

# Smart Investments by Smart Money: Evidence from Acquirers' Projected Synergies

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# **Smart Investments by Smart Money: Evidence from Acquirers' Projected Synergies**

## **Abstract**

Institutional investors tend to accumulate the shares of firms that announce acquisitions. The tendency to accumulate shares is stronger when the acquirer discloses synergy forecasts, and it is especially strong when the disclosed synergies are higher. This evidence is consistent with the idea that institutional investors are attracted to situations where their better access to management and analysts provides an information advantage. Indeed, this tendency to accumulate information sensitive shares is especially strong for hedge funds, which tend to have the greatest information advantage. Moreover, stock returns respond favorably in the quarter following the acquisition announcement when higher institutional holdings are revealed.

*JEL classification: G23, G140*

*Keywords: Stock Picking; Mergers; Acquisitions; Institutional Investors*

## 1. Introduction

Institutional investors devote considerable resources to their stock selection efforts. Starting with Grinblatt and Titman (1989), researchers have examined data from the SEC filings of institutional stock holdings and find evidence consistent with the hypothesis that the efforts of these institutions do in fact lead to superior stock selections. Moreover, recent evidence suggests that hedge funds, which are incentivized to devote the most resources to these efforts, tend to outperform other categories of institutional investors.<sup>1</sup>

A plausible explanation for this superior performance is that institutions, in particular hedge funds, tend to have better access to management, and as a result, have an information advantage over retail investors. If this is indeed the case, one might expect these investors to do particularly well when their information advantage is likely to be strongest, i.e., during periods when firms are experiencing some sort of transition.

To understand this, consider how different types of investors may be influenced by equity issue announcements. Equity issues can be interpreted as good news, because they signal favorable investment opportunities, or bad news, (e.g., Myers and Majluf (1984)) because they signal that the firm's stock may be overpriced. Hence, having access to soft information from management is likely to be particularly valuable when firms are raising external equity. Indeed, Gibson, Safieddine and Sonti (2004) find that institutions do tend to outperform around seasoned equity issues (SEOs). Specifically, those SEO issuers experiencing the greatest increase in institutional ownership around the offer date outperform their benchmark portfolio.

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<sup>1</sup> See Agarwal, Mullally, and Naik (2015) for a review of the hedge fund literature. Swem (2016) provides further information about how hedge funds generate superior performance. Specifically, he finds that hedge fund trades tend to anticipate analyst upgrade and downgrade reports, while mutual funds tend to trade after the analyst reports are released.

In this paper we explore the possibility that the soft information acquired through access to management is especially important around M&A announcements. As in the case of SEOs, acquisitions can be interpreted in multiple ways. Acquisition announcements can be viewed as negative news, indicating that managers are either empire builders or that they think their core business is struggling, necessitating a need to diversify into another line of business. Alternatively, acquisition announcements can be viewed as positive news, indicating that management has identified a target with attractive synergies. Hence, soft information about the quality and intentions of management may put the institutional investors in an advantageous position when they interpret these announcements.

Our research design consists of two parts: The first part of our research design examines whether institutions tend to accumulate shares around announcements that increase the importance of soft information. Of course, institutions can potentially exploit this information by selling or shorting shares as well as buying shares. However, given short sale restrictions (and the fact that we only observe long transactions) we expect to see an increase in observed institutional holdings around these events.

We conjecture that soft information is likely to be more important for mergers that are expected to generate greater synergies. These combinations require more integration, so their success is more likely to depend on the specific attributes and cultures of the managers involved in the integration process. We measure synergies based on managerial forecasts of incremental cash flows for each acquisition, and verify that these forecasts are informative on average by examining the link between announcement returns and synergy forecasts and by comparing the forecasts to the actual change in operating performance after the mergers are completed.

Because overconfident institutional investors may simply act as though they have special information around these events, it is important to get corroborating evidence of the efficacy of their information. We do this in the second part of our research design, which examines whether market participants believe that the institutions that acquire the shares are informed by examining whether the revelation of their trades convey information. We do this by analyzing the stock returns in the future quarter when the changes in institutional holdings are publicly revealed.

As we show, institutions do in fact have a tendency to accumulate shares in companies in both the contemporaneous quarter and the quarter following acquisitions announcements. This tendency is stronger for hedge funds, which are more likely to be informed, than for other institutions, and is stronger for both hedge funds and other institutions when the acquisitions are larger, and presumably more important.<sup>2</sup> We also find that the effect is stronger when the acquiring firm reveals that the acquisition is likely to generate significant synergies.

Our analysis of the market reaction in the quarter following the acquisition announcement is consistent with the hypothesis that the institutional trades around the announcement are in fact generated by special information. Specifically, we find positive returns for those deals where institutions increase their holdings in the previous quarter. The returns are higher when the hedge funds increase their holdings and it is higher for those deals where we see both higher institutional holdings and high projected synergies.

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<sup>2</sup> In theory, the less informed investors are less likely to trade in situations where they are at an information disadvantage. In most cases, it is easy for an uninformed investor to avoid acquiring a stock when they are at an information disadvantage, but it may be the case that an uninformed investor has a liquidity event that forces it to sell. As a result, we expect to see more informed buys and uninformed sells when asymmetric information is high.

As we mentioned at the outset, we are not the first to suggest that institutions may have a comparative advantage selecting the stocks of firms in a state of transition. Gibson et al. (2004) find that issuers experiencing the greatest increase in institutional ownership around seasoned equity issues outperform their benchmark portfolios in the first post-issue year. Similarly, Field (1995) and Field and Lowry (2009) finds that Initial Public Offerings (IPOs) with high institutional ownership performed better in the three-year post IPO period than those with little or no such ownership. Likewise, Krigman, Shaw, and Womack (1999) find that IPOs with heavy institutional first-day selling perform the worst in the following year. More recently, Gucbilmez (2015) finds that while many institutions bid for shares in cold IPOs as well as hot ones, a small proportion of institutions successfully cherry-pick hot IPOs and earn higher returns than uninformed investors. We are also not the first to examine institutional holdings around merger announcements. For example, there are a number of studies that link post-merger performance to the presence of institutional investors.<sup>3</sup> However, relative to these earlier studies, we use synergy forecasts as a proxy for the importance of soft information and provide collaborative evidence that the institutions are in fact informed by explicitly look at stock returns around the time when the institutional holdings are revealed to the market.

The paper proceeds as follows. Section 2 presents our methodology and data set. Section 3 discusses the empirical findings, while Section 4 provides our conclusions.

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<sup>3</sup> Demiralp, D'Mello, Schlingemann, and Subramaniam (2011) also find a relation between post-merger performance and institutional holdings. In addition, Gasper, Massa, and Matos (2005) find that acquirers held by institutions with low turnover rates outperform those held by short-term institutional investors after merger, Chen, Harford, and Li (2007) show that concentrated holdings of independent long-term institutions (ILTI) are positively related to post-merger performance and Nain and Yao (2013) find that mutual fund stock selection skill predict the post-merger performance. In a related finding, Fich, Harford and Tran (2015) find that holdings of monitoring institutions in the target firm results in higher final premiums and lower acquirer returns.

## 2. Data Description

We extract our sample from Thomson Financial SDC Database for all the M&A deals completed in the U.S. market between January 1<sup>st</sup>, 1990 and Dec. 31<sup>st</sup>, 2013, where the acquiring and target firms are both publicly listed on the US stock markets.<sup>4</sup> We collect share price data from the Centre for Research in Security Prices (CRSP) database and accounting data from COMPUSTAT. Additionally, we retrieve the institutional shareholdings (13f) data for 1989–2014 from Thomson Reuters Ownership Database, which reports institutional shareholdings as of the end of each calendar quarter.

The subsample of institutions that are classified as hedge funds are identified in the Swem (2016) study. Specifically, the funds are identified by manually matching over 2,500 hedge fund names listed in the FactSet LionShares holdings data from 2004-2015 against each of the over 14,000 names of 13-F filings institutions from the Thomson Reuters S34 file over the same period.<sup>5</sup>

The initial sample of acquisitions includes 3,380 deals of which 3,108 have complete information on Thomson Financial. We further refine the sample following standard refinement criteria as follows:

- (i) Percentage of shares held by the acquirer six months prior to announcement is less than 50%.

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<sup>4</sup> We exclude from these deals Privatizations, Leveraged Buyouts, Spinoffs, Recapitalizations, Self-Tenders Repurchases, and Exchange Offer

<sup>5</sup> See Swem (2016) for further details. We thank Nathan Swem for generously sharing his data.

- (ii) Percentage of shares owned after the transaction (completed deals) is more than 50%.<sup>6</sup>

These two criteria are meant to insure that the deals result (when completed) in a transfer of control. Following previous studies on mergers and acquisitions and/or on institutional investors (e.g. Chung and Zhang, 2011; Hovakimian and Hu, 2016), we exclude financial companies (Standard Industrial Classification (SIC) codes 6000–6999) and utilities firms (SIC codes 4900–4949) from the study sample.

One of the main variables in this study is the managerial forecasts of incremental cash flows for each acquisition. To obtain this data and calculate synergy, we follow Houston, James, and Ryngaert (2001), Dutordoir, Roosenboom, and Vasconcelos (2014), and Ismail (2011) and collect managerial forecasts from 8-K filings and proxy statements DEF14, DEFM14A, and S-4 filed with the SEC, in addition to the business press. Ultimately, our sample of 3,108 deals consists of 607 completed deals with available merger synergy forecasts and 2,501 without such forecasts. We provide a more detailed analysis of these synergy forecasts in Appendix B.<sup>7</sup>

Panel A of Table 1 describes our sample of 3,108 acquisitions. Specifically, we report the

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<sup>6</sup> It should be noted, that like Houston et al. (2001), Ismail (2011), Bernile and Bauguess (2011), Dutordoir et al. (2014) and Netter, Stegemoller and Wintoki (2011), we include only completed deals, so there is some selection bias. We only focus on completed deals since our hand collected data on forecasted synergies is obtained mostly from SEC filings that occur after the merger is completed, and is thus available only from completed deals. Thomson Financial primary data shows that during our sample period, out of 11,343 announced acquisitions in all industry sectors in the USA, 8,345 deals were completed regardless of whether these have any data available on CRSP, Compustat or on 13F filings. On the other hand, Thomson Financial also report the management forecasted synergy for a very small number of deals. For instance, out of 11,343 announced deals, 258 acquisitions have synergy data reported by Thomson Financial; while only 15 deals of these (5.8% of the total sample) were not completed, which implies that for deals with disclosed synergy forecasts, the probability of not completing the deal is only around 6%.

