance* 51, 1405–1436.

Edmans, Alex, 2009, Blockholder trading, market efficiency, and managerial myopia, *Journal of Finance* 64, 2481–2513.

Edmans, Alex, and Gustavo Manso, 2011, Governance through trading and intervention: A theory of multiple blockholders, *Review of Financial Studies* 24, 2395–2428.

Faleye, Olubunmi, Rani Hoitash, and Udi Hoitash, 2011, The costs of intense board monitoring, *Journal of Financial Economics* 101, 160–181.

Falkenstein, Eric G., 1996, Preferences for stock characteristics as revealed by mutual fund portfolio holdings, *Journal of Finance* 51, 111–135.

Fama, Eugene F., and Kenneth R. French, 1992, The cross-section of expected stock returns, *Journal of Finance* 47, 427–465.

Ferreira, Miguel A., and Pedro Matos, 2008, The colors of investors' money: The role of institutional investors around the world, *Journal of Financial Economics* 88, 499–533.

Francis, Bill B., Iftekhar Hasan, Kose John, and Maya Waisman, 2016, Urban agglomeration and CEO compensation, *Journal of Financial and Quantitative Analysis* 51, 1925–1953.

Francis, Bill B., Iftekhar Hasan, and Yun Zhu, 2021, The impact of political uncertainty on institutional ownership, *Journal of Financial Stability* 57, 100921.

Francis, Jennifer, Donna Philbrick, and Katherine Schipper, 1994, Shareholder litigation and corporate disclosures, *Journal of Accounting Research* 32, 137–164.

Fukuyama, Francis, 1997, Social capital and the modern capitalist economy: Creating a high trust workplace, *Stern Business Magazine* 4, 1–16.

Gao, Ziqi, Leye Li, and Louise Yi Lu, 2021, Social capital and managers' use of corporate resources, *Journal of Business Ethics* 168, 593–613.

Gaspar, José-Miguel, Massimo Massa, and Pedro Matos, 2005, Shareholder investment horizons and the market for corporate control, *Journal of Financial Economics* 76, 135–165.

Giannetti, Mariassunta, and Tracy Yue Wang, 2016, Corporate scandals and household stock market participation, *Journal of Finance* 71, 2591–2636.

Giroud, Xavier, and Holger M. Mueller, 2011, Corporate governance, product market competition, and equity prices, *Journal of Finance* 66, 563–600.

Gompers, Paul A., Joy Ishii, and Andrew Metrick, 2003, Corporate governance and equity prices, *Quarterly Journal of Economics* 118, 107–155.

Gompers, Paul A., and Andrew Metrick, 2001, Institutional investors and equity prices, *Quarterly Journal of Economics* 116, 229–259.

Grinstein, Yaniv, and Roni Michaely, 2005, Institutional holdings and payout policy, *Journal of Finance* 60, 1389–1426.

Grossman, Sanford J., and Oliver D. Hart, 1986, The costs and benefits of ownership: A theory of lateral and vertical integration, *Journal of Political Economy* 94, 691–719.

Grullon, Gustavo, George Kanatas, and James P. Weston, 2004, Advertising, breadth of ownership, and liquidity, *Review of Financial Studies* 17, 439–461.

Guiso, Luigi, Paola Sapienza, and Luigi Zingales, 2004, The role of social capital in financial development, *American Economic Review* 94, 526–556.

Guiso, Luigi, Paola Sapienza, and Luigi Zingales, 2008, Trusting the stock market, *Journal of Finance* 63, 2557–2600.

Guiso, Luigi, Paola Sapienza, and Luigi Zingales, 2009, Cultural biases in economic exchange?, *Quarterly Journal of Economics* 124, 1095–1131.

Gupta, Atul, Kartik Raman, and Chenguang Shang, 2018, Social capital and the cost of equity, *Journal of Banking and Finance* 87, 102–117.

Gupta, Atul, Kartik Raman, and Chenguang Shang, 2020, Do informal contracts matter for corporate innovation? Evidence from social capital, *Journal of Financial and Quantitative Analysis* 55, 1657–1684.

Gurun, Umit G., Noah Stoffman, and Scott E. Yonker, 2018, Trust busting: The effect of fraud on investor behavior, *Review of Financial Studies* 31, 1341–1376.

Hall, Alastair, Glenn D. Rudebusch, and David W. Wilcox, 1996, Judging instrument relevance in instrumental variablesestimation, *International Economic Review* 37, 283–298.

Hart, Oliver D., and John Moore, 1990, Property rights and the nature of the firm, *Journal of Political Economy* 98, 1119–1158.

Hartzell, Jay C., and Laura T. Starks, 2003, Institutional investors and executive compensation, *Journal of Finance* 58, 2351–2374.

Hasan, Iftekhar, Qing He, and Haitian Lu, 2021, Social capital, trusting, and trustworthiness: Evidence from peer-to-peer lending, *Journal of Financial and Quantitative Analysis* forthcoming.

Hasan, Iftekhar, Chun Keung Hoi, Qiang Wu, and Hao Zhang, 2017a, Social capital and debt contracting: Evidence from bank loans and public bonds, *Journal of Financial and Quantitative Analysis* 52, 1017–1047.

Hasan, Iftekhar, Chun-Keung (Stan) Hoi, Qiang Wu, and Hao Zhang, 2017b, Does social capital matter in corporate decisions? Evidence from corporate tax avoidance, *Journal of Accounting Research* 55, 629–668.

He, Jie (Jack), and Xuan Tian, 2013, The dark side of analyst coverage: The case of innovation, *Journal of Financial Economics* 109, 856–878.

Hoberg, Gerard, and Gordon Phillips, 2016, Text-based network industries and endogenous product differentiation, *Journal of Political Economy* 124, 1423–1465.

Hoi, Chun Keung, Qiang Wu, and Hao Zhang, 2019, Does social capital mitigate agency problems? Evidence from chief executive officer (CEO) compensation, *Journal of Financial Economics* 133, 498–519.

Huang, Kershen, and Chenguang Shang, 2019, Leverage, debt maturity, and social capital,, *Journal of Corporate Finance* 54, 26–46.

Huang, Kershen, Chenguang Shang, and Chi Zhang, 2021, Working hard for long-distance relationships: Geographic proximity and relationship-specific investments, *Financial Management* 50, 985–1011.

Jegadeesh, Narasimhan, and Sheridan Titman, 1993, Returns to buying winners and selling losers: Implications for stock market efficiency, *Journal of Finance* 48, 65–91.

Jha, Anand, 2019, Financial reports and social capital, *Journal of Business Ethics* 155, 567–596.

Jha, Anand, and Yu Chen, 2015, Audit fees and social capital, *Accounting Review* 90, 611–639.

Jha, Anand, and James Cox, 2015, Corporate social responsibility and social capital, *Journal of Banking and Finance* 60, 252–270.

