

# Advisor-hedge fund connections, information flows and deal outcomes in mergers and acquisitions

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## Abstract

This paper examines the impact of investment banks' prime brokerage connections to hedge funds on the choice of an advisor and the deal outcome in M&As. Acquirers are more likely to choose advisors connected to hedge funds that hold equity in the target before the deal announcement. Such connections reduce deal duration, increase the likelihood of deal completion, and increase the acquirer abnormal return when target firms are characterised by a high degree of information asymmetry, suggesting an 'indirect toehold' mechanism of information transmission.

**Keywords:** Choice of advisor; relationship banking; hedge fund holdings; indirect toehold; information advantage; mergers and acquisitions.

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# 1 Introduction

As a pre-cursor to substantial resource re-allocations within the economy, mergers and acquisitions (M&As) are among the most important corporate events. Analysis undertaken by the Institute for Mergers, Acquisitions, and Alliances (IMAA)<sup>1</sup>, indicates that at the peak of the 2015 merger wave, the total transaction value of US M&As totalled \$2,417 billion. A common characteristic of these M&A transactions is that they customarily involve financial advisors, with an average of over 84% (by transaction value) of deals in our sample between 1990 and 2020 facilitated by an advisory firm.

Investment banks acting as advisors help execute complex deals, especially those characterised by high information asymmetry (Servaes and Zenner, 1996). At the same time, they may exploit insider information gained through the advisory process for their own benefit (Bodnaruk et al., 2009) or share valuable firm-specific information with their other clients, such as hedge funds (Kumar et al., 2020).

Our paper examines the information flow between different parties within this network of connections during M&As and the effects of this information transmission on M&A outcomes. The key players are: (1) a bidder, a firm that intends to acquire a target and may already own an initial equity stake in the target; (2) an advisor, an investment bank chosen by the bidder to facilitate the deal. The bank may also serve as a prime broker to one or more hedge funds; (3) hedge funds that may or may not be connected to the advisor through a prime-brokerage relation and may have a stake in either the target and/or the bidding firm; (4) a target, a firm that is to be acquired through a completed deal. Information flows within such a network are complex and multi-directional, and are discussed in detail in Section 2. This study examines two potential channels of information transmission. In the first, advisors may use the holdings of connected hedge funds in the target firm as an ‘indirect toehold’. This may enable an advisor to obtain additional information about the target and use it to help the bidder to reduce information asymmetry and strike a better deal. In the second channel, connected hedge funds may secure an ‘information advantage’ from the advisor concerning the prospects of the deal,

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<sup>1</sup>The data is available at <https://imaa-institute.org/mergers-and-acquisitions-statistics/united-states-ma-statistics/>

adjusting their trades in the target's stock accordingly before the M&A announcement.

Using a sample of 910 US mergers of public companies with hedge fund holdings in the target firm between 2000 to 2019, we find that acquirers are more likely to have an investment bank as their deal advisor if the bank's connected hedge funds own equity stake in the target firm. Two channels can contribute to this result. Having chosen a particular target, the acquirer may be looking for a connected advisor to facilitate the deal. The estimated probability for an average investment bank in our sample to be chosen as an advisor for a deal increases from 8% if it does not have connected hedge funds to 85% if it does. Alternatively, the acquirer can first hire an advisor, and the advisor recommends a firm with connected fund holdings as a target. Indeed, in our sample the probability for an average firm to be chosen as a target increases from 13% to 27% if the firm is held by hedge funds, connected to the advisor.

Our analysis reveals no evidence that advisors share their private information about impending M&A deals with their connected funds. Connected hedge funds do not exhibit any significant changes in their equity holdings in either target or acquirer firms before the deal announcement compared to unconnected funds. At the same time, deals where connected funds own equity in target firms exhibit a shorter deal duration, a higher likelihood of deal completion, and are associated with a significantly higher acquirer abnormal return on the announcement date, when target firms have higher degrees of information asymmetry. Furthermore, connected hedge fund holdings lead to a significantly lower premium if a high-information-asymmetry target is of low importance in the hedge fund portfolio. The positive impact of connected hedge fund holdings on acquirer abnormal returns is stronger when the marginal value of information for a bidder is higher, that is, when there are multiple bidders, when a bidder uses a larger fraction of stock payment, and during merger waves. These findings suggest that the bidder may benefit from the value relevant information obtained through the advising investment bank and its connected hedge funds, thereby supporting the 'indirect toehold' hypothesis. These relationships appear to help the bidder to reduce information asymmetry and enhance its bargaining power.

In this context, our analysis informs the growing literature on the relationship between hedge funds and their prime brokers and the potential information flow from prime brokers to hedge funds. Hedge funds sharing prime brokers exhibit a strong co-movement in returns, often attributable to information flows from the common broker (Chung and Kang, 2016). Similarly, information regarding corporate client loans disseminates from prime brokers to hedge funds (Kumar et al., 2020). Hedge funds earn higher abnormal returns from IPO stocks when their prime brokers also serve as IPO underwriters (Qian and Zhong, 2018). Prime brokerage relations expose hedge funds to significant counterparty risk. The probability of contagion across hedge funds increases following adverse shocks to their prime broker’s share price (Boyson et al., 2010). Hedge funds using Lehman Brothers as their prime broker experience a decline in funding liquidity subsequent to its bankruptcy in 2008 (Aragon and Strahan, 2012). A liquidity shock to a prime broker can be transmitted to connected funds and result in a reduction in credit to hedge funds (Kruttili et al., 2022). We contribute to the literature highlighting the existence of a reverse direction of information flow, namely from hedge funds to their prime brokers.

Our analysis also contributes to discussions concerning the role of M&A advisors, which is largely populated with mixed findings. Studies contend that investment bank advisors may facilitate the successful completion of complex deals characterized by significant informational asymmetries and also reduce transaction costs (Servaes and Zenner, 1996). However, the relevant empirical evidence is mixed. While investment bank involvement may lead to larger shareholder wealth gains (Kale et al., 2003), enhanced M&A returns (Bao and Edmans, 2011; Golubov et al., 2012), and a greater probability of deal completion (Hunter and Jagtiani, 2003), other studies find no association between an advisor’s quality and M&A outcomes (Rau, 2000; Hunter and Jagtiani, 2003; Ismail, 2010). At the same time, certain evidence suggests that the type of advisor impacts the terms of the M&A deals. For example, if a target’s own bank acts as the advisor, it fulfils ‘a certification role’ for the target’s quality, which leads to higher target abnormal returns (Allen et al., 2004). For complex deals, boutique advisors are more likely to be

used; and acquirers hiring boutique advisors tend to pay lower premiums (Song et al., 2013). Several other factors are found to affect the choice of advisor. These include the prior performance of the advisor and the advisors' market values changes (Sibilkov and McConnell, 2014), prior client relationships, the reputation of the advisor, and deal complexity (Francis et al., 2014), advisor's industry expertise, and firms' concerns about the information leakage to industry rivals (Chang et al., 2016). Forte et al. (2010) focus on the target's choice of advisor and show that the probability of hiring a bank depends on the intensity of the previous banking relationship, the reputation of the bidder's advisor, and the complexity of the deal. Our findings contribute to this literature and show that advisors' connection to hedge funds with holdings in the target firm is a significant determinant of acquirer firms' choice of advisor.

Our study also contributes to the literature on the impact of information asymmetry in acquisitions and how any resulting gains are split between the firms. Acquirer returns are significantly higher in stock-swap acquisitions of difficult-to-value targets (Officer et al., 2009). Targets characterised by greater information asymmetry tend to receive larger bid premiums from the acquirers, and the acquirers' investors respond more positively to the acquisition of opaque targets (Cheng et al., 2016). Acquirers strategically exploit their superior bargaining power, are more likely to offer cash payments, and earn a larger fraction of total M&A gains if the target is characterized by higher information asymmetry (Luypaert and Van Caneghem, 2017). Acquirers' gains increase if they employ financial advisors in private offers, whereas the opposite is true for public deals (Leledakis et al., 2021). We show that advisors' connections to hedge funds that own equity in target firms are also a potential source of information for acquirers. Such an indirect toehold seems to help the bidder to collect more information about the target, reduce information asymmetry, and enhance their higher bargaining power. This result complements that of Bodnaruk et al. (2009), which argues that investment banks exploit information gained as advisors to take stakes in target firms before the deal announcement, which is highly profitable. Their stakes are positively related to bid prospects and to the size of the premiums paid for targets. Hence, the authors implicitly document the information flow

from the acquirers to the advisors, which the latter use for their benefit. Our findings suggest that information also flows in the reverse direction: from the targets to hedge funds (through direct stock holdings in the target), then to the investment banks (through their prime-brokerage relations with hedge funds), and finally (and beneficially) to bidders (through the advisory relations to the said investment banks).

Our paper relates to the role of (direct) toeholds, pre-bid ownership of target shares, in acquisitions. Bidders strategically use toeholds to yield an information advantage over rivals, positively affecting their profits. [Betton and Eckbo \(2000\)](#) and [Bris \(2002\)](#) find that the probability of being taken over, the takeover premium, and pre-bid increase in the target's stock price are negatively related to toehold size. In contrast, the post-announcement rise in the target's stock price is positively related to toehold size. [Povel and Sertsios \(2014\)](#) provide evidence that potential acquirers of a target use toeholds to improve their information about possible synergies with the target, and it is more beneficial if a target is opaque. Our results indicate that advisors' connections to hedge funds holding targets appear to function as an 'indirect toehold' and similarly help to create an informational advantage for the bidders.

Finally, our paper extends the literature on the role of hedge funds in the M&A process. Hedge fund activist interventions substantially increase the probability of a takeover offer and enhance shareholder value ([Boyson et al., 2017](#)); they also improve firms' M&A decisions and investors favourably receive such post-activism acquisitions ([Wu and Chung, 2021](#)). On the contrary, targets characterised by agency problems and facing threats of investor coordination often engage in hostile resistance, which leads to adverse outcomes unless hedge funds provide resistance ([Boyson and Pichler, 2019](#)). As for non-activist hedge funds, [Gao et al. \(2018\)](#) find evidence that pre-transaction hedge-fund holdings in the target firm increase the proportion of cash payment while having no effects on the deal premium. [Dai et al. \(2017\)](#) show that hedge funds use nonpublic information to take long positions in M&A target stocks and short positions in acquirer stocks before M&A announcements, and their stakes in targets are positively related to takeover premiums. Our paper highlights how hedge funds may potentially

gather target-related private information through their holdings and then transmit it to bidders via prime brokerage connections with advisory firms.

## 2 Research Design: Information Flows in M&As

This section introduces two (not mutually exclusive) scenarios of the patterns of information flow in M&As, and then discusses how this information flow may affect the choice of an advisor, choice of a target, changes in hedge fund holdings, deal duration, deal completion, target premium, and abnormal returns.

Figure 1 illustrates potential directions of information flow between targets, hedge funds, advisors, and bidders in M&A activity.

[Figure 1 in here]

Consider, first, the potential information flow from targets to hedge funds (through their equity holdings in targets), then to advisors (through their prime-brokerage relations with hedge funds), and finally to acquirers. This constitutes our ‘indirect toehold’ scenario.

Hansen (1987) argues that a lemon problem arises in M&A transactions when targets possess proprietary information about their own value. Bidders can mitigate information asymmetry in several ways, including paying a lower purchase price (Makadok and Barney, 2001), paying with stock (Hansen, 1987, Finnerty et al., 2012), and using financial advisors (Officer, 2007, Leledakis et al., 2021). In particular, incentivised by appropriate fees, financial advisors use their expertise to collect value relevant information concerning potential targets and identify synergies. In addition, small direct equity holdings by the bidder in the target, termed toeholds, are also an information source for the bidders (Povel and Sertsios, 2014). However, a toehold purchase may create rumours of a pending bid that can result in a pre-bid run-up of the target’s market value that only serves to increase the offer price (Ravid and Spiegel, 1999) and/or a rejection of negotiations by the target (Betton et al., 2009). Therefore, advisors’ connected fund holdings in the target can be a valuable source of information for acquirers, and such indirect access to information may

ultimately be less costly than a direct toehold.<sup>2</sup> The existence of such ‘indirect toeholds’ can be important for bidders with different initial M&A strategies. The acquirer may have already a target in mind and then chooses an advisor that fits best for the job – the one contributing an ‘indirect toehold’ together with other types of expertise. There may be an alternative path in which the acquirer wants to grow through M&As, hires an advisor, and the advisor helps to choose a target. As the advisor may expect to obtain (or may already possess) superior information about some potential targets through connected hedge funds, it may be more likely to recommend such a connected firm as a target. Both alternatives lead to a higher likelihood of a connected advisor to work for the deal.

In this ‘indirect toehold’ scenario, we would expect:

- (1) an advisor with connected hedge funds owning target’s shares to be more likely to be hired either because the acquirer chooses the connected advisor or the advisor recommends the firm with connected fund holdings to be the target;
- (2) the information asymmetry between the target and the bidder to reduce, the deal duration to shorten and the likelihood of the acquisition completion to increase;
- (3) the acquirer to gain higher bargaining power, leading to a reduction in the premium paid, a lower target abnormal return, and a higher acquirer abnormal return on the announcement date;
- (4) no pre-announcement increase in holdings by connected hedge funds in the target, due to potential reduction of the announcement returns.

In the second scenario, the information flows from the acquirers to the advisors and finally to their connected hedge funds. These hedge funds, hence, gain privileged information and may earn superior returns by taking positions in the target firm before the announcement. We call this the ‘information advantage’ scenario.

[Qian and Zhong \(2018\)](#) examine hedge funds’ investment in new publicly listed stocks and find that hedge funds obtain information advantages from their prime brokers, who also serve as underwriters for the stocks. [Bodnaruk et al. \(2009\)](#) document that financial

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<sup>2</sup>Advisory banks may compensate connected hedge funds through the services they provide. As shown in [Kumar et al. \(2020\)](#) and [Qian and Zhong \(2018\)](#), hedge funds may benefit from mutual information flow between them and their prime broker.



conglomerates, in which the affiliated investment banks advise the bidders, increase their positions in targets before M&A announcements. This tactic is related to a higher probability of deal success and is highly profitable. Applying the same reasoning to connected hedge funds, if information flows from advisory banks to hedge funds with prime brokerage connections, these funds will exploit this information by taking a position in the target firm in advance and realizing the gain around the M&A announcement.

In this ‘information advantage’ scenario, we would expect:

- (1) the acquirer to be less likely to choose an advisor with connected hedge funds holding the target and a firm’s probability of becoming a target to decrease with connected fund holdings;
- (2) connected funds to increase their holdings in target firms before the acquisition announcements to gain abnormal returns;
- (3) connected hedge funds to be motivated to facilitate the deal<sup>3</sup>, the deal duration to reduce, and the likelihood of deal completion to increase;
- (4) connected fund holdings to be positively related to the target premium and abnormal returns, and negatively related to the acquirer abnormal returns on the announcement date.

Table 1 summarizes all the expected effects under the two scenarios.

[Table 1 in here]

The effects would be expected to be more pronounced for targets with higher degrees of information asymmetry, for which the marginal benefits of the information asymmetry reduction are higher. Hence, we divide our sample into two sub-samples of deals, namely those with higher and lower target information asymmetry (*IA*), and perform the analysis separately for these two sub-samples.

We use stock market and accounting information from CRSP/Compustat and the information on analysts’ coverage and the earnings forecasts from I/B/E/S to compute the following five measures for each target firm following Karpoff et al. (2013), Cheng

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<sup>3</sup>Connected hedge funds may try to directly affect the merger outcome, e.g., voting on the shareholder meetings, to realize capital gains from their positions.

et al. (2016) and Borochin et al. (2019):

- (1) *Amihud* is the average Amihud illiquidity measure over the year before the acquisition announcement;
- (2) *SPREAD* is the average bid-ask spread over the year before the acquisition announcement;
- (3) *Size* is the natural logarithm of the book value of total assets in the year before the acquisition announcement;
- (4) *COVER* is the analysts' coverage computed as the number of analysts for the target in the year before the acquisition announcement;
- (5) *ERR* is the relative forecast error computed as the ratio of the absolute difference between the forecast earnings and the actual earnings per share to the price per share in the year before the acquisition announcement.

*IA* is assigned an additional risk point for *Amihud*, *SPREAD*, and *ERR*, which are above the median, and for *Size* and *COVER*, which are below the median. A target is said to have a high information asymmetry if the sum of its risk points (the final value of *IA*) is above the median. On this basis, we classify 342 targets in our sample as high information asymmetry targets.

To evaluate the predictions from the two scenarios related to the choice of the advisor, we estimate the following probit regression:

$$Advisor\_Chosen^{i,j} = \begin{cases} 1, & \text{if } Advisor\_Chosen_{L^*}^{i,j} > 0, \text{ an advisor is hired for a particular deal;} \\ 0, & \text{otherwise.} \end{cases}$$

$$Advisor\_Chosen_{L^*}^{i,j} = \alpha + \beta_1 Connected_{t-1}^{i,j} + \beta_2 Holding\_connected_{t-1}^{i,j} + \delta Controls_{t-1}^{i,j} + \eta^{i,j} \quad (1)$$

where  $Advisor\_Chosen^{i,j}$  equals one if an advisor  $i$  is hired for a particular deal  $j$ , and zero otherwise. For an advisor to enter the estimation, the advisor must have been the advisor in at least one acquisition during the past year before the announcement of the current acquisition.  $Connected_{t-1}^{i,j}$  is a dummy variable that equals one if an advisor  $i$

is the prime broker of a hedge fund with holdings in the target firm in acquisition  $j$  in quarter  $t-1$  and zero otherwise.  $Holding\_connected_{t-1}^{i,j}$  is the percentage holdings of advisor  $i$ 's connected hedge funds in the target firm in acquisition  $j$  in quarter  $t-1$ .

In our sample, we identify 13 advisors that are connected in at least one deal, including the Bank of America Corporation, JP Morgan Chase Co., Citigroup Inc., Goldman Sachs Group, Morgan Stanley, Merrill Lynch, Lehman Brothers, Bear Stearns, UBS Group AG, Deutsche Bank AG, Credit Suisse Group AG, Royal Bank of Canada, and Barclays plc. The number of unique unconnected advisors is 130.

In choosing the other control variables, we follow [Sibilkov and McConnell \(2014\)](#): *Acquisition times* is the number of times an advisor serves as an acquirer's advisor one year before the acquisition announcements; *Acquisition value* is the logarithm of the total value of all acquisitions that an advisor serves as an acquirer's advisor one year before the acquisition announcements; *Prior advisor* equals one if the advisor serves as a M&A advisor for the acquirer one year before the acquisition announcements and zero otherwise; *Expertise* equals one if the advisor serves as an acquirer's advisor in an acquisition that involves a target from the same two-digit SIC industry as the target of the current acquisition and 0 otherwise.

We examine the alternative pathway in which the advisor recommends the target using the following probit regression:

$$Target\_Chosen_{L^*}^{i,j} = \begin{cases} 1, & \text{if } Target\_Chosen_{L^*}^{i,j} > 0, \text{ a target is chosen for a particular deal;} \\ 0, & \text{otherwise.} \end{cases}$$

$$Target\_Chosen_{L^*}^{i,j} = \alpha + \beta_1 Connected_{t-1}^{i,j} + \beta_2 Holding\_connected_{t-1}^{i,j} + \delta Controls_{t-1}^{i,j} + \eta^{i,j} \quad (2)$$

where  $Target\_Chosen_{L^*}^{i,j}$  equals one if a firm  $i$  is chosen to be the target for a particular deal  $j$ , and zero otherwise. We use propensity score matching to find potential targets for each deal. Following [Palepu \(1986\)](#), the determinants include firm size (log of total assets), book-to-market ratio, return on equity, leverage (equity-to-asset ratio), liquidity

(current assets/current liabilities), tangibility (tangible assets/total assets), sales growth, and price-earning ratio. We then obtain each firm’s propensity score as the probability that a firm with given characteristics will be a merger target. For each actual target, we select five firms in the same industry with the closest score, active in the same year.  $Connected_{t-1}^{i,j}$  is a dummy variable that equals one if a firm  $i$  is held by hedge funds in quarter  $t-1$  whose prime broker is the advisor in acquisition  $j$  and zero otherwise.  $Holding\_connected_{t-1}^{i,j}$  is the percentage holdings of advisor’s connected hedge funds in the firm  $i$  in acquisition  $j$  in quarter  $t-1$ .

The ‘indirect toehold’ scenario predicts a positive relation between connected fund holdings and the probability of an advisor to be hired and for a firm to become a target, thus a positive  $\beta_1$  and  $\beta_2$  in Equations 1 and 2. The ‘information advantage’ scenario implies reversed relations.

In our analysis, we deliberately include only those deals with non-zero hedge fund holdings. This setting allows us to isolate the effects of connections instead of contaminating them with additional effects of general hedge funds’ choices of holding targets. Still, we include the Inverse Mills Ratio ( $IMR$ ) in all equations to account for a possible selection on the side of hedge funds. The first-stage probit analysis employs all target firms and estimates the probability of hedge funds owning equity in these target firms. Following Dai et al. (2017), we use the deals’ percentage of cash payment, indicators for a hostile deal and tender offer, holdings by mutual funds in acquirers, the premium paid to the target, target’s return on asset, leverage, size, and book-to-market ratio as predictors of positive hedge fund stakes in targets. We then include the corresponding Inverse Mills Ratio ( $IMR\_holding$ ) in all regressions.

Another important selection issue in this setting is that connections may closely be related to the importance of the advisor, and bidders may deliberately choose a large (and hence, connected) advisor. To address this side of the selection, we estimate a probit model for the probability that the acquirer chooses a large investment bank as an advisor. We also include the corresponding Inverse Mills Ratio ( $IMR\_bigbank$ ) in all regressions. Following Song et al. (2013), the acquirer’s choice of a large bank as the

advisor is a function of deal size, percentage of cash payment, an indicator of a hostile deal, whether the targets and acquirers are in different industries, number of bidders, the fraction of target shares held by the acquirer before deal announcement, target and acquirer’s book-to-market ratio, and target’s return on equity.

Now we discuss how we assess the effect of information flow on hedge fund equity holdings. Equation 3 describes the empirical setting:

$$\overline{\Delta Holding\_connected}_t^i = \alpha + \beta Holding\_connected_t^i + \delta Controls_t^i + \epsilon^i \quad (3)$$

where  $\overline{\Delta Holding\_connected}_t^i$  are the changes in the average holdings per fund of connected hedge funds of stock  $i$  in quarter  $t-1$  (the difference between quarter  $t-1$  and  $t-2$ ), with the quarter  $t$  being the announcement quarter. The holdings are measured as the total number of shares owned by hedge funds scaled by the total shares outstanding of the firm. A hedge fund is said to be connected if its prime broker is also the advisory bank in the deal. For comparison, we also regress the changes in unconnected fund holdings in the target on connected fund holdings and other controls in a similar way.

Under the ‘indirect toehold’ scenario,  $\beta$  should not be positive for changes of connected fund holdings in Equation (3), indicating that connected funds do not increase the holdings in target firms before the acquisition announcements. The ‘information advantage’ scenario would imply a positive  $\beta$ , with a higher level of connected hedge fund ownership predicting a pre-announcement increase in holdings by such connected hedge funds.

We also control for the changes of holdings of connected funds in quarter  $t-2$  ( $\overline{\Delta Holding\_connected}_{t-2}^i$ ), the total holdings of hedge funds in a target firm in quarter  $t-1$  ( $Holding\_total_{t-1}$ ) and hedge funds’ holdings in the acquirer ( $Holding\_acquirer_{t-1}$ ). In choosing the other control variables, we follow Bodnaruk et al. (2009) and Gao et al. (2018): *Return on asset<sub>t</sub>* ( $ROA_t$ ) is the return on asset of a target firm in the last fiscal year before the acquisition announcement; *Leverage<sub>t</sub>* is the equity-to-assets ratio of a target firm in the last fiscal year before the acquisition announcement;  $B/M_t$  is target’s book-to-market value of equity measured in the last fiscal year before the acquisition

announcement;  $Tangible_t$  is target's ratio of total tangible assets to total assets in the last fiscal year before the acquisition announcement;  $Size_a$  is the logarithm of acquirer's market capitalization in the last fiscal year before the acquisition announcement;  $B/M_a$  is acquirer's book-to-market value of equity in the last fiscal year before the acquisition announcement;  $RELSIZE$  is the ratio of target total assets to bidder total assets;  $Valpct$  is the ratio of deal value to acquirer market capitalization in the last fiscal year before the acquisition announcement;  $Holding\_MF$  is the mutual fund holdings in a target firm one quarter before the acquisition announcement;  $Pctcash$  is the percentage of cash payment in the consideration;  $Hostile$  is a dummy variable taking the value of 1 for a hostile deal and 0 otherwise;  $Tender$  is a dummy variable taking the value of 1 for tender offers and 0 otherwise;  $Merger\ of\ equals$  is a dummy variable taking the value of 1 when the target and acquirer consider their merger a merger of equals;  $Diff\_Ind$  is a dummy variable taking the value of 1 for a deal where bidder and target are from different 3-digit SIC code industries and 0 otherwise;  $Number\ of\ bidders$  is the number of bidders involved in a deal.

In order to evaluate the effect of information flow on deal duration, premium, and cumulative abnormal returns on target and acquirer, we estimate Equation 4:

$$\left. \begin{array}{l} Duration^i \\ Premium^i \\ TCAR^i \\ ACAR^i \end{array} \right\} = \alpha + \beta Holding\_connected_{t-1}^i + \delta Controls_{t-1}^i + \epsilon^i \quad (4)$$

where  $Duration$  is calculated as the number of months between the deal announcement date and its effective date;  $Premium$  is the premium computed as the ratio of the offer price per share to the target's closing share price one week (and four weeks in a robustness specification) before the acquisition announcement;  $TCAR$  ( $ACAR$ ) is the cumulative abnormal returns (CARs) for target (acquirer) firms on the acquisition announcement date, computed using the event study methodology of [Brown and Warner \(1985\)](#). We estimate the Fama-French 3-factor model for each firm over the 200 trading days ending

two months before the announcement following [Cai and Sevilir \(2012\)](#). We compute the abnormal returns on the announcement day as the difference between the realized and the expected returns. In the main specification, CAR represents the announcement abnormal return. In [Section 7](#), we further calculate cumulative abnormal returns over different windows surrounding the announcement date.

The key variable of interest is  $Holding\_connected_{t-1}^i$ , which represents the total holdings of all connected hedge funds in target firm  $i$  in quarter  $t-1$ . We also control for the total holdings of hedge funds in a target firm in quarter  $t-1$  ( $Holding\_total_{t-1}$ ) and hedge funds' holdings in the acquirer ( $Holding\_acquirer_{t-1}$ ).

To evaluate any potential effects on deal completion probability, we estimate the following probit regression:

$$Completion^i = \begin{cases} 1, & \text{if } Completion_{L^*}^i > 0, \text{ the deal is completed;} \\ 0, & \text{otherwise.} \end{cases}$$

$$Completion_{L^*}^i = \alpha + \beta Holding\_connected_{t-1}^i + \delta Controls_{t-1}^i + \eta^i \quad (5)$$

where  $Completion^i$  equals 1 if deal  $i$  is completed.  $Completion_{L^*}^i$  is a latent variable that depends on a set of explanatory variables, and  $\eta^i$  is the error term. For the duration and completion regressions, following [Dikova et al. \(2010\)](#), we further control for the total value of the consideration paid by the acquirer in a billion dollars ( $Deal\ Value$ ) and the amount of the termination fee paid by the acquirer in a billion dollars ( $Termination\ fee$ ).

The ‘indirect toehold’ and ‘information advantage’ scenarios both lead to identical predictions concerning the relationship between connected hedge fund holdings and deal duration (which is expected to decrease) and deal completion probability (which is expected to increase). Hence,  $\beta$  in [Equation \(4\)](#) is expected to be negative for deal duration, and it is expected to be positive in [Equation \(5\)](#). Two scenarios give, however, different predictions for premium and abnormal returns. The ‘indirect toehold’ mechanism predicts a negative relation between connected hedge fund holdings and premium and TCAR, hence, a negative  $\beta$  in [Equation \(4\)](#) in these specifications. It

predicts a positive relation with ACAR, and thus a positive  $\beta$ . The ‘information advantage’ scenario implies precisely the reverse relationships. Therefore, the results on premium and target and acquirer abnormal returns would present the most interesting findings, as they allow disentangling these two mechanisms.

To capture the motivation of investment banks, simultaneously acting as prime brokers for hedge funds and advisors in M&A deals, to share information with bidders, we include the interaction term  $Connected \times Abnormal\_fees$  into Equations (1) and (2) and  $Holding\_connect_{t-1} \times Abnormal\_fees$  to Equations (1) to (5). Advisors may be more willing to use the connections with hedge funds to help the bidder when they possess financial incentives to do so, namely when their advisory fees are higher. We calculate the fees paid by the acquirer as a percentage of deal value and define the abnormal fees (*Abnormal\_fees*) as the difference between these percentage fees and the average percentage fees for the two deals with the closest deal size in the same industry over the past two years.

We include target industry fixed effects and year fixed effects and use robust standard errors in all equations. We further add advisor fixed effects to Equations (2)-(5). Table 2 summarizes all the key variables and their definitions.

[Table 2 in here]

### 3 Data

We use three sets of data: (1) a sample of hedge funds from the TASS and Eureka hedge databases, (2) hedge fund holdings data from the 13f filings to the Security and Exchange Commission (SEC), and (3) a sample of M&A transactions with detailed information from the Eikon database.

Our hedge fund sample is from the TASS and Eureka hedge databases from January 1994 to September 2019, which includes information on affiliated companies, such as prime brokers. Hedge fund investment companies registered in the U.S. that manage over \$100 million are required by the SEC to file quarterly reports on their holdings. We



aggregate all individual hedge funds managed by the same hedge fund companies and obtain their holdings from the CDA database (Thomson Reuters, 13f filings) following Cui et al. (2022)<sup>4</sup>. In total, we have 5,713,269 data points of holdings (a hedge fund company-quarter-security uniquely defines each data point), and 651 hedge fund companies hold at least one of the target firms one quarter before the deal announcement in our sample.<sup>5</sup>

Our sample of the acquisition announced between January 2000 to September 2019 is from the Eikon database. We apply several filters commonly used in the prior M&A literature (see Boyson et al., 2017; Dai et al., 2017; Wu and Chung, 2021), namely: (1) the disclosed deal value should be greater than USD 1 million; (2) the acquirer should own less than 50% of the target's stock before the acquisition and should seek to own 100% of the target's shares upon successful acquisition; (3) spin-offs, repurchases, and self-tenders are excluded; (4) both the bidder and the target should be U.S. public firms listed on NYSE or Nasdaq, as the data on hedge fund holdings are available only for U.S. listed firms.<sup>6</sup> The initial sample contains 2,681 deals. We use only those deals for which all the necessary variables for our baseline analysis can be computed using the data from CRSP and Compustat<sup>7</sup> and deals with non-zero hedge fund holdings in the target firm. The final sample includes 910 deals. We use the target primary ticker symbol to match the firms in our M&A sample to the companies included in the hedge-fund holdings sample.

Panel A of Table 3 reports the advisor-level descriptive statistics, using connected and unconnected advisors separately. Overall, there are 130 unique advisors in our sample, of which 13 have a hedge fund connection. An advisor is said to be connected if it acts as a prime broker to at least one hedge fund that holds a target in a deal for which the advisor is employed. On average, connected advisors advise more deals than unconnected

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<sup>4</sup>For each hedge fund company, we check its information in Bloomberg to make sure that those companies have no side business, such as mutual fund or insurance.

<sup>5</sup>Hedge funds may ask for the confidentiality of their holdings (Agarwal et al., 2013). Agarwal et al. (2013) show that confidential holdings of hedge funds outperform their original holdings. Hence, any results, including confidential holdings, are likely to be even stronger than those that we are able to document.

<sup>6</sup>This filter allows us to calculate the holdings of hedge funds in both the target and acquirer. Hedge funds may hold other companies too, but it is not observed in our sample.