<sup>7</sup> It is also worth noting that the frequency of voluntarily disclosing incremental cash flow forecasts has increased substantially over time, especially among larger deals. In fact, we present in Appendix B a table containing the frequency of disclosure in our sample and we notice that the percentage of deals associated with synergy forecasts exceeded 60% (70%) for medium (large) deals recently and that the disclosure for small deals has also increased significantly as well and in some cases it reached more than 20%.



method of payment and other deal characteristics, e.g., industry-related acquisition, hostile, competing offer, and deals with acquirer toehold. The table shows that cash is slightly more frequently used as a method of payment (in 1,063 deals) than equity (in 1,034 deals) and mixed offers (in 1,011 deals). Around 62% (1,939) of the acquisitions are industry related. In a small percentage of the deals the acquirer had a toehold, the deal was hostile, and there were competing offers.

Panel B of Table 1 presents the distribution of the total sample of acquirers and targets according to the Fama-French 12 industries' classification. The largest percentage of acquirers and targets (31.72% and 32.53% respectively) operates in Business Equipment and the smallest percentage (1.83% of acquirers and targets) in Consumer Durables.

**Insert Table 1 here**

Table 2 reports descriptive statistics for the acquirer, target, and deal characteristics of the two deal sub-samples. A glance at the table reveals that Forecast and No-Forecast sub-samples are significantly different. The firms that forecast synergies tend to be larger, slightly more leveraged, and have lower Market to Book and Tobin's Q ratios and have higher institutional holdings as evidenced by a mean (median) of 67.96% (73.76%) relative to 52.56% (55.95%) for No-Forecast firms. Forecast deals are also larger on average.<sup>8</sup>

The evidence in the table suggests that acquirers are more likely to announce synergy forecasts when the deal is expected to have a more significant impact on the acquirer's performance; the mean relative size of the target to acquirer of 68.81% for Forecast deals is high

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<sup>8</sup> Variables definitions are in Appendix A

relative to 37.39% for No-Forecast deals. Equally important, the evidence indicates that firms that forecast synergies pay a lower premium as demonstrated by a mean (median) of 39.19% (34.03%) compared to 49.34% (43.13%), which may imply that targets accept a lower premium on offer while aspiring to share in larger gains post-acquisitions. These summary statistics are qualitatively similar to those reported in Bernile and Bauguess (2011) and Dutordoir, Roosenboom, and Vasconcelos (2014). For instance, Dutordoir et al., (2014) also report a lower takeover premium paid by forecasting acquirers relative to non-forecasting firms. Additionally, both Bernile and Bauguess (2011) and Dutordoir et al., (2014) show that forecasting firms have lower valuation ratios (M/B and/or Tobins Q), larger size and larger leverage among other statistics. Finally, the statistics of forecasted synergies are also comparable to previous research for instance, we report mean synergy percentage (Synergy/Acq.Eq.) of 19.28% while Houston et al., (2001) reports synergy-to-combined equity of 13%, while Bernile and Bauguess (2011) report a mean of 14% for comparability, we also scale the dollar synergy by the combined equity value and we get a mean of 12.3%, which is very close to those of Houston et al., (2001) and Bernile and Bauguess (2011) estimates.

**Insert Table 2 here**

Table 3 sorts the sample of synergy disclosers into terciles based on the level of the estimated disclosed synergy relative to the acquirer's value. The mean (median) synergy percentage is 2.46% (2.2%) for deals in the Low tercile relative to 44.87% (34.67%) for deals in the High tercile. The table reveals that acquirers reporting high synergies are smaller and more highly leveraged and have significantly lower market to book ratios and lower institutional

holdings, relative to their counterparts in the low forecasted synergies' tercile. High synergy targets are also more leveraged, have weaker operating performance as measured by operating cash flow (OCF-to-Assets), and have lower market to book ratios by the market relative to their counterparts in the low synergy tercile. We also find that cash financing is used less for high forecasted synergy deals (18.37% for the High tercile relative to 37.76% for the Low tercile).

**Insert Table 3 here**

### **3. Empirical Results**

#### **3.1. Announcement returns and post-acquisition cash flows**

In this section we provide evidence on acquisition synergies from two perspectives. We examine the combined returns of the acquiring firm and target on the announcement of the acquisition, and we also measure their combined cash flows after the acquisition. If the synergy forecasts are credible, they should influence announcement returns and they should correspond to actual changes in cash flows.

Table 4 reports the stock returns of both the targets and the acquirers around the acquisition announcements. Consistent with the prior literature, the acquirers in our sample tend to have modest negative returns on the acquisition announcements. The negative returns are somewhat larger for the deals that disclose synergies, perhaps, reflecting the fact that these deals are larger on average. However, conditioned on disclosing synergies, those that disclose higher synergies tend to have less negative announcement returns. The target returns are of course very positive, and the combined announcement returns of the acquirer and the target are positive, and are highest for the deals that announce the highest synergies. Specifically, the mean (median)

merged entity CAR (-1, +1) is 3.8% (3.59%) for the high tercile relative to 0.34% (0.21%) for the low tercile with the difference in mean (median) being significant at the 1% level. This observation provides evidence that the synergy forecasts are in fact credible.

**Insert Table 4 here**

To further examine the accuracy of these synergy forecasts we examine the change in the merged firms' abnormal operating performance from pre- to post-acquisition; i.e. the difference between the abnormal operating performance in year -1 and the median of years 1, 2, and 3 relative to the acquisition year. To conduct this analysis, we follow Powell and Stark (2005), Gosh (2001), and Healy et al. (1992) and measure abnormal operating performance as the operating performance of the firm minus the operating performance of a matched sample of firms, where firms are matched by SIC codes and firm size.<sup>9</sup>

Panel A of Table 5 reports the change in operating performance for the Low Synergy subsample. The results suggest that the change in operating performance from pre-to post-acquisition for firms announcing low synergies is not significantly different from that of their matched firms. In other words, we cannot reject the hypothesis that these acquisitions generate zero synergies. In contrast, Panel B presents evidence that the high synergy mergers lead to an increase in operating performance of the combined entity of 1.14%, which is significant at the 5% level. The difference in the change in abnormal performance between the Low and High

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<sup>9</sup> Operating Cash Flow is sales minus cost of goods sold, selling and general administrative expenses, and working capital change. Market Value of Assets is calculated as total book value of assets minus the book value of equity plus the market value of equity. Pro-forma data of merged firms for pre-acquisition years are created by aggregating acquiring and target firms' data. The matching procedure is in line with Powell and Stark (2005) and Ghosh (2001). That is, matched non-merging firms are selected if they have the same three-digit SIC codes as the merging firms and their size (book value of assets) is within 25%-200% of the size of the merging firms. Furthermore, in cases where we do not find at least 10 matching firms, we repeat the matching procedure on two-digit SIC codes and size and then on one-digit SIC code and size.

Synergy subsamples is -1.04%, which is significant at the 10% level. The results suggest that the firms announcing the highest synergy forecasts exhibit improved post-acquisition performance relative to their matched firms and their counterparts in the Low Synergy subsample.

**Insert Table 5 here**

### **3.2. An Analysis of Institutional Holdings**

In this section we examine how acquisition announcements and synergy forecasts influence institutional holdings. We start with a univariate analysis. As we note, the univariate results can be influenced by characteristics of acquirers that are correlated with their incentives to reveal synergy forecasts. Most notably, larger acquirers are much more likely to forecast synergies. We then provide a multivariate analysis that controls for these characteristics.<sup>10</sup>

#### **3.2.1. A univariate analysis**

Table 6 reports the level and changes of the institutional holdings of acquirers in the quarters surrounding the merger announcement. Panel A reveals that institutions have significantly lower ownership stakes in acquirer firms that do not disclose the synergy forecasts. This is at least partly due to the fact that firms that do not disclose synergies tend to be smaller (their average total assets are \$1,430 million vs. \$3,787 million). In addition, firms that disclose synergies may be more transparent in general, which may make them more attractive to institutional investors

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<sup>10</sup> We examine but do not report the stock returns of both the targets and the acquirers around the acquisition announcements. Consistent with the prior literature, the acquirers in our sample tend to have modest negative returns on the acquisition announcements. The negative returns are somewhat larger for the deals that disclose synergies, perhaps, reflecting the fact that these deals are larger on average. However, conditioned on disclosing synergies, those that disclose higher synergies tend to have less negative announcement returns. The target returns are of course very positive, and the combined announcement returns of the acquirer and the target are positive, and are highest for the deals that announce the highest synergies. Specifically, the mean (median) merged entity CAR (-2, +2) is 3.94% (3.74%) for the high tercile relative to 0.95% (0.73%) for the low tercile. This observation provides evidence that the synergy forecasts are in fact credible.

for a number of reasons. Panel B reveals that in the announcement quarter, institutions increase their holdings of all acquirers; those that disclose synergies as well as of those that do not disclose synergies. However, they increase their holdings of acquirers that disclose synergies more aggressively.

Panels C and D of Table 6 replicate the analysis presented in the previous panels for our subsample of hedge funds. Consistent with other institutional investors, hedge funds hold a greater fraction of the shares of the disclosing acquirers and also tend to increase those holdings in the announcement quarter. However, the changes by hedge funds are much more significant. For example, the change in hedge fund holdings for the forecast subsample from quarter -1 to 0 is 0.7%, which represents a 15% increase in holdings (from a base of 4.7% in quarter -1), compared to a change of 2.1% by total institutions, which denotes a 3% increase (from a base of 68% in quarter -1).

**Insert Table 6 here**

Table 7 presents our analysis of institutional holdings for the subsample of acquisitions that disclose synergies. Panel A reveals that institutions tend to have higher holdings in acquiring firms that forecast lower synergies. On average, in quarter -1 they hold 73% of the shares of the lowest tercile synergy acquirers and 60.4% of the highest tercile acquirers. Again, this may just be a size effect, those that disclose lower synergies tend to be larger, and have nothing to do with the future synergy forecasts. However, as shown in Panel B, between quarters 0 and 1 institutions decrease their ownerships in the Low tercile firms and increase them in the High synergy tercile. Moreover, between quarters 0 and 3 institutional holding levels decrease by 1.8% in low synergy tercile firms and increase by 0.8% in their high synergy tercile.

