

Causes and consequences of preannouncement runups in acquisition targets: Evidence from deal negotiations and earnings news

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Abstract:

Prior literature documents some possible sources of abnormal stock price movements in target firms prior to the announcement of a deal (i.e., the runup) and the effect of such runups on the final price paid (i.e., the premium). We address three broad questions related to this literature. First, are stock price runups in acquisition targets prior to a merger announcement related to the development of private deal negotiations? Second, is earnings news an important source of variation in these runups? Third, how are merger premiums related to the runup, in particular the source of the runup? We find the following: a) runups are significantly higher on the day of and following a negotiation-related event, b) earnings announcements, management forecasts, and analyst forecast revisions create substantial variation in runups, and c) runups related to the development of private deal negotiations have a smaller effect on the final acquisition premium than runups related to earnings news.

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1.0. Introduction

Stock prices of acquisition targets tend to rise significantly in the weeks leading up to the public announcement of a merger agreement. This “runup” is often attributed to informed trading, toeholds, and rumors (Jarrell and Poulsen, 1989). Bidding firms appear to revise their offers in response to this stock price movement, on average increasing the total offer price by at least the amount of the runup (Schwert, 1996). Despite existing evidence on the determinants of runups and their effects on acquisition pricing, there are several unexplored questions that we investigate here. First, are the target’s stock returns prior to the merger announcement related to the development of deal negotiations? Second, how does news about the stand-alone value of the target (e.g., earnings surprises) affect the runup? Third, how is the acquisition price affected by the source of the target’s stock price runup? For example, is runup driven by trading on inside knowledge of deal negotiations valued the same as the runup arising from a positive shock to the target’s earnings?

With the exception of studies relying on insider trading prosecutions by the Securities and Exchange Commission (SEC) such as Meulbroek (1992), there is little large sample evidence that leakage of information about deal negotiations has a measureable effect on prices. In this paper, we use hand-collected data from SEC-mandated disclosures to identify the timing of material negotiations prior to any public announcement of a deal. Our interest is in capturing the dates of events that are relevant to the development of a potential deal and therefore affect the likelihood of informed trading. For example, we focus on the dates when the bidder or target

firm's board meets, a bid is submitted to the target, financial advisors are retained, or various contracts are signed (e.g., confidentiality or exclusivity agreements).

Based on a sample of 557 completed acquisition contests announced between 1995 and 2006, we first document a positive and significant association between the total runup during the 63 trading days prior to the announcement and the number of preannouncement events disclosed during that period. Next, we estimate a pooled regression of *daily* abnormal returns during the 63-trading day period prior to the announcement on indicators for contemporaneous negotiation "events" described above. Average excess abnormal returns over the day of and day following *each* disclosed negotiation event total 0.46%, which provides evidence that runups are in part driven by informed trading during negotiations. For specific events, the approximate excess abnormal return over the two days beginning on the event day is 0.43% for target board meetings, 0.64% for acquirer board meetings, and 0.37% for bids communicated to the target. Interestingly, we find that retaining a financial advisor four to six months before the announcement is associated with a 1.74% excess abnormal return over two days.¹

Runups can also arise from other sources. Theory predicts that runups driven by information about the stand-alone value of the target ought to have a significant effect on the total premiums paid to target shareholders (Schwert, 1996). Yet to date there is little evidence on the role of common sources of information about the firm's value released during merger negotiations. Earnings announcements and analyst forecasts are often viewed as an important source of valuation-relevant information. As merger negotiations develop in private, managers continue to publicly report accounting information and often provide voluntary earnings forecasts, while

¹ It is important to note that these estimates represent the abnormal returns over and above the average abnormal return during the runup period. Thus, the total abnormal return on these days is likely to be even larger.

stock analysts release earnings projections (and investment recommendations). We refer to these as earnings news events.

Based on a sample of 6,703 successful and unsuccessful takeover contests announced between 1984 and 2007, we first estimate a simple regression of total runup on various measures of earnings news released during the three-month runup period. Not surprisingly, we find a positive association between runups and the news in earnings surprises, analyst forecast revisions, and management earnings forecasts. For example, the average runup is 10.2% among targets that meet or beat analyst expectations, but only 4.2% among targets that miss expectations. We document similar effects when we partition the sample of targets by the news in analyst forecast revisions. Although earnings news appears responsible for substantial variation in runups across firms, it is not the source of the average positive runups in takeover targets (e.g. Jensen and Ruback, 1983; Eckbo, 2009); the average earnings news released by targets during the runup period is neutral or negative.

A central but understudied question is how runups in the target's stock price before the announcement affect the price paid by the acquirer. This question is important because it speaks to the large literature on bidding strategies as well as the economic consequences of insider trading. Under the *substitution hypothesis*, a bidder that is able to ignore movements in the target's stock price during negotiations will pay a premium that is independent of the runup; larger preannouncement returns in the target (i.e., runups) are offset by lower post-announcement returns (i.e., markups). This could happen, for example, if bidder and target managers (and target shareholders) believe the runup reflects trading on leaked information about the deal. However, under the *markup pricing hypothesis*, a bidder that believes the runup reflects information about the stand-alone value of the target or the presence of competing bidders may need to increase the

offer price to secure the deal. Under certain conditions, the total premium is increasing in the runup dollar for dollar.

These two hypotheses imply that runups that reflect changes in the stand-alone value of the target should lead to revised bids more often than runups that reflect leakage of information about the deal. Schwert (1996) documents that an additional \$1 of runup is associated with a \$1.10 larger premium for target shareholders. This leads to the interpretation that bidding strategies are affected by stock price changes during the runup period. We use our analyses of deal negotiations and earnings news events described above to identify the sources of the runup and, extending Schwert, analyze whether the association between premiums and runups is a function of the source of the runup.