John, Kose, Anzhela Knyazeva, and Diana Knyazeva, 2011, Does geography matter? Firm location and corporate payout policy, *Journal of Financial Economics* 101, 533–551.

Knack, Stephen, and Philip Keefer, 1997, Does social capital have an economic payoff? A cross-country investigation, *Quarterly Journal of Economics* 112, 1251–1288.

Krueger, Philipp, Zacharias Sautner, and Laura T. Starks, 2020, The importance of climate risks for institutional investors, *Review of Financial Studies* 33, 1067–1111.

Laux, Volker, 2010, Effects of litigation risk on board oversight and CEO incentive pay, *Management Science* 56, 938–948.

Leuz, Christian, Karl V. Lins, and Francis E. Warnock, 2009, Do foreigners invest less in poorly governed firms?, *Review of Financial Studies* 22, 3245–3285.

Li, Kai, Hernán Ortiz-Molina, and Xinlei Zhao, 2008, Do voting rights affect institutional investment decisions? Evidence from dual-class firms, *Financial Management* 37, 713–745.

Li, Xiaorong, Steven Shuye Wang, and Xue Wang, 2019, Trust and IPO underpricing, *Journal of Corporate Finance* 56, 224–248.

Lins, Karl V., Henri Servaes, and Ane Tamayo, 2017, Social capital, trust, and firm performance: The value of corporate social responsibility during the financial crisis, *Journal of Finance* 72, 1785–1824.

Malloy, Christopher J., 2005, The geography of equity analysis, *Journal of Finance* 60, 719–755.

Massa, Massimo, Chengwei Wang, Hong Zhang, and Jian Zhang, 2022, Investing in low-trust countries: On the role of social trust in the global mutual fund industry, *Journal of Financial and Quantitative Analysis* 57, 240–290.

McCahery, Joseph A., Zacharias Sautner, and Laura T. Starks, 2016, Behind the scenes: The corporate governance preferences of institutional investors, *Journal of Finance* 71, 2905–2932.

Mead, George H., 1934, *Mind, Self, and Society: From the Standpoint of a Social Behaviorist.* (University of Chicago Press).

Michaely, Roni, and Christopher Vincent, 2013, Do institutional investors influence capital structure decisions?, *Cornell University working paper.*

Pevzner, Mikhail, Fei Xie, and Xiangang Xin, 2015, When firms talk, do investors listen? The role of trust in stock market reactions to corporate earnings announcements, *Journal of Financial Economics* 117, 190–223.

Porter, Michael E., 1992, Capital choices: Changing the way America invests in industry, *Journal of Applied Corporate Finance* 5, 4–16.

Putnam, Robert D., 2000, *Bowling Alone: The Collapse and Revival of American Community*. (Simon & Schuster).

Putnam, Robert D., 2001, Social capital: Measurement and consequences, *Canadian Journal of Policy Research* 2, 41–51.

Robin, Ashok, Qiang Wu, and Hao Zhang, 2017, Auditor quality and debt covenants, *Contemporary Accounting Research* 34, 154–185.

Rupasingha, Anil, Stephan J. Goetz, and David Freshwater, 2006, The production of social capital in US counties, *Journal of Socio-Economics* 35, 83–101.

Shleifer, Andrei, and Robert W. Vishny, 1986, Large shareholders and corporate control, *Journal of Political Economy* 94, 461–488.

Sias, Richard W., 2004, Institutional herding, *Review of Financial Studies* 17, 165–206.

Skinner, Douglas J., 1994, Why firms voluntarily disclose bad news, *Journal of Accounting Research* 32, 38–60.

Skinner, Douglas J., 1997, Earnings disclosures and stockholder lawsuits, *Journal of Accounting and Economics* 23, 249–282.

Smith, Michael P., 1996, Shareholder activism by institutional investors: Evidence from CalPERS, *Journal of Finance* 51, 227–252.

Stock, James H., Jonathan H. Wright, and Motohiro Yogo, 2002, A survey of weak instruments and weak identification in generalized method of moments, *Journal of Business & Economic Statistics* 20, 518–529.

To, Thomas Y., Marco Navone, and Eliza Wu, 2018, Analyst coverage and the quality of corporate investment decisions, *Journal of Corporate Finance* 51, 164–181.

Uhlaner, Carole Jean, 1989, "relational goods" and participation: Incorporating sociability into a theory of rational action, *Public Choice* 62, 253–285.

Uysal, Vahap B., Simi Kedia, and Venkatesh Panchapagesan, 2008, Geography and acquirer returns, *Journal of Financial Intermediation* 17, 256–275.

Weisbach, Michael S., 1988, Outside directors and CEO turnover, *Journal of Financial Economics* 20, 431–460.

Welker, Michael, 1995, Disclosure policy, information asymmetry, and liquidity in equity markets, *Contemporary Accounting Research* 11, 801–827.

Williamson, Oliver E., 1979, Transactions-cost economics: The governance of contractual relations, *Journal of Law and Economics* 22, 233–62.

Woolcock, Michael, 2001, The place of social capital in understanding social and economic outcomes, *Canadian Journal of Policy Research* 2, 11–17.

Yan, Xuemin (Sterling), and Zhe Zhang, 2009, Institutional investors and equity returns: Are short-term institutions better informed?, *Review of Financial Studies* 22, 893–924.

Yu, Fang (Frank), 2008, Analyst coverage and earnings management, *Journal of Financial Economics* 88, 245–271.

Zak, Paul J., and Stephen Knack, 2001, Trust and growth, *Economic Journal* 111, 295–321.

Table I: **Descriptive Statistics.** This table presents descriptive statistics for the variables used in this study. There are 127,166 firm-year observations, with 12,982 unique firms over a sample period of 1980–2019. Variable definitions can be found in Table AI.

	Mean	SD	P1	P10	P25	Median	P75	P90	P99
Institutional Ownership	0.316	0.324	0.000	0.000	0.000	0.208	0.579	0.837	1.000
RGF Index	-0.402	0.930	-2.216	-1.568	-1.127	-0.443	0.253	0.787	1.740
Firm Size	5.132	2.182	0.631	2.351	3.545	5.021	6.645	8.070	10.309
Firm Age	2.623	0.767	1.099	1.609	2.079	2.639	3.219	3.638	4.078
M/B	2.026	2.028	0.590	0.885	1.075	1.435	2.183	3.626	10.221
Profitability	0.044	0.290	-1.138	-0.182	0.025	0.107	0.168	0.229	0.390
Tangibility	0.279	0.225	0.007	0.044	0.100	0.216	0.398	0.637	0.894
Leverage	0.241	0.242	0.000	0.000	0.041	0.200	0.363	0.532	0.985
Advertising Expense	0.015	0.038	0.000	0.000	0.000	0.000	0.011	0.045	0.229
R&D	0.054	0.119	0.000	0.000	0.000	0.000	0.058	0.158	0.626
Dividends	0.321	0.467	0.000	0.000	0.000	0.000	1.000	1.000	1.000
Stock Return	0.160	0.931	-0.869	-0.552	-0.300	0.000	0.329	0.834	4.699
Returns Volatility	0.039	0.023	0.010	0.016	0.022	0.032	0.048	0.069	0.131
Stock Turnover	0.006	0.007	0.000	0.001	0.002	0.004	0.008	0.014	0.037
Price	18.516	21.725	0.187	1.375	3.875	11.000	25.125	44.650	118.740
Income per Capita	10.376	0.526	9.298	9.687	9.994	10.371	10.748	11.031	11.698
Population	13.650	1.124	10.429	12.193	13.111	13.705	14.290	14.925	16.088
Density	0.175	0.504	0.002	0.010	0.026	0.056	0.088	0.200	2.689
Religiosity	0.501	0.136	0.239	0.333	0.395	0.500	0.592	0.687	0.806
Population Growth	0.011	0.014	-0.012	-0.003	0.003	0.009	0.017	0.027	0.057