The difference is significant at the 1% level.

Panels C and D examine the holdings and changes in holdings for hedge funds. In contrast to other institutions, hedge funds hold more of the higher synergy acquirers prior to the acquisition announcement. In addition, they increase their holdings more in the high synergy acquirers in subsequent quarters. For example, the level of holdings in quarter -1 is 3.8% for the low synergy subsample compared to 5.7% in the high synergy sub-sample. The change in holdings from quarter -1 to 0 is 0.4% in low synergy acquirers, (an increase of around 15% from a base of 3.8%) compared to 1% in high synergy firms, which represents an increase in holding of 19% from a base of 5.7% in quarter -1. The difference is significant at the 1% level.<sup>11</sup>

**Insert Table 7 here**

In Table 8, acquirer firms that disclose synergy forecasts are sorted into terciles according to the level of the bid Premium to Synergy ratio. Panel A shows that institutions have significantly higher holdings in acquirers that pay more for targets (the High Premium to Synergy Tercile). However, they tend to increase their holdings the most for those acquirers that offer lower premiums relative to the synergies. Between quarters -1 and 0 institutional holdings increase by 2.5% and 1.5% in low premium and high premium firms respectively. Between

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<sup>11</sup> We considered the possibility that part of the increase in institutional ownership is due to the acquirer absorbing the institutional ownership of the target. This could potentially be an issue since, as we report in Table 2, deals with synergy forecasts tend to have larger targets (both absolute and relative size), more institutional holdings and are more likely to use equity as the method of payment. This is not an issue for the change in institutional ownership from quarter -1 to quarter 0, since the mergers have not yet been consummated in the announcement quarter. In our sample, the average period between an announcement of an acquisition and its completion (when the actual exchange of shares actually takes place) is around 5 months (0.395 years), so there is a potential effect in later quarters, but given that in most cases the target is much smaller than the acquirer, the effect is likely to be small.

quarters -1 and +4, institutions increase their holdings by 3.1% and 1% in low premium and high premium firms respectively. The differences in the means are significant at the 10% level.

In Panels C and D of Table 8 we report the levels and changes sorted by premium to synergy for hedge funds. In contrast to other institutions, hedge funds tend to have higher holdings in acquirers that offer lower premiums. But like the other institutions, hedge funds tend to increase their holdings of the low premium acquirers significantly more following the announcement. The change in holdings from quarter -1 to 0 is 1.1% (an increase of 19% from a base of 5.2%) for the low premium acquirers compared to 0.5% (an increase of 13% from a base of 3.8%) for the high premium acquirers. The difference is significant at the 5% level.

**Insert Table 8 here**

### **3.2.2. Multivariate analysis**

As we mentioned in the last subsection, synergy forecasts are related to firm characteristics, like the size of the acquirer, which may also influence the choices of institutional investors. In this section we provide a multivariate analysis that examines how synergy forecasts influence the portfolio choices of institutional investors. Specifically, Table 9 report OLS regressions with year fixed-effect that explain the change in holdings from the quarter prior to the acquisition announcement quarter. In the Panel A regressions the dependent variable is the change in total institutional holdings; whereby in Models 1 and 3 it is the change in holding from quarter -1 to quarter 0 ( $\Delta IO (-1,0)$ ) while in Models 2 and 4 the dependent variable is the change in holding up until quarter 1. In Panel B the dependent variables are changes in hedge fund holdings until quarter 0 (Models 1 and 3) and until quarter 1 (Model 2 and 4). The results



reported in the two panels are qualitatively very similar.

The main independent variables in these regressions are two variables that measure the relative magnitude of the forecasted synergy. The forecasted synergy scaled by the acquirer's equity value ( $\text{Synergy}/\text{Acq.Eq.}$ ) and the premium offered to the target scaled by forecasted synergy ( $\text{Premium-to-Synergy}$ ). The other independent variables include dummies for whether or not the deal is hostile (that take the value 1 if the deal is hostile), industry relatedness (the deal is between firms that share the same two-digit SIC code), share fraction in the method of payment. Other independent variables include the natural logarithm of the deal value ( $\text{Ln(Deal)}$ ), and the acquirer CAR (-1,+1) and market and accounting ratios of acquirers including the acquirer stock liquidity, the  $\text{Debt-to-Assets}_{\text{MV}}$ ,  $\text{OCF-to-Assets}_{\text{MV}}$ , the Tobin's q ratio and Total Ownership by Institutional Block Holders.

The regression estimates, which are consistent with Tables 7 and 8, indicate that hedge funds and institutional investors tend to be attracted to higher forecasted synergies and increase their holdings of acquirer firms that pay less relative to the estimated synergy. Namely, the results in Panel A show that the coefficient of the  $\text{Synergy}/\text{Acq.Eq.}$  is positive and significant at the 10% (1%) level in Model 1 (2). Specifically, a one standard deviation change in forecasted percentage synergy causes the total institutional holding to increase by 0.17% (0.45%) from quarter -1 to quarter 0 (quarter +1) relative to the acquisition announcement quarter. On the other hand, the coefficient of the  $\text{Premium-to-Synergy}$  is negative and significant at the 10% and 5% levels in Models 3 & 4 respectively, implying that institutional investors are attracted more to underpaying acquirers.

We report in Panel B similar OLS regressions with the dependent variables being the change in hedge fund holdings from quarter -1 to quarter 0 in Models 1 & 3 and to quarter + 1 in

Models 2& 4. Consistent with our univariate results, the change in hedge fund holdings around the merger announcement is positively related to the synergy percentage. Hedge funds tend to increase their holdings in the acquiring firm more when the disclosed synergies are higher.. Similar to the results of the total institutional holdings, in Models 3 & 4 we find that hedge funds increase their holding in underpaying acquirers as the coefficient on the Premium-to-Synergy is negative and significant at the 10% (5%) level in Model 3 (Model 4).

Only two of the control variables reliably predict the increases in hedge fund ownership. The first is the share fraction in payment. The second is the size of the deal. Our theory that hedge funds are more likely to accumulate shares when access to analysts and management is more valuable provides an explanation for the significant coefficients of these variables if we believe that the larger deals with mixed financing tend to be the more complicated deals.

**Insert Table 9 here**

### **3.3. Synergy forecasts, institutional holdings and stock returns**

Up to this point we have established that institutional investors tend to accumulate shares of firms that make acquisition announcements and that this tendency is especially strong for those events where large synergies are forecast. This observation is consistent with our hypothesis that institutions have an information advantage when firms are involved in acquisitions and that this advantage is especially important when firms are engaged in deals with larger synergies that are likely to be more complicated. However, given that synergy forecasts tend to be chosen for endogenous reasons, these results should be interpreted with some caution. In particular, it is possible that firms announce high synergies to attract the support of institutional investors.

To provide more direct evidence for our information hypothesis we examine the link between changes in institutional holdings and realized stock returns around these merger announcements. In particular, we measure the stock returns in the quarter following the acquisition announcement when the changes in institutional holdings are publicly revealed. Our hypothesis is that stock returns will react favorably if it is revealed that “smart money” has accumulated the acquiring firm’s stock around the announcement date. Our conjecture is that institutions tend to be “smart” and are likely to be particularly informed around mergers with high projected synergies.

We start with a two by two independent sort of the stocks of the acquiring firms by whether or not they provide synergy forecasts and whether or not the change in institutional ownership is above or below the median change. Based on these sorts we form four equally weighted portfolios and calculate the excess returns of these portfolios using the Fama and French (1993) three factor model. If institutional investors have no special information (i.e., our null hypothesis) the excess returns of each of the portfolios will be zero. If, however, institutional investors have special access to private information around these announcements (i.e., our alternative hypothesis), the change in holdings of the institutions will convey information, i.e., the excess returns of the portfolios with the largest increases in institutional ownership will be positive.

Panel A of Table 10, which reports these regressions, reveal that the change in institutional ownership does in fact convey information. Those acquiring firms that exhibited increases in institutional holdings realize positive excess stock returns and those with decreases in holdings exhibit negative excess stock returns when the institutional holdings are revealed in the following quarter. This is the case for both the synergy forecast subsample of acquirers as well

as for the subsample that do not offer synergy forecasts. However, the effect is twice as strong for the sample that provides synergy forecasts, suggesting that the information advantage of institutional investors are in fact greater for the acquisitions that are likely to be more complicated.

Panel B considers these same regressions but instead of sorting the stocks into portfolios by the amount that total institutional holdings increases, we sort by changes in hedge fund holdings. Our evidence on sorts based on changes in hedge fund ownership is consistent with the results on changes in total institutional ownership, but the results are weaker. This may reflect the fact that our hedge fund sample is much smaller, so the results using hedge fund ownership may have less power. In addition, it should be noted that hedge funds may be realizing profits from taking short positions that they do not disclose.

**Insert Table 10 here**

Table 11 Panels A and B examine the subsample of acquisitions that include synergy forecasts. The regressions are essentially the same as those estimated in Table 10 Panels A and B, however, rather than sorting on whether or not the acquirer provides a synergy forecast we sort by whether the synergy forecast is high or low. The excess returns reported in Panel A indicate that the revelation of the change in institutional holdings has a significant effect on stock returns regardless of whether the synergy forecast is high or low. The differences between the returns for the low and high synergy forecasts are relatively small and are not statistically significant. The results are again consistent, but weaker in Panel B that examines sorts based on hedge fund ownership. We find that when the acquirer discloses high expected synergies the returns tend to be significantly higher when it is disclosed that hedge fund ownership increases.

The evidence in the subsample with low disclosed synergies is consistent, but not statistically significant.

In unreported regressions we examined the returns of these portfolios beyond the three months holding period. Consistent with a relatively efficient market, the excess returns for these longer holding periods are relatively modest and are generally not statistically significant.

**Insert Table 11 here**

#### **4. Conclusion**

Institutional investors tend to have better access to both corporate executives and sell side analysts than other investors, and may thus be better positioned to access and interpret firm specific information. We conjecture that this information advantage is especially important when firms are making significant acquisitions. If this is the case, then one might expect to see institutional investors accumulate the shares of firms when they are making acquisitions. Our evidence indicates that this is indeed the case. We also find that when the trades of these investors are revealed when their portfolio holdings are made public, that the stock prices of the acquiring firms that they accumulate increase, and consistent with the idea that access to management is more important in acquisitions with higher synergies, the magnitude of the increase is higher when higher synergies are disclosed.