<sup>7</sup>The largest loss of data of 993 and 463 deals is driven by the absence of information on target ROA and acquirer size, respectively.

advisors (43.846 versus 4.285) and deals with larger values (390.920 versus 19.031 billion dollars).

Panel B uses all potential deal-advisor pairs in our sample. For each deal, we consider the chosen advisors and all other potential advisors that are not chosen but are active in the advisory market during this year. This results in 44,680 advisor-deal combinations in total, with the vast majority of combinations being with not-chosen advisors. Note that each advisor may enter both sub-samples of connected and unconnected advisors for different deals. Given the existence of connections to the target through hedge funds, 97.4% of advisors are chosen, while among unconnected advisors, 1.3% are chosen to advise the deals. Connected advisors have previously worked on more deals than unconnected advisors (12.4 versus 3.5 deals), with the prior acquisitions being larger in value (100.6 versus 25.1 billion dollars). Connected advisors are also more likely to be the previous advisor of the acquirer in the past year (5.0% of connected advisors versus 0.03% of unconnected advisors) and advise a target in the same industry as the target of the current acquisition (31.8% versus 13.0% of cases, respectively).

Panel C reports the deal-level statistics. The average number of advisors is 1.840 for deals with at least one connected advisor and 0.777 for deals without such advisors. On average, 5.3 connected hedge funds and 20.7 unconnected hedge funds take a stake in the target firm in deals with connected advisors, while 10.1 hedge funds hold the target in deals without such connections.

Table 4 reports the target-level descriptive statistics, using actual and matched targets separately. Overall, we obtain 4279 matched targets for 879 actual targets. On average, actual targets have significantly higher connected fund holdings (0.9% versus 0.5%), higher unconnected fund holdings (11.4% versus 5.4%), and slightly larger size (6.11 versus 5.99). They exhibit no differences in any other characteristics.

As for deal characteristics (Table 5), deals with connected and unconnected advisors exhibit statistically significant differences along multiple dimensions. The average holdings of connected funds are 2.0% in deals with connected advisors, while they are per construction zero in deals with unconnected advisors. Holdings of hedge funds in

the acquirer are higher for deals with connected advisors (10.6 % versus 9.6%). On average, deals with connected advisors have targets with higher ROA (-0.004 versus -0.018), higher leverage (0.415 versus 0.364), lower book-to-market value (0.450 versus 0.679), and lower tangible assets (0.805 versus 0.889). The acquirers in connected deals are larger (8.882 versus 7.683) and have a lower book-to-market ratio (0.419 versus 0.532). The connected deals are characterised by a higher ratio of deal value to acquirer market capitalisation (0.623 versus 0.353), higher mutual fund holdings (0.506 versus 0.271), a higher percentage of the payment made in cash (0.622 versus 0.530), a larger overall deal value (6.140 versus 0.815 billion dollars), higher termination fees (0.108 versus 0.014 billion dollars), and a lower level of target information asymmetry (1.684 versus 3.263). Overall, the descriptive statistics suggest structural differences in the deals that involve connected and unconnected advisors.

[Tables 3 to 5 in here]

## 4 Empirical Results

Table 6 reports the estimation results for Equation (1), capturing an acquirer’s choice of advisor. Columns (1) and (2) use sub-samples of deals in which targets exhibit high and low levels of information asymmetry, respectively. The coefficients  $\beta_1$  of 4.54 and 4.18 are significant at the 1% level in both columns, suggesting that connections of the advisor are important for both high and low information asymmetry cases.<sup>8</sup> After controlling for other factors that influence the choice of a financial advisor, an advisor is significantly more likely to be selected if it has prime brokerage connections to hedge funds that hold the target firm. For an average advisor in our sample, moving from a position of no connections to connections increases its estimated probability of being selected from 8% to 85%. This finding supports the ‘indirect toehold’ channel of information flows from connected hedge funds through the advisors and acquirers. At the same time, the

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<sup>8</sup>In unreported results, we also use an interaction term between Connected and IA and find this this interaction is not statistically significant, hence, IA does not significantly affect the relation between the probability of the choice of the advisor and its connected status.

coefficient of 12.108 on  *Holding\_connected*  is significant at the 1% level for targets with a high information asymmetry. Acquirers are more likely to choose an advisor connected to hedge funds with a higher stake in a target, if the information asymmetry is high. Potentially, this result points to an expectation that higher holdings in the target may be required to obtain reliable information concerning more opaque targets.

In columns (3) and (4), we include  *Abnormal\_fees*  and the interaction terms with  *Connected*  and  *Holding\_connected<sub>t-1</sub>* .  *Abnormal\_fees*  do not seem to be a significant factor in the case of low information asymmetry targets, but it does play a role if targets exhibit high information asymmetry. While the positive effect of the connection dummy weakens if the bidder is paying higher advisory fees, the positive effect of the level of connected hedge fund holdings becomes stronger for high information asymmetry targets. The results are also consistent with the ‘indirect toehold’ mechanism of information transmission. Advisors seem to be more willing to share the information and help the acquirer when their abnormal fees are higher.

The coefficients of other variables are consistent with the literature. Acquirers are more likely to select advisors with a higher value of acquisitions in the prior year, higher expertise in the target’s industry, and previous connections with the acquirer. The coefficients on the  *IMR\_bigbank*  are negative and statistically significant in columns (1) and (3), suggesting a downward-biased estimate without correction.

Table 7 reports the estimation results for Equation (2), capturing the acquirer’s choice of target. The coefficients  $\beta_1$  on  *Connected*  are significantly positive at the 1% level in all columns, suggesting that the advisor’s connection to hedge funds that hold the target significantly increases a firm’s probability of being a target. On average, the estimated probability of being chosen increases from 25% to 38% if connected fund holdings in a firm increase from zero to a positive value. The coefficients on  *Holding\_connected<sub>t-1</sub>*  are insignificant, indicating that the actual levels of holdings do not seem to matter. We find no evidence for differential effects across targets according to their level of information asymmetry. Remarkably, connected fund holdings decrease a firm’s probability of becoming a target for firms with high information asymmetry, when

the abnormal fees are high (Column (3) in Table 7). One possible explanation might be that advisors do not want connected funds to lose value from their holdings in the target, while they try to ensure the most favorable terms for the bidder. As for other control variables, firms with a larger size and higher book-to-market ratio are less likely to be chosen as a target. Overall, the findings also support the alternative pathway that advisors may recommend firms with connected fund holdings as a target to acquirers.

[Tables 6 and 7 in here]

Table 8 reports the estimation results for Equation (3), capturing the changes in hedge fund holdings before the deal announcement for connected (Columns (1)-(2) and (5)-(6)) and unconnected (Columns (3)-(4) and (7)-(8)) hedge funds.<sup>9</sup> The coefficient  $\beta$  is insignificant in every specification. The level of connected hedge fund holdings in the target does not seem to impact pre-announcement changes of connected or unconnected holdings one quarter before the acquisition announcement. This finding suggests that either there is no information flow between the advisor and connected hedge funds regarding the upcoming deal, or connected funds optimally choose not to increase their holdings. This appears to be rational behaviour, since under our ‘indirect toehold’ mechanism, they are unlikely to achieve abnormal returns on the target holdings.<sup>10</sup> The coefficients on  $\Delta Holding\_connected_{t-2}$  are also insignificant for connected funds in columns (1)-(2) and (5)-(6), while a negative loading is found in columns (3) and (7) for holdings of unconnected funds, especially in deals involving high information asymmetry targets.

Pre-announcement changes in connected fund holdings in the high information asymmetry targets are significantly negatively related to the level of connected hedge fund holdings if abnormal fees are high (Column (5) in Table 8). Expecting well-paid advisors to try to ensure the most favorable terms for the bidder, connected hedge funds

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<sup>9</sup>We run the same model for the changes of hedge fund holdings in acquirers; the results are reported in Online Appendix Table B1.

<sup>10</sup>We also consider a different measure of changes in holdings based not on the fractional holdings of the target, but the fraction of the hedge fund’s portfolio allocated the target. The results reported in Online Appendix Tables C1 similarly reveal no effect of connected fund holdings on pre-announcement changes.

do not increase their holdings in the target.

Interestingly, connected fund increase their holdings in the deals with a higher percentage of cash payment, especially for targets characterised by low information asymmetry, while there is no effect of cash payment on the changes in holdings of unconnected hedge funds. This evidence may indicate information flow from advisors to connected hedge funds regarding the expected payment structure, and it also lends some support to the ‘information advantage’ mechanism.

[Table 8 in here]

In terms of deal duration (Table 9), we find marginal evidence that connected hedge fund holdings reduce the deal duration for deals involving high-IA targets.<sup>11</sup> The coefficient of  $\beta$  on connected funds’ holdings is negative of -12.318 in Column (1) significant at the 10% level and it is not significant for targets with low information asymmetry. A one standard deviation increase in connected fund holdings reduces deal duration by around five days for targets with a higher level of information asymmetry. This is equivalent to more than 4% of the average deal duration in our sample. No significant impact of connected fund holdings on deal duration can be, however, detected, when we control for the advisor abnormal fees. Other control variables have signs consistent with the literature: higher deal value, a higher ratio of target total assets to bidder total assets, and hostile deals are all associated with higher deal duration, while the percentage of cash payment and a tender offer reduce the deal duration.

At the same time, connected funds’ holdings significantly increase the likelihood of deal completion, especially for targets with enhanced information asymmetry, as revealed by a positive and significant  $\beta$  in Column (3) of Table 9.<sup>12</sup> The effect is economically meaningful. For an average deal involving a target with enhanced information asymmetry, a one standard deviation increase in connected hedge fund holdings leads to an increase in the deal’s completion probability of 5.3 percentage points, which is around 6.0%

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<sup>11</sup>The number of deals reduces for the duration model as duration is computed only for completed deals.

<sup>12</sup>The number of deals used in the completion probability model reduces because some fixed effects perfectly predict completion. The results remain qualitatively unchanged if the full sample of deals is used without fixed effects.

of the average completion probability. The effect on completion probability is driven predominantly by connected funds. The overall hedge fund holdings are not significant in almost all specifications.

The positive effects of connected funds' holdings on the likelihood of deal completion are even more pronounced when the advisor abnormal fees are higher (Column (7) in Table 9). The coefficient  $\beta_1^*$  on  $Holding\_connected_{t-1} \times Abnormal\_fees$  is positive and significant for targets with a higher level of information asymmetry, and the effect is four times larger than for targets with a lower level of information asymmetry (79.69 vs. 18.36, respectively). The coefficient on the stand alone  $Abnormal\_fees$  variable is also positive and significant at the 1% level, suggesting that higher abnormal fees increase the likelihood of deal completion for targets with a higher level of information asymmetry. As for other control variables, a higher ratio of target total assets to bidder total assets and tender offer increases the probability of deal completion, while a greater number of bidders reduces the likelihood of deal completion.

The results on deal completion probability do not allow us to disentangle the 'indirect toehold' and 'information advantage' mechanisms since they both point in the same direction of increasing the likelihood of deal completion. The estimated effect for abnormal returns, however, supports the 'indirect toehold' mechanism (Table 10).

Announcement abnormal returns of bidders in deals involving targets with high information asymmetry increase in connected hedge fund holdings. The  $\beta$  coefficient on connected hedge fund holdings of 1.402 is significant at the 1% level (Column (5) of Table 10). A one standard deviation increase in connected fund holdings leads to an increase of 1.9 bp in acquirer abnormal returns for targets with a higher level of information asymmetry. Given the mean value of ACAR of -0.008%, the increase in ACAR amounts to more than twice the absolute value of the mean ACAR, which turns the ACAR positive. The effect is not statistically significant for targets with low information asymmetry.

We find no significant impact of connected fund holdings on target premium and target abnormal returns in any of the specifications.<sup>13</sup> One possible explanation might be that

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<sup>13</sup>We run the same model for the premium estimated based on the target market value four weeks before the announcement, and the results reported in Online Appendix Tables E1 to E3 are qualitatively

while connected hedge funds facilitate the deal, they do not harm their own interests, and their involvement does not lead to underpayment in the M&A deal.<sup>14</sup> Interestingly, general hedge fund involvement, as captured by the total holdings of hedge funds in the target, reduces both the premium paid and target abnormal returns in our sample of the deals, especially for target firms with higher degrees of information asymmetry. In terms of control variables, the premium consistently increases with acquirer size and for tender offers.<sup>15</sup>

Overall, our baseline results are consistent with the ‘indirect toehold’ hypothesis that advisors use connected hedge funds’ holdings in the target firm to obtain additional information about the target and thereby help the bidder to reduce information asymmetry. Thus, advisors are more likely to be chosen if they are connected to hedge funds that hold the target and/or such advisors are more likely to recommend a connected target. This leads to a higher likelihood of deal completion, a shorter deal duration, and higher acquirer announcement returns.

[Tables 9 and 10 in here]

## 5 Hedge Funds’ Information Sharing Incentives

The evidence relating to the ‘indirect toehold’ mechanism suggests that hedge funds with equity holdings in a M&A target share certain value-relevant information with the bidder, channeled through the connected advisor. Potentially, this leads to a reduction in the premium and lower returns to target owners. Implicitly, this outcome harms the connected hedge fund’s interests, but may such return sacrifices benefit these hedge  
unchanged.

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<sup>14</sup>In Section 7, we separate connected hedge funds based on the relative importance of the target in the hedge fund portfolios and the length of hedge funds’ holding period in the target. Connected hedge funds seem more likely to share information with their prime broker when they have small holdings in the target, do not specialise in the target industry, or hold the target for a shorter period.

<sup>15</sup>As a robustness check, we compute the target and acquirer abnormal returns in three different event windows, including a 3-day [-1, +1], a 7-day [3, +3], and an 11-day [5, +5] window (Hillmer and Yu, 1979; Krivin et al., 2003). The results in Online Appendix Table D1 are consistent with the main findings. Connected hedge fund holdings do not affect target abnormal returns, but they significantly increase the cumulative abnormal returns of the bidder in deals involving targets with enhanced information asymmetry.



funds?

One possible explanation might be that connected hedge funds are willing to forego target abnormal returns for additional compensating benefits (possibly informal) they obtain from their prime brokers (see, for example, [Chung and Kang, 2016](#); [Kumar et al., 2020](#); [Qian and Zhong, 2018](#)). If this is the case, information sharing may be optimal from hedge funds' perspective when the associated benefits outweigh the costs. This situation is facilitated when losses incurred from a lower premium paid for targets are limited. To test this conjecture, we examine hedge funds' incentives and disincentives to share information from three perspectives: (i) the target importance in the hedge fund portfolio, (ii) the importance of the prime broker to connected hedge funds, and (iii) hedge fund past performance.<sup>16</sup>

## 5.1 Target importance in the hedge fund portfolio

We use three measures to assess the importance of the target firm in the hedge fund portfolio: (1) direct hedge fund investment: the fraction of the total hedge fund portfolio allocated to the target firm, (2) hedge fund industry specialization: the fraction of hedge fund portfolio invested in the target's industry, and (3) hedge funds' holding period in the target.

For the first measure, for each hedge fund and each firm held, we compute fractional holdings as the ratio of the dollar value of holdings in the firm scaled by the total value of the reported holdings of the hedge fund. We denote a target as representing a low share of the hedge fund portfolio (signalling lower importance for the hedge fund) if the fractional holdings lie below the 30th percentile. In our sample, a 30th percentile holding of a hedge fund is 0.019% per firm. Next, for each target in our sample, we compute the total holdings by hedge funds for which this target is of low importance  $Holding\_connected\_lowshare_{t-1}$  and add this variable to Equation (4). We expect connected funds to be more willing to share information about targets in exchange

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<sup>16</sup>Another interesting question would be whether connected hedge funds are more willing to share information when they hold both the target and the acquirer. In such a setting, any losses on the side of the target may be more than compensated on the side of the acquirer. Such test is not feasible in our sample, however, as there are only three deals with connected funds' cross-holdings.

for beneficial consideration from their prime brokers when their equity stakes in targets account for a smaller share of their whole portfolio.

The second measure is hedge funds' specialisation in the target industry. For each hedge fund, we compute fractional holdings in the industry as the ratio of the total dollar value allocated to the firms in the same four-digit SIC code as the target, scaled by the total value of the reported holdings of the hedge fund. We say that a hedge fund does not specialise in that industry; hence the target has lower importance for the hedge fund if the fund's fractional holdings in the industry are below the 30th percentile. In our sample, a 30th percentile holding of hedge funds is 0.345% per industry. We include total holdings in the target by hedge funds that do not specialize in its industry  $Holding\_connected\_lowsic_{t-1}$  in Equation (4). We expect connected funds to be more willing to share information about targets to benefit from their prime brokers when they do not specialise in the target industry.

Finally, we look at the pre-M&A hedge funds' holding period of the target. Hedge funds that have been holding the target for a long period may be long-term investors and may be less likely to share information with prime brokers if such sharing potentially leads to underpayment in the M&A deal. Hedge funds that have only recently purchased stakes in the target may have less of a vested interest in the company, and the benefits of strong prime brokerage relations may outweigh the costs of lower returns. In a similar vein to the previous specifications, we add  $Holding\_connected\_shortperiod_{t-1}$  to Equation (4) capturing total holdings by hedge funds that have been invested in the target for no longer than one quarter before the announcement. We expect connected funds to be more willing to sacrifice premiums and announcement returns in targets when they have been holding the target firm for a short period.

## 5.2 Importance of prime brokerage relations for the hedge fund

Hedge funds may be more willing to share sensitive information with their prime broker when this prime broker is highly important for the funds. To assess the importance of a prime broker for a hedge fund, we used two different measures: (1) the number of

prime brokers associated with a hedge fund company, and (2) the total assets of the hedge fund company serviced by a given prime broker.

Hedge funds with multiple prime brokers are less dependent on each individual prime broker, while a strong relationship with their prime broker is more important for hedge funds with only a single prime broker. Hence, hedge funds with a single prime broker may be more likely to share information, as the benefits of a cordial prime brokerage relationship may outweigh any losses arising from the potentially lower premiums paid in M&As. In similar fashion to the previous specifications, we include *Holdings\_connected\_singlePB<sub>t-1</sub>* to Equation (4) capturing holdings by hedge funds that have only one prime broker. We expect connected funds to be more willing to pass information to their broker when they only have one prime broker.

Since the holding information is at a hedge fund company level, the prime brokerage relations are also measured on a company level. If a company operates several hedge funds and each of these hedge funds has its own prime broker, the company is classified as having multiple prime brokers. At the same time, if a company has a large flagship fund and several small satellite funds, only the relations with the prime broker of the flagship fund may be of material importance for the company. Hence, despite technically having multiple prime brokers, such a company is more reliant upon strong relations with its main prime broker. To account for this possibility, we now use the share of the assets under management linked to a dominant prime broker as a proxy for the importance of hedge fund-prime broker relations. For each hedge fund company reporting prime brokers  $b$ , we compute the fraction of assets a prime broker services based on the size of constituent funds:

$$Frac\_Assets_b = \frac{\sum_i Fund\_AUM_i^b}{\sum_j Fund\_AUM_j}, \quad (6)$$

where  $Fund\_AUM_j$  are assets under management of fund  $j$  within a given hedge fund company, and  $Fund\_AUM_i^b$  are the assets under management of fund  $i$  that reports prime broker  $b$ .

We say that a prime broker is dominant if it services at least 70% of the assets of the company. We proceed to compute the total holdings of connected funds

in the targets if the deal advisor is the dominant prime broker of the hedge funds  *Holding\_connected\_dominant70<sub>t-1</sub>*. We include this variable into Equation (4). We expect that funds are more willing to share information with their dominant prime broker.

### 5.3 Hedge fund past performance and flow

Recent performance and fund flow are likely to affect hedge fund willingness to share information with their prime broker, but the direction of the effect is difficult to be predicted ex-ante. For poorly performing funds the marginal benefit of a larger M&A announcement return on their holdings in target is high, hence they may be reluctant to share information with their prime brokers if such sharing potentially harms performance. At the same time, poor performance is often followed by outflow. Hedge funds' liquidity deteriorates and they become more reliant on their prime brokers to provide financing to sustain their operations. This provides stronger incentives for hedge funds to foster good relationships with their prime brokers and to share information.

To evaluate the effect of hedge fund performance, we calculate the hedge-fund-company level monthly returns as the asset-weighted monthly returns across individual hedge funds managed by this company. We classify a hedge fund company as poorly performing if its average return over the quarter preceding the M&A announcement date is below the 30th percentile of all hedge fund companies active in that quarter. In our sample, an average 30th percentile of the returns is -0.07% per month. We include an additional variable into Equation (4) capturing holdings in the target by poorly performing hedge funds  *Holding\_connected\_lowret<sub>t-1</sub>*.

To address the effect of fund flow, we first compute dollar flows for each fund  $i$  during month  $m$  using Equation (7), where  $Fund\_AUM_m^i$  denotes the assets under management of fund  $i$  at the end of month  $m$ , and  $Ret_m^i$  is the reported return for fund  $i$  during month  $m$ . We aggregate the monthly dollar flows for all individual hedge funds managed by the same hedge fund company  $j$  during quarter  $q$  to estimate quarterly flows. Following Agarwal et al. (2004), we scale company-level quarterly dollar flows by beginning-of-quarter company-level assets under management.

$$Fund\_DollarFlow_m^i = Fund\_AUM_m^i - Fund\_AUM_{m-1}^i(1 + Ret_m^i) \quad (7)$$

$$QuarterDollarFlow_q^j = \sum_i \sum_m Fund\_DollarFlow_m^i,$$

for months  $m$  in quarter  $q$ , and funds  $i$  in company  $j$ .

$$AUM_{q-1}^j = \sum_i Fund\_AUM_{q-1}^i \quad (8)$$

$$Flow_q^j = \frac{QuarterDollarFlow_q^j}{AUM_{q-1}^j}$$

We say that a hedge fund company has a low flow if its flow over the quarter before the M&A announcement is below the 30th percentile of all hedge fund companies in that quarter. In our sample, an average 30th percentile of quarterly flows is -0.78% per quarter. Similar to the previous specifications, we add a separate variable into Equation (4) capturing holdings in the target by hedge fund companies with low flows  *Holding\_connected\_lowflow<sub>t-1</sub>*.

## 5.4 Information sharing incentives: Results

Tables 11 to 13 report the results using the sub-samples of targets with high levels of information asymmetry.<sup>17</sup> We report only the estimates for the key variables of interest. The effects of the other control variables are similar to the ones reported in the previous tables and their estimates are omitted for the sake of space. Overall, the results provide consistent support for the corollary that hedge funds for which the target is of less importance are more willing to share information with the prime broker. The effects of prime brokerage importance and fund flows are pronounced for the acquirer abnormal returns, further supporting the ‘indirect toehold’ mechanism of information transmission.

If a high information asymmetry target is of low importance in the hedge fund’s portfolio, connected hedge fund holdings lead to a significantly lower premium (Table

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<sup>17</sup>We report the results using sub-samples of targets with low information asymmetry in Online Appendix Tables F1 to F3.

11). The coefficients of -14.87, -11.91, and -60.85 on  *Holding\_connected\_lowshare*,  *Holding\_connected\_lowsic*, and  *Holding\_connected\_shortperiod*, respectively, are all significant at the 5% level. These effects are economically large. For example, a one standard deviation increase in connected fund holdings with low target share leads to a premium reduction of 9.37 basis points. When holdings in a target are less important for the hedge fund, the losses from the holdings are limited. Therefore, hedge funds are more likely to share information that may adversely impact the target premiums, potentially in exchange for other (informal) benefits provided by their prime brokers. Importantly, such negative effect of hedge fund holdings is pronounced only for connected hedge funds and not for total holdings of funds with low target share, low industry specialization, or a short holding period. This further highlights the importance of the information transmission channel through the prime brokerage connection. Furthermore, holdings by connected funds with a short investment period in the target lead to significantly lower target abnormal returns (column (3) of Table 12). The estimated coefficient of -27.34 is significant at the 5% level. A one standard deviation increase in connected fund holdings with a short period leads to a decrease of 3.01 bp in target abnormal returns for targets with a higher level of information asymmetry.

As for the importance of prime brokerage relation for the hedge fund, we do not find any incremental effect of holdings by connected hedge funds with a single or dominant prime broker on premium or target car. Holdings of hedge funds with the single prime broker, however, significantly increase bidder abnormal return (column (4) of Table 13). The corresponding coefficient of 1.33 is significant at the 1% level. A one standard deviation increase in fund holdings by connected hedge funds with a single prime broker increases the acquirer abnormal return by 1.05 bp.

Holdings by poor performing connected funds do not seem to affect premiums, target or acquirer abnormal returns any differently, than holdings of all other connected funds. Holdings by funds with low flow lead to further increase in acquirer abnormal return. The corresponding coefficient of 1.25 is significant at the 1% level (column (7) of Table 13). A one standard deviation increase in fund holdings by connected hedge funds with

low flow increases the acquirer abnormal return by 1.10 bp.

Again, the effects of the single prime broker and low flows are driven only by connected hedge fund holdings, while no relation can be seen for total holdings of all hedge funds.

[Tables 11 to 13 in here]

## 6 Importance of Information Sharing for the Bidder

The observable effects of information sharing would depend on the initial information set of a bidder and the marginal benefit of each extra piece of information obtained through the ‘indirect toehold’. Information sharing may be more important for the bidder when (1) targets and bidders are from different industries, (2) multiple bidders are involved in the deal, (3) a higher fraction of payment is made in stock, and (4) there is a merger wave.

A bidder who lacks expertise in the target industry will find it more beneficial to become informed than a rival bidder with more reliable information (Povel and Sertsios, 2014). Hence, the incremental information obtained through connected advisors may be more important for the bidder when the bidder and target are in different industries. To test this proposition, we include the interaction term  $Holding\_connected_{t-1} \times Diff\_Ind$  into Equation (4). We expect information to have a greater impact when the target and bidder are in different industries.

Another factor affecting the benefits of information sharing is the number of bidders. Auction theory suggests that toehold bidding may yield a competitive advantage over rival bidders (Betton et al., 2009). Thus, the ‘indirect toehold’ through connected hedge funds may benefit bidders more in the presence of multiple bidders for the deal. Similarly to the previous specification, we include  $Holding\_connected_{t-1} \times Multi\_bidder$  into Equation (4), where  $Multi\_bidder$  is a dummy variable that equals one if more than one bidder is involved in the deal. Information sharing is expected to be more important to the bidder when there are other bidders too.

Bidders tend to resort to stock payment if they are concerned about adverse selection

on the target side (Hansen, 1987). Hence, the benefits of information sharing may be larger when bidders offer stock payment as the target is likely to be relatively opaque. We include  $Holding\_connected_{t-1} \times Pctstock$  into Equation (4), where  $Pctstock$  is the percentage of stock payment in the consideration. We expect information sharing to have stronger effects when the bidder offers a higher fraction of stock payment.

Finally, information sharing may be more beneficial during merger waves. During merger waves, the quality of information available to the market is usually worse and the uncertainty is higher (Duchin and Schmidt, 2013). Following Ahern and Harford (2014), we calculate the dollar value of mergers in each industry-pair of acquirer and target industries each year. We say that there is a merger wave in an industry pair if the dollar value of all deals in this pair of industries in a year is above the 30th percentile. We then add the interaction term  $Holding\_connected_{t-1} \times Merger\_wave$  into Equation (4). Information sharing is likely to be more important to the bidder during merger waves.

The results for targets with high levels of information asymmetry<sup>18</sup> are reported in Tables 14 to 16. We do not find any significant impact of connected fund holdings on premium when information sharing is more important for the bidder (Table 14). At the same time, connected hedge fund holdings are associated with a significant reduction of target abnormal returns during merger waves, as reflected by a significantly negative coefficient on  $Holdings\_connected_{t-1} \times Merger\_wave$  ( $\beta^*$ ) in column (4) of Table 15. The results for acquirer abnormal returns in Table 16 further support information sharing importance to bidders when there are multiple bidders involved, when bidders use higher stock payment, and when those industries experience merger waves. The corresponding coefficients  $\beta^*$  of 1.89, 1.14, and 0.93 are positive and significant at the 5% level in columns (2)-(4). These effects are exclusively associate with connected hedge fund holdings, while the interactions with total hedge funds holdings are not significant.

[Tables 14 to 16 in here]

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<sup>18</sup>We report the results for targets with low information asymmetry in Online Appendix Tables F4 to F6.



## 7 Extensions and Robustness

### 7.1 Post-merger performance

We now consider the longer term implications for the bidder and focus on the post-merger performance. [Bodnaruk et al. \(2009\)](#) document a lower post-merger profitability for mergers in which the advisor to the bidder has a stake in the target firm. Could connected fund holdings in the target similarly lead to losses of the merged firm? To answer this question, we use three measures to assess the post-merger performance of the firm: (1) the return on asset (*ROA*), (2) the return on equity (*ROE*), and (3) the net profit margin, measured by the ratio of net income to net sales (*NPM*). We regress these profitability measures computed at the end of the first fiscal year after the acquisition announcement on connected funds' holdings and other controls as in Equation (4) for completed deals only. Table 17 shows no significant impact of connected hedge funds' holdings on the firm's future profitability. Hence, unlike direct holdings by the advisors, connected hedge fund holdings in the target are not associated with decreasing future profitability of the merged firm.

[Table 17 in here]

### 7.2 Changes in hedge fund holdings after the deal announcement

In this section, we check whether connected and unconnected funds behave differently in terms of their ownership of the target firm after the deal announcement and before the deal completion and if their potential changes in holdings further highlight any alternative channels of information transmission.

Generally, we anticipate hedge funds are likely to purchase the target's equity after the deal announcement ([Cui et al., 2022](#); [Dai et al., 2017](#); [Mitchell et al., 2004](#)). If connected hedge funds additionally increase their holdings in the target after the deal announcement and prior to deal completion, it may signal that advisors share information with them concerning the likelihood of successful deal completion. Such a pattern could also suggest an implicit contract between hedge funds and their prime brokers acting as advisors for

the deal, in which hedge funds are purchasing additional stakes in the target and then vote to help the bidder secure the deal. If connected funds do not disproportionately increase their holdings, there may be either no information flowing between the advisor and connected hedge funds or the information flowing from hedge funds to advisors may be as stipulated by the ‘indirect toehold’ mechanism. In the latter case, funds may expect the underpayment for the deal and choose not to increase their holdings.

To answer these questions, we restrict the sample to deals that last more than one quarter and for which we have another observation of holdings in the target before the deal completion. In total, we identify 623 deals. We then re-estimate Equation (3) in which our dependent variables now become the changes in the average holdings per connected and unconnected fund from the announcement quarter to the post-announcement quarter ( $\Delta \overline{Holding\_connected}_{t+1}$  and  $\Delta \overline{Holding\_unconnected}_{t+1}$ ).

The results in Table 18 indicate that the higher level of connected hedge fund holdings leads to lower post-announcement changes in the connected holdings for targets with high information asymmetry, while it leads to larger changes in holdings of unconnected funds for targets with low information asymmetry.

This result again is consistent with the ‘indirect toehold’ information transmission mechanism and does not suggest any strategic purchases of target equity by connected hedge funds to facilitate deal completion.

[Table 18 in here]

### 7.3 Propensity score matching

We now employ a propensity score matching technique to control for other possible (unobserved) differences between deals with and without connected fund holdings. We examine changes in holdings, completion, duration, premium, and abnormal returns for deals with connected fund holdings compared with a matched control sample of deals without such holdings.

The first-stage probit regression relates the probability of having connected fund holdings to a set of explanatory variables. These include the book-to-market value of both

the target and acquirer, acquirer size, the ratio of the target's to the acquirer's asset size, the ratio of deal value to acquirer market capitalisation, mutual fund holdings, percentage of the payment made in cash, and a dummy for the target and the acquirer being from different industries. Deals with connected fund holdings and other deals are matched using one-to-one matching without replacement based on the estimated propensity score. We retain only those matches for which the difference in the score is smaller than 0.01, resulting in a total of 59 matched pairs. Table 19 shows that the resulting treated and control groups are indistinguishable in terms of all characteristics used as the basis for matching.