Table II: **Institutional Ownership Estimations.** This table presents results from OLS estimations of institutional ownership (IO) using social capital (proxied by the RGF Index of Rupasingha et al., 2006) as the key determinant. Panel A presents total IO estimations. Model 1 includes only social capital on the RHS. Models 2 through 4 gradually include firm-level, market-level, and county-level covariates. Panel B shows estimations of IO by different legal types of investors. Models 1, 2, 3, and 4 estimate the holdings of bank trusts (BNK), insurance companies (INS), investment companies (INV), and independent investment advisors (IIA), respectively . All models include year, industry (based on the two-digit SIC code), and county fixed effects. Coefficient estimates are reported using robust standard errors clustered by county. *p*-values are reported in parentheses for each coefficient estimate. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Variable definitions can be found in Table AI.

Panel A: Total Institutional Ownership

	Model 1 Coef.		p-val	Model 2 Coef.		p-val	Model 3 Coef.		p-val	Model 4 Coef.		p-val
RGF Index	0.020	***	(0.00)	0.018	***	(0.01)	0.018	***	(0.01)	0.018	***	(0.00)
Firm Size				0.070	***	(0.00)	0.046	***	(0.00)	0.046	***	(0.00)
Firm Age				-0.014	***	(0.00)	-0.011	***	(0.01)	-0.012	***	(0.00)
M/B				0.014	***	(0.00)	0.006	***	(0.00)	0.006	***	(0.00)
Profitability				0.097	***	(0.00)	0.062	***	(0.00)	0.062	***	(0.00)
Tangibility				-0.019		(0.12)	-0.010		(0.41)	-0.010		(0.43)
Leverage				-0.079	***	(0.00)	-0.035	***	(0.00)	-0.036	***	(0.00)
Advertising Expense				-0.072		(0.17)	-0.091	*	(0.07)	-0.089	*	(0.08)
R&D				0.024		(0.23)	0.018		(0.37)	0.017		(0.39)
Dividends				0.001		(0.88)	-0.011		(0.12)	-0.010		(0.13)
Stock Return							-0.007	***	(0.00)	-0.007	***	(0.00)
Returns Volatility							-2.073	***	(0.00)	-2.075	***	(0.00)
Stock Turnover							5.692	***	(0.00)	5.708	***	(0.00)
Price							0.001	***	(0.00)	0.001	***	(0.00)
Income per Capita										0.001		(0.98)
Population										-0.016		(0.42)
Density										-0.171	**	(0.03)
Religiosity										-0.093	***	(0.00)
Population Growth										0.023		(0.87)
Intercept	0.124	**	(0.05)	-0.216	***	(0.00)	-0.067		(0.28)	0.210		(0.59)
Year FE	YES			YES			YES			YES		
Industry FE	YES			YES			YES			YES		
County FE	YES			YES			YES			YES		
Obs	127,166			127,166			127,166			127,166		
Adj-R2	0.311			0.471			0.493			0.493		

Continued on next page

Table II – continued from previous page

Panel B: Institutional Ownership by Legal Type

	Model 1: BNK			Model 2: INS			Model 3: INV			Model 4: IIA		
	Coef.		p-val	Coef.		p-val	Coef.		p-val	Coef.		p-val
RGF Index	0.003	***	(0.00)	0.001	**	(0.03)	0.003	**	(0.02)	0.009	**	(0.04)
Firm Size	0.009	***	(0.00)	0.004	***	(0.00)	0.007	***	(0.00)	0.018	***	(0.00)
Firm Age	0.004	***	(0.00)	0.000		(0.17)	-0.003	***	(0.00)	-0.009	***	(0.00)
M/B	0.001	***	(0.00)	0.001	***	(0.00)	0.002	***	(0.00)	0.001	**	(0.01)
Profitability	0.004	***	(0.00)	0.001		(0.11)	0.009	***	(0.00)	0.045	***	(0.00)
Tangibility	0.004		(0.14)	0.001		(0.23)	-0.005	**	(0.02)	-0.005		(0.53)
Leverage	-0.011	***	(0.00)	-0.004	***	(0.00)	-0.003	**	(0.03)	-0.015	***	(0.00)
Advertising Expense	0.010		(0.37)	-0.006		(0.11)	-0.032	***	(0.00)	-0.063	**	(0.04)
R&D	0.000		(0.89)	0.002		(0.13)	-0.005		(0.13)	0.008		(0.54)
Dividends	0.010	***	(0.00)	0.001		(0.12)	-0.004	***	(0.00)	-0.015	***	(0.00)
Stock Return	-0.002	***	(0.00)	0.000	***	(0.00)	-0.002	***	(0.00)	-0.001	***	(0.01)
Returns Volatility	-0.174	***	(0.00)	-0.096	***	(0.00)	-0.279	***	(0.00)	-1.440	***	(0.00)
Stock Turnover	0.767	***	(0.00)	0.283	***	(0.00)	1.245	***	(0.00)	3.263	***	(0.00)
Price	0.000	***	(0.00)	0.000	***	(0.00)	0.000	***	(0.00)	0.001	***	(0.00)
Income per Capita	-0.001		(0.77)	-0.004	*	(0.08)	0.011	*	(0.08)	-0.014		(0.41)
Population	0.003		(0.36)	0.000		(0.92)	-0.011	***	(0.00)	-0.017		(0.20)
Density	0.018	*	(0.09)	0.001		(0.82)	-0.039	**	(0.02)	-0.132	***	(0.00)
Religiosity	-0.008		(0.11)	-0.005	**	(0.01)	-0.016	***	(0.00)	-0.051	***	(0.00)
Population Growth	-0.002		(0.93)	-0.007		(0.60)	-0.010		(0.74)	0.052		(0.59)
Intercept	-0.071		(0.32)	0.028		(0.42)	0.033		(0.66)	0.391		(0.11)
Year FE	YES			YES			YES			YES		
Industry FE	YES			YES			YES			YES		
County FE	YES			YES			YES			YES		
Obs	123,689			123,689			123,689			123,689		
Adj-R2	0.3859			0.245			0.385			0.446		

