Target Firm-Specific Information and Expected Synergies in M&A

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ABSTRACT: This study investigates the relation between target firm-specific information and expected synergies created in M&A. We find that expected synergies increase in target firm specific information available to market participants. This association is driven mainly by cross-industry acquisitions rather than within-industry acquisitions. Further analysis suggests that while acquirers' shareholders benefit from target firm-specific information, target shareholder returns from an acquisition decrease with firm-specific information. Finally, we find that the likelihood of an announced acquisition to be withdrawn subsequent to the acquisition announcement decreases with target firm-specific information.

Key Words: Merger and Acquisitions, Synergy, Transparency, Stock Return Non-synchronicity

Data Availability: Data used in this study are available from the Compustat, SDC, and CRSP databases and other public sources.

JEL Classifications: G14; G34

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1. Introduction

We investigate whether targets transparency facilitates ex ante decision-making by acquirers, and thus aids overall value creation. Mergers and acquisitions can create economic value if the combined new entity is more valuable than the two entities operating separately, namely if there are economic synergies between the two entities. This study explores whether target's firm specific information facilitates better matching of acquirers and targets in the sense that their combination is expected to create greater inherent synergies and thus to promote greater economic efficiency. To illustrate this point, assume that a target, T, with an economic value as a stand-alone firm of 10 dollars has three potential acquirers AA, AB, and AC. All three acquirers have the same stand-alone economic value of 20 dollars. A combination of T with AA will generate 5 dollars synergy (combined entity value of 35), a combination of T with AB will generate 7 dollars synergy (combined entity value of 37), and a combination of T with AC will generate 10 dollars synergy (combined entity value of 40). We posit that the likelihood that AC and not AA or AB will acquire T is high (low) when T is transparent (opaque).

It is important to note from the outset that the due diligence normally conducted by acquiring firms before the completion of the acquisition that to close the information gap between transparent and opaque targets does not undermine the above idea. This is because due diligence is usually conducted after an acquirer has signed a confidential agreement with one potential target firm. Therefore, it can only increase transparency of one specific target to one specific potential acquirer, rather than to all potential acquirers that may be interested in buying the target. Consequently, cross sectional differences in target firm-specific information remains at acquirers' search-for-target stage and due diligence can be viewed as a second best solution to

mitigate information asymmetry. Bushman and Smith (2003) argue that "an absence of reliable and accessible information in an economy impedes the flow of financial capital toward sectors that are expected to have high returns and away from sectors with poor prospects." In exploring the effect of target firm transparency on acquisition expected synergy, the purpose of our study is to evaluate the relation between information environment and its economic consequence. M&A's setting is particularly suitable for such investigation for several reasons: First, acquisitions are among the biggest investment decisions a company ever makes. As such, they involve a significant resource reallocation and have the potential to significantly affect shareholder wealth. Second, ex-ante assessment of the viability of M&A is more difficult than the assessment of any traded security due to unobservable market prices of the combined entity. Therefore target firm-specific information has greater implication for the eventual economic outcome. Third, investigating the effect of target transparency on shareholder wealth of a combined entity resolves some of the endogeneity issue related with the implication of firm transparency for its own shareholder wealth.

Following extant literature, we employ stock return non-synchronicity to proxy for the level of firm transparency. Bushman, Piotroski and Smith (2004) show that stock returns non-synchronicity is higher in countries with more developed financial analysis industries and with a freer press. Also in a cross country setting, Jin and Myers (2006), and Morck, Yeung and Yu (2000) associate stock price non-synchronicity with greater transparency and with better protection of property rights, respectively. A recent study by Hutton, Marcus and Teheranian (2008) demonstrates that stock return non-synchronicity is positively associated with the transparency of financial reporting measured by discretionary accruals.

In examining the effect of target firm-specific information on expected acquisitions synergy, we use weighted average abnormal returns of the acquirer and the target around an acquisition announcement to gauge the expected synergistic gains from an acquisition. Analysis suggests that the combined value-weighted average abnormal returns are positively associated with target stock return non-synchronicity. We then explore whether the positive relation between the expected synergy and target non-synchronicity varies with industry relatedness. We find the positive relation to be greater for cross-industry acquisitions than for within-industry acquisitions, an indication that target transparency plays an important role in synergy valuation when an acquirer purchases a target outside the same industry. A supplementary analysis based on the change in operating performance of the combined firm compared to the weighted average performance of the two operating separately provides consistent results. Specifically, the ROA in the year subsequent to an acquisition relative to the weighted average ROA in the year leading to the acquisition is positively associated with target non-synchronicity and this relation is driven mainly by cross-industry acquisitions.

We further explore how increased shareholder wealth is distributed between the acquirer and the target. The evidence indicates acquirer (target) abnormal returns around announcements increase (decrease) with target non-synchronicity, suggesting that acquirer shareholders capture the synergistic gains from target transparency while leaving target shareholders worse off. Lastly, we find that the likelihood of a withdrawn deal decrease with target firm-specific information, consistent with the idea that when the target is more transparent, acquirers are less likely to learn new information that would lead them to withdraw the acquisition subsequent to the announcement.

Our study contributes to several important strands of literature. First, we extend the understanding of the economic consequence of information transparency (e.g. Wurgler, 2000, DeFond and Hung, 2004, and Durnev, Morck and Yeung, 2004). Both Wurgler (2000) and Defond and Hung (2004) show, in a cross-country setting, a positive association between stock return non-synchronicity and different aspects of economic efficiency. Wurgler (2000) finds that firms in countries with higher stock return non-synchronicity achieve higher efficiency of investments through internal growth. DeFond and Hung (2004) demonstrate that stock return non-synchronicity contributes to higher frequency of CEO turnover upon bad performance. Therefore, they conclude that more firm-specific information contained in stock price helps strengthen corporate governance. Durnev, Morck, and Yeung (2004) show that firms' internal investments are closer to the optimal level when their stock returns are not synchronized with the market or the industry. Our firm-level analysis shows that firm transparency can also serve outsiders (acquirers) and the overall economy to channel targets' assets to their best use when acquirers pursue an external growth strategy. In this regard, our paper is also related to Ashbaugh and Friday (2008) who find that foreign firms that voluntarily adopted international financial reporting standard have higher likelihood of being a target acquired by a U.S. firm.

Second, as acquisitions are among the largest and most readily observable form of corporate investment, they have a significant potential effect on shareholder wealth. Not surprisingly researchers have studied them extensively: Mandelker, (1974) and Andrade, Mitchell and Stafford (2001) suggest that mergers on average create combined shareholder wealth. However, Jensen (1986) argues that acquisitions motivated by self-serving purposes destroy firm value, and Morck, Shleifer and Vishny (1990) suggest that managers typically pursue private benefits from diversifying acquisitions. A further study by Campa and Kedia

(2002) argues that though incomplete information may force some acquirers to enter into a costly diversification, diversification may not always be negative. We add to this stream of research by documenting that target transparency increases synergistic gains from acquisitions and could mitigate some of the negative effects of diversifying acquisitions.

Third, our study indirectly provides support to the literature that links stock return non-synchronicity with firm transparency. The evidence of a positive association between stock return non-synchronicity and economic outcome of an acquisition is consistent with the view that stock return non-synchronicity gauges the level of firm transparency.

The remainder of the paper proceeds as follows. Section 2 reviews related literature and develops testable hypotheses. Section 3 discusses research methodology, and Section 4 describes sample selection. In Section 5, we present the empirical results of analyzing the relation between target firm transparency and change in shareholder wealth. Section 6 concludes.

2. Literature Review and Hypotheses Development

2.1. Merger and Acquisitions

M&As represent massive reallocation of resources within the economy, both within and across industries and are among the largest items in firms' investment activities. Harford and Li (2005) report that between 1993 and 2000, there were 622 acquisitions with a purchase price greater than 10 percent of the acquirer's total assets compared to 450 firm-years with total capital expenditure greater than 10 percent of total assets.[1] Because this type of investment is large in scale and tends to intensify conflicts of interest between managers and shareholders, researchers

[1] These data are based on the March 15, 2005, version. In later versions the authors do not discuss firms with large capital expenditure, and therefore this part of the sample is taken out of the analysis.

extensively investigated its causes and effects (e.g., Berle and Means, 1933 and Jensen and Meckling, 1976).