We first turn to the 557 firms with deal background data. In the spirit of Meulbroek (1992), we use daily return data and firm-specific regressions to estimate the runup that is attributable to informed trading around deal negotiation dates (i.e., the negotiation event runup). We then regress the total premium on the negotiation event runup and the non-event runup. Our evidence suggests that a \$1 increase in the non-event runup increases the premium by \$1.11, whereas a \$1 increase in the negotiation event runup increases the premium by \$0.84. This difference is significant and consistent with bidders and targets discounting at least some (but not all) of the runup that occurs around deal negotiation dates. We then analyze the results across specific events and find that runups related to bids and target firm board meetings have the smallest effect on total premiums, that is, they are discounted the most. A \$1 increase in the component of the runup due to bids and target board meetings increases the premium by \$0.58 and \$0.84, which is significantly less than the markup on non-event runups. Given that bidders know the dates of

their bids and are likely to know when the target's board meets, this evidence further suggests that negotiating parties discount price movements attributable to leakage.

To investigate how runups related to news regarding the stand-alone value of the target affect acquisition pricing, we examine the association between the component of runups driven by earnings news and the total premium. Abnormal returns over the two days following earnings announcements and analysts forecast revisions made during the runup period are fully priced into the final takeover premium. For each \$1 of runup related to these sources of earnings news, the total premium increases by about \$1.30. However, abnormal returns following management earnings forecasts have a much smaller effect on premiums. For each \$1 of runup occurring around these revisions the premium increases by only \$0.90. One interpretation of this evidence is that bidders discount investor valuation of management forecasts while the target firm is in play. Overall, our results suggest that earnings announcements and analyst forecasts during the runup period convey valuation-relevant information that is not subsequently discounted by the acquiring firm.

Our study makes several contributions. First, for a large number of acquisitions, we document a significant association between deal negotiations and abnormal stock returns in the target prior to the deal announcement. Although we cannot claim that our findings are the result of illegal insider trading, this evidence is timely given recent concerns voiced by the SEC about how hedge funds, brokerages, deal advisers, and traders at Wall Street exchanges share information about the progression of deal negotiations.² Second, we provide evidence that bidders and targets discount at least part of the runup associated with informed trading when

² See Jenny Strasburg and Kara Scannell, "SEC probes transactions in a hunt for inside trades," *The Wall Street Journal*, December 10, 2009, and Robert A. Guth and Justin Scheck, "How Galleon built an empire." *The Wall Street Journal*, December 30, 2009.

negotiating the final acquisition price. This suggests that bidders are able to convince target managers and their shareholders that price movements around deal negotiation developments do not fully reflect information about potential competition or stand-alone value.

Finally, our findings indicate that news about the future cash flows of the target released during the runup period generates significant variation in runups across firms (and may even be the dominant source of runup in many firms). Addressing a central prediction of acquisition pricing theory, our results suggest that returns around a target's earnings announcement and analysts' earnings forecast revisions during the runup period are fully priced by the acquirer. Moreover, the analysis adds to the broader literature on the information content and valuation-relevance of accounting information and the role of analysts as information intermediaries.

In ongoing (but unreported) analyses related to our main results, we investigate: 1) the information in ex post insider trading prosecutions, 2) the properties of runups and markups around bids made during private deal negotiations, 3) the link between negotiation events and trading volume and return volatility, 4) the effect of alternative sources of runups on *bidder* returns, 5) the role of deal, target, and bidder characteristics on runups, 6) the sensitivity of the results to measuring runups and premiums with actual stock and offer prices in place of abnormal returns, and 7) the incentives for strategic reporting by acquisition targets and the role of earnings credibility in acquisition pricing.

The remainder of the paper is organized as follows. In sections 2 and 3 we discuss the literature on preannouncement runups in target firms, markup pricing, and our empirical predictions. In section 4 we discuss our sample and methodology while in sections 5, 6, and 7 we report empirical findings. In section 8, we conclude.

2.0. Preannouncement runups in target firms

2.1. Toeholds, rumors, and informed trading

To date, three primary explanations have been put forward for the preannouncement runup in target firm stock prices: toehold purchases by an acquirer, press speculation or rumors, and informed trading. Acquirers are required to disclose the purchase of the target's shares on form 13D within 10 days of reaching a 5% ownership stake. Mikkelsen and Ruback (1985) find that the announcement of a toehold leads to positive abnormal returns in the target, but only when the acquirer discloses an intent to gain control. Likewise, Betton, Eckbo and Thorburn (2008) show that a toehold acquired by a competing bidder prior to a merger announcement is associated with a higher runup. However, Jarrell and Poulsen (1989) report that bidder toeholds are negatively correlated with the runup.

Corporate control theory predicts that a bidder's toehold acquisition of target firm stock has strategic value. Yet evidence in Betton et al. (2008) suggests that the frequency of toeholds by the initial bidder has been declining since the early 1980s, from over 30% to less than 10%. Moreover, they report that the fraction of initial bidders that acquire their toehold stakes during a two-month window before the merger announcement is less than 2%, and appears to have no systematic effect on runups. Thus, while toehold acquisitions can create important price effects, either through demand or the information their disclosure conveys about the target's takeover probability, it appears unlikely they can explain runups to a large extent.

Press speculation that a firm is in play is also associated with larger preannouncement runups (Jarrell and Poulsen, 1989). However, an important issue is the extent to which rumors actually cause higher runups. The evidence in Pound and Zeckhauser (1990) suggests that articles in the Wall Street Journal identifying firms as potential targets are themselves a reaction to abnormal

price and volume movements. In other words, the positive association between press speculation and runups likely reflects knowledge inferred from informed trading.