Table III: **Endogenizing Institutional Ownership Choices.** This table presents results from two sets of two-stage estimations of total institutional ownership (IO) using predicted values of social capital (proxied by the RGF Index of Rupasingha et al., 2006). In Panel A, the historical degree of racial segmentation, computed as one minus the Herfindahl index of black and non-black population in a given state in 1960 (Alesina and La Ferrara, 2000), is used as the instrument. In Panel B, Confederacy membership of a given state during 1861–1865 is used as the instrument (Putnam, 2001). In each panel, the first-stage estimation of social capital and the second-stage estimation of IO are reported on the left and right sides, respectively. All models include year and industry (based on the two-digit SIC code) fixed effects and are reported using robust errors clustered by county. In the last row of each panel, the robust F-statistic from the first stage estimation is reported (Hall et al., 1996; Stock et al., 2002). *p*-values are reported in parentheses for each coefficient estimate. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Variable definitions can be found in Table AI.

	Panel A: Racial Segmentation						Panel B: Confederate State					
	1st Stage SC			2nd Stage IO			1st Stage SC			2nd Stage IO		
	Coef.		p-val	Coef.		p-val	Coef.		p-val	Coef.		p-val
RGF Index				0.036	***	(0.01)				0.042	***	(0.00)
Instrument	-2.294	***	(0.00)				-0.550	***	(0.00)			
Firm Size	-0.004		(0.69)	0.048	***	(0.00)	-0.005		(0.65)	0.048	***	(0.00)
Firm Age	0.033	***	(0.00)	-0.016	***	(0.00)	0.028	**	(0.02)	-0.016	***	(0.00)
M/B	-0.006	***	(0.01)	0.006	***	(0.00)	-0.005	**	(0.01)	0.006	***	(0.00)
Profitability	0.025		(0.34)	0.069	***	(0.00)	0.038		(0.23)	0.069	***	(0.00)
Tangibility	0.032		(0.45)	-0.013		(0.26)	0.061		(0.16)	-0.014		(0.25)
Leverage	0.028		(0.32)	-0.039	***	(0.00)	0.012		(0.68)	-0.039	***	(0.00)
Advertising Expense	0.197		(0.33)	-0.072		(0.16)	0.268		(0.23)	-0.074		(0.15)
R&D	0.027		(0.82)	0.055	**	(0.02)	0.080		(0.52)	0.055	**	(0.02)
Dividends	0.086	***	(0.00)	-0.011		(0.12)	0.075	***	(0.00)	-0.011		(0.11)
Stock Return	0.003		(0.12)	-0.007	***	(0.00)	0.003		(0.13)	-0.007	***	(0.00)
Returns Volatility	-0.620	**	(0.03)	-2.092	***	(0.00)	-0.686	**	(0.03)	-2.088	***	(0.00)
Stock Turnover	-2.297		(0.12)	6.008	***	(0.00)	-2.302		(0.11)	6.018	***	(0.00)
Price	0.001	*	(0.09)	0.001	***	(0.00)	0.001	*	(0.08)	0.001	***	(0.00)
Income per Capita	1.112	***	(0.00)	-0.035	*	(0.09)	1.026	***	(0.00)	-0.043	**	(0.04)
Population	-0.422	***	(0.00)	0.012	**	(0.04)	-0.408	***	(0.00)	0.014	***	(0.01)
Density	0.173	**	(0.05)	-0.033	***	(0.00)	0.147		(0.12)	-0.034	***	(0.00)
Religiosity	0.662	**	(0.02)	-0.067	**	(0.01)	0.714	**	(0.02)	-0.070	**	(0.01)
Population Growth	-14.165	***	(0.00)	-0.042		(0.88)	-11.094	***	(0.00)	0.062		(0.82)
Intercept	-4.826	***	(0.01)	0.160		(0.31)	-4.530	**	(0.02)	0.197		(0.22)
Year FE	YES			YES			YES			YES		
Industry FE	YES			YES			YES			YES		
Obs	127,166			127,166			127,166			127,166		
Adj-R2	0.545			0.468			0.536			0.466		
Robust F-stat	23.584	***	(0.00)				37.199	***	(0.00)			

Table IV: **Subsample Analyses – Information Asymmetry.** This table presents results from OLS estimations of total institutional ownership (IO) using interaction terms between social capital (proxied by the RGF Index of Rupasingha et al., 2006) and subsamples of high vs. low information asymmetry. Models 1, 2, 3, and 4 proxy for information asymmetry using illiquidity (Amihud, 2002), firm size, discretionary accruals (Dechow et al., 1995), and expert auditors, respectively. In each model, an F test is conducted to evaluate the statistical difference between the estimated coefficients of social capital across the subsamples. All models include year, industry (based on the two-digit SIC code), and county fixed effects. Coefficient estimates are reported using robust standard errors clustered by county. p-values are reported in parentheses for each coefficient estimate. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Variable definitions can be found in Table AI.

	Model 1: Illiquidity			Model 2: Size			Model 3: DACC			Model 4: Expert Aud		
	Coef.		p-val	Coef.		p-val	Coef.		p-val	Coef.		p-val
Low x RGF Index	-0.004		(0.63)	0.002		(0.79)	0.013	*	(0.05)	0.012	*	(0.08)
High x RGF Index	0.033	***	(0.00)	0.036	***	(0.00)	0.022	***	(0.00)	0.022	***	(0.00)
Firm Size	0.044	***	(0.00)	0.043	***	(0.00)	0.050	***	(0.00)	0.045	***	(0.00)
Firm Age	-0.010	***	(0.01)	-0.010	***	(0.01)	-0.008	*	(0.07)	-0.012	***	(0.00)
M/B	0.005	***	(0.00)	0.006	***	(0.00)	0.005	***	(0.00)	0.006	***	(0.00)
Profitability	0.060	***	(0.00)	0.060	***	(0.00)	0.065	***	(0.00)	0.063	***	(0.00)
Tangibility	-0.010		(0.41)	-0.011		(0.39)	-0.031		(0.10)	-0.010		(0.41)
Leverage	-0.033	***	(0.00)	-0.036	***	(0.00)	-0.046	***	(0.00)	-0.036	***	(0.00)
Advertising Expense	-0.082	*	(0.09)	-0.082	*	(0.10)	-0.128	*	(0.09)	-0.090	*	(0.07)
R&D	0.014		(0.49)	0.019		(0.36)	0.062	**	(0.02)	0.017		(0.39)
Dividends	-0.010		(0.14)	-0.009		(0.18)	-0.010		(0.22)	-0.010		(0.13)
Stock Return	-0.006	***	(0.00)	-0.007	***	(0.00)	-0.007	***	(0.00)	-0.007	***	(0.00)
Returns Volatility	-2.004	***	(0.00)	-2.020	***	(0.00)	-1.944	***	(0.00)	-2.075	***	(0.00)
Stock Turnover	5.306	***	(0.00)	5.598	***	(0.00)	5.069	***	(0.00)	5.686	***	(0.00)
Price	0.002	***	(0.00)	0.002	***	(0.00)	0.002	***	(0.00)	0.001	***	(0.00)
Income per Capita	0.014		(0.64)	0.011		(0.72)	-0.028		(0.49)	0.001		(0.97)
Population	-0.031		(0.11)	-0.026		(0.19)	-0.060	**	(0.02)	-0.017		(0.39)
Density	-0.147	**	(0.04)	-0.163	**	(0.03)	-0.181	**	(0.04)	-0.167	**	(0.03)
Religiosity	-0.110	***	(0.00)	-0.106	***	(0.00)	-0.036		(0.21)	-0.094	***	(0.00)
Population Growth	0.012		(0.93)	0.027		(0.85)	-0.031		(0.88)	0.026		(0.85)
Intercept	0.300		(0.47)	0.250		(0.54)	1.145	**	(0.03)	0.221		(0.58)
Year FE	YES			YES			YES			YES		
Industry FE	YES			YES			YES			YES		
County FE	YES			YES			YES			YES		
Obs	127,163			127,166			75,920			126,982		
Adj-R2	0.496			0.495			0.492			0.493		
F (High = Low?)	31.03	***	(0.00)	18.80	***	(0.00)	15.67	***	(0.00)	6.51	**	(0.01)