One line of research focuses on causes for M&A's and suggests two motivations from an acquirer perspective: synergies (e.g., Bradley, Desai and Kim, 1988; Rohdes-Kropf, Robinson and Viswanathan, 2005; and among others) and managers private benefits (e.g., Jensen, 1986; Lang, Stulz and Walking, 1991; and Morck, Shleifer and Vishny, 1990; and among others). These two motivations are also summarized in Stein (1988).

Mandelker (1974) analyzes 241 mergers that took place between 1941 and 1962 and finds that while abnormal returns for the target shareholders are positive and significant; acquirer shareholders earn only normal returns. Roll (1986) investigates the announcement day returns of acquisitions and concludes that acquisitions on average create no value to acquirers. Bradley, Desai and Kim (1988) find that successful tender offers increase combined shareholder wealth of both the acquirer and the target. Using a comprehensive sample analysis, Andrade, Mitchell and Stafford (2001) suggest that mergers on average create a combined shareholder wealth.

From agency costs perspective, Jensen (1986) argues that managers realize large personal gains from empire building and predicts that abundant cash flow can facilitate value destroying acquisitions, commonly known as the free cash flow hypothesis. Lang, Stulz and Walking (1991) empirically test the free cash flow hypothesis and provide supporting evidence. Morck, Shleifer and Vishny (1990) identify types of acquisitions (e.g. diversifying) that could benefit managers but may deplete shareholders wealth. Masulis, Wang and Xie (2007) suggest that negative returns are associated with poor corporate governance, and Wang and Xie (2009) find that acquisitions of poorly governed targets made by well governed acquirers create synergistic gains.

A second line of research identifies acquisition characteristics and tests how these factors explain acquisition profitability. Fuller, Netter and Stegemoller (2002) show that, on average, shareholders of an acquiring firm lose when buying a publicly traded target but gain when buying a privately held firm or a subsidiary. Moeller, Schilingemann and Stulz (2007) examine the theoretical predictions that link acquirer returns to divergence of opinion and information asymmetry at the acquirer. They find evidence consistent with the theory that for acquisitions of public target paid with equity, acquirer returns around acquisition announcements are negatively related with information asymmetry and divergence of opinion. Officer (2007) shows that price premium paid for private targets are affected by the need for and the supply of liquidity of targets.

2.2. Firm Transparency and Stock Return Non-synchronicity

Firm transparency, as defined in Bushman, Piotroski and Smith (2004), is the availability of firm specific information to those outside publicly traded firms. Bushman and Smith (2003) argue that contracting parties with a firm desire information both about the firm's ability to satisfy the contractual terms and its ultimate compliance with contractual obligations. Bushman, Piotroski and Smith (2004) note that the availability of information is a key determinant of efficiency of resources allocation and economic growth. They provide a framework on how to measure transparency and one of their measures is stock return non-synchronicity.

Stock price aggregates information available to market participants about the firm fundamental value and changes in stock price reflect changes in the information set. Therefore, if a firm's stock price movement is highly correlated with the movement of other stocks in the same industry or market (non-synchronicity is low), it implies that changes in the information set about the firm are driven by industry or economy wide changes. Morck, Yeung and Yu (2000)

find greater stock return non-synchronicity in countries with better outside investors' property rights protection. Jin and Myers (2006) reach a similar conclusion and find that stock return non-synchronicity is negatively correlated with various country-level measures of opacity, such as, auditing and accounting standard. Durnev, Morck, Yeung and Zarowin (2003) find that more firm-specific return as a fraction of the total variation signals a more information-laden stock prices. Focusing on U.S. firms, Hutton, Marcus and Tehranian (2008) show that firm level non-synchronicity is explained by the transparency of financial reports. In sum, the extant literature suggests that stock return non-synchronicity captures the richness of firm-specific information available to market participants, namely, firm transparency.[2]

Research has also examined the economic impact of firm-specific information impounded in stock price. Wurgler (2000) shows that firm-specific information impounded in the stock price improves the efficiency of investments at the country level. More closely related to our study, Durnev, Morck and Yeung (2004) argue that informative stock price serve corporate governance mechanisms to induce better corporate governance and enhance investment efficiency. They show that industries with high stock return non-synchronicity allocate capital more efficiently in the sense that their marginal Tobin's Qs are closer to one than industries with low stock return non-synchronicity.[3]

Admittedly, there is some disagreement among academics about what exactly non-synchronicity captures. West (1988) suggests that low R-square (high stock return non-synchronicity) merely reflects greater non-information related noise in returns rather than more firm specific information. Barberis, Shliefer and Wurgler (2005) show that a simple addition to

[2] Throughout this paper, we use the terms non-synchronicity, firm-specific information, transparency, and stock price informativeness interchangeably to mean firm transparency.
[3] Note that early papers (Wurgler, 2000 and Morck Yeung and Yu, 2000) use market model to gauge synchronicity, later papers, which there method we follow, include industry returns in the right hand side of the regression.

or deletion of a firm from the S&P 500 index, perceived to be a non information event, can significantly change its R-square. Further, Rajgopal and Ventkatachalam (2008) find a temporal increase in US firms' stock return volatility accompanied by declining earning quality, which implies a negative relation between stock return non-synchronicity and firm transparency. Some research papers use stock return synchronicity as a measure of information asymmetry (i.e., Moeller, Schlingeman and Stulz, 2007) where low synchronicity corresponds to high information asymmetries. The above studies use either simple stock return volatility or the R-square of the market model to compute non-synchronicity and none of them use a model that includes industry returns as part of the explanatory variables, in the way that is commonly done in the literature that links non-synchronicity with information and with economic outcome.[4] Notwithstanding, we realize that there is some disagreement among researchers on the interpretation of non-synchronicity. Thus our test could be considered to be testing joint hypotheses, one being that non-synchronicity is positively associated with firm specific information.

2.3. Hypotheses Development

The strongest economic argument for an acquisition is that the combined entity will be more valuable than the sum of the acquirer and the target. In the context of a merger between two publicly traded firms, this argument is even stronger because investors can hold the stocks of both the acquirer and the target in their portfolio. Since there are no ex-ante observable market prices for the combined entity, target firm-specific information is particularly important in order to evaluate the synergy of a potential combination. Therefore, we argue that the availability of a target's firm-specific information can facilitate the acquirer with the largest expected synergies

[4]The average R-square of a market model of the U.S firm universe between 1980 and 2008 is 12 percent, while the average R-square of a model that includes industry returns is 19 percent. The correlation in our sample between the R-square is based on a market model and the R-square that is based on a model that also includes industry returns as part of the explanatory variables is 0.78.

to initiate an acquisition bid and achieve the eventual success, thus improving the efficiency of overall asset allocation. Based on this argument, we expect synergies to increase with the level of target firm-specific information. Our first hypothesis is formally stated as follows:[5]

Hypothesis 1 (H1): Acquisition synergy is positively associated with target firm specific information.

The impact of target firm-specific information on the quality of a merger is likely to be less important in situations in which the acquirer has more private sources to collect information about the target. When the acquirer and the target operate in the same industry, the acquirer can have various business ties with the target such as sharing a similar product market and having a common pool of suppliers and customers. To the extreme, if the target is a customer of the acquirer, then the acquirer may already possesses extensive information on the target such as the target's financial health, product popularity, and assets efficiency as could be inferred from a recent paper by Arya and Mittendorf (2009) that demonstrates that it is an optimal strategy for a firm to share inventory information with its supplier. Therefore, when the target and the acquirer line of business are closely related target transparency should be less important for the acquirer. Following this reasoning, we predict that the positive association between target firm-specific information and acquisition synergy to be stronger for cross-industry acquisitions than for within-industry acquisitions. Our second hypothesis is stated formally as follows:

[5] An important assumption underlies our hypothesis is that pre-acquisition stock price does not incorporate anticipation of efficiency improvement through acquisitions with potential unknown buyer. We believe that this assumption is reasonable because our sample consists of only actual acquisitions that occurred. Recent study by Edmans et al, (2008) provides support to this assumption. They suggest that when anticipation of an acquisition corrects prices up close to efficient use of the net assets the acquisition does not occur.

Hypothesis 2 (H2): The positive association between acquisition synergy and target firm specific information is stronger in cross-industry acquisitions than in within-industry acquisitions.

