Institutional investor cliques and ESG performance:

Evidence from Chinese firms

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Abstract: Using a sample of Chinese firms, we identify groups of coordinated institutional investors (i.e., cliques) based on their common block stakes and study how their coordination shapes the firm's ESG policy. We document that clique ownership shows a robust and causal positive impact on the firm's future ESG performance. Further tests confirm a positive relationship between ESG and firm value in China. Additionally, we find that clique members coordinate their trades, and the coordination enhances their governance via both voice and exit threats. These results suggest that coordination increases institutional investors' governance impact, which improves their portfolio firms' ESG performance. Consistent with this argument, cross-sectional analyses demonstrate that the positive impact of clique ownership on ESG is greater for firms with weaker governance mechanisms or larger potential ESG benefits.

Key Words: Institutional investor cliques; Common ownership; ESG; Coordination; Corporate governance

JEL Classificiations: G14; G20; G30

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1. Introduction

The Environmental, Social, and Governance (ESG) impact of corporate social responsibility (CSR) activities has been increasingly attracting academic attention in recent decades (Boubakri *et al.* 2021; Gillan *et al.* 2021). Rich literature shows that ESG reputation significantly impacts the firm's market value (Harjoto & Laksmana 2018), financial performance (Manchiraju & Rajgopal 2017), capital costs (El Ghoul *et al.* 2011), risk-taking (Albuquerque *et al.* 2019), social capital (Lins *et al.* 2017), etc. Given these impacts, there are rapidly growing studies exploring how institutional investors, who are important stake owners and monitors of public firms, influence their portfolio firms' ESG policies (Dyck *et al.* 2019; Chen *et al.* 2020; Li *et al.* 2021). However, these studies reach mixed results (Gillan *et al.* 2021).

Essentially, institutional investors shape the firm's ESG performance via their governance efforts, usually proxied by the firm's total institutional ownership. However, each institutional investor usually owns small shares in any given firm and has limited incentives to monitor individually (Doidge *et al.* 2019). Accordingly, institutional investors' governance impact does not simply add up like their ownership. Instead, they have to work together to influence corporate actions (Edmans & Holderness 2016). In consideration of this, recent studies claim that coordination among institutional investors considerably determines their governance impact (Crane *et al.* 2019; Doidge *et al.* 2019; Gonzalez & Calluzzo 2019).

Based on this assertation, we expect that the coordination among institutional investors plays an important role in their impact on ESG. However, prior studies offer

mixed implications for this role, motivating us to test it empirically. Coordination may drive institutional investors to act as one block shareholder and, thus, strengthen their governance via voice (Doidge *et al.* 2019). It may also weaken their governance via exit threats because coordinated institutional investors trade less aggressively to minimize price impact (Crane *et al.* 2019). Thus, the net governance impact of such coordination can be either positive or negative. Meanwhile, institutional investors' preferences for ESG depend on its impact on shareholder wealth, on which prior studies have also reached inconclusive findings (Buchanan *et al.* 2018; Bartov *et al.* 2021). An increase in institutional investors' governance may either promote or mitigate ESG engagement (Borghesi *et al.* 2014; Dyck *et al.* 2019). In summary, whether coordination among institutional investors enhances or weakens their portfolio firms' ESG performance is an important yet unexplored empirical question.

We test this question using a sample of Chinese public firms. The Chinese setting is unique in several ways. First, institutional ownership is much lower in China than in developed countries (Lin & Fu 2017)[1], and Chinese public firms usually have a controlling shareholder (Jiang & Kim 2020). Given their minority ownership, institutional investors of Chinese firms need to work together to exert their governance influences. In other words, coordination should notably determine their governance impact. Second, due to China's developing legal institutions and its prevalent culture of "*guanxi*" (social connections), social networks considerably determine asset managers' business decisions in China (Gu *et al.* 2019). Thus, China's unique formal

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[1] The mean institutional ownership is about 16% for our sample of Chinese firms during 2008-2021. In comparison, institutional investors own over 65% of American firms by 2010s, according to Borochin and Yang (2017).

institutions and social norms may facilitate the formation of coordinated institutional investor groups, which in turn affects their governance impact (Li & Jiang 2022). Third, the motivations and consequences of ESG in developing countries, such as China, significantly differ from those in developed countries and are still under-explored (Boubakri *et al.* 2021). Specifically, China may not currently be in a position to make ESG a high priority (Jiang & Kim 2020), and Chinese consumers are relatively unwilling to share the firm's ESG cost (Bartling *et al.* 2015). These characteristics may also add to our study's uniqueness and importance.

Following the methodology of Crane *et al.* (2019), we identify groups of coordinated institutional investors (i.e., institutional investor cliques) as those connected via common block stakes in any given firm. The idea is that institutional investor networks formed by common shareholdings motivate and facilitate their information transfer and coordination (Pareek 2012; Rossi *et al.* 2018). According to this definition, larger clique ownership indicates that institutional investors have more incentives and a higher propensity to coordinate their governance activities. Using a sample of Chinese public firms during 2008-2021, we document that Chinese firms with higher clique ownership are associated with significantly better ESG performance in the subsequent year. The positive impact survives in a battery of robustness tests, including those with alternative clique ownership or ESG performance measures and those with an alternative algorithm to identify institutional investor cliques.

Our finding on the positive impact of clique ownership on ESG may suffer from endogeneity issues, such as omitted variables and reverse causality. To address the

concern about omitted variables, we add firm fixed effects in the regression, and the finding above still holds. To establish causality, we use the expansion of China's QFII (Qualified Foreign Institutional Investors) scheme during 2012-2013 as an exogenous shock that caused variation in Chinese firms' clique ownership.[2] The Chinese authority increased QFIIs' investment quota from 30 billion USD in 2011 to 80 billion in 2012 and 150 billion in 2013. Accordingly, the number of approved QFIIs increased from 165 in 2011 to 277 in 2013. We expect the newly approved QFIIs to cause exogenous changes in institutional investor networks in China, which in turn lead to the changes in institutional investor cliques and firms' clique ownership. More importantly, individual firms' ESG policies can not affect the Chinese authority's decision to expand its QFII scheme. Based on this assertation, we instrument the firm's clique ownership with the treatment effects of the QFII expansion.[3] The two-stage least square regression (2SLS) results using this instrument still document a positive impact of clique ownership on ESG, implying that the impact is causal.

To verify that coordination among clique members determines this impact, we examine their trade correlations. We find that a given institutional investor's change in position in a certain firm significantly and positively correlates with that of other institutional investors within the same clique. These results suggest that the cliques indeed coordinate their behaviors, which in turn affects their governance impact on ESG. However, the positive relationship between clique ownership and ESG can be

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[2] In 2002, the Chinese government initiated the QFII scheme, which offers Qualified Foreign Institutional Investors access to the RMB-dominated A-share markets in China with an initial quota ceiling of 4 billion USD. The scheme gradually expanded to more foreign institutions and the quota increased accordingly in the following two decades.
[3] See Equation (3) and Section 4.4 for details on this instrument.

interpreted in two different ways. Under the premise that ESG benefits Chinese firms and institutional investors demand ESG accordingly, the positive impact indicates that coordination strengthens institutional investors' governance impact. However, it may also indicate that coordination weakens institutional investors' governance, assuming that ESG is initiated by agency problems and detrimental to firm value.

Our further tests support the former interpretation but are against the latter. First, we document that Chinese firms with better ESG performance have higher market values and better financial performance in the future. Second, we find that institutional investors conduct more site visits to firms with higher clique ownership, suggesting that they send more shareholder voices to those firms. Additionally, we employ the short-selling pilot program in China as an exogenous liquidity shock and examine its impact on the changes in firm value. The results show that the increase in liquidity causes a larger increase in firm value for firms with higher clique ownership, indicating that institutional investors' governance impact via exit threats is larger for those firms.[4] Altogether, these results support the premise that ESG benefits Chinese firms, and institutional investors are motivated to promote ESG. More importantly, the results suggest that coordination strengthens institutional investors' governance via both voice and exit threats, consequently improving the ESG performance of their portfolio firms. In line with this argument, cross-sectional analyses show that the positive impact of clique ownership on ESG is more pronounced for firms with weaker governance mechanisms or larger potential ESG benefits.

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[4] This finding is opposite to the study of Crane *et al.* (2019) on American firms. We discuss this difference and its potential causes in detail in Section 5.4.

The contribution of our study to the literature is threefold. First, our study contributes to the ongoing debate on institutional investors' influence on ESG, which is found to be positive in some studies (Dyck *et al.* 2019; Chen *et al.* 2020), but negative or nonlinear in others (Borghesi *et al.* 2014; Harjoto & Laksmana 2018; Cheng *et al.* 2022). Additionally, most prior studies in this field focus on total institutional ownership, institution types, or investment horizons and relatively ignore the interactions between institutional investors (Cheng *et al.* 2022). Unlike these studies, we reveal that coordination among institutional investors results in their portfolio firm's ESG improvement, controlling for the impact of total institutional ownership. In this way, we enrich the understanding of the relationship between institutional investors and ESG and, more importantly, the plausible underlying mechanism of the relationship.

Second, we add to the fast-growing studies on coordination among institutional investors. While existing studies explore the impact of such coordination on the firm's operational and financial outcomes (Crane *et al.* 2019; Doidge *et al.* 2019; Gonzalez & Calluzzo 2019), we examine its impact on the firm's ESG performance that stands for the extent to which the firm benefits or harms social welfare (Gillan *et al.* 2021). Additionally, most existing studies focus on developed markets and find that coordination strengthens institutional investors' governance via voice but weakens governance via exit (Edmans & Manso 2011; Bharath *et al.* 2013; Crane *et al.* 2019). However, our study on China, the largest emerging market with low institutional ownership and weak investor protections, provides evidence that coordination strengthens institutional investors' governance via both voice and exit. These findings

suggest that the impact of such coordination is subject to market characteristics, calling for further studies on emerging markets.