Table V: **Subsample Analyses – Performance** This table presents results from OLS estimations of total institutional ownership (IO) using interaction terms between social capital (proxied by the RGF Index of Rupasingha et al., 2006) and subsamples of better vs. worst performance. Models 1, 2, 3, and 4 proxy for performance using interest coverage, distance-to-default, z-score, and profitability, respectively. In each model, an F test is conducted to evaluate the statistical difference between the estimated coefficients of social capital across the subsamples. All models include year, industry (based on the two-digit SIC code), and county fixed effects. Coefficient estimates are reported using robust standard errors clustered by county. p-values are reported in parentheses for each coefficient estimate. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Variable definitions can be found in Table AI.

	Model 1: Int Coverage			Model 2: DD			Model 3: z-Score			Model 4: Profitability		
	Coef.		p-val	Coef.		p-val	Coef.		p-val	Coef.		p-val
Better × RGF Index	0.004		(0.52)	0.010		(0.13)	0.009		(0.14)	0.011	*	(0.07)
Worse × RGF Index	0.028	***	(0.00)	0.022	***	(0.00)	0.030	***	(0.00)	0.028	***	(0.00)
Firm Size	0.044	***	(0.00)	0.044	***	(0.00)	0.048	***	(0.00)	0.046	***	(0.00)
Firm Age	-0.010	***	(0.01)	-0.012	***	(0.00)	-0.012	***	(0.00)	-0.011	***	(0.00)
M/B	0.006	***	(0.00)	0.006	***	(0.00)	0.006	***	(0.00)	0.006	***	(0.00)
Profitability	0.055	***	(0.00)	0.060	***	(0.00)	0.054	***	(0.00)	0.055	***	(0.00)
Tangibility	-0.013		(0.32)	-0.012		(0.37)	-0.012		(0.32)	-0.012		(0.34)
Leverage	-0.034	***	(0.00)	-0.030	***	(0.00)	-0.034	***	(0.00)	-0.037	***	(0.00)
Advertising Expense	-0.089		(0.11)	-0.072		(0.21)	-0.094	*	(0.07)	-0.088	*	(0.08)
R&D	0.018		(0.39)	0.016		(0.48)	0.015		(0.47)	0.013		(0.51)
Dividends	-0.005		(0.51)	-0.004		(0.53)	-0.013	*	(0.07)	-0.011		(0.13)
Stock Return	-0.007	***	(0.00)	-0.005	***	(0.00)	-0.006	***	(0.00)	-0.007	***	(0.00)
Returns Volatility	-2.034	***	(0.00)	-2.054	***	(0.00)	-2.025	***	(0.00)	-2.046	***	(0.00)
Stock Turnover	5.703	***	(0.00)	5.692	***	(0.00)	5.442	***	(0.00)	5.684	***	(0.00)
Price	0.001	***	(0.00)	0.001	***	(0.00)	0.001	***	(0.00)	0.001	***	(0.00)
Income per Capita	-0.002		(0.96)	-0.011		(0.73)	-0.005		(0.87)	0.001		(0.98)
Population	-0.012		(0.57)	-0.018		(0.37)	-0.015		(0.44)	-0.016		(0.42)
Density	-0.184	**	(0.02)	-0.178	**	(0.02)	-0.170	**	(0.03)	-0.174	**	(0.02)
Religiosity	-0.102	***	(0.00)	-0.097	***	(0.00)	-0.090	***	(0.00)	-0.091	***	(0.00)
Population Growth	-0.079		(0.59)	0.036		(0.81)	-0.022		(0.88)	0.016		(0.91)
Intercept	0.176		(0.67)	0.355		(0.41)	0.229		(0.56)	0.208		(0.59)
Year FE	YES			YES			YES			YES		
Industry FE	YES			YES			YES			YES		
County FE	YES			YES			YES			YES		
Obs	111,253			108,036			124,117			127,166		
Adj-R2	0.496			0.494			0.498			0.494		
F (Better = Worse?)	23.61	***	(0.00)	11.30	***	(0.00)	19.50	***	(0.00)	18.55	***	(0.00)

Table VI: **Transient, Quasi-Index, and Dedicated Investors.** This table presents results from simultaneous estimations of transient, quasi-index, and dedicated institutional investor holdings (Bushee, 2001; Bushee and Noe, 2000) in Models 1, 2, and 3, respectively, using social capital (measured using the RGF index of Rupasingha et al., 2006) as the key explanatory variable. For each pair of estimations, a χ^2 test is conducted to evaluate the statistical difference between the estimated coefficients of social capital. All models include year, industry (based on the two-digit SIC code), and county fixed effects. Coefficient estimates are reported using robust standard errors clustered by county. *p*-values are reported in parentheses for each coefficient estimate. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Variable definitions can be found in Table AI.