Most acquisitions do not become effective on the announcement day (92% of the acquisitions in our sample did not become effective on the announcement day) and sometimes announced acquisitions are withdrawn before they become effective. Reasons for withdrawal can range from problems with the approval of the deal by relevant authorities to the negative market reaction to the deal (Luo, 2005). We posit that information revealed on an opaque target subsequent to an acquisition announcement can be one factor leading to a withdrawal decision. We acknowledge, however, that to the extent that the acquirer has completed a comprehensive due diligence prior to the acquisition announcement, this projected relation may be mitigated and therefore we may not find results. Based on this line of argument, our third hypothesis is stated formally as follows:

Hypothesis 3 (H3): The likelihood of a withdrawn acquisition decreases with target firm-specific information.

3. Research Methodology

3.1 Measure of Acquisition Synergy

We measure acquisition synergy in percentage returns using the methodology developed by Bradley, Desai and Kim (1988). For each acquisition, we form a value-weighted portfolio of the acquirer and the target, with the weights based on their respective market value measured on the date when we start measuring returns prior to an acquisition announcement date. Acquisition synergy is defined as the portfolio's cumulative abnormal return around an acquisition

announcement date. For the acquirer, this would be (-1, +1) around the announcement day. For the target, because some information about the acquisition leaks to the market before the actual announcement target stock may experience a run up in price in the period leading to the acquisition announcement. Therefore, we measure abnormal returns for the target in the period of -20, +1 days around acquisition announcement day. The portfolio's abnormal return is measured by market-adjusted returns around acquisition announcements. We obtain the announcement dates from SDC's US Mergers & Acquisitions database, and use the CRSP value-weighted return as the market return. The cumulative abnormal returns around the announcement for the target and the acquirer are also separately calculated.[6]

Though the focus of this study is on the combined returns of both the acquirer and the target, we are also interested in the change in shareholder wealth for the two parties, separately. The objective is to shed light on wealth distribution between less than fully diversified investors that hold either of the two firms' stock. We have a clear-cut prediction for the relation between target firm-specific information and acquirer's returns but not for the relation with target's returns. If indeed target firm-specific information helps increasing the synergy "pie" through better matching, it is reasonable to assume that target and acquirer shareholders will receive a share of the added synergy returns, leading to a prediction of positive association between target share non-synchronicity and both acquirer and target returns. However, with regard to target's returns, Raman, Shivakumar, and Tamayo (2008) find in negotiated acquisitions opaque targets have higher acquisition announcement returns as acquirers are willing to pay a premium for soliciting targets' private information, which would suggest a negative association between target firm specific information and target's abnormal returns around announcement.

[6] We also use market-adjusted, equally weighted abnormal return and size-adjusted returns to test our hypotheses. Results are quantitatively similar to those based on value-weighted market-adjusted return.

Finally, to corroborate the results of our market based tests of the first two hypotheses, we also use the change in long-term operating performance (ROA) around acquisition year to capture the wealth impact of acquisitions. We expect a positive association between target firm-specific information and the change in operating performance of the combined entity.

3.2 Measure of Firm-Specific Onformation/Transparency

Following Bushman, Piotroski and Smith (2004) and Piotroski and Roulstone (2004), we measure firm transparency using stock return synchronicity, namely, the firm-specific R^2 (R-square) estimated annually based on the following regression:

$$RET_{i,t}=\beta_0+ \beta_1 MARET_{i,t-1}+ \beta_2 MARET_{i,t}+ \beta_3 INDRET_{i,t-1}+INDRET_{i,t}+\varepsilon_{i,t} \quad (1)$$

where, $MARET_{i,t}$ and $MARET_{i,t-1}$ are the value weighted weekly market return for week t and t-1, respectively. $INDRET_{i,t}$ and $INDRET_{i,t-1}$ are the weekly industry (two-digit Standard Industrial Classification (SIC) codes) return for week t and t-1, respectively with firm i's return omitted.

The firm specific annual R-square measures how much the variation of its annual stock returns can be explained by the market and the industry level returns. The higher the R-square (higher synchronicity), the more the firm's stock return commoves with the market and the industry, and therefore the less firm specific information is impounded in stock price and the lower level is the firm transparency. Hence, firm transparency decreases in R-square.

3.3. Model Specification and Variable Definitions:

The baseline equation for testing our hypotheses in this study is as follows:

$$SYNERGY_i = \beta_0 + \beta_1 SYNCH_i + \beta_2 ACQ_{controls} + \beta_3 TRG_{controls} + \beta_4 DEAL_{controls} + \varepsilon_i \quad (2)$$

where $SYNERY_i$ is weighted combined abnormal returns of both the acquirer and the target averaged around acquisition announcement. $SYNCH_i$ is the natural logarithm transformation of annual firm specific R-square obtained from equation (1). Specifically, we follow Piotroski and Roulstone (2004) and measure synchronicity (SYNCH) as the $log(\frac{R^2}{1-R^2})$ [7]. Synch is measured as a 3-year average ending in the fiscal year-end before the acquisition announcement. Note that SYNCH is measured over three years prior to an acquisition announcement to avoid potential information leakage effect on target stock price changes. We select control variables based on prior studies (i.e., Myers and Majluf,1984; Bradley, Desai and Kim,1988; Lang, Stulz and Walkling,1989; Moeller, Schilingemann and Stulz, 2004; and Wang and Xie, 2009). These control variables are categorized into three groups: acquirer characteristics ($ACQ_CONTROLS_i$), target characteristics ($TRG_CONTROLS_i$), and deal characteristics ($DEAL_CONTROLS_i$). Both $ACQ_CONTROLS_i$ and $TRG_CONTROLS_i$ are measured at the end of fiscal year prior to acquisition announcements.

Acquirer and target characteristics that we consider are firm size, Tobin's Q, leverage, and ROA. Following Jensen (1986), we also include acquirer free cash flow as another control. Deal characteristics include the method of payment, the relative size of the target to the acquirer, whether a deal is a merger of equals, whether a target is from the same industry as the acquirer, and whether a merger is the result of a hostile takeover. In the Appendix, we provide variable definitions in more details.

[7] We use natural logarithm transformation in order to create a normally distributed variable.

Moeller, Schilingemann and Stulz (2004) show that acquirer announcement returns decrease with firm size. Their evidence is consistent with the hubris hypothesis suggested by Roll (1986). Masulis, Wang and Xie (2007) offer an alternative explanation that size serves as an effective takeover defense. Specifically, managers of large corporations are likely to be more entrenched and thus make more value reducing acquisitions. Based on these studies, we expect synergy to decrease with firm size. Myers and Majluf (1984) argue that a bidding firm will offer stock to finance an acquisition when its stock is overvalued. Jensen (2005) argues that overvalued stock leads to bad acquisitions due to agency costs. Therefore, we expect a negative coefficient on the use of stock for acquisition consideration. Leverage is acquirer's leverage ratio and it is expected to be positively related with synergy because the role of monitoring by debt holders improves decision making.

For other control variables, we do not have, however, clear-cut prediction. For example, on the one hand, Jensen (1986) argues that agency costs are higher in the presence of free cash flow at the acquirer. Therefore, free cash flow should be negatively related with synergy. On the other hand, Masulis, Wang and Xie (2007) argue that free cash flow at the acquirer could be also positively correlated with managers' quality, which may be positively correlated with synergy. Regarding Tobin's Q, prior literature provides evidence on a statistically significant relation between acquirer abnormal returns and Tobin's q, though in opposite directions. Lang, Stulz and Walking (1991) suggest a positive relation while Moeller, Schilingemann and Stulz (2004) suggest a negative relation. For Diversification, Morck, Shleifer and Vishny (1990) suggest that mangers pursuing personal benefit will tend to engage in diversifying acquisitions that would lead to negative synergy. However, Campa and Kedia (2002) and Villalonga (2004) suggest that diversification does not necessarily result in value destruction.

Based on our hypothesis 1, we expect the coefficient on SYNCH, β_1, to be negative in eq. (2). Hypothesis 2 predicts a positive coefficient on the interaction of SYNCH with INDSAME. Following Petersen (2009), equation (2) is estimated using ordinary least square with industry fixed-effects and robust standard errors are clustered at the firm level. Industries are identified using two-digit standard industry classification (SIC). All p-values are reported based on two-tailed tests unless noted otherwise.