In Table 20 we compare the differences across the two groups of deals in terms of the likelihood of deal completion, deal duration, premium paid, as well as the target's and acquirer's abnormal returns over an event window of  $[0]$ , and cumulative abnormal returns over three other windows  $[-1,1]$ ,  $[-3,3]$ , and  $[-5,5]$ . We also report differences in the changes in unconnected hedge fund holdings in the target and bidder for these two deals groups. Note we do not consider changes in connected hedge fund holdings before or after the deal announcement since the control group of deals by construction does not have any connected holdings before the announcement. Hence, any differences, in this case, will be purely mechanical.

Deals with connected fund holdings have significantly lower premiums and smaller target abnormal returns in all windows. There is no evidence of significant differences in deal duration and acquirer abnormal returns between these two deal groups. The effect on the completion probability cannot be assessed since our strict matching approach leads to having only completed deals in the paired sample.

Overall, the matching results support our central conclusion: there seems to be information flow from hedge funds holding the target through their prime brokers acting as deal advisors to the bidder, leading to lower takeover premiums and smaller target announcement returns.

[Tables 19 and 20 in here]

## 7.4 Deals involving connected advisors

To ensure that our results are not driven by some systematic (possibly unobserved) differences between advisors that are connected and not (such as skill or an informed set of connections), we repeat the analysis using the sub-sample of deals involving advisors that are connected in at least in one deal in our sample. Hence, we drop all deals involving advisors that are never connected. The remaining advisors are still connected in some of the deals in this sub-sample, while they are unconnected in other deals. In total, we identify 575 deals with connected advisors, accounting for 63% of the sample.

The results in Tables G1 to G5 in Online Appendix confirm that our main results remain qualitatively unchanged when using this connected sub-sample of deals. Hence, the ‘indirect toehold’ information channel appears to be robust. It requires a direct link between hedge funds and their prime broker to manifest in the M&A outcomes.

## 7.5 Pseudo hedge fund-prime broker connections

One potential concern in our analysis could be the endogeneity of the hedge fund-prime broker connections. To address this issue, in the spirit of instrumental variable estimation, we define a pseudo-relationship between hedge funds and prime brokers and proceed to repeat the analysis using such estimated pseudo-connections instead of the actual ones.

For each connected advisor in our sample, we estimate a probit regression for the probability that a hedge fund has this advisor as its prime broker. The dependent variable is a dummy indicating the use of this advisor as a prime broker at the hedge fund level. We use hedge fund size, domicile, and strategy as explanatory variables. In total, we have 4,155 hedge funds in our sample. In the next step, we predict the hedge fund connection to each advisor. We say a hedge fund is estimated to be connected with a given advisor if the probability of such connection is above the 70th percentile for each advisor. We then aggregate such individual fund level pseudo-connections at a company level to use together with the holdings information. This yields 495 deals with pseudo-connected fund holdings (compared to 412 truly connected deals in the main sample), and the average holdings of such pseudo connected funds in the targets are 1.5% (which is comparable

with 2% holdings by hedge funds truly connected via their actual prime brokers). We then use this pseudo-relationship to measure connected hedge fund holdings in the target firm. The complete set of results is reported in Online Appendix Tables H1 to H5. We find that the advisor’s pseudo connection to hedge funds significantly increases the likelihood of the advisor being selected. A firm is also more likely to be chosen as a target if it has pseudo-connected hedge fund holdings. The pseudo-connected hedge fund holdings significantly increase deal completion and reduce target premium for targets with higher information asymmetry levels. Hence, these results are consistent with the ‘indirect toehold’ information flow pattern in M&A deals.

## 8 Conclusion

In this paper, we study the potential channels of information flow between bidders, advisors, and their connected hedge funds and their impact on the choice of the advisor, target, and deal outcome in M&As. We define connected hedge funds as those that hold equity in the target before an M&A announcement while having a prime broker who serves as the bidder’s advisor on the M&A deal. Using a sample of 910 US public M&A transactions between 2000 to 2019, we find that the existence of links to the target through connected hedge fund holdings is a positive and significant determinant of the likelihood of an advisor being chosen to facilitate the deal. Two pathways lead to this relation. On the one hand, bidders are more likely to select connected advisors, and on the other hand, once selected, advisors are also more likely to recommend a connected target. The connected hedge fund holdings in a target are significantly negatively related to the deal duration and they are positively associated with the likelihood of deal completion and acquirer abnormal returns, especially for targets with higher levels of information asymmetry.

These findings are consistent with the ‘indirect toehold’ information flow mechanism. Acquirers seem to choose advisors connected to hedge funds that hold the target to obtain an ‘indirect toehold’ in target firms. Advisors are likely to have all the incentives to help

the bidder in order to justify their fees and increase the likelihood of being hired in the future. Therefore, advisors seem to exploit possibly private information obtained from the affiliated funds with holdings in the target firm and help bidders reduce information asymmetry and gain higher bargaining power. This leads to a higher probability of a successful merger deal completion, lower deal duration, and higher acquirer abnormal returns upon the deal announcements.

The affiliated hedge funds seem more likely to share information with their prime brokers when the target is of diminished importance in the overall hedge fund portfolio, thereby limiting any potential losses for hedge funds due to lower announcement returns. Hedge funds are also more likely to share information if strong prime-brokerage relations with a particular advisor are more important for them. This is the case when the advisor is a single prime broker for the hedge fund company or hedge funds experience outflows and become more reliant on prime brokerage support to finance their activities. The effects of the ‘indirect toehold’ are more pronounced when such information acquisition is of greater importance for the bidder. This happens when there are multiple bidders for the deal, when the bidder uses higher fraction of stock payment, and when there is a merger wave in the target-acquirer industry pair.

Our findings contribute to the research on information sharing between prime brokers and their clients ([Chung and Kang, 2016](#); [Kumar et al., 2020](#); [Qian and Zhong, 2018](#)) as well as to the literature showing that financial advisors reduce information asymmetry between targets and acquirers ([Officer, 2007](#); [Leledakis et al., 2021](#)). We highlight one particular channel through which such a reduction can be achieved, namely utilising an ‘indirect toehold’ through connected hedge funds. Overall, our analysis provides novel insights into the role of advisors and their connections to other financial institutions in M&As.

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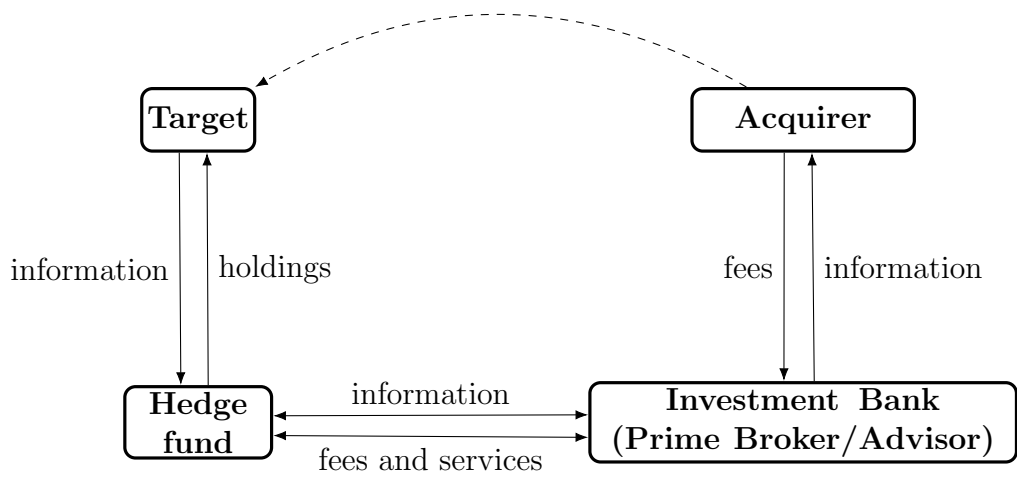
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The figure depicts the possible directions of information flow between target firms, hedge funds, investment banks, and acquiring firms in M&A.

Figure 1: The information flow in M&A.

# Tables

Table 1: Predicted directions of effects of the information flow

The table summarises the predicted directions of the effects of the information flow between acquirers, advisors, connected hedge funds, and targets on different characteristics of M&A deals under two scenarios of indirect toehold and information advantage.

	Indirect Toehold	Information Advantage
Probability to choose a connected advisor	↗	↘
Probability to choose a target with connected fund holdings	↗	↘
Deal duration	↘	↘
Deal completion probability	↗	↗
Premium	↘	↗
Target announcement abnormal return	↘	↗
Acquirer announcement abnormal return	↗	↘
Pre-announcement hedge fund holdings	↘ or =	↗

Table 2: Variable description

This table describes the variables used in this paper in alphabetical order.

Variables	Description
Abnormal_fees	The difference between the percentage fees and the average percentage fees for the two deals with the closest deal size in the same industry over the past two years.
ACAR	Acquirer cumulative abnormal returns computed on the acquisition announcement date, expressed in decimals.
Acquisition times	The number of times an advisor served as an acquirer's advisor one year before the acquisition announcement.
Acquisition value	The logarithm of the total value of all acquisitions that an advisor served as an acquirer's advisor one year before the acquisition announcement.
Amihud	The average Amihud illiquidity measure over the year prior to the acquisition announcement.
B/M	The book-to-market value of equity of a target or acquirer measured at the end of last fiscal year before the acquisition announcement.
Chosen	A dummy variable that equals 1 if an advisor is hired for a particular deal and 0 otherwise.
Completion	A dummy variable that equals 1 if the deal is completed and 0 otherwise.
Connected	A dummy variable equals 1 if an advisor is the prime broker of a hedge fund with holdings in the target firm and 0 otherwise.
COVER	The number of analysts for the target in the year before the acquisition announcement.
Deal value	Total value of the consideration paid by the acquirer in a billion dollars.
Diff_Ind	A dummy variable equals 1 for a deal where bidder and target are from different 3-digit SIC code industries and 0 otherwise.
Duration	The number of months between the deal announcement and the deal final outcome.
ERR	The analyst forecast error for the target in the year before the acquisition announcement.
Expertise	A dummy variable equals 1 if the advisor served as an acquirer's advisor in an acquisition that involved a target from the same two-digit SIC industry as the target of the current acquisition and 0 otherwise.
Holding_acquirer <sub>t-1</sub>	Hedge funds' holdings in the acquirer one quarter before the acquisition announcement.
Holding_connected <sub>t-1</sub>	Holdings of connected hedge funds in a target firm one quarter before the acquisition announcement.
Holding_total <sub>t-1</sub>	Holdings of all hedge funds in a target firm one quarter before the acquisition announcement.
Holding_MF	Mutual fund holdings in a target or acquirer firm one quarter before the acquisition announcement.
$\Delta$ Holding_connected	Changes in holdings of connected funds measured by the difference between the holdings per fund in the current and previous quarters.
IA	The target firm's information asymmetry measure based on five variables ( <i>Amihud</i> , <i>SPREAD</i> , <i>Size</i> , <i>COVER</i> , <i>ERR</i> ).
IMR	The Inverse Mills Ratio.
Leverage	The equity-to-assets ratio of a target firm at the end of last fiscal year before the acquisition announcement.
Hostile	A dummy variable equals 1 for a hostile deal and 0 otherwise.
Merger of equals	A dummy variable equals 1 when the target and acquirer are considering their merger a merger of equals and 0 otherwise.
Merger_wave	A dummy variable equals 1 if the dollar value of mergers in each target and acquirer industry pair in a year is above the 30th percentile.
Multi-bidder	A dummy variable equals 1 if more than one bidder is involved and 0 otherwise.
NPM	The net profit margin of the new firm at the end of the first fiscal year after the acquisition announcement.
Number of bidders	The number of bidders involved in a deal.
Pctcash	The percentage of the cash payment in the consideration.
Pctstock	The percentage of the stock payment in the consideration.
P/E	The price-earnings ratio in the year prior to the acquisition announcement.
Premium	The premium paid one week (four weeks) before the acquisition announcement.
Prior advisor	A dummy variable equals 1 if the advisor served as a M&A advisor for the acquirer one year before the acquisition announcement and 0 otherwise.
RELSIZE	The ratio of the target's asset size to the acquirer's asset size at the end of the last fiscal year before the acquisition announcement.
ROA	The return on asset of the target at the end of last fiscal year before the acquisition announcement.
ROE	The return on equity of the target at the end of last fiscal year before the acquisition announcement.
Sales	The sales growth rate in the year prior to the acquisition announcement.
Size	The logarithm of the book value of total assets in the year prior to the acquisition announcement.
SPREAD	The average bid-ask spread over the year prior to the acquisition announcement.
Tangible	The ratio of total tangible assets to total assets at the end of last fiscal year before announcement.
TCAR	Target cumulative abnormal returns computed on the acquisition announcement date, expressed in decimals.
Tender	A dummy variable taking the value of 1 for tender offers and 0 otherwise.
Termination fee	The amount of the termination fee paid by the acquirer in a billion dollars.
Toehold	The fraction of target shares held by the acquirer 6 months before the acquisition announcement.
Valpct	The ratio of deal value to acquirer market capitalization at the end of last fiscal year before the acquisition announcement.

Table 3: Descriptive statistics of advisors

This table reports the descriptive statistics of advisor characteristics. Connected advisors are advisors with a prime brokerage connection with hedge funds with holdings in the target firm. Panel A reports the statistics for connected and unconnected advisors, respectively. In Panel B, we include the chosen advisors and other potential advisors not chosen but active in the advisory market for each deal. Panel C reports the advisor statistics for deals with and without connected fund holdings, respectively. Other variables are summarized in Table 2. We conduct a t-test for differences in means between connected and unconnected advisors. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

	Mean	Median	SD	Min.	Max.	N	Mean	Median	SD	Min.	Max.	N	t-test
Panel A: Advisor level													
	Connected advisors						Unconnected advisors						
Number of deals advised	43.846	45.000	30.605	2.000	92.000	13	4.285	2.000	6.828	1.000	43.000	130	12.295***
Deal value advised (\$B)	390.920	359.496	306.410	21.156	905.914	13	19.031	1.577	46.874	0.011	255.149	130	12.784***
Panel B: Deal-advisor level													
	Deal-connected advisors pairs						Deal-unconnected advisors pairs						
Probability to be chosen	0.974	1.000	0.158	0.000	1.000	585	0.013	0.000	0.112	0.000	1.000	44095	205.566***
Acquisition times	12.381	12.000	5.641	0.000	29.000	585	3.502	1.000	4.486	0.000	29.000	44095	47.383***
Acquisition value (\$B)	100.606	84.874	89.141	0.000	445.000	585	25.074	2.317	54.035	0.000	445.000	44095	33.215***
Prior advisor	0.050	0.000	0.217	0.000	1.000	585	0.003	0.000	0.059	0.000	1.000	44095	17.394***
Expertise	0.318	0.000	0.466	0.000	1.000	585	0.130	0.000	0.336	0.000	1.000	44095	13.334***
Panel C: Deal level													
	Deals with connected advisors						Deals without connected advisors						
Number of advisors	1.840	1.000	1.319	1.000	11.000	412	0.777	1.000	0.596	0.000	4.000	498	16.102***
Number of connected HFs	5.340	4.000	5.305	1.000	38.000	412	0.000	0.000	0.000	0.000	0.000	498	22.465***
Number of unconnected HFs	20.743	18.000	13.718	0.000	89.000	412	10.100	7.000	9.176	1.000	70.000	498	13.948***

Table 4: Descriptive statistics of targets

This table compares the descriptive statistics of firm characteristics for actual and matched targets. Actual targets are the firms chosen by acquirers, and matched targets are other potential ones not chosen but active in the same year, same industry, and with similar size, book-to-market ratio, ROE, leverage, tangible assets, sales growth, and price-earnings ratio.  $Holding_{(un)connected_{t-1}}$  are the holdings of (un)connected hedge funds in a target firm one quarter before the acquisition announcement. t-test is the test statistics for the two-sample test for the mean difference. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

	Actual targets						Matched targets						t-test
	Mean	Median	SD	Min.	Max.	N	Mean	Median	SD	Min.	Max.	N	
Holding_connected <sub>t-1</sub>	0.009	0.000	0.020	0.000	0.189	879	0.005	0.000	0.017	0.000	0.288	4279	6.281***
Holding_unconnected <sub>t-1</sub>	0.114	0.093	0.089	0.000	0.621	879	0.054	0.007	0.085	0.000	1.154	4279	19.053***
Size	6.107	5.964	1.749	0.823	11.312	879	5.988	5.882	1.926	0.823	11.597	4279	1.685*
B/M	0.580	0.524	0.574	-6.032	5.113	879	0.598	0.524	0.700	-6.032	5.490	4279	-0.737
ROE	0.000	0.016	0.549	-5.152	6.897	879	-0.005	0.019	0.489	-5.152	6.897	4279	0.288
Leverage	0.385	0.365	0.307	-1.791	0.968	879	0.374	0.386	0.391	-3.301	0.968	4279	0.822
Tangible	0.851	0.948	0.192	0.127	1.000	879	0.851	0.954	0.198	0.096	1.000	4279	-0.096
Sales	0.070	0.024	0.534	-1.000	9.627	879	0.106	0.024	0.653	-1.000	9.627	4279	-1.535
P/E	29.682	31.735	113.797	-700.440	635.122	879	25.249	28.739	94.733	-700.440	635.122	4279	1.219



Table 5: Descriptive statistics of deal characteristics

This table reports the descriptive statistics of deal characteristics based on whether they have connected hedge fund holdings in the target firm. We define a fund as a connected fund if the advisory bank is the prime broker of a hedge fund.  $Holding\_connected_{t-1}$  ( $Holding\_unconnected_{t-1}$ ) represents the holdings of connected (unconnected) hedge funds in a target firm one quarter prior the acquisition announcement.  $Duration$  is the number of days between the deal announcement and the final deal outcome.  $Completion$  is a dummy variable that equals one if the deal is completed.  $Premium$  is the premium paid one week (four weeks) before the acquisition announcement.  $TCAR$  and  $ACAR$  are the cumulative abnormal returns on target and acquirer over an event window of  $[0]$ ,  $[-1,1]$ ,  $[-3,3]$ , and  $[-5,5]$ , respectively. Other variables are summarized in Table 2. We conduct a t-test for differences in means between deals with and without connected fund holdings. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

	Deals with connected fund holdings						Deals without connected fund holdings						t-test
	Mean	Median	SD	Min.	Max.	N	Mean	Median	SD	Min.	Max.	N	
Holdings_connected <sub>t-1</sub>	0.020	0.012	0.025	0.000	0.189	412	0.000	0.000	0.000	0.000	0.000	498	17.572***
Holdings_unconnected <sub>t-1</sub>	0.116	0.096	0.083	0.000	0.503	412	0.114	0.092	0.094	0.000	0.621	498	0.345
Holdings_acquirer <sub>t-1</sub>	0.106	0.083	0.092	0.000	0.672	412	0.096	0.080	0.088	0.000	0.581	498	1.749*
Duration	4.830	3.900	3.395	1.000	23.100	412	4.516	3.933	3.324	0.267	38.700	498	1.318
Completion	0.881	1.000	0.324	0.000	1.000	412	0.888	1.000	0.316	0.000	1.000	498	-0.304
Premium (one week)	0.375	0.303	0.373	-0.847	2.605	412	0.375	0.309	0.386	-0.507	3.222	498	-0.001
Premium (four weeks)	0.392	0.319	0.360	-0.864	2.313	412	0.411	0.311	0.441	-0.573	3.471	498	-0.676
TCAR	0.181	0.107	0.245	-0.200	1.748	412	0.196	0.102	0.302	-0.404	2.718	498	-0.789
TCAR[-1,1]	0.243	0.197	0.265	-0.210	2.308	412	0.273	0.200	0.328	-0.432	3.074	498	-1.489
TCAR[-3,3]	0.256	0.212	0.263	-0.255	2.300	412	0.282	0.214	0.328	-0.510	2.908	498	-1.296
TCAR[-5,5]	0.261	0.215	0.267	-0.338	2.245	412	0.288	0.213	0.335	-0.484	3.042	498	-1.348
ACAR	-0.013	-0.004	0.063	-0.325	0.276	412	-0.005	-0.004	0.045	-0.271	0.307	498	-2.117**
ACAR[-1,1]	-0.012	-0.009	0.075	-0.333	0.272	412	-0.009	-0.008	0.060	-0.342	0.286	498	-0.576
ACAR[-3,3]	-0.012	-0.009	0.080	-0.324	0.309	412	-0.009	-0.011	0.063	-0.383	0.294	498	-0.737
ACAR[-5,5]	-0.015	-0.011	0.087	-0.355	0.302	412	-0.010	-0.010	0.071	-0.393	0.367	498	-1.040
ROA <sub>t</sub>	-0.004	0.007	0.056	-0.743	0.086	412	-0.018	0.002	0.069	-0.743	0.086	498	3.214***
Leverage <sub>t</sub>	0.415	0.416	0.293	-1.278	0.987	412	0.364	0.314	0.320	-1.278	0.999	498	2.497**
B/M <sub>t</sub>	0.450	0.426	0.861	-10.145	5.113	412	0.679	0.638	0.503	-1.332	3.488	498	-4.999***
Tangible <sub>t</sub>	0.805	0.880	0.210	0.190	1.000	412	0.889	0.975	0.169	0.249	1.000	498	-6.730***
Size <sub>a</sub>	8.882	8.686	1.710	3.082	12.740	412	7.683	7.360	2.055	2.823	12.483	498	9.446***
B/M <sub>a</sub>	0.419	0.357	0.309	-0.610	1.707	412	0.532	0.495	0.326	-0.236	2.010	498	-5.309***
RELSIZE	0.735	0.266	3.109	0.000	37.120	412	0.430	0.148	1.804	0.000	37.120	498	1.847*
Valpct	0.623	0.317	1.382	0.001	15.294	412	0.353	0.154	0.837	0.001	15.294	498	3.633***
Holding_MF	0.506	0.446	0.771	0.000	9.991	412	0.271	0.099	0.549	0.000	9.991	498	5.361***
Pctcash	0.622	0.733	0.400	0.000	1.000	412	0.530	0.500	0.440	0.000	1.000	498	3.285***
Hostile	0.022	0.000	0.146	0.000	1.000	412	0.010	0.000	0.100	0.000	1.000	498	1.440
Diff_Ind	0.396	0.000	0.490	0.000	1.000	412	0.390	0.000	0.488	0.000	1.000	498	0.187
Merger of equals	0.027	0.000	0.161	0.000	1.000	412	0.012	0.000	0.109	0.000	1.000	498	1.625
Tender	0.192	0.000	0.394	0.000	1.000	412	0.165	0.000	0.371	0.000	1.000	498	1.065
Deal value (\$B)	6.140	1.960	12.493	0.012	79.406	412	0.815	0.247	2.303	0.008	35.274	498	9.323***
Termination fee (\$B)	0.108	0.000	0.365	0.000	3.500	412	0.014	0.000	0.161	0.000	3.500	498	5.166***
IA	1.684	1.000	1.548	0.000	5.000	412	3.263	4.000	1.543	0.000	5.000	498	-15.342***
Number of bidders	1.073	1.000	0.287	1.000	3.000	412	1.062	1.000	0.294	1.000	4.000	498	0.545

Table 6: Choice of the advisor

This table reports the results from Equation (1), examining the acquirer's choice of advisors in M&A. Columns (1), (3) and (2), (4) use sub-samples of targets with information asymmetry above or below the median separately. The dependent variable is a dummy variable that equals one if an advisor is hired by the acquirer for the operation and zero otherwise. *Connected* is a dummy variable that equals one if an advisor is the prime broker of a hedge fund with holdings in the target firm and zero otherwise. *Holding\_connected<sub>t-1</sub>* is the percentage holdings of an advisor's connected hedge funds in the target firm one quarter before the acquisition announcement. *Abnormal\_fees* is the abnormal fees paid by the acquirer. *IA* represents the target firm's information asymmetry measure based on five variables (*Amihud*, *SPREAD*, *Size*, *COVER*, *ERR*). Other variables are defined in Table 2. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Sample=	(1) IA_high	(2) IA_low	(3) IA_high	(4) IA_low
Connected ( $\beta_1$ )	4.543*** (0.394)	4.179*** (0.145)	3.877*** (0.555)	4.169*** (0.255)
Holding_connected <sub>t-1</sub> ( $\beta_2$ )	12.108*** (4.400)	2.738 (6.104)	43.812*** (13.546)	5.409 (11.175)
Abnormal_fees			-0.027 (0.065)	-0.016 (0.064)
Connected $\times$ Abnormal_fees ( $\beta_1^*$ )			-1.391*** (0.482)	-0.094 (0.568)
Holding_connected <sub>t-1</sub> $\times$ Abnormal_fees ( $\beta_2^*$ )			80.671*** (30.337)	13.331 (42.641)
Acquisition times	0.018** (0.008)	-0.011* (0.006)	0.017** (0.008)	-0.011* (0.006)
Acquisition value	-0.026 (0.016)	0.085*** (0.015)	-0.027 (0.017)	0.083*** (0.015)
Prior advisor	0.678** (0.288)	1.276*** (0.152)	0.686** (0.289)	1.282*** (0.151)
Expertise	0.719*** (0.078)	0.472*** (0.063)	0.723*** (0.078)	0.479*** (0.063)
IMR_holding	0.002 (0.002)	0.000 (0.002)	0.002 (0.002)	0.000 (0.002)
IMR_bigbank	-0.003** (0.001)	-0.000 (0.001)	-0.003** (0.001)	-0.000 (0.001)
Constant	-2.403*** (0.427)	-3.387*** (0.369)	-2.383*** (0.513)	-3.814*** (0.695)
R-squared	0.364	0.598	0.368	0.598
Number of deals	324	540	316	532
Observations	16,089	26,762	15,626	26,375
Industry, Year FE	Yes	Yes	Yes	Yes

Table 7: Choice of the target

This table reports the results from Equation (2), examining the acquirer's choice of targets in M&A. Columns (1), (3) and (2), (4) use sub-samples of targets with information asymmetry above or below the median separately. The dependent variable is a dummy variable that equals one if a firm is chosen to be the target and zero otherwise. *Connected* is a dummy variable that equals one if a firm is held by hedge funds whose prime broker is the advisor and zero otherwise. *Holding\_connected<sub>t-1</sub>* is the percentage holdings of an advisor's connected hedge funds in the firm one quarter before the acquisition announcement. *Abnormal\_fees* is the abnormal fees paid by the acquirer. *IA* represents the target firm's information asymmetry measure based on five variables (*Amihud*, *SPREAD*, *Size*, *COVER*, *ERR*). Other variables are defined in Table 2. Standard errors are clustered at the firm level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Sample=	(1) IA_high	(2) IA_low	(3) IA_high	(4) IA_low
Connected ( $\beta_1$ )	0.985*** (0.154)	1.195*** (0.087)	1.367*** (0.343)	1.260*** (0.143)
Holding_connected <sub>t-1</sub> ( $\beta_2$ )	2.763 (2.895)	0.200 (1.508)	-8.815 (5.692)	-4.125 (2.887)
Abnormal_fees			0.041 (0.119)	-0.013 (0.138)
Connected $\times$ Abnormal_fees ( $\beta_1^*$ )			0.383 (0.310)	0.110 (0.220)
Holding_connected <sub>t-1</sub> $\times$ Abnormal_fees ( $\beta_2^*$ )			-14.661** (6.498)	-7.554 (4.924)
Size	-0.109*** (0.035)	0.042* (0.024)	-0.119*** (0.036)	0.032 (0.024)
B/M	0.021 (0.041)	-0.146** (0.067)	0.024 (0.041)	-0.154** (0.068)
ROE	0.077 (0.060)	-0.021 (0.070)	0.073 (0.062)	-0.016 (0.067)
Leverage	0.150 (0.092)	0.016 (0.116)	0.117 (0.092)	0.036 (0.118)
Tangible	0.103 (0.273)	-0.177 (0.190)	0.115 (0.273)	-0.156 (0.192)
Sales	-0.060 (0.054)	-0.180 (0.137)	-0.056 (0.055)	-0.174 (0.135)
P/E	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
IMR_holding	-0.001 (0.004)	0.000 (0.003)	-0.001 (0.005)	0.000 (0.003)
IMR_bigbank	-0.002 (0.002)	0.005** (0.002)	-0.001 (0.002)	0.005** (0.002)
Constant	0.009 (0.751)	-1.105 (0.695)	-0.054 (0.676)	-1.000 (0.748)
R-squared	0.042	0.088	0.042	0.088
Observations	1,884	3,064	1,806	3,004
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes

Table 8: Changes in hedge fund holdings before the deal announcement

This table reports the results from Equation (3) for the changes in the average connected (unconnected) hedge fund holdings in target one quarter before the deal announcement ( $\Delta \overline{Holding\_connected}_{t-1}$  and  $\Delta \overline{Holding\_unconnected}_{t-1}$ ). Columns (1), (3), (5), (7) and (2), (4), (6), (8) use sub-samples of targets with information asymmetry above or below the median separately.  $Holding\_connected_{t-1}$  ( $Holding\_total_{t-1}$ ) are the total holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement.  $Abnormal\_fees$  is the abnormal fees paid by the acquirer.  $IA$  represents the target firm's information asymmetry measure based on five variables ( $Amihud$ ,  $SPREAD$ ,  $Size$ ,  $COVER$ ,  $ERR$ ). Other variables are defined in Table 2. Standard errors are clustered at the fund level and reported in parenthesis. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Sample=	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)	
	$\Delta \overline{Holding\_connected}_{t-1}$	IA_high	IA_low	$\Delta \overline{Holding\_unconnected}_{t-1}$	IA_high	IA_low	$\Delta \overline{Holding\_connected}_{t-1}$	IA_high	IA_low	$\Delta \overline{Holding\_connected}_{t-1}$	IA_high	IA_low	$\Delta \overline{Holding\_unconnected}_{t-1}$	IA_high	IA_low	
Holding_connected <sub>t-1</sub> ( $\beta$ )	1.774	0.366	0.366	-2.420	1.589	1.589	-19.105	-0.348	-0.348	-0.515	3.352*	3.352*	3.352*	3.352*	3.352*	
Holding_total <sub>t-1</sub>	(5.620)	(1.206)	(1.206)	(3.435)	(1.057)	(1.057)	(12.589)	(1.806)	(1.806)	(9.399)	(2.017)	(2.017)	(2.017)	(2.017)	(2.017)	
Abnormal_fees	0.426	-0.077	-0.077	2.017	-0.157	-0.157	0.483	0.032	0.032	3.114	-1.119	-1.119	0.008	-0.042	-0.042	
	(0.333)	(0.139)	(0.139)	(1.329)	(0.364)	(0.364)	(0.494)	(0.269)	(0.269)	(2.007)	(0.693)	(0.693)	(0.045)	(0.061)	(0.061)	
Holding_connected <sub>t-1</sub> × Abnormal_fees( $\beta^*$ )							-21.809**	-0.574	-0.574	1.607	2.268	2.268				
Holding_total <sub>t-1</sub> × Abnormal_fees							(9.995)	(2.450)	(2.450)	(7.292)	(2.171)	(2.171)				
							0.325	0.212	0.212	1.200	-1.483**	-1.483**				
							(0.393)	(0.377)	(0.377)	(1.998)	(0.699)	(0.699)				
$\Delta \overline{Holding\_connected}_{t-2}$	0.034	-0.099	-0.099				-0.016	-0.093	-0.093							
	(0.076)	(0.099)	(0.099)				(0.068)	(0.098)	(0.098)							
$\Delta \overline{Holding\_unconnected}_{t-2}$				-0.366***	-0.218	-0.218							-0.408***	-0.108	-0.108	
				(0.118)	(0.169)	(0.169)							(0.114)	(0.182)	(0.182)	
Holding_acquirer <sub>t-1</sub>	-0.003	-0.002	-0.002	-0.004	-0.001	-0.001	-0.004	-0.001	-0.001	-0.005	-0.000	-0.000	-0.005	-0.000	-0.000	
	(0.005)	(0.002)	(0.002)	(0.006)	(0.002)	(0.002)	(0.004)	(0.002)	(0.002)	(0.010)	(0.002)	(0.002)	(0.010)	(0.002)	(0.002)	
ROA_t	-0.364	0.139	0.139	-1.139	-0.491*	-0.491*	-0.401	0.184	0.184	-1.204	-0.443	-0.443	-0.401	0.184	0.184	
	(0.460)	(0.350)	(0.350)	(0.819)	(0.264)	(0.264)	(0.415)	(0.431)	(0.431)	(0.741)	(0.275)	(0.275)	(0.415)	(0.431)	(0.431)	
Leverage_t	-0.074	0.058	0.058	-0.053	0.079	0.079	-0.114	0.055	0.055	0.017	0.099	0.099	-0.114	0.055	0.055	
	(0.094)	(0.053)	(0.053)	(0.243)	(0.107)	(0.107)	(0.103)	(0.056)	(0.056)	(0.230)	(0.104)	(0.104)	(0.103)	(0.056)	(0.056)	
B/M_t	0.087	-0.053***	-0.053***	-0.108	-0.023	-0.023	0.067	-0.049***	-0.049***	-0.095	-0.028*	-0.028*	0.067	-0.049***	-0.049***	
	(0.055)	(0.018)	(0.018)	(0.125)	(0.016)	(0.016)	(0.048)	(0.019)	(0.019)	(0.134)	(0.015)	(0.015)	(0.048)	(0.019)	(0.019)	
Size_a	-0.019	-0.009	-0.009	-0.131***	0.014	0.014	-0.031	-0.006	-0.006	-0.098*	0.013	0.013	-0.031	-0.006	-0.006	
	(0.028)	(0.010)	(0.010)	(0.046)	(0.016)	(0.016)	(0.025)	(0.010)	(0.010)	(0.053)	(0.018)	(0.018)	(0.025)	(0.010)	(0.010)	
B/M_a	-0.067	-0.014	-0.014	-0.531*	0.005	0.005	0.007	0.003	0.003	-0.600*	-0.074	-0.074	0.007	0.003	0.003	
	(0.134)	(0.063)	(0.063)	(0.289)	(0.100)	(0.100)	(0.149)	(0.063)	(0.063)	(0.314)	(0.100)	(0.100)	(0.149)	(0.063)	(0.063)	
Tangible_t	-0.458*	0.121	0.121	-0.148	0.064	0.064	-0.538**	0.122	0.122	-0.331	0.080	0.080	-0.538**	0.122	0.122	
	(0.249)	(0.079)	(0.079)	(0.415)	(0.090)	(0.090)	(0.251)	(0.082)	(0.082)	(0.446)	(0.085)	(0.085)	(0.251)	(0.082)	(0.082)	
RELSIZE	-0.063**	0.014**	0.014**	-0.014	-0.001	-0.001	-0.068**	0.014**	0.014**	-0.008	-0.002	-0.002	-0.068**	0.014**	0.014**	
	(0.024)	(0.007)	(0.007)	(0.016)	(0.009)	(0.009)	(0.027)	(0.007)	(0.007)	(0.014)	(0.009)	(0.009)	(0.027)	(0.007)	(0.007)	
Valpet	0.132**	-0.029*	-0.029*	-0.158***	-0.004	-0.004	-0.099	-0.027*	-0.027*	-0.020	-0.005	-0.005	-0.099	-0.027*	-0.027*	
	(0.060)	(0.016)	(0.016)	(0.053)	(0.018)	(0.018)	(0.117)	(0.016)	(0.016)	(0.194)	(0.018)	(0.018)	(0.117)	(0.016)	(0.016)	
Holding_MF	0.036*	-0.011	-0.011	0.131*	0.020	0.020	0.031	-0.011	-0.011	0.131*	0.015	0.015	0.031	-0.011	-0.011	
	(0.022)	(0.010)	(0.010)	(0.069)	(0.014)	(0.014)	(0.025)	(0.010)	(0.010)	(0.068)	(0.013)	(0.013)	(0.025)	(0.010)	(0.010)	
Petcash	-0.055	0.113***	0.113***	-0.052	-0.017	-0.017	-0.086	0.095**	0.095**	-0.117	0.006	0.006	-0.086	0.095**	0.095**	
	(0.078)	(0.039)	(0.039)	(0.122)	(0.055)	(0.055)	(0.078)	(0.041)	(0.041)	(0.143)	(0.054)	(0.054)	(0.078)	(0.041)	(0.041)	
Hostile	-0.022	0.205**	0.205**	-0.186	0.208	0.208	0.111	0.271**	0.271**	-0.140	-0.073	-0.073	0.111	0.271**	0.271**	
	(0.152)	(0.094)	(0.094)	(0.645)	(0.170)	(0.170)	(0.154)	(0.118)	(0.118)	(0.749)	(0.094)	(0.094)	(0.154)	(0.118)	(0.118)	
Diff_Ind	-0.055	0.067*	0.067*	0.270***	0.026	0.026	-0.050	0.063*	0.063*	0.278**	0.019	0.019	-0.050	0.063*	0.063*	
	(0.049)	(0.037)	(0.037)	(0.095)	(0.050)	(0.050)	(0.037)	(0.037)	(0.037)	(0.109)	(0.052)	(0.052)	(0.037)	(0.037)	(0.037)	
Merger of equals	0.283	0.036	0.036	0.825*	-0.027	-0.027	0.758	0.032	0.032	0.569	0.012	0.012	0.758	0.032	0.032	
	(0.279)	(0.061)	(0.061)	(0.449)	(0.066)	(0.066)	(0.570)	(0.062)	(0.062)	(0.510)	(0.064)	(0.064)	(0.570)	(0.062)	(0.062)	
Tender	0.114	0.020	0.020	0.189	-0.065	-0.065	0.049	0.025	0.025	0.168	-0.069	-0.069	0.049	0.025	0.025	
	(0.120)	(0.032)	(0.032)	(0.125)	(0.063)	(0.063)	(0.109)	(0.032)	(0.032)	(0.145)	(0.064)	(0.064)	(0.109)	(0.032)	(0.032)	
Number of bidders	0.070	-0.025	-0.025	-0.688	0.159**	0.159**	0.008	-0.020	-0.020	-0.587	0.091	0.091	0.008	-0.020	-0.020	
	(0.085)	(0.042)	(0.042)	(0.573)	(0.066)	(0.066)	(0.099)	(0.043)	(0.043)	(0.580)	(0.060)	(0.060)	(0.099)	(0.043)	(0.043)	
IMR_holding	-0.003	0.001	0.001	0.000	0.000	0.000	-0.002	0.001	0.001	-0.000	0.000	0.000	-0.002	0.001	0.001	
	(0.002)	(0.001)	(0.001)	(0.003)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.003)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	
IMR_bigbank	0.001	-0.000	-0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.002	0.001	0.001	0.000	0.000	0.000	
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	
Constant	0.529	-0.136	-0.136	4.390***	0.037	0.037	1.080*	0.166	0.166	2.045*	-0.582*	-0.582*	1.080*	0.166	0.166	
	(0.501)	(0.187)	(0.187)	(1.442)	(0.611)	(0.611)	(0.559)	(0.249)	(0.249)	(1.154)	(0.317)	(0.317)	(0.559)	(0.249)	(0.249)	
R-squared	0.416	0.214	0.214	0.685	0.256	0.256	0.537	0.202	0.202	0.704	0.192	0.192	0.537	0.202	0.202	
Number of deals	329	547	547	329	547	547	316	535	535	316	535	535	316	535	535	
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	

Table 9: Deal duration and completion

This table reports the results from Equation (4) for the impact of connected fund holdings on deal duration and completion. Columns (1), (3), (5), (7) and (2), (4), (6), (8) use sub-samples of targets with information asymmetry above or below the median separately. *Duration* is the number of months between the deal announcement and the deal outcome. *Completion* is a dummy variable that equals one if the deal is completed. *Holding\_connected<sub>t-1</sub>* (*Holding\_total<sub>t-1</sub>*) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement. *Abnormal\_fees* is the abnormal fees paid by the acquirer. *IA* represents the target firm's information asymmetry measure based on five variables (*Amihud*, *SPREAD*, *Size*, *COVER*, *ERR*). Other variables are defined in Table 2. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Sample=	(1) Duration		(3) Completion		(5) Duration		(7) Completion	
	IA_high	IA_low	IA_high	IA_low	IA_high	IA_low	IA_high	IA_low
Holding_connected <sub>t-1</sub> ( $\beta$ )	-12.318*	4.784	21.216**	17.419**	7.806	-3.129	136.730*	29.212**
	(6.907)	(9.075)	(9.320)	(6.971)	(17.073)	(13.020)	(72.201)	(13.186)
Holding_total <sub>t-1</sub>	0.791	-1.486	5.158	-0.576	0.572	-3.220	13.725	4.174*
	(2.034)	(1.717)	(3.183)	(1.195)	(5.257)	(3.997)	(13.021)	(2.457)
Abnormal_fees					0.427	0.695	1.852***	-0.914*
					(0.484)	(1.119)	(0.696)	(0.531)
Holding_connect <sub>t-1</sub> $\times$ <i>Abnormal_fees</i> ( $\beta^*$ )					18.586	-12.385	79.688*	18.364
					(14.383)	(20.048)	(46.013)	(12.796)
Holding_total <sub>t-1</sub> $\times$ <i>Abnormal_fees</i>					-0.388	-2.904	2.645	6.356**
					(3.845)	(5.237)	(9.455)	(2.870)
Holding_acquirer <sub>t-1</sub>	-3.751	2.986	0.998	-3.255***	-4.037	3.466*	1.373	-3.713***
	(2.353)	(2.106)	(1.715)	(1.087)	(2.816)	(2.075)	(2.767)	(1.115)
Deal value	0.136	0.045***	4.281	-0.004	0.104	0.044***	5.180	-0.004
	(0.263)	(0.016)	(5.413)	(0.010)	(0.333)	(0.016)	(5.164)	(0.011)
Termination fee	10.262	0.733	-3.993	-0.553*	10.107	0.752	-15.129	-0.558*
	(22.498)	(0.591)	(28.238)	(0.310)	(23.033)	(0.597)	(60.746)	(0.321)
RELSIZE	0.049**	-0.066	0.549	-0.019	0.032	-0.072*	0.843***	-0.007
	(0.023)	(0.041)	(0.448)	(0.033)	(0.027)	(0.043)	(0.270)	(0.031)
Petcash	-1.832*	0.106	0.902	0.021	-2.036*	0.107	-0.087	-0.081
	(0.938)	(0.539)	(0.602)	(0.283)	(1.035)	(0.536)	(0.910)	(0.302)
Hostile	-	10.315***	-	-	-	-	-	-
		(1.943)						
Diff_Ind	-0.505	-0.462	-0.234	0.032	-0.472	-0.516	-0.622	0.021
	(0.375)	(0.361)	(0.453)	(0.206)	(0.425)	(0.362)	(0.451)	(0.215)
Merger of equals	4.829	1.485	-	-0.289	4.176	1.545	-	-0.406
	(3.216)	(1.701)		(0.631)	(3.098)	(1.608)		(0.652)
Tender	-1.327***	-2.186***	-0.488	1.014***	-1.185**	-2.221***	-0.764	0.949***
	(0.442)	(0.424)	(0.535)	(0.319)	(0.510)	(0.419)	(0.585)	(0.335)
Number of bidders	-0.145	1.028	-	-1.698***	0.425	1.077	-	-1.914***
	(2.703)	(1.100)		(0.389)	(2.579)	(1.084)		(0.426)
IMR_holding	-0.011	0.001	-0.020	0.001	-0.010	0.002	-0.032*	0.000
	(0.012)	(0.015)	(0.017)	(0.008)	(0.014)	(0.015)	(0.018)	(0.009)
IMR_bigbank	0.006	-0.017**	-0.007	0.007	0.010	-0.016*	-0.003	0.010
	(0.006)	(0.008)	(0.023)	(0.006)	(0.008)	(0.009)	(0.026)	(0.007)
Constant	5.733	2.110	-0.343	1.779	4.646	1.482	5.152	3.211**
	(3.778)	(2.344)	(5.533)	(1.300)	(3.784)	(3.433)	(4.011)	(1.368)
R-squared	0.602	0.427	0.314	0.341	0.604	0.422	0.481	0.363
Number of deals	298	480	119	370	286	473	115	366
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 10: Target premium and abnormal returns

This table reports the results from Equation (4) for the impact of connected fund holdings on target premium and abnormal returns. Columns (1), (3), (5), (7), (9), (11) and (2), (4), (6), (8), (10), (12) use sub-samples of targets with information asymmetry above or below the median separately. *Premium* is the premium paid one week before the announcement. *TCAR* and *ACAR* are the target and acquirer abnormal returns on the acquisition announcement date. *Holding\_connected<sub>t-1</sub>* (*Holding\_total<sub>t-1</sub>*) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement. *Abnormal\_fees* is the abnormal fees paid by the acquirer. *IA* represents the target firm's information asymmetry measure based on five variables (*Amihud*, *SPREAD*, *Size*, *COVER*, *ERR*). Other variables are defined in Table 2. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Sample=	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Premium IA_high	(one week) IA_low	TCAR IA_high	TCAR IA_low	ACAR IA_high	ACAR IA_low	Premium IA_high	(one week) IA_low	TCAR IA_high	TCAR IA_low	ACAR IA_high	ACAR IA_low
Holding_connected <sub>t-1</sub> ( $\beta$ )	-0.373 (2.865)	-0.653 (0.754)	-2.050 (1.705)	-0.308 (0.633)	1.402*** (0.321)	-0.088 (0.165)	2.131 (5.041)	-0.100 (1.490)	1.523 (4.724)	0.161 (1.113)	1.545** (0.600)	-0.331 (0.320)
Holding_total <sub>t-1</sub>	-0.624** (0.284)	-0.160 (0.275)	-0.513** (0.254)	-0.042 (0.282)	-0.022 (0.027)	0.049 (0.038)	-1.292 (1.515)	-0.112 (0.392)	-0.777 (0.546)	-0.124 (0.316)	0.040 (0.055)	0.032 (0.077)
Abnormal_fees							0.043 (0.194)	-0.093 (0.099)	-0.029 (0.123)	-0.021 (0.056)	-0.002 (0.009)	0.018 (0.018)
Holding_connected <sub>t-1</sub> × <i>Abnormal_fees</i> ( $\beta^*$ )							2.753 (5.611)	0.954 (2.098)	3.837 (5.584)	0.820 (1.397)	0.092 (0.819)	-0.426 (0.413)
Holding_total <sub>t-1</sub> × <i>Abnormal_fees</i>							-0.561 (1.269)	0.157 (0.497)	-0.269 (0.470)	-0.115 (0.255)	0.055 (0.038)	-0.001 (0.094)
Holding_acquirer <sub>t-1</sub>	-0.109 (0.544)	-0.046 (0.294)	-0.091 (0.508)	0.133 (0.149)	-0.034 (0.034)	0.014 (0.073)	-0.126 (0.591)	-0.074 (0.308)	-0.158 (0.483)	0.116 (0.160)	-0.014 (0.032)	0.021 (0.074)
ROA_t	-1.003 (0.988)	0.037 (0.432)	-0.594 (0.509)	-0.363 (0.259)	0.053 (0.043)	-0.011 (0.044)	-1.080 (1.095)	0.031 (0.494)	-0.516 (0.522)	-0.516 (0.319)	0.092** (0.040)	-0.016 (0.047)
Leverage_t	-0.081 (0.190)	-0.041 (0.116)	-0.022 (0.104)	-0.022 (0.075)	0.004 (0.017)	-0.002 (0.011)	-0.075 (0.202)	-0.050 (0.121)	-0.003 (0.115)	-0.032 (0.081)	-0.003 (0.019)	-0.004 (0.012)
B/M_t	-0.014 (0.101)	0.007 (0.029)	-0.029 (0.051)	0.026 (0.016)	-0.005 (0.012)	-0.005 (0.004)	-0.004 (0.112)	-0.002 (0.029)	-0.038 (0.055)	0.021 (0.015)	-0.002 (0.011)	-0.006 (0.004)
Size_a	0.075* (0.044)	0.028 (0.020)	0.065* (0.036)	0.036 (0.023)	-0.001 (0.003)	0.008** (0.003)	0.084** (0.039)	0.024 (0.021)	0.080* (0.041)	0.039 (0.024)	0.001 (0.003)	0.009** (0.004)
B/M_a	0.154 (0.153)	-0.075 (0.083)	0.177 (0.131)	-0.004 (0.060)	-0.004 (0.017)	0.002 (0.020)	0.181 (0.170)	-0.055 (0.085)	0.207 (0.151)	0.032 (0.060)	-0.017 (0.013)	0.013 (0.020)
Tangible_t	0.071 (0.213)	0.058 (0.168)	0.200 (0.192)	0.109* (0.060)	-0.020 (0.025)	0.020 (0.019)	0.015 (0.212)	0.069 (0.177)	0.171 (0.187)	0.107 (0.065)	-0.016 (0.022)	0.018 (0.020)
RELSIZE	0.004 (0.008)	-0.021 (0.020)	-0.001 (0.009)	-0.008 (0.013)	0.000 (0.001)	-0.004 (0.003)	0.004 (0.009)	-0.021 (0.020)	-0.000 (0.009)	-0.009 (0.014)	0.000 (0.001)	-0.005 (0.003)
Valpct	-0.109 (0.155)	-0.000 (0.038)	-0.161 (0.157)	-0.000 (0.027)	0.000 (0.011)	0.014** (0.007)	-0.100 (0.165)	0.001 (0.040)	-0.122 (0.153)	0.008 (0.028)	0.008 (0.012)	0.016** (0.008)
Holding_MF	-0.019 (0.032)	-0.009 (0.016)	-0.050 (0.033)	-0.022 (0.019)	-0.006* (0.003)	0.003 (0.003)	-0.016 (0.031)	-0.012 (0.017)	-0.045 (0.032)	-0.022 (0.019)	-0.006* (0.003)	0.002 (0.003)
Pctcash	0.012 (0.106)	0.067 (0.072)	-0.059 (0.098)	0.042 (0.049)	-0.011 (0.016)	0.017 (0.012)	0.017 (0.135)	0.083 (0.076)	-0.047 (0.104)	0.045 (0.056)	-0.010 (0.018)	0.012 (0.013)
Hostile	0.168 (0.312)	0.085 (0.176)	-0.412** (0.205)	-0.040 (0.096)	0.070** (0.033)	-0.051* (0.030)	0.097 (0.311)	0.004 (0.145)	-0.516** (0.210)	-0.096 (0.077)	0.074** (0.037)	-0.058* (0.031)
Diffind	-0.032 (0.064)	0.005 (0.040)	-0.046 (0.061)	0.020 (0.027)	-0.007 (0.007)	-0.009 (0.008)	-0.041 (0.066)	0.012 (0.041)	-0.055 (0.065)	0.026 (0.029)	-0.006 (0.007)	-0.006 (0.009)
Merger of equals	0.067 (0.383)	-0.251** (0.110)	0.007 (0.265)	-0.159** (0.071)	0.068*** (0.025)	-0.007 (0.044)	0.081 (0.363)	-0.253** (0.113)	0.057 (0.260)	-0.172** (0.072)	0.056** (0.024)	-0.013 (0.044)
Tender	0.002 (0.098)	0.161** (0.080)	-0.069 (0.078)	0.108** (0.049)	0.002 (0.007)	0.004 (0.012)	-0.021 (0.107)	0.166** (0.083)	-0.099 (0.074)	0.106** (0.051)	0.005 (0.007)	0.006 (0.012)
Number of bidders	-0.056 (0.207)	0.099 (0.080)	0.004 (0.171)	-0.089* (0.050)	0.014 (0.009)	-0.014 (0.013)	-0.045 (0.230)	0.080 (0.083)	0.002 (0.179)	-0.082 (0.053)	0.019** (0.009)	-0.010 (0.014)
IMR_holding	0.006 (0.004)	0.003** (0.001)	0.005 (0.004)	0.002 (0.001)	-0.000 (0.000)	0.000 (0.000)	0.005 (0.004)	0.003** (0.001)	0.005 (0.004)	0.002 (0.001)	-0.000 (0.000)	0.000 (0.000)
IMR_bigbank	0.001 (0.002)	0.000 (0.001)	0.001 (0.002)	0.000 (0.001)	0.000 (0.000)	0.000 (0.000)	0.001 (0.003)	-0.001 (0.002)	0.001 (0.002)	0.000 (0.001)	0.000 (0.000)	0.000* (0.000)
Constant	-1.242 (0.832)	-0.370 (0.528)	-1.247** (0.601)	-0.364 (0.437)	0.082 (0.087)	-0.156** (0.064)	-0.954 (0.821)	-0.233 (0.519)	-0.752 (0.579)	-0.167 (0.417)	0.054 (0.109)	-0.207** (0.086)
R-squared	0.578	0.494	0.572	0.457	0.693	0.616	0.583	0.497	0.583	0.465	0.674	0.617
Number of deals	329	547	317	510	317	505	316	535	305	498	305	493
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 11: Target premium: hedge funds' information sharing incentives

This table reports the results from Equation (4) for the impact of connected fund holdings on target premium, considering hedge funds' information sharing incentives. We report the results using sub-samples of targets with information asymmetry above the median. The dependent variable is the premium paid one week before the announcement.  $Holding\_connected_{t-1}$  ( $Holding\_total_{t-1}$ ) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement. We further include holdings by hedge funds for which the target accounts for a low share in a hedge fund portfolio, hedge funds have low investments in the target industry, hedge funds have held the target for a short period, a hedge fund has a single prime broker, the prime broker services 70% of the assets of a hedge fund, a hedge fund performs poorly, and a hedge fund with low inflows. Other variables are defined in Table 2. We use all the other controls as in Table 10, which are not reported for the sake of space. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Measure=	(1) Use low share	(2) Use low SIC	(3) Use short period	(4) Use single PB	(5) Use dominant PB	(6) Use low return	(7) Use low flow
Holding_connected $_{t-1}(\beta)$	2.242 (2.721)	1.730 (2.531)	0.565 (2.172)	0.969 (3.178)	0.486 (4.742)	0.819 (2.785)	-0.267 (3.601)
Holding_connected_lowshare $_{t-1}(\beta^*)$	-14.868** (7.190)						
Holding_connected_lowsic $_{t-1}(\beta^*)$		-11.912** (5.230)					
Holding_connected_shortperiod $_{t-1}(\beta^*)$			-60.848*** (15.892)				
Holding_connected_singlePB $_{t-1}(\beta^*)$				-2.671 (3.763)			
Holding_connected_dominant70 $_{t-1}(\beta^*)$					-0.003 (6.020)		
Holding_connected_lowret $_{t-1}(\beta^*)$						-4.816 (5.227)	
Holding_connected_lowflow $_{t-1}(\beta^*)$							2.046 (5.758)
Holding_total $_{t-1}$	-0.518** (0.237)	-0.440* (0.232)	-0.313 (0.258)	-0.462 (0.280)	-0.246 (0.355)	-0.371 (0.281)	-0.238 (0.251)
Holding_total_lowshare $_{t-1}$	1.787* (1.062)						
Holding_total_lowsic $_{t-1}$		0.411 (0.623)					
Holding_total_shortperiod $_{t-1}$			-1.124 (1.908)				
Holding_total_singlePB $_{t-1}$				0.482 (0.606)			
Holding_total_dominant70 $_{t-1}$					-0.423 (0.741)		
Holding_total_lowret $_{t-1}$						0.725 (1.356)	
Holding_total_lowflow $_{t-1}$							-1.286 (0.793)
Holding_acquirer $_{t-1}$	0.284 (0.402)	0.334 (0.417)	0.176 (0.384)	0.255 (0.404)	0.259 (0.394)	0.263 (0.376)	0.289 (0.393)
IMR_holding	0.004 (0.003)	0.004 (0.003)	0.003 (0.003)	0.004 (0.003)	0.003 (0.003)	0.003 (0.003)	0.003 (0.003)
IMR_bigbank	0.001 (0.001)	0.001 (0.001)	0.001 (0.002)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Constant	-1.564*** (0.437)	-1.413*** (0.449)	-1.353*** (0.477)	-1.338*** (0.456)	-1.350*** (0.429)	-1.337*** (0.462)	-1.377*** (0.436)
R-squared	0.433	0.424	0.427	0.410	0.409	0.411	0.411
Number of deals	329	329	329	329	329	329	329
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 12: Target abnormal returns: hedge funds' information sharing incentives

This table reports the results from Equation (4) for the impact of connected fund holdings on target abnormal returns, considering hedge funds' information sharing incentives. We report the results using sub-samples of targets with information asymmetry above the median. The dependent variable is the target abnormal returns on the acquisition announcement date.  $Holding\_connected_{t-1}$  ( $Holding\_total_{t-1}$ ) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement. We further include holdings by hedge funds for which the target accounts for a low share in a hedge fund portfolio, hedge funds have low investments in the target industry, hedge funds have held the target for a short period, a hedge fund has a single prime broker, the prime broker services 70% of the assets of a hedge fund, a hedge fund performs poorly, and a hedge fund with low inflows. Other variables are defined in Table 2. We use all the other controls as in Table 10, which are not reported for the sake of space. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Measure=	(1) Use low share	(2) Use low SIC	(3) Use short period	(4) Use single PB	(5) Use dominant PB	(6) Use low return	(7) Use low flow
Holding_connected $_{t-1}(\beta)$	-1.105 (1.125)	-1.727* (0.984)	-1.690* (0.912)	-2.209 (1.512)	-1.685 (3.474)	-1.081 (0.922)	-3.119* (1.687)
Holding_connected_lowshare $_{t-1}(\beta^*)$	-4.762 (3.521)						
Holding_connected_lowsic $_{t-1}(\beta^*)$		-0.988 (2.919)					
Holding_connected_shortperiod $_{t-1}(\beta^*)$			-27.343** (13.372)				
Holding_connected_singlePB $_{t-1}(\beta^*)$				1.264 (2.115)			
Holding_connected_dominant70 $_{t-1}(\beta^*)$					0.139 (3.968)		
Holding_connected_lowret $_{t-1}(\beta^*)$						-4.377 (3.326)	
Holding_connected_lowflow $_{t-1}(\beta^*)$							4.060 (3.005)
Holding_total $_{t-1}$	-0.193 (0.181)	-0.265 (0.185)	-0.233 (0.185)	-0.207 (0.244)	-0.166 (0.220)	-0.169 (0.234)	-0.145 (0.213)
Holding_total_lowshare $_{t-1}$	-0.602 (0.930)						
Holding_total_lowsic $_{t-1}$		0.339 (0.885)					
Holding_total_shortperiod $_{t-1}$			-0.194 (1.169)				
Holding_total_singlePB $_{t-1}$				-0.073 (0.849)			
Holding_total_dominant70 $_{t-1}$					-0.315 (0.643)		
Holding_total_lowret $_{t-1}$						-0.466 (1.082)	
Holding_total_lowflow $_{t-1}$							-0.999 (0.976)
Holding_acquirer $_{t-1}$	0.183 (0.265)	0.205 (0.274)	0.173 (0.265)	0.210 (0.260)	0.204 (0.268)	0.193 (0.265)	0.222 (0.253)
IMR_holding	0.003 (0.002)	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)
IMR_bigbank	0.001 (0.001)	0.001 (0.001)	0.000 (0.001)	0.001 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)
Constant	-1.155*** (0.340)	-1.059*** (0.343)	-1.070*** (0.351)	-1.080*** (0.341)	-1.028*** (0.336)	-1.018*** (0.344)	-1.077*** (0.353)
R-squared	0.410	0.405	0.411	0.405	0.405	0.409	0.410
Number of deals	317	317	317	317	317	317	317
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes



Table 13: Acquirer abnormal returns: hedge funds' information sharing incentives

This table reports the results from Equation (4) for the impact of connected fund holdings on acquirer abnormal returns considering hedge funds' information sharing incentives. We report the results using sub-samples of targets with information asymmetry above the median. The dependent variable is the acquirer abnormal returns on the acquisition announcement date.  $Holding\_connected_{t-1}$  ( $Holding\_total_{t-1}$ ) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement. We further include holdings by hedge funds for which the target accounts for a low share in a hedge fund portfolio, hedge funds have low investments in the target industry, hedge funds have held the target for a short period, a hedge fund has a single prime broker, the prime broker services 70% of the assets of a hedge fund, a hedge fund performs poorly, and a hedge fund with low inflows. Other variables are defined in Table 2. We use all the other controls as in Table 10, which are not reported for the sake of space. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Measure=	(1) Use low share	(2) Use low SIC	(3) Use short period	(4) Use single PB	(5) Use dominant PB	(6) Use low return	(7) Use low flow
Holding_connected $_{t-1}(\beta)$	0.921** (0.385)	0.892** (0.378)	0.785** (0.345)	0.378** (0.158)	0.748** (0.293)	0.807** (0.374)	0.306* (0.163)
Holding_connected_lowshare $_{t-1}(\beta^*)$	-0.839* (0.498)						
Holding_connected_lowsic $_{t-1}(\beta^*)$		-0.611 (0.368)					
Holding_connected_shortperiod $_{t-1}(\beta^*)$			2.115 (1.608)				
Holding_connected_singlePB $_{t-1}(\beta^*)$				1.330*** (0.302)			
Holding_connected_dominant70 $_{t-1}(\beta^*)$					0.095 (0.463)		
Holding_connected_lowret $_{t-1}(\beta^*)$						0.189 (0.438)	
Holding_connected_lowflow $_{t-1}(\beta^*)$							1.253*** (0.340)
Holding_total $_{t-1}$	-0.000 (0.023)	0.002 (0.022)	0.001 (0.021)	0.024 (0.023)	0.003 (0.027)	0.015 (0.025)	0.004 (0.020)
Holding_total_lowshare $_{t-1}$	-0.063 (0.091)						
Holding_total_lowsic $_{t-1}$		-0.103 (0.072)					
Holding_total_shortperiod $_{t-1}$			-0.103 (0.152)				
Holding_total_singlePB $_{t-1}$				-0.091 (0.058)			
Holding_total_dominant70 $_{t-1}$					-0.031 (0.067)		
Holding_total_lowret $_{t-1}$						-0.227 (0.148)	
Holding_total_lowflow $_{t-1}$							-0.026 (0.062)
Holding_acquirer $_{t-1}$	-0.041* (0.023)	-0.031 (0.022)	-0.036 (0.022)	-0.035* (0.020)	-0.038* (0.022)	-0.041* (0.023)	-0.040* (0.022)
IMR_holding	-0.000 (0.000)	-0.000 (0.000)	-0.000* (0.000)	-0.000* (0.000)	-0.000* (0.000)	-0.000* (0.000)	-0.000* (0.000)
IMR_bigbank	0.000*** (0.000)	0.000*** (0.000)	0.000** (0.000)	0.000** (0.000)	0.000** (0.000)	0.000** (0.000)	0.000** (0.000)
Constant	0.026 (0.043)	0.039 (0.047)	0.050 (0.050)	0.017 (0.045)	0.045 (0.050)	0.040 (0.044)	0.028 (0.043)
R-squared	0.541	0.544	0.535	0.562	0.533	0.541	0.563
Number of deals	317	317	317	317	317	317	317
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 14: Target premium: importance of information sharing for the bidder