While other authors have shown that institutional investors tend to be informed, our contribution is that we show that institutions tend to have a greater advantage when soft information is particularly important, i.e., around synergistic acquisitions, and that hedge funds have a particular advantage in these situations. While the distinction between hedge funds and non-hedge funds is of interest, one can potentially drill deeper into the characteristics of the institutions that are most likely to exploit the soft information that can be gained from better

access to corporate management. For example, one might look at an institution's geographic proximity to the acquiring or target firms, or alternatively, to common school ties between the portfolio managers and the corporate managers that are involved in the acquisitions. Alternatively, one might look more carefully at characteristics of funds that are likely to have better access to the relevant managers. Perhaps, for example, investors that owned the stock of either the acquirer or the target are better positioned to benefit from soft information about the acquisition. While these questions are beyond the scope of this study, they do suggest interesting avenues for future research.

## Appendices

### Appendix A: Variables Definitions

Assets <sub>MV</sub>	This is Market Value of Assets and is defined as liabilities(Item LT) minus balance sheet deferred taxes and investment tax credit (Item TXDITC) plus Preferred Stock (as defined below) plus Market Equity (Item CSHO*Item PRCC F).
Book Debt	This is Total Assets (Item AT) minus Book Equity
Book Equity	This is Total Assets (Item AT) minus liabilities (Item LT) plus balance sheet deferred taxes and investment tax credit (Item TXDITC) minus Preferred Stock.
Debt-to-Assets <sub>MV</sub>	This is Book Debt over Market Value of assets (as defined above).
Debt-to-Assets <sub>BV</sub>	This is Book Debt over Total Assets (Item AT).
Equity <sub>MV</sub>	Market Equity is calculated as Item CSHO*Item PRCC F.
Tobin's Q	Market Value or Assets <sub>MV</sub> (as defined above) over book value of Total Assets (Item AT).
Premium relative to day -40	This is final offer Pre run-up premium calculated as [(Final Offer price / P <sub>-40</sub> ) -1]
CAR (-1, +1)	CAR (-1, +1) is the 3-day cumulative abnormal returns estimated using the market model over the (-210,-21) interval using the CRSP value-weighted index returns as the benchmark. The statistical significance of the returns is tested using the Patell (1976) test corrected for time-series and cross-sectional variation of abnormal returns.
CAR (-2, +2)	CAR (-2, +2) is the 5-day cumulative abnormal returns estimated using the market model over the (-210,-21) interval using the CRSP value-weighted index returns as the benchmark. The statistical significance of the returns is tested using the Patell (1976) test corrected for time-series and cross-sectional variation of abnormal returns.
OCF-to-Assets <sub>MV</sub>	Operating Cash flow to MV of Assets Ratio and the Operating cash flow is sales minus cost of goods sold, selling and general administrative expenses, and working capital change, items (SALE-COGS-XSGA-WCAPCH).
Cash-to-Assets <sub>BV</sub>	Cash to Book value of Assets ratio item (CHE) over item (AT)
(M/B)	Market to Book ratio: Market value of Equity calculated as share price multiplied by number of shares outstanding Divided by Book value of shareholders equity.
Tobin's Q	Market Value or Assets <sub>MV</sub> (as defined above) over book value of Total Assets (Item AT).
Deal value	Deal Value is the total consideration paid as reported in SDC
Relative size	Target market value of equity Divided by Acquirer market value of Equity
Industry-Related	Dummy equal one if the acquisition is between firms with the same two-digit SIC code

Cash	Dummy equal one if the Method of payment is Pure Cash
Shares	Dummy equal one if the method of payment is Pure share
Mixed	Dummy equal one if the Method of payment is a mixed offer of cash, equity and other forms
Share fraction in Payment	This is the percentage of stock payment in the consideration offered for the target firm, as reported in Thomson Reuters database.
Hostile	Acquisition is Hostile as in SDC database
TOEHOLD	Is a dummy equal one for deals where the acquirer had at least 5% ownership in the target firm prior to the acquisition
Herfindahl Index	Ownership concentration (Herfindahl Index) during quarter -1 relative to the merger announcement quarter. This variable is collected from 13-F filings
Institutional Ownership	Ownership of common stocks by all institutional investors. This variable is collected from 13-F filings
Hedge Fund Ownership	Ownership of common stocks by hedge funds. This variable is collected from 13-F filings
Acquirer's stock illiquidity	This variable is calculated as in Amihud, Hameed, Kang & Zhang (2015)
Block-holding	Block-holding is the total ownership by institutional block holders in quarter -1 as reported in 13-F filings.



## Appendix B: The Calculation of Merger Synergy

In order to calculate the present value of the synergies, we follow a procedure similar to Kaplan and Ruback (1995) and Gilson, Hotchkiss, and Ruback (2000), Houston et al. (2001), Ruback (2002), Devos, Kadapakkam, and Krishnamurthy (2009) and Ismail (2011). We collect all merger-related forecasts and other relevant information such as cost savings, revenue enhancements, and other merger costs, such as restructuring costs and financial advisors fees. In some cases, the management predictions are comprehensive with well-defined timelines for realizing the incremental cash flows. However, in most cases the management projections of incremental cash flows are of  $x$  dollars by year  $t$  and  $y$  dollars by year  $t + i$ , where  $i > 1$ , we follow the exact procedure in Devos et al. (2009) and Houston et al., (2001) so that we interpolate the expected cash flows for the intermediate years by assuming that the cash flows increase linearly over those intermediate years. In all cases, we assume that incremental cash flows will be perpetual (will reach a steady state) after the last year of projection as declared by management. Throughout, we assume a tax rate of 36%.

The annual incremental cash flows from the merger are then discounted back to the announcement day in order to calculate the present value of the synergies as follows:

$$PV(\text{Synergies}) = \sum_{t=i}^T \frac{(1-0.36)CF_t}{(1+K_s)^t} + \frac{(1-0.36)CF_{i+T}}{K_s(1+K_s)^{i+T}}$$

where  $i = 1 + (\text{number of days to completion}/365)$ . The number of days to completion is the actual number of days to completion as all deals in my sample are completed deals. The reason for accounting for the time period for completion is because we are essentially discounting the cash flows back to the announcement date since, in all cases, the cash flows are forecasted to be

generated in future years relative to the completion date not announcement date. The discount rate used to estimate the present value ( $Ks$ ) is the weighted average cost of equity capital of the acquirer and the target as determined from the Capital Asset Pricing Model (CAPM), where the weights are the relative market capitalizations of the two companies' equity two months prior to the merger announcement. We use the cost of equity capital to discount cash flows based on the assumption that these cash flows (cost savings and revenue enhancement) accrue to shareholders only<sup>12</sup>. We estimate the CAPM betas from daily data where we regress firm stock returns against CRSP value weighted returns in the time window from 210 to 21 trading days prior to the merger announcement. We use a market risk premium of 7.5% p.a., in line with other similar investigations (e.g., Devos et al, 2009; Houston et al., 2001 who use 7%, and Gilson et al., 2000 who use 7.4%). we use the 10-year U.S. government bond yield for the risk-free rate. In cases where we obtain a negative beta, we set the beta equal to the average beta in the sample that is 1.036 for acquirers and 0.975 for targets.

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<sup>12</sup> The use of the cost of equity capital for cash flow discounting is also similar to the procedure used in Houston et al., (2001). Moreover, this is also consistent with the procedure followed by Weston, Siu and Johnson (2001) in the valuation of ConAgra where in Table 9.15 they show that the hypothetical increase in revenues results in a higher valuation for the equity of ConAgra.

### Appendix C: Frequency of Synergy Disclosure by Deal size:

The table reports percentage of deals that disclose (Forecast) and those that do not disclose (No Forecast) synergy forecasts by Year and Deal size in our sample of M&A deals between 1990 and 2013 whereby the sample is divided into three terciles by Deal value (Small, Medium and Large Deal).

<b>Deal Size Tercile</b>	<b>Small</b>	<b>Small</b>	<b>Medium</b>	<b>Medium</b>	<b>Large</b>	<b>Large</b>
<b>Forecast</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>	<b>YES</b>
1990	100	0	100	0	100	0
1991	100	0	100	0	100	0
1992	100	0	100	0	100	0
1993	100	0	100	0	86.67	13.33
1994	100	0	97.96	2.04	69.57	30.43
1995	98.7	1.30	95.52	4.48	86.11	13.89
1996	95.89	4.11	97.59	2.41	71.74	28.26
1997	96.55	3.45	89.25	10.75	70.00	30.00
1998	95.05	4.95	95.41	4.59	57.30	42.70
1999	95.38	4.62	92.63	7.37	80.56	19.44
2000	95.08	4.92	92.75	7.25	68.22	31.78
2001	92.94	7.06	91.84	8.16	55.77	44.23
2002	95.74	4.26	86.36	13.64	54.55	45.45
2003	82.93	17.07	74.42	25.58	57.69	42.31
2004	93.1	6.90	81.08	18.92	20.51	79.49
2005	88.00	12.00	71.05	28.95	51.85	48.15
2006	96.15	3.85	66.67	33.33	49.18	50.82
2007	100	0.00	76.47	23.53	35.48	64.52
2008	78.79	21.21	78.26	21.74	51.85	48.15
2009	88.89	11.11	61.11	38.89	47.22	52.78
2010	81.25	18.75	83.33	16.67	59.46	40.54
2011	91.67	8.33	54.55	45.45	28.00	72.00
2012	83.33	16.67	47.37	52.63	47.22	52.78
2013	100	0.00	37.50	62.50	29.03	70.97
<b>Total</b>	<b>94.79%</b>	<b>5.21%</b>	<b>87.36%</b>	<b>12.64%</b>	<b>59.27%</b>	<b>40.73%</b>

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**Table 1. Sample Summary:** The table presents the number of acquisitions for the whole sample during each year partitioned by the method of payment: Pure Cash, Pure Shares, or Mixed offers. We also report the numbers for Industry-Related, Hostile, Competing Offer, for deals with acquirer Toehold, during the Financial Crisis and Dot Com bubble periods and during Bear Market periods in each announcement year. The sample comprises the acquisitions announced by US acquirers between January, 1990 and December, 2013 as reported by the SDC, where the acquirer completes a deal and gains control of a public target firm. we exclude financial companies (Standard Industrial Classification (SIC) codes 6000–6999) and utilities (SIC codes 4900–4949) from the sample.