4. Sample Selection

We obtain the initial acquisitions data from the Securities Data Corporation (SDC) U.S M&As database. We identify 5,050 acquisitions announcements with publicly traded acquirers and targets between January 1, 1980 and December 31, 2008. Sample period is restricted to start in 1980 because the number of acquisitions dated before 1980 recorded in SDC are very small. We restrict the sample to acquisitions in which the acquirer purchased 100 percent of the target for two reasons. First, this restriction eliminates acquisitions where acquirers had a stake at targets prior to current acquisition announcements, and thereby possibly obtained access to unique target firm-specific information. Consequently, the impact of the availability of pre-acquisition firm-specific information impounded in target stock price may have little impact on the matching and thus on synergy. Second, 100 percent restriction ensures the economic impact of acquisition decisions is large on synergy creation. Further, in order to eliminate acquisitions in which formal acquirer was chosen for deal specific purposes (e.g. tax) when in fact it was the one taken over, we also restrict the sample to acquisitions in which the deal value is smaller than the acquirer pre-acquisition market value. Stock price and return information are obtained from Center for Research in Security Prices (CRSP) to compute our main interest variable, SYNCH.

Other financial data are obtained from Compustat. After conditioning on the availability of data from the above-mentioned databases, our final sample holds 2,052 observations.

Table 1, panel A presents summary statistics of our acquisition sample by announcement year. Beginning in 1980, the number of acquisitions increases until its local pick in 1987, then it stays stable before picking up pace in 1994 and reaching all time in the years 1997-1999. These M&A waves are consistent with economic cycles. Table 1, panel A also reports the mean and median acquirer market value, deal value, and relative deal size defined as the deal value to the acquirer market value of equity prior to an acquisition announcement. Acquirer's market value increases gradually from 2,533 million$ in 1980 to 23,500 million$ in 1999. Panel B of Table1 provides summary statistics for acquirer and target firm characteristics. The average leverage is 0.14 for acquirers and 0.16 for targets. Average ROA is 0.11 for acquirers and 0.05 for targets. The average size of the deal relative to the acquirer is 0.23 while the median is 0.13. Panel B also displays the summary statistics of deal characteristics. Thirty one percent of acquisitions are cross industry, 6% are classified as merger of equal, less than 2% are classified as hostile, 4% have more than one bidder, 28% are classified as all cash deals, and 41% are classified as all stock deals.

[Insert Table 1]

5. Empirical Results

5.1 Descriptive Statistics

Panel A of Table 2 reports announcement returns for acquirers and targets at both the combined (synergy) and the individual level. Consistent with Mandelker (1974) and Andrade, Mitchell and Stafford (2001), combined mean (median) returns around the announcement day

are 1.2 (0.8)%. Target 21-day cumulative abnormal returns have a mean (median) of 27.8 (24.4)%, which are much better than those of acquirers, whose mean (median) abnormal returns are -0.9 (-0.8)%. Consistent with Meyers and Majluf (1984), returns for both parties are significantly lower when acquisitions are financed entirely with stock. Operating performance as measured by the change in ROA is positive at both the mean and the median, though the magnitude is very small.

[Insert Table 2]

For descriptive purposes, we provide a pair wise correlation matrix of abnormal returns, stock return synchronicity, and control variables included in the analyses in Table 3. The table shows that target synchronicity is negatively associated with acquisition expected synergies and acquirer announcement return. These results provide univariate support to our hypothesis 1. Further, target synchronicity is positively correlated with target size and with target ROA. Acquisitions financed by equity display lower announcement returns for acquirers, targets, and the combined entity, whereas acquisitions financed by cash have the opposite effect. Table 3 also shows statistically significant correlations between most of the control variables and abnormal returns consistent with prior studies and our expectations.

[Insert Table 3]

5.2. Univariate Analyses

Table 4 Panel A presents univariate portfolio analysis of announcement returns across different levels of target synchronicity based on the full sample. Specifically, we partition our sample into quintiles based on target stock return synchronicity (portfolio 1 represents the lowest synchronicity, or highest transparency). Though not monotonic, mean and median abnormal

returns for the acquirer and the target, individually, as well as the combined entity decrease with the target pre-acquisition stock return synchronicity. The difference in mean returns between the bottom quintile (low synchronicity) and the top quintile (high synchronicity) is 1.7 percentage points for the combined return, 2.3 percentage points for the acquirer returns, and 3.7 percentage points for the target returns. The differences in combined and acquirer returns are both economically and statistically significant (at the 1 percent level in a two tailed test). The difference in targets returns is weakly significant at the mean but not at the median.

In Panels B and C, we repeat the above analyses based on the two within-industry and cross-industry acquisition subsamples, respectively. Results in Panel B (within-industry subsample) indicate that combined and acquirer announcement returns are higher when target firm-specific information is greater. However, target announcement returns do not vary with target firm-specific information. Results in Panel C (cross-industry subsample) show a similar pattern except that target announcement returns also display a decrease in its own synchronicity. Note, however, that the difference in mean returns combined returns (synergy) between the bottom quintile (low synchronicity) and the top quintile (high synchronicity) is 2.7 percent for the cross-industry acquisition sample compared to 1.1 percent for the within-industry acquisition sample. Overall, the univariate analysis provides initial support to both hypothesis 1 and hypothesis 2.

[Insert Table 4]

5.3 Multivariate Regression Analyses

Columns 1 and 2 of Table 5 report results from multivariate regression analysis for combined abnormal returns. The coefficients on control variables are largely consistent with prior studies. Namely, announcement returns are higher for cash-financed acquisitions and for

within-industry acquisitions. Consistent with Asquith, Bruner and Mullins (1983) and Moeller, Schlingemann and Stulz (2004), relative deal size is positively associated with announcement returns. Column 1 summarizes results for the effect of synchronicity on expected synergy. The coefficient on stock return synchronicity (SYNCH) is negative and statistically significant at the 1 percent level (-0.006, t-stat=-2.68), supporting our first hypothesis that target firm-specific information increases acquisition synergies. The economic significance of one standard deviation change in synchronicity is of 43 basis point of synergy.

When we add an interaction variable between synchronicity and relatedness of the acquirer and the target (SYNCH*INDSAME), the coefficient is positive and statistically significant at the 10 percent level of one-tail test (t-stat=1.44), confirming our second hypothesis that target firm-specific information is more important for cross-industry acquisitions. The economic significance of one standard deviation change in synchronicity for a cross-industry merger is of 71 basis points of synergy. In a within industry acquisition the impact of synchronicity is reduced by 60% to 28 basis points. As a robustness (untabulated) we partition the sample into two subsamples, one that includes only cross industry acquisitions and the other that includes only within industry acquisitions and run the regression specification of column 1 for each subsample separately. The coefficients produced from these two regressions support hypothesis of this study.

[Insert Table 5]

Next, we investigate the relation between target stock return synchronicity and the announcement returns of acquirer and of target measured separately. Table 6 reports results based on equation 2 substituting synergy for acquirer and target abnormal announcement returns as the dependent variable. Consistent with Raman, Shivakumar, and Tamayo (2008), results

suggest that target shareholders wealth decreases with target firm specific information (0.022, t-stat=2.00). Acquirer shareholder, however, befit from target-firm specific information (-0.009, t-stat=-3.97).

[Insert Table 6]

5.4 Long-term Post-acquisition Operating Performance

In order to corroborate market-based results, we next explore the relation between target stock return synchronicity and the change in long-term performance due to the combination of the acquirer and the target. Change in long-term performance is measured as the change in ROA. More specifically, we estimate the following regression:

$$\Delta ROA_i = \beta_0 + \beta_1 SYNCH_i + \beta_2 ACQ_{controls} + \beta_3 TRG_{controls} + \beta_4 DEAL_{controls} + \varepsilon_i \quad (3)$$

where ΔROA_i is the percentage change in ROA from year t-1 to year t+1, and t is acquisition announcement year. For the ROA in year t-1 we use an average ROA for the acquirer and the target weighted by pre-acquisition total assets. ROA_i is measured by the operating income before depreciation in year t deflated by the average of total assets in year t and year t-1. $SYNCH_i$ is target stock return synchronicity; $ACQ_{controls,,}$ $TRG_{controls,}$ and $DEAL_{controls}$ are the same set of control variables as used in equation (2) consisting of acquirer firm-specific controls, target firm-specific controls, and deal characteristic controls. Because the pooling of interest method can bias post-acquisition ROA upward, we add one additional control variable that takes the value 1 for an acquisition in which the acquirer used the pooling of interest method to account for it, and 0 otherwise. Based on hypothesis 1, we expect the coefficient on SYNCH, β_1, to be negative. Hypothesis 2 predicts a positive coefficient on the interaction of SYNCH with INDSAME.