Informed trading appears to play an important role in price formation among target firms. For a sample of cash tender offers, Barclay and Warner (1993) show that nearly all of the preannouncement runup in the target is attributable to medium-size trades, a finding consistent with informed investors trading on superior information (yet attempting to avoid detection by other traders and/or regulators by limiting trade size). Meulbroek (1992) focuses on deals with subsequent insider trading prosecution and finds that about half of the total runup in insider trading cases occurred on days that insiders traded. However, the frequency of insider trading prosecution is relatively low, and the total runup (as a fraction of the total premium) is no larger in targets with later insider trading prosecution (Jarrell and Poulsen, 1989; Meulbroek, 1992).

2.2. Deal negotiations and informed trading

Relatively few insider trading cases are actually prosecuted, but it is widely believed that leakage of private information about a potential deal is common. The announcement of a deal usually follows several months of private negotiations between the target and the potential acquirer(s). The initial contact is usually between CEOs and/or their financial advisors. As the discussions progress, the target's entire board is informed, financial and legal advisors are retained, investment bankers are contacted to assist with financing, and lower-level managers and auditors are brought in to support the due diligence process and integration planning. As the set of individuals involved in the transaction grows, so does the difficulty of controlling leakage and informed trading before a public announcement.

Other dimensions of the deal can also affect the likelihood of informed trading. Negotiated offers are rarely revised *after* a deal is publicly announced, but they often are revised during the

bargaining process before a deal is announced. An initial offer or an increase in the offer price increases the likelihood of deal completion and the per-share value conditional on completion, and therefore increases the incentives to buy the target's shares. In addition to offers, many other events take place during negotiations that affect the likelihood of an acquisition and thus the incentives to trade. In general, as the offer price and likelihood of completing the deal increases, so does the gain from informed trading.³

Meulbroek's (1992) analysis of insider trading cases prosecuted by the SEC is a novel and useful effort that sheds light on the effect of informed trading on prices. However, we do not know the tools used by the SEC to identify insider trading, the selection criteria for prosecution, or the attributes of the insiders in cases that are not prosecuted. As a result, insider trading cases may have important selection biases. We believe that a meaningful extension of this is a focus on the stock price movements around material developments in merger negotiations.

Nearly all takeover contests involve some level of contact between the target and acquirer before the public announcement, and more often, months of intense negotiations. SEC-mandated disclosures usually require the bidder and/or target to disclose material contacts and negotiations to shareholders. Thus, we can identify the dates on which material developments take place.⁴ These developments, which we refer to as negotiation events, encompass actions that affect the spread of information, the likelihood of a deal, or the expected offer price. If negotiation events

³ To be clear, informed trading before a merger announcement includes both illegal insider trading on material nonpublic information and legitimate trading based on superior information acquisition and processing. Moreover, the "insiders" in insider trading as used in this paper refers to any individual that knowingly trades on material nonpublic information. This could include, but is not limited to, insiders as defined under Section 16 requirements for reporting trades (officers, directors, blockholders). See Agrawal and Jaffe (1995) for evidence on trading by Section 16 insiders prior to merger announcements.

⁴ Conditional on compliance with disclosure requirements, there is still likely to be substantial variation in disclosure quality across firms. Unfortunately, there is a paucity of administrative or judicial guidance on the level of detail expected by regulators and shareholders.

represent important developments that lead to a higher likelihood of informed trading, we expect abnormal returns to be higher around those dates.

2.3. *Earnings news*

Our analysis of deal negotiations addresses the informed trading explanation for runups. However, it is also useful to consider more directly the role of information relevant to the valuation of the target. During the runup period, multiple sources of public information about the target's future cash flows can affect observed runups. Managers continue to report quarterly earnings, and in some cases, provide forecasts of future earnings. Analysts revise estimates of future earnings and update stock recommendations.⁵ Investors without knowledge of the takeover negotiations likely react to this information. Positive news about a target firm's future earnings should lead to a higher stock return and hence a larger runup, while negative news has the opposite effect. In either case, the news may also convey or reflect information that could be important in determining the offer price. Evidence from the accounting literature suggests that earnings announcements, analyst forecast revisions, and management earnings forecasts do provide valuation-relevant information to investors, albeit to different degrees (see Beyer et al., 2009 for a recent review of this literature).

While there is some evidence on the properties of preannouncement earnings in acquiring firms in stock-for-stock mergers (Erickson and Wang, 1999; Louis, 2004), there is little evidence on the properties of earnings in acquisition targets leading up the announcement of an offer. For example, we are not aware of any compelling evidence on target firm earnings manipulation prior a takeover announcement except in the case of management buyouts (DeAngelo, 1986; Perry and Williams, 1994). Moreover, there is little understanding of the extent to which

⁵ See Becher and Juergens (2008) for evidence on the properties of analyst forecasts and recommendations in target and acquiring firms.

earnings news from various sources contributes to the variation in runups across targets. That is, are earnings surprises associated with larger runups, and does the market reaction to a given earnings surprise change as the firm approaches takeover?

3.0. Runups and merger pricing

3.1. Substitution and markup

A potentially important economic consequence of stock price movements in the target during deal negotiations is their effect on the final price paid by the acquirer. To motivate this, a logical starting point is the argument that the bidder and target have superior information about the value of the target. Thus, any price movements during the runup period merely reflect the information that the bidder and target already have and are irrelevant for pricing the target (Jarrell and Poulsen, 1989). In this case, the total price for the target, measured by the premium, is independent of the preannouncement runup. Higher runup returns lead to lower post-announcement returns, but the total premium is the same. In a regression of premiums on runups, the coefficient on the runup should be zero. This is the core prediction of the *substitution hypothesis*.