In Panel B we report the distribution of acquirers and target firms based on the Fama-French 12 Industry groups.

**Panel A:**

<b>Year</b>	<b>Cash</b>	<b>Shares</b>	<b>Mixed</b>	<b>Industry Related</b>	<b>Toehold</b>	<b>Hostile</b>	<b>Competing</b>	<b>Total</b>
1990	22	25	20	33	7	2	2	<b>67</b>
1991	11	23	35	37	5	0	3	<b>69</b>
1992	14	20	28	34	8	1	2	<b>62</b>
1993	19	27	34	54	7	0	3	<b>80</b>
1994	31	65	48	88	12	5	6	<b>144</b>
1995	48	87	45	108	13	8	11	<b>180</b>
1996	48	83	71	120	10	4	5	<b>202</b>
1997	57	98	76	138	5	4	12	<b>231</b>
1998	83	126	90	194	10	1	9	<b>299</b>
1999	82	115	71	168	11	4	5	<b>268</b>
2000	60	101	76	145	1	2	5	<b>237</b>
2001	51	70	65	125	9	1	7	<b>186</b>
2002	50	29	34	70	3	1	9	<b>113</b>
2003	38	27	45	77	5	2	3	<b>110</b>
2004	44	26	35	69	3	1	1	<b>105</b>
2005	53	20	44	75	5	1	9	<b>117</b>
2006	68	16	30	66	3	0	3	<b>114</b>
2007	64	13	34	68	0	0	2	<b>111</b>
2008	38	15	30	56	3	0	5	<b>83</b>
2009	30	17	34	55	4	0	3	<b>81</b>
2010	50	11	22	54	0	0	3	<b>83</b>
2011	22	7	19	29	2	0	1	<b>48</b>
2012	46	8	13	39	3	0	0	<b>67</b>
2013	34	5	12	37	0	0	1	<b>51</b>
<b>Total</b>	<b>1063</b>	<b>1034</b>	<b>1011</b>	<b>1939</b>	<b>129</b>	<b>37</b>	<b>110</b>	<b>3108</b>



**Panel B: Distribution of sample acquires and targets by Fama-French 12 Industries**

Fama-French Industry Codes and Description		Acquirer industry		Target industry	
		Frequency	Percent	Frequency	Percent
<b>1</b>	Consumer Non-Durables - Food, Tobacco, Textiles, Apparel, Leather, Toys	140	4.50	138	4.44
<b>2</b>	Consumer Durables - Cars, TV's, Furniture, Household Appliances	57	1.83	57	1.83
<b>3</b>	Manufacturing	294	9.46	270	8.69
<b>4</b>	Energy	185	5.95	181	5.82
<b>5</b>	Chemicals and Allied Products	58	1.87	53	1.71
<b>6</b>	Business Equipment	986	31.72	1,011	32.53
<b>7</b>	Telephone and Television Transmission	244	7.85	195	6.27
<b>9</b>	Shops Wholesale, Retail, and Some Services	270	8.69	279	8.98
<b>10</b>	Healthcare, Medical Equipment, and Drugs	489	15.73	490	15.77
<b>12</b>	Other	385	12.39	434	13.96
Total		3,108	100	3,108	100

**Table 2. Sample Descriptive Statistics for Forecast and No-Forecast Firms**

The table reports descriptive statistics of the sample containing mean, median for various deal, acquirer and target characteristics split by Forecast and No-Forecast deals. Forecast deals are those in which the acquiring firm's management disclosed cost saving estimates and/or other incremental cash flow estimates of the merger deal, where this information is collected from SEC filings and various press releases. In addition to the accounting variables for acquires and target firms, and to deal characteristics, the table reports statistics of the Institutional ownership and of the ownership concentration (Herfindahl Index) of the acquirer and target during quarter -1 relative to the merger announcement quarter. These two variables are collected from 13-F filings. All acquirer and target characteristics are taken at the end of the fiscal year prior to the acquisition. Variables definitions are in Appendix A. Dollar values are in millions.

	Forecast			No-Forecast			P-Value Mean Diff.
	607			2501			
	Mean	Median	Std	Mean	Median	Std	
<b>Acquirer Characteristics</b>							
Equity <sub>MV</sub>	9,350	2348	17264	8,086	939	17,255	0.1129
Assets <sub>MV</sub>	14,578	3,787	24,969	11,912	1,430	24,837	0.0200
Debt-to-Assets <sub>MV</sub>	0.3321	0.2989	0.1903	0.2672	0.2319	0.1885	<.0001
OCF-to-Assets <sub>MV</sub>	0.0732	0.0746	0.0509	0.0563	0.0650	0.0612	<.0001
<i>M/B</i>	3.5880	2.4725	3.2516	4.2750	2.9677	3.7690	<.0001
Tobins' Q	2.0864	1.6335	1.3503	2.6881	1.9769	1.9418	<.0001
Hedge Fund Ownership	0.0472	0.0304	0.0442	0.0298	0.0165	0.0342	<.0001
Institutional Ownership	0.6796	0.7376	0.2192	0.5256	0.5595	0.2587	0.0001
<b>Target Characteristics</b>							
Equity <sub>MV</sub>	1159	663	1179	355	96	656	<.0001
Assets <sub>MV</sub>	2,026	1,132	2,082	526	145	1,029	<.0001
Debt-to-Assets <sub>MV</sub>	0.3699	0.3482	0.2177	0.3280	0.2764	0.2391	<.0001
OCF-to-Assets <sub>MV</sub>	0.0603	0.0784	0.0876	0.0169	0.0520	0.1240	<.0001
<i>M/B</i>	2.8385	2.1398	2.3556	2.8035	1.9340	2.5873	0.7574
Tobins' Q	1.8568	1.5013	1.1206	2.0718	1.5293	1.4109	<.0001
Institutional Ownership	0.6000	0.6484	0.2605	0.3484	0.2992	0.2608	0.0001
<b>Deal Characteristics</b>							
PV of Synergy	1,263.40	183.51	6,020	NA	NA	NA	NA
Synergy/Acq.Eq.	0.1928	0.1019	0.2393	NA	NA	NA	NA
Premium-to-Synergy	1.6727	0.8307	2.3383	NA	NA	NA	NA
Industry Related	0.6985	1.0000	0.4593	0.5936	1.0000	0.4913	<.0001
Deal Value	1,841	967	1,851	512	130	1,012	<.0001
Relative size	0.6881	0.5368	0.5790	0.3739	0.1500	0.5067	<.0001
Premium relative to day -40	0.3919	0.3403	0.3488	0.4934	0.4313	0.4336	0.0001
Cash	0.2801	0.0000	0.4494	0.3246	0.0000	0.4683	0.0286
Shares	0.2784	0.0000	0.4486	0.3426	0.0000	0.4747	0.0016
Mixed	0.4415	0.0000	0.4970	0.3329	0.0000	0.4713	<.0001
Hostile	0.0231	0.0000	0.1502	0.0083	0.0000	0.0907	0.0200

**Table 3. Sample Statistics by Low, Medium and High (Synergy/Acq.Eq.)**

The table reports sample statistics for three sub-samples based on the level of the estimated merger synergy (low, medium and high) and presents analysis of the difference in mean between the Low and High synergy sub-samples. *PV of Synergy* is the after-tax present value of the incremental cash flows where incremental cash flows are disclosed by the management of the acquiring firm. The calculation of the *PV of Synergy* follows a procedure similar to Kaplan and Ruback (1995) and Gilson, Hotchkiss, and Ruback (2000), Houston et al. (2001), Ruback (2002), Devos et al. (2009) and Ismail (2011). The calculation of the discount rate is based on the Capital Asset Pricing Model (CAPM) where the equity beta is the weighted average equity beta of the target and the acquirer. The weights are the market value of equity of the corresponding party taken two months prior to the acquisition announcement. The beta is estimated from the market model where stock returns are regressed against CRSP value weighted returns in the (-210,-21) window prior to the acquisition announcement. Synergy/Acq.Eq. is the *PV of Synergy* divided by the equity value of acquirer. Variables definitions are in Appendix A

	Low		Medium		High		P-value Mean difference (Low vs. High)
	Mean	Median	Mean	Median	Mean	Median	
N	196		196		196		
<b>Acquirer Characteristics</b>							
Equity <sub>MV</sub>	15,416	4,840	8,204	2,434	4,431	879	<.0001
Assets <sub>MV</sub>	22,006	7,598	13,312	3,993	8,092	1,731	<.0001
Debt-to-Assets <sub>MV</sub>	0.2753	0.2441	0.3176	0.2935	0.4009	0.3807	<.0001
OCF-to-Assets <sub>MV</sub>	0.0764	0.0713	0.0719	0.0735	0.0711	0.0789	0.3448
<i>M/B</i>	4.2109	2.9215	3.8886	2.9252	2.5856	1.7553	<.0001
Tobins' Q	2.4333	1.8508	2.2472	1.7709	1.5818	1.3191	<.0001
Hedge Fund Ownership	0.0378	0.0264	0.0483	0.0310	0.0568	0.0382	<.0001
Institutional Ownership	0.7296	0.7465	0.7011	0.7517	0.6042	0.6546	<.0001
<b>Target Characteristics</b>							
Equity <sub>MV</sub>	1,237	776	1,164	687	1,107	530	0.2948
Assets <sub>MV</sub>	1,923	1,115	2,062	1,180	2,178	1,177	0.2470
Debt-to-Assets <sub>MV</sub>	0.3008	0.2545	0.3636	0.3531	0.4511	0.4663	<.0001
OCF-to-Assets <sub>MV</sub>	0.0721	0.0777	0.0629	0.0812	0.0445	0.0772	0.0043
<i>M/B</i>	3.3459	2.6449	2.8219	2.1027	2.3137	1.7311	<.0001
Tobin's Q	2.1612	1.8370	1.8478	1.5198	1.5449	1.2833	<.0001
Institutional Ownership	0.6396	0.7050	0.6179	0.6459	0.5488	0.5752	0.0011
<b>Deal Characteristics</b>							
PV of Synergy	371	95	1,014	235	2,405	360	0.0057
Synergy/Acq.Eq.	0.0246	0.0220	0.1052	0.1019	0.4487	0.3467	<.0001
Industry Related	0.6939	1.0000	0.6735	1.0000	0.7245	1.0000	0.5058
Deal Value	1,880	1,129	1,895	1,156	1,806	797	0.6956
Relative size	0.4066	0.2208	0.6317	0.5202	1.0258	0.8875	<.0001
Premium relative to day -40	0.3668	0.3335	0.4166	0.3767	0.3994	0.3312	0.3652
Cash	0.3776	0.0000	0.2806	0.0000	0.1837	0.0000	<.0001
Shares	0.1990	0.0000	0.3010	0.0000	0.3316	0.0000	0.0029
Mixed	0.4235	0.0000	0.4184	0.0000	0.4847	0.0000	0.2245
Hostile	0.0153	0.0000	0.0357	0.0000	0.0204	0.0000	0.7038

