Network-induced Agency Conflicts in Delegated Portfolio Management

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Abstract

Social ties between mutual funds and the companies in which they invest (investees) can both facilitate information transfers and encourage favoritism. Using the investment choices of mutual funds in China, we compare investment performance of holdings in companies that are socially connected to mutual funds versus those that are not. We find that funds allocate more investment to connected investees' stocks, especially when a fund is weakly monitored. This overweighting is greater in times of poor investee performance, when the benefits of additional investment to the connected investees are high. Weakly monitored funds' preference for connected stocks hurts the returns of these funds, yielding a 6.6% lower annualized risk-adjusted return, relative to closely monitored funds. These results suggest that, absent sufficient monitoring, agency conflicts generated by social networks will dominate the information advantages of these networks.

Keywords: Mutual funds; Information asymmetry; Delegated portfolio management; Social ties
JEL classification: G10, G11, G14

I. INTRODUCTION

In emerging markets, where much information is obtained through private channels, social ties can be an important information source for investors (Fan and Wong, 2002). Investors who have access to better information can make informed investment decisions before the information is impounded into the market price. Those who lack such access are reluctant to make investment decisions based on the current price (Akerlof, 1970). Studies find that superior information access is an important reason why investors with stronger social ties outperform others.

When fund managers share social ties with the companies they invest in, it can lead to a comparative information advantage for their funds.[1] Yet these same social connections can have downsides and foster favoritism between the two parties (Granovetter 1985). This downside may be especially evident in markets, like China's, where there is a strong tendency to favor in-groups. In such markets, connections may induce fund managers to overinvest in connected investees at the expense of fund returns. In this study, we examine how the private networks of fund managers and their investees affect the investment patterns of mutual funds in China.

Investment funds are subject to agency conflicts that arise from delegated portfolio management (Black 1992). Delegation gives rise to the classic principal-agent problem, in which the agent's (i.e., the fund manager's) incentives misalign with the principals' (i.e., the fund investors'). The fund managers' agency conflicts may be exacerbated if connections lead them to favor connected investees over the interests of their own investors. We argue that such network-induced agency conflicts compromise the fund managers' fiduciary duty to act on behalf of the

[1] This advantage can stem from the direct sharing of private information (Cohen et al. 2008) or from tacit knowledge that allows the manager to better interpret publicly disclosed information (Ke and Petroni 2004).

investors' best interest. In this paper, we document the extent to which close ties lead to information transfers or favoritism and examine the conditions under which network-induced agency conflicts can be mitigated.

We argue that network-induced agency conflict is particularly acute in the mutual fund industry in China. Because public disclosure in China is scant, fund managers rely heavily on private networks to obtain information about investees (Piotroski and Wong 2012). However, these networks can also lead to collusion between the funds and their connected investees, which in turn may undercut fund performance. Two factors could exacerbate the agency problem. First, the mutual fund industry in China is nascent, and the funds lack key governance protections for their investors (Yuan et al. 2008).[2] Weak governance allows fund managers more opportunities to misuse fund assets. Second, oversight by the China Securities Regulatory Commission (CSRC) is notoriously weak. In fact, prior to 2007, there was no public enforcement against fund managers. This weak oversight makes opportunism by fund managers less costly.

Media reports provide anecdotal evidence of network-induced conflicts and misuse of private connections by fund managers. In a 2000 special issue on mutual fund misconduct in China, the magazine *Caijing* uncovered many examples of fund managers executing trades to prop up the share prices of connected investees. Media reports of CSRC enforcement cases have also revealed fund managers' use of information from their social connections for private gain—engaging in private trading or receiving side payments, for example (Zhao 2000).[3] These examples show that

[2] For example, independent board representation for fund investors, which the literature establishes as a key governance feature for mutual funds (Tufano and Sevick 1997; Del Guercio et al. 2003; Khorana et al. 2007), is nonexistent because mutual funds are not considered separate legal entities in China.

[3] The report states that an implicit "market price" is established for the side payments that fund managers would receive for every share of investees' stock that they purchased.

private benefits may be one reason why funds engage in inefficient investment behavior. Yet, as researchers, we have limited data to observe the private trading of fund managers or the side payments they receive. We thus focus on distortions in funds' portfolio allocation choices, which are observable to researchers.

Our hypothesis that funds favor connected investees over their own investors leads to several testable propositions. First, we expect that funds allocate more of their investment to connected investees' stocks than to unconnected investees' stocks. To test this, we measure portfolio allocation using the holdings in each stock as a percentage of the fund's aggregate holdings. Second, we expect this overweighting to be greater when funds have weak external monitoring.[4] Weak monitoring gives fund managers more opportunities to use their connections for purposes other than earning higher returns for fund investors, and thereby implies greater agency conflicts. Finally, we predict that the overweighting of connected investees is more likely to occur when the investees are performing poorly. Overweighting a poorly performing investee stock may help the connected investee by generating needed demand for the stock, but it lowers returns for the funds' investors. Network-induced agency conflicts will predict overweighting to be greater in times of poor investee performance than in times of strong investee performance.

We begin by identifying investee managers who are connected to fund managers through social ties. We proxy for social ties using attendance at the same universities (school ties), which has been shown to be an important source of connections in China (Guan et al. 2016; He et al.

[4] We assign a monitoring score for funds based on the existence of two mechanisms: (i) foreign institutional ownership, and (ii) the independence of the fund custodian. We later validate these measures using ex-post measures: CSRC enforcement actions against mutual funds. See section III for details.

2017).[5] A distinctive feature of educational networks in China is that unlike family ties, they are continually replenished and enlarged through alumni networks. To capture the school ties that are strengthened through direct interactions between individuals, we examine only investees located in the same vicinities as the funds, based on prior studies showing that geographic proximity increases the likelihood of private interaction (Coval and Moskowitz 2001; Hong et al. 2005). We classify a fund as socially connected to an investee if (i) the fund manager shares school ties with any senior manager or member of the board of directors at the investee firm *and* (ii) the fund is located in the same province where the firm is headquartered.

We first examine the portfolio allocation of mutual funds in China. We document that funds allocate more of their investments to connected investees and that this tendency is greater when the funds are weakly monitored. Further analysis shows that the weakly monitored funds allocate disproportionately greater investment to connected stocks when the investees report poor performance, as measured using earnings surprise. This is consistent with funds tilting their portfolio towards connected investees when the investees need their help. In times of strong investee performance, weakly monitored funds do not exhibit any significant overweighting of connected stocks. This indicates that the funds overweigh these stocks only when the benefits of favoritism to the connected investees are high.

These allocation patterns may not indicate agency conflicts if they generate higher returns for funds. To confirm that they do indicate agency costs, we turn to fund returns. We examine whether the returns on connected holdings vary with the funds' network-induced agency costs. We

[5] School ties, along with family ties and hometown ties, are among the defining sources of private interactions in emerging markets such as China. The Chinese media has extensively covered the prevalence of school ties in the finance industry (Qi 2011).

find that the incremental returns from connected holdings (relative to unconnected holdings) are significantly reduced when funds are weakly monitored. These findings hold after we control for investment style and after including fund fixed effects to control for other unobservable fund characteristics (e.g., skills) that may drive differences in returns across funds.

We quantify the returns from the connected holdings and show that the agency cost of social ties is both economically and statistically significant. For weakly monitored funds, the annualized incremental risk-adjusted returns from connected holdings are lower by 6.6%, relative to those of closely monitored funds.[6] These lower returns are concentrated during times when investees report poor accounting performance. In times of strong investee performance, weakly monitored funds and closely monitored funds show no statistical difference in the incremental returns from connected holdings. This means that, when investee performance is strong, connections lead to higher returns even for the weakly monitored funds. These findings suggest that social connections afford informational advantages, but network-induced agency conflicts prevent funds from taking advantage of them.

Our findings are robust to different specifications and sensitivity analyses. Governance structure and fund monitoring develop endogenously and can correlate with factors that determine fund returns. In additional tests, we therefore use the recent change in the CSRC's enforcement in the mutual fund industry to explore time-series variation in monitoring. Starting in 2007, following media accusations of poor governance in the mutual fund industry, the CSRC promulgated two rules (Nos. 7 and 44) and heightened its enforcement against fund managers who violated their

[6] In terms of the (lost) value to investors, we calculate the loss in investment value of $1,243,567 in each fund-year, which implies a total distortion in the aggregate industry of more than USD $86.7 million. See section IV for its calculation.

fiduciary duty.[7] We use this uptick in enforcement as an event that increases the costs of favoritism, and expect the network-induced agency problem to diminish after the new CSRC rules. We find that, after the new rules are in place, the returns generated in connected holdings increase significantly, mostly for the funds that had been weakly monitored in the past. We interpret this finding to mean that enforcement curtails the misuse of network relationships and induces funds to use their connections to better serve fund investors.

We also find that quality public disclosure by investees can curb funds' underuse of the information they obtain from private networks. As high quality public information about investees becomes available, it is difficult for funds to not trade on the information they possess. We find that weakly monitored funds suffer from lower returns in their connected holdings only when investees have poor disclosure quality. When quality disclosure about investees is available, the weakly monitored funds have higher returns in their connected holdings, suggesting that the quality disclosure spurs them to capitalize on their network-related information advantages.

Our paper contributes to two streams of the literature. First, we contribute to research on the agency conflicts in delegated portfolio management. Studies find that the agency costs of delegated fund management arise from multiple sources, including fund managers' incentive fees (Goetzmann et al. 2003), career concerns (Khorana 2001), and business ties (Cohen and Schmidt 2009; Davis and Kim 2007; Kuhnen 2009). Our study suggests that network-induced agency costs can arise from school ties between fund managers and investees' managers and that these conflicts can affect whether information advantages produce greater returns.

[7] In 2009, there was another major event, Amendment (VII) to the Criminal Law. The amendment made clear that it is a criminal offense to trade securities using any undisclosed information obtained from private networks and provided a legal basis for prosecuting individual fund managers. See section II for details.

Second, we offer new insight into the role of private information for investors. Prior studies find that investors with a higher cost of private information acquisition suffer from poor performance (Ali et al. 2004; Ke and Petroni 2004; Pinnuck 2005). We show that investors with better access to private information are vulnerable to a different problem: their strong ties with investees can generate incentives to act against their fiduciary duty, which may prevent the investors from using whatever information advantage they gain. This pattern is likely to be more severe in a developing economy, such as China, where the same factors that heighten agency conflicts (e.g., close ties to investees) may also function as an important source of a fund's information advantage (e.g., access to management). To our knowledge, our paper is the first to examine the dual role of social ties—as a conduit for both information transfers and collusion (Granovetter 1985).

II. INSTITUTIONAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

Development of the mutual fund industry in China

Since its creation in 1991, shortly after the establishment of the Shenzhen and Shanghai stock exchanges, the mutual fund industry in China has achieved rapid growth. The CSRC viewed the development of securities investment funds as a way to stabilize China's capital market, which was predominantly driven by retail investors. With the CSRC's support, the total assets managed by mutual funds grew from 1 percent of the equity market capitalization in the early 2000s to 10 percent within a decade. At the end of 2014, more than 1,800 funds were registered with the CSRC.[8]

[8] Source: China Securities and Futures Market 2015 Year Book.

In contrast to the steadfast growth in its asset base, the returns to mutual fund investors in China have been surprisingly low—sometimes even lower than the fees charged by the funds. The mediocre returns raise concerns about what value, if any, funds bring to their clients as an asset group.[9] Some observers attribute the lackluster performance to factors such as a lack of expertise and investment knowledge. In recent years, however, industry watchdogs have voiced concerns about the governance and monitoring in the fund industry being too weak to protect the interests of fund investors (Zhao 2000).

Several institutional features contribute to the weak investor protection in China. First, the level of protection is poor due to the unique institutional features of the fund industry. Unlike U.S. mutual funds, which are individually incorporated, Chinese mutual funds are based on contracts with their fund investors. Because the relationship is contractual, fund investors have little say (i.e., no voting rights) in investment decisions and less ability to monitor fund managers. Chinese funds also lack boards of directors, which have been found to play a key role in reducing potential conflicts between fund managers and their investors (Del Guercio et al. 2003; Khorana et al. 2007; Tufano and Sevick 1997). The absence of well-developed governance gives fund managers greater opportunities to breach their fiduciary duty. Consistent with weak investor protections, studies show that the trading of mutual funds in China is influenced by the fund managers' private rent seeking. For example, Wang (2011) shows that, during the split share structure reform, the

[9] Industry reports show that in 2010, the total fees charged by the 60 major fund management companies (U.S. $4.56 billion) exceeded the total profit they generated for investors (U.S. $770 million). Also, the average annual return that the funds reported was 0.19% of total assets under management, underperforming the market index during the same period. *Source*: http://business.sohu.com/20110411/n280224152.shtml.

investments of Chinese mutual funds largely correlated with the entertainment expenses paid on the part of the investees, rather than with the investees' future performance.