Table 7 summarizes results for long-term performance analysis. Consistent with our expectation, column 1 shows that the coefficient on target stock return synchronicity is negative and statistically significant at the 10 percent level of one-tail test (-0.005, t-stat=1.51). In addition, the coefficients on previous year ROA of both the acquirer and the target are negative and statistically significant. Column 2 provides results for a regression that also includes an interaction between target synchronicity and industry relatedness. The coefficient on the interaction term is positive and statistically significant at the 10 percent level of one-tail test (t-stat=1.51). The economic significance of one standard deviation change in synchronicity is of 0.77% change in combined ROA for a cross industry acquisition. In a within-industry acquisition 90% of the effect of synchronicity disappears. Similar to the return analysis, as a robustness (untabulated) we partition the sample to two subsamples, one that includes only cross industry acquisitions and the other that includes only within industry acquisitions, and run the regression specification of column 1 for each subsample separately. The coefficients produced from these two regressions support the hypotheses of this study. Overall post-acquisition operating performance analysis corroborates results based on abnormal returns analysis and further confirming that the availability of target firm-specific information increases expected acquisition synergy through better matching of acquirer and target, and this effect is more important for cross-industry acquisitions than it is for within industry acquisitions.

[Insert Table 7]

5.5 Withdrawal Analyses

To investigate whether the availability of target firm-specific information reduces the likelihood that new information discovered subsequent to acquisition announcements and therefore reduces the likelihood of withdrawals, we estimate the following regression:

$$WITHDRAW_i = \beta_0 + \beta_1 SYNCH_i + \beta_2 ACQ_{controls} + \beta_3 TRG_{controls} + \beta_4 DEAL_{controls} + \varepsilon_i \qquad (4)$$

where $WITHDRAW_i$ is a binary variable that takes the value 1 for a withdrawn acquisition, and 0 otherwise. $ACQ_{controls,,}$ $TRG_{controls,}$ and $DEAL_{controls}$ are the same set of control variables as in equation (2) consisting of acquirer firm-specific controls, target firm-specific controls, and deal characteristics. In this analysis we impose two more restrictions on the sample: first, only acquisitions with one bidder are included because multiple-bidder acquisitions mechanically have higher likelihood of withdrawals. Second, only acquisitions with a time gap between announcement dates and effective dates are included, because deals that are closed upon announcements do not give managers time to learn additional information. This procedure yields 259 withdrawn acquisitions and 1797 completed acquisitions. Based on hypothesis 3, we expect the likelihood of withdrawals after acquisition announcements to decrease with target firm-specific information, namely to increase with target stock return synchronicity.

Table 8 summarizes the estimation results. Confirming our expectation, the coefficient on target synchronicity is positive and statistically significant at the 10 percent level (0.177, t-stat=1.86). Results also indicate that hostile takeovers and cross-industry acquisitions are more likely to be withdrawn. Large acquirers (targets) are less (more) likely to withdraw an announced acquisition. When we further divide the sample into the two subsamples based on industry relatedness, we do not find a significant difference in the coefficient of synchronicity between the two subsamples. Economically, one standard deviation increase in target stock return synchronicity increases the probability of withdrawal by 16 percent.

[Insert Table 8]

6. Conclusion

This study draws a link between two streams of research: the economic effects of firm transparency and economic consequence of M&As. We provide evidence that target firm transparency increases synergistic gains from an acquisition. Using a U.S. acquisition sample over the period 1980 – 2008 that consists of only public targets, we find that the availability of target firm-specific information is positively associated with expected synergy gains. Further investigation suggests that acquirer shareholders benefit from target transparency, while target shareholders benefit from its own opacity. Post-acquisition analysis provides corroborating evidence that the improvement in the combined entity's long-term operating performance increases in the level of target firm transparency. When we partition the acquisition sample into within-industry and cross-industry acquisitions, the evidence suggests that the impact of target transparency on value creation is greater for cross-industry M&A's than it is for within industry M&A's. Finally, we find that the probability of a deal withdrawal increases with target opacity. Overall, our study extends the understanding of the importance of information in improving efficiency of economic resources reallocation.

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Appendix A – Variables Definitions

NAME	DESCRIPTION
<u>Dependent:</u>	
SYNERGY	Acquirer and target value weighted average cumulative abnormal returns, measured over three days around the acquisition announcement (-1, +1) for the acquirer and over twenty two days around the acquisition announcement (-20, +1) for the target. Abnormal returns are market adjusted, value weighted.
ACQ_ABRET	Acquirer cumulative abnormal return measured over three days around the acquisition announcement (-1, +1).
TRG_ABRET	Target cumulative abnormal return measured over twenty two days around the acquisition announcement (-20, +1).
ΔROA1	Change in ROA from year t-1 (acquirer and target weighted average) to year t+1 (combined entity). ROA is measured as operating income before depreciation at year t scaled by average of year t and year t-1 total assets.
WITHDRAWN	A binary variable that takes the value 1 if the announced acquisition was subsequently withdrawn, and zero otherwise.
<u>Explanatory:</u>	
SYNCH	Three year average of target return synchronicity ending in the calendar year before the acquisition announcement. Measured as $log(\frac{R^2}{1-R^2})$. Where the R^2 (R-square) estimated annually based on the following regression: $$Ret_{i,t} = \beta_0 + \beta_1 Maret_{i,t-1} + \beta_2 Maret_{i,t} + \beta_3 Indret_{i,t-1} + \beta_1 Indret_{i,t} + \varepsilon_{i,t}$$ where, $Maret_{i,t}$ is the value weighted market return and $Maret_{i,t-1}$ is the value weighted market return for the previous week. $Indret_{i,t}$ is the industry (two-digit Standard Industrial Classification (SIC) codes) return at week t with firm i's return omitted.
SYNCH * INDSAME	An interaction between SYNCH and INDSAME.

Control:	
ACQ_FCF	Acquirer pre-acquisition free cash flow. Measured as operating income before depreciation minus interest expense minus income taxes minus capital expenditure deflated by total assets at the fiscal year end prior to an acquisition announcement. Compustat: (oibdp-xint-txt-capx)/at
ACQ_TOBIN	Acquirer's pre-acquisition Tobin's q. Measured as the ratio of acquirer's market value of assets to the book value of assets at the fiscal year end prior to an acquisition announcement. Compustat: (at - ceq + csho * prcc_f)/ at
ACQ_LEV	Acquirer's pre-acquisition leverage. Measured as the sum of long term debt and short term debt deflated by the market value of total assets at the fiscal year end prior to an acquisition announcement.
ACQ_LOG_MV	Acquirer size. Measured as the natural logarithm of acquirer's market value one day before the announcement day.
ACQ_ROA	Acquirer return on assets for the year ended before the announcement year, measured as operating income before depreciation scaled by average total assets.
TRG_TOBIN	Target's pre-acquisition Tobin's q. Measured as the ratio of target's market value of assets to the book value of assets at the fiscal year end prior to an acquisition announcement. Compustat: (at - ceq + csho * prcc_f)/ at
TRG_LEV	Target's pre-acquisition leverage. Measured as the sum of long term debt and short term debt deflated by the market value of total assets at the fiscal year end prior to an acquisition announcement.
TRG_LOG_MV	Target's size. Measured as the natural logarithm of acquirer's market value twenty days before the announcement day.
TRG_ROA	Target's return on assets for the year ended before the announcement year, measured as operating income before depreciation scaled by average total assets.
ALLSTOCK	A binary variable that takes the value 1 if the acquisition was financed at least 90 percent by acquirer's stocks, and zero otherwise.