Third, our study is also related to the broad research on ESG. As summarized by Boubakri *et al.* (2021), the motivation and outcomes of ESG in emerging markets notably differ from those in developed ones and are still under-explored. Firms' ESG engagement is less expected by external stakeholders and the general public in developing countries (Ali *et al.* 2017). Nevertheless, we find that the coordination of institutional investors improves their portfolio firms' ESG performance by enhancing their governance, implying the positive role of corporate governance in promoting ESG in developing countries. Additionally, we demonstrate that ESG increases Chinese firms' market value and financial performance. Thus, we also contribute to the debate on the relationship between ESG and firm value in developing countries (Zhang *et al.* 2020; Broadstock *et al.* 2021; Yi *et al.* 2022).

The rest of this paper is as follows: Section 2 reviews related studies and develops testable hypotheses. Section 3 describes our data and methodology. In Section 4, we present the empirical results showing the impact of clique ownership on ESG. Section 5 verifies the mechanism underlying the impact, and Section 6 reports the cross-sectional variation in the impact. Finally, Section 7 concludes this study.

2. Literature review and hypothesis development

2.1 Institutional investors and ESG

Institutional investors are globally important owners and vital external monitors

of publicly traded firms (Aggarwal *et al.* 2011; Borochin & Yang 2017). Meanwhile, it has become a standard strategy for publicly traded firms to incorporate ESG impact into their operations over the recent decades (Cheng *et al.* 2022). Accordingly, the question of how institutional investors shape the firm's ESG performance has been intensively explored (Gillan *et al.* 2021). However, prior studies reached mixed conclusions on this question. Depending on different samples, methodologies, and ESG measures, existing studies document that the impact of institutional investors on ESG can be positive (Dyck *et al.* 2019; Chen *et al.* 2020), negative (Borghesi *et al.* 2014; Cheng *et al.* 2022), or nonlinear (Harjoto *et al.* 2017).

The main reason for the inclusive relationship is that institutional investors' demand for ESG depends on its impact on shareholder wealth, on which prior studies have not reached conclusive findings, either. On the one hand, the stakeholder theory states that ESG activities increase firm value by enhancing the firm's reputation and social capital among stakeholders (Bartov *et al.* 2021), such as debtors, customers, suppliers, etc. In line with this view, empirical studies show that ESG performance decreases the firm's financing costs (El Ghoul *et al.* 2011), increases customer loyalty and the firm's access to trade credit from suppliers (Zhang *et al.* 2014), and offers insurance-like protection against negative events (Lins *et al.* 2017; Shiu & Yang 2017; Ding *et al.* 2021). Given these positive impacts, institutional investors may act as a driving force for ESG investments, leading to a positive relationship between institutional ownership and ESG (Dyck *et al.* 2019).

On the other hand, opponents of ESG argue that ESG investments are a waste of

corporate resources since such investments deviate from the firm's objective of shareholder wealth maximization (Friedman 1970). Based on this assertion, the agency theory claims that the firm's ESG engagement is initiated by agency problems between shareholders and managers, thus detrimental to firm value (Buchanan *et al.* 2018). For example, managers may overinvest in ESG for their private benefits, such as improving their own reputation as good global citizens (Barnea & Rubin 2010). Additionally, managers may use ESG as a strategic tool to disguise their inefficiency or misconduct in daily operations (Du 2015; Flugum & Souther 2022). Consistent with agency theory, Borghesi *et al.* (2014) demonstrate that institutional investors act as external monitors of managers' self-interested behaviors, causing a negative relationship between the firm's institutional ownership and corporate social responsibility activities.

2.2 Institutional investor cliques and ESG

Essentially, institutional investors shape the firm's ESG outcomes via their governance impact on corporate actions. Although global institutional ownership has risen considerably in the last few decades, it is dispersed among individual firms (Borochin & Yang 2017), which may impede institutional investors' governance impact due to the "free rider" problem. Given their fractional ownership in any given firm, institutional investors may not have sufficient power to influence corporate actions if they act independently. Accordingly, whether institutional investors coordinate their behaviors and how such coordination affects their governance have attracted increasing attention from investors, policy-makers, and scholars (Azar *et al.* 2018; Ge *et al.* 2022).

Most existing studies in this field focus on coordination events that are observable

ex-post, such as activism campaigns through formal collective action organizations (Appel *et al.* 2019; Doidge *et al.* 2019; Gonzalez & Calluzzo 2019). Unlike these studies, Crane *et al.* (2019) propose identifying coordinated groups of institutional investors ex-ante through the connections in the network of institutional holdings. They label these groups as cliques and define a clique as a group of institutions where each member is connected via a common block stake (>=5% ownership) in any given firm. In this way, clique ownership proxies for institutional investors' incentives and propensity to coordinate their governance based on their connections. Crane *et al.* (2019) then demonstrate that an increase in clique ownership strengthens institutional investors' governance via voice but weakens governance via exit threats.

Following the methodology of Crane *et al.* (2019), we plan to examine the impact of institutional investor cliques on the ESG performance of Chinese firms. Our motivation is that prior studies, including that of Crane *et al.* (2019), offer mixed implications on the impact. According to Crane *et al.* (2019), institutional investor cliques facilitate governance via voice but mitigate governance via exit threats in America. Therefore, the net effect of clique ownership on governance impact may be inconclusive. Additionally, the governance impact of institutional investor cliques in China may differ from that in America since the two markets differ notably in ownership structures, institution backgrounds, and culture (Gul *et al.* 2010; Jiang & Kim 2020). Meanwhile, as discussed earlier, institutional investors may either promote or mitigate the firm's ESG activities, depending on whether such activities help align stakeholders' interests or are initiated by agency problems. Similar to other countries,

prior studies on the driving forces of ESG and their impact on firm value in China reach inconclusive findings (Tian *et al.* 2011; Yi *et al.* 2022). Therefore, it is difficult to anticipate whether the coordination of institutional investor cliques increases or decreases Chinese firms' ESG performance, even if the net governance impact of the coordination is explicit.

In summary, whether firms with higher clique ownership have better or worse ESG performance in the future is an empirical question. Assuming that the coordination of institutional investor cliques shows a positive net governance impact, an increase in clique ownership should enhance (weaken) ESG performance if ESG helps increase (decrease) firm value. On the contrary, Chinese firms with larger clique ownership should be associated with worse (better) ESG performance if ESG activities are beneficial (detrimental) to firm value, given that coordination exhibits a negative net effect on institutional investors' governance impact. Based on these assertions, we propose a pair of competing hypotheses as follows:

Hypothesis H1a: Firms with a larger fraction of shares owned by institutional investor cliques are associated with better future ESG performance.

Hypothesis H1b: Firms with a larger fraction of shares owned by institutional investor cliques are associated with worse future ESG performance.

3. Sample, data, and methodology

3.1 Sample and data

To test our hypotheses, we construct a sample of Chinese public firms during

2008-2021. We start our sample from 2008 since most Chinese public firms had completed their split share reform by 2007, which exhibited profound influences on their ownership structure and stock liquidity. Following prior studies, we exclude firms with special treatment marks, financial firms, and observations with missing variables. The final sample consists of 27,594 firm-year observations from 3,422 firms.

The primary ESG data used in our study is obtained from the Sino-Securities Index Information Service (Shanghai) Co.Ltd (denoted as SNSI hereafter).[5] SNSI combines the core of international ESG standards and China's unique characteristics to build its ESG rating system, including a four-tier structure with more than 300 underlying indicators.[6] SNSI provides ESG scores ranging from 0 to 100 for all listed firms in China's A-share market dating back to 2009. As discussed later, we examine the impact of clique ownership on the firm's ESG performance in the subsequent year. Accordingly, SNSI ESG scores fit our sample period well. In robustness tests, we also use ESG data from an alternative ESG rating agency: Rankins ESG Ratings (RKS hereafter). Unless otherwise stated, data other than ESG scores is obtained from CSMAR, i.e., the China Stock Market & Accounting Research database.

3.2 Identifying institutional investor cliques

Following Crane *et al.* (2019), we identify coordinated groups of institutional investors (i.e., cliques) within the network formed by institutional investors' holdings. Prior studies suggest that common holdings drive institutional investors' direct

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[5] Tian and Tian (2022) also use SNSI ESG data in their study and refer it as Hua Zheng ESG ratings.
[6] The details on the methodology of SNSI ESG Ratings is available at https://www.chindices.com/files/Sino-Securities%20Index%20ESG%20Ratings%20Methodology.pdf

communication and interactions (Pool *et al.* 2015). Based on this notion, Crane *et al.* (2019) state that there is a connection between a pair of institutions if they hold common block stakes (>=5% ownership) in any given firm. They then define a clique as a group of institutional investors connected to each other, arguing that the connections proxy for clique members' incentives and propensity to coordinate.

To identify the institutional investor cliques defined by Crane *et al.* (2019), we construct an N×N matrix each year, representing the relationships among the N institutional investors in the market. For a pair of institutional investors denoted as institutions i and j, the off-diagonal element of X_{ij} in the matrix equals 1 if both institutions own a large stake in common in at least one firm and 0 otherwise. Following Crane *et al.* (2019), we use no less than 5% ownership as the cutoff of "a large stake" when identifying cliques.[7] Although it is easy to judge whether two institutional investors belong to the same clique, identifying cliques in the massive network of institutional holdings depends on complicated algorithms developed by network researchers. We use the Louvain algorithm developed by Blondel *et al.* (2008) to approximate the identification of cliques, as suggested by Crane *et al.* (2019).

The Louvain algorithm identifies an average of 6 cliques each year during our sample period, and the median (mean) amount of members in identified cliques is 8 (9.2). For any given year, about 17.4% of institutional investors in China are members of the identified cliques, and the cliques hold an average of 5.8% ownership of our sample firms. Compared to the American market studied by Crane *et al.* (2019), there

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[7] As discussed later in Section 4.3, we use alternative cutoffs (a 3%, 2.5%, or 1% ownership) in robustness tests.

are fewer cliques and lower clique ownership in China's A-share market. A plausible reason is that Chinese public firms' total institutional ownership is much lower than their American peers. The average institutional ownership is about 16% for our sample firms. In contrast, institutional investors own over 65% of American firms by the 2010s, according to Borochin and Yang (2017).