	Model 1: Transient			Model 2: Quasi-Index			Model 3: Dedicated		
	Coef.		p-val	Coef.		p-val	Coef.		p-val
RGF Index	0.004	**	(0.03)	0.011	**	(0.01)	-0.001		(0.49)
Firm Size	0.009	***	(0.00)	0.030	***	(0.00)	0.003	***	(0.00)
Firm Age	-0.008	***	(0.00)	-0.001		(0.69)	0.002	***	(0.01)
M/B	0.003	***	(0.00)	0.003	***	(0.00)	0.000	*	(0.07)
Profitability	0.027	***	(0.00)	0.034	***	(0.00)	-0.003	***	(0.00)
Tangibility	-0.009	***	(0.01)	0.007		(0.43)	-0.002		(0.32)
Leverage	-0.003		(0.28)	-0.035	***	(0.00)	-0.001		(0.23)
Advertising Expense	-0.030	*	(0.06)	-0.089	**	(0.01)	0.004		(0.64)
R&D	0.014	**	(0.01)	-0.013		(0.39)	0.013	***	(0.00)
Dividends	-0.015	***	(0.00)	0.007		(0.17)	-0.001	*	(0.06)
Stock Return	0.003	***	(0.00)	-0.011	***	(0.00)	0.000	*	(0.05)
Returns Volatility	-0.582	***	(0.00)	-1.364	***	(0.00)	-0.088	***	(0.00)
Stock Turnover	3.330	***	(0.00)	2.844	***	(0.00)	-0.336	***	(0.00)
Price	0.000	***	(0.00)	0.001	***	(0.00)	0.000	***	(0.01)
Income per Capita	-0.007		(0.39)	0.012		(0.54)	-0.007	*	(0.09)
Population	-0.006		(0.26)	-0.023		(0.16)	0.004		(0.15)
Density	-0.026		(0.16)	-0.170	***	(0.00)	0.009		(0.37)
Religiosity	-0.010		(0.20)	-0.076	***	(0.00)	0.000		(0.98)
Population Growth	-0.002		(0.97)	0.059		(0.57)	-0.032		(0.14)
Intercept	0.144		(0.16)	0.168		(0.56)	0.030		(0.60)
Year FE	YES			YES			YES		
Industry FE	YES			YES			YES		
County FE	YES			YES			YES		
Obs	123,689			123,689			123,689		
Adj-R2	0.387			0.473			0.077		
χ^2 Transient = Quasi-Index?	4.86	**	(0.03)						
χ^2 Quasi-Index = Dedicated?	6.77	***	(0.01)						
χ^2 Dedicated = Transient?	5.59	**	(0.02)						

Table VII: **Alternative Measures for Key Variables.** This table presents results from robustness checks by employing alternative measures of social capital in Models 1–3 and ownership in Models 4–5. In Models 1 and 2, the state-level social capital and trust measures of Putnam (2000), respectively, are used as the key explanatory variable in place of the county-level RGF index of Rupasingha et al. (2006). In Model 3, state-level voter turnout is used as an alternative measure for social capital. Model 4 uses the mean of 13-F ownership over the four calendar quarters during the reporting year to measure IO, instead of using the end-of-year IO. Model 5 uses the breadth of IO (i.e., natural log of the number of institutional shareholders) in place of ownership. All models include year, industry (based on the two-digit SIC code), and county fixed effects. Coefficient estimates are reported using robust standard errors clustered either by state (Models 1–3) or by county (Models 4 and 5). *p*-values are reported in parentheses for each coefficient estimate. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Variable definitions can be found in Table AI.

	Model 1: Putnam			Model 2: Trust			Model 3: Vote			Model 4: Ann Mean IO			Model 5: Breadth		
	Coef.		p-val	Coef.		p-val	Coef.		p-val	Coef.		p-val	Coef.		p-val
Social Capital	0.013	**	(0.04)	0.098	**	(0.03)	0.108	*	(0.06)	0.018	***	(0.00)	0.071	*	(0.06)
Firm Size	0.048	***	(0.00)	0.048	***	(0.00)	0.044	***	(0.00)	0.045	***	(0.00)	0.395	***	(0.00)
Firm Age	-0.014	***	(0.00)	-0.014	***	(0.00)	-0.010	**	(0.02)	-0.007	*	(0.06)	0.017		(0.48)
M/B	0.005	***	(0.00)	0.005	***	(0.00)	0.004	***	(0.00)	0.005	***	(0.00)	0.086	***	(0.00)
Profitability	0.070	***	(0.00)	0.067	***	(0.00)	0.062	***	(0.00)	0.058	***	(0.00)	0.427	***	(0.00)
Tangibility	-0.012		(0.31)	-0.011		(0.35)	-0.007		(0.54)	-0.006		(0.63)	0.080		(0.28)
Leverage	-0.038	***	(0.00)	-0.040	***	(0.00)	-0.039	***	(0.00)	-0.032	***	(0.00)	-0.459	***	(0.00)
Advertising Expense	-0.064		(0.28)	-0.075		(0.21)	-0.065		(0.27)	-0.087	*	(0.08)	0.208		(0.56)
R&D	0.060	***	(0.00)	0.055	***	(0.01)	0.053	***	(0.01)	0.019		(0.34)	0.635	***	(0.00)
Dividends	-0.008		(0.35)	-0.009		(0.31)	-0.005		(0.58)	-0.009		(0.21)	0.090	**	(0.02)
Stock Return	-0.007	***	(0.00)	-0.007	***	(0.00)	-0.007	***	(0.00)	-0.014	***	(0.00)	-0.047	***	(0.00)
Returns Volatility	-2.107	***	(0.00)	-2.100	***	(0.00)	-1.973	***	(0.00)	-1.952	***	(0.00)	-6.639	***	(0.00)
Stock Turnover	5.966	***	(0.00)	5.905	***	(0.00)	6.204	***	(0.00)	5.905	***	(0.00)	13.844	***	(0.00)
Price	0.001	***	(0.00)	0.002	***	(0.00)	0.002	***	(0.00)	0.001	***	(0.00)	0.006	***	(0.00)
Income per Capita	0.006		(0.69)	0.002		(0.88)	0.003		(0.83)	-0.006		(0.84)	-0.214		(0.21)
Population	-0.002		(0.24)	-0.002		(0.20)	-0.003		(0.22)	-0.018		(0.37)	-0.022		(0.83)
Density	-0.026	***	(0.00)	-0.026	***	(0.00)	-0.025	***	(0.00)	-0.168	**	(0.02)	-0.224		(0.61)
Religiosity	-0.047		(0.12)	-0.052	*	(0.08)	-0.048		(0.10)	-0.095	***	(0.00)	-0.547	***	(0.00)
Population Growth	-0.590	***	(0.00)	-0.553	***	(0.00)	-0.585	***	(0.00)	0.044		(0.76)	-0.480		(0.58)
Intercept	-0.050		(0.76)	-0.058		(0.72)	-0.095		(0.56)	0.280		(0.47)	1.962		(0.37)
Year FE	YES			YES			YES			YES			YES		
Industry FE	YES			YES			YES			YES			YES		
County FE	NO			NO			NO			YES			YES		
Obs	127,208			124,367			118,625			127,166			127,166		
Adj-R2	0.470			0.472			0.452			0.506			0.489		

Table VIII: **Alternative Governance Mechanisms.** This table presents results from OLS estimations of institutional ownership (IO) using social capital (proxied by the RGF Index of Rupasingha et al., 2006) while addressing alternative governance explanations. Model 1 controls for product market competition (Hoberg and Phillips, 2016), Model 2 considers analyst coverage, Model 3 includes S&P 500 membership, Model 4 hostile takeover risk (Cain et al., 2017), and Model 5 litigation risk (Francis et al., 1994). All models include year, industry (based on the two-digit SIC code), and county fixed effects. Coefficient estimates are reported using robust standard errors clustered by county. *p*-values are reported in parentheses for each coefficient estimate. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Variable definitions can be found in Table AI.