An alternative possibility is that stock price movements during preannouncement negotiations affect bidding strategies. Suppose the runup reflects a change in the stand-alone value of the target or the presence of a competing bidder. In those cases, the acquirer may be forced to increase the offer price to secure the deal. Even if the runup is driven by leaked information, it may be very difficult for the bidder to identify the source of the leak and as a result the bidder may be forced to price the runup as if it reflects information about the target's value or potential competition (Schwert, 1996). Under the *markup pricing hypothesis*, the

acquisition price is effectively a markup on the target's current stock price. As a result, a \$1 increase in the runup leads to a \$1 higher price paid to target shareholders.

Although Jarrell and Poulsen (1989) document some evidence of substitution between runups and post-announcement returns for tender offers over a short window, the evidence in Schwert (1996) is largely consistent with the markup pricing prediction. The basic model is a regression of premiums on runups (both sides measured using cumulative abnormal returns). Under the markup pricing hypothesis, the coefficient on runup should be 1. Schwert finds consistent evidence that runups are fully priced in final premiums; a \$1 runup is associated with a \$1.1 larger premium. This association appears robust over a wide range of subsamples. Using actual offer prices in place of abnormal returns, Betton et al. (2008) document a smaller effect of runups on premiums; a \$1 runup is associated with a \$0.80 higher premium.

The predictions under the substitution and markup pricing hypotheses are ultimately derived from assumptions about the source of the runup. For instance, runups driven by identifiable leakage should have a smaller effect on premiums than runups driven by changes in the target's stand-alone value or the arrival of a competing bidder. Consistent with this proposition, Schwert finds that the runup coefficient is significantly smaller in targets with subsequent insider trading prosecution. Also, Betton et al. (2008) document that runups in cases when the ultimate acquirer purchases a short-term toehold have smaller effects on premiums. However, they also show that competing bidder toeholds have no effect on premiums.

3.2. The source of the runup

The theory linking acquisition premiums to runups relies on assumptions about the source of the runup. One way to express this association is the following:

$$P = V_0(1 + \delta) + \theta dV$$

or

$$P - V_0 = V_0\delta + \theta dV$$

P is the negotiated acquisition price, V_0 is the stock price before the runup period, δ is the initial premium (as a % of pre-negotiation value), dV is the change in the target's stock price between the initiation and announcement of a deal (the runup), and θ is the marginal effect of a change in target stock price (dV) on final price P . We can rewrite this in terms of premiums and runups as:

$$Premium = V_0\delta + \theta_k Runup_k \tag{1}$$

where $Premium$ is $P - V$ and $V_0\delta$ is the offer premium in the absence of any runup. To allow for alternative sources of runup (dV) and hence their different theoretical effects on premiums, we let $Runup$ be a vector of price changes indexed by k , the source of the runup. Under the substitution hypothesis, θ_k equals 0. Under the markup pricing hypothesis, θ_k equals 1 (and can even be greater than 1 if the runup reflects information that changes the dollar amount of synergies).

In this paper, we use this framework to revisit the effect of runups on merger pricing by using data on negotiations and earnings information to estimate the amount of the runup arising from these various sources. Specifically, we predict that runups associated with nonpublic deal negotiations should have a smaller effect on acquisition premiums (i.e. smaller θ) than runups from other sources. We also predict that runups associated with news about the stand-alone value of the firm should have a larger effect on acquisition premiums (i.e. larger θ) than other sources.

4.0. The sample

The full sample that we use to analyze the role of earnings news on runups and merger pricing is drawn from takeover attempts of publicly traded U.S. targets announced between 1984

and 2007 as covered by the SDC Mergers and Acquisitions database. To be included in the sample, the acquirer must be seeking control and must own no more than 50% of the target prior to the announcement. Moreover, the consideration must be in cash and/or shares of the acquirer. We group acquisition attempts into contests. A contest begins with the first announced acquisition of a target, continues with a subsequent offer within six months, and ends either with completion or six months following the last bid (see Schwert, 1996 and Betton et al., 2008 for similar approaches). Targets must have a stock price of at least \$1 and a market capitalization of at least \$10 million measured three months before the first announcement of the contest. After requiring the target firm to have sufficient data on CRSP and Compustat, we are left with 6,703 contests.

The background sample is a subset of the full sample and includes 557 contests for which we collect deal background disclosures from either the target or bidder. The background sample is similar to the set of deals analyzed in Heitzman (2009), and includes completed acquisitions of firms covered by Execucomp announced between 1995 and 2006. We describe these disclosures and the data we collect in the following section.

To calculate the returns used to measure runups and premiums, we first estimate a market model regression over a one-year period ending approximately 127 trading days before the first public announcement of an offer for a target, i.e.:

$$R_{it} = \alpha_i + \beta_i R_{mt} + e_{it}, \quad t = -379, \dots, -127,$$

where t is the trading day relative to the announcement day, R_{it} is the continuously compounded return to target firm i and R_{mt} is the continuously compounded return on the CRSP value-weighted market portfolio. Each target must have at least 100 observations in the market model estimation to be included in the sample.