3.3 Regression model

Based on the identified cliques, we test the impact of coordination among institutional investors on the firm's ESG performance with the following model:

$$ESG_{i,t+1} = \alpha + \beta_1 CliqueOwn_{i,t} + \Sigma Controls + IndFE + YearFE + \varepsilon_{i,t} \tag{1}$$

where $ESG_{i,t+1}$ is the firm's one-year lead ESG performance proxied by its SNSI ESG score. The independent variable of most interest is firm i's total clique ownership, denoted as $CliqueOwn_{i,t}$ and calculated as follows:

$$CliqueOwn_{i,t} = \sum_{j=1}^{N} \lambda_{i,j,t} \times CliqueMember_{j,t} \tag{2}$$

Assuming that N institutional investors hold firm i's shares at the end of year t. $CliqueMember_{j,t}$ is a dummy that equals 1 if the jth institutional investor of firm i belongs to at least one clique over year t. Otherwise, $CliqueMember_{j,t}$ equals 0. $\lambda_{i,j,t}$ is firm i's shares owned by the jth institutional investor at the end of year t. Accordingly, $CliqueOwn_{i,t}$ is firm i's stock shares owned by all institutional cliques, which can proxy for institutional investors' incentives and propensity to coordinate.

Following prior studies on the determinants of the firm's ESG engagement, we control for several firm characteristics in Equation (1). First, we use a set of firm-level accounting and financial proxies as control variables, including the firms' book-to-

market ratio ($BM_{i,t}$), total assets ($LnAsset_{i,t}$), Tobin's Q ($TobinQ_{i,t}$), asset tangibility ($Tan_{i,t}$), profitability ($Profit_{i,t}$), and financial leverage ($Lev_{i,t}$). Since this study explores the impact of the ownership of certain institutional investor groups on ESG, we also control for the firms' total institutional ownership ($IO_{i,t}$). Similarly, we control for a set of proxies for the firm's ownership structure, which matters to its governance structure and, thus, its ESG performance. Those proxies include the firm's stake owned by its largest shareholder ($Top1_{i,t}$), top managers ($ManOwn_{i,t}$), and the state ($SOE_{i,t}$). Finally, we control for the firm's board size ($BSize_{i,t}$) and independence ($BIndep_{i,t}$) since they are important governance mechanisms as institutional investors do. The detailed definitions of all variables are reported in the Appendix.

Table 1 reports the summary statistics of the main variables used in our study. All continuous variables are winsorized at the 1% and 99% percentiles for the concern of outliers. The average SNSI ESG scores of sample firms are 73.360, equivalent to a rating of "B" (the fifth grade) in SNSI's nine-grade ESG rating of "AAA-C." This is consistent with the notion that, on average, Chinese firms do not make social concerns a high priority (Jiang & Kim 2020). As discussed earlier, the total clique ownership ($CliqueOwn_{i,t}$) of the average sample firms is 5.8%, which is significantly lower than that of American firms since the total institutional ownership in China is much lower. The standard deviation and the maximum value of $CliqueOwn_{i,t}$ are 0.094 and 0.475, implying a sufficient variation of $CliqueOwn_{i,t}$ for our empirical tests.

<Insert Table 1 here>

4. Clique ownership and ESG performance

4.1 Baseline regression results

Table 2 reports the regression results of our baseline model shown in Equation (1). In all settings, we control for industry and year fixed effects and use standard errors clustered at the firm level to infer the statistical significance of estimated coefficients. In Column (1), we use SNSI ESG scores as the proxy of ESG performance and employ the full sample in the regression. The coefficient of $CliqueOwn_{i,t}$ is 2.121 with a 1% significance level, consistent with Hypothesis H1a that firms with higher clique ownership are associated with better future ESG performance. This finding implies that coordination among institutional investors promotes ESG for Chinese firms.

We then employ alternative settings to explore the robustness of the results in Column (1). In Column (2), we exclude observations during 2020-2021 to address the potential impact of the COVID-19 pandemic on our regression results, considering that firms may change their ESG policies to cater to investors' change in demand for ESG during the pandemic (Broadstock *et al.* 2021; Ding *et al.* 2021). In Column (3), we exclude the firm's blockholders with at least 5% ownership from cliques while calculating the total clique ownership. Prior studies suggest that blockholders play an important role in the governance of Chinese firms (Jiang & Kim 2020). By excluding blockholders, we can further verify the role of coordination in the governance impact of institutional investors with only fractional shares in the firm. In Column (4), we alternatively measure ESG performance with ESG scores issued by RKS (denoted as $RKS\_ESG_{i,t+1}$), which have been commonly employed in ESG- or CSR-related studies

on Chinese firms (Zhang *et al.* 2020; Xiang *et al.* 2021). In Columns (2) to (4), the coefficient of *CliqueOwn$_{i,t}$* is always positive with a 1% significance level, implying that the positive impact of clique ownership on ESG is robust.

The results of control variables are generally consistent with existing studies. The coefficient of institutional ownership (*IO$_{i,t}$*) is statistically insignificant in most columns, implying that institutional investors of Chinese firms may not influence the firm's ESG policies without coordination. Both *ManOwn$_{i,t}$* and *BIndep$_{i,t}$* are significantly and positively related to the firm's future ESG performance. The results suggest that managers more motivated or better monitored are more likely to engage in ESG activities, implying a positive relationship between the firm's governance quality and ESG engagement.[8] Additionally, Table 2 shows that firms with bigger sizes (*LnAsset$_{i,t}$*), higher profitability (*Profit$_{i,t}$*), or lower financial leverage (*Lev$_{i,t}$*) have better future ESG performance. These results are consistent with the idea that firms less financially constrained make more ESG investments since ESG is costly (Xu & Kim 2022).

<div align="center">**<Insert Table 2 here>**</div>

4.2 Alternative measures of clique ownership

We further verify the robustness of the positive impact of coordination on ESG with three alternative clique ownership measures. The first is firm *i*'s shares owned by its largest institutional investor clique (*CliqueTop1$_{i,t}$*), and the second is the ownership concentration of the firm's all cliques (*CliqueHHI$_{i,t}$*). Specifically, *CliqueHHI$_{i,t}$* is the

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[8] These results also indicate that coordination increases ESG performance by strengthening institutional investors' governance, which we formally verify in Section 5.

sum of the squares of the fraction of firm i owned by each clique. Both measures are suggested by Crane *et al.* (2019) as well and are based on cliques identified with the Louvain algorithm. The third measure is the aggregate ownership of firm i's cliques identified with the Bron-Kerbosch algorithm developed by Bron and Kerbosch (1973). Identifying cliques in a network is a nondeterministic polynomial (NP) complete problem, and the Bron-Kerbosch algorithm is one of the classic algorithms to solve the problem.

Table 3 reports the regression results using the three alternative clique ownership measures. We use SNSI ESG scores to proxy for ESG performance in Panel A and RKS ESG scores in Panel B. The results of control variables are omitted for brevity. The coefficients of clique ownership measures are positive in all six columns and are statistically significant in five columns. These results suggest a robust positive impact of clique ownership on ESG.

<Insert Table 3 here>

4.3 Alternative ownership cutoffs to identify cliques

Our methodology to identify cliques depends on the assumption that institutional investors within a clique are connected and motivated to coordinate because they hold a large stake in common in at least one firm. In previous sections, we set the cutoff of "a large stake" as no less than 5% ownership, as Crane *et al.* (2019) do in their study on American firms. As discussed earlier, the institutional ownership of Chinese firms is much lower than American firms. Accordingly, the common ownership needed to

motivate coordination can also be lower for institutional investors in China, and using

the 5% ownership cutoff may underestimate their coordination. To address this concern,

we alternatively set the cutoff as 3%, 2.5%, or 1% ownership and repeat the baseline

model regressions in Table 4. The results show that the aggregate clique ownership

($CliqueOwn_{i,t}$) is always positively related to the firm's future ESG performance with a

1% significance level.[9] These results show that our finding about the positive impact

of clique ownership on ESG is robust to the ownership criteria of cliques.

<div align="center">**<Insert Table 4 here>**</div>

4.4 Addressing endogeneity issues

So far, we have reached robust results showing that firms with higher clique

ownership are associated with better ESG performance. We argue that these results

suggest that coordination among institutional investors leads to an increase in the firm's

ESG performance. However, this argument may suffer from endogeneity issues such as

omitted variables and reverse causality. Unobservable or omitted firm characteristics

may simultaneously drive the increase in the firm's clique ownership and future ESG

performance. Additionally, it is possible that institutional investor cliques prefer

holding firms expected to have high ESG scores, but not that their active monitoring

improves the ESG performance of firms then own.

To address the issue of omitted variables, we add firm fixed effects in the

regressions and report the results in Table 5. All four clique ownership measures

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[9] In untabulated tests, we reach similar results while measuring clique ownership with *CliqueTop1$_{i,t}$* or *CliqueHHI$_{i,t}$*. For brevity, we do not report these results in Table 4.

previously used are positively related to the firm's future SNSI ESG score with a 1% significance level. These results demonstrate that unobservable or omitted firm characteristics do not drive the positive impact of coordination on ESG.

<Insert Table 5 here>

To establish the causality of this impact, we employ the expansion of China's QFII scheme during 2012-2013 as an exogenous shock that causes variation in Chinese firms' clique ownership. The Chinese authority launched its QFII scheme to open its stock markets to Qualified Foreign Institutional Investors in 2002. It initially limited the investment quota of QFIIs to 4 billion USD and gradually increased it to 30 billion USD by 2007. The quota was then increased to 80 billion in April 2012 and 150 billion in July 2013. Simultaneously, the number of approved QFIIs increased from 165 in 2011 to 277 by 2013. The newly approved QFIIs may form new connections with each other and/or existing institutional investors and expand the aggregate institutional investor network. The expansion in the network then may cause an increase in institutional investor clique members and, consequently, an increase in Chinese firms' total clique ownership. Based on this assertation, we instrument firm i's clique ownership with the treatment of the exogenous QFII expansion on firm i, denoted as:

$$Treatment_{i,t} = \sum_{j}^{N} \lambda_{i,j,t} \left(\frac{1}{|\mathbf{C}_j|} \sum_{k \in C_j} \delta_k \right) \tag{3}$$

where $\lambda_{i,j,t}$ is institution j's ownership in firm i by year t, and N is the number of institutions holding firm i. C_j is the number of institutions connected to institution j via common block stakes (>=5% ownership) in any given firm, and $|C_j|$ is its cardinality.