ALLCASH	A binary variable that takes the value 1 if the acquisition was financed at least 90 percent by cash and zero otherwise.
DEALSIZE	The ratio of the deal value to the acquirer pre-acquisition market value.
INDSAME	A binary variable that takes the value 1 if the acquirer and the target share the same two digit standard industry classification (SIC) code, and zero otherwise.
EQUAL	A binary variable that takes the value 1 if target size is greater than 70 percent of acquirer size, and zero otherwise.
HOSTILE	A binary variable that takes the value 1 if the acquisition was achieved through hostile takeover, and zero otherwise.
POOLING	A binary variable that takes the value 1 if the acquisition was accounted using the pooling of interest method, and zero otherwise.

Table 1

Panel A Sample Distribution by Announcement Year

The sample consists of 2,052 announced U.S M&As (listed in SDC) between 1980 and 2008 in which the 100 percent of publicly traded targets were acquired

Year	Number of Acquisitions	Percentage of Sample	Mean (Median) Acquirer Market Value of Equity	Mean (Median) Deal Value	Mean (Median) Relative Size
1980	3	0.15	2533	249	0.19
			(1040)	(227)	(0.16)
1981	25	1.22	843	168	0.26
			(660)	(30)	(0.18)
1983	23	1.12	1369	145	0.20
			(817)	(103)	(0.16)
1984	30	1.46	1233	183	0.27
			(575)	(92)	(0.17)
1985	37	1.8	3405	192	0.34
			(708)	(122)	(0.21)
1986	48	2.34	1558	218	0.26
			(861)	(99)	(0.17)
1987	50	2.44	2530	181	0.23
			(826)	(88)	(0.11)
1988	50	2.44	3412	179	0.23
			(885)	(57)	(0.10)
1989	47	2.29	2180	182	0.20
			(858)	(89)	(0.15)
1990	35	1.71	4211	126	0.22
			(625)	(44)	(0.21)
1991	51	2.49	1464	193	0.30
			(614)	(91)	(0.20)
1992	35	1.71	1521	271	0.25
			(890)	(138)	(0.15)
1993	45	2.19	2263	213	0.22
			(1251)	(131)	(0.13)
1994	72	3.51	2964	213	0.26
			(718)	(135)	(0.18)
1995	122	5.95	3289	163	0.23
			(831)	(101)	(0.13)
1996	111	5.41	3646	225	0.26
			(1268)	(116)	(0.12)
1997	180	8.77	6057	272	0.26
			(1096)	(175)	(0.19)
1998	159	7.75	6741	210	0.22
			(1323)	(107)	(0.11)
1999	181	8.82	23500	250	0.18
			(2374)	(160)	(0.09)
2000	138	6.73	15600	245	0.22
			(1577)	(153)	(0.09)

Table 1 (Continued)

2001	117	5.7	9172	195	0.21
			(1158)	(111)	(0.12)
2002	73	3.56	5128	171	0.18
			(858)	(99)	(0.09)
2003	85	4.14	8941	224	0.23
			(937)	(136)	(0.14)
2004	89	4.34	5504	266	0.22
			(1695)	(176)	(0.13)
2005	67	3.27	10300	253	0.27
			(1193)	(192)	(0.12)
2006	61	2.97	14800	319	0.17
			(2402)	(262)	(0.11)
2007	70	3.41	10900	361	0.23
			(2216)	(285)	(0.13)
2008	48	2.34	8367	199	0.23
			(749)	(127)	(0.17)
Total	2052	100	7853	225	0.23
			(1116)	(131)	(0.13)

Panel B – Sample Statistics

	Yes	No
Cross-Industry	640	1412
	(0.31)	(0.69)
Hostile	38	2014
	(0.02)	(0.98)
Cash Deal	583	1469
	(0.28)	(0.72)
Stock Deal	851	1201
	(0.41)	(0.59)
Mergers of Equals	116	1936
	(0.06)	(0.94)
One Bidder	1977	85
	(0.96)	(0.04)
Withdrawn	259	1795
	(0.13)	(0.87)

Table 2

Summary Statistics

Panel A

Announcement Abnormal Returns and Change in ROA

The sample consists of 2,052 announced U.S M&As (listed in SDC) between 1980 and 2008 in which the target is a publicly traded firm. Abnormal returns are: for the acquirer - market adjusted return from -1 day to +1 day of acquisition announcements. For the target market adjusted return from -20 days to +1 day of acquisition announcements. ΔROA is measured as the difference in ROA between year t+1 and year t-1, where year t is the announcement year.

	Whole Sample	All Stock	All Cash	Mix
COMB_ABRET				
Mean	0.012	0.002	0.028	0.012
Median	0.008	0.002	0.015	0.009
Number of obs.	2,042	848	580	614
ACQ_ABRET				
Mean	-0.009	-0.021	0.009	-0.010
Median	-0.008	-0.015	0.003	-0.010
Number of obs.	2,051	850	583	618
TRG_ABRET				
Mean	0.278	0.244	0.373	0.235
Median	0.244	0.221	0.325	0.202
Number of obs.	2,049	850	581	618
ΔROA				
Mean	0.004	0.001	0.008	0.000
Median	0.001	0.002	0.001	0.000
Number of obs.	1,864	767	536	561

Table 2 (Continued)

Panel B

Descriptive Statistic – Deal and Acquirer Characteristics

VARIABLE	Mean	STD	25%	50%	75%	Min	Max
CONTROLS							
ACQ_FCF	0.02	0.13	0.01	0.02	0.06	-2.41	0.80
ACQ_TOBIN	1.99	1.80	1.08	1.38	2.21	0.28	29.70
ACQ_LEV	0.14	0.13	0.04	0.12	0.21	0.00	0.98
ACQ_LOG_MV	13.99	1.88	12.70	13.93	15.16	8.78	20.14
ACQ_ROA	0.11	0.14	0.03	0.11	0.19	-1.75	1.14
TRG_TOBIN	1.63	1.52	1.02	1.16	1.69	0.30	32.62
TRG_LEV	0.16	0.16	0.02	0.11	0.24	0.00	0.96
TRG_LOG_MV	11.35	1.29	10.43	11.44	12.34	6.26	16.29
TRG_ROA	0.23	0.25	0.02	0.06	0.14	-2.66	0.71
DEALSIZE	0.05	0.21	0.04	0.13	0.34	0.00	1.00
EXPLANATORY							
SYNCH	-1.91	0.71	-2.35	-1.92	-1.46	-4.24	6.43
N				2,052			

Table 3

Correlation Table

Figures represent Pearson pair wise correlations. For each variable, the first row indicates correlation coefficient and the second row indicates significance level.