Daily abnormal returns are the prediction errors using the market model parameters and runups and premiums are calculated by summing the abnormal returns over the runup and premium windows as in Jarrell and Poulsen (1989), Schwert (1996), and others:

$$AR_{it} = R_{it} - \alpha_i - \beta_i R_{mt}$$

$$Runup_i = \sum_{t=-63}^{-1} AR_{it}$$

$$Markup_i = \sum_{t=0}^{\min[delisting, 126]} AR_{it}$$

$$Premium = Runup + Markup = \sum_{t=-63}^{\min[delisting, 126]} AR_{it}$$

In Table 1, we provide descriptive statistics on deals and target and bidding firms. The average runup measured over the 63 trading days (about three months) ending the day before the first announcement is 7.9%, while the average total premium is around 21.4%.⁶

On other dimensions, 77.3% of takeover attempts are successful, 44.5% are pure cash offers, 24.7% are stock-for-stock exchanges, 28.2% of targets have poison pills, 68.8% of bidders are publicly traded, 12.8% of bidders have toeholds before the announcement, and 4.7% of bidders are considered hostile by SDC. With respect to competition for the target, 10% of control contests have multiple bidders after the announcement. For the background sample, 5.7% of deals have multiple bidders after the announcement, while 38.2% of these same deals have multiple bidders *prior* to the deal announcement, consistent with Boone and Mulherin (2007). Moreover, among the background sample, 28.7% of deals are initiated by the target, the average time between initiation and announcement is 181 calendar days, and 12.1% of deals are followed by SEC prosecution of insider trading in the target's stock before a merger announcement (identified by searching the SEC website and Factiva).

5.0. Analysis of deal negotiations

5.1. Background disclosure data

Item 1005 of Regulation M-A (reproduced in Appendix A) describes the target or potential acquirer's obligation to disclose various material contacts with the other party prior to the announcement of the acquisition. This disclosure is required by the filing instructions for tender offers (e.g. Form SC 14D-9), securities issuances (e.g. Form S-4), and proxy statements (e.g. Form DEFM14A).

This data source is seldom used in empirical work, yet provides insight into the takeover process that is not possible using only SDC data. In Appendix B we provide an example from Swift Transportation's acquisition of M.S. Carriers in 2001. Boone and Mulherin (2007) use background disclosures to provide more texture on the role of auctions versus negotiations in the takeover market and show that traditional measures of competition using SDC data vastly understate the level of competition before the public announcement. Heitzman (2009) uses background disclosures to identify the role of CEOs in the negotiation process, addressing the common assumption that the CEO has the authority to tradeoff premium for personal benefits (e.g., Wulf, 2004). The data reveal that target CEOs are delegated negotiating authority only half the time.

In our context, we exploit features of these disclosures that not only reveal how the merger progressed, but the actual dates that various developments occurred before any public announcement. Our focus is on the potential leakage of information about the deal and in particular, the likelihood and profitability of trading on nonpublic information about a potential acquisition. Consistent with this, our interest lies in events that affect the offer price, the

⁶ The runups in this sample are smaller than the average runup in Schwert (1996) of 13.3% in the 1975 through 1991. About 30% of targets have negative runups.

probability of a deal, and the number of individuals aware of the deal or offer. The events we identify and study include initiating contact, retaining a financial advisor, executing various contracts (including confidentiality, standstill, and exclusivity agreements), initiating due diligence, board meetings, and formal and informal offers communicated to the target, among others. In about 20% of all events, only an approximate date is disclosed (e.g. mid-week, mid-month, mid-season). Most of these approximate dates occur earlier in the negotiation process, not the runup period. We exclude events with approximate dates from tests using daily returns.

In Panel A of Table 2, we report the frequencies for a number of different events over three- and six-month periods prior to the public announcement of a bid for the 557 deals in the background sample. During the three-month period prior to the announcement we identify a total of 3,622 events with exact dates, averaging 6.5 events per deal. Target board meetings are the most frequent (1,889), followed by bids (846) and acquirer board meetings (560).⁷ In figure 1, we plot the cumulative frequency of various events over the 126 trading days prior to deal announcement.

As a preliminary step, we examine whether the number of days with negotiation events disclosed for a given deal is associated with the total runup. This analysis assumes that the likelihood of informed trading is increasing in the number of meetings between directors and outside advisors, bids communicated to the target, the execution of various merger-related agreements (among other events). Reported in Panel B of Table 2, we find a positive association between runups and the number of negotiation events identified for a deal and show that this effect is economically significant and robust to controlling for deal and target firm

⁷ This table only includes events that have a precise date mentioned within the six-month window. Events with ambiguous dates or those that occurred prior to the event window are not considered.

characteristics. Specifically, the coefficient estimates suggest that for each additional day with a negotiation event, the runup increases by 0.6% to 0.8%.

5.2. *Negotiation and leakage in the runup period: evidence from daily returns*

To provide a more compelling link between deal negotiations and runups, we investigate the association between daily abnormal returns and deal negotiations. Abnormal stock returns over the days of and following developments in the negotiation process are consistent with informed trading. We first estimate a general model with pooled data that correlates negotiation events with daily abnormal returns during the runup period, i.e.:

$$AR_{it} = a + b_1 Event_{it} + b_2 Event_{it-1} + c_i + e_{it} \quad (2)$$

AR is the abnormal return calculated using the approach described earlier, $Event$ represents an indicator variable equal to one if a negotiation event occurred on the day of or day before a return is measured, and c represents firm fixed effects. We included the lagged event indicator to capture the effect of negotiation events that occur after the market closes. The time index t is defined by the runup window of interest. The results are reported in Panel A of Table 3.

The main results for the 63 trading day runup window ($t = -63, \dots, -1$) are in column 2. The coefficient of 0.219 on $Event_t$ implies that across all targets and events, the average abnormal return is about 0.22% higher on days with events ($p < 0.01$) than those without. The coefficient of 0.249 on $Event_{t-1}$ implies that a given event leads to a 0.25% higher abnormal return on the next day as well ($p < 0.01$). The combined excess abnormal return for a given event is about 0.47% over the two days.⁸ We note that these estimates of runup attributable to informed trading around negotiation developments could be understated since informed trading driven by leakage of deal negotiations can take place on other days as well. One potential concern is that both

⁸ Note that the coefficient on the event dummies is incremental to average runup in non-event days (which tends to be positive) and not necessarily zero.

runup returns and the frequency of negotiation events are typically larger just prior to the announcement, creating bias in the coefficient estimates. However, when we narrow the analysis to returns during the last month (col. 5) or last week (col. 6) before the announcement, negotiation events from the prior day continue to have a measurable impact on runup returns (coeff. = 0.310, $p < 0.01$ in col. 5; coeff. = 0.604, $p < 0.01$ in col. 6). That is, negotiation events still explain cross-sectional variation in runups even over small windows just before the announcement.