Finally, δ_k is a dummy that equals 1 if institution k is a new QFII, i.e., a QFII approved by the Chinese authority later than April 2012. Otherwise, δ_k equals 0. Using $Treatment_{i,t}$, we instrument the firm's clique ownership with the change in institutional investor networks resulting from the exogenous increase in QFIIs. Since individual firms' ESG policies are irrelevant to the Chinese authority's decision to expand the QFII scheme, $Treatment_{i,t}$ meets the exclusion criterion as a valid instrumental variable. Additionally, it is worth mentioning that new QFIIs are only used to establish connections in the networks of institutional investors. For any given firm, its change in total institutional ownership and QFII ownership may be trivial after new QFIIs become a clique member. Accordingly, our 2SLS regression results are free from the concern that $Treatment_{i,t}$ proxies for the firm's total institutional ownership or QFII ownership.

Table 6 reports the 2SLS regressions using $Treatment_{i,t}$ as the instrument of clique ownership measures. The Chinese authority further increased the QFII quota to 300 billion USD in January 2019 and removed the quota restriction in September. To isolate the impact of the two events on our tests, we exclude observations during 2019-2021 in Table 6.[10] In columns (1), (3), (5), and (7), we regress the four clique ownership measures on $Treatment_{i,t}$ and control variables in the baseline model. The coefficients of $Treatment_{i,t}$ are always positive with a 1% significance level, consistent with the prediction that the QFII expansion increased the clique ownership of Chinese firms. The F-statistics in those columns are considerably higher than 10. According to Staiger and Stock (1997), we reject the hypothesis that $Treatment_{i,t}$ is a weak instrument.

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[10] In untabulated tests, we reach similar results when including these observations.

Columns (2), (4), (6), and (8) report that instrumented clique ownership measures are always positively related to $ESG_{i,t+1}$ at the 1% significance level. These results support that the positive impact of clique ownership on ESG is casual.

5. Mechanism for the impact of clique ownership on ESG

So far, we have revealed a casual and robust positive impact of clique ownership on ESG. As discussed in Section 2.2, we can interpret the positive impact in two different ways. Assuming that ESG benefits Chinese firms, the positive impact implies that coordination among institutional investors increases their governance impact. On the opposite, it may suggest that such coordination decreases institutional investors' governance impact if ESG is initiated by agency problems and is detrimental to firm value. In this section, we empirically verify which interpretation is more plausible. First, we examine the trade similarities among clique members to verify that they coordinate their behaviors as assumed. We then study whether ESG benefits or harms Chinese firms to indicate whether coordination increases or decreases institutional investors' governance impact. Finally, we explore how coordination affects institutional investors' governance via voice and exit.

5.1 Coordination among clique members: Evidence from trade similarities

The key assumption of this study is that institutional investors coordinate their behaviors. Although prior studies provide evidence for this assumption in markets outside China (Appel *et al.* 2019; Crane *et al.* 2019; Doidge *et al.* 2019), no similar

evidence is yet documented in China's A-share market. Accordingly, it is necessary to examine whether the members of institutional investor cliques in China coordinate their behaviors as assumed. Institutional investors exert their governance via either voice (e.g., voting) or exit (e.g., trading). Since voting data of Chinese public firms is unavailable to us, we focus on their institutional investors' coordination in trading. Specifically, we estimate the following model to examine the trade similarities among clique members:

$$dShare_{i,j,h} = \alpha + \beta_1 dCliqShare_{i,j,h} + \beta_2 dNonCliqShare_{i,j,h} + FirmFE + InstFE + HalfYearFE + \varepsilon_{i,j,h} \quad (4)$$

where $dShare_{i,j,h}$ is the change in firm i's shares owned by institution j over half-year h. The independent variable of interest is the change in firm i's shares owned by institutional investors connected to institution j via any clique ($dCliqShare_{i,j,h}$). We collect half-year observations since institutional investors in China only disclose their detailed mid-year and year-end portfolios. A significant positive β_1 indicates that clique members simultaneously increase or decrease their holdings in any given firm. That is, they make coordinated trades. For comparison, we control for the change in firm i's shares owned by institutional investors not connected to institution j ($dNonCliqShare_{i,j,h}$). Additionally, we add firm and institution fixed effects (denoted as *FirmFE* and *InstFE*) in Equation (4) to control for the potential impact of firm or institution characteristics on institutional investors' holdings. Similarly, we include half-year fixed effects (*HalfYearFE*) in the model to control for the change in institutional investors' portfolios over time.

Table 7 reports the regression results of Equation (4). $dCliqShare_{i,j,h}$ is always

positively related to $dShare_{i,j,h}$ with a 1% significance level in all columns. In Column (4), the coefficient of $dCliqShare_{i,j,h}$ is 0.542 when controlling for $dNonCliqShare_{i,j,h}$ and the fixed effects. It implies that a 1% ownership change in any given firm by institutional investors connected to institution j would result in a comparable change (0.542%) in institution j's ownership in the firm. In comparison, Column (4) shows that a 1% ownership change in non-clique members only causes a 0.038% ownership change in institution j. The p-value testing the coefficient difference between $dCliqShare_{i,j,h}$ and $dNonCliqShare_{i,j,h}$ suggests that the difference is highly significant. These results confirm that clique members simultaneously change their holdings in any given firm, i.e., make coordinated behaviors as assumed.

<div align="center">**<Insert Table 7 here>**</div>

5.2 Impact of ESG on firm value for Chinese firms

To provide implications on whether institutional investors in China demand ESG or not, we examine the relationship between Chinese firms' ESG performance and their future market value and financial performance in Table 8. Specifically, we measure the firm's market value with Tobin's Q ($TobinQ_{i,t}$) and use industry-adjusted ROE ($AdjROE_{i,t}$) or ROA ($AdjROA_{i,t}$) as financial performance proxies. Following existing studies, we control for the firm's book-to-market ratio ($BM_{i,t}$), size ($LnAsset_{i,t}$), financial leverage ($Lev_{i,t}$), ownership of the largest shareholder ($Top1_{i,t}$), institutional ownership ($IO_{i,t}$), state ownership ($SOE_{i,t}$), and capital expenditures ($CapEx_{i,t}$) in Table 8.

In Column (1) of Table 8, the firm's lagged SNSI ESG performance ($ESG_{i,t-1}$) is

positively related to Tobin's Q with a 1% significance level.[11] Similarly, $ESG_{i,t-1}$ is positively related to the firm's industry-adjusted ROE (ROA) with a 10% (5%) significance level. These results demonstrate that institutional investors benefit from Chinese firms' ESG investments, implying that they are motivated to promote ESG via governance. Accordingly, these findings also indicate that a more plausible interpretation of the positive impact of clique ownership on ESG is that coordination increases rather than decreases institutional investors' governance impact.

<Insert Table 8 here>

5.3 Clique ownership and governance via voice

Since the previous section reveals a positive relationship between Chinese firms' ESG performance and their market values or financial performance, the documented positive impact of clique ownership on ESG indicates that coordination enhances institutional investors' governance impact. In the following two sections, we explore whether coordination enhances their governance via voice, exit threats, or both. Dyck *et al.* (2019) state that governance via voice takes the form of public shareholder proposals or private engagements between investors and managers. Since the data on Chinese public firms' shareholder proposals is unavailable to us, we focus on the latter form. Specifically, we examine the impact of clique ownership on institutional investors' corporate site visits, which offer them private access to management teams of firms

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[11] We lag ESG to mitigate the concern about the endogneity relationship between the firm's contemporaneous ESG performance and its market value or financial performance. Untabulated tests show that our findings do not qualatively change when lagging all independent variables.

visited (Cheng *et al*. 2019; Yang *et al*. 2020). Recent studies prove that paying site visits is a form of soft activism that allows institutional investors to directly express their governance concerns, i.e., their voices (Jiang & Yuan 2018; Cao *et al.* 2022; Guo *et al.* 2023). If coordination increases institutional investors' governance via voice, we expect they conduct more site visits to firms with higher clique ownership.

In Table 9, we regress the proxies for the frequency of institutional investors' site visits on measures of the firm's clique ownership and control variables. $DVisit_{i,t}$ is a binary variable that equals 1 if firm i is visited by institutional investors at least once over year t and 0 otherwise. We run logistic regressions when using $DVisit_{i,t}$ as the dependent variable. $LnNVisit_{i,t}$ is the natural logarithm of one plus the number of times for which institutional investors visit firm i over year t. We use Chinese firms listed on the Shenzhen Stock Exchange (SZSE) during 2012-2021 as sample firms in Table 9 because of the availability of the visit data. [12] Table 9 shows that all four clique ownership measures used in this study are positively related to $DVisit_{i,t}$ or $LnNVisit_{i,t}$ with a 1% significance level. These results support that institutional investors send more voices to firms with higher clique ownership. That is, coordination increases institutional investors' governance via voice.

<Insert Table 9 here>

5.4 Clique ownership and governance via exit

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[12] Since 2012, the SZSE has mandated Chinese firms listed on it to disclose detailed records on such visits within two trading days of their completetion. The records provide information about dates, visitors, hosters, locations, questions discussed and mangers' responses to the questions, etc. The other stock exchange in mainland China, the Shanghai Stock Exchange do not introduce similar requirments for its listed firms. See Yang *et al.* (2020) for detailed backgrounds. We collect visit data from CSMAR.

Finally, we investigate the impact of clique ownership on institutional investors' governance via exit threats. Like Crane *et al.* (2019), we examine this based on the link between stock liquidity and exit threats since actual threats are unobservable. High stock liquidity decreases the price impact of institutional investors' trades. Accordingly, an increase in stock liquidity should facilitate their exit threats and increase firm value (Edmans 2009; Bharath *et al.* 2013). Based on this idea, Crane *et al.* (2019) conclude that a positive liquidity shock should increase more (less) value for firms with larger clique ownership if coordination enhances (weakens) institutional investors' exit threats.

We employ the pilot program removing short-selling constraints in China as an exogenous liquidity shock and investigate whether the sensitivity of Chinese firms' value to this shock varies with their clique ownership. The Chinese authority announced the pilot program in March 2010 and gradually expanded it to about 50% of Chinese public firms by 2021. Prior studies have confirmed that the pilot program enhances the liquidity of designated firms since short-selling provides additional liquidity to the market (Li *et al.* 2018). Based on this finding, we examine whether the pilot program's impact on designated firms' value correlates with the firms' clique ownership.