**Table 4. Announcement Returns by Forecast No-Forecast and Low, Medium and High (Synergy/Acq.Eq.)**

The table reports announcement returns in two panels. Panel A reports announcement returns for two sub-samples: Forecast and No-Forecast deals and presents analysis of the difference in mean between the two sub-samples. Panel B reports returns for three sub-samples based on the level of the estimated merger synergy (low, medium and high) and presents analysis of the difference in mean between the Low and High synergy sub-samples. *PV of Synergy* is the after-tax present value of the incremental cash flows where incremental cash flows are disclosed by the management of the acquiring firm. The calculation of the *PV of Synergy* follows a procedure similar to Kaplan and Ruback (1995) and Gilson, Hotchkiss, and Ruback (2000), Houston et al. (2001), Ruback (2002), Devos et al. (2009) and Ismail (2011). The calculation of the discount rate is based on the Capital Asset Pricing Model (CAPM) where the equity beta is the weighted average equity beta of the target and the acquirer. The weights are the market value of equity of the corresponding party taken two months prior to the acquisition announcement. The beta is estimated from the market model where stock returns are regressed against CRSP value weighted returns in the (-210,-21) window prior to the acquisition announcement. Synergy/Acq.Eq. is the *PV of Synergy* divided by the equity value of the acquirer only. CAR (-2,+2) is the 5-day cumulative abnormal returns and CAR (-1,+1) is the 3-day cumulative abnormal returns estimated using the market model. Abnormal returns are estimated using a standard event study methodology as in Brown and Warner (1985) and employing the market model. The market model's parameters are estimated over the (-210,-21) interval using the CRSP value-weighted index returns as the benchmark. The statistical significance of the returns is tested using the Patell (1976) test corrected for time-series and cross-sectional variation of abnormal returns

		Acquirer			Target		Combined Entity	
Panel A		N	CAR (-2,+2)	CAR (-1,+1)	CAR (-2,+2)	CAR (-1,+1)	CAR (-2,+2)	CAR (-1,+1)
Forecast	Mean	607	-0.0218	-0.0221	0.1783	0.1715	0.0228	0.0203
	[Median]		[-0.0166]	[-0.0174]	[0.1676]	[0.1561]	[0.0175]	[0.0162]
No-Forecast	Mean	2501	-0.0095	-0.0079	0.1929	0.1943	0.0147	0.0135
	[Median]		[-0.0058]	[-0.0039]	[0.1834]	[0.1819]	[0.0115]	[0.0096]
<b>P-value Mean Difference (Forecast vs. No-Forecast)</b>			0.0018	<.0001	0.0656	0.0029	0.0359	0.0473
<b>Panel B</b>								
Low	Mean	196	-0.0245	-0.0294	0.1884	0.1773	0.0095	0.0034
	[Median]		[-0.0105]	[-0.017]	[0.1774]	[0.172]	[0.0073]	[0.0021]
Medium	Mean	196	-0.0243	-0.0224	0.1814	0.1763	0.02	0.0204
	[Median]		[-0.0234]	[-0.0232]	[0.1753]	[0.1595]	[0.0204]	[0.0239]
High	Mean	196	-0.016	-0.0143	0.1657	0.162	0.0394	0.038
	[Median]		[-0.0156]	[-0.0131]	[0.1436]	[0.1452]	[0.0374]	[0.0359]
<b>P-value Mean difference (Low vs. High)</b>			0.3293	0.0545	0.1701	0.3444	0.0004	<.0001

**Table 5. Operating Performance for Low versus High Synergy samples.**

The table presents operating performance measured by cash flow return on assets relative to matched firms. Abnormal operating performance is the operating performance for the firm minus the value for a matching firm. Firms are matched by SIC code, firm size. Operating performance is measured as a firm's ratio of operating cash flow to its market value of assets as in Powell and Stark (2005) and Gosh (2001) and Healy et al. (1992). OCF is the Operating Cash Flow that is sales minus cost of goods sold, selling and general administrative expenses, and working capital change and Market Value of Assets is calculated as total book value of assets minus the book value of equity plus the market value of equity. Pro-forma data of merged firms for pre-acquisition years are created by aggregating acquiring and target firms' data. Pro-forma data of matched firms are created by aggregating the data of the two matched samples of firms. The tests of significance are conducted using T-statistics for mean values and signed-rank tests for median values. Panel A contains the results for the Low Synergy sub-sample, while Panel B contains the results for the High Synergy sub-sample. We also report the difference in the operating performance between the Low and High Synergy sub-samples at the bottom of the table.

Years Around Merger	Merged Firms (MRG <sub>i</sub> )		Matched Firms (MAT <sub>i</sub> )		Difference (MRG <sub>i</sub> - MAT <sub>i</sub> ) (Abnormal Performance)			
	Mean	Median	Mean	Median	Mean	P-value <i>t</i> -statistics	Median	P-value of the Signed Rank test
<i>Panel A. Cash Flow Return on Assets for Low Synergy</i>								
-1	7.86%	7.44%	7.88%	7.85%	-0.15%	0.522	-0.44%	0.179
1	8.28%	7.74%	8.05%	8.02%	0.11%	0.696	-0.02%	0.886
2	8.16%	7.72%	8.15%	7.64%	0.04%	0.913	0.13%	0.851
3	7.80%	7.55%	8.36%	7.98%	-0.45%	0.235	-0.43%	0.268
Abnormal Performance (MRG <sub>i</sub> - MAT <sub>i</sub> ) <sub>Post</sub> : Median of years 3,2, and 1					-0.02%	0.931	-0.13%	0.709
Change in Cash flow return= (MRG <sub>i</sub> - MAT <sub>i</sub> ) <sub>Post</sub> - (MRG <sub>i</sub> - MAT <sub>i</sub> ) <sub>Pre</sub>					0.09%	0.757	0.15%	0.359
<i>Panel B. Cash Flow Return on Assets for High Synergy</i>								
-1	6.21%	7.94%	6.86%	7.71%	-0.64%	0.210	0.17%	0.793
1	6.75%	7.54%	6.90%	7.67%	-0.12%	0.780	-0.29%	0.543
2	7.59%	8.74%	7.12%	7.58%	0.40%	0.450	0.86%	0.031
3	6.51%	7.75%	7.22%	7.41%	-0.78%	0.221	0.36%	0.929
Abnormal Performance (MRG <sub>i</sub> - MAT <sub>i</sub> ) <sub>Post</sub> : Median of years 3,2, and 1					0.13%	0.770	0.46%	0.169
Change in Cash flow return= (MRG <sub>i</sub> - MAT <sub>i</sub> ) <sub>Post</sub> - (MRG <sub>i</sub> - MAT <sub>i</sub> ) <sub>Pre</sub>					1.14%	0.030	0.32%	0.064
<b>Difference of Postmerger Abnormal CF Low minus High</b>					-0.15%	0.769	-0.59%	0.212
Difference of Change in CF LOW minus HIGH					-1.04%	0.084	-0.17%	0.264



**Table 46. Institutional Holding for Firms with and without Synergy Forecasts:** The table presents statistics in two panels; **Panel A** presents the level of total institutional ownership in various quarters relative to the merger announcement quarter for US. acquiring firms that **disclosed** synergy forecasts (Forecast sample) and those that **did not** (No-Forecast sample). Panel B presents the **change** in Institutional ownership holding between quarters. Panels C and D replicates panels A and B for hedge funds respectively. The merger sample is for US completed acquisitions that were announced between 1990 and 2013 where the merger parties are both publicly listed in the US market.

<b>Panel A</b>	<b>-2</b>	<b>-1</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>All institutional holding</b>							
Forecast	0.673	0.680	0.703	0.694	0.691	0.687	0.689
No-Forecast	0.525	0.526	0.537	0.536	0.536	0.534	0.532
P-value of Difference in Mean	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

  

<b>Panel B</b>	<b>-1 to 0</b>	<b>-1 to 1</b>	<b>-1 to 2</b>	<b>-1 to 3</b>	<b>-1 to 4</b>	<b>0 to 1</b>	<b>0 to 2</b>	<b>0 to 3</b>	<b>0 to 4</b>
<b>All institutional holding</b>									
Forecast	0.021***	0.021***	0.018***	0.015***	0.019**	0.001	-0.002	-0.006*	-0.005***
No-Forecast	0.014***	0.016***	0.019***	0.022***	0.021**	0.002**	0.005***	0.007***	0.006***
P-value of Difference in Mean	0.005	0.1713	0.9238	0.1487	0.5722	0.6185	0.0647	0.0018	0.0114

  

<b>Panel C</b>	<b>-2</b>	<b>-1</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Hedge Funds holding</b>							
Forecast	0.047	0.047	0.055	0.057	0.059	0.059	0.06
No-Forecast	0.030	0.030	0.033	0.034	0.034	0.035	0.035
P-value of Difference in Mean	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

  

<b>Panel D</b>	<b>-1 to 0</b>	<b>-1 to 1</b>	<b>-1 to 2</b>	<b>-1 to 3</b>	<b>-1 to 4</b>	<b>0 to 1</b>	<b>0 to 2</b>	<b>0 to 3</b>	<b>0 to 4</b>
<b>Hedge Funds holding</b>									
Forecast	0.007***	0.009***	0.01**	0.011**	0.012**	0.002***	0.004***	0.005***	0.005***
No-Forecast	0.002***	0.003***	0.003***	0.004***	0.004***	0.001	0.001*	0.002***	0.002***
P-value of Difference in Mean	0.0001	0.0001	0.0001	0.0001	0.0001	0.0561	0.0173	0.0129	0.0501

\*\*\*, \*\*, \* denote significance at the 1%, 5% and 10% level, respectively

**Table 75. Institutional Holding in forecast firms sorted by size terciles of the percentage synergy:** The table presents the level (change) of institutional ownership data in Panel A (Panel B) for US. acquiring firms that **disclosed** synergy forecasts (Forecast sample) whereby the data is sorted by the level of percentage synergy Low, medium and high (the percentage synergy is the present value of synergy scaled by the market value of equity of the acquiring firm). Panels C and D replicates panels A and B for hedge funds respectively.