Another factor that weakens investor protection is weak regulatory oversight in the mutual fund industry. The regulatory framework, *China's Law on Funds for Investment in Securities*, was established in 2003. But it was not until 2007 that the CSRC started raising concerns about investor protection and portfolio managers' conflicts of interest. That year, two CSRC pronouncements explicitly mentioned, for the first time, the agency problem that arises from fund managers' close ties with investee firms. The new regulations emphasized the importance of internal controls and risk management systems in governing the investment decisions of mutual fund managers, and strictly prohibited opportunism. Then, in 2009, the government issued Amendment (VII) to the Criminal Law, which makes it a criminal offense for fund managers to buy and sell securities in order to privately benefit from undisclosed information obtained from their position. These regulations, which are still in effect, aim to prevent fund managers from misusing their information advantages to benefit themselves or a connected party (e.g., by propping up investees' share prices).

Along with this new regulatory framework, the CSRC heightened enforcement of violations of fund managers' fiduciary duty. The first enforcement action of this type was carried out in the second quarter of 2007, and enforcement spiked to its highest level in 2010 (see Figure 1). In our empirical tests, we explore this regulatory change as a regime shift that brought market-wide change to the level of investor protection, especially for funds that had been weakly monitored.

Hypothesis development

Networks have been shown to facilitate information transfers and provide access to private information (Brochet et al. 2014; Solomon and Soltes 2015; Li et al. 2017). Consistent with information advantages, studies show that network affiliations lead to positive outcomes for retail investors (Hong et al. 2004), venture capitalists (Hochberg et al. 2007), and sell-side equity analysts (Cohen et al. 2010), among others. More closely related to our study, Cohen et al. (2008) show that when fund managers share school ties with their investees, the funds earn higher returns, suggesting that these ties can be a channel for information transfer.

Another, developing strand of the literature examines a negative side to networks, arguing that they can breed malfeasance and collusion (Granovetter 1985). Larcker et al. (2005) and Hwang and Kim (2009) study the impact of corporate executives' and directors' school ties on CEO pay decisions and find evidence of favoritism. In the mutual fund setting, two related studies show how network ties can lead to inefficient decisions. First, Davis and Kim (2007) show that when mutual funds establish ties with corporate clients via the clients' pension fund business, the funds are less likely to vote against those clients. Unlike Davis and Kim (2007), who focus on voting patterns, we focus on funds' portfolio choices, which more directly affect fund investors through fund returns. Second, Cohen and Schmidt (2009) find that funds tend to significantly overweight a firm's stock when the funds also act as the trustee for the sponsor firm. In contrast, our study focuses on agency conflicts arising from social ties, not trusteeship, and examines how these conflicts can distort funds' investment decisions. In sum, we contribute to the literature on the negative side to networks by documenting how network-induced agency conflicts may lead funds to overinvest in the stocks of connected investees at the expense of fund returns.

We argue that the social networks of fund managers lead to agency conflicts when fund managers favor connected investees over their own investors. The source of the agency conflict is

the tendency to favor in-groups within private networks. In-group bias leads to conflicts between network insiders (fund managers and their investees) and network outsiders (arm's length fund investors). Thus, a private network between a fund manager and investees can harm fund investors outside the network. We label this type of harm as network-induced agency conflict.

Media reports provide anecdotal evidence for how fund managers misuse private connections. *Caijing* magazine's 2000 report described cases in which fund managers executing trades propped up the share prices of connected investees in exchange for side payments. More egregious cases have since come to light, including ones where fund managers used their information advantages in their private trading. A notable example of this is a recent CSRC enforcement case involving Jianzhao Ni (Ni, hereafter), a fund manager of Zhong You Chuang Ye Fund Management Co. Ni had synchronized the trading of his private accounts and the funds he managed. The transactions, which he engaged in for over 14 years (from Nov. 11, 2001, to Jan. 22, 2014), typically involved his front-running trades of the funds under his management, a practice known as "rat trading." Ni's private connections (via school ties) with company managers gave him better access to private information and allowed him to reap generous returns.[10] These examples show how fund managers benefit privately from either direct side payments or private trading based on information obtained through their connections.

Our premise that network-based agency costs will lead to distortions in the investment decisions of mutual funds leads to several testable predictions. The first is based on the fact that

[10] The total volume of illegal trades amounted to U.S. $150 million, with a trading profit of $2.78 million. In contrast, the fund manager was sentenced to prison for three and a half years and fined USD 2.78 million.

network-based agency costs will be greater for funds with weak external monitoring.[11] We predict weakly monitored funds will allocate greater investment to connected investees, relative to closely monitored funds.

Hypothesis 1: Weakly monitored funds allocate more weight in connected holdings than closely monitored funds.

Although monitoring is generally weak in China, we still expect to see variations in the level of monitoring across funds. We posit that monitoring mechanisms such as foreign investors, and high-quality fund custodians can help limit fund managers' potential favoritism toward connected investees.[12] In addition to the cross-sectional variation in monitoring, we also explore a time-series change in the level of investor protection in the mutual fund industry. In China, two regulatory events drastically shifted enforcement of mutual funds. The first was in 2007, when the CSRC issued new pronouncements that clarified its intent to protect investors in mutual funds and heightened enforcement against funds. 2007 was the first year an enforcement action against a fund took place (see Figure 1). The second event was in 2009, when Amendment (VII) to the Criminal Law exposed individual fund managers to penalties for the first time (see Figure 1).[13] The 2009 amendment made it a criminal offense to trade securities using any undisclosed information obtained from private networks, and provided a legal basis to prosecute individual fund managers for this offense.

[11] Ideally, we would test for when fund managers have greater incentives to favor a connected investee. However, private benefits such as side payments or private trading are not observable to researchers. We thus use proxies for when private benefits are more likely to be allowed, i.e., when monitoring is lacking.

[12] We validate these two monitoring measures, confirming that funds with strong monitoring have fewer enforcement actions by the CSRC. See section III for more discussion of the monitoring mechanisms.

[13] By 2014, there were 51 public enforcement cases against either mutual fund management companies and/or their managers, 19 of which involved rat trading (Ren, 2014).

We use the governance reforms in 2007 and 2009 as a shock to monitoring, since the heightened enforcement would increase the costs of showing favoritism. Stronger government monitoring by CSRC could compensate for the lack of market monitoring (foreign ownership and independence of custodian) of weakly monitored funds. We expect that any increase in CSRC enforcement in the fund industry will be followed by a reduction in the overweighting in connected holdings, especially among weakly monitored funds.

The second prediction is that fund managers will be more likely to tilt fund holdings toward connected investees when it will benefit the investees more, as when the connected investees report a poor performance over a strong one. When investees report poor performance, fund managers have a greater incentive to overweight the connected investees and thereby sustain the market demand for these stocks. However, overweighting an underperformer will hurt the fund's performance, resulting in lower returns for the fund. We predict that the overweighting of connected investees by weakly monitored funds will be driven by periods of poor investee performance. We also predict that weakly monitored funds will fail to generate higher returns in connected holdings, resulting in a transfer of wealth from fund investors to connected investees.

Hypothesis 2: Weakly monitored funds' tendency to overweight connected holdings is greater when investees are performing poorly.

To quantify the cost of network-induced agency costs, we examine fund returns. We predict that whether funds generate higher returns in their connected holdings is a function of network-based agency costs. Specifically, closely monitored funds will realize higher returns in their connected holdings than weakly monitored funds.

Hypothesis 3: Weakly monitored funds generate lower returns in connected holdings than do closely monitored funds.

A possible alternative explanation for the lower returns of weakly monitored funds is that they are less skillful in obtaining information through connections. To rule out this possibility, we separate the analysis into periods of strong investee performance versus periods of weak investee performance. If the lower returns of weakly monitored funds stem from a lack of information access, the low returns are likely to be observed in times of both strong and poor investee performance. However, if agency conflicts are driving the lower returns in the connected portfolios, the lower returns will be observed mostly in times of poor investee performance, when the investee will benefit more.

Hypothesis 4: Weakly monitored funds' tendency to generate lower returns in connected holdings is greater when investees are performing poorly.

III. SAMPLE SELECTION AND EMPIRICAL MEASURES

Data

Our sample starts in 2003, the year China established a regulatory framework governing the operations of the domestic mutual fund industry, and ends in 2014. We collect fund holdings data from the Mutual Fund Research database provided by CSMAR. This database is composed of the regulatory fillings of all domestic funds and includes details of each fund's stock ownership on a semi-annual basis as well as information about fund ownership and the location of the fund management company. We exclude funds classified as index funds, money market funds, fixed income funds, those investing exclusively in nondomestic equities (i.e., qualified domestic institutional investors), and foreign funds.[14] Our final fund sample consists of stock ownership from 736 unique domestic funds.

[14] We exclude foreign funds, otherwise known as Qualified Foreign Institutional Investors (QFIIs). QFIIs are a unique group of investors that have been approved by the CSRC to invest in domestic A-shares in China. Only certain funds

For the holdings, we include all firms from the CSMAR database that issue A-shares traded on the Shanghai and Shenzhen stock exchanges.[15] We exclude firms that have no mutual fund holdings throughout our sample period. After requiring firms to have the data needed to construct our control variables, our sample consists of 23,288 firm-semi-annual years from 2,417 unique firms.

Table 1, Panel A, presents the distribution of domestic funds by year and by location of the fund management company. The number of funds shows a steady increase throughout the sample period, starting from 91 funds in 2003 and rising to 659 funds in 2014. As of 2014, the total assets under management of the funds in our sample is US $190.7 billion. Shanghai and Guangdong are among the provinces that experienced early growth and where the majority of the funds are located. The growth of mutual funds in other areas, such as Beijing, is a more recent phenomenon. The size of the fund industry also varies by region. As of 2014, the region with the largest asset base, measured using total AUM, is Guangdong at US $75.7 billion, followed by Shanghai (US $73.8 billion) and then Beijing (US $36.5 billion).

Panel B shows that the median number of equities held by mutual funds in our sample is 48. This is smaller than the figure that prior studies find for U.S. mutual funds, suggesting that mutual funds in China tend to be less diversified.[16] Most funds have a single manager, although approximately 25% of the funds are managed by a team consisting of more than one fund manager.

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are eligible to apply, and those likely to be approved demonstrate superior investment records and investment skills. Thus the investment decisions of QFIIs may differ systematically on account of this screening process (rather than their superior information access).

[15] A-shares are shares traded in RMB and are only available to domestic institutional/retail investors and qualified foreign institutional investors. A few firms also issue B-shares, which are open to both foreign and domestic investors (post 2001). Studies show that the B-share market, however, tends to be illiquid and more volatile than the A-share market.

[16] Sapp and Yan (2008) find that U.S. mutual funds' median number of holdings is 93 (Table 1).

The average AUM of a mutual fund is US $495.8 million yet varies widely in the cross-section. Funds in the lower 10th percentile have an AUM of US $22.9 million, and those in the upper 10th quartile have an AUM of US $1,275 million.

Empirical measures and descriptive statistics

Measures of connected investees

We use school ties and geographic ties to identify a connected investee. Studies show that educational networks can function as a channel for information transfers (Cohen et al. 2010). Anecdotal evidence suggests that these networks are an important source of connections in China (Guan et al. 2016; He et al. 2017).[17] We consider a fund and an investee to be connected through school ties if the fund manager attended the same university as any of the senior managers on an investee's management team. For example, the holdings of a fund with a fund manager who attended Peking University will qualify as connected if any of the investee firm's senior managers or board members also attended that university.[18, 19]

A unique feature of school ties in China is that they are constantly replenished and later enlarged through alumni networks, even after graduation. Alumni associations in China are particularly active in the finance industry. All the top 10 universities have an active alumni association with regional branches. Table 2, Panel A, shows that the top 10 universities collectively have 995 alumni branches throughout the country (column 3). To capture the fact that school ties

[17] Many of the top mutual and private equity funds are controlled by alumni networks (Research Institute of Private Equity Ranking Network 2016). Also, school ties often help investment banks obtain underwriting businesses (Sina Finance and Economics 2011).

[18] We excluded programs that are less than a year in duration (when duration information is available) and programs for which regular attendance is not required (e.g., post-doctoral programs).

[19] For mutual funds that operate as teams, we use all fund managers affiliated with the fund to identify linkages. That is, we consider a fund to be connected to an investee if at least one of the fund managers shares ties with the investee firm. Funds with more than one fund manager make up approximately 25% of our fund sample.

are likely to strengthen with direct interactions between individuals, we use school ties that are strengthened through geography (Coval and Moskowitz 2001; Hong et al. 2005).[20] We thus consider a fund to be connected to an investee if the fund manager shares school ties with any senior manager or member of the board of directors at the investee firm *and* the fund is located in the same province as where the firm is headquartered.[21]

For each firm-year, we collect from the CSMAR Corporate Governance Research database the educational backgrounds of the management team, which includes the senior executives and the board of directors. The CSMAR Corporate Governance Research database contains biographical information (e.g., the name, age, gender, and educational background) of the senior manager and board members of each firm. For individuals with information missing in CSMAR, we conduct online searches using professional networking websites.[22] We follow a similar process for fund managers. For each fund-year, we hand-collect the fund manager's educational background from the individual's résumé provided in the CSMAR Mutual Fund Research database, or, when that is unavailable, from professional networking websites.