In Panel B, we expand the basic regression to include separate dummies for four specific events: target and acquirer board meetings, bids, and the target's retention of a financial advisor.⁹ Over the 63-day runup window reported in column (2), the estimated two-day excess abnormal return is 0.43% for target board meetings (0.228 + 0.200), 0.64% for acquirer board meetings (0.359 + 0.279), and 0.37% for bids (0.093 + 0.275). The retention of a financial advisor during the runup window has no effect on abnormal returns in column 2. However, if we replicate the analysis using the previous three months (i.e., $t = -126, \dots, -64$), excess abnormal returns are about 1.74% higher over the two days around the retention. This suggests that targets' advisors play a role in the leakage of private deal negotiations. Overall, the evidence in Table 3 is consistent with informed traders utilizing superior knowledge about the progression of deal negotiations.

5.3. *Event-related runups and their effect on markup pricing*

The pooled cross-sectional approach above estimates the average effect of a given negotiation event across firms. Yet there is likely to be substantial heterogeneity across deals in the importance of events and the potential for leakage. To capture this heterogeneity, we estimate

⁹ We choose board meetings and bids based on their higher relative frequency in the sample and the retention of a financial advisor based on anecdotal evidence that this event can lead to leakage.

the following equation at the firm level using daily abnormal returns over the 63 trading days of the runup period:

$$AR_{it} = a_i + b_{i1}Event_{it} + b_{i2}Event_{it-1} + e_{it} \quad (3)$$

The coefficients b_{i1} and b_{i2} estimate the sensitivity of target firm i 's stock returns to its negotiation events. Larger coefficient estimates are interpreted as more informed trading. There is substantial variation in the estimates across firms as we do not restrict these coefficients to be any particular sign. Nevertheless, the average coefficient estimates reported in Panel A of Table 4 are positive and significant at 0.237 ($t = 3.14$) and 0.303 ($t = 4.25$) for events the day of and before the trading day. We also report the average coefficient estimates across the individual events in Panel B. In this case, we rewrite the model as:

$$AR_{it} = a_i + \sum_{k=1}^K b_{ik1}Event_{ikt} + \sum_{k=1}^K b_{ik2}Event_{ikt-1} + e_{it} \quad (4)$$

k is an index for specific events; however, for a given target firm, k includes only those events in which the firm has a valid observation. Of the 522 targets with at least one board meeting observation, the average excess abnormal return around a target board meeting is 0.267% ($t = 2.13$) the day of the meeting and 0.157% ($t = 1.46$) the day after. For the 253 deals with acquirer board meetings, the average excess abnormal returns are 0.688% ($t = 2.07$) and 0.234% ($t = 1.53$), and for the 381 deals with at least one bid observation during the runup period, the average excess abnormal return is 0.018% ($t = 0.11$) the day of the offer, but 0.483% ($t = 3.46$) the day after. During this window, the retention of a financial advisor has an insignificant effect on returns.

For each target, we use these firm-specific coefficients to estimate the runup due to a target's negotiation event as:

$$Event\ runup_i = (b_{i1} + b_{i2}) \cdot Number\ of\ events \quad (5)$$

Where the *Event runup_i* is the runup for firm *i* attributed to a given event definition, and *b_{i1}* and *b_{i2}* are coefficient estimates obtained from the firm-specific regressions described above. The non-event runup is the total runup less the negotiation event runup. This approach is in the spirit of Meulbroek (1992) who estimates the firm-specific runup around insider trading days, and Barclay and Warner (1993) who use trade-size data as a proxy for informed trading to infer source of price formation during the runup period for tender offer targets.

Reported in Panel C of Table 4, we estimate the average runup attributable to negotiation events at 2.71%, while the average non-event runup is 6.99%. The respective medians are 1.54% and 5.40%. When we repeat the analysis on specific negotiation events, we use *b_{ik1}* and *b_{ik2}* estimated from (4) and define the *Event runup_{ik}* as 0% for firms that do not have at least one event *k* during the period. Average runups are 1.20% around target board meetings, 0.61% around acquirer board meetings, and 0.63% around bid dates.

In the first column of Panel D in Table 4, we regress total premiums on the total runup over the 63 days before the announcement. The coefficient of 1.11 suggests that for every \$1 of runup before the announcement, the total acquisition premium increases by \$1.11. This is similar to the fundamental result documented in Schwert (1996) to support the markup pricing hypothesis. But, a central prediction of the substitution hypothesis is that acquisition prices should be less sensitive to runups when runups reflect informed trading about a potential deal.

In the second column of Table 4, Panel D, we include separate terms for the event and non-event runups. The coefficient on event runups is 0.841 compared to a coefficient on non-event runups of 1.125. In other words, every \$1 of negotiation event runups is associated with a \$0.84 higher premium, but is significantly less than the effect of \$1 of non-event runup on the final

premium (p -value of difference < 0.01). This difference is consistent with bidders and targets discounting some of the runup occurring around deal developments when negotiating the acquisition price. To further investigate this issue, we examine how the pricing of runups in total premiums varies across specific events. We find evidence that runups around bids and target firm board meetings have the smallest effect on premiums. That is, a \$1 increase in runup related to bids and target board meetings increases the premium by \$0.58 and \$0.84 respectively, both significantly less than the \$1.12 markup on non-event runups (both p -values < 0.01). Given that bidders know the dates of their bids and are likely to know when the target firm's board meets, this evidence suggests that negotiating parties partly discount price movements attributable to trading on information about deal negotiations.