Table 10 reports the results of regressing the firm's value proxied by Tobin's Q on lagged clique ownership, $MT_{i,t}$, their interaction term, and control variables. $MT_{i,t}$ is an indicator that equals 1 for pilot firms allowed for short-selling and 0 otherwise. The coefficients of $MT_{i,t}$ are positive with a 5% or higher significance level, consistent with the notion that short-selling increases firm value by increasing liquidity. The interaction terms of the four clique ownership measures and $MT_{i,t}$ are always positively related to

Tobin's Q with a 1% significance level. These results show that the value effect of the positive liquidity shock caused by the removal of short-selling constraints is larger for firms with higher clique ownership. As discussed earlier, this finding implies that coordination increases institutional investors' governance via exit threats.

In contrast to our study, Crane *et al.* (2019) find that coordination decreases institutional investors' exit threats for American firms. They argue that the reason is that institutional investors of cliques with larger ownership have to trade less aggressively due to the concern about the price impact of their trades. However, the total institutional ownership and the clique ownership of Chinese firms are much lower than American firms. For example, the mean clique ownership is 5.8% in our study and 29% in Crane *et al.* (2019). Thus, institutional investor cliques in China face a weaker price impact than those in America when trading collectively. In other words, institutional investor cliques in China may be relatively less concerned about their collective trades' price impact. In contrast, they may exert a larger governance impact when they can threaten to exit collectively via coordination. Therefore, the coordination among institutional investor clique members in China strengthens rather than weakens their exit threats.

<center>**\<Insert Table 10 here\>**</center>

6. Cross-sectional analyses

Previous sections reveal that ESG benefits Chinese firms, implying that institutional investors in China are motivated to exert their governance impact to promote ESG. Meanwhile, coordination increases institutional investors' governance

via voice and exit threats, resulting in the documented positive relationship between clique ownership and ESG. As final tests of these findings, we run subsample regressions to explore the cross-sectional variation in this relationship.

6.1 Subsamples based on governance mechanisms

First, we split our sample into subsamples based on the firm's governance mechanisms. If larger clique ownership results in better ESG performance because coordination enhances institutional investors' governance, the marginal impact of such coordination should be larger for firms with weaker internal or external governance mechanisms. We use the firm's internal control quality to proxy for its internal governance quality and employ analyst coverage to measure its external governance quality. Rich literature documents that internal control is an effective governance tool (Chen *et al.* 2017), and analysts serve as external monitors by collecting, disseminating, and producing information for the market (Chen *et al.* 2015).

In Panel A of Table 11, we divide observations into the High (Low) subsample if the firm's internal control quality is above (below) the sample median. Similarly, we divided observations into the High or Low subsample in Panel B depending on whether their analyst coverage is above the sample median. We proxy for internal control quality with the DIB internal control index obtained from DIB internal control and risk management database,[13] and analyst coverage is the number of analysts following the firm over the year. We then estimate the baseline model using each subsample.

As shown in Panels A and B of Table 11, although *CliqueOwn$_{i,t}$* is significantly

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[13] See http://www.dibdata.cn/.

and positively related to $ESG_{i,t+1}$ in all columns, its coefficient is larger in magnitude for the Low subsamples. For example, the coefficient of $CliqueOwn_{i,t}$ is 3.920 for the subsample of Low internal control quality and 2.168 for the High sample. The Wald Chi^2 of Seemingly Unrelated Regressions (SUR) suggests that the coefficient difference is statistically significant at the 10% level. Similarly, the coefficient of $CliqueOwn_{i,t}$ in the subsample of Low analyst coverage is larger than that in the High subsample, and the difference is statistically significant at the 5% level. In summary, Panels A and B of Table 11 support our prediction that the positive impact of clique ownership on ESG is greater for firms with weaker internal or external governance mechanisms.

6.2 Subsamples based on the benefits of ESG

Previous sections suggest that institutional investor cliques in China promote ESG since it benefits Chinese firms. If so, the cliques should be more motivated to promote ESG in firms with larger potential ESG benefits. Accordingly, the positive impact of clique ownership on ESG should be greater for those firms. Based on prior studies, we expect that firms in heavily polluting industries and firms that are industry followers benefit more from ESG investments. First, firms in heavily polluting industries are exposed to greater risks of environmental regulation and customer boycotts. Accordingly, ESG investments by heavily polluting firms should show larger effects in mitigating these risks than other firms (Huang *et al.* 2021; Brown *et al.* 2022). Second, compared to industry leaders with high market shares, ESG investments may provide industry followers with more benefits in increasing product differentiation and sales (Albuquerque *et al.* 2019; Cao *et al.* 2019).

We identify heavily polluting industries according to the Industry List for the Category Management of Public Firms' Environmental Verification issued in 2008 by the Ministry of Ecology and Environment, China. Examples of those industries include the thermal power industry, the cement industry, the mining industry, the petrochemical industry, etc.[14] Additionally, we define firms as industry followers (leaders) if their gross profit margins are below (above) the industry median. We then divide our sample into subsamples depending on whether the firm is a heavily polluting firm (an industry follower) and report the subsample regression results in Panel C (D) of Table 11.

Again, $CliqueOwn_{i,t}$ is significantly and positively related to $ESG_{i,t+1}$ in all columns. Nevertheless, Panel C shows that the coefficient of $CliqueOwn_{i,t}$ for heavily polluting firms is about twice the magnitude of that for other firms. Similarly, Panel D reports that the coefficient is larger for industry followers than for industry leaders. The Wald Chi^2 values reported at the bottom of the panels suggest that the coefficient differences are statistically significant. Thus, these results confirm that the positive impact of clique ownership on ESG is more pronounced for firms potentially benefiting more from their ESG investments.

<center>**<Insert Table 11 here>**</center>

7. Conclusion

We identify coordinated groups of institutional investors, i.e., cliques, through the connections in their common block holdings and examine how coordination affects

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[14] See http://www.gov.cn/gzdt/2008-07/07/content_1038083.htm for the list.

their governance impact on the ESG performance of Chinese firms. Our empirical results suggest a robust and positive impact of clique ownership on ESG. Using the 2012-2013 QFII expansion as an exogenous shock to the institutional investor networks, we provide evidence for the causality of the impact.

Further tests confirm that ESG improves Chinese firms' market value and financial performance, and clique members coordinate their trades. Additionally, we document that coordination increases institutional investors' governance via both voice and exit threats. Altogether, our findings suggest that institutional investors in China coordinate their governance to improve their portfolio firms' ESG performance, given that ESG benefits Chinese firms. Consistent with this argument, we show that the positive impact of clique ownership on ESG is more pronounced for firms with weaker governance mechanisms or firms that potentially benefit more from ESG investments.

Based on the unique Chinese setting, our findings provide additional empirical evidence on the governance impact of coordination among institutional investors. Unlike prior studies in developed markets, we find that coordination in China's A-share market increases institutional investors' governance via exit threats. A plausible explanation is that institutional investors in China are less concerned about the price impact of their simultaneous trades since their ownership is relatively low. Also, our study contributes to the literature on institutional investors' role in shaping the firm's ESG policy and the driving forces of ESG investments in emerging markets.

References

Aggarwal, R., Erel, I., Ferreira, M., Matos, P., 2011. Does governance travel around the world? Evidence

from institutional investors. Journal Of Financial Economics 100, 154-181

Albuquerque, R., Koskinen, Y., Zhang, C.D., 2019. Corporate Social Responsibility and Firm Risk: Theory and Empirical Evidence. Management Science 65, 4451-4469

Ali, W., Frynas, J.G., Mahmood, Z., 2017. Determinants of Corporate Social Responsibility (CSR) Disclosure in Developed and Developing Countries: A Literature Review. Corporate Social Responsibility and Environmental Management 24, 273-294

Appel, I.R., Gormley, T.A., Keim, D.B., 2019. Standing on the Shoulders of Giants: The Effect of Passive Investors on Activism. Review of Financial Studies 32, 2720-2774

Azar, J., Schmalz, M.C., Tecu, I., 2018. Anticompetitive Effects of Common Ownership. Journal of Finance 73, 1513-1565

Barnea, A., Rubin, A., 2010. Corporate Social Responsibility as a Conflict Between Shareholders. Journal of Business Ethics 97, 71-86

Bartling, B., Weber, R.A., Yao, L., 2015. Do Markets Erode Social Responsibility? Quarterly Journal of Economics 130, 219-266

Bartov, E., Marra, A., Momente, F., 2021. Corporate Social Responsibility and the Market Reaction to Negative Events: Evidence from Inadvertent and Fraudulent Restatement Announcements. Accounting Review 96, 81-106

Bharath, S.T., Jayaraman, S., Nagar, V., 2013. Exit as Governance: An Empirical Analysis. Journal Of Finance 68, 2515-2547

Blondel, V.D., Guillaume, J.L., Lambiotte, R., Lefebvre, E., 2008. Fast unfolding of communities in large networks. Journal of Statistical Mechanics-Theory and Experiment, P10008

Borghesi, R., Houston, J.F., Naranjo, A., 2014. Corporate socially responsible investments: CEO altruism, reputation, and shareholder interests. Journal of Corporate Finance 26, 164-181

Borochin, P., Yang, J., 2017. The effects of institutional investor objectives on firm valuation and governance. Journal Of Financial Economics 126, 171-199

Boubakri, N., El Ghoul, S., Guedhami, O., Wang, H., 2021. Corporate social responsibility in emerging market economies: Determinants, consequences, and future research directions. Emerging Markets Review 46, 100758

Broadstock, D.C., Chan, K.L., Cheng, L.T.W., Wang, X.W., 2021. The role of ESG performance during times of financial crisis: Evidence from COVID-19 in China. Finance Research Letters 38, 101716

Bron, C., Kerbosch, J., 1973. Algorithm 457: finding all cliques of an undirected graph. Communications of the ACM 16, 575-577

Brown, J.R., Martinsson, G., Thomann, C., 2022. Can Environmental Policy Encourage Technical Change? Emissions Taxes and R&D Investment in Polluting Firms. Review of Financial Studies 35, 4518-4560

Buchanan, B., Cao, C.X.Y., Chen, C.Y., 2018. Corporate social responsibility, firm value, and influential institutional ownership. Journal of Corporate Finance 52, 73-95

Cao, J., Liang, H., Zhan, X.T., 2019. Peer Effects of Corporate Social Responsibility. Management Science 65, 5487-5503

Cao, J., Wang, H.Y., Zhou, S.L., 2022. Soft activism and corporate dividend policy: Evidence from institutional investors site visits. Journal of Corporate Finance 75, 102221

Chen, J., Chan, K.C., Dong, W., Zhang, F., 2017. Internal Control and Stock Price Crash Risk: Evidence from China. European Accounting Review 26, 125-152

Chen, T., Dong, H., Lin, C., 2020. Institutional shareholders and corporate social responsibility. Journal of Financial Economics 135, 483-504

Chen, T., Harford, J., Lin, C., 2015. Do analysts matter for governance? Evidence from natural experiments. Journal Of Financial Economics 115, 383-410

Cheng, Q., Du, F., Wang, B. Y. T., & Wang, X. (2019). Do Corporate Site Visits Impact Stock Prices? Contemporary Accounting Research, 36, 359-388.