	SYNERGY	ACQ ABRET	TRG ABRET	ΔROA	ACQ_FCF	ACQ_TOBIN	ACQ_LEV	ACQ_LOG_MV	ACQ_ROA	TRG_TOBIN	TRG_LEV	TRG_LOG_MV	TRG_ROA	DEAL SIZE	CASH_DEAL	STOCK_DEAL	IND SAME	BIDDERS
ACQ_ABRET	**0.80**																	
	0.00																	
TRG_ABRET0	**0.32**	**0.09**																
	0.00	0.00																
ΔROA	0.04	**0.04**	0.00															
	0.15	0.09	0.98															
ACQ_FCF	0.01	-0.01	**0.13**	**-0.16**														
	0.56	0.64	0.00	0.00														
ACQ_TOBIN	-0.03	0.01	**0.08**	**-0.06**	**0.05**													
	0.23	0.81	0.00	0.01	0.04													
ACQ_LEV	0.03	0.04	**-0.09**	-0.01	**-0.10**	**-0.36**												
	0.26	0.11	0.00	0.77	0.00	0.00												
ACQ_LOG_MV	**-0.14**	**0.05**	**0.15**	**-0.05**	**0.30**	**0.20**	**-0.09**											
	0.00	0.02	0.00	0.05	0.00	0.00	0.00											
ACQ_ROA	0.02	**0.04**	**0.11**	**-0.25**	**0.73**	**0.16**	**-0.07**	**0.27**										
	0.48	0.08	0.00	0.00	0.00	0.00	0.00	0.00										
TRG_TOBIN	-0.03	0.01	**-0.05**	**0.05**	-0.01	**0.28**	**-0.15**	**0.13**	**0.05**									
	0.12	0.64	0.04	0.03	0.70	0.00	0.00	0.00	0.02									
TRG_LEV	**0.04**	**0.06**	-0.02	-0.04	**-0.07**	**-0.20**	**0.40**	**-0.09**	0.03	**-0.25**								
	0.05	0.00	0.42	0.13	0.00	0.00	0.00	0.00	0.16	0.00								
TRG_LOG_MV	**-0.06**	**-0.09**	**-0.16**	-0.02	**0.17**	0.04	0.01	**0.54**	**0.11**	**0.10**	**-0.11**							
	0.01	0.00	0.00	0.53	0.00	0.11	0.63	0.00	0.00	0.00	0.00							
TRG_ROA	**0.06**	0.01	0.00	**-0.22**	**0.20**	**-0.11**	**0.14**	0.01	**0.28**	**-0.23**	**0.13**	**0.18**						
	0.00	0.76	0.96	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.00	0.00						
DEALSIZE	**0.20**	**-0.11**	**-0.13**	0.03	**-0.19**	**-0.12**	**0.05**	**-0.58**	**-0.19**	**-0.06**	**0.08**	**0.09**	**0.07**					
	0.00	0.00	0.00	0.21	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.00	0.00					
CASH_DEAL	**0.14**	**0.17**	**0.19**	-0.02	**0.12**	0.01	**-0.06**	**0.15**	**0.14**	-0.01	**-0.06**	**-0.07**	**0.04**	**-0.20**				
	0.00	0.00	0.00	0.39	0.00	0.66	0.01	0.00	0.00	0.67	0.01	0.00	0.10	0.00				
STOCK_DEAL	**-0.12**	**-0.15**	**-0.09**	**0.08**	**-0.11**	**0.05**	**-0.05**	**-0.09**	**-0.17**	**0.06**	**-0.12**	**0.06**	**-0.05**	**0.11**	**-0.53**			
	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.01	0.00	0.01	0.02	0.00	0.00			
INDSAME	0.00	**-0.05**	**-0.05**	**0.06**	-0.03	**-0.07**	-0.02	**-0.07**	**-0.11**	**-0.09**	-0.02	**0.07**	**-0.08**	**0.12**	**-0.15**	**0.14**		
	0.87	0.03	0.02	0.01	0.25	0.00	0.32	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.00		
BIDDERS	**0.04**	0.00	0.02	0.02	0.01	-0.02	0.03	0.01	0.01	-0.02	0.03	0.02	0.03	0.02	**0.06**	**-0.08**	0.00	
	0.07	0.88	0.35	0.44	0.63	0.41	0.23	0.81	0.64	0.31	0.22	0.35	0.13	0.33	0.01	0.00	0.90	
SYNCH	**-0.07**	**-0.11**	-0.02	-0.04	0.03	0.00	-0.03	**0.19**	**0.09**	0.03	0.01	**0.35**	**0.07**	**0.05**	0.02	**-0.08**	**-0.06**	**0.05**
	0.00	0.00	0.31	0.12	0.25	0.98	0.21	0.00	0.00	0.13	0.65	0.00	0.00	0.03	0.31	0.00	0.01	0.03

*Since both hostile takeovers and mergers of equals constitute a small portion of the sample (2% and 6 % , respectively) for compactness these variables are not presented in the correlation matrix.

Table 4

Portfolio Analysis: Sample Partitioned to Quintiles Sorted by Synchronicity

Two independent samples T-test is used to test mean difference and Wilcoxon-Mann-Whitney test is used to test median difference.

Panel A: Full sample

Sorting Variable	SYNCH					
Performance	1	2	3	4	5	Diff 1-5
SYNERGY						
Mean	0.027	0.017	0.024	0.010	0.010	**0.017*** **
Median	0.017	0.010	0.017	0.009	0.008	**0.009*** **
ACQ_ABRET						
Mean	0.004	-0.010	-0.004	-0.015	-0.019	**0.023*** **
Median	-0.001	-0.009	-0.005	-0.011	-0.014	**0.013*** **
TRG_ABRET						
Mean	0.306	0.287	0.276	0.252	0.269	**0.037***
Median	0.256	0.258	0.238	0.224	0.243	0.012

*, **, *** significant at 10%, 5%, and 1% respectively

Table 4 (Continued)

Panel B: Within industry acquisitions

Sorting Variable	SYNCH					
Performance	1	2	3	4	5	Diff 1-5
SYNERGY						
Mean	0.025	0.015	0.236	0.011	0.014	**0.011****
Median	0.017	0.008	0.016	0.010	0.014	0.003
ACQ_ABRET						
Mean	0.000	-0.012	-0.006	-0.018	-0.021	**0.021*****
Median	-0.002	-0.010	-0.009	-0.011	-0.014	**0.012*****
TRG_ABRET						
Mean	0.277	0.269	0.266	0.242	0.281	0.004
Median	0.238	0.236	0.227	0.209	0.243	0.005

*, **, *** significant at 10%, 5%, and 1% respectively

Table 4 (Continued)

Panel C: Cross Industry Acquisitions

Sorting Variable	SYNCH					
Performance	1	2	3	4	5	Diff 1-5
SYNERGY						
Mean	0.031	0.022	0.024	0.008	0.004	**0.027*** **
Median	0.019	0.010	0.016	0.006	-0.001	**0.020*** **
ACQ_ABRET						
Mean	0.013	-0.004	0.000	-0.010	-0.018	**0.031*** **
Median	0.000	-0.005	-0.001	-0.010	-0.014	**0.014*** **
TRG_ABRET						
Mean	0.369	0.340	0.324	0.354	0.249	**0.120*** **
Median	0.302	0.289	0.300	0.271	0.242	0.060***

*, **, *** significant at 10%, 5%, and 1% respectively.

TABLE 5

OLS Estimation of a Model of Abnormal Returns

$$SYNERGY_i = \beta_0 + \beta_1 SYNCH_i + \beta_2 ACQ_{controls} + \beta_3 TRG_{controls} + \beta_4 DEAL_{controls} + \varepsilon_i \qquad (2)$$

Column 1 reports a multivariate analysis of the baseline regression and Column 2 includes an interaction between SYNCH and INDSAME. All regressions are estimated using 2-digit industry fixed effects and robust standard errors clustered by firm.

VARIABLE	Prediction	1		2	
		Coefficient	t-stat	Coefficient	t-stat
ACQUIRER CONTROLS					
ACQ_FCF	?	0.014	(0.30)	0.013	(0.29)
ACQ_TOBIN	?	0.000	(0.17)	0.000	(0.11)
ACQ_LEV	+	0.023	(1.36)	0.023	(1.35)
ACQ_LOG_MV	-	0.001	(0.43)	0.001	(0.42)
ACQ_ROA	?	-0.003	(-0.10)	-0.003	(-0.09)
TARGET CONTROLS					
TRG_TOBIN	?	-0.001	(-1.05)	-0.001	(-1.04)
TRG_LEV	?	0.002	(0.19)	0.001	(0.13)
TRG_LOG_MV	?	-0.004*	(-1.86)	-0.004*	(-1.90)
TRG_ROA	?	0.013	(0.82)	0.014	(0.83)
DEAL CONTROLS					
DEALSIZE	+	0.066***	(5.04)	0.066***	(5.04)
CASH_DEAL	+	0.021***	(4.90)	0.021***	(4.91)
STOCK_DEAL	-	-0.003	(-0.82)	-0.003	(-0.86)
INDSAME	+	0.006	(1.45)	0.017**	(2.01)
BIDDERS	?	0.006	(1.01)	0.006	(0.94)
EQUAL	?	0.011*	(1.68)	0.009*	(1.67)
HOSTILE	?	-0.032	(-0.99)	-0.031	(-0.96)
EXPLANATORY					
SYNCH	-	-0.006***	(-2.68)	-0.010***	(-2.71)
SYNCH*INDSAME	+			0.006	(1.45)
INTERCEPT		0.009	0.36	0.004	0.15
Number of observations		1734		1734	
Adj R^2		8.1%		8.2%	

*, **, *** significant at 10%, 5%, and 1% respectively.

TABLE 5

OLS Estimation of a Model of Abnormal Returns

$$SYNERGY_i = \beta_0 + \beta_1 SYNCH_i + \beta_2 ACQ_{controls} + \beta_3 TRG_{controls} + \beta_4 DEAL_{controls} + \varepsilon_i \qquad (2)$$

Column 1 reports a multivariate analysis of the baseline regression and Column 2 includes an interaction between SYNCH and INDSAME. All regressions are estimated using 2-digit industry fixed effects and robust standard errors clustered by firm.