This table reports the results from Equation (4) for the impact of connected fund holdings on target premium, considering the importance of information sharing for the bidder. We report the results using sub-samples of targets with information asymmetry above the median. The dependent variable is the premium paid one week before the announcement.  $Holding\_connected_{t-1}$  ( $Holding\_total_{t-1}$ ) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement.  $Diff\_Ind$  is a dummy variable that equals one if the bidder and target are from different 3-digit SIC code industries and 0 otherwise.  $Multi\_bidder$  is a dummy variable that equals one if more than one bidder is involved.  $Pctstock$  is the percentage of stock payment.  $Merger\_wave$  is a dummy variable that equals one when there is a merger wave in the target-acquirer industry. Other variables are defined in Table 2. We use all the other controls as in Table 10, which are not reported for the sake of space. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Measure=	(1) Different industry	(2) Multi-bidder	(3) Stock payment	(4) Merger wave
$Holding\_connected_{t-1}(\beta)$	4.195 (8.118)	10.162 (14.948)	-1.545 (5.024)	8.022 (8.585)
$Holding\_connected_{t-1} \times Diff\_Ind (\beta^*)$	-6.741 (8.769)			
$Holding\_connected_{t-1} \times Multi\_bidder (\beta^*)$		-10.303 (15.676)		
$Holding\_connected_{t-1} \times Pctstock (\beta^*)$			1.794 (6.155)	
$Holding\_connected_{t-1} \times Merger\_wave (\beta^*)$				-11.244 (8.776)
$Holding\_total_{t-1}$	-0.484 (0.386)	0.843 (3.136)	-0.372 (0.712)	-1.110*** (0.390)
$Holding\_total_{t-1} \times Diffind$	-0.287 (0.457)			
$Holding\_total_{t-1} \times Multi\_bidder$		-1.405 (3.084)		
$Holding\_total_{t-1} \times Pctstock$			-0.553 (1.162)	
$Holding\_total_{t-1} \times Merger\_wave$				0.914 (0.651)
$Holding\_acquirer_{t-1}$	-0.114 (0.570)	-0.139 (0.567)	-0.107 (0.550)	-0.213 (0.555)
IMR_holding	0.006 (0.004)	0.005 (0.004)	0.005 (0.004)	0.006* (0.003)
IMR_bigbank	0.001 (0.002)	0.000 (0.002)	0.000 (0.002)	0.001 (0.002)
Constant	-1.218 (0.835)	-1.431 (1.005)	-1.199 (0.911)	-1.070 (0.829)
R-squared	0.584	0.581	0.579	0.589
Number of deals	329	329	329	329
Controls	Yes	Yes	Yes	Yes
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes

Table 15: Target abnormal returns: importance of information sharing for the bidder

This table reports the results from Equation (4) for the impact of connected fund holdings on target abnormal returns, considering the importance of information sharing for the bidder. We report the results using sub-samples of targets with information asymmetry above the median. The dependent variable is the target abnormal returns on the acquisition announcement date.  $Holding\_connected_{t-1}$  ( $Holding\_total_{t-1}$ ) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement.  $Diff\_Ind$  is a dummy variable that equals one if the bidder and target are from different 3-digit SIC code industries and 0 otherwise.  $Multi\_bidder$  is a dummy variable that equals one if more than one bidder is involved.  $Pctstock$  is the percentage of stock payment.  $Merger\_wave$  is a dummy variable that equals one when there is a merger wave in the target-acquirer industry. Other variables are defined in Table 2. We use all the other controls as in Table 10, which are not reported for the sake of space. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Measure=	(1) Different industry	(2) Multi-bidder	(3) Stock payment	(4) Merger wave
$Holding\_connected_{t-1}(\beta)$	0.222 (4.391)	4.611 (19.052)	-5.036 (5.053)	3.938 (3.834)
$Holding\_connected_{t-1} \times Diff\_Ind (\beta^*)$	-3.230 (4.911)			
$Holding\_connected_{t-1} \times Multi\_bidder (\beta^*)$		-6.534 (18.220)		
$Holding\_connected_{t-1} \times Pctstock (\beta^*)$			4.542 (6.038)	
$Holding\_connected_{t-1} \times Merger\_wave (\beta^*)$				-8.301** (4.122)
$Holding\_total_{t-1}$	-0.758* (0.452)	2.218 (2.635)	-0.149 (0.410)	-0.615 (0.499)
$Holding\_total_{t-1} \times Diffind$	0.421 (0.595)			
$Holding\_total_{t-1} \times Multi\_bidder$		-2.607 (2.575)		
$Holding\_total_{t-1} \times Pctstock$			-0.753 (0.825)	
$Holding\_total_{t-1} \times Merger\_wave$				0.107 (0.788)
$Holding\_acquirer_{t-1}$	-0.108 (0.524)	-0.131 (0.512)	-0.101 (0.485)	-0.123 (0.556)
IMR_holding	0.005 (0.003)	0.005 (0.004)	0.005 (0.003)	0.005 (0.004)
IMR_bigbank	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)
Constant	-1.134** (0.561)	-1.587** (0.748)	-1.213* (0.622)	-1.101** (0.468)
R-squared	0.575	0.583	0.578	0.589
Number of deals	317	317	317	317
Controls	Yes	Yes	Yes	Yes
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes

Table 16: Acquirer abnormal returns: importance of information sharing for the bidder

This table reports the results from Equation (4) for the impact of connected fund holdings on acquirer abnormal returns, considering the importance of information sharing for the bidder. We report the results using sub-samples of targets with information asymmetry above the median. The dependent variable is the acquirer abnormal returns on the acquisition announcement date.  $Holding\_connected_{t-1}$  ( $Holding\_total_{t-1}$ ) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement.  $Diff\_Ind$  is a dummy variable that equals one if the bidder and target are from different 3-digit SIC code industries and 0 otherwise.  $Multi\_bidder$  is a dummy variable that equals one if more than one bidder is involved.  $Pctstock$  is the percentage of stock payment.  $Merger\_wave$  is a dummy variable that equals one when there is a merger wave in the target-acquirer industry. Other variables are defined in Table 2. We use all the other controls as in Table 10, which are not reported for the sake of space. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Measure=	(1) Different industry	(2) Multi-bidder	(3) Stock payment	(4) Merger wave
$Holding\_connected_{t-1}(\beta)$	0.987** (0.388)	-0.541 (1.247)	0.651* (0.334)	0.679* (0.365)
$Holding\_connected_{t-1} \times Diff\_Ind (\beta^*)$	0.590 (0.646)			
$Holding\_connected_{t-1} \times Multi\_bidder (\beta^*)$		1.893** (0.918)		
$Holding\_connected_{t-1} \times Pctstock (\beta^*)$			1.143** (0.469)	
$Holding\_connected_{t-1} \times Merger\_wave (\beta^*)$				0.929** (0.441)
$Holding\_total_{t-1}$	-0.060** (0.028)	-0.155 (0.136)	-0.001 (0.040)	-0.005 (0.035)
$Holding\_total_{t-1} \times Diff\_Ind$	0.071 (0.046)			
$Holding\_total_{t-1} \times Multi\_bidder$		0.128 (0.124)		
$Holding\_total_{t-1} \times Pctstock$			-0.023 (0.060)	
$Holding\_total_{t-1} \times Merger\_wave$				-0.031 (0.063)
$Holding\_acquirer_{t-1}$	-0.037 (0.031)	-0.031 (0.035)	-0.042 (0.032)	-0.028 (0.033)
IMR_holding	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
IMR_bigbank	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Constant	0.087 (0.087)	0.100 (0.083)	0.068 (0.086)	0.068 (0.083)
R-squared	0.702	0.698	0.703	0.699
Number of deals	317	317	317	317
Controls	Yes	Yes	Yes	Yes
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes

Table 17: Post-merger performance

This table reports the results from Equation (4) for the impact of connected fund holdings on post-merger performance. Columns (1)-(3) and (4)-(6) use sub-samples of targets with information asymmetry above or below the median separately. *ROA*, *ROE*, and *NPM* are the return on asset, return on equity, and net profit margin of the new firm one year after the acquisition. *Holding\_connected<sub>t-1</sub>* (*Holding\_total<sub>t-1</sub>*) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement. Other variables are defined in Table 2. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	ROA	ROE	NPM	ROA	ROE	NPM
		IA_high			IA_low	
Holding_connected <sub>t-1</sub> ( $\beta$ )	-0.124 (0.142)	-1.669 (4.611)	-2.926 (2.005)	0.032 (0.044)	28.042 (23.188)	0.015 (0.468)
Holding_total <sub>t-1</sub>	0.056 (0.048)	-1.325 (1.338)	0.561** (0.252)	0.001 (0.011)	-16.438 (15.472)	0.031 (0.119)
Holding_acquirer <sub>t-1</sub>	0.052*** (0.020)	-1.914** (0.834)	0.001 (0.216)	0.022* (0.013)	3.303 (2.589)	0.064 (0.091)
ROA_t	0.235* (0.127)	-5.106 (4.775)	1.084* (0.548)	0.055*** (0.017)	0.466 (6.840)	0.342 (0.248)
Leverage_t	0.002 (0.012)	-0.257 (0.366)	0.056 (0.066)	0.002 (0.005)	0.919 (1.106)	0.037 (0.052)
B/M_t	0.006 (0.009)	-0.222 (0.301)	0.039 (0.057)	0.003** (0.001)	-0.142 (0.572)	0.014 (0.012)
Size_a	0.010* (0.006)	-0.206 (0.178)	0.085*** (0.027)	0.006*** (0.001)	0.310 (0.226)	0.034*** (0.009)
B/M_a	0.025 (0.023)	-0.890 (0.766)	0.195* (0.114)	-0.006 (0.005)	1.852 (1.673)	-0.096 (0.081)
Tangible_t	-0.037 (0.049)	1.774 (1.954)	-0.318 (0.251)	-0.004 (0.006)	1.506 (1.635)	-0.028 (0.061)
RELSIZE	-0.000 (0.000)	0.003 (0.030)	0.008 (0.011)	-0.000 (0.001)	-0.126 (0.199)	-0.007 (0.007)
Valpct	-0.010*** (0.003)	-0.018 (0.090)	-0.076** (0.036)	0.003** (0.001)	0.208 (0.439)	0.023* (0.014)
Holding_MF	0.004 (0.007)	-0.150 (0.231)	0.043 (0.065)	0.000 (0.001)	0.111 (0.226)	-0.011 (0.019)
Pctcash	0.007 (0.010)	-0.264 (0.292)	-0.115 (0.102)	0.004 (0.003)	-1.015 (0.702)	0.066 (0.044)
Hostile	-	-	-	0.003 (0.008)	3.016 (3.424)	0.047 (0.093)
Diff_Ind	-0.002 (0.005)	0.023 (0.139)	-0.054 (0.057)	0.000 (0.003)	-0.064 (0.521)	0.019 (0.035)
Merger of equals	0.107 (0.066)	-2.468 (2.349)	1.013* (0.526)	-0.025 (0.022)	-8.934 (9.110)	-0.366 (0.302)
Tender	-0.006 (0.014)	0.121 (0.327)	-0.139 (0.132)	0.006** (0.002)	-1.542 (1.221)	0.046** (0.021)
Number of bidders	0.015 (0.033)	-0.434 (1.152)	0.327 (0.314)	-0.002 (0.004)	0.731 (0.940)	-0.029 (0.060)
IMR_holding	-0.001 (0.001)	0.021 (0.015)	0.001 (0.001)	0.000 (0.000)	-0.028 (0.031)	0.001 (0.001)
IMR_bigbank	-0.000 (0.000)	0.003 (0.005)	0.003** (0.001)	0.000* (0.000)	0.010 (0.016)	-0.000 (0.001)
Constant	0.035 (0.049)	-2.654 (2.042)	-0.278 (0.400)	-0.071*** (0.018)	-4.798 (3.891)	-0.573*** (0.216)
R-squared	0.539	0.420	0.595	0.399	0.183	0.373
Number of deals	293	293	292	471	471	471
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 18: Changes in hedge fund holdings after the deal announcement

This table reports the results from Equation (3) for the changes in connected (unconnected) hedge fund holdings per fund in target one quarter after the deal announcement ( $\Delta \overline{Holding\_connected}_{t+1}$  and  $\Delta \overline{Holding\_unconnected}_{t+1}$ ). Columns (1), (3), (5), (7) and (2), (4), (6), (8) use sub-samples of targets with information asymmetry above or below the median separately.  $Holding\_connected_{t-1}$  ( $Holding\_total_{t-1}$ ) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement.  $Abnormal\_fees$  is the abnormal fees paid by the acquirer.  $IA$  represents the target firm's information asymmetry measure based on five variables ( $Amihud$ ,  $SPREAD$ ,  $Size$ ,  $COVER$ ,  $ERR$ ). Other variables are defined in Table 2. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Sample=	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	$\Delta \overline{Holding\_connected}_{t-1}$ IA_high	$\Delta \overline{Holding\_connected}_{t-1}$ IA_low	$\Delta \overline{Holding\_unconnected}_{t-1}$ IA_high	$\Delta \overline{Holding\_unconnected}_{t-1}$ IA_low	$\Delta \overline{Holding\_connected}_{t-1}$ IA_high	$\Delta \overline{Holding\_connected}_{t-1}$ IA_low	$\Delta \overline{Holding\_unconnected}_{t-1}$ IA_high	$\Delta \overline{Holding\_unconnected}_{t-1}$ IA_low
Holding_connected <sub>t-1</sub> (β)	-0.515** (0.249)	-0.036 (0.027)	-0.171* (0.099)	0.026 (0.018)	-1.000 (0.771)	-0.054 (0.033)	-0.268 (0.243)	0.063* (0.036)
Holding_total <sub>t-1</sub>	-0.005 (0.007)	-0.002 (0.004)	-0.034*** (0.012)	-0.015*** (0.005)	-0.032 (0.023)	0.003 (0.005)	-0.044** (0.020)	-0.025** (0.012)
Abnormal_fees					0.001 (0.002)	-0.002* (0.001)	0.002 (0.002)	0.001 (0.002)
Holding_connected <sub>t-1</sub> × Abnormal_fees(β*)					-0.637 (0.838)	-0.015 (0.032)	-0.181 (0.247)	0.064 (0.043)
Holding_total <sub>t-1</sub> × Abnormal_fees					-0.022 (0.021)	0.008 (0.006)	-0.013 (0.013)	-0.014 (0.014)
$\Delta \overline{Holding\_connected}_t$	-0.002 (0.010)	-0.004 (0.003)						
$\Delta \overline{Holding\_unconnected}_t$			0.001 (0.001)	-0.000 (0.002)			0.002* (0.001)	0.001 (0.002)
Holding_acquirer <sub>t-1</sub>	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
ROA_t	0.046* (0.025)	-0.014 (0.009)	-0.056 (0.040)	-0.002 (0.008)	0.052* (0.026)	-0.014 (0.013)	-0.033 (0.029)	-0.010 (0.013)
Leverage_t	0.001 (0.004)	0.000 (0.001)	0.002 (0.005)	-0.001 (0.001)	-0.000 (0.005)	0.000 (0.001)	-0.002 (0.004)	-0.001 (0.001)
B/M_t	-0.001 (0.002)	-0.000 (0.000)	0.000 (0.003)	-0.000 (0.000)	-0.000 (0.002)	-0.000 (0.000)	-0.000 (0.002)	-0.000 (0.000)
Size_a	-0.001* (0.000)	0.000 (0.000)	0.000 (0.001)	0.000 (0.000)	-0.001 (0.001)	0.000 (0.000)	-0.000 (0.001)	0.000 (0.000)
B/M_a	0.000 (0.002)	0.000 (0.001)	0.002 (0.006)	-0.002 (0.001)	-0.001 (0.002)	0.000 (0.001)	0.008 (0.005)	-0.001 (0.001)
Tangible_t	0.014 (0.010)	0.003* (0.002)	-0.030** (0.014)	0.004* (0.002)	0.015 (0.010)	0.003* (0.002)	-0.018* (0.009)	0.003* (0.002)
RELSIZE	0.000 (0.001)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.001 (0.001)	0.000 (0.000)	-0.001** (0.000)	0.000 (0.000)
Valpet	0.000 (0.003)	-0.000 (0.000)	-0.001 (0.002)	0.000 (0.000)	0.003 (0.006)	-0.000 (0.000)	-0.004 (0.003)	0.000 (0.000)
Holding_MF	-0.000 (0.001)	0.000 (0.000)	0.003** (0.001)	0.000 (0.000)	-0.000 (0.001)	0.000 (0.000)	0.002* (0.001)	0.000 (0.000)
Petcash	-0.000 (0.003)	0.001 (0.001)	-0.003 (0.003)	0.000 (0.001)	-0.000 (0.003)	0.001 (0.001)	-0.002 (0.002)	0.001 (0.001)
Hostile	0.010 (0.007)	0.004** (0.002)	0.017* (0.009)	0.002 (0.002)	0.009 (0.009)	0.005** (0.003)	0.011 (0.007)	0.004** (0.002)
Diff_Ind	-0.001 (0.002)	-0.000 (0.001)	0.001 (0.001)	-0.000 (0.001)	-0.001 (0.002)	-0.000 (0.001)	0.000 (0.002)	-0.000 (0.001)
Merger of equals	0.031** (0.014)	0.001 (0.001)	-0.010 (0.012)	-0.001 (0.002)	0.049 (0.030)	0.001 (0.001)	0.000 (0.014)	-0.001 (0.003)
Tender	0.003 (0.004)	0.001 (0.001)	-0.004 (0.003)	-0.000 (0.001)	0.003 (0.004)	0.001 (0.001)	-0.002 (0.003)	0.000 (0.001)
Number of bidders	-0.002 (0.004)	-0.001 (0.001)	-0.004 (0.003)	-0.000 (0.001)	-0.001 (0.004)	-0.001 (0.001)	-0.002 (0.003)	0.000 (0.001)
IMR_holding	-0.000 (0.000)	-0.000 (0.000)	-0.000** (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000** (0.000)	-0.000 (0.000)
IMR_bigbank	-0.000 (0.000)	-0.000* (0.000)	-0.000 (0.000)	-0.000** (0.000)	-0.000 (0.000)	-0.000** (0.000)	-0.000 (0.000)	-0.000 (0.000)
Constant	0.002 (0.012)	-0.000 (0.005)	0.029 (0.031)	0.009 (0.008)	0.018 (0.012)	0.000 (0.006)	0.042*** (0.013)	-0.005 (0.006)
R-squared	0.708	0.325	0.533	0.383	0.722	0.360	0.702	0.411
Number of deals	186	405	186	405	179	394	179	394
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 19: Balancing tests of propensity score matching

This table reports the balancing test results of propensity score matching. The treated group includes deals with connected fund holdings, and the control group includes other deals.  $B/M$  is the book-to-market value of equity of a target or acquirer measured at the end of the last fiscal year before the announcement.  $Size_a$  is the logarithm of the acquirer's market capitalization in the last fiscal year before the announcement.  $RELSIZE$  is the ratio of the target's asset size to the acquirer's asset size at the end of the last fiscal year before the announcement.  $Valpct$  is the ratio of deal value to acquirer market capitalization at the end of the last fiscal year before announcement.  $Holding\_MF$  is mutual fund holdings in a target firm one quarter before the acquisition announcement.  $Pctcash$  is the percentage of the stock payment in the consideration.  $Diff\_Ind$  is a dummy variable that equals one for a deal where bidder and target are from different 3-digit SIC code industries and 0 otherwise. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

	Treated	Control	%bias	t-stats
B/M_t	0.544	0.624	-18.900	-1.030
Size_a	8.966	8.975	-0.500	-0.030
B/M_a	0.488	0.420	21.300	1.160
RELSIZE	0.799	0.231	20.400	1.110
Valpct	0.340	0.230	35.100	1.910*
Holding_MF	0.376	0.281	27.600	1.500
Pctcash	58.861	64.858	-13.800	-0.750
Diffind	0.237	0.288	-11.500	-0.620

Table 20: Propensity score matching results

This table reports the propensity matching results for deals announced between January 2000 and September 2019. Connected includes deals with holdings of connected hedge funds in a target firm one quarter before the acquisition announcement, and others include deals without connected fund holdings.  $\overline{\Delta Holding\_unconnected}$  are the changes in the average holdings per fund of unconnected hedge funds of the target or acquirer firm one quarter before or after the acquisition announcement. *Completion* is a dummy variable that equals one if the deal is completed. *Duration* is the number of months between the deal announcement and the deal outcome. *Premium* is the premium paid one week (four weeks) before the announcement. *TCAR* and *ACAR* are the cumulative abnormal returns on target and acquirer over an event window of [0], [-1,1], [-3,3], and [-5,5], respectively. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively. The missing values of t-stats indicate that all deals are completed in both groups, and there is no difference.

	Connected	Others	Difference	t-stats
$\overline{\Delta Holding\_unconnected}_{t-1}$ in target	-0.101	0.209	-0.310	-3.040***
$\overline{\Delta Holding\_unconnected}_{t-1}$ in acquirer	-0.010	0.003	-0.014	-0.650
$\overline{\Delta Holding\_unconnected}_{t+1}$ in target	-0.004	-0.006	0.002	1.570
$\overline{\Delta Holding\_unconnected}_{t+1}$ in acquirer	0.000	0.000	0.000	0.050
Completion	1.000	1.000	0.000	.
Duration	124.421	125.579	-1.158	-0.080
Premium (one week)	0.288	0.399	-0.111	-2.320**
Premium (four weeks)	0.324	0.458	-0.134	-2.460**
TCAR	0.122	0.303	-0.181	-2.900***
TCAR[-1,1]	0.199	0.368	-0.169	-2.780***
TCAR[-3,3]	0.204	0.367	-0.163	-2.650***
TCAR[-5,5]	0.202	0.369	-0.167	-2.690***
ACAR	-0.019	-0.010	-0.009	-1.040
ACAR[-1,1]	-0.015	-0.008	-0.007	-0.530
ACAR[-3,3]	-0.011	-0.003	-0.009	-0.690
ACAR[-5,5]	-0.012	0.002	-0.014	-0.940



# Advisor-hedge fund connections, information flows, and deal outcomes in mergers and acquisitions

Supplementary results

## **Appendix A Inverse mills ratio**

We initially estimate the first-stage probit regressions for hedge funds' holdings in the target and for acquirers' choice of an advisor (Tables [A1](#) and [A2](#)), which are used later to compute the *IMR\_holding* and *IMR\_bigbank*. Consistent with the literature, hedge funds are more likely to hold targets in deals with a higher percentage of cash payment and more mutual fund holdings in the acquirer. The likelihood of an acquirer hiring a large bank as the advisor increases in deal size and target book-to-market ratio, while it decreases in the percentage of cash payment.

Table A1: Probability of hedge funds to hold the targets

This table reports the estimation results for the probability of hedge funds to hold the targets one quarter before the acquisition announcement.  *Holding*  is a dummy variable that equals one if a target has hedge fund holdings.  *Holding\_MF\_a*  is mutual fund holdings in an acquirer firm one quarter before the acquisition announcement. Other variables are defined in Table 2. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

	Holding
Pctcash	0.290** (0.135)
Hostile	-0.125 (0.406)
Tender	0.314* (0.187)
Holding_MF_a	1.670*** (0.217)
Premium (one week)	-0.149 (0.142)
ROA_t	-0.124 (0.648)
Leverage_t	-0.052 (0.195)
Size_t	0.037 (0.031)
B/M_t	-0.063 (0.101)
Constant	-0.193 (0.382)
R-squared	0.185
Number of deals	1,037
Year FE	Yes

Table A2: Probability of acquirers to use a big bank advisor

This table reports the estimation results for the probability of acquirers to use a big bank advisor. *Bigbank* is a dummy variable that equals one if a deal involves a big bank advisor. *Toehold* is the fraction of target shares held by the acquirer before the deal announcement. Other variables are defined in Table 2. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

	Bigbank
ln(Deal Value)	0.443*** (0.036)
Pctcash	-0.345*** (0.114)
Hostile	-0.396 (0.421)
Diffind	-0.018 (0.097)
Number of bidders	0.045 (0.173)
Toehold	-0.012 (0.014)
B/M <sub>a</sub>	-0.079 (0.054)
B/M <sub>t</sub>	0.149* (0.086)
ROE <sub>t</sub>	-0.001 (0.002)
Constant	-3.114*** (0.652)
R-squared	0.190
Number of deals	910
Year FE	Yes

## Appendix B Changes of hedge fund holdings in acquirers

In this appendix, we report the results for the changes of hedge fund holdings in acquirers one quarter before and after the deal announcement. In Table B1, the estimated coefficients on connected funds' holdings are negative and significant in Columns (1), (3), and (7) for both changes in connected and unconnected hedge fund holdings in bidder when the targets are characterized by high information asymmetry, indicating that hedge funds have lower changes in the holdings in the acquirers for deals with connected fund holdings one quarter before the acquisition announcement. Connected funds also show significantly lower holdings changes in the acquirer after the deal announcement, which is consistent with the literature on the short-selling of the acquirers' stocks around merger announcement (Mitchell et al., 2004). Tables B1 and B2 reports the detailed results.

Table B1: Changes in hedge fund holdings in acquirers before the deal announcement

This table reports the results from Equation (3) for the changes in connected (unconnected) hedge fund holdings per fund in acquirer one quarter before the deal announcement ( $\Delta \overline{Holding\_connected}_{t-1}^a$  and  $\Delta \overline{Holding\_unconnected}_{t-1}^a$ ). Columns (1), (3), (5), (7) and (2), (4), (6), (8) use sub-samples of targets with information asymmetry above or below the median separately.  $Holding\_connected_{t-1}$  ( $Holding\_total_{t-1}$ ) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement.  $Abnormal\_fees$  is the abnormal fees paid by the acquirer.  $IA$  represents the target firm's information asymmetry measure based on five variables ( $Amihud$ ,  $SPREAD$ ,  $Size$ ,  $COVER$ ,  $ERR$ ). Other variables are defined in Table 2. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Sample=	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	$\Delta \overline{Holding\_connected}_{t-1}^a$ IA.high	$\Delta \overline{Holding\_connected}_{t-1}^a$ IA.low	$\Delta \overline{Holding\_unconnected}_{t-1}^a$ IA.high	$\Delta \overline{Holding\_unconnected}_{t-1}^a$ IA.low	$\Delta \overline{Holding\_connected}_{t-1}^a$ IA.high	$\Delta \overline{Holding\_connected}_{t-1}^a$ IA.low	$\Delta \overline{Holding\_unconnected}_{t-1}^a$ IA.high	$\Delta \overline{Holding\_unconnected}_{t-1}^a$ IA.low
Holding_connected <sub>t-1</sub> ( $\beta$ )	-3.051*	-0.327	-8.802*	0.210	-3.137	0.230	-20.262***	0.850
	(1.608)	(0.487)	(4.509)	(0.348)	(5.230)	(0.714)	(4.089)	(0.808)
Holding_total <sub>t-1</sub>	-0.041	-0.018	-0.054	-0.082	-0.067**	-0.069*	-0.065	-0.015
	(0.111)	(0.115)	(0.138)	(0.077)	(0.031)	(0.037)	(0.044)	(0.044)
Abnormal_fees					0.019	0.883	-10.152***	1.093
					(4.136)	(1.231)	(3.310)	(1.099)
Holding_connect <sub>t-1</sub> × Abnormal_fees( $\beta^*$ )					0.194	0.220	0.301	-0.109
					(0.256)	(0.142)	(0.348)	(0.164)
Holding_total <sub>t-1</sub> × Abnormal_fees					0.235	0.401**	0.382	-0.052
					(0.217)	(0.201)	(0.276)	(0.225)
$\Delta \overline{Holding\_connected}_{t-2}^a$	0.023	-0.044			0.027	-0.045		
	(0.022)	(0.036)			(0.029)	(0.036)		
$\Delta \overline{Holding\_unconnected}_{t-2}^a$			-0.137*	-0.192*			-0.075	-0.189*
			(0.080)	(0.112)			(0.068)	(0.110)
Holding_acquirer <sub>t-1</sub>	-0.001	-0.000	-0.001	0.002	-0.001	-0.000	0.002	0.002
	(0.002)	(0.001)	(0.004)	(0.002)	(0.002)	(0.001)	(0.003)	(0.002)
ROA_t	-0.415*	0.130	0.198	-0.184	-0.357	0.136	0.226	-0.129
	(0.244)	(0.208)	(0.275)	(0.117)	(0.243)	(0.237)	(0.250)	(0.106)
Leverage_t	-0.052	-0.008	0.124**	0.033	-0.044	-0.012	0.111*	0.031
	(0.056)	(0.044)	(0.055)	(0.024)	(0.053)	(0.045)	(0.058)	(0.024)
B/M_t	-0.013	0.005	-0.034	-0.019**	-0.015	0.005	0.012	-0.020**
	(0.017)	(0.007)	(0.048)	(0.010)	(0.018)	(0.008)	(0.031)	(0.010)
Size_a	-0.003	0.010	0.006	-0.003	0.008	0.009	0.017	-0.004
	(0.009)	(0.006)	(0.010)	(0.007)	(0.010)	(0.006)	(0.013)	(0.008)
B/M_a	-0.127	-0.022	-0.080	-0.020	-0.141*	-0.022	-0.096	-0.028
	(0.077)	(0.039)	(0.065)	(0.034)	(0.082)	(0.039)	(0.076)	(0.035)
Tangible_t	-0.168*	-0.062	-0.008	0.020	-0.146	-0.056	0.143	0.030
	(0.088)	(0.043)	(0.114)	(0.034)	(0.089)	(0.043)	(0.112)	(0.035)
RELSIZE	-0.005	-0.001	-0.001	0.004	-0.004	-0.000	0.008	0.004
	(0.005)	(0.003)	(0.012)	(0.005)	(0.004)	(0.004)	(0.011)	(0.005)
Valpct	0.002	0.005	0.023	-0.015	0.093	0.004	0.057	-0.016
	(0.017)	(0.007)	(0.033)	(0.011)	(0.071)	(0.007)	(0.082)	(0.012)
Holding_MF	0.019	-0.006	-0.047**	0.000	0.021	-0.006	-0.054**	-0.001
	(0.015)	(0.007)	(0.021)	(0.005)	(0.017)	(0.007)	(0.021)	(0.005)
Pctcash	-0.010	-0.026	0.062	-0.003	-0.005	-0.029	0.116	-0.001
	(0.047)	(0.020)	(0.090)	(0.018)	(0.052)	(0.020)	(0.075)	(0.019)
Hostile	0.011	0.043	0.018	-0.011	0.003	0.053	0.010	0.009
	(0.124)	(0.044)	(0.162)	(0.048)	(0.109)	(0.058)	(0.125)	(0.052)
Diff_Ind	0.005	0.010	-0.053	0.018	0.007	0.011	-0.034	0.019
	(0.025)	(0.018)	(0.043)	(0.013)	(0.025)	(0.018)	(0.035)	(0.014)
Merger of equals	0.271	-0.079	0.273	-0.010	0.237	-0.085	0.354*	-0.006
	(0.295)	(0.097)	(0.419)	(0.068)	(0.276)	(0.093)	(0.196)	(0.068)
Tender	-0.085	-0.005	-0.044	-0.031*	-0.089*	-0.005	-0.025	-0.028
	(0.053)	(0.020)	(0.062)	(0.019)	(0.052)	(0.021)	(0.059)	(0.019)
Number of bidders	0.001	0.026	-0.026	0.045**	-0.002	0.022	-0.077**	0.042
	(0.037)	(0.018)	(0.048)	(0.024)	(0.039)	(0.018)	(0.038)	(0.026)
IMR_holding	-0.000	-0.001	0.000	-0.000	-0.000	-0.001	0.000	-0.000
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)
IMR_bigbank	-0.000	0.000	0.002*	-0.001	-0.000	0.000	0.000	-0.001
	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)
Constant	0.584**	-0.066	0.292	0.093	0.407	0.012	-0.692	0.334*
	(0.228)	(0.111)	(0.437)	(0.134)	(0.264)	(0.111)	(0.479)	(0.198)
R-squared	0.324	0.174	0.480	0.522	0.332	0.184	0.563	0.456
Number of deals	329	547	329	547	316	535	316	535
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table B2: Changes in hedge fund holdings in acquirers after the deal announcement