Cheng, X., Wang, H., Wang, X.J., 2022. Common institutional ownership and corporate social responsibility. Journal of Banking & Finance 136, 106218

Crane, A.D., Koch, A., Michenaud, S., 2019. Institutional investor cliques and governance. Journal of Financial Economics 133, 175-197

Ding, W.Z., Levine, R., Lin, C., Xie, W.S., 2021. Corporate immunity to the COVID-19 pandemic. Journal of Financial Economics 141, 802-830

Doidge, C., Dyck, A., Mahmudi, H., Virani, A., 2019. Collective Action and Governance Activism. Review of Finance 23, 893-933

Du, X.Q., 2015. Is Corporate Philanthropy Used as Environmental Misconduct Dressing? Evidence from Chinese Family-Owned Firms. Journal of Business Ethics 129, 341-361

Dyck, A., Lins, K.V., Roth, L., Wagner, H.E., 2019. Do institutional investors drive corporate social responsibility? International evidence. Journal of Financial Economics 131, 693-714

Edmans, A., 2009. Blockholder Trading, Market Efficiency, and Managerial Myopia. Journal Of Finance 64, 2481-2513

Edmans, A., Manso, G., 2011. Governance Through Trading and Intervention: A Theory of Multiple Blockholders. Review Of Financial Studies 24, 2395-2428

Edmans, A., Holderness, C.G., 2018. Blockholders: A Survey of Theory and Evidence. The Handbook of the Economics and Corporate Governance, Chapter 8. Volume 1, 2017, Pages 541-636

El Ghoul, S., Guedhami, O., Kwok, C.C.Y., Mishra, D.R., 2011. Does corporate social responsibility affect the cost of capital? Journal of Banking & Finance 35, 2388-2406

Flugum, R., Souther, M.E., 2022. Stakeholder Value: A Convenient Excuse for Underperforming Managers? Available at SSRN: https://ssrn.com/abstract=3725828

Friedman, M., 1970. The social responsibility of business is to increase its profits. New York Times Magazine

Ge, W.X., Ouyang, C.Y., Shi, Z.Y., Chen, Z.L., 2022. Can a not-for-profit minority institutional shareholder make a big difference in corporate governance? A quasi-natural experiment. Journal of Corporate Finance 72, 102125

Gillan, S.L., Koch, A., Starks, L.T., 2021. Firms and social responsibility: A review of ESG and CSR research in corporate finance. Journal of Corporate Finance 66, 101889

Gonzalez, T.A., Calluzzo, P., 2019. Clustered shareholder activism. Corporate Governance-an International Review 27, 210-225

Gu, Z.Y., Li, Z.Q., Yang, Y.G., Li, G.Q., 2019. Friends in Need Are Friends Indeed: An Analysis of Social Ties between Financial Analysts and Mutual Fund Managers. Accounting Review 94, 153-181

Gul, F.A., Kim, J.B., Qiu, A.A., 2010. Ownership concentration, foreign shareholding, audit quality, and stock price synchronicity: Evidence from China. Journal Of Financial Economics 95, 425-442

Guo, Y., Li, J., Lin, B., 2023. Corporate site visit and tax avoidance: The effects of monitoring and tax knowledge dissemination. Journal of Corporate Finance, Forthcoming

Harjoto, M., Jo, H., Kim, Y., 2017. Is Institutional Ownership Related to Corporate Social Responsibility?

The Nonlinear Relation and Its Implication for Stock Return Volatility. Journal of Business Ethics 146, 77-109

Harjoto, M., Laksmana, I., 2018. The Impact of Corporate Social Responsibility on Risk Taking and Firm Value. Journal of Business Ethics 151, 353-373

Huang, B.H., Punzi, M.T., Wu, Y., 2021. Do banks price environmental transition risks? Evidence from a quasi-natural experiment in China. Journal of Corporate Finance 69, 101983

Jiang, F.X., Kim, K.A., 2020. Corporate Governance in China: A Survey. Review of Finance 24, 733-772

Jiang, X.Y., Yuan, Q.B., 2018. Institutional investors' corporate site visits and corporate innovation. Journal of Corporate Finance 48, 148-168

Li, F.Z., Jiang, Y.X., 2022. Institutional investor networks and crash risk: Evidence from China. Finance Research Letters 47, 102627

Li, Z.F., Patel, S., Ramani, S., 2021. The Role of Mutual Funds in Corporate Social Responsibility. Journal of Business Ethics 174, 715-737

Li, Z.S., Lin, B.X., Zhang, T., Chen, C., 2018. Does short selling improve stock price efficiency and liquidity? Evidence from a natural experiment in China. European Journal of Finance 24, 1350-1368

Lin, Y.R., Fu, X.M., 2017. Does institutional ownership influence firm performance? Evidence from China. International Review of Economics & Finance 49, 17-57

Lins, K.V., Servaes, H., Tamayo, A., 2017. Social Capital, Trust, and Firm Performance: The Value of Corporate Social Responsibility during the Financial Crisis. Journal Of Finance 72, 1785-1823

Manchiraju, H., Rajgopal, S., 2017. Does Corporate Social Responsibility (CSR) Create Shareholder Value? Evidence from the Indian Companies Act 2013. Journal of Accounting Research 55, 1257-1300

Pareek, A., 2012. Information Networks: Implications for Mutual Fund Trading Behavior and Stock Returns. Available at SSRN: https://ssrn.com/abstract=1361779

Pool, V.K., Stoffman, N., Yonker, S.E., 2015. The People in Your Neighborhood: Social Interactions and Mutual Fund Portfolios. Journal of Finance 70, 2679-2732

Rossi, A.G., Blake, D., Timmermann, A., Tonks, I., Wermers, R., 2018. Network centrality and delegated investment performance. Journal of Financial Economics 128, 183-206

Shiu, Y.M., Yang, S.L., 2017. Does Engagement in Corporate Social Responsibility Provide Strategic Insurance-Like Effects? Strategic Management Journal 38, 455-470

Staiger, D., Stock, J.H., 1997. Instrumental variables regression with weak instruments. Econometrica 65, 557-586

Tian, H.W., Tian, G.L., 2022. Corporate sustainability and trade credit financing: Evidence from environmental, social, and governance ratings. Corporate Social Responsibility and Environmental Management 29, 1896-1908

Tian, Z.L., Wang, R., Yang, W., 2011. Consumer Responses to Corporate Social Responsibility (CSR) in China. Journal of Business Ethics 101, 197-212

Xiang, C., Chen, F., Jones, P., Xia, S., 2021. The effect of institutional investors' distraction on firms' corporate social responsibility engagement: evidence from China. Review of Managerial Science 15, 1645-1681

Xu, Q.P., Kim, T., 2022. Financial Constraints and Corporate Environmental Policies. Review of Financial Studies 35, 576-635

Yang, J., Lu, J., Xiang, C. 2020. Do disclosures of selective access improve market information acquisition fairness? Evidence from company visits in China. Journal Of Corporate Finance, 64, 101631

Yi, Y.Y., Zhang, Z.Y., Xiang, C., 2022. The value of CSR during the COVID-19 crisis: Evidence from Chinese firms. Pacific-Basin Finance Journal 74, 101795

Zhang, J., Zi, S., Shao, P., Xiao, Y.C., 2020. The value of corporate social responsibility during the crisis: Chinese evidence. Pacific-Basin Finance Journal 64, 101432

Zhang, M., Ma, L.J., Su, J., Zhang, W., 2014. Do Suppliers Applaud Corporate Social Performance? Journal of Business Ethics 121, 543-557

Appendix Variable definition

Variable	Definition
$ESG_{i,t}$	Firm i's annual ESG score issued by the Sino-Securities Index Information Service (Shanghai) Co. Ltd.
$CliqueOwn_{i,t}$	The total fraction of firm i owned by all institutional investor cliques identified with the Louvain algorithm.
$CliqueTop1_{i,t}$	The fraction of firm i owned by its largest institutional investor clique identified with the Louvain algorithm.
$CliqueHHI_{i,t}$	The sum of the squares of the year-end fraction of firm i owned by each institutional investor clique identified with the Louvain algorithm.
$CliqueOwn\_BK_{i,t}$	The total fraction of firm i owned by all institutional investor cliques identified with the Bron-Kerbosch algorithm.
$BM_{i,t}$	Firm i's year-end book-to-market ratio.
$LnAsset_{i,t}$	The natural logarithm of firm i's year-end total assets (in Chinese Yuan).
$TobinQ_{i,t}$	The ratio of the firm's year-end market value to the replacement cost of its assets.
$Tan_{i,t}$	The ratio of firm i's year-end tangible assets to total assets.
$Profit_{i,t}$	The ratio of firm i's earnings before interests and taxes to total assets.
$Lev_{i,t}$	The ratio of firm i's year-end total debt to total assets.
$Top1_{i,t}$	The fraction of firm i owned by its largest shareholder.
$IO_{i,t}$	The fraction of firm i owned by institutional investors.
$ManOwn_{i,t}$	The fraction of firm i owned by top executives.
$SOE_{i,t}$	The binary variable that equals 1 for state-owned enterprises and 0 otherwise.
$BIndep_{i,t}$	The fraction of independent directors on firm i's board.
$BSize_{i,t}$	The number of firm i's board directors.
$Treatment_{i,t}$	The instrumental variable of clique ownership measures. See Equation (3) for details.
$AdjROE_{i,t}$	The firm's return on equity adjusted for the industry median.
$AdjROA_{i,t}$	The firm's return on assets adjusted for the industry median.
$DVisit_{i,t}$	The binary variable that equals 1 if firm i is visited by institutional investors at least once over the year and 0 otherwise.
$LnNVisit_{i,t}$	The natural logarithm of one plus the number of times for which firm i is visited by institutional investors over the year.
$MT_{i,t}$	The dummy that equals 1 if firm i is allowed for short-selling over year t and 0 otherwise.
$dShare_{i,j,h}$	The change in firm i's shares owned by institution j over half-year h.
$dCliqShare_{i,j,h}$	The change in firm i's shares owned by all institutional investors connected to institution j via any clique.
$dNonCliqShare_{i,j,h}$	The change in firm i's shares owned by all institutional investors not connected to institution j via any clique.