Table 2, Panel A, shows the top 10 universities most frequently attended by fund managers (column 1) and by members of management teams in China (column 2). We include, in the management team sample, senior managers and boards members of firms with mutual fund

[20] Another way in which ties can be better identified is to consider only the ties of individuals who attended the same school in the same year. However, for many of the executives and fund managers, data for the years attended (or an individual's age) is not available. In China, individuals share a strong sense of loyalty and kinship from the mere fact that they attended the same university, even if they did not necessarily study or live together during that time (He et al. 2017). Thus we believe that school ties will form, even if the individuals did not directly interact during their schooling.

[21] In additional analysis, presented in an online appendix, we use all school ties without requiring that the fund and investee reside near each other. We find qualitatively similar results, with marginally smaller economic significance.

[22] Source: http://baike.baidu.com.

ownership. The sample includes 911 fund managers in the CSMAR Mutual Fund Research database for whom we were able to collect educational backgrounds. The top three universities most frequently attended by fund managers and senior managers are Tsinghua University, Peking University, and Fudan University. Panel B, shows the universities with the most frequent school ties. The school that provides the most frequent linkages in our sample is Tsinghua University, which constitutes 21.69 percent of the total number of school ties in our sample. Panel B shows that the top three universities constitute over 50 percent of the sample's school ties. Education networks in China are formed mostly through domestic institutions. Foreign institutions comprise only 1.55 percent of school ties.

Table 2, Panel C, shows the distribution of a fund's holdings by its connected and unconnected holdings. *Connected* is an indicator variable that takes a value of one for fund-investee pairs that share school ties and are located in the same city. We find that 3.80 (4.29) percent of fund holdings are held in investees with shared school ties in the same cities, using the percentage of AUM as the basis for quantifying holdings. The remaining 96.20 (95.71) percent are holdings held by unconnected firms.

Fund-level measure of monitoring mechanisms

We use two measures of monitoring: (i) foreign institutional ownership and (ii) independence of the fund custodian. We validate these measures using ex-post measures: CSRC enforcement actions against mutual funds.

Foreign institutional ownership: The first monitoring measure is the level of foreign institutional ownership in the fund management company. Studies find that increased foreign ownership leads to improved governance (Aggarwal et al. 2011) and firm performance (Ferreira and Matos 2008) and that this outcome is more pronounced in emerging markets (Huang and Shiu

2009). We use the existence of foreign ownership in the fund management company as our first proxy of fund governance. In China, foreign institutions, typically large banks, often hold large shares of fund management companies. While they cannot hold a controlling share (> 50 percent) in domestic firms, foreign banks often hold a large share of fund management companies by forming a joint venture with a domestic shareholder.[23, 24] Media reports claim that funds' foreign controlling shareholders have better governance and can prevent funds from engaging in illegal trading (e.g., rat trading).[25]

Empirically, we consider the funds of a fund management company with foreign ownership to have strong monitoring. The first monitoring measure, *No foreign ownership*, takes a value of one if the fund's management company has no foreign ownership. Almost half (43.8 percent) of the funds in our sample have a management company with no foreign investors as shareholders (Table 3, Panel A).

Independence of fund custodian: Our second measure of monitoring is the existence of an independent fund custodian. Custodians hold the securities and execute trades on the fund's behalf. Studies show that an independent custodian is important for the proper monitoring of funds' assets. Khorana et al. (2005) analyze a cross-country sample of mutual funds and argue that custodial independence is an important requirement for funds' investor protection.

[23] In 2007, the CSRC allowed foreign investors to wholly own a local subsidiary. A growing number of foreign financial institutions, such as Aberdeen Asset Management, Bridgewater Associates, Vanguard, and Fidelity have entered this market, setting up wholly foreign-owned enterprises.

[24] Fund management companies with this ownership structure are called joint venture management companies. The first joint venture formed was between China Merchants and ING in 2003, and most foreign management companies enter China through a joint venture agreement.

[25] *China Daily*, July 28, 2014. "Great Wisdom News Agency, CSRC intending to ease restrictions on foreign equity in fund management companies in China and expected to introduce partnership."
Source: http://www.chinadaily.com.cn/hqcj/zgjj/2014-07-28/content_12092564.html

Custodians ensure that the fund's assets are secure and not expropriated. A custodian's responsibilities include implementing investment decisions on behalf of fund managers, keeping assets in safe custody, and maintaining the fund's books and records. Also, custodians have a duty to report any wrongdoing by the fund manager directly to the CSRC (Tao 1999). They prepare reports about fund assets for regulators (the CSRC) and restrict the execution of trades if they find a fund has violated regulations.

We use the size of the custodian to measure its independence. We consider funds with a large custodian to be more independent and better monitored. Larger custodians are less likely to be captured by a specific client and more likely to have independent controls in place (Khorana et al. 2005; Tao 1999). Empirically, we use median size (based on registered capital) to classify custodians as more independent. If a fund has a custodian with assets below the annual median, we consider it to be weakly monitored (*Weak independence of custodian=1)*. There are 22 custodians in China over our sample period, 11 of which our definition qualifies as independent.

For our empirical tests, we use the sum of the two fund monitoring indicators to construct a measure of (the lack of) fund monitoring. For example, if there is no foreign ownership in the fund's management company (*No foreign ownership* =1) and the fund has a custodian with weak independence (*Weak independence of custodian* =1), the fund has a weakly monitored score of 2.[26] Table 3, Panel A, shows that more than 25 percent of funds have neither of these two monitoring mechanisms. Less than 25 percent of the funds in our sample have both monitoring mechanisms in place.

[26] We acknowledge that aggregating different monitoring mechanisms into a single score requires us to make certain assumptions about the nature of the relationship across monitoring measures (e.g., complements or substitutes). In untabulated results, we show that our findings are robust to alternative aggregation methods if, for example, we classify funds with any monitoring mechanism in place as having the highest monitoring score.

Validation of monitoring measure: We validate our monitoring proxies using ex-post measures, that is, public enforcement actions. We use the CSRC's enforcement actions against individual fund managers (or fund management companies) and test whether those with weak external monitoring are more likely to be targets of CSRC enforcement. Enforcement actions against individual fund managers often involve rat-trading cases, in which fund managers personally benefited from front-running trades of the funds they managed. Those against fund management companies frequently relate to internal control weaknesses.

Panel B of Table 3 presents the frequencies of enforcement action by funds' monitoring levels. In column 3, where we use all enforcement actions (against either the funds or the fund managers), we find that funds with management companies that have no foreign shareholders (*No foreign ownership* =1) are 21.6 percent (= (0.270-0.222)/0.222) more likely to be targeted. Funds having custodians with weak independence are 23.9 percent (= (0.269-0.217)/0.217) more likely to be targeted for CSRC enforcement. For funds with no external monitors (*Weakly monitored score*=2), their frequency of enforcement actions is 26.5 percent. The likelihood of enforcement action is much lower, 16.4 percent, for funds with both external monitors (*Weakly monitored score*=0). The positive association between enforcement targets and weakly monitored funds validates our monitoring proxies. [27]

IV. EMPIRICAL TESTS AND RESULTS

[27] The relationship between enforcement frequency and monitoring score, although increasing, is not necessarily monotonic. The frequency of enforcement actions for funds with the weakest monitoring level (*Weakly monitored score* =2) is lower than for funds with the next weakest monitoring level (*Weakly monitored score* =1), 26.5% vs. 27.4%, although the difference across the two samples is not statistically significant (t value=0.629, p value=0.53). The reason we do not see a monotonic relation may be due to the regulator's preference when choosing enforcement targets, which could be driven by other factors (e.g., fund size) rather than the monitoring levels.

Investment weights in connected vs. unconnected investee

We start out by examining whether sharing ties with investees affects the portfolio allocation choices of funds. We investigate how funds allocate investments in connected and unconnected investees stocks. Our measure of investment weight (*Weight*) is a fund's holdings in an individual investee scaled by the fund's total holdings (in equity positions only).[28] We compare the investment weights in connected versus unconnected stocks. The unit of analysis is a fund-investee pair for each semi-annual period, which is the reporting frequency required for mutual funds in China.

The univariate tests in Table 3, Panel C, suggest that connected funds hold, on average, 1.13 percent of their holdings in connected investee stocks, compared to 0.81 percent in unconnected investee stocks.[29] The difference is statistically significant and economically meaningful, with a relative increase in weights from sharing connections of 39.5 percent (= (1.13%-0.81%)/ 0.81%).

The difference in mean weights in connected versus unconnected investees varies across fund monitoring levels, as hypothesized. There is greater weighting in connected funds when the funds are weakly monitored (H1). For the weakest monitored funds (*Weakly monitored score*=2), mean weights in connected and unconnected holdings are 1.12 percent and 0.78 percent respectively, which represents a 43.6 percent (= (1.12% - 0.78%)/0.78%) relative increase. In contrast, for funds with strongest monitoring (*Weakly monitored score*=0), the relative increase in

[28] There are outliers in investment weights, which may be due to funds investing in only a few stocks. To decrease the influence of outliers, we exclude observations at 5% in the upper tail (as the lower tail is bound by zero). In untabulated results, we find qualitatively similar results using different levels of trimming (3% and 7%).

[29] The weights (in connected and unconnected holdings) are calculated for each individual investee and thus do not add up to 100 percent. The mean statistics represent average holdings in an investee as a percentage of fund assets.

investment weights for connected funds is lower, at 30.0 percent (= (1.17% - 0.90%)/0.90%). The pattern suggests that weakly monitored funds are more likely to tilt their holdings toward connected stocks.

In Panel D of Table 3, we split the sample by investee performance. An implication of agency-cost-driven motives is that we should see greater weightings in connected investees by weakly monitored funds when investees report poor performance. We partition the sample using earnings surprises. The poorly (strongly) performing investee sample includes investees with earnings surprise below (above) the sample median in each period, where earnings surprise is defined as changes in EPS, relative to the previous period (i.e., semi-annual period).

Panel D, Table 3, reports the average weight in individual investees in times of poor versus strong investee performance. We find that the greater weighting in connected investees for weakly monitored funds is driven by times of weak investee performance. When investees report poor performance, on average, weakly monitored funds (*Weakly monitored score*=2) allocate 1.07 percent of their investments to connected investees, compared to 0.67 percent to unconnected investees, which represents a 59.7 percent (= (1.07% - 0.67%)/0.67%) relative increase in investment weights. In contrast, in times of strong investee performance, the relative increase in investment weights for weakly monitored funds (*Weakly monitored score*=2) is lower at 32.3 percent (= (1.23% - 0.93%)/0.93%).

Next, we use regression models to control for other factors driving mutual fund portfolio allocation decisions. We use the following model.

$$Weight_{f,i,t} = \beta_0 + \beta_1 \times Connected_{f,i,t} + \beta_K Controls_{f,i,t,K} + Fund,\ Semi\text{-}annual,\ Industry\ FE + e_{i,t}. \quad (1)$$

Our unit of observation is a fund (*f*)-investee (*i*) pair in each reporting period (*t*), which is semi-annual. The dependent variable is *Weight*, which measures the holdings allocated to a particular

investee, relative to the fund's total equity position. Our main variable of interest is *Connected*, an indicator variable that takes a value of one if the investee shares school ties with the fund (i.e., the fund manager and a member of the management team of the investee attended the same university) and is located in the same province. If fund managers tilt portfolio allocation toward connected investee stocks, we predict a greater weight in connected investees, relative to unconnected investees, that is, $\beta_1 > 0$.

We include a rich set of controls and fixed effects. Following Cohen et al. (2008), we include various investee-level controls, such as firm size (*ME*), investment opportunities (*BM*), and momentum (*R12*). We include fund controls, such as investment style *(%STYLE*), and fund fixed effects to control for unobservable fund characteristics (e.g., compensation policy). We include both industry (of the investee) and semi-annual period fixed effects to control for unobserved time and industry factors that determine fund holdings. All controls are measured semi-annually and defined in the appendix. Standard errors are two-way clustered by fund and semi-annual year.

We next examine whether portfolio allocation choices reflect agency costs. Our first hypothesis (H1) predicts there will be more weighting in connected funds when a fund is weakly monitored. We test the effect of fund monitoring using the following regression model.

$$Weight_{f,i,t} = \beta_0 + \beta_1 \times Connected_{f,i,t} + \beta_2 \times Weakly\ monitored_{f,t} + \beta_3 \times Connected_{f,i,t} \times Weakly\ monitored_{f,t} + \beta_K\, Controls_{f,i,t,K} + Fund,\ Semi\text{-}annual,\ Industry\ FE + e_{i,t}. \quad (2)$$

The *Weakly monitored* variable is the sum of the two fund monitoring indicators (*No foreign ownership* and *Weak independence of custodian*) discussed in section III. The score ranges from zero to two and takes a higher value when funds are weakly monitored. We predict that weakly

monitored funds will allocate disproportionately more capital to connected investees than closely monitored funds will, that is, $\beta_3 > 0$.