<b>Panel A</b>	<b>-2</b>	<b>-1</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>		
<b>All institutional holdings</b>									
Low Synergy	0.718	0.730	0.749	0.741	0.733	0.727	0.737		
Medium	0.703	0.701	0.730	0.715	0.708	0.699	0.694		
High Synergy	0.589	0.604	0.628	0.629	0.636	0.641	0.641		
P-value of Difference in Mean	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001		
<b>Panel B</b>	<b>-1 to 0</b>	<b>-1 to 1</b>	<b>-1 to 2</b>	<b>-1 to 3</b>	<b>-1 to 4</b>	<b>0 to 1</b>	<b>0 to 2</b>	<b>0 to 3</b>	<b>0 to 4</b>
<b>All institutional holdings</b>									
Low Synergy	0.016***	0.008*	0.006	-0.001	0.006	-0.006*	-0.011**	-0.018***	-0.013***
Medium	0.025***	0.027***	0.022***	0.016**	0.017**	0.005	0.001	-0.006	-0.007
High Synergy	0.025***	0.033***	0.028***	0.033***	0.036***	0.006	0.004	0.008	0.006
P-value of Difference in Mean	0.1216	0.0026	0.0261	0.0017	0.0082	0.0587	0.0685	0.0047	0.0564
<b>Panel C</b>	<b>-2</b>	<b>-1</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>		
<b>Hedge Fund holdings</b>									
Low Synergy	0.038	0.038	0.043	0.045	0.046	0.048	0.05		
Medium	0.049	0.048	0.056	0.06	0.06	0.059	0.057		
High Synergy	0.057	0.057	0.068	0.069	0.076	0.075	0.077		
P-value of Difference in Mean	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001		
<b>Panel D</b>	<b>-1 to 0</b>	<b>-1 to 1</b>	<b>-1 to 2</b>	<b>-1 to 3</b>	<b>-1 to 4</b>	<b>0 to 1</b>	<b>0 to 2</b>	<b>0 to 3</b>	<b>0 to 4</b>
<b>Hedge Fund holdings</b>									
Low Synergy	0.004***	0.006***	0.007***	0.008***	0.011***	0.002	0.003*	0.005**	0.006**
Medium	0.009***	0.011***	0.012***	0.01***	0.009***	0.002*	0.003	0.003	0.002
High Synergy	0.01***	0.011***	0.013***	0.016***	0.017***	0.003*	0.005**	0.009***	0.009***
P-value of Difference in Mean	0.0023	0.0436	0.0601	0.0574	0.1079	0.5382	0.2967	0.2443	0.4049

\*\*\*, \*\*, \* denote significance at the 1%, 5% and 10% level, respectively.



**Table 68. Institutional Holding in forecast firms sorted by size terciles of the premium to synergy ratio:** The table presents the level (change) of institutional ownership data in Panel A (Panel B) for U.S. acquiring firms that **disclosed** synergy forecasts (Forecast sample) whereby the data is sorted by the level of premium to synergy ratio Low, medium and high (the percentage synergy is the present value of synergy scaled by the market value of equity of the acquiring firm). The premium used is the Final Offer Premium relative to day -40, that is  $(Final\ Offer\ price / P_{-40}) - 1$ . Panels C and D replicates panels A and B for hedge funds respectively.

<b>Panel A</b>	<b>-2</b>	<b>-1</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>		
<b>All institutional holding</b>									
Low Premium to Synergy (Underpaid)	0.619	0.632	0.661	0.660	0.660	0.660	0.661		
Medium	0.682	0.683	0.703	0.695	0.691	0.689	0.689		
High Premium to Synergy (Overpaid)	0.715	0.726	0.745	0.739	0.728	0.724	0.726		
P-value of Difference in Mean	0.0001	0.0001	0.0006	0.0009	0.0015	0.0028	0.0025		
<b>Panel B</b>	<b>-1 to 0</b>	<b>-1 to 1</b>	<b>-1 to 2</b>	<b>-1 to 3</b>	<b>-1 to 4</b>	<b>0 to 1</b>	<b>0 to 2</b>	<b>0 to 3</b>	<b>0 to 4</b>
<b>All institutional holding</b>									
Low Premium to Synergy (Underpaid)	0.025***	0.029***	0.026***	0.025***	0.031***	0.0002	-0.0003	-0.004	0.0002
Medium	0.024***	0.026***	0.018**	0.012	0.015*	0.004	-0.001	-0.006	-0.008
High Premium to Synergy (Overpaid)	0.015***	0.011**	0.008*	0.006	0.01	-0.002	-0.008*	-0.011**	-0.008
P-value of Difference in Mean	0.0818	0.0368	0.0627	0.0728	0.0575	0.7218	0.3616	0.4139	0.4168
<b>Panel C</b>	<b>-2</b>	<b>-1</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>		
<b>Hedge Funds holding</b>									
Low Premium to Synergy (Underpaid)	0.050	0.052	0.062	0.066	0.066	0.067	0.069		
Medium	0.053	0.052	0.060	0.061	0.065	0.063	0.062		
High Premium to Synergy (Overpaid)	0.039	0.038	0.044	0.046	0.046	0.047	0.049		
P-value of Difference in Mean	0.0159	0.0028	0.0007	0.0009	0.0008	0.0011	0.0019		
<b>Panel D</b>	<b>-1 to 0</b>	<b>-1 to 1</b>	<b>-1 to 2</b>	<b>-1 to 3</b>	<b>-1 to 4</b>	<b>0 to 1</b>	<b>0 to 2</b>	<b>0 to 3</b>	<b>0 to 4</b>
<b>Hedge Funds holding</b>									
Low Premium to Synergy (Underpaid)	0.010***	0.012**	0.011**	0.014**	0.016**	0.003*	0.004*	0.007**	0.007**
Medium	0.008***	0.009***	0.013**	0.011**	0.01***	0.001	0.004**	0.003	0.003
High Premium to Synergy (Overpaid)	0.005***	0.006***	0.007***	0.009***	0.011**	0.002*	0.003*	0.005***	0.005**
P-value of Difference in Mean	0.0225	0.0271	0.2526	0.1696	0.2435	0.6546	0.7004	0.5629	0.5582

\*\*\*, \*\*, \* denote significance at the 1%, 5% and 10% level, respectively

**Table 27A Does Synergy or Over/Underpayment explain the change in Total Institutional Holdings around mergers?**

This table presents OLS regressions that explain **Changes in Total Institutional Holdings** during the quarter the merger is announced. The dependent variable is the **Change in Total Institutional Holdings** from quarter -1 to quarter 0 (or +1) relative to the merger announcement quarter. The independent variables include total synergy scaled by the acquirer or Premium-to-Synergy ratio, merger premium, dummies for the deal attitude, Hostile (that take the value 1 if the deal is hostile), industry relatedness (the deal is between firms that share the same two-digit SIC code), share fraction in the method of payment. Other independent variables include the natural logarithm of the deal value (Ln(Deal)), and the acquirer CAR (-1,+1) and market and accounting ratios of acquirers including the acquirer stock liquidity, the Debt-to-Assets<sub>MV</sub>, OCF-to-Assets<sub>MV</sub>, the Tobin's q ratio and Total Ownership by Institutional Block Holders. Standard errors are in parentheses. Variables definitions are in Appendix A

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
	$\Delta IO (-1,0)$	$\Delta IO (-1,1)$	$\Delta IO (-1,0)$	$\Delta IO (-1,1)$
Intercept	0.00533 (0.0595)	0.102 (0.0811)	0.0396 (0.0596)	0.138* (0.0806)
Synergy/Acq.Eq	0.00720* (0.0039)	0.0189*** (0.0054)		
Premium-to-Synergy			-0.00628* (0.0038)	-0.0107** (0.0053)
Premium	0.00509 (0.0095)	-0.0057 (0.0131)		
Share Fraction in Payment	0.0297*** (0.0082)	0.0207* (0.0112)		0.0217* (0.0114)
Ln (Deal)	0.00374 (0.0025)	0.000848 (0.0034)	0.0032 (0.0025)	0.00117 (0.0034)
Hostile	-0.00398 (0.0223)	0.000169 (0.0304)	0.00174 (0.0227)	0.00332 (0.0306)
Industry-Related	-0.00033 (0.0064)	-0.00723 (0.0088)	0.00204 (0.0065)	-0.0072 (0.0089)
Tobin's q	-0.00625* (0.0032)	-0.0009 (0.0045)	-0.00463 (0.0033)	-0.00088 (0.0045)
Debt-to-Assets <sub>MV</sub>	-0.0275 (0.0215)	-0.0249 (0.0293)	-0.023 (0.0218)	-0.0173 (0.0295)
OCF-to-Assets <sub>MV</sub>	-0.0032 (0.0734)	0.127 (0.1030)	-0.0155 (0.0749)	0.117 (0.1040)
CAR (-1,+1)	-0.0403 (0.0415)	-0.014 (0.0575)	-0.0601 (0.0415)	-0.00032 (0.0579)
Stock Liquidity	-29.28* (15.4100)	-14.16 (24.7000)	-20.82 (15.4900)	-2.492 (24.6200)
Block-holding	-0.0593** (0.0254)	-0.0937*** (0.0350)	-0.0577** (0.0259)	-0.0885** (0.0353)
Year Fixed Effect	YES	YES	YES	YES
N	383	375	383	375
adj. R-sq	0.0400	0.0300	0.0010	0.0100