Table 1 Summary statistics

This table reports the number of observations, mean values, 25 percentiles, medians, 75 percentiles, standard deviations, minimum values, and maximum values of the main variables. Detailed definitions of the variables are presented in the Appendix. All continuous variables are winsorized at the 1% and 99% levels.

Variable	N	mean	p25	p50	p75	sd	min	max
$ESG_{i,t+1}$	27,594	73.360	70.040	73.690	77.230	5.647	56.400	85.310
$CliqueOwn_{i,t}$	27,594	0.058	0.002	0.016	0.069	0.094	0	0.475
$BM_{i,t}$	27,594	0.624	0.437	0.624	0.809	0.245	0.120	1.155
$LnAsset_{i,t}$	27,594	22.211	21.275	22.029	22.946	1.291	19.959	26.215
$TobinQ_{i,t}$	27,594	2.011	1.236	1.602	2.290	1.263	0.866	8.353
$Tan_{i,t}$	27,594	0.927	0.915	0.957	0.979	0.088	0.528	1
$Profit_{i,t}$	27,594	0.059	0.032	0.056	0.087	0.060	-0.196	0.236
$Lev_{i,t}$	27,594	0.422	0.255	0.415	0.580	0.207	0.050	0.884
$Top1_{i,t}$	27,594	0.353	0.235	0.334	0.456	0.150	0.088	0.750
$IO_{i,t}$	27,594	0.160	0.018	0.071	0.214	0.205	0	0.829
$ManOwn_{i,t}$	27,594	0.137	0	0.004	0.253	0.202	0	0.691
$SOE_{i,t}$	27,594	0.392	0	0	1	0.488	0	1
$BIndep_{i,t}$	27,594	0.374	0.333	0.333	0.429	0.053	0.333	0.571
$BSize_{i,t}$	27,594	8.680	7.000	9.000	9.000	1.709	5.000	15.000

Table 2 Clique ownership and ESG performance

This table reports the estimation results of Equation (1) in the text. $ESG_{i,t+1}$ is the firm's one-year lead ESG score issued by SNSI, and $RKS\_ESG_{i,t+1}$ is that issued by RKS. $CliqueOwn_{i,t}$ is the total fraction of firm i owned by all institutional investor cliques identified with the Louvain algorithm. Detailed definitions of all variables are reported in Appendix. Observations during 2020-2021 are excluded in Column (2). Blockholders with at least 5% ownership are excluded while calculating $CliqueOwn_{i,t}$ in Column (3). Ind FE and Year FE denote the industry and year fixed effects, respectively. Standard errors clustered at the firm level are disclosed in parentheses. *, **, and *** denote the significance level of 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)
	$ESG_{i,t+1}$	$ESG_{i,t+1}$	$ESG_{i,t+1}$	$RKS\_ESG_{i,t+1}$
$CliqueOwn_{i,t}$	2.121***	2.210***	4.267***	6.214***
	(0.53)	(0.54)	(0.97)	(1.75)
$BM_{i,t}$	-1.303***	-1.069**	-1.263***	-10.459***
	(0.44)	(0.48)	(0.45)	(1.10)
$LnAsset_{i,t}$	1.343***	1.286***	1.345***	4.450***
	(0.07)	(0.08)	(0.08)	(0.18)
$TobinQ_{i,t}$	-0.221***	-0.289***	-0.231***	-0.445***
	(0.06)	(0.07)	(0.06)	(0.16)
$Tan_{i,t}$	5.639***	5.345***	5.836***	6.958***
	(0.72)	(0.76)	(0.76)	(1.58)
$Profit_{i,t}$	18.296***	16.803***	18.305***	56.704***
	(0.93)	(1.04)	(0.93)	(2.24)
$Lev_{i,t}$	-5.193***	-5.136***	-5.396***	-8.290***
	(0.37)	(0.38)	(0.38)	(0.89)
$Top1_{i,t}$	0.557	0.167	0.606	2.356**
	(0.45)	(0.47)	(0.46)	(1.08)
$IO_{i,t}$	-0.036	-0.395	-0.001	2.389***
	(0.28)	(0.29)	(0.00)	(0.74)
$ManOwn_{i,t}$	2.065***	1.755***	2.037***	3.446***
	(0.37)	(0.40)	(0.37)	(0.84)
$SOE_{i,t}$	1.590***	1.497***	1.611***	1.622***
	(0.17)	(0.18)	(0.17)	(0.42)
$BIndep_{i,t}$	6.985***	6.666***	6.712***	2.730
	(1.17)	(1.22)	(1.11)	(3.17)
$BSize_{i,t}$	0.063	0.047	0.059	0.111
	(0.04)	(0.04)	(0.04)	(0.11)
Constant	36.293***	38.211***	36.216***	-77.815***
	(1.69)	(1.83)	(1.77)	(4.21)
Ind FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
F-statistics	132.364	103.178	128.015	163.903
Adj. R^2	0.219	0.204	0.218	0.304
Obs	27,594	21,457	27,495	23,998

Table 3 Alternative measures of clique ownership

This table reports the regression results of Equation (1) in the text using alternative clique ownership measures. Panel A (Panel B) uses SNSI ESG scores (RKS CSR scores) to proxy for the firm's ESG performance. $CliqueTop1_{i,t}$ is the fraction of firm i owned by its largest institutional investor clique identified with the Louvain algorithm. $CliqueHHI_{i,t}$ is the sum of the squares of the fraction of firm i owned by each clique identified with the Louvain algorithm. Finally, $CliqueOwn\_BK_{i,t}$ is the total fraction of firm i owned by all institutional investor cliques identified with the Bron-Kerbosch algorithm. The control variables are identical to those in Table 2. Ind FE and Year FE denote the industry and year fixed effects, respectively. Standard errors clustered at the firm level are disclosed in parentheses. *, **, and *** denote the significance level of 10%, 5%, and 1%, respectively.

	Panel A Dep var= $ESG_{i,t+1}$			Panel B Dep var= $RKS\_ESG_{i,t+1}$		
	(1)	(2)	(3)	(4)	(5)	(6)
$CliqueTop1_{i,t}$	3.619***			5.291*		
	(0.90)			(2.72)		
$CliqueHHI_{i,t}$		6.998**			9.001	
		(2.86)			(9.74)	
$CliqueOwn\_BK_{i,t}$			1.944***			6.451***
			(0.54)			(1.87)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Ind FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
F-statistics	132.430	131.704	129.519	163.118	163.273	161.824
Adj. R^2	0.219	0.218	0.218	0.303	0.303	0.304
Obs	27,594	27,594	27,258	23,998	23,998	23,710

Table 4 Alternative ownership cutoffs to identify institutional investor cliques

In Columns (1) and (2), *CliqueOwn*$_{i,t}$ is the fraction of firm *i* owned by institutional investor cliques that are identified with the cutoff of a 3% common ownership between pairs of institutions. Additionally, the cutoff to identify connected pairs of institutions is set to a 2.5% common ownership in Columns (3) and (4) and a 1% common ownership in Columns (5) and (6). Firm FE and Year FE denote the firm and year fixed effects, respectively. The control variables are identical to those in Table 2. Standard errors clustered at the firm level are disclosed in parentheses. *, **, and *** denote the significance level of 10%, 5%, and 1%, respectively.

Dep var= *ESG*$_{i,t+1}$	3% common ownership		2.5% common ownership		1% common ownership	
	(1)	(2)	(3)	(4)	(5)	(6)
CliqueOwn$_{i,t}$	7.662***	2.135***	7.634***	2.038***	7.710***	2.052***
	(0.50)	(0.53)	(0.49)	(0.52)	(0.48)	(0.51)
Controls	No	Yes	No	Yes	No	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
F-statistics	234.733	134.301	240.374	136.485	253.446	138.376
Adj. R^2	0.080	0.219	0.080	0.220	0.081	0.220
Obs	28,154	28,154	28,402	28,402	28,576	28,576

Table 5 Controlling for firm fixed effects

This table reports the regression results of Equation (1) in the text while controlling for firm fixed effects. The control variables are identical to those in Table 2. All variables are defined in detail in the Appendix. Firm FE and Year FE denote the firm and year fixed effects, respectively. Standard errors clustered at the firm level are disclosed in parentheses. *, **, and *** denote the significance level of 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)
Dep var=	$ESG_{i,t+1}$	$ESG_{i,t+1}$	$ESG_{i,t+1}$	$ESG_{i,t+1}$
$CliqueOwn_{i,t}$	2.951***			
	(0.58)			
$CliqueTop1_{i,t}$		4.950***		
		(0.98)		
$CliqueHHI_{i,t}$			11.840***	
			(3.13)	
$CliqueOwn\_BK_{i,t}$				2.720***
				(0.59)
Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
F-statistics	103.865	103.840	102.846	102.335
Adj. R^2	0.163	0.162	0.162	0.161
Obs	27,578	27,578	27,578	27,240