6.0. Earnings news: evidence from earnings announcements, management forecasts, and analyst forecast revisions

An important assumption in the markup pricing literature is that stock price movements that reflect changes in the stand-alone value of the target ought to have a stronger effect on merger premiums than stock price movements arising from leakage about the deal. However, there is no evidence to date that actually examines the link between information about the stand-alone value of the target and either runups or merger premiums. In Panel A of Table 5, we provide descriptive evidence on the characteristics of earnings news during the three-month runup period. For comparison, we also report the statistics for prior three-month periods.

6.1. Is earnings news important for runups?

To what extent are earnings surprises, analyst forecast revisions, and management earnings forecasts associated with returns in the runup period? In Panel B of Table 5 we present the results from estimating the following general model:

$$Runup_i = c + dGood\ news\ indicator_i + e_i \quad (6)$$

Runup is measured over the 63 trading days before the merger announcement. In the first two columns, the good news indicator equals 1 if the firm meets or beats prior year earnings (col. 1) or analyst consensus forecasts (col. 2) and 0 if it misses either benchmark. Based on the result in column 2 for the 3,664 deals with an earnings announcement recorded by IBES during the runup period, firms that meet or beat the forecast have 6.05% higher runups. In other words, the average runup for firms that miss analyst forecasts is captured by the intercept, i.e. 4.18%, while the average runup for firms that meet or beat analyst forecasts is 10.23% (4.18% + 6.05%). We perform a similar test using the direction of analyst forecast revisions. If the majority of analyst forecast revisions over the quarter reflect increases in future earnings estimates, the good news indicator equals 1. Based on the results in column 3 for the 4,378 firms with at least one analyst forecast revision, quarters in which analysts make more frequent positive revisions of future earnings have 6.48% higher runups. In column 4 we find that among the 643 targets in which management provided earnings forecasts at least once (as recorded by FirstCall), those in which the forecasts were positive had 12.45% larger runups. The large negative intercept of -2.447 reflects the average runups among firms in which the management forecast contained bad news (such forecasts often relate to earnings warnings and tend to have large price effects).¹⁰

6.2. *Earnings news runups and their effect on markup pricing*

Next, we provide evidence on how runups related to earnings news affect acquisition pricing. Rather than infer news-related runup from the earnings–return relation, we simply assume that the returns over the two-day window following some earnings news event reflects the

¹⁰ While the marginal effects of good news events during the runup period are positive and significant, we do note that these effects are similar when looking at returns in other windows. Nevertheless, this analysis provides important evidence that earnings news leads to important variation in runups.

information conveyed to the market. Similar to our firm-level analysis of background events, we estimate:

$$AR_{it} = a_i + \sum_{j=1}^J b_{ij1} News_{ijt} + \sum_{j=1}^J b_{ij2} News_{ijt-1} + e_{it}, \quad (7)$$

where $News$ is an indicator variable if earnings news event j (earnings announcements, analyst forecast revisions, or management earnings forecasts) occurs on the day of or day before the return is measured. b_{ij1} and b_{ij2} estimate the firm-specific excess abnormal return to a given news event j . The cross-sectional means of the estimated coefficients across the various news events (conditional on having a news event in the runup period) are reported in Panel A of Table 6. On average, the earnings news conveyed by the various sources appears neutral or negative. Across all firms announcing earnings, the average effect is close to zero the day of the announcement and negative -0.21% (t -stat = -2.50) the day after. The average news conveyed by a given analyst forecast revision is close to zero as well. Management forecasts, however, appear to convey more negative than positive news. Across all firms, the average effect of a management earnings forecast on returns is about -4.68% over the two days (-2.11% + -2.57%).

For each firm, we use the estimated coefficients from the firm-level regressions to estimate the runup associated with the earnings news during the runup period. That is,

$$Earnings\ news\ runup_{ij} = (b_{ij1} + b_{ij2}) \cdot Number\ of\ news\ events_j \quad (8)$$

For firms without an observed event j , we set $Earnings\ news\ runup_j$ to zero. The estimated runups are summarized in Panel B of Table 6. Consistent with the evidence in Panel A, the average runup attributable to each event is close to zero. However, an important feature of this analysis is the distribution of runups around earnings events. Specifically, runups associated with earnings news range from -2.49% at the 25th percentile to 2.15% at the 75th percentile. At the 10th and 90th percentiles, the earnings news runups are -8.17% and 8.22% (not tabulated). Analyst

forecast revisions generate similar variation, ranging from -2.48% at the 25th percentile to 2.35% at the 75th percentile, and even larger effects at the extreme deciles.¹¹

In Panel C of Table 6, we present the results from a regression of premiums on the various sources of runup from earnings news. We find that the coefficient on earnings announcement runups and analyst revision runups are no different from the coefficient on non-event runups. This suggests that the runups due to earnings announcements and analyst forecast revisions are fully priced into the final takeover premium. For each \$1 of runup related to such news about target firm earnings, the total premium increases by about \$1.30. We also find evidence that the runup around revisions of earnings forecasts made by the target's managers is not fully priced into the final takeover premium. For each dollar of runup occurring around these revisions the premium increases by only \$0.90. This finding could reflect bidder skepticism about forecasts made by the target's managers while the firm is in play.¹² Overall, our findings on the relation between earnings news runups and acquisition prices imply that for earnings announcements and analyst forecast revisions, earnings information released during the runup period reflects valuation-relevant information that is not subsequently discounted by the acquiring firm. However, more work here is needed to understand the practical implications of earnings news on merger negotiations, including the effect of the source, direction, and timing of the news, as well as the incentives for and constraints on strategic reporting by target managers.