\*\*\*, \*\*, \* denote significance at the 1%, 5% and 10% level, respectively

**Table 27B. Do Synergies and Over/Underpayment explain Changes in Hedge Fund Holdings around merger announcements?**

This table presents OLS regressions that explain **Changes in Hedge Fund Holdings** during the quarter the merger is announced. The dependent variable is the **Change in hedge funds holdings** from quarter -1 to quarter 0 (or +1) relative to the merger announcement quarter. The independent variables include total synergy scaled by the acquirer or Premium-to-Synergy ratio, merger premium, dummies for the deal attitude, Hostile (that take the value 1 if the deal is hostile), industry relatedness (the deal is between firms that share the same two-digit SIC code), share fraction in the method of payment. Other independent variables include the natural logarithm of the deal value (Ln(Deal)), and the acquirer CAR (-1,+1) and market and accounting ratios of acquirers including the acquirer stock liquidity, the Debt-to-Assets<sub>MV</sub>, OCF-to-Assets<sub>MV</sub>, the Tobin's q ratio and Total Ownership by Institutional Block Holders. Standard errors are in parentheses. Variables definitions are in Appendix A

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
	$\Delta HF (-1,0)$	$\Delta HF (-1,1)$	$\Delta HF (-1,0)$	$\Delta HF (-1,1)$
Intercept	-0.0294 (0.0206)	-0.0329 (0.0261)	-0.0176 (0.0205)	-0.0202 (0.0257)
Synergy/Acq.Eq	0.0036*** (0.0014)	0.0044** (0.0018)		
Premium-to-Synergy			-0.0001* (0.0001)	-0.0002** (0.0001)
Premium	0.0021 (0.0033)	0.0026 (0.0042)		
Share Fraction in Payment	0.0069** (0.0028)	0.0069* (0.0036)		0.0066* (0.0036)
Ln (Deal)	0.0030*** (0.0009)	0.0036*** (0.0011)	0.0028*** (0.0009)	0.0034*** (0.0011)
Hostile	-0.0039 (0.0077)	-0.0123 (0.0098)	-0.0031 (0.0078)	-0.0119 (0.0098)
Industry-Related	0.0023 (0.0022)	-0.003 (0.0029)	0.003 (0.0023)	-0.003 (0.0029)
Tobin's q	-0.0019* (0.0011)	-0.0019 (0.0014)	-0.0016 (0.0011)	-0.0017 (0.0014)
Debt-to-Assets <sub>MV</sub>	-0.0034 (0.0075)	-0.0089 (0.0095)	-0.0005 (0.0075)	-0.0065 (0.0094)
OCF-to-Assets <sub>MV</sub>	0.0035 (0.0258)	0.0307 (0.0336)	-0.0028 (0.0261)	0.0285 (0.0337)
CAR (-1,+1)	-0.0055 (0.0144)	-0.0162 (0.0186)	-0.009 (0.0144)	-0.0121 (0.0186)
Stock Liquidity	-5.5258 (5.3411)	4.4981 (7.9367)	-2.4602 (5.3383)	6.9099 (7.8573)
Block-holding	0.013 (0.0089)	0.0332*** (0.0114)	0.0131 (0.0090)	0.0320*** (0.0115)
Year Fixed Effect	YES	YES	YES	YES
N	377	368	377	368
adj. R-sq	0.092	0.069	0.07	0.07

\*\*\*, \*\*, \* denote significance at the 1%, 5% and 10% level, respectively

**Table 108. Post-event Monthly Abnormal Returns** This table presents monthly abnormal returns for below/above median change in holdings (Low/High), and for Forecast/No-Forecast sub-samples. The monthly abnormal return is calculated using a time-series regression, where the dependent variable is the equally weighted portfolio return in each calendar month of all bidders within each subgroup that have an event during the 6 or 12 months prior to the measurement month. The independent variables are the Fama and French (1993) factors. The intercept of the time-series regression for each group is the monthly abnormal return (in percentage). RMRF is the value-weighted market return on all NYSE/AMEX/ NASDAQ firms (RM) minus the risk-free rate (RF), which is the one-month Treasury bill rate. SMB (small minus big) is the difference each month between the return on small firms and big firms. HML (high minus low) is the difference each month between the return on a portfolio of high book-to-market stocks and the return on a portfolio of low book-to-market stocks. Standard Errors are in parentheses.

	Panel A		$\Delta IO(-1,0)$ Rank	
		Low	High	Difference
		3 months	3 months	3 months
<b>No Forecast</b>	<i>Intercept</i>	-0.0075*** (0.0025)	0.0047* (0.0026)	0.0122*** (0.0035)
	MKTRF	0.9874*** (0.0599)	0.9628*** (0.0618)	-0.0246 (0.0834)
	SMB	0.4874*** (0.0790)	0.4881*** (0.0815)	0.0007 (0.1100)
	HML	-0.0668 (0.0867)	-0.3122*** (0.0894)	-0.2454** (0.1207)
	Adj. R-sqd.	0.6052	0.6158	0.0063
	<b>Forecast</b>	<i>Intercept</i>	-0.0137** (0.0053)	0.0118** (0.0052)
MKTRF		0.9619*** (0.1279)	1.0889*** (0.1258)	0.1271 (0.1633)
SMB		0.5061*** (0.1734)	0.2112 (0.1705)	-0.2949 (0.2213)
HML		0.2942 (0.1940)	0.8047*** (0.1908)	0.5105** (0.2477)
Adj. R-sqd.		0.5038	0.4949	0.0821

\*\*\*, \*\*, \*Denote significance at the 1%, 5%, and 10% levels, respectively.

	<b>Panel B</b>		<b><math>\Delta HF(-1,0)</math> Rank</b>	
		<b>Low</b>	<b>High</b>	<b>Difference</b>
		<b>3 months</b>	<b>3 months</b>	<b>3 months</b>
<b>No Forecast</b>	Intercept	-0.0014 (0.0023)	0.0008 (0.0026)	0.0022 (0.0034)
	MKTRF	1.0268*** (0.0546)	1.0438*** (0.0607)	0.0169 (0.0803)
	SMB	0.4526*** (0.0743)	0.4151*** (0.0827)	-0.0374 (0.1094)
	HML	-0.2256*** (0.0781)	-0.1771*** (0.0868)	0.0486 (0.1149)
	Adj. R-sqd.	0.6562	0.6010	-0.0091
<b>Forecast</b>	Intercept	-0.0099* (0.0055)	0.0067 (0.0051)	0.0165** (0.0076)
	MKTRF	1.1321*** (0.1272)	1.2550*** (0.1168)	0.1229 (0.1739)
	SMB	0.2886** (0.1454)	0.5311*** (0.1336)	0.2425 (0.1988)
	HML	0.6420*** (0.1717)	0.7914*** (0.1578)	0.1493 (0.2348)
	Adj. R-sqd.	0.4352	0.5560	-0.0079

\*\*\*, \*\*, \* Denote significance at the 1%, 5%, and 10% levels, respectively

**Table 911. Post-event Monthly Abnormal Returns** This table presents monthly abnormal returns for below/above median change in holdings (Low/High), and for below/above median synergy. The monthly abnormal return is calculated using a time-series regression, where the dependent variable is the equally weighted portfolio return in each calendar month of all bidders within each subgroup that have an event during the 6 or 12 months prior to the measurement month. The independent variables are the Fama and French (1993) factors. The intercept of the time-series regression for each group is the monthly abnormal return (in percentage). RMRF is the value-weighted market return on all NYSE/AMEX/ NASDAQ firms (RM) minus the risk-free rate (RF), which is the one-month Treasury bill rate. SMB (small minus big) is the difference each month between the return on small firms and big firms. HML (high minus low) is the difference each month between the return on a portfolio of high book-to-market stocks and the return on a portfolio of low book-to-market stocks. Standard Errors are in parentheses.

<b>Panel A</b>		<b><math>\Delta IO(-1,0)</math> Rank</b>		
		<b>Low</b>	<b>High</b>	<b>Difference</b>
<b>Synergy/Acquirer Equity</b>		<b>3 months</b>	<b>3 months</b>	<b>3 months</b>
<b>Low</b>	<i>Intercept</i>	-0.0174** (0.0071)	0.0103 (0.0068)	0.0277*** (0.0096)
	MKTRF	0.8834*** (0.1725)	0.9357*** (0.1643)	0.0523 (0.2307)
	SMB	0.4996** (0.2337)	0.2876 (0.2226)	-0.2120 (0.3127)
	HML	0.4121 (0.2616)	0.2888 (0.2491)	-0.1233 (0.3499)
	Adj. R-sqd.	0.3037	0.3213	-0.0316
	<b>High</b>	<i>Intercept</i>	-0.0123 (0.0092)	0.0186** (0.0095)
MKTRF		1.0545*** (0.2212)	1.2997*** (0.2313)	0.2453 (0.2653)
SMB		0.3742 (0.2998)	0.0853 (0.3135)	-0.2889 (0.3595)
HML		0.1774 (0.3355)	1.4169*** (0.3509)	1.2395*** (0.4024)
Adj. R-sqd.		0.2639	0.2984	0.1292

\*\*\*, \*\*, \*Denote significance at the 1%, 5%, and 10% levels, respectively.

Synergy/Acquirer Equity	Panel B			
	$\Delta HF(-1,0)$ Rank			
	Low	High	Difference	
	3 months	3 months	3 months	
<b>Low</b>	<i>Intercept</i>	-0.0199*** (0.0071)	-0.0045 (0.0071)	0.0154 (0.0103)
	MKTRF	1.2649*** (0.1630)	1.0325*** (0.1642)	-0.2325 (0.2367)
	SMB	0.4707*** (0.1863)	0.6258*** (0.1877)	0.1551 (0.2706)
	HML	0.7091*** (0.2201)	0.4540** (0.2218)	-0.2551 (0.3196)
	Adj. R- sqd.	0.3833	0.3339	-0.0096
	<b>High</b>	<i>Intercept</i>	-0.0049 (0.0076)	0.0206*** (0.0081)
MKTRF		1.0792*** (0.1753)	1.3765*** (0.1866)	0.2973 (0.2572)
SMB		0.1156 (0.2005)	0.5669*** (0.2133)	0.4513 (0.2940)
HML		0.6421*** (0.2368)	1.2419*** (0.2519)	0.5998* (0.3473)
Adj. R- sqd.		0.2510	0.3725	0.0144

\*, \*\*, \*Denote significance at the 1%, 5%, and 10% levels, respectively.