An important prediction of the agency-cost argument is that we should see greater weighting in connected investees by weakly monitored funds when doing so is most valuable to the investee, that is, when the investee reports poor performance (H2). If a connected fund continues to hold its position during times of poor investee performance, that may make it easier for the investee to hold up the stock price. We partition our sample by investee performance to test whether overweighting in connected holdings is more pronounced when a connected investee has poor performance, measured using earnings surprises. Our main coefficient of interest is the β_3 coefficient, which captures the incremental weight in a connected investee's stock for weakly monitored funds. If connections are a source of agency conflicts, we predict that there will be more weighting in connected investees by weakly monitored funds (i.e., $\beta_3 > 0$) during times of poor performance than strong performance.

Table 5 shows the estimated results of equation (1) and (2). We report the estimates from an OLS regression using the whole sample (columns 1 and 2) and partitioned by investee performance (columns 3 and 4). Using the entire sample in column 1, we find a positive and significant β_1 coefficient, (β_1=0.0018, t-stat=6.93), suggesting that funds allocate more weight to connected investees. Given that mean investment weights in each firm is 0.008 (Table 4, Panel A), the estimated coefficient suggests that sharing connections with an investee increases fund's investment weight by 22.5 percent (= 0.0018/0.008), relative to the sample mean. This translates

to holding, on average, US$ 1,963,526 more holdings in connected firms for an average fund, which implies an aggregate distortion in the industry of more than US$ 703 million.[30]

In column 2, we include the interaction term (*Connected ×Weakly monitored*) and test whether increased weight in connected investees is more pronounced when funds have weak monitoring. The estimated coefficient on β_3 is positive and significant (β_3=0.0006, t-stat=1.92), showing that weakly monitored funds tend to give more weight to connected investees than closely monitored funds, as predicted in H1. The estimated coefficient suggests that moving from the strongest monitoring score category (*Weakly monitored score*=0) to the weakest (*Weakly monitored score*=2) will show a 15.0 percent (=(0.0006×2 scores)/0.008) increase in investment weight in connected investees, relative to the sample mean.

Columns 3 and 4 present the results after partitioning by investee performance. We find that greater weighting of connected investees by weakly monitored funds is observed only when investees report poor performance. In column 3, when using only the sample of poor investee performance, we find a significant positive coefficient on the interaction term (β_3= 0.0011, t-stat=3.05), consistent with H2. When we examine positive earnings surprise sample, we do not find evidence of significant overweight for weakly monitored funds (β_3=0.0003, t-stat=0.84). We also find that the difference in the coefficients for the two interaction terms (0.0008= 0.0011 - 0.0003) is statistically significant (F stats = 3.46, p-value= 0.08). Overall, the results suggest that

[30] The numbers are calculated using the estimated increase from connections, implied by the β_1 coefficient. We calculate the incremental dollar value increase in connected holdings for individual funds by multiplying the β_1 coefficient (β_1= 0.0018) with the average total assets managed by an individual fund in our sample (= US$ 495,840,000 in Table 2) and the average number of connected holdings that funds hold each year 2.2 (=57.92*3.8% in Table 2). This leads to a US$ 1,963,526 (= 0.0018 × US$ 495,840,000 ×2.2) increase in holdings in connected firms for the average fund in our sample. The total distortion is then calculated by multiplying this difference by the average number of funds per year in our sample (358.4), which amounts to US$ 703,727,718 = US$ 1,963,526 X 358.4.

weakly monitored funds tilt their portfolio toward connected investees (H1) and that this overweighting is observed only when connected investees report poor performance (H2).[31]

Fund returns in connected versus unconnected investee

To test whether the investment allocation indicates network-induced agency conflicts, we turn to examining fund returns. We predict that weakly monitored funds' tendency to put greater weights on connected stocks will lead to lower returns in connected holdings, compared to closely monitored funds. Also, weakly monitored funds' tendency to generate lower returns in connected holdings will be greater in times of poor investee performance. We test these two predictions using the following regression model.

$$Ret\_adjusted\ (Ret)_{i,t+1} = \beta_0 + \beta_1 \times Connected_{f,i,t} + \beta_K Controls_{f,i,t,K} + Fund,\ Semi\text{-}annual,\ Industry\ FE + e_{i,t}. \quad (3)$$

Our unit of observation is a fund (*f*)-investee (*i*) for each reporting period (*t*). The dependent variable *Ret* is the buy-and-hold returns calculated over the next reporting period (six-month window), which we annualize for ease of interpretation. This is the returns the fund will realize if it held the holdings from now until the beginning of the next reporting period, based on the assumption that funds do not change their holdings between reports. We use risk-adjusted returns (*Ret_adjusted)* to ensure that risk in connected holdings is not driving our results. Following Daniel et al. (1997), we risk-adjust the returns by subtracting the returns of three benchmark portfolios—size, book-to-market, and momentum. Each benchmark portfolio is respectively formed every semi-annual period using the value-weighted returns of the size, book-to-market, and momentum

[31] In additional analysis (untabulated), we differentiate buying from selling. We find that changes in allocation in poorly performing stocks result from both (i) selling less of connected stocks and (ii) buying more of the connected stocks.

portfolios. Details are provided in the appendix. We present our analysis using both raw and risk-adjusted returns.

Our main variable of interest is *Connected*, an indicator variable for investees with close ties to a fund. *Connected* takes a value of one (zero) for connected (unconnected) fund-investee pairs. The coefficient β_1 represents the average incremental fund returns of the connected portfolio, relative to those of the unconnected portfolio. If fund connections provide information advantages to fund managers, we predict the connected portfolio will have greater returns than the unconnected portfolio, that is, $\beta_1 > 0$.

We include a set of controls following prior studies (Gompers and Metrick 2001). Investee-level controls include book-to-market (*BTM*), size (*SIZE*), volatility (*STDRET*), growth (*TURNOVER*), stock price (*P*), momentum (*MOM_current*, *MOM_prior*), and dividend policy (*DIV*). We also include measures of the firm's visibility (*DOWJ* and *AGE*) and governance, based on audit quality (*BIG4*) and analyst following (*ANA*). Fund-level controls include time-varying fund characteristics, such as fund size (*Ln(AUM)*), measured using log of the fund's total assets under management), and investment style, measured using the average number of firms held (*# of firms held*), *Holdings period,* and *%Style*. All controls are measured semi-annually and defined in the appendix. We include both industry (of the investee) and semi-annual period fixed effects to control for unobserved time and industry factors that determine fund returns.[32] We also include fund fixed effects to control for other unobservable fund characteristics (e.g., investment style) that may account for the different returns across funds. Standard errors are two-way clustered by fund and time.

[32] We also estimate the model after including controls that have only time-series variation (e.g., market returns) without year fixed effects and find robust results (see online appendix).

Our main prediction is that network-based agency conflicts prevent funds from trading on their information advantages. Specifically, H3 predicts that, when the funds are weakly monitored, they will generate lower returns in their connected portfolios compared to when they are closely monitored. To test these predictions, we first expand on equation (3) and include an interaction term for the level of external monitoring.

$$Ret\_adjusted\ (Ret)_{i,t+1} = \beta_0 + \beta_1 \times Connected_{f,i,t} + \beta_2 \times Weakly\ monitored_{f,t} + \beta_3 \times Connected_{f,i,t} \times Weakly\ monitored_{f,t} + \beta_K\ Controls_{f,i,t,K} + Fund,\ Semi\text{-}annual,\ Industry\ FE + e_{i,t}. \quad (4)$$

As before, *Weakly monitored* is the sum of the two fund monitoring indicators and takes a higher value when a fund is weakly monitored. The coefficient β_3 is our main variable of interest, and it captures the difference in the incremental returns in a connected portfolio when a fund is weakly monitored compared to when a fund is closely monitored. If network-induced agency conflicts compromise weakly monitored funds' ability to execute trades for the benefit of their investors, we expect the value of these funds' connections to diminish (H3), that is, $\beta_3 < 0$.

Next, we examine the differential returns in connected portfolios in times of an investee's negative versus positive performance. We predict that there will be lower returns in connected investees by weakly monitored funds (i.e., $\beta_3 < 0$) in times of poor investee performance and not in times of strong investee performance (H4).

Table 6 presents the results of the estimated coefficients from equations (3) and (4). Columns 1 through 3 present risk-adjusted returns, and columns 4 to 6 present raw returns as the respective dependent variables. In column 1, we present the results using the entire sample. We first find that the average risk-adjusted returns in a connected portfolio are positive and significant ($\beta_1 = 0.102$, t-stat=2.71). Funds generate 10.2 percent higher annualized abnormal returns in their connected investments relative to unconnected investments on average. However, the incremental

returns in connected stocks drop when funds are weakly monitored (β_3= -0.033, t-stat=-2.00). A one unit increase in the weakly monitored score, which can result from either a fund having no foreign shareholders or from having a custodian with weak independence, is associated with a 3.3 percent reduction in the returns of the connected holdings. The estimation implies that for funds with the weakest monitoring (*Weakly monitored* =2), the incremental returns in connected holdings will drop to 3.6 percent (=10.2% - (2 units×3.3%)), which contrasts with the 10.2 percent incremental returns that the best monitored funds (*Weakly monitored*=0) realize in their connected holdings. Overall, the cost of distorting the investment allocation in connected holdings in the weakest monitoring category is 6.6 percent (=10.2%-3.6%). This translates to a loss in investment value of US$ 1,243,567 in each fund-year, which implies a total distortion in the industry of more than US$ 86.7 million.[33]

In columns 2 and 3, we examine the differential returns in connected portfolios in times of an investee's poor versus strong performance. As before, we include, in the negative performing investee sample, investees with earnings surprise below the sample median in each period. When investees face weak performance (column 2), returns in the connected portfolio for weakly monitored funds are significantly lower (β_3=-0.053, t-stat=-2.32), compared to closely monitored funds. When investees have strong performance (column 3), we find no statistical significance in the incremental returns in connected holdings of weakly monitored funds (β_3= -0.013, t-stat= -0.68).

[33] The numbers are calculated using the estimates implied by the 6.6% difference in the β coefficients. We calculate the estimated loss in investment value by multiplying the 6.6% returns with the average assets that individual funds in our sample invest in connected firms (US$ 18,841,920= 3.8%* US$ 495,840,000 in Table 2). This implies a US$ 1,243,567 (= 0.066 × US$ 18,841,920) loss in investment value for an average fund in our sample. The total industry-wide distortion is calculated by multiplying this difference by the average number of weakly monitored funds per semi-year in our sample (= 69.75, untabulated).

In columns 4 to 6, we repeat the estimation using raw returns and find very similar results with marginally weaker economic significance. In column 4, we find that the average returns in connected stocks are higher by 15.9 percent (β_1=0.159, t-stat=3.89) than unconnected stocks for an average fund. For weakly monitored funds, the incremental returns in connected stocks are lower by 3.8 percent with every unit increase in the monitoring score (*Weakly monitored*), although this increase is not statistically significant. More importantly, the lower returns of weakly monitored funds are only observed in times of poor investee performance (column 5), not in times of strong investee performance (column 6). The difference in the *Connected* × *Weakly monitored* coefficients is statistically significant (F-stats= 8.53, p-value= 0.008). We interpret the findings as network-induced agency conflicts preventing funds from trading on their information advantages and leading to economically significant losses for fund investors.

V. ADDITIONAL ANALYSES AND ROBUSTNESS TESTS

Returns in connected investees after CSRC enforcement

Monitoring may arise endogenously, and the reasons may be correlated with factors that affect fund performance. In this section, we address concerns about correlated omitted variables using a regulatory change that triggered a market-wide change in monitoring levels. In the second quarter of 2007, the CSRC enacted two rules and heightened enforcement against violations of fiduciary duty in the fund industry. The second wave of enforcement took place in 2009 when the government issued Amendment (VII) to the Criminal Law, which stipulated that it is a criminal offense for fund managers to trade on securities using private information. The amendment provided a legal basis for prosecuting individuals, i.e., fund managers. We use this change as an event that reduced network-induced agency conflicts (i.e., increased the cost of favoritism),

especially for previously weakly monitored funds. We use the model in equation (5) to examine how returns in connected holdings change following these events. We estimate the regression for each subsample of monitoring and test whether the effect is greatest among weakly monitored funds.

$$Ret\_adjusted_{i,t+1} = \beta_0 + \beta_1 \times Connected_{f,i,t} + \beta_2 \times Post\ enforcement_t + \beta_3 \times Connected_{f,i,t} \times Post\ enforcement_t + \beta_K Controls_{f,i,t,K} + Fund\ FE + Industry\ FE + e_{i,t}. \quad (5)$$

The *Post enforcement* is a continuous variable that takes a value of one after the first enforcement event, which occurred in the second quarter of 2007, and zero in earlier periods. The variable takes a value of two after the second enforcement event, which extends from the first quarter of 2009 to the end of our sample period. We predict that returns in the connected holdings increase in the post period ($\beta_3>0$), especially for funds that were previously weakly monitored.