	Model 1			Model 2			Model 3			Model 4			Model 5		
	Coef.		p-val	Coef.		p-val	Coef.		p-val	Coef.		p-val	Coef.		p-val
RGF Index	0.018	***	(0.00)	0.015	**	(0.02)	0.018	***	(0.00)	0.020	***	(0.01)	0.019	***	(0.00)
HHI	-0.032	***	(0.00)												
Analysts				0.018	***	(0.00)									
S&P 500							-0.093	***	(0.00)						
Hostile Takeover										-0.141	***	(0.00)			
Litigation Risk													-0.002		(0.71)
Firm Size	0.049	***	(0.00)	0.018	***	(0.00)	0.054	***	(0.00)	0.045	***	(0.00)	0.043	***	(0.00)
Firm Age	-0.011	**	(0.01)	-0.007	**	(0.02)	-0.006		(0.12)	0.008	**	(0.05)	-0.009	**	(0.02)
M/B	0.006	***	(0.00)	0.000		(0.92)	0.007	***	(0.00)	0.004	***	(0.00)	0.005	***	(0.00)
Profitability	0.065	***	(0.00)	0.055	***	(0.00)	0.053	***	(0.00)	0.052	***	(0.00)	0.069	***	(0.00)
Tangibility	-0.010		(0.51)	-0.026	**	(0.02)	-0.010		(0.40)	-0.006		(0.64)	-0.036	***	(0.00)
Leverage	-0.038	***	(0.00)	-0.006		(0.43)	-0.044	***	(0.00)	-0.035	***	(0.00)	-0.040	***	(0.00)
Advertising Expense	-0.111	*	(0.07)	-0.158	***	(0.00)	-0.056		(0.26)	-0.084		(0.13)	-0.115	**	(0.04)
R&D	0.021		(0.34)	-0.017		(0.34)	0.024		(0.24)	0.011		(0.59)	0.032		(0.10)
Dividends	-0.010		(0.18)	-0.013	**	(0.03)	-0.006		(0.41)	-0.010		(0.12)	-0.010		(0.18)
Stock Return	-0.006	***	(0.00)	0.001		(0.31)	-0.008	***	(0.00)	-0.006	***	(0.00)	-0.008	***	(0.00)
Returns Volatility	-2.130	***	(0.00)	-2.166	***	(0.00)	-1.903	***	(0.00)	-2.006	***	(0.00)	-2.115	***	(0.00)
Stock Turnover	5.463	***	(0.00)	4.329	***	(0.00)	5.389	***	(0.00)	6.057	***	(0.00)	5.850	***	(0.00)
Price	0.001	***	(0.00)	0.001	***	(0.00)	0.002	***	(0.00)	0.002	***	(0.00)	0.001	***	(0.00)
Income per Capita	-0.013		(0.70)	-0.017		(0.60)	0.004		(0.88)	0.009		(0.77)	-0.005		(0.86)
Population	-0.018		(0.43)	-0.011		(0.56)	-0.017		(0.39)	-0.035		(0.15)	-0.012		(0.54)
Density	-0.127		(0.20)	-0.145	**	(0.03)	-0.159	**	(0.03)	-0.202	***	(0.01)	-0.173	**	(0.03)
Religiosity	-0.063	**	(0.03)	-0.085	***	(0.00)	-0.097	***	(0.00)	-0.085	***	(0.00)	-0.091	***	(0.00)
Population Growth	0.057		(0.76)	0.039		(0.76)	0.016		(0.91)	-0.040		(0.79)	0.070		(0.63)
Intercept	0.479		(0.29)	0.160		(0.61)	0.136		(0.72)	0.355		(0.42)	0.242		(0.53)
Year FE	YES			YES			YES			YES			YES		
Industry FE	YES			YES			YES			YES			NO		
County FE	YES			YES			YES			YES			YES		
Obs	102,355			127,166			127,166			107,283			127,166		
Adj-R2	0.473			0.5627			0.4974			0.4799			0.4851		

Figure 1: **Distribution of Social Capital Among US Counties.** This figure depicts the distribution of social capital among US counties based on the 2014 version of the data. The darkness of shades indicates the quartile rank of the level of social capital based on the RGF index of Rupasingha et al. (2006).