This table reports the results from Equation (3) for the changes in connected (unconnected) hedge fund holdings per fund in acquirer one quarter after the deal announcement ( $\Delta \overline{Holding\_connected}_t^a$  and  $\Delta \overline{Holding\_unconnected}_t^a$ ). Columns (1), (3), (5), (7) and (2), (4), (6), (8) use sub-samples of targets with information asymmetry above or below the median separately.  $Holding\_connected_{t-1}$  ( $Holding\_total_{t-1}$ ) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement.  $Abnormal\_fees$  is the abnormal fees paid by the acquirer.  $IA$  represents the target firm's information asymmetry measure based on five variables ( $Amihud$ ,  $SPREAD$ ,  $Size$ ,  $COVER$ ,  $ERR$ ). Other variables are defined in Table 2. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Sample=	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	$\Delta \overline{Holding\_connected}_{t-1}^a$ IA_high	$\Delta \overline{Holding\_connected}_{t-1}^a$ IA_low	$\Delta \overline{Holding\_unconnected}_{t-1}^a$ IA_high	$\Delta \overline{Holding\_unconnected}_{t-1}^a$ IA_low	$\Delta \overline{Holding\_connected}_{t-1}^a$ IA_high	$\Delta \overline{Holding\_connected}_{t-1}^a$ IA_low	$\Delta \overline{Holding\_unconnected}_{t-1}^a$ IA_high	$\Delta \overline{Holding\_unconnected}_{t-1}^a$ IA_low
Holding_connected <sub>t-1</sub> (β)	-0.126*** (0.039)	0.006 (0.006)	0.029 (0.067)	0.006 (0.006)	-0.143 (0.146)	0.016 (0.010)	0.272 (0.203)	0.012 (0.012)
Holding_total <sub>t-1</sub>	-0.003 (0.003)	0.002 (0.002)	0.001 (0.008)	-0.001 (0.002)	-0.008 (0.005)	0.000 (0.002)	-0.005 (0.012)	-0.006** (0.003)
Abnormal_fees					-0.000 (0.000)	0.000 (0.001)	0.000 (0.001)	0.001** (0.001)
Holding_connected <sub>t-1</sub> × Abnormal_fees(β*)					-0.025 (0.142)	0.013 (0.013)	0.248 (0.190)	0.002 (0.015)
Holding_total <sub>t-1</sub> × Abnormal_fees					-0.005 (0.003)	-0.002 (0.003)	-0.006 (0.008)	-0.008* (0.004)
$\Delta \overline{Holding\_connected}_t^a$	-0.015*** (0.004)	0.004 (0.002)			-0.016*** (0.004)	0.004 (0.002)		
$\Delta \overline{Holding\_unconnected}_t^a$			-0.001 (0.001)	0.001 (0.001)			0.001 (0.001)	0.000 (0.001)
Holding_acquirer <sub>t-1</sub>	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
ROA_t	0.013* (0.008)	0.001 (0.003)	0.015 (0.011)	0.002 (0.005)	0.014* (0.008)	0.004 (0.003)	0.011 (0.009)	0.008 (0.006)
Leverage_t	-0.000 (0.001)	0.001 (0.001)	-0.002 (0.002)	-0.000 (0.001)	-0.001 (0.001)	0.001 (0.001)	-0.001 (0.002)	-0.000 (0.001)
B/M_t	-0.001 (0.000)	-0.000 (0.000)	0.000 (0.001)	-0.000 (0.000)	-0.001 (0.001)	-0.000 (0.000)	-0.001 (0.001)	-0.000 (0.000)
Size_a	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)
B/M_a	0.000 (0.000)	0.000 (0.000)	0.003* (0.001)	-0.000 (0.001)	0.000 (0.001)	0.000 (0.000)	0.003** (0.001)	-0.000 (0.001)
Tangible_t	0.005 (0.004)	0.000 (0.001)	0.005 (0.005)	0.000 (0.001)	0.005 (0.004)	0.001 (0.001)	0.002 (0.004)	0.000 (0.001)
RELSIZE	-0.000 (0.000)	0.000 (0.000)	-0.001*** (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.001*** (0.000)	0.000 (0.000)
Valpct	0.000 (0.000)	-0.000 (0.000)	0.001 (0.001)	-0.000 (0.000)	0.001 (0.001)	-0.000 (0.000)	-0.002 (0.002)	-0.000 (0.000)
Holding_MF	-0.000 (0.000)	-0.000*** (0.000)	-0.001** (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000*** (0.000)	-0.000 (0.000)	0.000 (0.000)
Pctcash	-0.000 (0.001)	0.001 (0.000)	0.001 (0.001)	-0.000 (0.001)	-0.000 (0.001)	0.001 (0.000)	0.001 (0.001)	-0.000 (0.001)
Hostile	0.001 (0.001)	-0.000 (0.001)	-0.001 (0.002)	-0.001 (0.001)	0.001 (0.001)	-0.001 (0.001)	-0.001 (0.002)	-0.001 (0.001)
Diff_Ind	0.000 (0.000)	0.000 (0.000)	0.001 (0.001)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.001** (0.000)	0.000 (0.000)
Merger of equals	0.009* (0.005)	0.001** (0.001)	-0.002 (0.004)	0.000 (0.001)	0.010 (0.007)	0.002** (0.001)	-0.005 (0.006)	0.001 (0.001)
Tender	-0.000 (0.001)	-0.000 (0.000)	-0.000 (0.001)	0.001 (0.001)	-0.001 (0.001)	-0.000 (0.000)	-0.001 (0.001)	0.001 (0.001)
Number of bidders	-0.000 (0.001)	-0.000 (0.000)	0.002 (0.002)	0.000 (0.000)	0.000 (0.001)	-0.000 (0.000)	0.002 (0.002)	0.001 (0.000)
IMR_holding	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)
IMR_bigbank	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)
Constant	0.001 (0.004)	-0.002 (0.002)	-0.014* (0.008)	-0.000 (0.002)	0.001 (0.003)	0.001 (0.002)	0.003 (0.008)	0.002 (0.004)
R-squared	0.805	0.313	0.719	0.320	0.813	0.323	0.738	0.347
Number of deals	186	405	186	405	179	394	179	394
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

## Appendix C Changes in shares of targets and acquirers in hedge fund portfolios

In this appendix, we evaluate changes in holdings of connected and unconnected hedge funds not based on the fractions of the total shares outstanding held in the target/acquirer, but based on the share of a hedge fund portfolio allocated to the target/acquirer. We use the average changes across funds of the fractional value of the target or acquirer in the connected or unconnected hedge fund portfolios that measures the importance of the firm in the hedge fund portfolio as in Section 7 ( $\overline{\Delta Shares_{connected}}$  and  $\overline{\Delta Shares_{unconnected}}$ ). Similar to the main results, we do not find any significant link between the holdings of connected hedge funds and the pre-announcement changes in the shares of targets or bidders in their portfolios (Tables C1 and C2).

Table C1: Changes in shares of the target in hedge fund portfolio before the deal announcement

This table reports the results from Equation (3) for the changes in shares of the target in the connected (unconnected) hedge fund portfolio one quarter before the deal announcement ( $\Delta\overline{Shares}_{connected}$  and  $\Delta\overline{Shares}_{unconnected}$ ). Columns (1), (3), (5), (7) and (2), (4), (6), (8) use sub-samples of targets with information asymmetry above or below the median separately.  $Holding_{connected}_{t-1}$  ( $Holding_{total}_{t-1}$ ) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement.  $Abnormal\_fees$  is the abnormal fees paid by the acquirer.  $IA$  represents the target firm's information asymmetry measure based on five variables ( $Amihud$ ,  $SPREAD$ ,  $Size$ ,  $COVER$ ,  $ERR$ ). Other variables are defined in Table 2. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Sample=	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	$\Delta\overline{Shares}_{connected}_{t-1}$ IA_high	$\Delta\overline{Shares}_{connected}_{t-1}$ IA_low	$\Delta\overline{Shares}_{unconnected}_{t-1}$ IA_high	$\Delta\overline{Shares}_{unconnected}_{t-1}$ IA_low	$\Delta\overline{Shares}_{connected}_{t-1}$ IA_high	$\Delta\overline{Shares}_{connected}_{t-1}$ IA_low	$\Delta\overline{Shares}_{unconnected}_{t-1}$ IA_high	$\Delta\overline{Shares}_{unconnected}_{t-1}$ IA_low
Holding_connected <sub>t-1</sub> ( $\beta$ )	0.011 (0.008)	-0.004 (0.017)	-0.013 (0.016)	0.000 (0.011)	-0.018 (0.012)	-0.051** (0.024)	-0.042 (0.044)	-0.022 (0.019)
Holding_total <sub>t-1</sub>	-0.000 (0.000)	-0.000 (0.002)	0.014 (0.010)	0.000 (0.003)	-0.001 (0.001)	-0.002 (0.004)	0.034 (0.024)	-0.002 (0.006)
Abnormal_fees					0.000 (0.000)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Holding_connected <sub>t-1</sub> × Abnormal_fees( $\beta^*$ )					-0.027** (0.012)	-0.071* (0.038)	-0.027 (0.042)	-0.034 (0.024)
Holding_total <sub>t-1</sub> × Abnormal_fees					-0.000 (0.001)	-0.002 (0.005)	0.020 (0.015)	-0.004 (0.006)
$\Delta\overline{Shares}_{connected}_{t-2}$	-0.578** (0.232)	0.049 (0.149)			-0.599*** (0.215)	0.052 (0.146)		
$\Delta\overline{Shares}_{unconnected}_{t-2}$			0.707 (0.680)	-0.152 (0.110)			0.695 (0.643)	-0.157 (0.111)
Holding_acquirer <sub>t-1</sub>	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
ROA_t	0.000 (0.001)	0.000 (0.002)	0.001 (0.007)	0.002 (0.002)	0.000 (0.001)	0.000 (0.002)	0.001 (0.007)	0.002 (0.002)
Leverage_t	0.000 (0.000)	0.000 (0.001)	0.000 (0.001)	-0.001 (0.001)	0.000 (0.000)	0.000 (0.001)	0.001 (0.001)	-0.001 (0.001)
B/M_t	-0.000 (0.000)	-0.001*** (0.000)	-0.001 (0.001)	0.000 (0.000)	-0.000 (0.000)	-0.000** (0.000)	-0.000 (0.001)	0.000 (0.000)
Size_a	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.001 (0.001)	-0.000 (0.000)
B/M_a	-0.000 (0.000)	0.001 (0.001)	-0.002 (0.002)	-0.000 (0.001)	-0.000 (0.000)	0.001 (0.001)	-0.002 (0.002)	0.000 (0.001)
Tangible_t	-0.000 (0.000)	-0.002 (0.002)	-0.003 (0.004)	-0.001 (0.001)	-0.000 (0.000)	-0.003 (0.002)	-0.003 (0.004)	-0.002 (0.001)
RELSIZE	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Valpct	-0.000 (0.000)	-0.000 (0.000)	-0.001 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.002)	0.000 (0.000)
Holding_MF	-0.000 (0.000)	-0.000 (0.000)	0.002*** (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.001*** (0.000)	0.000 (0.000)
Pctcash	0.000 (0.000)	-0.001 (0.001)	0.001 (0.001)	0.000 (0.001)	0.000 (0.000)	-0.001 (0.001)	0.000 (0.001)	0.000 (0.001)
Hostile	-0.000 (0.001)	0.002 (0.002)	-0.005 (0.005)	0.000 (0.002)	0.000 (0.001)	0.002 (0.002)	-0.004 (0.007)	0.001 (0.001)
Diff_Ind	0.000 (0.000)	0.000 (0.000)	0.001 (0.001)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.001 (0.001)	0.000 (0.000)
Merger of equals	0.001* (0.001)	0.000 (0.001)	-0.002 (0.004)	-0.001 (0.001)	0.001 (0.001)	0.000 (0.001)	-0.003 (0.005)	-0.001 (0.001)
Tender	0.000 (0.000)	-0.000 (0.001)	0.001 (0.001)	-0.000 (0.001)	0.000 (0.000)	-0.000 (0.001)	0.001 (0.001)	-0.000 (0.001)
Number of bidders	0.000 (0.000)	0.003 (0.002)	0.004 (0.003)	0.002** (0.001)	0.000 (0.000)	0.003 (0.002)	0.004 (0.003)	0.003** (0.001)
IMR_holding	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)
IMR_bigbank	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Constant	0.001 (0.001)	-0.004 (0.004)	0.001 (0.006)	-0.005 (0.003)	0.001 (0.001)	-0.002 (0.003)	-0.001 (0.006)	-0.002 (0.003)
R-squared	0.677	0.458	0.871	0.202	0.716	0.473	0.880	0.205
Number of deals	329	547	329	547	316	535	316	535
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes



Table C2: Changes in shares of the acquirer in hedge fund portfolio before the deal announcement

This table reports the results from Equation (3) for the changes in shares of the acquirer in the connected (unconnected) hedge fund portfolio one quarter before the deal announcement ( $\Delta Shares_{connected}^a$  and  $\Delta Shares_{unconnected}^a$ ). Columns (1), (3), (5), (7) and (2), (4), (6), (8) use sub-samples of targets with information asymmetry above or below the median separately.  $Holding_{connected}_{t-1}$  ( $Holding_{total}_{t-1}$ ) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement.  $Abnormal\_fees$  is the abnormal fees paid by the acquirer.  $IA$  represents the target firm's information asymmetry measure based on five variables ( $Amihud$ ,  $SPREAD$ ,  $Size$ ,  $COVER$ ,  $ERR$ ). Other variables are defined in Table 2. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Sample=	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	$\Delta Shares_{connected}_{t-1}^a$ IA_high	$\Delta Shares_{connected}_{t-1}^a$ IA_low	$\Delta Shares_{unconnected}_{t-1}^a$ IA_high	$\Delta Shares_{unconnected}_{t-1}^a$ IA_low	$\Delta Shares_{connected}_{t-1}^a$ IA_high	$\Delta Shares_{connected}_{t-1}^a$ IA_low	$\Delta Shares_{unconnected}_{t-1}^a$ IA_high	$\Delta Shares_{unconnected}_{t-1}^a$ IA_low
Holding_connected <sub>t-1</sub> ( $\beta$ )	-0.002 (0.019)	-0.026 (0.025)	0.005 (0.008)	0.001 (0.012)	-0.030 (0.043)	0.003 (0.027)	0.015 (0.021)	-0.020 (0.014)
Holding_total <sub>t-1</sub>	0.001 (0.001)	0.002 (0.006)	0.001 (0.002)	-0.002 (0.002)	0.008 (0.006)	-0.003 (0.006)	-0.006 (0.006)	-0.001 (0.005)
Abnormal_fees					-0.001 (0.001)	0.001 (0.001)	0.001 (0.000)	-0.000 (0.001)
Holding_connected <sub>t-1</sub> × Abnormal_fees( $\beta^*$ )					-0.027 (0.030)	0.052 (0.039)	0.010 (0.018)	-0.034 (0.024)
Holding_total <sub>t-1</sub> × Abnormal_fees					0.006 (0.005)	-0.010* (0.005)	-0.007 (0.005)	0.002 (0.007)
$\Delta Shares_{connected}_{t-2}^a$	-0.031 (0.153)	-0.652*** (0.154)			-0.013 (0.125)	-0.653*** (0.155)		
$\Delta Shares_{unconnected}_{t-2}^a$			-0.164 (0.132)	-0.244*** (0.083)			-0.145 (0.139)	-0.244*** (0.081)
Holding_acquirer <sub>t-1</sub>	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
ROA_t	-0.000 (0.002)	-0.003 (0.003)	0.007*** (0.004)	-0.000 (0.002)	-0.000 (0.002)	-0.004 (0.004)	0.006 (0.004)	0.000 (0.002)
Leverage_t	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	0.000 (0.001)	-0.001 (0.001)	-0.001 (0.002)	-0.001 (0.001)	0.000 (0.001)
B/M_t	-0.000 (0.000)	-0.000 (0.000)	0.001 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.001* (0.000)	0.000 (0.000)
Size_a	0.000 (0.000)	0.000 (0.000)	0.000* (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)
B/M_a	0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	0.001 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)
Tangible_t	-0.002* (0.001)	0.000 (0.001)	-0.000 (0.001)	-0.001 (0.001)	-0.002 (0.001)	0.000 (0.001)	-0.001 (0.002)	-0.001 (0.001)
RELSIZE	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)
Valpct	0.000 (0.000)	-0.000 (0.001)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.001)	0.001 (0.001)	-0.000 (0.000)
Holding_MF	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000* (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000* (0.000)
Pctcash	-0.000 (0.000)	0.000 (0.001)	-0.001 (0.001)	-0.000 (0.001)	0.000 (0.000)	0.000 (0.001)	-0.001 (0.001)	-0.001 (0.001)
Hostile	-0.000 (0.001)	0.003 (0.002)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	0.003 (0.003)	-0.000 (0.001)	-0.000 (0.001)
Diff_Ind	-0.000 (0.000)	-0.001 (0.001)	0.001 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.001 (0.001)	0.001 (0.000)	0.000 (0.000)
Merger of equals	-0.002 (0.002)	0.004 (0.004)	0.000 (0.002)	0.001 (0.002)	-0.001 (0.002)	0.004 (0.005)	-0.001 (0.002)	0.001 (0.002)
Tender	-0.000 (0.000)	-0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	-0.001 (0.000)	-0.000 (0.001)	0.000 (0.001)	0.000 (0.001)
Number of bidders	0.001 (0.001)	0.000 (0.001)	0.000 (0.001)	-0.000 (0.001)	0.000 (0.000)	0.000 (0.001)	0.000 (0.001)	-0.000 (0.001)
IMR_holding	0.000 (0.000)	-0.000 (0.000)	0.000* (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)
IMR_bigbank	0.000* (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)
Constant	0.000 (0.002)	-0.001 (0.003)	-0.006*** (0.003)	0.004 (0.004)	-0.000 (0.002)	-0.001 (0.004)	-0.007* (0.004)	0.008* (0.004)
R-squared	0.324	0.342	0.324	0.374	0.352	0.346	0.341	0.378
Number of deals	329	547	329	547	316	535	316	535
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

## Appendix D Target and bidder abnormal returns: different event windows

We compute the target and acquirer abnormal returns in three different event windows, including a 3-day  $[-1,+1]$ , a 7-day  $[3,+3]$ , and an 11-day  $[5,+5]$  window. Several studies address the issue of appropriate window lengths to accurately measure price reactions (Hillmer and Yu, 1979; Krivin et al., 2003). The results in Table D1 are consistent with the main findings. Connected hedge fund holdings significantly impact the target's cumulative abnormal returns but lead to a statistically significant increase in the cumulative abnormal returns of the bidder for deals involving targets with high information asymmetry. This pattern is pronounced for all event windows considered.

Table D1: Hedge fund holdings and abnormal returns: different event windows

This table reports the results from Equation (4) for the impact of connected fund holdings on cumulative abnormal returns on target (TCAR) and acquirer (ACAR) over event windows of [-1,1], [-3,3], [-5,5]. Columns (1), (3), (5), (7), (9), (11) and (2), (4), (6), (8), (10), (12) use sub-samples of targets with information asymmetry above or below the median separately.  $Holding\_connected_{t-1}$  ( $Holding\_total_{t-1}$ ) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement. Other variables are defined in Table 2. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Sample=	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)		(11)		(12)	
	TCAR[-1,1]		TCAR[-3,3]		TCAR[-5,5]		ACAR[-1,1]		ACAR[-3,3]		ACAR[-5,5]		IA_high	IA_low	IA_high	IA_low	IA_high	IA_low	IA_high	IA_low	IA_high	IA_low	IA_high	IA_low
Holding_connected <sub>t-1</sub> (β)	-1.308	-0.203	-0.899	-0.189	-0.698	-0.352	1.280***	-0.025	1.961***	0.145	2.099***	0.129	(1.469)	(0.558)	(1.524)	(0.553)	(1.527)	(0.537)	(0.281)	(0.194)	(0.405)	(0.203)	(0.424)	(0.228)
Holding_total <sub>t-1</sub>	-0.601***	-0.142	-0.580**	-0.122	-0.566**	-0.127	-0.058	0.036	-0.071*	0.044	-0.050	0.049	(0.211)	(0.249)	(0.226)	(0.250)	(0.237)	(0.255)	(0.050)	(0.037)	(0.037)	(0.043)	(0.041)	(0.046)
Holding_acquirer <sub>t-1</sub>	-0.314	0.028	-0.389	0.050	-0.406	0.040	-0.058	-0.020	-0.035	-0.006	-0.007	-0.041	(0.432)	(0.160)	(0.432)	(0.155)	(0.458)	(0.158)	(0.091)	(0.077)	(0.087)	(0.076)	(0.098)	(0.077)
ROA_t	-0.582	-0.290	-0.718	-0.077	-0.725	-0.104	0.043	-0.080	0.162*	0.015	0.234*	-0.034	(0.620)	(0.310)	(0.640)	(0.291)	(0.678)	(0.309)	(0.069)	(0.074)	(0.085)	(0.065)	(0.124)	(0.079)
Leverage_t	0.067	-0.057	0.031	-0.048	0.015	-0.059	-0.006	0.005	-0.016	0.018	-0.035	0.021	(0.126)	(0.079)	(0.111)	(0.081)	(0.111)	(0.084)	(0.017)	(0.013)	(0.019)	(0.019)	(0.028)	(0.021)
B/M_t	-0.047	0.024	-0.059	0.014	-0.055	0.009	-0.001	0.002	-0.007	0.001	-0.010	-0.002	(0.067)	(0.022)	(0.064)	(0.026)	(0.068)	(0.024)	(0.014)	(0.006)	(0.013)	(0.006)	(0.017)	(0.006)
Size_a	0.070*	0.024*	0.066	0.026*	0.065	0.027*	0.006	0.007	0.009*	0.007*	0.011*	0.007	(0.038)	(0.014)	(0.040)	(0.014)	(0.041)	(0.014)	(0.004)	(0.004)	(0.005)	(0.004)	(0.006)	(0.005)
B/M_a	0.109	-0.054	0.087	-0.034	0.113	-0.020	0.008	0.007	0.014	-0.007	0.015	-0.003	(0.135)	(0.059)	(0.146)	(0.058)	(0.152)	(0.058)	(0.027)	(0.019)	(0.022)	(0.021)	(0.026)	(0.023)
Tangible_t	0.033	0.129**	0.048	0.113*	0.057	0.091	-0.031	0.016	-0.049*	0.033	-0.052	0.030	(0.181)	(0.060)	(0.170)	(0.065)	(0.169)	(0.068)	(0.027)	(0.028)	(0.026)	(0.026)	(0.033)	(0.027)
RELSIZE	0.006	0.002	0.005	0.002	0.003	0.001	-0.002	-0.004	-0.003*	-0.003	-0.004	-0.000	(0.008)	(0.011)	(0.008)	(0.010)	(0.007)	(0.011)	(0.001)	(0.003)	(0.002)	(0.004)	(0.003)	(0.004)
Valpct	-0.148	-0.005	-0.178	-0.009	-0.184	-0.008	0.018	0.012	0.014	0.007	0.022	0.001	(0.166)	(0.025)	(0.170)	(0.023)	(0.180)	(0.023)	(0.026)	(0.008)	(0.023)	(0.008)	(0.033)	(0.010)
Holding_MF	-0.049**	-0.014	-0.042*	-0.019	-0.040*	-0.020	-0.005	0.001	-0.009	0.003	-0.012*	0.003	(0.023)	(0.014)	(0.022)	(0.014)	(0.022)	(0.014)	(0.005)	(0.003)	(0.006)	(0.003)	(0.007)	(0.003)
Pctcash	-0.005	0.088	0.007	0.093*	-0.000	0.104**	-0.005	0.019	-0.011	0.020	-0.017	0.017	(0.086)	(0.054)	(0.084)	(0.048)	(0.087)	(0.047)	(0.020)	(0.014)	(0.022)	(0.015)	(0.026)	(0.017)
Hostile	0.239	-0.050	0.234	-0.026	0.239	-0.016	0.097	-0.026	0.125	-0.034	0.098	-0.036	(0.202)	(0.112)	(0.180)	(0.120)	(0.185)	(0.129)	(0.072)	(0.033)	(0.076)	(0.036)	(0.097)	(0.039)
Diff_Ind	-0.029	0.032	-0.021	0.023	-0.013	0.020	-0.014	-0.014	-0.014	-0.016**	-0.004	-0.014	(0.060)	(0.027)	(0.055)	(0.028)	(0.053)	(0.030)	(0.010)	(0.009)	(0.009)	(0.008)	(0.013)	(0.009)
Merger of equals	0.297	-0.146	0.352	-0.110	0.344	-0.102	0.057	0.023	0.060	0.024	0.081*	0.011	(0.299)	(0.089)	(0.287)	(0.090)	(0.285)	(0.101)	(0.042)	(0.047)	(0.043)	(0.040)	(0.047)	(0.052)
Tender	0.061	0.110**	0.083	0.124***	0.082	0.115**	0.001	-0.002	0.004	-0.005	0.012	-0.006	(0.096)	(0.048)	(0.088)	(0.043)	(0.083)	(0.045)	(0.014)	(0.012)	(0.013)	(0.011)	(0.016)	(0.010)
Number of bidders	-0.032	-0.076*	-0.019	-0.061	-0.013	-0.046	0.023	-0.008	0.030*	-0.009	0.045**	0.001	(0.205)	(0.041)	(0.200)	(0.044)	(0.196)	(0.048)	(0.017)	(0.015)	(0.018)	(0.017)	(0.020)	(0.017)
IMR_holding	0.006	0.002*	0.007*	0.003**	0.006	0.003**	-0.001	0.000	-0.001	0.000	0.000	0.000	(0.004)	(0.001)	(0.004)	(0.001)	(0.004)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
IMR_bigbank	0.001	0.001	0.001	0.001	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	-1.254*	-0.385	-1.207*	-0.470	-1.218*	-0.427	-0.021	-0.158**	-0.085	-0.171*	-0.222	-0.222*	(0.672)	(0.311)	(0.659)	(0.311)	(0.667)	(0.315)	(0.112)	(0.076)	(0.142)	(0.098)	(0.149)	(0.129)
R-squared	0.610	0.453	0.626	0.461	0.627	0.463	0.654	0.581	0.681	0.565	0.649	0.572												
Number of deals	327	546	327	547	327	547	327	541	327	542	327	542												
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes												

## **Appendix E Premium based on the target market value four weeks before the announcement**

In this appendix, we report the impact of connected fund holdings on premiums paid four weeks before the deal announcement. Tables [E1](#) to [E3](#) report the results and the interpretation of the results remain qualitatively unchanged.

Table E1: Target premium and abnormal returns

This table reports the results from Equation (4) for the impact of connected fund holdings on target premium and abnormal returns. Columns (1), (3) and (2), (4) use sub-samples of targets with information asymmetry above or below the median separately. *Premium* is the premium paid four weeks before the announcement.  *Holding\_connected<sub>t-1</sub>* ( *Holding\_total<sub>t-1</sub>*) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement.  *Abnormal\_fees* is the abnormal fees paid by the acquirer.  *IA* represents the target firm's information asymmetry measure based on five variables ( *Amihud*,  *SPREAD*,  *Size*,  *COVER*,  *ERR*). Other variables are defined in Table 2. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Sample=	(1) IA_high	(2) IA_low	(3) IA_high	(4) IA_low
Holding_connected <sub>t-1</sub> ( $\beta$ )	0.133 (3.009)	-0.290 (0.896)	4.077 (3.740)	-0.414 (1.951)
Holding_total <sub>t-1</sub>	-0.730** (0.318)	-0.106 (0.336)	-1.550 (1.210)	0.321 (0.457)
Abnormal_fees			0.090 (0.110)	-0.202 (0.135)
Holding_connected <sub>t-1</sub> $\times$ Abnormal_fees( $\beta^*$ )			4.124 (5.234)	-0.025 (2.552)
Holding_total <sub>t-1</sub> $\times$ Abnormal_fees			-0.738 (0.925)	0.739 (0.622)
Holding_acquirer <sub>t-1</sub>	-0.260 (0.499)	-0.242 (0.284)	-0.302 (0.536)	-0.311 (0.306)
ROA_t	-1.036 (0.853)	-0.127 (0.664)	-1.103 (0.897)	-0.128 (0.733)
Leverage_t	-0.350** (0.166)	-0.023 (0.119)	-0.350* (0.176)	-0.026 (0.129)
B/M_t	-0.037 (0.123)	-0.008 (0.027)	-0.016 (0.127)	-0.014 (0.027)
Size_a	0.076* (0.041)	0.031 (0.020)	0.083* (0.044)	0.028 (0.021)
B/M_a	0.151 (0.160)	-0.050 (0.083)	0.151 (0.179)	-0.022 (0.085)
Tangible_t	0.289 (0.282)	0.044 (0.188)	0.237 (0.286)	0.064 (0.193)
RELSIZE	-0.002 (0.008)	-0.019 (0.014)	-0.001 (0.009)	-0.016 (0.016)
Valpct	-0.146 (0.113)	0.021 (0.031)	-0.112 (0.127)	0.018 (0.034)
Holding_MF	-0.043 (0.034)	-0.005 (0.025)	-0.039 (0.037)	-0.008 (0.029)
Pctcash	-0.062 (0.111)	0.069 (0.062)	-0.066 (0.114)	0.074 (0.066)
Hostile	0.074 (0.386)	-0.060 (0.115)	0.029 (0.375)	-0.051 (0.149)
Diff_Ind	-0.009 (0.086)	-0.012 (0.042)	-0.010 (0.090)	-0.001 (0.043)
Merger of equals	0.100 (0.496)	-0.356*** (0.099)	0.082 (0.472)	-0.370*** (0.099)
Tender	0.197 (0.133)	0.200** (0.085)	0.183 (0.147)	0.211** (0.085)
Number of bidders	0.016 (0.210)	0.207* (0.123)	0.044 (0.222)	0.189 (0.123)
IMR_holding	0.004 (0.004)	0.001 (0.001)	0.004 (0.004)	0.001 (0.001)
IMR_bigbank	-0.000 (0.002)	0.000 (0.001)	0.000 (0.002)	-0.001 (0.002)
Constant	-1.115 (0.875)	-0.373 (0.559)	-0.913 (1.012)	-0.377 (0.486)
R-squared	0.654	0.484	0.656	0.490
Number of deals	329	547	316	535
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes

Table E2: Target premium: hedge funds' information sharing incentives

This table reports the results from Equation (4) for the impact of connected fund holdings on target premium considering hedge funds' information sharing incentives. We report the results using sub-samples of targets with information asymmetry above the median. The dependent variable is the premium paid four weeks before the announcement.  $Holding\_connected_{t-1}$  ( $Holding\_total_{t-1}$ ) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement. We further include holdings by hedge funds for which the target accounts for a low share in a hedge fund portfolio, hedge funds have low investments in the target industry, hedge funds has held the target for a short period, a hedge fund has a single prime broker, the prime broker services 70% of the assets of a hedge fund, a hedge fund performs poorly, and a hedge fund with low inflows. Other variables are defined in Table 2. We use all the other controls as in Table 10, which are not reported for the sake of space. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Measure=	(1) Use low share	(2) Use low SIC	(3) Use short period	(4) Use single PB	(5) Use dominant PB	(6) Use low return	(7) Use low flow
Holding_connected $_{t-1}(\beta)$	1.628 (2.316)	1.299 (2.030)	0.398 (1.643)	0.429 (2.699)	0.241 (4.754)	0.588 (2.187)	-0.828 (3.167)
Holding_connected_lowshare $_{t-1}(\beta^*)$	-11.875* (6.149)						
Holding_connected_lowsic $_{t-1}(\beta^*)$		-10.183* (5.542)					
Holding_connected_shortperiod $_{t-1}(\beta^*)$			-69.246*** (17.759)				
Holding_connected_singlePB $_{t-1}(\beta^*)$				-1.548 (3.896)			
Holding_connected_dominant70 $_{t-1}(\beta^*)$					0.149 (5.793)		
Holding_connected_lowret $_{t-1}(\beta^*)$						-3.633 (5.618)	
Holding_connected_lowflow $_{t-1}(\beta^*)$							2.590 (5.335)
Holding_total $_{t-1}$	-0.590** (0.226)	-0.553** (0.234)	-0.429 (0.264)	-0.542* (0.278)	-0.353 (0.350)	-0.426 (0.300)	-0.397 (0.257)
Holding_total_lowshare $_{t-1}$	1.184 (1.067)						
Holding_total_lowsic $_{t-1}$		0.348 (0.733)					
Holding_total_shortperiod $_{t-1}$			-1.582 (1.678)				
Holding_total_singlePB $_{t-1}$				0.300 (0.734)			
Holding_total_dominant70 $_{t-1}$					-0.531 (0.696)		
Holding_total_lowret $_{t-1}$						-0.216 (1.368)	
Holding_total_lowflow $_{t-1}$							-0.802 (0.839)
Holding_acquirer $_{t-1}$	0.233 (0.360)	0.285 (0.379)	0.122 (0.336)	0.218 (0.365)	0.220 (0.356)	0.211 (0.351)	0.235 (0.352)
IMR_holding	0.002 (0.003)	0.002 (0.003)	0.002 (0.003)	0.002 (0.003)	0.002 (0.003)	0.002 (0.003)	0.002 (0.003)
IMR_bigbank	0.000 (0.001)	0.000 (0.001)	-0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	-0.000 (0.001)	0.000 (0.001)
Constant	-1.560*** (0.569)	-1.438** (0.561)	-1.362*** (0.514)	-1.386** (0.604)	-1.369** (0.563)	-1.382** (0.584)	-1.424** (0.567)
R-squared	0.503	0.500	0.513	0.491	0.491	0.491	0.492
Number of deals	329	329	329	329	329	329	329
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table E3: Target premium: importance of information sharing for the bidder

This table reports the results from Equation (4) for the impact of connected fund holdings on target premium, considering the importance of information sharing for the bidder. We report the results using sub-samples of targets with information asymmetry above the median. The dependent variable is the premium paid four weeks before the announcement.  $Holding\_connected_{t-1}$  ( $Holding\_total_{t-1}$ ) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement.  $Diff\_Ind$  is a dummy variable that equals one if the bidder and target are from different 3-digit SIC code industries and 0 otherwise.  $Multi\_bidder$  is a dummy variable that equals one if more than one bidder is involved.  $Pctstock$  is the percentage of stock payment.  $Merger\_wave$  is a dummy variable that equals one when there is a merger wave in the target-acquirer industry. Other variables are defined in Table 2. We use all the other controls as in Table 10, which are not reported for the sake of space. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Measure=	(1) Different industry	(2) Multi-bidder	(3) Stock payment	(4) Merger wave
$ Holding\_connected_{t-1}(\beta)$	4.460 (8.471)	6.481 (18.299)	-1.465 (5.014)	7.282 (9.668)
$ Holding\_connected_{t-1} \times Diff\_Ind (\beta^*)$	-6.366 (9.072)			
$ Holding\_connected_{t-1} \times Multi\_bidder (\beta^*)$		-6.211 (18.895)		
$ Holding\_connected_{t-1} \times Pctstock (\beta^*)$			2.444 (6.336)	
$ Holding\_connected_{t-1} \times Merger\_wave (\beta^*)$				-9.738 (9.648)
$ Holding\_total_{t-1}$	-0.699 (0.541)	0.242 (3.296)	-0.351 (0.669)	-1.306*** (0.402)
$ Holding\_total_{t-1} \times Diff\_Ind$	-0.089 (0.655)			
$ Holding\_total_{t-1} \times Multi\_bidder$		-0.930 (3.245)		
$ Holding\_total_{t-1} \times Pctstock$			-0.837 (0.999)	
$ Holding\_total_{t-1} \times Merger\_wave$				1.066 (0.882)
$ Holding\_acquirer_{t-1}$	-0.269 (0.524)	-0.279 (0.514)	-0.255 (0.516)	-0.353 (0.544)
IMR_holding	0.004 (0.004)	0.004 (0.004)	0.004 (0.004)	0.004 (0.004)
IMR_bigbank	-0.000 (0.002)	-0.000 (0.002)	-0.000 (0.002)	-0.000 (0.002)
Constant	-1.063 (0.890)	-1.239 (0.975)	-1.045 (0.831)	-0.936 (0.862)
R-squared	0.657	0.655	0.656	0.665
Number of deals	329	329	329	329
Controls	Yes	Yes	Yes	Yes
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes

## **Appendix F Results using sub-sample of targets with low information asymmetry**

In this appendix, we report the impact of connected fund holdings on premium, target, and acquirer abnormal returns, considering hedge funds' information-sharing incentives or the importance of information sharing for the bidder for sub-samples of targets with information asymmetry below the median. Tables [F1](#) to [F6](#) report the results and we do not find similar effects of connected fund holdings for deals with low target information asymmetry.