Table 7 reports the estimated coefficients using the risk-adjusted returns as dependent variable.[34] We estimate the model separately for each level of fund monitoring (*Weakly monitored* = 0, 1, and 2). Column 1 shows the estimates using only funds with weak monitoring (*Weakly monitored*=2), that is, no monitoring either by a foreign investor or independent custodian. For the weakest monitored funds in column 1, we find that the returns of connected holdings increase following enforcement (β_3=0.066, t-value=2.29), suggesting that the information advantages from connections now lead to greater returns. For funds that were already closely monitored (*Weakly monitored*=0), we find little evidence of improved returns in connected holdings (β_3=0.045, t-value=1.21), suggesting that quality monitoring in the pre-enforcement regime protected investors from network-induced agency conflicts.

Quality of public information and the use of private information channels

[34] When raw returns are used in the regressions, all results are qualitatively similar (untabulated).

We add cross-sectional tests to examine whether network-induced agency conflicts are less likely to arise with better public information, because opportunities to exploit private information are reduced. We run this cross-sectional test by partitioning our sample into those with high versus low quality public information. We examine the role of connections and network-induced agency conflicts in each subsample using the regression model in equation (4). The quality of a firm's information environment is measured using proxies from the literature: Big 4 auditor (DeFond et al. 1999), analyst following (Lang and Lundholm 1996), and earnings response coefficients (Lennox and Park 2006). Detailed definitions are provided in the appendix.

The estimated results are included in Table 8. Columns 1 and 2 use the presence of a Big 4 auditor to measure public information quality of investees. Column 1 includes only investees with a Big 4 auditor; those with non-Big 4 auditors are in column 2. We find that returns in connected holdings are positive and significant only when investees' quality of public information is poor, that is, the investee firm has a non-Big 4 auditor (β_1=0.184, t-stat=3.07). We find no evidence of connections leading to higher returns when investees have a Big 4 auditor (β_1=0.013, t-stat=0.53). A F-test (untabulated) shows that the two β_1 coefficients in columns 1 and 2 are different at statistically significant levels (p-value=0.03, untabulated). A possible explanation for the difference is that, when good public information is available, private connections provide less investment value to funds.

Next, we test whether network-induced agency conflicts (i.e., weakly monitored funds generating lower returns from connections) are exacerbated when investees have poor information quality, that is, when investees have non-Big 4 auditors. When funds are weakly monitored, the incremental returns of connected funds are negative and significant only among investees with poor information quality (β_3=-0.056, t-stat= - 2.08 in column 2) but not significant among investees

with superior information quality (β_3=0.006, t-stat=0.49 in column 1). Using analyst following (column 3 and 4) and earnings response coefficients (columns 5 and 6) to partition firms by the quality of their information environments, we find very similar results.[35] The findings suggest private connections matter more in the absence of quality public information and lead to higher returns when there is a lack of public information.

Robustness tests

We perform sensitivity tests to ensure robustness of our findings. First, we note that a connected fund is more likely to be meaningful to investees if the fund's holdings are influential for the firm. Our ownership data includes the holdings of all funds, even those with a very small amount of ownership. We therefore repeat our analysis using only influential ownership, measured as funds with an ownership greater than the median holdings of all the funds that invest in the firm. Table 9 reports the estimates from estimating equation (4), after limiting the holdings to those held by only influential funds. The estimated coefficients are consistent with our earlier findings in Table 6 with similar economic significance.

We examine the sensitivity of the inclusion of school fixed effects. Including school fixed effects ensures that the connection through the educational network itself is driving the results, rather than skills or beliefs acquired at school. In Table 9, we present the estimates after including school fixed effects. We use school of the fund managers (rather than the firms) to identify the schools, as our concern is the skills of the fund managers and not those of the firm managers. For funds with more than one manager, we use the most frequent school affiliation within the team. We find that weakly monitored funds show lower returns in their connected holdings. The β_3

[35] We partition the sample using the sample median in each period. Column 3(5) includes observations with analysts following (ERCs) above the sample median, and column 4(6) includes observations below the sample median.

coefficient is significant (columns 1). More importantly, the patterns are driven by periods of poor investee performance (columns 2 and 5), suggesting that our results are robust to including school fixed effects. Our results are also robust to using different measures of investee performance and connections and after clustering by firms (instead of funds) and time to address concerns of correlations in returns over time (e.g., momentum) (see online appendix).

VI. CONCLUSION

In this study, we examine the role of close ties in a market where private information channels play an important role. Studies find that close ties can act as a channel of information transfer. Using the investment decisions of mutual fund managers in China, we show how close ties can be a source of agency conflict when the manager puts the interests of a friendly investee over those of his or her own investors. Funds allocate more capital to connected investees yet realize lower returns when there are more network-induced agency conflicts, for example, (i) when funds have weak monitoring and (ii) when the investee suffers poor performance. Our findings suggest that the fund manager's incentive alignment is an important pre-condition to an information advantage translating into better returns.

This study shows that role networks can play as an information source in emerging economies. In the case of the mutual fund industry, when public information is scarce, social ties enable mutual fund managers to gain access to important information about their investees. Although the fund managers' private networks can provide information advantages, they can also create an agency problem that leads to the consumption of private benefits by fund managers, at the expense of fund investors. Future research could study how these network-induced agency problems arise in emerging markets. Specifically, researchers could study the role of networks in

agency conflicts in these settings and how one might design market and/or regulatory mechanisms to ameliorate them, especially when these private networks still serve a crucial role in filling institutional voids in underdeveloped markets.

Our findings have several policy implications for the mutual fund industry in China. Since 2000, the CSRC has emphasized the development of investment funds in China. The CSRC has viewed the development of these companies as a way to stabilize China's capital market, which is dominated by retail investors. Our study highlights that these institutional investors, because of agency conflicts, can fail to act in their investors' best interests. We also find that increased enforcement in the fund industry has the effect of improving investor protection among previously weakly monitored funds. Improved governance and stronger monitoring is thus an important prerequisite to the development of China's mutual fund industry.

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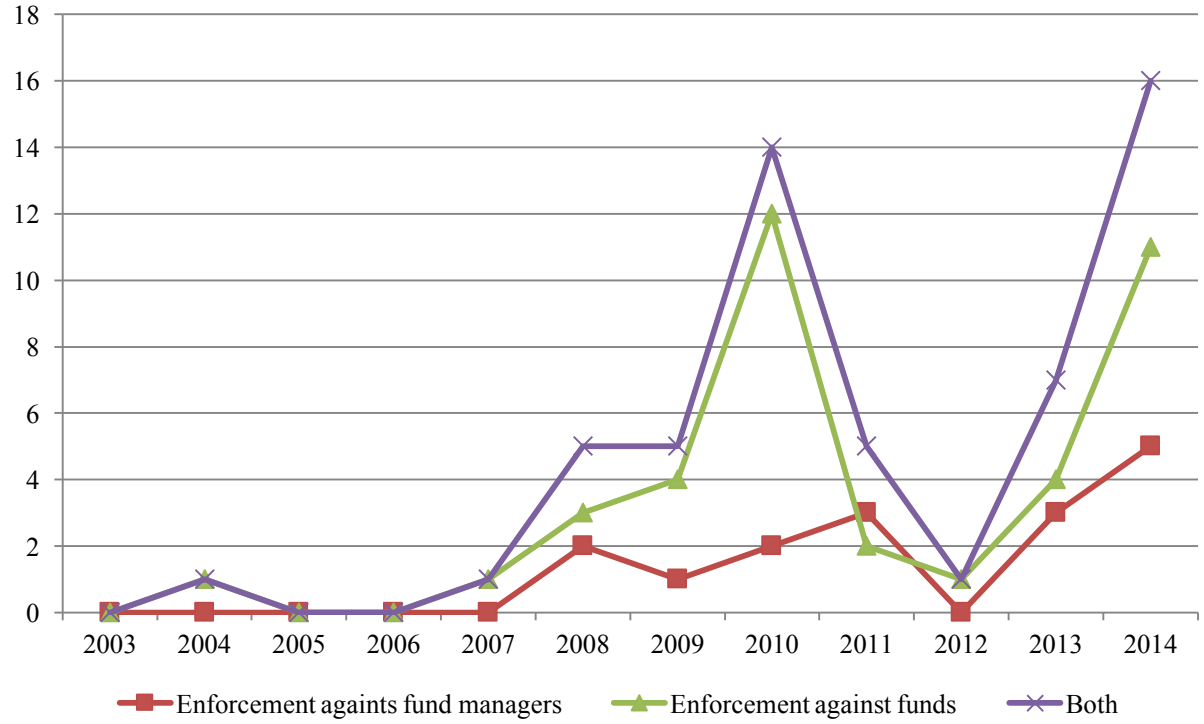
Figure 1
Frequency of CSRC enforcement actions against mutual funds by year



Notes: Figure 1 presents the frequency of enforcement actions against fund management companies (fund managers) throughout our sample period.

Appendix: Variable definitions

Variable name	Definition and empirical measures
Dependent variable	
Ret	Buy-and-hold returns of firm i in period t+1, where each period is based on a semi-annual calendar year. We annualize the semi-annual returns for ease of interpretation
Ret_adjusted	Risk-adjusted buy-and-hold returns of firm i in period t+1. Each period is based on a semi-annual calendar year and annualized for ease of interpretation. Following Daniel et al. (1997), returns are risk-adjusted using a benchmark portfolio. The benchmark portfolio is constructed based on a sort on firm size (i.e., the natural log of total assets), book-to-market ratio, and momentum (i.e., returns in the previous year). For each period, we form size quintiles using all common stocks, and then further sort firms into book-to-market portfolios within each size quintile, finally, the firms in each of the 25 SIZE/BTM portfolios are then sorted into quintiles based on their preceding 12-month returns, giving us a total of 125 portfolios. We calculate the risk-adjusted buy-and-hold returns by subtracting the value-weighted buy-and-hold returns of each portfolio from the raw buy-and-hold return of each firm.
Weight	Market value of fund holding for a firm scaled by the total equity holding of the fund.
Independent variable	
Connection between funds and investees	
Connected	An indicator variable that takes a value of one if the fund manager went to the same university with the investee's senior managers and/or board members *and* the fund family is located in the same province or region where the investee is incorporated.
Network-induced agency cost measures	
No foreign ownership	Equal to 1 for fund families without foreign ownership, and zero otherwise.
Weak independence of custodian	Equal to 1 for funds with a small custodian, and zero otherwise.
Weakly monitored	Sum of *No foreign ownership* and *Weak independence of custodian*, taking a higher value when funds are weakly monitored.
Post enforcement	Continuous variable that takes a value of two after the second enforcement event, which extends from the first quarter of 2009 to the end of our sample period, takes a value of one after the first enforcement event, which occurred in the second quarter of 2007, and zero in earlier periods,.
Quality of accounting information measures	
Big4 auditor	Equal to 1 for a firm audited by a Big4 auditor.
Analyst following	Number of analysts following a firm in the given semi-annual year.
ERC	The firm's historic earnings response coefficient. We estimate each firm's ERC by regressing cumulative market-adjusted stock returns on the earnings news of past quarters. Returns are cumulated over two trading days [-2, +2], where day 0 is the earnings announcement date in a past quarter. The earnings news of a past quarter equals the quarter's earnings per share announced on day 0 minus the earnings in the same quarter of last year, scaled by the closing share price at day -1. To estimate the firm's ERC, we use the 20 most recent past quarters for returns and earnings (Lennox and Park, 2006).
Control variables	
Investment weight regressions	
ME	Percentiles of the market value of equity, calculated as in Cohen et al. (2008).
BM	Percentiles of the market value of equity, calculated as in Cohen et al. (2008).
R12	Percentiles of the past 12-month return, calculated as in Cohen et al. (2008).
Returns regressions	
SIZE	The natural logarithm of firm *i*'s total assets at the of end of period *t*.

BTM	Firm *i*'s book value of total equity divided by market value at the end of period *t*.
STDRET	The standard deviation of firm *i*'s monthly returns during period *t*.
TURNOVER	The average daily turnover rate in period *t*, where the daily turnover rate is defined as the sum of the total daily trading volume of firm *i* divided by the daily tradable shares.
P	The share price of firm *i* at the semi-annual year-end.
MOM_current	The stock return of firm *i* in period *t*.
MOM_prior	The stock return of firm *i* in period *t-1*.
DIV	Firm *i*'s dividend per share scaled by its stock price at the beginning of period *t*.
DOWJ	Indicator variable that takes a value of 1 if firm *i* is included in the Dow-Jones 600 index, 0 otherwise.
AGE	The natural logarithm of one plus the number of months since firm *i* first listed.
BIG4	Equal to 1 for a firm audited by a Big4 auditor.
ANA	The natural logarithm of one plus number of analysts following a firm in the given semi-annual year
Ln(AUM)	The natural logarithm of fund *f*'s total assets under management at the end of period *t*.
# of fund managers	The natural logarithm of one plus the # of fund managers at fund *f* at the end of period *t*.
# of firms held	The natural logarithm of one plus the # of firms held by fund *f* at the end of period *t*.
Holding period	An indicator variable that takes a value of one if fund *f* has held firm *i* for more than one year, zero otherwise.
%STYLE	The percentage of the fund's total net assets invested in the style corresponding to the stock being considered. Style is constructed based on a quintiles sort on firm size, book-to-market ratio, and momentum, successively. For each period, we form size quintiles using all common stocks, and then further sort firms into book-to-market portfolios within each size quintile, finally, the firms in each of the 25 SIZE/BTM portfolios are then sorted quintiles based on their preceding 12-month return, giving us a total of 125 kinds of stock styles (Cohen et al. 2008; Daniel et al. 1997).