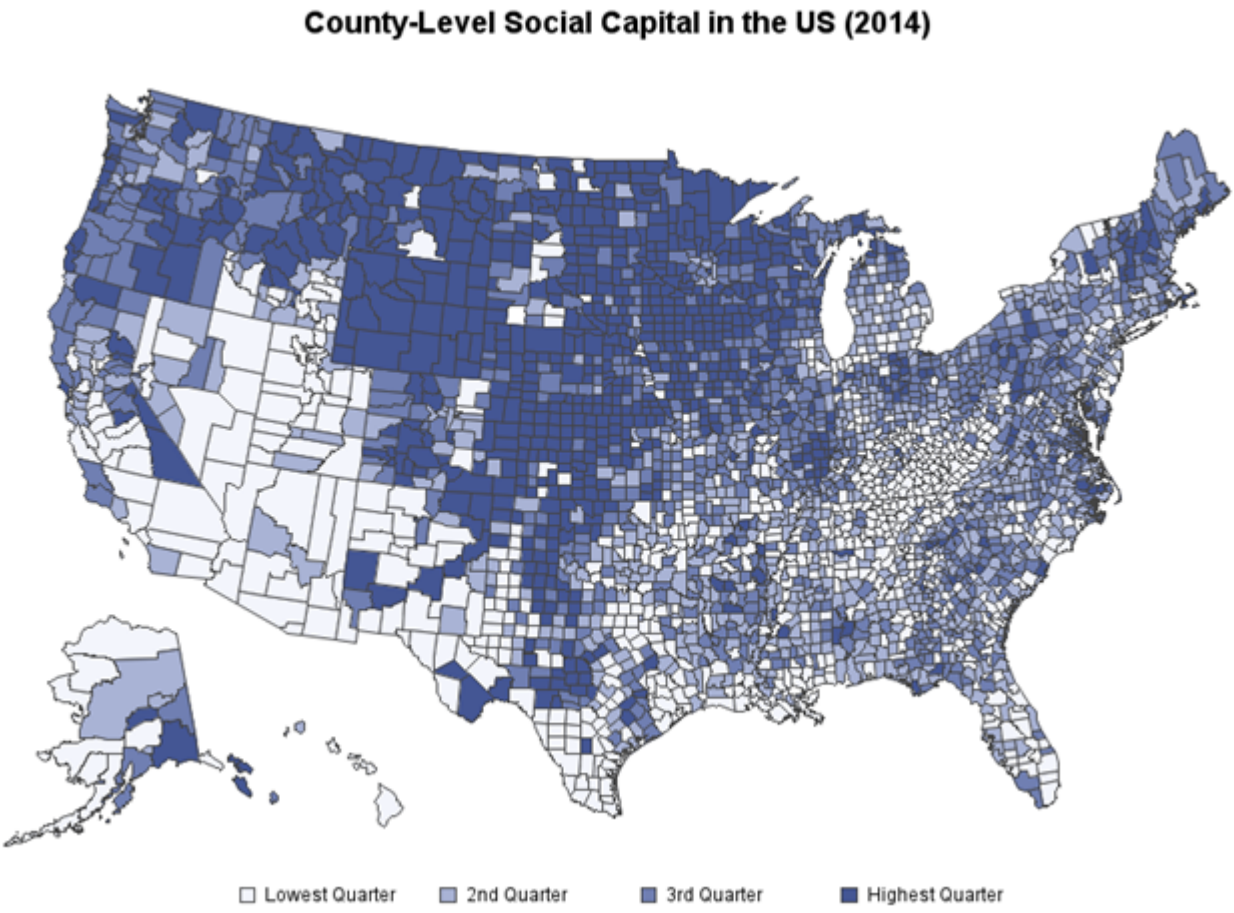

Table AI: **Variable Definitions.** This table shows the definitions of variables that are used in the study. Compustat item names, where applicable, are shown in `verbatim` fonts. The "Key Variables" section contains variables that are used in the base estimations of IO; the "Additional Variables" section contains ones that are used in the extended analyses.

Variable	Definition
Key Variables	
Institutional Ownership (IO)	The percentage of outstanding shares of a firm held by institutional investors based on their end-of-year 13F reporting.
RGF Index	The county-level social capital index of Rupasingha et al.'s (2006).
Firm Size	The natural logarithm of book assets (`at`).
Firm Age	The number of years since the firm's accounting data became available in the Compustat database.
M/B	The ratio of market value of total assets (`csho × prcc_f + at − ceq`) to book value of total assets (`at`).
Profitability	The ratio of operating income before depreciation (`oibdp`) to book value of total assets (`at`).
Tangibility	The ratio of net property, plant, and equipment (`ppent`) to book value of total assets (`at`).
Leverage	The ratio of total debt (`dlc + dltt`) to book value of total assets (`at`).
Advertising Expense	The ratio of advertising expense (`xad`) to book value of total assets (`at`). Advertising expense is assigned a value of zero if `xad` is missing.
R&D	The ratio of research and development expense (`xrd`) to book value of total assets (`at`). R&D is assigned a value of zero if `xrd` is missing.
Dividends	Dummy variable equal to one if the firm pays a dividend (`dvc`) in a given year and zero otherwise.

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Stock Return	The percent change in stock price (`prcc_f`) from year t–1 to year t.
Returns Volatility	The standard deviation of daily stock returns during the fiscal year.
Stock Turnover	The ratio of daily volume to shares outstanding, averaged over the fiscal year.
Price	Fiscal year end stock price (`prcc_f`).
Income Per Capita	Natural logarithm of income per capita in a county.
Population	Natural logarithm of population in a county.
Density	The average population per 10 square meters of land area in a county.
Religiosity	The number of adherents divided by the population in a county.
Population Growth	Population growth in a county.
Additional Variables (presented in the order of appearance in the paper)	
BNK	The percentage of outstanding shares of a firm held by banks.
INS	The percentage of outstanding shares of a firm held by insurance companies.
INV	The percentage of outstanding shares of a firm held by investment companies.
IIA	The percentage of outstanding shares of a firm held by independent investment advisors.
Racial Segmentation	One minus the Herfindahl index of the 1960 black vs. non-black population in a given state.
Confederate State	A dummy variable that is equal to one if the firm is located in a state that belonged to the Confederacy during the American Civil War from 1861 to 1865 and zero otherwise.
Illiquidity	The stock illiquidity measure of Amihud (2002).
DACC	Discretionary accruals calculated following Dechow et al. (1995).

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Expert Aud	A dummy variable that is equal to one if the client's audit firm audits at least 20% of sales in a given year in the client's industry (based on the three-digit SIC code) and zero otherwise.
Int Coverage	The ratio of EBIT (`ebit`) to interest expense (`xint`).
DD	The measure of distance-to-default of a firm based on Bharath and Shumway (2008).
z-Score	The modified Altman's z-Score; 3.3 × [ratio of earnings before interest and taxes (`ebit`) to book value of total assets (`at`)] + [ratio of total sales (`revt`) to book value of total assets (`at`)] + 1.4 × [ratio of retained earnings (`re`) to book value of total assets (`at`)] + 1.2 × [ratio of working capital (`act - lct`) to book value of total assets (`at`)].
Profitability	The ratio of operating income before depreciation (`oibdp`) to the book value of total assets (`at`).
Transient	The percentage of outstanding shares of a firm held by transient institutional investors based on the classification used in Bushee (2001) and Bushee and Noe (2000).
Quasi-Index	The percentage of outstanding shares of a firm held by quasi-indexing institutional investors (Bushee, 2001; Bushee and Noe, 2000).
Dedicated	The percentage of outstanding shares of a firm held by dedicated institutional investors (Bushee, 2001; Bushee and Noe, 2000).
Putnam	The state-level index of social capital developed by Putnam (2000).
Trust	State-level score based on a survey question in Putnam (2000) that asks if the surveyee agrees that "most people can be trusted."
Voter	The ratio of the number of participating voters for the highest office in an election year in a state to the population that is eligible for voting in that state.

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Ann Mean IO	The percentage of outstanding shares of a firm held by institutional investors based on the mean of quarterly 13F ownership figures during a reporting year.
IO Breadth	The natural logarithm of the number of institutional shareholders.
HHI	The Herfindahl index based on TNIC industries constructed by Hoberg and Phillips (2016).
Analyst	The number of analysts the issue EPS forecasts for the firm. If a firm is not followed by any analyst, this variable equals to zero.
S&P 500	A dummy variable that is equal to one if the firm is a constituent of S&P 500 index and zero otherwise.
Hostile Takeover	The hostile takeover index developed by Cain et al. (2017).
Litigation Risk	A dummy variable that is equal to one if the firm belongs to one of the industries with a high incidence of litigation and zero otherwise (Francis et al., 1994).