Table 6 Clique ownership and ESG performance: Exogenous network shocks

This table reports the two-stage least square regression results using $Treatment_{i,t}$ as the instrumental variable of clique ownership measures. We define $Treatment_{i,t}$ in Equation (3) in the text. The control variables are identical to those in Table 2. All variables are defined in detail in the Appendix. Firm FE and Year FE denote the firm and year fixed effects, respectively. Standard errors clustered at the firm level are disclosed in parentheses. *, **, and *** denote the significance level of 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	$CliqueOwn_{i,t}$	$ESG_{i,t+1}$	$CliqueTop1_{i,t}$	$ESG_{i,t+1}$	$CliqueHHI_{i,t}$	$ESG_{i,t+1}$	$CliqueOwn\_BK_{i,t}$	$ESG_{i,t+1}$
$Treatment_{i,t}$	5.583***		3.678***		0.733***		5.293***	
	(0.53)		(0.32)		(0.09)		(0.55)	
$CliqueOwn_{i,t}$		12.729***						
		(4.01)						
$CliqueTop1_{i,t}$				19.320***				
				(6.19)				
$CliqueHHI_{i,t}$						96.941***		
						(30.87)		
$CliqueOwn\_BK_{i,t}$								13.450***
								(4.22)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F-statistics/Wald chi2	54.812	2153.999	55.356	2177.132	23.450	2096.772	53.486	2113.608
Adj. R^2	0.406	0.180	0.349	0.187	0.285	0.160	0.295	0.178
Obs	21,457	21,457	21,457	21,457	21,457	21,457	21,196	21,196

Table 7 Coordination in trades within institutional investor cliques

$dShare_{i,j,h}$ is the change in firm i's shares owned by institution j over half-year h. $dCliqShare_{i,j,h}$ is the change in firm i's shares owned by all institutional investors connected to institution j via any clique, and $dNonCliqShare_{i,j,h}$ is the change in firm i's shares owned by all institutional investors not connected to institution j. We control for firm, institution, and half-year fixed effects in all columns. Standard errors clustered at the institution level are disclosed in parentheses. At the bottom of Columns (2) and (4), we report the coefficient differences between $dCliqShare_{i,j,h}$ and $dNonCliqShare_{i,j,h}$ and the p-values testing the coefficient differences. *, **, and *** denote the significance level of 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)
	$dShare_{i,j,h}$	$dShare_{i,j,h}$	$dShare_{i,j,h}$	$dShare_{i,j,h}$
$dCliqShare_{i,j,h}$	0.569***	0.556***	0.549***	0.542***
	(0.04)	(0.04)	(0.04)	(0.04)
$dNonCliqShare_{i,j,h}$		0.038***		0.038***
		(0.01)		(0.01)
Constant	0.017***	0.012***	0.020***	0.015**
	(0.00)	(0.00)	(0.01)	(0.01)
Firm FE	No	No	Yes	Yes
Institution FE	No	No	Yes	Yes
Half-year FE	Yes	Yes	Yes	Yes
F-statistics	217.345	309.965	192.942	333.016
Adj. R^2	0.310	0.309	0.339	0.338
Obs	695,704	690,098	695,667	690,071
Coefficient difference		0.518***		0.504***
Test of coefficient difference (p-value)		0.000		0.000

Table 8 ESG performance and firm value

This table reports the results of regressing firm value proxies on the firm's lagged SNSI ESG score ($ESG_{i,t-1}$) and control variables. $TobinQ_{i,t}$ is the firm's year-end market value to the replacement cost of its assets. $AdjROE_{i,t}$ is the firm's return on equity adjusted for the industry median, and $AdjROA_{i,t}$ is its return on assets adjusted for the industry median. Firm FE and Year FE denote the firm and year fixed effects, respectively. Standard errors clustered at the firm level are disclosed in parentheses. *, **, and *** denote the significance level of 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)
	$TobinQ_{i,t}$	$AdjROE_{i,t}$	$AdjROA_{i,t}$
$ESG_{i,t-1}$	0.005***	0.021*	0.012**
	(0.00)	(0.01)	(0.01)
$BM_{i,t}$	-4.247***	-3.871***	-0.019***
	(0.07)	(0.33)	(0.00)
$LnAsset_{i,t}$	-0.049**	0.587***	0.002***
	(0.02)	(0.13)	(0.00)
$Lev_{i,t}$	0.076	-3.220***	-0.019***
	(0.08)	(0.52)	(0.00)
$Top1_{i,t}$	0.222*	-0.697	0.001
	(0.12)	(0.78)	(0.00)
$IO_{i,t}$	0.000	0.013***	0.000***
	(0.00)	(0.00)	(0.00)
$SOE_{i,t}$	-0.150***	-0.116	-0.001
	(0.04)	(0.32)	(0.00)
$CapEx_{i,t}$	-0.233	2.892**	0.010*
	(0.15)	(1.13)	(0.01)
Constant	5.370***	-2.904	0.003
	(0.52)	(2.84)	(0.01)
Ind FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
F-statistics	502.158	25.434	25.359
Adj. R^2	0.793	0.383	0.512
Obs	24,073	24,035	24,035

Table 9 Cliques and governance via voice

This table reports the results of examing the impact of clique ownership on institutional investors' site visits to the firm. $DVisit_{i,t}$ is a binary variable that equals 1 if firm i is visited by institutional investors at least once over year t and 0 otherwise. $LnNVisit_{i,t}$ is the natural logarithm of one plus the number of times for which firm i is visited by institutional investors over year t. The control variables are identical to those in Table 8. Firm FE and Year FE denote the firm and year fixed effects, respectively. Standard errors clustered at the firm level are disclosed in parentheses. *, **, and *** denote the significance level of 10%, 5%, and 1%, respectively.

Dep var=	(1) $DVisit_{i,t}$	(2) $DVisit_{i,t}$	(3) $DVisit_{i,t}$	(4) $DVisit_{i,t}$	(5) $LnNVisit_{i,t}$	(6) $LnNVisit_{i,t}$	(7) $LnNVisit_{i,t}$	(8) $LnNVisit_{i,t}$
$CliqueOwn_{i,t}$	3.953***				3.770***			
	(0.55)				(0.27)			
$CliqueTop1_{i,t}$		7.110***				6.423***		
		(0.88)				(0.44)		
$CliqueHHI_{i,t}$			16.416***				14.148***	
			(3.69)				(1.62)	
$CliqueOwn\_BK_{i,t}$				3.923***				3.709***
				(0.59)				(0.30)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F- statistics /Wald Chi2	1100.499	1122.308	1091.193	1089.893	133.149	137.266	123.205	127.467
Adj. R^2/Pseudo R^2	0.135	0.137	0.131	0.134	0.300	0.301	0.288	0.295
Obs	13,515	13,515	13,515	13,295	13,540	13,540	13,540	13,320

Table 10 Cliques and governance via the threat of exit

This table reports the results of regressing the firm's Tobin's Q on lagged clique ownership, the indicator for short-selling ($MT_{i,t}$), their interaction term, and control variables. $MT_{i,t}$ equals 1 if firm i is allowed for short-selling over year t and 0 otherwise. Detailed definitions of all variables are reported in the Appendix. The control variables are identical to those in Table 8. Firm FE and Year FE denote the firm and year fixed effects, respectively. Standard errors clustered at the firm level are disclosed in parentheses. *, **, and *** denote the significance level of 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)
	$TobinQ_{i,t}$	$TobinQ_{i,t}$	$TobinQ_{i,t}$	$TobinQ_{i,t}$
$CliqueOwn_{i,t-1}$	0.178*			
	(0.09)			
$CliqueOwn_{i,t-1}{\times}MT_{i,t}$	0.575***			
	(0.16)			
$CliqueTop1_{i,t-1}$		0.191		
		(0.15)		
$CliqueTop1_{i,t-1}{\times}MT_{i,t}$		0.985***		
		(0.29)		
$CliqueHHI_{i,t-1}$			0.394	
			(0.54)	
$CliqueHHI_{i,t-1}{\times}MT_{i,t}$			3.452***	
			(1.15)	
$CliqueOwn\_BK_{i,t-1}$				0.217**
				(0.10)
$CliqueOwn\_BK_{i,t-1}{\times}MT_{i,t}$				0.607***
				(0.17)
$MT_{i,t}$	0.047**	0.050**	0.066***	0.048**
	(0.02)	(0.02)	(0.02)	(0.02)
Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
F-statistics	396.166	396.474	394.850	386.946
Adj. R^2	0.793	0.793	0.793	0.793
Obs	24,073	24,073	24,073	23,837

Table 11 Cross-sectional analyses

This table reports the subsample regression results of Equation (1) in the text. In Panels A and B, we split the sample into the Low (High) subsample if the firm's internal control quality or analyst coverage is below (above) the sample median. We measure internal control quality with the internal control index developed by the DIB internal control and risk management database, and analyst coverage is the number of analysts following the firm over the year. In Panel C, we divide the sample into subsamples depending on whether the firm belongs to a heavily polluting industry. Finally, we define firms as industry followers in Panel D if their gross profit margins are below the industry median. Ind FE and Year FE denote the industry and year fixed effects, respectively. The control variables are identical to those in Table 2. Standard errors clustered at the firm level are disclosed in parentheses. *, **, and *** denote the significance level of 10%, 5%, and 1%, respectively.

	Panel A Internal control		Panel B Analyst Coverage	
Dep var=ESG$_{i,t+1}$	(1) Low	(2) High	(3) Low	(4) High
CliqueOwn$_{i,t}$	3.920***	2.168***	4.472***	1.601***
	(0.98)	(0.670)	(1.30)	(0.611)
Controls	Yes	Yes	Yes	Yes
Ind FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
F-statistics	24.053	27.798	27.029	22.783
Adj. R^2	0.188	0.219	0.202	0.197
Obs	12,799	12,882	14,084	13,510
Coefficients (Low-High)	1.752*		2.872**	
Wald Chi^2	2.82		4.28	

	Panel C Heavily polluting firms		Panel D Industry followers	
Dep var=ESG$_{i,t+1}$	(1) Yes	(2) No	(3) Yes	(4) No
CliqueOwn$_{i,t}$	3.976***	1.547**	3.598***	1.777***
	(1.25)	(0.60)	(1.017)	(0.602)
Controls	Yes	Yes	Yes	Yes
Ind FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
F-statistics	29.732	39.384	27.311	21.837
Adj. R^2	0.196	0.232	0.210	0.189
Obs	7,678	19,838	13,751	13,843
Coefficients (Yes-No)	2.429*		1.820*	
Wald Chi^2	3.11		2.72	