Table 1 Distribution of mutual funds by region of incorporation

Panel A: Distribution of the total number of registered funds from 2003 to 2014

	# of funds												Total AUM (in million USD)
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	as of 2014
Beijing	7	9	12	19	33	39	43	49	57	69	78	91	36,503.44
Shanghai	30	47	64	91	108	131	165	195	234	270	312	296	73,846.98
Guangdong	54	71	79	97	112	122	142	158	184	203	232	238	75,772.55
Guangxi	0	0	1	2	3	4	5	5	7	8	9	9	1,256.47
Chongqing	0	0	1	1	3	4	5	7	9	11	13	17	2,269.91
Tianjin	0	0	1	1	1	1	2	4	4	4	5	6	1,009.47
Zhejiang	0	0	0	0	0	0	0	0	1	2	2	2	64.06
Total	91	127	158	211	260	301	362	418	496	567	651	659	190,722.87

Panel B: Characteristics of the mutual fund holdings data

	# of funds								
	Mean	Std	P1	P10	P25	P50	P75	P90	P99
# of holdings per fund	57.92	46.42	4	24	34	48	68	99	227
AUM per fund (in million USD)	495.84	653.02	7.72	22.90	74.73	269.72	632.12	1274.68	3,203.65
# of fund managers per fund	1.29	0.52	1	1	1	1	2	2	3

Notes: Panel A presents the distribution of registered funds over our sample period. Information on registered domestic funds is collected from CSMAR (China Stock Market and Accounting Research). Total AUM is the total assets under management in millions USD of all funds as of 2014. We use the exchange rate as of Dec 31, 2014, when the RMB yuan to the dollar is 6.119:1. Panel B presents the descriptive statistics of various fund characteristics. # of holdings per fund is the number of equities a fund holds in each reporting period. AUM per fund is the total assets under management of a fund in each reporting period. # of fund managers per fund is the number of fund managers for each fund reported in the CSMAR database.

Table 2 Close ties between fund managers and firms' management teams by academic institution

Panel A: Top 10 academic institutions of fund managers in China

Academic institutions of fund managers	(1) # of fund managers	(2) # of firm executives and board of directors	(3) # of alumni club branches	Regional branch	Finance branch
1. Peking University	100	1199	112	Yes	Yes
2. Tsinghua University	88	1407	196	Yes	Yes
3. Fudan University	82	725	95	Yes	Yes
4. Shanghai Univ. of Finance and Econ.	68	662	53	Yes	Yes
5. Shanghai Jiao Tong University	53	490	82	Yes	Yes
6. Renmin Univ. of China	48	1094	N/A	Yes	Yes
7. Nankai University	36	412	145	Yes	Yes
8. Wuhan University	34	565	187	Yes	Yes
9. PBC School of Finance, Tsinghua	34	45	10	Yes	Yes
10. Nanjing University	34	444	115	Yes	Yes
All	911	98,844	995		

Panel B: School ties between fund managers and firm senior managers or board of director, by top 10 academic institutions

Academic institution	# of ties between fund managers and firms	% of total
1. Tsinghua University	5,235	21.69
2. Peking University	4,911	20.34
3. Fudan University	2,402	9.95
4. Shanghai Univ. of Finance and Economics	1,856	7.69
5. Renmin Univ. of China	1,744	7.22
6. Shanghai Jiao Tong University	1,135	4.70
7. Wuhan University	888	3.68
8. Zhejiang University	795	3.29
9. Nankai University	598	2.48
10. Nanjing University	492	2.04
Foreign	374	1.55
Others	3,710	15.37
All	24,140	100

Panel C: Distribution of mutual fund holdings, by connected and unconnected holdings

Variable	Measure	Connected holdings	Unconnected holdings	% connected holdings	
				# holding	AUM
School ties	Shared school ties between the fund manager and the investee's managers	The fund manager went to the same university as the investee's senior executives and/or board members.	The fund manager has no shared education networks with any of the investee's senior executives or board members.	13.52	14.43

Geographic proximity	Measuring geographic proximity as the distance between the provinces where the fund and the investee are incorporated.	The fund family is located in the same province or region where the investee is incorporated.	The fund family is not located in the same region where the investee is incorporated.	12.75	13.39
Connected	Composite measure of school ties and geographic proximity	The fund manager went to the same university as the investee's senior managers and/or board members *and* the fund management company is located in the same province where the investee is incorporated.	The fund manager has no shared education networks with any of the investee's senior managers or board members *or* the fund management is located in a different province from where the investee is incorporated.	3.80	4.29

Notes: The table reports the distribution of the academic institutions of individuals in our sample. The sample of fund managers includes all fund managers from the CSMAR database who hold equities between 2003 and 2014. The sample of stocks includes the stocks from CSMAR with mutual funds holdings and non-missing information on the educational background of the members of the board of directors and the senior officers of the firm (CEO, CFO, or Chairman). In Panel A, we present the top 10 academic institutions attended by the fund managers and the firm executives and boards of directors in our sample. Panel B presents the ties among fund managers and Chinese firms based on educational backgrounds. Foreign institutions include all academic institutions located outside of mainland China, including Hong Kong and Taiwan. In Panel C, we show the percentage of mutual fund holdings invested in firms with which the fund shares close ties, i.e., connected holdings.

Table 3 Governance characteristics and the investment allocation of mutual funds in China

Panel A: Distribution of mutual funds by quality of monitoring

Variable	Measure	# funds Semi-annual years	Mean	Std	P1	P25	P50	P75	P99
No foreign ownership	Equals one if fund family has *no* foreign shareholders, zero otherwise	6,405	0.438	0.496	0	0	0	1	1
Weak independence of custodian	Equals one if fund has a *small* custodian, zero otherwise.	6,405	0.502	0.500	0	0	1	1	1
Weakly monitored score	Sum of the two variables above. Takes a higher value when funds are weakly monitored.	6,405	0.940	0.678	0	0	1	1	2

Panel B: Frequency of enforcement actions against funds by quality of monitoring

Variable	Measure	(1) Enforcement against fund managers			(2) Enforcement against fund management companies			(3) All enforcements (= (1) + (2))		
		Closely monitored	Weakly monitored	Diff.	Closely monitored	Weakly monitored	Diff.	Closely monitored	Weakly monitored	Diff.
No foreign ownership	Equals one if fund family has *no* foreign shareholders	0.192	0.243	-0.051***	0.037	0.046	-0.009*	0.222	0.270	-0.048***
Weak independence of custodian	Equals one if fund has a *small* custodian	0.189	0.240	-0.051***	0.039	0.043	-0.004	0.217	0.269	-0.052***

By monitoring levels	(1) Enforcement against fund managers	(2) Enforcement against fund management companies	(3) All enforcements (= (1) + (2))
Weakly monitored score=0	0.133	0.041	0.164
Weakly monitored score=1	0.246	0.035	0.274
Weakly monitored score=2	0.235	0.057	0.265

Panel C: Mean investment weights in connected vs. unconnected investees for weakly monitored funds

	Mean weight		
	Connected holdings	Unconnected holdings	Diff.
All funds	0.0113	0.0081	0.0032***
By monitoring levels			
Weakly monitored score==0	0.0117	0.0090	0.0027***
Weakly monitored score==1	0.0111	0.0077	0.0034***
Weakly monitored score==2	0.0112	0.0078	0.0034***

Panel D: Mean investment weights in connected vs. unconnected investees by poor vs. strong investee performance

Mean % weight	Poor investee performance			Strong investee performance		
	(1) Connected holdings	(2) Unconnected holdings	Diff (1)-(2)	(3) Connected holdings	(4) Unconnected holdings	Diff (3)–(4)
All funds	0.0103	0.0066	0.0037***	0.0124	0.0096	0.0028***
By monitoring levels						
Weakly monitored score==0	0.0088	0.0066	0.0022***	0.0139	0.0110	0.0029***
Weakly monitored score==1	0.0107	0.0065	0.0042***	0.0117	0.0090	0.0027***
Weakly monitored score==2	0.0107	0.0067	0.0040***	0.0123	0.0093	0.0030***

Notes: Panel A shows the distribution of the monitoring measures of mutual funds. The sample funds include all funds from the CSMAR database that hold equities between 2003 and 2014. Panel B presents the validation test of the weakly monitored score. We compare the likelihood of CSRC enforcement actions by the level of monitoring a fund has. Panel C shows individual funds' mean investment weights in connected vs. unconnected investees. The unit of analysis is the fund-investee pair for each semi-annual year. Investment weight (*Weight*) is defined as the market value that a fund holds in an investee's stock relative to the fund's total the fund's total equity holdings. *Connected* holdings is holdings of an investee that share school ties with the fund manager and located in the same city. Panel D shows individual funds' mean investment weights in connected vs. unconnected investees in times of poor vs. strong investee performance. The poorly (strongly) performing investee sample includes investees with earnings surprise below (above) the sample median in each period, where earnings surprise is defined as changes in EPS relative to the previous period (i.e., semi-annual year). See Table 2, Panel C for definitions of a connected investee. Refer to the appendix for detailed definitions of all other variables. The significance of the t-tests is denoted by ***, **, and * for 1%, 5%, and 10% respectively, using a two-tailed test.

Table 4 Descriptive statistics

Panel A: Investment weights

Variables	# fund-firm, semi-annual	Mean	Std	P10	P25	P50	P75	P90
a. Dependent variable								
Weight	404,964	0.008	0.012	0.000	0.000	0.002	0.013	0.026
b. Control variables								
ME	404,964	0.76	0.22	0.43	0.65	0.84	0.94	0.97
BM	404,964	0.44	0.28	0.09	0.22	0.41	0.66	0.85
R12	404,964	0.57	0.31	0.10	0.29	0.62	0.85	0.94
%STYLE	404,964	0.036	0.059	0.000	0.002	0.014	0.042	0.102

Panel B: Fund returns

Variables	# fund-firm, semi-annual	Mean	Std	P10	P25	P50	P75	P90
a. Dependent variables								
Ret	270,017	0.462	1.235	-0.554	-0.275	0.099	0.756	1.839
Ret_adjusted	270,017	0.100	0.641	-0.470	-0.275	-0.045	0.292	0.801
b. Control variables								
BTM	270,017	1.223	2.170	0.199	0.330	0.578	1.133	2.323
SIZE	270,017	22.914	1.788	21.030	21.667	22.567	23.665	25.221
STDRET	270,017	0.130	0.049	0.075	0.094	0.121	0.156	0.197
TURNOVER	270,017	1.899	1.495	0.518	0.851	1.474	2.492	3.856
P	270,017	21.168	17.220	6.620	9.980	16.260	26.600	39.990
MOM_current	270,017	0.220	0.468	-0.265	-0.089	0.125	0.418	0.830
MOM_prior	270,017	0.184	0.457	-0.293	-0.115	0.089	0.384	0.786
DIV	270,017	0.101	0.177	0.000	0.000	0.000	0.135	0.289
DOWJ	270,017	0.610	0.488	0.000	0.000	1.000	1.000	1.000
AGE	270,017	4.455	0.777	3.332	3.932	4.663	5.075	5.293
BIG4	270,017	0.169	0.374	0.000	0.000	0.000	0.000	1.000
ANA	270,017	3.221	1.124	1.609	2.639	3.466	4.060	4.431
Ln(AUM)	270,017	21.433	1.523	19.126	20.502	21.723	22.598	23.159
# of fund managers	270,017	0.835	0.219	0.693	0.693	0.693	1.099	1.099
# of firms held	270,017	4.317	0.687	3.555	3.850	4.234	4.682	5.193
Holding period	270,017	0.404	0.491	0.000	0.000	0.000	1.000	1.000
%STYLE	270,017	0.049	0.067	0.002	0.008	0.023	0.061	0.131

Notes: This table shows the descriptive statistics of the dependent variables and all other control variables. Panel A presents the variables in the portfolio weights regressions (equations 1 and 2). Investment weights (*Weight*) is defined as the market value a fund holds in an investee's stock relative to the fund's total equity holdings. Panel B shows variables in the returns regressions (equations 3 and 4). *Ret* is based on the semi-annual returns of investees the funds held at the beginning of the reporting period and annualized for ease of interpretation. It is the returns the fund will realize if it had held the firms from the beginning of each reporting period. Ret_adjusted is the returns risk-adjusted by subtracting the value-weighted returns of the size, book-to-market, and momentum portfolios (Daniel et al. 1997). Each benchmark portfolio is formed every semi-annual year using the respective value-weighted returns of size, book-to-market, or momentum portfolio. Refer to the appendix for a detailed definition of each variable.