Table F1: Target premium: hedge funds' information sharing incentives

This table reports the results from Equation (4) for the impact of connected fund holdings on target premium considering hedge funds' information sharing incentives. We report the results using sub-samples of targets with information asymmetry below the median. The dependent variable is the premium paid one week before the announcement.  $Holding\_connected_{t-1}$  ( $Holding\_total_{t-1}$ ) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement. We further include holdings by hedge funds for which the target accounts for a low share in a hedge fund portfolio, hedge funds have low investments in the target industry, hedge funds has held the target for a short period, a hedge fund has a single prime broker, the prime broker services 70% of the assets of a hedge fund, a hedge fund performs poorly, and a hedge fund with low inflows. Other variables are defined in Table 2. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Measure=	(1) Use low share	(2) Use low SIC	(3) Use short period	(4) Use single PB	(5) Use dominant PB	(6) Use low return	(7) Use low flow
Holding_connected $_{t-1}(\beta)$	-0.343 (0.687)	-1.049 (0.791)	-0.558 (0.711)	-0.711 (0.782)	-0.191 (0.768)	0.352 (1.098)	-0.450 (0.796)
Holding_connected_lowshare $_{t-1}(\beta^*)$	7.245 (6.323)						
Holding_connected_lowsic $_{t-1}(\beta^*)$		5.735 (3.606)					
Holding_connected_shortperiod $_{t-1}(\beta^*)$			4.575 (3.339)				
Holding_connected_singlePB $_{t-1}(\beta^*)$				3.302 (2.616)			
Holding_connected_dominant70 $_{t-1}(\beta^*)$					0.113 (1.323)		
Holding_connected_lowret $_{t-1}(\beta^*)$						-1.261 (1.998)	
Holding_connected_lowflow $_{t-1}(\beta^*)$							1.218 (1.767)
Holding_total $_{t-1}$	-0.189 (0.239)	-0.139 (0.235)	-0.040 (0.236)	-0.086 (0.328)	-0.030 (0.331)	-0.174 (0.246)	-0.089 (0.226)
Holding_total_lowshare $_{t-1}$	0.242 (0.958)						
Holding_total_lowsic $_{t-1}$		-0.200 (0.405)					
Holding_total_shortperiod $_{t-1}$			-1.992** (0.971)				
Holding_total_singlePB $_{t-1}$				-0.419 (0.590)			
Holding_total_dominant70 $_{t-1}$					-0.557 (0.611)		
Holding_total_lowret $_{t-1}$						-0.419 (0.870)	
Holding_total_lowflow $_{t-1}$							-0.986 (0.763)
Holding_acquirer $_{t-1}$	0.166 (0.205)	0.112 (0.207)	0.151 (0.203)	0.138 (0.207)	0.128 (0.205)	0.142 (0.204)	0.148 (0.207)
IMR_holding	0.003** (0.001)	0.003** (0.001)	0.003** (0.001)	0.003** (0.001)	0.003** (0.001)	0.003* (0.001)	0.003** (0.001)
IMR_bigbank	-0.001 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)
Constant	-0.072 (0.349)	-0.075 (0.352)	-0.047 (0.348)	-0.051 (0.345)	-0.085 (0.346)	-0.073 (0.332)	-0.047 (0.336)
R-squared	0.293	0.298	0.299	0.293	0.293	0.292	0.295
Number of deals	547	547	547	547	547	547	547
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table F2: Target abnormal returns: hedge funds' information sharing incentives

This table reports the results from Equation (4) for the impact of connected fund holdings on target abnormal returns considering hedge funds' information sharing incentives. We report the results using sub-samples of targets with information asymmetry below the median. The dependent variable is the target abnormal returns on the acquisition announcement date.  $Holding\_connected_{t-1}$  ( $Holding\_total_{t-1}$ ) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement. We further include holdings by hedge funds for which the target accounts for a low share in a hedge fund portfolio, hedge funds have low investments in the target industry, hedge funds has held the target for a short period, a hedge fund has a single prime broker, the prime broker services 70% of the assets of a hedge fund, a hedge fund performs poorly, and a hedge fund with low inflows. Other variables are defined in Table 2. We use all the other controls as in Table 10, which are not reported for the sake of space. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Measure=	(1) Use low share	(2) Use low SIC	(3) Use short period	(4) Use single PB	(5) Use dominant PB	(6) Use low return	(7) Use low flow
Holding_connected $_{t-1}(\beta)$	-0.311 (0.577)	-0.910 (0.565)	-0.150 (0.568)	-0.316 (0.645)	0.014 (0.659)	-0.007 (0.705)	-0.602 (0.612)
Holding_connected_lowshare $_{t-1}(\beta^*)$	4.828 (3.515)						
Holding_connected_lowsic $_{t-1}(\beta^*)$		6.028** (2.640)					
Holding_connected_shortperiod $_{t-1}(\beta^*)$			1.320 (1.626)				
Holding_connected_singlePB $_{t-1}(\beta^*)$				0.145 (2.091)			
Holding_connected_dominant70 $_{t-1}(\beta^*)$					-0.634 (1.043)		
Holding_connected_lowret $_{t-1}(\beta^*)$						-0.112 (1.217)	
Holding_connected_lowflow $_{t-1}(\beta^*)$							1.787* (0.995)
Holding_total $_{t-1}$	-0.062 (0.218)	-0.027 (0.215)	0.056 (0.240)	0.004 (0.304)	0.007 (0.283)	-0.069 (0.222)	-0.036 (0.219)
Holding_total_lowshare $_{t-1}$	-0.668 (0.794)						
Holding_total_lowsic $_{t-1}$		-0.419* (0.235)					
Holding_total_shortperiod $_{t-1}$			-1.817** (0.754)				
Holding_total_singlePB $_{t-1}$				-0.392 (0.526)			
Holding_total_dominant70 $_{t-1}$					-0.336 (0.410)		
Holding_total_lowret $_{t-1}$						-0.419 (0.525)	
Holding_total_lowflow $_{t-1}$							-0.589* (0.340)
Holding_acquirer $_{t-1}$	0.170* (0.097)	0.127 (0.100)	0.175* (0.101)	0.162 (0.102)	0.153 (0.100)	0.153 (0.098)	0.161* (0.097)
IMR_holding	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
IMR_bigbank	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Constant	-0.294 (0.298)	-0.287 (0.296)	-0.292 (0.301)	-0.281 (0.283)	-0.314 (0.300)	-0.291 (0.288)	-0.257 (0.285)
R-squared	0.275	0.286	0.287	0.274	0.274	0.272	0.276
Number of deals	510	510	510	510	510	510	510
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table F3: Acquirer abnormal returns: hedge funds' information sharing incentives

This table reports the results from Equation (4) for the impact of connected fund holdings on acquirer abnormal returns considering hedge funds' information sharing incentives. We report the results using sub-samples of targets with information asymmetry below the median. The dependent variable is the acquirer abnormal returns on the acquisition announcement date.  $Holding\_connected_{t-1}$  ( $Holding\_total_{t-1}$ ) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement. We further include holdings by hedge funds for which the target accounts for a low share in a hedge fund portfolio, hedge funds have low investments in the target industry, hedge funds has held the target for a short period, a hedge fund has a single prime broker, the prime broker services 70% of the assets of a hedge fund, a hedge fund performs poorly, and a hedge fund with low inflows. Other variables are defined in Table 2. We use all the other controls as in Table 10, which are not reported for the sake of space. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Measure=	(1) Use low share	(2) Use low SIC	(3) Use short period	(4) Use single PB	(5) Use dominant PB	(6) Use low return	(7) Use low flow
Holding_connected $_{t-1}(\beta)$	-0.124 (0.132)	-0.143 (0.139)	-0.108 (0.131)	-0.077 (0.127)	-0.079 (0.152)	-0.128 (0.178)	-0.025 (0.142)
Holding_connected_lowshare $_{t-1}(\beta^*)$	0.550 (0.931)						
Holding_connected_lowsic $_{t-1}(\beta^*)$		0.108 (0.726)					
Holding_connected_shortperiod $_{t-1}(\beta^*)$			0.014 (0.634)				
Holding_connected_singlePB $_{t-1}(\beta^*)$				-0.340 (0.690)			
Holding_connected_dominant70 $_{t-1}(\beta^*)$					-0.271 (0.414)		
Holding_connected_lowret $_{t-1}(\beta^*)$						0.211 (0.251)	
Holding_connected_lowflow $_{t-1}(\beta^*)$							-0.377 (0.256)
Holding_total $_{t-1}$	0.045* (0.024)	0.037 (0.025)	0.041 (0.029)	0.043 (0.027)	-0.005 (0.029)	0.048* (0.026)	0.031 (0.026)
Holding_total_lowshare $_{t-1}$	-0.132 (0.196)						
Holding_total_lowsic $_{t-1}$		0.084 (0.069)					
Holding_total_shortperiod $_{t-1}$			-0.007 (0.200)				
Holding_total_singlePB $_{t-1}$				-0.010 (0.077)			
Holding_total_dominant70 $_{t-1}$					0.168** (0.081)		
Holding_total_lowret $_{t-1}$						-0.164 (0.149)	
Holding_total_lowflow $_{t-1}$							0.127 (0.130)
Holding_acquirer $_{t-1}$	0.025 (0.049)	0.023 (0.049)	0.023 (0.048)	0.025 (0.049)	0.029 (0.050)	0.024 (0.048)	0.022 (0.049)
IMR_holding	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
IMR_bigbank	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Constant	-0.045 (0.047)	-0.052 (0.049)	-0.046 (0.048)	-0.047 (0.048)	-0.047 (0.048)	-0.041 (0.048)	-0.055 (0.050)
R-squared	0.325	0.326	0.323	0.324	0.332	0.325	0.327
Number of deals	505	505	505	505	505	505	505
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table F4: Target premium: importance of information sharing for the bidder

This table reports the results from Equation (4) for the impact of connected fund holdings on target premium, considering the importance of information sharing for the bidder. We report the results using sub-samples of targets with information asymmetry below the median. The dependent variable is the premium paid one week before the announcement.  $Holding\_connected_{t-1}$  ( $Holding\_total_{t-1}$ ) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement.  $Diff\_Ind$  is a dummy variable that equals one if the bidder and target are from different 3-digit SIC code industries and 0 otherwise.  $Multi\_bidder$  is a dummy variable that equals one if more than one bidder is involved.  $Pctstock$  is the percentage of stock payment.  $Merger\_wave$  is a dummy variable that equals one when there is a merger wave in the target-acquirer industry. Other variables are defined in Table 2. We use all the other controls as in Table 10, which are not reported for the sake of space. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Measure=	(1) Different industry	(2) Multi-bidder	(3) Stock payment	(4) Merger wave
$Holding\_connected_{t-1}(\beta)$	-1.798 (1.360)	-1.340 (1.726)	0.083 (0.877)	-3.438** (1.632)
$Holding\_connected_{t-1} \times Diff\_Ind (\beta^*)$	2.110 (1.434)			
$Holding\_connected_{t-1} \times Multi\_bidder (\beta^*)$		0.647 (1.220)		
$Holding\_connected_{t-1} \times Pctstock (\beta^*)$			-2.647 (3.427)	
$Holding\_connected_{t-1} \times Merger\_wave (\beta^*)$				3.524* (1.994)
$Holding\_total_{t-1}$	-0.176 (0.474)	0.893 (0.824)	-0.166 (0.448)	0.512 (0.758)
$Holding\_total_{t-1} \times Diffind$	0.051 (0.777)			
$Holding\_total_{t-1} \times Multi\_bidder$		-0.971 (0.634)		
$Holding\_total_{t-1} \times Pctstock$			0.074 (1.162)	
$Holding\_total_{t-1} \times Merger\_wave$				-0.933 (0.811)
$Holding\_acquirer_{t-1}$	-0.053 (0.294)	-0.058 (0.300)	-0.061 (0.295)	-0.090 (0.280)
IMR_holding	0.003** (0.001)	0.004** (0.002)	0.003** (0.001)	0.003** (0.001)
IMR_bigbank	0.000 (0.001)	-0.000 (0.001)	0.000 (0.001)	0.000 (0.001)
Constant	-0.330 (0.522)	-0.523 (0.552)	-0.335 (0.540)	-0.359 (0.506)
R-squared	0.497	0.497	0.496	0.504
Number of deals	547	547	547	547
Controls	Yes	Yes	Yes	Yes
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes

Table F5: Target abnormal returns: importance of information sharing for the bidder

This table reports the results from Equation (4) for the impact of connected fund holdings on target abnormal returns, considering the importance of information sharing for the bidder. We report the results using sub-samples of targets with information asymmetry below the median. The dependent variable is the target abnormal returns on the acquisition announcement date.  $Holding\_connected_{t-1}$  ( $Holding\_total_{t-1}$ ) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement.  $Diff\_Ind$  is a dummy variable that equals one if the bidder and target are from different 3-digit SIC code industries and 0 otherwise.  $Multi\_bidder$  is a dummy variable that equals one if more than one bidder is involved.  $Pctstock$  is the percentage of stock payment.  $Merger\_wave$  is a dummy variable that equals one when there is a merger wave in the target-acquirer industry. Other variables are defined in Table 2. We use all the other controls as in Table 10, which are not reported for the sake of space. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Measure=	(1) Different industry	(2) Multi-bidder	(3) Stock payment	(4) Merger wave
$Holding\_connected_{t-1}(\beta)$	-0.362 (0.979)	-2.494 (1.764)	-0.457 (0.938)	-3.484** (1.633)
$Holding\_connected_{t-1} \times Diff\_Ind (\beta^*)$	0.126 (1.127)			
$Holding\_connected_{t-1} \times Multi\_bidder (\beta^*)$		1.834 (1.209)		
$Holding\_connected_{t-1} \times Pctstock (\beta^*)$			0.598 (1.825)	
$Holding\_connected_{t-1} \times Merger\_wave (\beta^*)$				3.937** (1.687)
$Holding\_total_{t-1}$	-0.088 (0.226)	0.510 (0.724)	0.265 (0.508)	0.586 (0.716)
$Holding\_total_{t-1} \times Diffind$	0.090 (0.529)			
$Holding\_total_{t-1} \times Multi\_bidder$		-0.501 (0.505)		
$Holding\_total_{t-1} \times Pctstock$			-0.886 (0.778)	
$Holding\_total_{t-1} \times Merger\_wave$				-0.894 (0.684)
$Holding\_acquirer_{t-1}$	0.128 (0.157)	0.118 (0.157)	0.122 (0.148)	0.058 (0.159)
IMR_holding	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)
IMR_bigbank	0.000 (0.001)	-0.000 (0.001)	0.000 (0.001)	-0.000 (0.001)
Constant	-0.363 (0.440)	-0.387 (0.443)	-0.311 (0.434)	-0.296 (0.397)
R-squared	0.458	0.461	0.467	0.487
Number of deals	510	510	510	510
Controls	Yes	Yes	Yes	Yes
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes

Table F6: Acquirer abnormal returns: importance of information sharing for the bidder

This table reports the results from Equation (4) for the impact of connected fund holdings on acquirer abnormal returns considering the importance of information sharing for the bidder. We report the results using sub-samples of targets with information asymmetry below the median. The dependent variable is the acquirer abnormal returns on the acquisition announcement date.  $Holding\_connected_{t-1}$  ( $Holding\_total_{t-1}$ ) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement.  $Diff\_Ind$  is a dummy variable that equals one if bidder and target are from different 3-digit SIC code industries and 0 otherwise.  $Multi\_bidder$  is a dummy variable that equals one if more than one bidder is involved.  $Pctstock$  is the percentage of stock payment.  $Merger\_wave$  is a dummy variable that equals one when there is a merger wave in the target-acquirer industry. Other variables are defined in Table 2. We use all the other controls as in Table 10, which are not reported for the sake of space. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Measure=	(1) Different industry	(2) Multi-bidder	(3) Stock payment	(4) Merger wave
Holding_connected $_{t-1}(\beta)$	-0.123 (0.256)	-0.165 (0.388)	0.104 (0.175)	0.024 (0.430)
Holding_connected $_{t-1} \times Diff\_Ind(\beta^*)$	0.058 (0.301)			
Holding_connected $_{t-1} \times Multi\_bidder(\beta^*)$		0.053 (0.268)		
Holding_connected $_{t-1} \times Pctstock(\beta^*)$			-0.714* (0.401)	
Holding_connected $_{t-1} \times Merger\_wave(\beta^*)$				-0.166 (0.427)
Holding_total $_{t-1}$	0.060 (0.047)	-0.054 (0.113)	0.066 (0.042)	-0.038 (0.062)
Holding_total $_{t-1} \times Diffind$	-0.021 (0.058)			
Holding_total $_{t-1} \times Multi\_bidder$		0.095 (0.102)		
Holding_total $_{t-1} \times Pctstock$			-0.037 (0.089)	
Holding_total $_{t-1} \times Merger\_wave$				0.123* (0.071)
Holding_acquirer $_{t-1}$	0.014 (0.073)	0.016 (0.071)	0.008 (0.074)	0.014 (0.075)
IMR_holding	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
IMR_bigbank	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Constant	-0.155** (0.064)	-0.137** (0.064)	-0.144** (0.064)	-0.150** (0.060)
R-squared	0.617	0.618	0.622	0.625
Number of deals	505	505	505	505
Controls	Yes	Yes	Yes	Yes
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes

## Appendix G Deals involving connected advisors

To ensure that our results are not driven by some systematic, possibly unobserved differences between advisors that are connected and not, we repeat the analysis using the sub-sample of deals involving advisors that are connected at least in one deal in our sample. Hence, we drop all deals involving advisors that are never connected. The remaining advisors are still connected in some of the deals in this sub-sample, while they are unconnected in other deals. In total, we identify 575 deals with connected advisors, accounting for 63% of the sample. Tables [G1](#) to [G5](#) indicate that our main results remain qualitatively unchanged when using this connected sub-sample of deals.

Table G1: Choice of the advisor: deals involving connected advisors

This table reports the results from Equation (1), examining the acquirer's choice of advisors in M&A using only deals that involve connected advisors. Column (1) uses the whole sample, and columns (2)-(3) use sub-samples of targets with information asymmetry above or below the median separately. The dependent variable is a dummy variable that equals one if an advisor is hired by the acquirer for the operation and zero otherwise. *Connected* is a dummy variable that equals one if an advisor is the prime broker of a hedge fund with holdings in the target firm and zero otherwise.  *Holding\_connected<sub>t-1</sub>* is the percentage holdings of an advisor's connected hedge funds in the target firm one quarter before the acquisition announcement. *IA* represents the target firm's information asymmetry measure based on five variables (*Amihud*, *SPREAD*, *Size*, *COVER*, *ERR*). Other variables are defined in Table 2. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Sample=	(1) All	(2) IA_high	(3) IA_low
Connected ( $\beta_1$ )	4.160*** (0.137)	4.432*** (0.383)	4.180*** (0.146)
Holding_connected <sub>t-1</sub> ( $\beta_2$ )	2.789 (5.921)	17.568** (7.045)	2.204 (5.976)
Acquisition times	0.008 (0.005)	0.039*** (0.010)	-0.005 (0.007)
Acquisition value	0.062*** (0.013)	-0.021 (0.020)	0.108*** (0.018)
Prior advisor	1.082*** (0.159)	0.814** (0.386)	1.181*** (0.179)
Expertise	0.643*** (0.059)	0.823*** (0.101)	0.555*** (0.072)
IMR_connected	0.002 (0.002)	0.003 (0.003)	0.002 (0.002)
IMR_bigbank	0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
Constant	-3.398*** (0.357)	-1.942*** (0.291)	-3.807*** (0.414)
R-squared	0.615	0.454	0.666
Number of deals	553	152	401
Observations	27,192	7,360	19,832
Industry, Year FE	Yes	Yes	Yes



Table G2: Choice of the target: deals involving connected advisors

This table reports the results from Equation (2), examining the acquirer's choice of targets in M&A using only deals that involve connected advisors. Column (1) use the whole sample, and columns (2)-(3) use sub-samples of targets with information asymmetry above or below the median separately. The dependent variable is a dummy variable that equals one if a firm is chosen to be the target and zero otherwise. *Connected* is a dummy variable that equals one if a firm is held by hedge funds whose prime broker is the advisor and zero otherwise.  *Holding\_connected<sub>t-1</sub>* is the percentage holdings of an advisor's connected hedge funds in the firm one quarter before the acquisition announcement. *IA* represents the target firm's information asymmetry measure based on five variables (*Amihud*, *SPREAD*, *Size*, *COVER*, *ERR*). Other variables are defined in Table 2. Standard errors are clustered at the firm level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Sample=	(1) All	(2) IA_high	(3) IA_low
Connected ( $\beta_1$ )	1.233*** (0.079)	1.118*** (0.164)	1.399*** (0.097)
Holding_connected <sub>t-1</sub> ( $\beta_2$ )	0.583 (1.324)	2.301 (2.956)	0.164 (1.528)
Size	-0.016 (0.023)	-0.164*** (0.054)	0.037 (0.029)
B/M	-0.050 (0.045)	0.020 (0.060)	-0.146** (0.073)
ROE	0.006 (0.063)	0.033 (0.094)	0.000 (0.088)
Leverage	-0.023 (0.094)	0.069 (0.134)	-0.064 (0.138)
Tangible	-0.244 (0.194)	-0.434 (0.435)	-0.180 (0.229)
Sales	-0.099 (0.114)	-0.060 (0.100)	-0.368* (0.208)
P/E	0.000 (0.000)	-0.000 (0.001)	0.000 (0.000)
IMR_holding	0.001 (0.003)	0.001 (0.008)	0.002 (0.004)
IMR_bigbank	0.002 (0.002)	-0.003 (0.004)	0.004 (0.003)
Constant	-0.983 (0.888)	0.368 (0.900)	-1.759* (0.976)
R-squared	0.105	0.079	0.132
Observations	3,093	870	2,223
Industry, Year, Advisor FE	Yes	Yes	Yes

Table G3: Changes in hedge fund holdings before the deal announcement: deals involving connected advisors

This table reports the results from Equation (3) for the changes in connected (unconnected) hedge fund holdings in targets one quarter before the deal announcement ( $\Delta \overline{Holding\_connected}_{t-1}$  and  $\Delta \overline{Holding\_unconnected}_{t-1}$ ) using only deals that involve connected advisors. Columns (1) and (4) use the whole sample, and columns (2)-(3) and (5)-(6) use sub-samples of targets with information asymmetry above or below the median separately.  $Holding\_connected_{t-1}$  ( $Holding\_total_{t-1}$ ) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement. Other variables are defined in Table 2. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Sample=	(1)	(2)	(3)	(4)	(5)	(6)
	All	IA_high	IA_low	All	IA_high	IA_low
$\Delta \overline{Holding\_connected}_{t-1}(\beta)$	0.794 (1.435)	1.150 (4.406)	0.439 (1.263)	-0.455 (1.560)	-3.977 (5.052)	1.810 (1.233)
$Holding\_total_{t-1}$	0.079 (0.230)	0.812* (0.443)	-0.135 (0.210)	1.038 (0.808)	2.802 (1.700)	-0.140 (0.441)
$\Delta \overline{Holding\_connected}_{t-2}$	0.021 (0.059)	0.013 (0.069)	-0.107 (0.098)			
$\Delta \overline{Holding\_unconnected}_{t-2}$				-0.627*** (0.181)	-0.708*** (0.129)	-0.148 (0.209)
$Holding\_acquirer_{t-1}$	-0.003 (0.003)	0.003 (0.007)	-0.002 (0.002)	-0.002 (0.002)	0.001 (0.009)	-0.001 (0.002)
ROA_t	-0.327 (0.503)	-2.090* (1.243)	0.190 (0.650)	-0.264 (0.389)	-0.464 (1.540)	-0.418 (0.424)
Leverage_t	0.060 (0.064)	-0.389* (0.222)	0.051 (0.074)	0.155 (0.130)	-0.176 (0.309)	0.133 (0.143)
B/M_t	0.013 (0.047)	0.206** (0.101)	-0.057** (0.022)	-0.029 (0.033)	0.017 (0.141)	-0.024 (0.017)
Size_a	0.001 (0.027)	-0.007 (0.054)	-0.006 (0.013)	-0.028 (0.021)	-0.153*** (0.050)	-0.003 (0.022)
B/M_a	0.060 (0.086)	-0.087 (0.230)	-0.016 (0.088)	-0.251** (0.126)	-0.768** (0.340)	-0.054 (0.120)
Tangible_t	-0.046 (0.096)	-0.858* (0.475)	0.150 (0.102)	-0.155 (0.136)	-0.938* (0.520)	0.092 (0.112)
RELSIZE	-0.033 (0.028)	-0.062*** (0.020)	0.016* (0.009)	-0.003 (0.009)	-0.002 (0.015)	-0.005 (0.009)
Valpct	0.060 (0.060)	0.096 (0.059)	-0.032 (0.021)	-0.036 (0.025)	-0.258*** (0.066)	-0.003 (0.020)
Holding_MF	-0.002 (0.012)	0.288 (0.285)	-0.011 (0.011)	0.029** (0.014)	0.805* (0.454)	0.009 (0.013)
Pctcash	0.088 (0.064)	-0.092 (0.143)	0.125** (0.051)	-0.014 (0.063)	-0.021 (0.196)	-0.001 (0.067)
Hostile	0.208 (0.149)	-0.983** (0.470)	0.289** (0.132)	0.042 (0.157)	-1.718*** (0.574)	0.050 (0.101)
Diff_Ind	0.014 (0.043)	-0.238** (0.111)	0.081 (0.050)	0.058 (0.047)	0.337*** (0.118)	0.024 (0.046)
Merger of equals	0.147 (0.124)	0.611 (0.457)	0.039 (0.093)	0.084 (0.113)	1.992** (0.896)	-0.028 (0.076)
Tender	0.073 (0.066)	0.208 (0.209)	0.007 (0.045)	0.006 (0.076)	0.375 (0.243)	-0.053 (0.081)
Number of bidders	0.000 (0.049)	0.084 (0.238)	-0.014 (0.050)	0.017 (0.085)	-0.146 (0.354)	0.067 (0.055)
IMR_holding	-0.001 (0.001)	-0.009** (0.004)	0.001 (0.001)	0.000 (0.002)	0.002 (0.004)	0.001 (0.001)
IMR_bigbank	-0.000 (0.002)	0.003 (0.002)	0.000 (0.001)	-0.001 (0.001)	0.002 (0.003)	-0.001 (0.002)
Constant	1.714*** (0.416)	0.418 (0.708)	1.245*** (0.248)	0.109 (0.377)	3.502*** (1.049)	-0.367 (0.333)
R-squared	0.174	0.647	0.248	0.421	0.757	0.196
Number of deals	556	151	405	556	151	405
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes

Table G4: Deal duration, and completion: deals involving connected advisors

This table reports the results from Equation (4) for the impact of connected fund holdings on deal duration and completion using only deals that involve connected advisors. Columns (1) and (4) use the whole sample, and columns (2)-(3) and (5)-(6) use sub-samples of targets with information asymmetry above or below the median separately. *Duration* is the number of months between the deal announcement and the deal outcome. *Completion* is a dummy variable that equals one if the deal is completed. *Holding\_connected<sub>t-1</sub>* (*Holding\_total<sub>t-1</sub>*) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement. Other variables are defined in Table 2. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Sample=	(1)	(2)	(3)	(4)	(5)	(6)
	All	Duration IA_high	IA_low	All	Completion IA_high	IA_low
Holding_connected <sub>t-1</sub> ( $\beta$ )	1.453 (6.545)	-14.186* (7.356)	10.136 (9.068)	14.677*** (5.355)	506.268 (0.000)	28.500*** (8.701)
Holding_total <sub>t-1</sub>	-0.897 (1.123)	-0.684 (2.048)	-3.673 (2.249)	0.298 (0.939)	-28.542 (0.000)	-2.526 (1.615)
Holding_acquirer <sub>t-1</sub>	0.834 (1.358)	-0.402 (2.116)	2.301 (2.495)	-1.867* (0.959)	-179.291 (0.000)	-2.464** (1.231)
Deal value	0.059*** (0.017)	0.002 (0.326)	0.050*** (0.016)	-0.006 (0.013)	14.764 (0.000)	-0.009 (0.015)
Termination fee	0.514 (0.577)	-7.279 (16.706)	0.681 (0.544)	-0.373 (0.315)	2,455.436 (0.000)	-0.601 (0.437)
RELSIZE	-0.002 (0.031)	0.067*** (0.018)	-0.088 (0.064)	0.015 (0.019)	-28.626 (0.000)	-0.036 (0.029)
Pctcash	-0.565 (0.381)	-0.520 (0.832)	-0.110 (0.655)	0.890*** (0.264)	92.346 (0.000)	0.361 (0.400)
Hostile	10.912*** (1.006)	-	8.844*** (2.765)	-	-	-
Diff_Ind	-0.368 (0.231)	-0.526 (0.345)	-0.477 (0.380)	0.191 (0.191)	-8.508 (0.000)	0.169 (0.264)
Merger of equals	2.010 (1.386)	9.170*** (0.907)	1.823 (2.094)	-0.202 (0.625)	-	-0.188 (0.751)
Tender	-1.854*** (0.265)	-1.616** (0.628)	-2.085*** (0.532)	0.351 (0.264)	39.204 (0.000)	1.259*** (0.456)
Number of bidders	1.157 (1.050)	-1.209 (1.383)	1.176 (1.137)	-1.284*** (0.284)	-	-1.385*** (0.420)
IMR_holding	-0.002 (0.009)	0.007 (0.016)	-0.005 (0.017)	0.009 (0.008)	0.545 (0.000)	0.021** (0.010)
IMR_bigbank	-0.012*** (0.003)	-0.006 (0.010)	-0.013 (0.010)	-0.006 (0.004)	0.087 (0.000)	-0.005 (0.008)
Constant	2.438 (1.976)	8.458*** (2.588)	1.150 (2.997)	1.906* (1.098)	-51.412 (0.000)	4.017*** (1.406)
R-squared	0.430	0.752	0.420	0.264	1	0.399
Number of deals	778	138	362	337	32	208
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes

Table G5: Target premium, and abnormal returns: deals involving connected advisors

This table reports the results from Equation (4) for the impact of connected fund holdings on target premium and abnormal returns using only deals that involve connected advisors. Columns (1), (4), (7), and (10) use the whole sample, and columns (2)-(3), (5)-(6), (8)-(9), and (11)-(12) use sub-samples of targets with information asymmetry above or below the median separately. *Premium* is the premium paid one week (four weeks) before the announcement. *TCAR* and *ACAR* are the target and acquirer abnormal returns on the acquisition announcement date. *Holding\_connected<sub>t-1</sub>* (*Holding\_total<sub>t-1</sub>*) are the holdings of connected (all) hedge funds in a target firm one quarter before the acquisition announcement. Other variables are defined in Table 2. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Sample=	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Premium (one week)			Premium (four weeks)			All	TCAR		All	ACAR	
	All	IA_high	IA_low	All	IA_high	IA_low		IA_high	IA_low		IA_high	IA_low
Holding_connected <sub>t-1</sub> ( $\beta$ )	0.006 (0.873)	2.075 (3.816)	-1.033 (0.902)	0.308 (0.799)	0.120 (3.237)	-0.566 (1.002)	-0.744 (0.520)	-2.565 (2.420)	-0.581 (0.727)	0.032 (0.148)	1.557*** (0.255)	-0.025 (0.181)
Holding_total <sub>t-1</sub>	-0.179 (0.227)	-0.848* (0.430)	0.095 (0.399)	-0.161 (0.264)	-0.933** (0.429)	0.158 (0.456)	-0.014 (0.211)	-0.674 (0.588)	0.177 (0.384)	0.014 (0.023)	-0.023 (0.028)	0.019 (0.057)
Holding_acquirer <sub>t-1</sub>	0.359** (0.167)	0.119 (0.675)	0.061 (0.238)	0.287 (0.178)	0.244 (0.720)	-0.216 (0.249)	0.165* (0.085)	-0.139 (0.863)	0.114 (0.181)	0.044 (0.039)	0.110 (0.087)	0.012 (0.098)
ROA.t	-0.772 (0.590)	0.477 (1.202)	-0.561 (0.675)	-1.093 (0.788)	-0.518 (1.114)	-1.035 (1.003)	-0.567 (0.378)	-1.161 (1.383)	-0.956 (0.791)	-0.061 (0.090)	-0.067 (0.108)	-0.018 (0.140)
Leverage.t	0.041 (0.083)	-0.109 (0.237)	0.149 (0.127)	0.058 (0.083)	-0.287 (0.223)	0.217* (0.124)	0.001 (0.070)	0.045 (0.275)	0.015 (0.106)	-0.008 (0.012)	-0.069* (0.038)	-0.002 (0.015)
B/M.t	0.029 (0.027)	0.002 (0.162)	0.007 (0.032)	0.031 (0.028)	0.046 (0.142)	0.010 (0.027)	0.014 (0.011)	-0.127* (0.069)	0.011 (0.036)	-0.003 (0.007)	0.010 (0.013)	-0.001 (0.009)
Size.a	0.046** (0.020)	0.102 (0.073)	0.043 (0.032)	0.057*** (0.020)	0.135* (0.074)	0.048 (0.033)	0.030*** (0.011)	0.072 (0.075)	0.036 (0.034)	0.002 (0.003)	-0.001 (0.007)	0.008 (0.005)
B/M.a	0.033 (0.058)	0.435 (0.404)	-0.175* (0.098)	0.028 (0.051)	0.464 (0.337)	-0.122 (0.096)	0.032 (0.039)	0.412* (0.230)	0.009 (0.087)	0.002 (0.017)	-0.039** (0.015)	0.006 (0.024)
Tangible.t	0.089 (0.093)	-0.150 (0.691)	0.150 (0.188)	0.096 (0.103)	-0.063 (0.774)	0.160 (0.195)	0.059 (0.071)	0.069 (0.493)	0.086 (0.085)	-0.011 (0.018)	-0.150** (0.073)	0.026 (0.027)
RELSIZE	-0.009 (0.007)	0.003 (0.013)	-0.031 (0.026)	-0.011 (0.008)	-0.002 (0.010)	-0.029 (0.023)	-0.004 (0.003)	-0.001 (0.009)	-0.005 (0.020)	0.002 (0.002)	0.001 (0.001)	-0.003 (0.004)
Valpct	0.028 (0.021)	0.067 (0.167)	0.042 (0.062)	0.039* (0.022)	0.163 (0.165)	0.069 (0.052)	0.013 (0.009)	-0.018 (0.215)	0.000 (0.053)	0.005 (0.006)	0.003 (0.018)	0.014 (0.010)
Holding_MF	-0.023 (0.022)	-0.957*** (0.357)	-0.009 (0.012)	-0.022 (0.029)	-0.782* (0.405)	-0.006 (0.025)	-0.032* (0.019)	-0.759*** (0.280)	-0.022 (0.020)	0.004 (0.003)	-0.043* (0.025)	0.003 (0.003)
Pctcash	0.044 (0.058)	-0.194 (0.203)	0.117 (0.088)	0.038 (0.053)	-0.241 (0.179)	0.102 (0.073)	0.045 (0.040)	-0.160 (0.180)	0.056 (0.053)	0.011 (0.009)	-0.013 (0.017)	0.014 (0.017)
Hostile	-0.082 (0.130)	1.593** (0.666)	0.118 (0.166)	-0.198* (0.108)	1.147 (0.689)	-0.016 (0.151)	-0.020 (0.058)	1.452*** (0.535)	-0.034 (0.102)	0.012 (0.020)	-0.138*** (0.051)	-0.047 (0.033)
Diff_Ind	0.001 (0.028)	-0.074 (0.159)	-0.015 (0.047)	-0.024 (0.028)	-0.080 (0.160)	-0.028 (0.044)	0.019 (0.022)	-0.122** (0.056)	0.031 (0.035)	-0.012** (0.006)	-0.001 (0.008)	-0.020* (0.011)
Merger of equals	-0.146 (0.106)	0.773 (0.799)	-0.276* (0.146)	-0.237** (0.101)	0.522 (0.795)	-0.413*** (0.132)	-0.165*** (0.051)	0.364 (0.799)	-0.177** (0.071)	-0.049 (0.047)	-0.265*** (0.072)	0.003 (0.069)
Tender	0.174** (0.076)	-0.087 (0.183)	0.164 (0.099)	0.224*** (0.082)	0.062 (0.215)	0.219** (0.089)	0.049 (0.044)	-0.181 (0.160)	0.098 (0.074)	0.000 (0.010)	0.020 (0.017)	0.011 (0.014)
Number of bidders	0.077 (0.064)	0.005 (0.256)	0.108 (0.114)	0.137 (0.084)	-0.033 (0.287)	0.213 (0.170)	-0.020 (0.054)	-0.069 (0.318)	-0.082 (0.070)	0.010 (0.009)	0.068*** (0.023)	-0.014 (0.015)
IMR_holding	0.003** (0.001)	-0.000 (0.005)	0.003* (0.002)	0.002** (0.001)	0.001 (0.004)	0.001 (0.001)	0.001 (0.001)	0.003 (0.006)	0.001 (0.002)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)
IMR_bigbank	0.002 (0.001)	-0.001 (0.003)	0.000 (0.003)	0.002* (0.001)	0.001 (0.003)	0.001 (0.003)	0.001 (0.001)	-0.000 (0.005)	-0.000 (0.002)	0.000* (0.000)	-0.000 (0.000)	0.000 (0.000)
Constant	-1.009*** (0.363)	-1.809* (1.067)	-0.916 (0.655)	-1.188*** (0.400)	-1.867 (1.234)	-1.011 (0.737)	-0.321* (0.179)	-1.472 (1.397)	-0.450 (0.585)	-0.018 (0.040)	0.298** (0.129)	-0.108 (0.080)
R-squared	0.266	0.647	0.529	0.305	0.678	0.517	0.213	0.701	0.455	0.256	0.853	0.643
Number of deals	556	151	405	556	151	405	518	147	371	513	147	366
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

## **Appendix H Results using pseudo hedge fund-prime broker connections**

In this appendix, we repeat the analysis using a pseudo hedge fund-prime broker connection to account for endogeneity. We estimate hedge funds' choice of prime brokers using fund size, domicile, and strategy. Tables [H1](#) to [H5](#) show the results. We find that the advisor's pseudo connection to hedge funds also significantly increases the likelihood of the advisor being selected. A firm is more likely to be chosen as target if it has pseudo-connected hedge fund holdings. The pseudo-connected hedge fund holdings significantly increase deal completion and reduce target premium for targets with higher information asymmetry levels.

Table H1: Choice of the advisor: pseudo hedge fund-prime broker connections

This table reports the results from Equation (1), examining the acquirer’s choice of advisors in M&A using pseudo hedge fund-prime broker connections. Column (1) uses the whole sample, and columns (2)-(3) use sub-samples of targets with information asymmetry above or below the median separately. The dependent variable is a dummy variable that equals one if an advisor is hired by the acquirer for the operation and zero otherwise. *Connected* is a dummy variable that equals one if an advisor is the pseudo prime broker of a hedge fund with holdings in the target firm and zero otherwise. *Holding\_connected<sub>t-1</sub>* is the percentage holdings of an advisor’s pseudo-connected hedge funds in the target firm one quarter before the acquisition announcement. *IA* represents the target firm’s information asymmetry measure based on five variables (*Amihud*, *SPREAD*, *Size*, *COVER*, *ERR*). Other variables are defined in Table 2. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Sample=	(1) All	(2) IA_high	(3) IA_low
Connected ( $\beta_1$ )	0.439*** (0.052)	0.401*** (0.099)	0.446*** (0.063)
Holding_connected <sub>t-1</sub> ( $\beta_2$ )	0.188 (0.421)	0.429 (0.743)	0.143 (0.544)
Acquisition times	0.032*** (0.004)	0.024*** (0.008)	0.032*** (0.004)
Acquisition value	0.040*** (0.010)	-0.027 (0.016)	0.081*** (0.013)
Prior advisor	1.085*** (0.131)	0.597** (0.303)	1.238*** (0.143)
Expertise	0.285*** (0.041)	0.550*** (0.071)	0.175*** (0.049)
IMR_holding	0.002** (0.001)	0.000 (0.001)	0.003* (0.002)
IMR_bigbank	-0.005*** (0.000)	-0.003*** (0.001)	-0.005*** (0.001)
Constant	-2.596*** (0.121)	-2.452*** (0.408)	-3.065*** (0.150)
R-squared	0.182	0.123	0.206
Number of deals	865	324	540
Observations	42,901	16,089	26,762
Industry, Year FE	Yes	Yes	Yes

Table H2: Choice of the target: pseudo hedge fund-prime broker connections

This table reports the results from Equation (2), examining the acquirer's choice of targets in M&A using pseudo hedge fund-prime broker connections. Column (1) use the whole sample, and columns (2)-(3) use sub-samples of targets with information asymmetry above or below the median separately. The dependent variable is a dummy variable that equals one if a firm is chosen to be the target and zero otherwise. *Connected* is a dummy variable that equals one if a firm is held by hedge funds whose prime broker is the advisor and zero otherwise.  *Holding\_connected<sub>t-1</sub>* is the percentage holdings of an advisor's connected hedge funds in the firm one quarter before the acquisition announcement. *IA* represents the target firm's information asymmetry measure based on five variables (*Amihud*, *SPREAD*, *Size*, *COVER*, *ERR*). Other variables are defined in Table 2. Standard errors are clustered at the firm level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Sample=	(1) All	(2) IA_high	(3) IA_low
Connected ( $\beta_1$ )	1.452*** (0.076)	1.705*** (0.187)	1.614*** (0.100)
Holding_connected <sub>t-1</sub> ( $\beta_2$ )	1.803* (1.087)	4.382** (1.869)	0.404 (1.665)
Size	-0.014 (0.019)	-0.134*** (0.037)	0.053** (0.026)
B/M	-0.027 (0.036)	0.017 (0.044)	-0.135* (0.073)
ROE	0.032 (0.048)	0.095 (0.061)	-0.024 (0.075)
Leverage	0.040 (0.071)	0.137 (0.098)	-0.017 (0.122)
Tangible	-0.048 (0.156)	0.055 (0.285)	-0.168 (0.198)
Sales	-0.099* (0.053)	-0.085 (0.058)	-0.172 (0.119)
P/E	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
IMR_holding	0.000 (0.002)	-0.000 (0.005)	-0.001 (0.003)
IMR_bigbank	0.002* (0.001)	-0.002 (0.002)	0.005** (0.002)
Constant	-0.745* (0.444)	0.660 (0.792)	-1.032 (0.708)
R-squared	0.089	0.081	0.113
Observations	4,948	1,884	3,064
Industry, Year, Advisor FE	Yes	Yes	Yes

Table H3: Changes in hedge fund holdings before the deal announcement: pseudo hedge fund-prime broker connections

This table reports the results from Equation (3) for the changes in connected (unconnected) hedge fund holdings in target one quarter before the deal announcement ( $\Delta \overline{Holding\_connected}_{t-1}$  and  $\Delta \overline{Holding\_unconnected}_{t-1}$ ) using pseudo hedge fund-prime broker connections. Columns (1) and (4) use the whole sample, and columns (2)-(3) and (5)-(6) use sub-samples of targets with information asymmetry above or below the median separately.  $Holding\_connected_{t-1}$  ( $Holding\_total_{t-1}$ ) are the holdings of pseudo-connected (all) hedge funds in a target firm one quarter before the acquisition announcement. Other variables are defined in Table 2. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Sample=	(1)	(2)	(3)	(4)	(5)	(6)
	All	IA_high	IA_low	All	IA_high	IA_low
$\Delta \overline{Holding\_connected}_{t-1}$	0.041 (0.352)	-0.354 (0.507)	0.731 (0.654)	5.219*** (1.928)	5.819*** (1.506)	1.204 (1.067)
$\overline{Holding\_total}_{t-1}$	0.063 (0.144)	0.507 (0.388)	-0.101 (0.132)	0.055 (0.304)	0.918 (0.815)	-0.123 (0.348)
$\Delta \overline{Holding\_connected}_{t-2}$	0.031 (0.062)	0.057 (0.055)	-0.097 (0.096)			
$\Delta \overline{Holding\_unconnected}_{t-2}$				-0.374*** (0.139)	-0.368*** (0.119)	-0.240 (0.182)
Holding_acquirer <sub>t-1</sub>	-0.002 (0.002)	-0.003 (0.005)	-0.002 (0.002)	-0.003 (0.002)	-0.006 (0.006)	-0.002 (0.002)
ROA <sub>t</sub>	-0.107 (0.213)	-0.375 (0.423)	0.140 (0.352)	-0.755* (0.401)	-1.258 (0.856)	-0.480* (0.259)
Leverage <sub>t</sub>	0.039 (0.047)	-0.059 (0.095)	0.053 (0.052)	0.022 (0.083)	-0.110 (0.224)	0.067 (0.100)
B/M <sub>t</sub>	0.002 (0.038)	0.088 (0.055)	-0.053*** (0.018)	-0.034 (0.030)	-0.132 (0.124)	-0.024 (0.016)
Size <sub>a</sub>	-0.004 (0.016)	-0.019 (0.028)	-0.009 (0.011)	-0.026 (0.018)	-0.131*** (0.046)	0.013 (0.016)
B/M <sub>a</sub>	0.024 (0.056)	-0.070 (0.134)	-0.013 (0.063)	-0.162 (0.119)	-0.429 (0.277)	0.001 (0.101)
Tangible <sub>t</sub>	-0.024 (0.065)	-0.460* (0.239)	0.119 (0.073)	-0.002 (0.110)	-0.003 (0.356)	0.053 (0.088)
RELSIZE	-0.029 (0.027)	-0.062** (0.024)	0.014** (0.007)	-0.003 (0.009)	-0.011 (0.015)	-0.002 (0.009)
Valpct	0.048 (0.054)	0.131** (0.059)	-0.027* (0.015)	-0.025 (0.023)	-0.162*** (0.053)	-0.000 (0.020)
Holding_MF	0.001 (0.006)	0.036 (0.022)	-0.010 (0.010)	0.018 (0.011)	0.114* (0.062)	0.022 (0.015)
Pctcash	0.057 (0.042)	-0.052 (0.071)	0.118*** (0.041)	-0.009 (0.056)	-0.059 (0.132)	-0.005 (0.056)
Hostile	0.105 (0.090)	-0.010 (0.164)	0.214** (0.098)	0.222 (0.170)	-0.143 (0.654)	0.230 (0.168)
Diff_Ind	0.010 (0.029)	-0.050 (0.052)	0.069* (0.038)	0.101*** (0.039)	0.227** (0.092)	0.028 (0.049)
Merger of equals	0.105 (0.085)	0.305 (0.249)	0.038 (0.060)	0.024 (0.077)	0.880** (0.423)	-0.021 (0.065)
Tender	0.060 (0.043)	0.117 (0.123)	0.021 (0.032)	-0.005 (0.054)	0.128 (0.109)	-0.064 (0.063)
Number of bidders	0.002 (0.035)	0.066 (0.088)	-0.028 (0.040)	-0.108 (0.178)	-0.680 (0.575)	0.160** (0.063)
IMR_holding	-0.000 (0.001)	-0.003 (0.002)	0.001 (0.001)	0.000 (0.001)	-0.001 (0.003)	0.000 (0.001)
IMR_bigbank	-0.000 (0.001)	0.001 (0.001)	-0.000 (0.001)	-0.001 (0.001)	-0.001 (0.002)	0.001 (0.002)
Constant	0.101 (0.237)	0.516 (0.496)	-0.125 (0.185)	1.451** (0.616)	4.566*** (1.455)	0.021 (0.599)
R-squared	0.144	0.416	0.216	0.549	0.710	0.254
Number of deals	876	329	547	876	329	547
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes



Table H4: Deal duration, and completion: pseudo hedge fund-prime broker connections

This table reports the results from Equation (4) for the impact of connected fund holdings on deal duration and completion using pseudo hedge fund-prime broker connections. Columns (1) and (4) use the whole sample, and columns (2)-(3) and (5)-(6) use sub-samples of targets with information asymmetry above or below the median separately. *Duration* is the number of months between the deal announcement and the deal outcome. *Completion* is a dummy variable that equals one if the deal is completed. *Holding\_connected<sub>t-1</sub>* (*Holding\_total<sub>t-1</sub>*) are the holdings of pseudo-connected (all) hedge funds in a target firm one quarter before the acquisition announcement. Other variables are defined in Table 2. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
		Duration			Completion	
Sample=	All	IA_high	IA_low	All	IA_high	IA_low
Holding_connected <sub>t-1</sub> ( $\beta$ )	0.027 (3.146)	-1.862 (1.761)	1.164 (9.452)	10.617 (6.712)	33.456*** (10.712)	12.606 (10.865)
Holding_total <sub>t-1</sub>	-0.823 (1.244)	0.913 (2.129)	-1.221 (1.874)	0.956 (0.867)	3.405 (3.400)	-0.062 (1.194)
Holding_acquirer <sub>t-1</sub>	0.834 (1.356)	-4.098* (2.285)	2.952 (2.099)	-2.248*** (0.753)	0.686 (1.768)	-3.294*** (1.084)
Deal value	0.059*** (0.017)	0.093 (0.273)	0.045*** (0.016)	-0.004 (0.010)	4.711 (5.285)	0.000 (0.010)
Termination fee	0.514 (0.579)	8.906 (22.446)	0.738 (0.590)	-0.338 (0.269)	2.722 (29.031)	-0.554* (0.316)
RELSIZE	-0.002 (0.031)	0.050** (0.024)	-0.066 (0.041)	0.004 (0.021)	0.520 (0.441)	-0.014 (0.033)
Pctcash	-0.562 (0.384)	-1.821* (0.942)	0.124 (0.543)	0.496*** (0.184)	0.785 (0.573)	0.035 (0.279)
Hostile	10.888*** (0.991)	-	10.178*** (1.908)	-	-	-
Diff_Ind	-0.367 (0.231)	-0.507 (0.369)	-0.454 (0.357)	-0.023 (0.146)	-0.174 (0.479)	0.085 (0.205)
Merger of equals	2.017 (1.388)	4.772 (3.111)	1.505 (1.706)	0.100 (0.549)	-	-0.229 (0.639)
Tender	-1.857*** (0.269)	-1.337*** (0.444)	-2.199*** (0.440)	0.378** (0.182)	-0.530 (0.501)	1.038*** (0.311)
Number of bidders	1.170 (1.033)	-0.314 (2.726)	1.062 (1.087)	-1.667*** (0.286)	-	-1.659*** (0.373)
IMR_holding	-0.002 (0.009)	-0.012 (0.012)	0.001 (0.015)	-0.004 (0.005)	-0.018 (0.017)	0.001 (0.008)
IMR_bigbank	-0.012*** (0.003)	0.005 (0.006)	-0.018** (0.008)	-0.001 (0.003)	-0.007 (0.022)	0.007 (0.006)
Constant	2.434 (1.964)	6.076 (3.799)	2.070 (2.311)	1.756** (0.824)	-0.768 (5.565)	1.336 (1.329)
R-squared	0.430	0.599	0.427	0.279	0.331	0.333
Number of deals	778	298	480	645	119	370
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes

Table H5: Target premium, and abnormal returns: pseudo hedge fund-prime broker connections

This table reports the results from Equation (4) for the impact of connected fund holdings on target premium and abnormal returns using pseudo hedge fund-prime broker connections. Columns (1), (4), (7), and (10) use the whole sample, and columns (2)-(3), (5)-(6), (8)-(9), and (11)-(12) use sub-samples of targets with information asymmetry above or below the median separately. *Premium* is the premium paid one week (four weeks) before the announcement. *TCAR* and *ACAR* are the target and acquirer abnormal returns on the acquisition announcement date. *Holding\_connected<sub>t-1</sub>* (*Holding\_total<sub>t-1</sub>*) are the holdings of pseudo-connected (all) hedge funds in a target firm one quarter before the acquisition announcement. Other variables are defined in Table 2. Standard errors are clustered at the fund level and reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Sample=	Premium (one week)			Premium (four weeks)			(7)	(8)		(10)	(11)		(12)
	All	IA_high	IA_low	All	IA_high	IA_low		TCAR	IA_low		All	IA_high	
Holding_connected <sub>t-1</sub> ( $\beta$ )	-0.339 (0.428)	-0.895* (0.521)	-0.163 (0.819)	-0.092 (0.524)	-0.772 (0.552)	0.280 (0.764)	-0.341 (0.218)	-0.000 (0.669)	-0.024 (0.474)	-0.019 (0.047)	0.026 (0.086)	0.012 (0.163)	
Holding_total <sub>t-1</sub>	-0.174 (0.158)	-0.509* (0.270)	-0.185 (0.298)	-0.183 (0.182)	-0.621* (0.329)	-0.142 (0.357)	-0.101 (0.143)	-0.556* (0.327)	-0.058 (0.274)	0.026 (0.020)	0.005 (0.039)	0.044 (0.035)	
Holding_acquirer <sub>t-1</sub>	0.286* (0.168)	-0.150 (0.549)	-0.045 (0.292)	0.175 (0.172)	-0.295 (0.509)	-0.240 (0.283)	0.193** (0.089)	-0.087 (0.521)	0.132 (0.149)	0.019 (0.028)	-0.035 (0.031)	0.014 (0.073)	
ROA <sub>t</sub>	-0.652 (0.482)	-0.982 (0.970)	0.034 (0.432)	-0.848 (0.637)	-1.031 (0.847)	-0.131 (0.666)	-0.430** (0.207)	-0.534 (0.541)	-0.363 (0.259)	0.008 (0.046)	0.013 (0.065)	-0.011 (0.044)	
Leverage <sub>t</sub>	-0.001 (0.061)	-0.080 (0.188)	-0.041 (0.119)	-0.052 (0.057)	-0.347** (0.173)	-0.027 (0.122)	0.004 (0.045)	-0.030 (0.107)	-0.022 (0.074)	0.001 (0.007)	0.009 (0.013)	-0.003 (0.011)	
B/M <sub>t</sub>	0.011 (0.020)	-0.012 (0.103)	0.009 (0.030)	0.002 (0.023)	-0.036 (0.125)	-0.007 (0.027)	0.008 (0.010)	-0.029 (0.052)	0.027 (0.017)	-0.000 (0.005)	-0.005 (0.013)	-0.005 (0.004)	
Size <sub>a</sub>	0.057*** (0.016)	0.077* (0.043)	0.028 (0.020)	0.062*** (0.020)	0.077* (0.041)	0.032 (0.020)	0.044*** (0.008)	0.064* (0.037)	0.036 (0.023)	0.002 (0.002)	-0.001 (0.003)	0.008** (0.003)	
B/M <sub>a</sub>	0.048 (0.061)	0.141 (0.151)	-0.076 (0.084)	0.038 (0.071)	0.141 (0.158)	-0.050 (0.084)	0.041 (0.050)	0.174 (0.131)	-0.004 (0.061)	0.001 (0.012)	-0.001 (0.019)	0.002 (0.020)	
Tangible <sub>t</sub>	0.034 (0.079)	0.045 (0.208)	0.068 (0.168)	0.065 (0.103)	0.262 (0.266)	0.048 (0.187)	0.084 (0.058)	0.221 (0.199)	0.114** (0.057)	-0.015 (0.016)	-0.035 (0.028)	0.021 (0.020)	
RELSIZE	-0.005 (0.005)	0.003 (0.008)	-0.020 (0.019)	-0.007 (0.006)	-0.002 (0.008)	-0.018 (0.014)	-0.001 (0.003)	-0.001 (0.009)	-0.008 (0.013)	0.001 (0.002)	0.000 (0.001)	-0.004 (0.003)	
Valpet	0.020 (0.012)	-0.109 (0.155)	-0.002 (0.036)	0.024* (0.013)	-0.146 (0.114)	0.021 (0.031)	0.011 (0.008)	-0.159 (0.161)	-0.002 (0.027)	0.005 (0.005)	-0.001 (0.013)	0.014** (0.007)	
Holding_MF	-0.018 (0.014)	-0.017 (0.033)	-0.009 (0.016)	-0.024 (0.021)	-0.041 (0.032)	-0.004 (0.025)	-0.028* (0.015)	-0.052 (0.035)	-0.022 (0.019)	0.002 (0.002)	-0.005 (0.006)	0.003 (0.003)	
Pctcash	0.023 (0.045)	0.009 (0.105)	0.067 (0.071)	-0.005 (0.044)	-0.064 (0.111)	0.070 (0.063)	0.015 (0.025)	-0.059 (0.099)	0.043 (0.049)	0.006 (0.007)	-0.011 (0.018)	0.017 (0.012)	
Hostile	-0.025 (0.083)	0.197 (0.311)	0.075 (0.179)	-0.172** (0.077)	0.105 (0.413)	-0.057 (0.121)	-0.055 (0.061)	-0.437** (0.216)	-0.041 (0.095)	0.003 (0.015)	0.086** (0.038)	-0.051* (0.030)	
Diff_Ind	-0.012 (0.026)	-0.035 (0.064)	0.003 (0.041)	-0.031 (0.032)	-0.012 (0.086)	-0.012 (0.042)	-0.001 (0.019)	-0.042 (0.059)	0.019 (0.028)	-0.011** (0.004)	-0.009 (0.007)	-0.009 (0.008)	
Merger of equals	-0.097 (0.092)	0.057 (0.385)	-0.252** (0.110)	-0.201** (0.097)	0.089 (0.491)	-0.356*** (0.099)	-0.090 (0.061)	0.017 (0.263)	-0.159** (0.071)	-0.019 (0.033)	0.063** (0.025)	-0.007 (0.044)	
Tender	0.136** (0.057)	0.009 (0.100)	0.161** (0.081)	0.211*** (0.072)	0.201 (0.133)	0.200** (0.085)	0.039 (0.028)	-0.062 (0.078)	0.108** (0.049)	-0.000 (0.006)	-0.003 (0.007)	0.004 (0.012)	
Number of bidders	0.076 (0.057)	-0.051 (0.208)	0.095 (0.078)	0.134* (0.070)	0.019 (0.210)	0.203* (0.120)	-0.021 (0.047)	0.008 (0.174)	-0.091* (0.051)	0.010 (0.008)	0.012 (0.008)	-0.015 (0.013)	
IMR_holding	0.003*** (0.001)	0.006 (0.004)	0.003** (0.001)	0.002* (0.001)	0.004 (0.004)	0.001 (0.001)	0.001 (0.001)	0.005 (0.004)	0.002 (0.001)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	
IMR_bigbank	0.002*** (0.001)	0.001 (0.002)	0.000 (0.001)	0.002*** (0.002)	-0.000 (0.002)	0.000 (0.001)	0.001** (0.001)	0.001 (0.002)	0.000 (0.001)	0.000*** (0.000)	0.000 (0.000)	0.000 (0.000)	
Constant	-0.750*** (0.282)	-1.252 (0.832)	-0.375 (0.548)	-0.747* (0.410)	-1.121 (0.882)	-0.361 (0.577)	-0.570*** (0.169)	-1.249** (0.596)	-0.363 (0.441)	-0.063* (0.037)	0.085 (0.084)	-0.155** (0.065)	
R-squared	0.300	0.580	0.493	0.340	0.655	0.484	0.275	0.569	0.457	0.248	0.619	0.616	
Number of deals	876	329	547	876	329	547	827	317	510	822	317	505	
Industry, Year, Advisor FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	