VARIABLE	Prediction	1		2	
		Coefficient	t-stat	Coefficient	t-stat
ACQUIRER CONTROLS					
ACQ_FCF	?	0.014	(0.30)	0.013	(0.29)
ACQ_TOBIN	?	0.000	(0.17)	0.000	(0.11)
ACQ_LEV	+	0.023	(1.36)	0.023	(1.35)
ACQ_LOG_MV	-	0.001	(0.43)	0.001	(0.42)
ACQ_ROA	?	-0.003	(-0.10)	-0.003	(-0.09)
TARGET CONTROLS					
TRG_TOBIN	?	-0.001	(-1.05)	-0.001	(-1.04)
TRG_LEV	?	0.002	(0.19)	0.001	(0.13)
TRG_LOG_MV	?	-0.004*	(-1.86)	-0.004*	(-1.90)
TRG_ROA	?	0.013	(0.82)	0.014	(0.83)
DEAL CONTROLS					
DEALSIZE	+	0.066***	(5.04)	0.066***	(5.04)
CASH_DEAL	+	0.021***	(4.90)	0.021***	(4.91)
STOCK_DEAL	-	-0.003	(-0.82)	-0.003	(-0.86)
INDSAME	+	0.006	(1.45)	0.017**	(2.01)
BIDDERS	?	0.006	(1.01)	0.006	(0.94)
EQUAL	?	0.011*	(1.68)	0.009*	(1.67)
HOSTILE	?	-0.032	(-0.99)	-0.031	(-0.96)
EXPLANATORY					
SYNCH	-	-0.006***	(-2.68)	-0.010***	(-2.71)
SYNCH*INDSAME	+			0.006	(1.45)
INTERCEPT		0.009	0.36	0.004	0.15
Number of observations		1734		1734	
Adj R^2		8.1%		8.2%	

*, **, *** significant at 10%, 5%, and 1% respectively.

TABLE 6

OLS Estimation of a Model of Abnormal Returns

$$ABRET_i = \beta_0 + \beta_1 SYNCH_i + \beta_2 ACQ_{controls} + \beta_3 TRG_{controls} + \beta_4 DEAL_{controls} + \varepsilon_i \quad (2)$$

Columns 1 reports results for a regression in which the dependent variable is acquirer's announcement abnormal returns, and Column 2 reports results for a regression in which the dependent variable is target's announcement abnormal returns. All regressions are estimated using 2-digit industry fixed effects and robust standard errors clustered by firm.

VARIABLE	ACQUIRER		TARGET	
	Coefficient	t-stat	Coefficient	t-stat
ACQUIRER CONTROLS				
ACQ_FCF	-0.056	(-0.74)	0.257***	(2.59)
ACQ_TOBIN	0.000	(-0.40)	0.011**	(2.33)
ACQ_LEV	0.017	(0.94)	-0.007	(-0.10)
ACQ_LOG_MV	0.004**	(2.20)	0.076***	(6.90)
ACQ_ROA	0.026	(0.57)	-0.128	(-1.20)
TARGET CONTROLS				
TRG_TOBIN	0.001	(0.58)	-0.018**	(-2.54)
TRG_LEV	0.018	(1.36)	-0.031	(-0.53)
TRG_LOG_MV	-0.005**	(-2.44)	-0.110***	(-7.64)
TRG_ROA	0.004	(0.31)	0.064	(1.08)
DEAL CONTROLS				
DEALSIZE	-0.012	(-0.87)	0.277***	(4.80)
CASH_DEAL	0.016***	(3.87)	0.079***	(3.87)
STOCK_DEAL	-0.008**	(-2.02)	0.021	(1.27)
INDSAME	0.004	(0.89)	0.002	(0.09)
BIDDERS	0.000	(0.00)	0.009	(0.28)
EQUAL	0.003	(0.43)	0.033	(1.39)
HOSTILE	-0.063	(-1.53)	0.044	(0.63)
EXPLANATORY				
SYNCH	-0.009***	(-3.97)	0.022**	(2.03)
INTERCEPT	-0.026	(-1.05)	0.423***	(3.60)
Number of observations	1737		1734	
Adj R^2	6.5%		14.6%	

*, **, *** significant at 10%, 5%, and 1% respectively.

TABLE 7

OLS Estimation of Post-Acquisition Change in ROA

$$\Delta ROA_i = \beta_0 + \beta_1 SYNCH_i + \beta_2 ACQ_{controls} + \beta_3 TRG_{controls} + \beta_4 DEAL_{controls} + \varepsilon_i \quad (3)$$

Column 1 displays a multivariate analysis of the baseline regression and Column 2 includes an interaction between SYNCH and INDSAME. All regressions are estimated using 2-digit industry fixed effects and robust standard errors clustered by firm.

VARIABLE	Prediction	1		2	
		Coefficient	t-stat	Coefficient	t-stat
ACQUIRER CONTROLS					
ACQ_FCF	?	0.100	(1.03)	0.100	(1.02)
ACQ_TOBIN	?	-0.003	(-0.48)	-0.003	(-0.52)
ACQ_LEV	+	-0.003	(-0.09)	-0.002	(-0.09)
ACQ_LOG_MV	?	-0.002	(-0.78)	-0.002	(-0.77)
ACQ_ROA	-	-0.283***	(-3.14)	-0.283***	(-3.13)
TARGET CONTROLS					
TRG_TOBIN	?	0.006	(1.29)	0.006	(1.29)
TRG_LEV	?	0.004	(0.24)	0.003	(0.15)
TRG_LOG_MV	?	0.005	(1.32)	0.005	(1.24)
TRG_ROA	-	-0.082***	(-2.80)	-0.082***	(-2.78)
DEAL CONTROLS					
DEALSIZE	+	-0.020	(-1.01)	-0.020	(-1.02)
CASH_DEAL	+	0.007	(1.04)	0.007	(1.01)
STOCK_DEAL	-	0.016*	(1.73)	0.015*	(1.69)
INDSAME	+	0.005	(0.75)	0.024*	(1.72)
BIDDERS	?	0.004	(0.56)	0.003	(0.44)
EQUAL	?	0.026***	(2.89)	0.026***	(2.87)
HOSTILE	?	0.018	(0.41)	0.019	(0.43)
POOLING	+	-0.002	(-0.22)	-0.002	(-0.22)
EXPLANATORY					
SYNCH	-	-0.005	(-1.51)	-0.011**	(-2.23)
SYNCH*INDSAME	+			0.010	(1.56)
INTERCEPT		-0.020	(-0.41)	-0.026	(-0.51)
Number of observations		1456		1456	
Adj R^2		13.9%		14.0%	

*, **, *** significant at 10%, 5%, and 1% respectively.

TABLE 8

Logit Estimation of Post-Announcement Withdrawals

$$WITHDRAWN_i = \beta_0 + \beta_1 SYNCH_i + \beta_2 ACQ_{controls} + \beta_3 TRG_{controls} + \beta_4 DEAL_{controls} + \varepsilon_i \qquad (4)$$

Model is estimated using 2-digit industry fixed effects and robust standard errors clustered by firm.

VARIABLE	Coefficient	t-stat
ACQUIRER CONTROLS		
ACQ_FCF	0.361	(0.55)
ACQ_TOBIN	0.023	(0.65)
ACQ_LEV	0.514	(0.69)
ACQ_LOG_MV	-0.632***	(-6.22)
ACQ_ROA	-0.522	(-0.76)
TARGET CONTROLS		
TRG_TOBIN	0.047	(0.78)
TRG_LEV	-0.041	(-0.10)
TRG_LOG_MV	0.369***	(3.85)
TRG_ROA	0.689*	(1.68)
DEAL CONTROLS		
DEALSIZE	-1.204**	(-2.08)
CASH_DEAL	-0.408**	(-2.06)
STOCK_DEAL	-0.446***	(-2.99)
INDSAME	-0.342*	(-1.85)
EQUAL	-0.416	(-1.20)
HOSTILE	3.778***	(8.15)
EXPLANATORY		
SYNCH	0.177*	(1.86)
Number of observations	1863	
Pseudo R^2	13.9%	