Table 5: Investment weight in connected investees

Model: $Weight_{f,i,t} = \beta_0 + \beta_1 \times Connected_{f,i,t} + \beta_2 \times Weakly\ monitored_{f,t} + \beta_3 \times Connected_{f,i,t} \times Weakly\ monitored_{f,t} + \beta_K\ Controls_{f,i,t,K} + Fund\ FE + Semi\text{-}annual\ FE + Industry\ FE + e_{i,t}$

		Weightf,i,t	Weightf,i,t	Weightf,i,t	
		(1)	(2)	(3)	(4)
				Poor investee performance	Strong investee performance
Connected	(+)	0.0018***	0.0012***	0.0013***	0.0012***
		(6.93)	(3.73)	(3.57)	(2.93)
Weakly monitored			-0.0006***	-0.0001	-0.0010***
			(-3.44)	(-0.71)	(-4.20)
*Connected *Weakly monitored*	(+)		0.0006*	0.0011***	0.0003
			(1.92)	(3.05)	(0.84)
*F-test: Connected+ Connected*Weakly monitored*				0.0024 (55.34)***	0.0015 (25.59)***
*F-test: column 3 = column 4 Connected*Weakly monitored*				0.0008 (3.46)*	
ME		0.004***	0.004***	0.003***	0.004***
		(5.90)	(5.88)	(4.36)	(5.08)
BM		-0.000	-0.000	-0.000	0.001
		(-0.35)	(-0.35)	(-0.76)	(1.27)
R12		0.003***	0.003***	0.003***	0.003***
		(7.66)	(7.69)	(6.45)	(6.04)
%STYLE		0.056***	0.056***	0.045***	0.060***
		(8.60)	(8.59)	(6.32)	(9.65)
Fund fixed effect		yes	yes	yes	yes
Industry fixed effect		yes	yes	yes	yes
Semi-annual fixed effect		yes	yes	yes	yes
SE cluster		fund, time	fund, time	fund, time	fund, time
Observations		404,964	404,964	160,646	220,248
Adjusted R-squared		0.197	0.197	0.168	0.201

Notes: This table reports the estimation from an OLS regression using investment weights as the dependent variable. The unit of analysis is the fund-investee pair for each semi-annual year. Columns 1 and 2 report the estimates using the whole sample. Columns 3 and 4 present the results after partitioning by investee performance. Columns 3 (4) reports the estimates using only the poorly (strongly) performing investee sample, defined as investees with earnings surprise below (above) the sample median in each period. Earnings surprise is measured as changes in EPS relative to the previous period (i.e., semi-annual year). The dependent variable, investment weights (*Weight*) is defined as the market value a fund holds in an investee's stock relative to the fund's total equity holdings. *Connected*, an indicator variable that takes a value of one if the investee share school ties with the fund (i.e.,fund manager went to the same university as the investee's senior managers and/or board members and the fund management company) and is located in the same province where the investee is incorporated. See Table 2, Panel C for a definition of the measure. The *Weakly monitored* variable is the sum of the two fund monitoring indicators (*No foreign ownership*, and *Weak independence of custodian*) discussed in Table 3 Panel A. The estimation includes both industry and semi-annual year fixed effects where industry is based on the two-digit CSRC industry code for the manufacturing industry and the single-digit code for all other industries. We also include fund fixed effects. All other variables are defined in the appendix. Standard errors are two-way clustered at the fund, semi-year level. Significance is denoted by t-values (or by F-statistics for F-tests), in parentheses, and by ***, **, and * for 1%, 5%, and 10% respectively, using a two-tailed test.

Table 6: Fund returns and social ties

Model: $Ret(adjusted)_{i,t+1} = \beta_0 + \beta_1 \times Connected_{f,i,t} + \beta_2 \times Weakly\ monitored_{f,t} + \beta_3 \times Connected_{f,i,t} \times Weakly\ monitored_{f,t} + \beta_K Controls_{f,i,t,K} + Fund\ FE + Semi\text{-}annual\ FE + Industry\ FE + e_{i,t}$

		Ret_adjusted			*Ret*		
		All	Poor investee performance	Strong investee performance	All	Poor investee performance	Strong investee performance
		(1)	(2)	(3)	(4)	(5)	(6)
Connected	(+)	0.102**	0.102***	0.109**	0.159***	0.154***	0.181***
		(2.71)	(3.29)	(2.10)	(3.89)	(3.27)	(3.10)
Weakly monitored		0.001	-0.004	0.007	-0.000	0.001	0.004
		(0.14)	(-0.48)	(0.64)	(-0.04)	(0.08)	(0.24)
*Connected * Weakly monitored*	(-)	-0.033*	-0.053**	-0.013	-0.038	-0.089**	0.002
		(-2.00)	(-2.32)	(-0.68)	(-1.24)	(-2.14)	(0.07)
*F-test: Connected+ Connected*Weakly monitored*		0.069 (4.48)**	0.049 (5.59)**	0.096 (5.47)**	0.121 (5.01)**	0.065 (3.63)*	0.183 (6.47)**
*F-test: column 2(5) = column 3(6) Connected*Weakly monitored*			-0.04 (4.19)*			-0.091 (8.53)***	
BTM		0.026***	0.023***	0.031**	0.052***	0.058*	0.058***
		(3.38)	(3.25)	(2.67)	(3.04)	(1.86)	(2.82)
SIZE		-0.043***	-0.034**	-0.057***	-0.072***	-0.079**	-0.086***
		(-3.17)	(-2.26)	(-3.57)	(-2.88)	(-2.19)	(-3.56)
STDRET		0.038	0.511	-0.071	-0.127	0.613	-0.572
		(0.08)	(0.77)	(-0.15)	(-0.14)	(0.57)	(-0.70)
TURNOVER		-0.002	-0.003	0.004	0.035	0.032	0.048**
		(-0.15)	(-0.22)	(0.25)	(1.52)	(1.32)	(2.09)
P		-0.000	-0.000	0.000	0.000	-0.000	0.001
		(-0.30)	(-0.29)	(0.00)	(0.27)	(-0.01)	(0.31)
Mom_current		0.017	0.009	-0.037	-0.248	-0.235	-0.335**
		(0.39)	(0.16)	(-0.75)	(-1.61)	(-1.69)	(-2.19)
Mom_prior		0.004	-0.044	-0.014	-0.038	-0.159**	-0.011
		(0.11)	(-1.35)	(-0.22)	(-0.49)	(-2.39)	(-0.12)
DIV		-0.045	-0.138	-0.038	-0.260	-0.345	-0.211
		(-0.47)	(-1.07)	(-0.33)	(-1.19)	(-1.52)	(-0.93)
DOWJ		0.031	0.025	0.045	-0.027	-0.006	-0.019
		(1.37)	(1.02)	(1.58)	(-0.57)	(-0.13)	(-0.37)
AGE		-0.012	-0.015	-0.041*	-0.030	-0.053*	-0.068
		(-0.81)	(-0.85)	(-1.98)	(-0.98)	(-1.79)	(-1.53)
BIG4		-0.034	-0.014	-0.049	-0.036	0.015	-0.083*
		(-1.27)	(-0.45)	(-1.47)	(-0.93)	(0.28)	(-1.77)
ANA		0.033**	0.037*	0.023	0.018	0.025	-0.002
		(2.14)	(1.91)	(1.55)	(0.74)	(1.02)	(-0.06)
Ln(AUM)		-0.016***	-0.015**	-0.016**	-0.023*	-0.018	-0.025*
		(-2.99)	(-2.62)	(-2.48)	(-1.88)	(-1.66)	(-1.89)
# of fund managers		0.004	0.005	0.001	0.010	0.012	0.004
		(0.38)	(0.34)	(0.06)	(0.45)	(0.55)	(0.16)
# of firms held		0.011*	0.003	0.019*	0.014	0.000	0.028
		(1.87)	(0.47)	(1.95)	(0.75)	(0.02)	(1.19)
Holding period		-0.017***	-0.016**	-0.011	-0.020*	-0.025**	-0.009
		(-3.55)	(-2.70)	(-1.65)	(-1.93)	(-2.38)	(-0.62)

%STYLE	0.075	-0.109	0.224	-0.081	-0.323	0.149
	(0.45)	(-0.56)	(0.83)	(-0.27)	(-1.05)	(0.35)
Fund fixed effect	yes	yes	yes	yes	yes	yes
Industry fixed effect	yes	yes	yes	yes	yes	yes
Semi-annual fixed effect	yes	yes	yes	yes	yes	yes
SE cluster	fund, time	fund, time	fund, time	fund, time	fund, time	fund, time
Observations	270,017	105,394	154,311	270,017	105,394	154,311
Adjusted R-squared	0.037	0.042	0.055	0.436	0.463	0.445

Notes: This table reports the estimation from an OLS regression using fund returns as the dependent variable. The unit of analysis is the fund-investee pair for each semi-annual year. We estimate the models using semi-annual observations. The dependent variable, *Ret*, is the buy-and-hold return in period t+1 calculated over the 6 month reporting period and annualized for ease of interpretation. This is the returns the fund will realize if it held the firms from now until the beginning of the next reporting period, based on the assumption that funds did not change their holdings between reports. Columns 1 and 4 report the estimates using the whole sample. Columns 2 and 5 (3 and 6) present the results after partitioning by investee performance. Columns 2 and 5 (3 and 6) reports the estimates using only the poorly (strongly) performing investee sample, defined as investees with an earnings surprise below (above) the sample median in each period. Earnings surprise is measured as changes in EPS relative to the previous period (i.e., semi-annual year). *Connected*, an indicator variable that takes a value of one if the investee share school ties with the fund (i.e., the fund manager went to the same university as the investee's senior managers and/or board members and the fund management company) and is located in the same province where the investee is incorporated. See Table 2, Panel C for a definition of the measure. The *Weakly monitored* variable is the sum of the two fund monitoring indicators (*No foreign ownership*, and *Weak independence of custodian*) discussed in Table 3 Panel A. All other variables are defined in the appendix. Standard errors are two-way clustered at the fund, semi-annual year level. Significance is denoted by t-values (or F-statistics for F-tests), in parentheses, and by ***, **, and * for 1%, 5%, and 10% respectively, using a two-tailed test.

Table 7: Returns after increased CSRC enforcement

Model: $Ret\_adjusted_{i,t+1} = \beta_0 + \beta_1 \times Connected_{f,i,t} + \beta_2 \times Post\ enforcement_t + \beta_3 \times Connected_{f,i,t} \times Post\ enforcement_t + \beta_K Controls_{f,i,t,K} + Fund\ FE + Industry\ FE + e_{i,t}$

	Ret_adjusted		
	(1)Weakly Monitored=2	(2)Weakly Monitored=1	(3)Weakly Monitored=0
Connected	-0.065	0.020	0.006
	(-1.46)	(0.43)	(0.09)
Post enforcement	-0.047**	-0.040**	-0.020
	(-3.00)	(-2.45)	(-0.95)
*Connected*Post enforcement*	0.066**	0.051	0.045
	(2.29)	(1.31)	(1.21)
BTM	0.031***	0.026***	0.022***
	(3.84)	(3.65)	(4.33)
SIZE	-0.041*	-0.043*	-0.039**
	(-1.89)	(-2.20)	(-2.62)
STDRET	0.199	0.402	0.192
	(0.43)	(0.90)	(0.50)
TURNOVER	0.007	0.010	-0.002
	(0.39)	(0.54)	(-0.20)
P	-0.001	-0.000	-0.001*
	(-0.62)	(-0.59)	(-1.83)
Mom_current	0.014	0.000	0.041
	(0.33)	(0.01)	(1.18)
Mom_prior	0.009	-0.014	-0.007
	(0.39)	(-0.65)	(-0.36)
DIV	0.040	0.064	0.047
	(0.59)	(0.74)	(0.60)
DOWJ	0.044	0.023	0.022
	(1.22)	(0.79)	(0.98)
AGE	-0.014	-0.013	-0.014
	(-0.84)	(-0.83)	(-0.95)
BIG4	-0.054*	-0.043	-0.017
	(-2.04)	(-1.60)	(-0.53)
ANA	0.019	0.022	0.019
	(0.95)	(1.13)	(1.19)
Ln(AUM)	-0.024	-0.026	-0.027**
	(-1.69)	(-1.74)	(-2.31)
# of fund managers	-0.009	-0.006	-0.000
	(-0.38)	(-0.24)	(-0.01)
# of firms held	0.011	0.040*	0.064*
	(0.49)	(2.10)	(1.84)
Holding period	-0.020	-0.016**	-0.015
	(-1.44)	(-2.90)	(-1.68)
%STYLE	0.308	0.250	0.043
	(1.22)	(1.25)	(0.26)
Fund fixed effect	yes	yes	yes
Industry fixed effect	yes	yes	yes
Semi-annual fixed effect	no	no	no
SE cluster	fund, time	fund, time	fund, time
Observations	50,981	143,200	75,836
Adjusted R-squared	0.025	0.025	0.023

Notes: This table reports the estimation from an OLS regression using risk-adjusted fund returns as the dependent variable. The unit of analysis is the fund-investee pair for each semi-annual year. We estimate the model separately for each level of fund monitoring using semi-annual observations. The dependent variable, *Ret_adjusted* is the returns risk-adjusted by subtracting the value-weighted returns of the size, book-to-market, and momentum portfolios (Daniel et al. 1997). We annualize the returns for ease of interpretation. Columns 1 (2, or 3) reports the estimates using only funds with *Weakly monitored* score that equals 2 (1, or 0). The *Weakly monitored* variable is the sum of the two fund monitoring indicators (*No foreign ownership*, and *Weak independence of custodian*) discussed in Table 3 Panel A. *Connected*, an indicator variable that takes a value of one if the investee share school ties with the fund (i.e.,fund manager went to the same university as the investee's senior managers and/or board members and the fund management company) and is located in the same province where the investee is incorporated. See Table 2, Panel C for definitions of the measure. *Post enforcement* is a continuous variable that takes a value of one after the first enforcement event, which starts from the second quarter of 2007, and has a value of zero in earlier periods. The variable takes a value of two after the second enforcement event, which is from the first quarter of 2009 to the end or our sample period. The estimation includes industry fixed effects where industry is based on the two-digit CSRC industry code for the manufacturing industry and the single-digit code for all other industries. We also include fund fixed effects. All other variables are defined in the appendix. Standard errors are two-way clustered at the fund, time level. Significance is denoted by t-values, in parentheses, and by ***, **, and * for 1%, 5%, and 10% respectively, using a two-tailed test.

Table 8: Quality of investee's public information and returns from connections

Model: $Ret\_adjusted_{i,t+1} = \beta_0 + \beta_1 \times Connected_{f,i,t} + \beta_2 \times Weakly\ monitored_{f,t} + \beta_3 \times Connected_{f,i,t} \times Weakly\ monitored_{f,t} + \beta_K Controls_{f,i,t,K} + Fund\ FE + Semi\text{-}annual\ FE + Industry\ FE + e_{i,t}$

	Ret_adjusted					
Measure of quality of investee's public information	Big 4 auditor		Analysts following		ERC	
	(1)Big4=1	(2)Big4=0	(3)High	(4)Low	(5)High	(6)Low
Connected	0.013	0.184***	0.075**	0.152**	0.073	0.113***
	(0.53)	(3.07)	(2.58)	(2.45)	(1.42)	(3.09)
Weakly monitored	-0.002	0.001	0.013	-0.007	-0.003	0.003
	(-0.14)	(0.10)	(1.34)	(-0.72)	(-0.35)	(0.43)
*Connected*Weakly monitored*	0.006	-0.056**	-0.029	-0.052**	-0.025	-0.038*
	(0.49)	(-2.08)	(-1.46)	(-2.21)	(-1.04)	(-1.84)
*F-test: Connected+ Connected*Weakly monitored*	0.019	0.128	0.046	0.1	0.048	0.075
	(0.86)	(7.40)**	(4.52)**	(3.10)*	(1.23)	(4.80)**
*F-test: column 2(4,6) = column 1(3,5) Connected*Weakly monitored*		-0.062		-0.023		-0.013
		(5.30)**		(0.91)		(0.36)
BTM	0.018**	0.025*	0.022**	0.038***	0.039***	0.017
	(2.16)	(2.07)	(2.42)	(2.88)	(5.38)	(1.63)
SIZE	-0.039*	-0.029*	-0.052***	-0.044**	-0.043***	-0.039**
	(-1.76)	(-1.82)	(-3.30)	(-2.56)	(-3.19)	(-2.59)
STDRET	-0.525	0.063	-0.653	0.567	0.053	-0.056
	(-0.94)	(0.12)	(-1.19)	(1.00)	(0.09)	(-0.12)
TURNOVER	-0.003	-0.006	0.010	-0.009	0.001	-0.005
	(-0.07)	(-0.45)	(0.48)	(-0.76)	(0.06)	(-0.41)
P	-0.001	0.000	0.001	-0.002	0.001	-0.000
	(-0.83)	(0.22)	(0.51)	(-1.60)	(1.34)	(-0.59)
Mom_current	-0.034	0.039	-0.015	0.038	-0.025	0.038
	(-0.64)	(0.73)	(-0.26)	(0.78)	(-0.46)	(0.81)
Mom_prior	0.004	-0.010	0.003	-0.002	-0.020	0.022
	(0.05)	(-0.28)	(0.07)	(-0.05)	(-0.38)	(0.61)
DIV	-0.069	-0.002	-0.086	0.266	-0.219*	0.092
	(-0.38)	(-0.03)	(-0.75)	(1.54)	(-2.01)	(0.89)
DOWJ	-0.009	0.031	0.086*	0.003	0.045**	0.038
	(-0.12)	(1.58)	(2.04)	(0.19)	(2.17)	(1.40)
AGE	-0.011	-0.021	-0.026	-0.008	-0.031	-0.008
	(-0.39)	(-1.28)	(-1.44)	(-0.38)	(-1.49)	(-0.42)
Ln(AUM)	-0.010	-0.017***	-0.009	-0.023***	-0.021***	-0.012**
	(-1.36)	(-2.83)	(-1.56)	(-3.29)	(-3.13)	(-2.10)
# of fund managers	-0.015	0.004	0.008	-0.002	0.002	0.005
	(-0.97)	(0.36)	(0.69)	(-0.12)	(0.14)	(0.44)
# of firms held	0.006	0.008	0.005	0.017*	0.029***	-0.005
	(0.53)	(1.30)	(0.70)	(1.89)	(3.00)	(-0.65)
Holding period	-0.001	-0.017**	-0.017**	-0.014	-0.016**	-0.013
	(-0.14)	(-2.63)	(-2.69)	(-1.55)	(-2.40)	(-1.69)
%STYLE	-0.102	0.180	0.008	0.422	0.297	-0.023
	(-0.37)	(1.04)	(0.05)	(1.16)	(1.26)	(-0.14)
Fund fixed effect	yes	yes	yes	yes	yes	yes
Industry fixed effect	yes	yes	yes	yes	yes	yes
Semi-annual fixed effect	yes	yes	yes	yes	yes	yes

SE cluster	fund,time	fund,time	fund,time	fund,time	fund,time	fund,time
Observations	45,552	224,465	133,337	136,680	109,197	160,820
Adjusted R-squared	0.051	0.042	0.056	0.043	0.049	0.037

Notes: This table reports the estimation from an OLS regression using risk-adjusted fund returns as the dependent variable. The unit of analysis is the fund-investee pair for each semi-annual year. We estimate the model separately for investees with high vs. low quality of investee public information using three different measures. In Columns 1 and 2, we partition the sample based on whether the investee is audited by a Big 4 audit firm. In Columns 3 and 4, we partition the sample using the sample median of analysts followings in each period and in columns 5 and 6, we use the investees earnings response coefficient (ERC), as defined in the appendix. Column 3(5) includes observations with analysts following (ERCs) above the sample median and column 4(6) includes observations below the sample median. The dependent variable, *Ret_adjusted* is the returns risk-adjusted by subtracting the value-weighted returns of the size, book-to-market, and momentum portfolios (Daniel et al. 1997). We annualize the returns for ease of interpretation. The *Weakly monitored* variable is the sum of the two fund monitoring indicators (*No foreign ownership*, and *Weak independence of custodian*) discussed in Table 3 Panel A. *Connected*, an indicator variable that takes a value of one if the investee share school ties with the fund (i.e., the fund manager went to the same university as the investee's senior managers and/or board members and the fund management company) and is located in the same province where the investee is incorporated. The estimation includes both industry and semi-annual year fixed effects where industry is based on the two-digit CSRC industry code for the manufacturing industry and the single-digit code for all other industries. We also include fund fixed effects. All other variables are defined in the appendix. Standard errors are two-way clustered at the fund, semi-annual year level. Significance is denoted by t-values (or by F-statistics for F-tests), in parentheses, and by ***, **, and * for 1%, 5%, and 10% respectively, using a two-tailed test.

Table 9 Sensitivity analyses

Model: $Ret\_adjusted\ (Ret)_{i,t+1} = \beta_0 + \beta_1 \times Connected_{f,i,t} + \beta_2 \times Weakly\ monitored_{f,t} + \beta_3 \times Connected_{f,i,t} \times Weakly\ monitored_{f,t} + \beta_K Controls_{f,i,t,K} + Fund\ FE + Semi\text{-}annual\ FE + Industry\ FE + e_{i,t}$

		Influential ownership		*Including school fixed effects*	
		Ret_adjusted	*Ret*	*Ret_adjusted*	*Ret*
Connected	(+)	0.105***	0.114***	0.103**	0.161***
		(3.37)	(5.41)	(2.61)	(3.61)
Weakly monitored		0.002	-0.006	0.001	-0.000
		(0.21)	(-0.47)	(0.19)	(-0.03)
Connected	(-)	-0.034*	0.006	-0.033*	-0.038
** Weakly monitored*		(-1.87)	(0.13)	(-1.87)	(-1.15)
F-test: Connected+		0.071	0.120	0.070	0.123
*Connected*Weakly monitored*		(4.07)*	(5.06)**	(4.17)*	(4.59)**
BTM		0.027**	0.052***	0.026***	0.052***
		(2.79)	(2.98)	(3.21)	(2.94)
SIZE		-0.046***	-0.074***	-0.043***	-0.072**
		(-3.03)	(-2.92)	(-3.05)	(-2.68)
STDRET		0.284	-0.099	0.036	-0.124
		(0.45)	(-0.11)	(0.07)	(-0.14)
TURNOVER		0.002	0.031	-0.002	0.035
		(0.17)	(1.41)	(-0.15)	(1.46)
P		-0.000	0.000	-0.000	0.000
		(-0.10)	(0.20)	(-0.28)	(0.24)
Mom_current		-0.005	-0.253	0.017	-0.247
		(-0.10)	(-1.62)	(0.39)	(-1.59)
Mom_prior		0.003	-0.038	0.004	-0.039
		(0.10)	(-0.50)	(0.11)	(-0.49)
DIV		-0.064	-0.263	-0.045	-0.258
		(-0.54)	(-1.21)	(-0.45)	(-1.16)
DOWJ		0.034	-0.025	0.031	-0.028
		(1.32)	(-0.53)	(1.29)	(-0.53)
AGE		-0.018	-0.029	-0.012	-0.030
		(-0.95)	(-0.93)	(-0.78)	(-0.95)
BIG4		-0.035	-0.034	-0.035	-0.036
		(-1.22)	(-0.89)	(-1.23)	(-0.91)
ANA		0.029*	0.021	0.033**	0.017
		(1.86)	(0.93)	(2.09)	(0.69)
Ln(AUM)		-0.018	-0.032	-0.017**	-0.025*
		(-1.56)	(-1.33)	(-2.67)	(-2.01)
# of fund managers		0.001	-0.008	0.010	0.022
		(0.03)	(-0.34)	(0.82)	(0.86)
# of firms held		0.013	0.008	0.010	0.012
		(1.15)	(0.31)	(1.35)	(0.65)
Holding period		-0.021***	-0.027**	-0.018***	-0.021*
		(-3.23)	(-2.40)	(-3.37)	(-1.87)
%STYLE		0.155	-0.039	0.072	-0.086
		(0.77)	(-0.14)	(0.42)	(-0.29)
Fund fixed effect		yes	yes	yes	yes

Industry fixed effect	yes	yes	yes	yes
Semi-annual fixed effect	yes	yes	yes	yes
School fixed effect	no	no	yes	yes
SE cluster	fund, time	fund, time	fund, time	fund, time
Observations	140,195	140,195	270,017	270,017
Adjusted R-squared	0.037	0.438	0.038	0.436

Notes: This table reports various sensitivity analyses. In columns 1 and 2 we repeat our analysis in Table 6 using only the funds with influential ownership, defined as funds with greater-than-the-median holdings of all funds investing in the firm. Columns 3 and 4 repeat the analysis in Table 6 after including school fixed effects based on the school the fund managers attended. For funds with more than one fund manager (e.g., teams), we use the most frequent school affiliation within the team. The estimation includes both industry and semi-annual year fixed effects where industry is based on the two-digit CSRC industry code for the manufacturing industry and the single-digit code for all other industries. We also include fund fixed effects. All other variables are defined in the appendix. Standard errors are two-way clustered at the fund, semi-annual year level. Significance is denoted by t-values, in parentheses, and by ***, **, and * for 1%, 5%, and 10% respectively, using a two-tailed test.