¹¹ If earnings information conveys news to the market about the stand-alone value of the target during the runup period, the question is how such information is accounted for by the acquirer. It is likely the case that a bidder in negotiations with a target has superior information about the underlying cash flows of the target. Thus, information conveyed to the market may not necessarily convey new information to the bidder management. If the offer price reflects information later conveyed to the market in the runup period, runups and premiums will be positively correlated events even though the bidder management is not responding directly to changes in the target stock price. However, it is impossible to know what information the bidding firm has at any point in time. In competitive bidding situations, information access is more restricted compared to exclusive negotiations, so the market reaction to earnings announcements and analyst activity may play a more important role in the bidding process.

¹² This result could also suggest that bidders believe that the market overreacts to such forecasts, perhaps this could occur if, as a result of due diligence conducted by the bidder on the target, the bidder interprets the information contained in such forecasts differently than the market does.

7.0. Additional analyses

7.1. Evidence from insider trading prosecutions

For the background sample, we search Factiva and SEC enforcement actions for deals in which the SEC later prosecuted an individual for trading on material nonpublic information prior the merger announcement. We identify 68 cases, or 12.1% of the sample, slightly more than the 8.9% rate documented in Schwert (1996).

In an untabulated test, we find that targets with subsequent insider trading prosecution have similar levels of disclosed negotiation events as targets without. We also document that runups for targets with insider trading are larger (12.3% vs. 9.3%), but so are premiums (37% vs. 27.7%). Turning to the evidence from premiums, the runup coefficient is smaller in insider trading cases than in other targets (runup coefficient of 0.91 vs. 1.13) but the difference in coefficients is marginally insignificant (p -value of difference = 0.11). Finally, the association between negotiation event runups and premiums appears to be affected by insider trading cases. The coefficient on negotiation event runups is smaller in targets with insider trading than those without, (0.77 vs. 0.85), but again the difference is not significant.¹³

7.2. Evidence from bid revisions

A maintained assumption of the markup pricing hypothesis is that stock price movements lead bidders to revise their offers. Empirically, bid revisions are usually inferred from total premiums and not measured directly. Evidence of markup pricing could arise if offer prices start out high with runups reflecting stronger incentives to trade in targets with high expected premiums (Eckbo, 2009). We address this issue more directly and provide evidence on the

¹³ In continuing tests, we are analyzing the relation of the individual charged with insider trading (i.e. employee, banker, lawyer) as well as the dates of alleged trading and their correspondence to negotiation events disclosed by the firms.

bidding process more generally by examining the sequence of offers during negotiations and the association between offer price revisions and past stock returns. In figure 2, we plot the cumulative average abnormal return prior to a bid revision across various magnitudes of the bid revision. In cases where the bid price goes up, targets have larger past stock price movements than cases where the bid price goes down. In unreported tests, we find evidence that the association between the percentage change in the offer price and stock returns preceding the bid is positive and significant.

Early evidence from preannouncement bids suggests complex associations between runups and premiums that we intend to address in future versions. The size of the association between bid revisions and prior stock returns (about 0.10, not reported) is nowhere near that documented for the relation between preannouncement runups and premiums (i.e., around 1). More work here is clearly needed. For example, does the association between the prebid runup and the implied markup change as the deal nears announcement? Do early (and unsuccessful) offers ignore prebid runup more than later (and successful) offers? How are the characteristics of bid revisions affected by bidding competition, bargaining power, and deal structure?

7.3. *Other analyses*

In ongoing analyses related to our main results (not reported in this version), we are examining the association between negotiation events and trading volume and return volatility, the effect of alternative sources of runups on *bidder* returns, the role of deal, target, and bidder characteristics on runups, and the sensitivity of the results to measuring runups and premiums with actual stock and offer prices in place of abnormal returns.¹⁴

¹⁴ Betton et al. (2008) motivate the use of actual offer prices rather than stock market returns because market returns embed the probability of deal completion and thus represent a noisy measure of the actual offer price. However, there are several reasons to support the use of stock return data. First, it accounts for market returns. Second, stock returns represent investor valuation of a given offer, which is particularly important when the offer price is uncertain

8.0. Conclusion

The stock prices of acquisition targets tend to rise significantly in the weeks leading up to the public announcement of a merger agreement. This “runup” is usually attributed to informed trading, toeholds, and rumors. Bidding firms appear to adjust their offers in response to this stock price movement, on average increasing the total price paid by more than a dollar for every dollar of runup. Despite existing evidence on the determinants of runups and their consequences for merger pricing, there are several unexplored questions that we address in this paper. First, is abnormal trading activity prior to the announcement related to the development of deal negotiations? Second, how does news about stand-alone value (e.g. earnings surprises) affect the runup? Third, how is the bidding strategy affected by the source of the target’s stock price runup? For example, is runup driven by trading on information about deal negotiations valued the same as runup driven by a positive shock to earnings?

We find the following: a) abnormal returns are significantly higher on the day of and following a negotiation event, b) earnings announcements, management forecasts, and analyst forecast revisions create significant variation in runups, and c) runups around negotiation events have a smaller effect on the final acquisition price than runups from other sources, while runups related to earnings news have a similar effect as non-earnings news runups. Our results have implications for the literature on bidding strategy, as well as the regulation and enforcement of insider trading and should be of interest to managers, investors, and regulators.

(e.g. stock offers). Third, to address the criticism that stock returns reflect likelihood of deal completion and that many deals are in fact not completed, one can examine the robustness of the results to the subsample of completed deals.

Appendix A

Item 1005 of Reg M-A -- Past Contacts, Transactions, Negotiations and Agreements

- a. Transactions. Briefly state the nature and approximate dollar amount of any transaction, other than those described in paragraphs (b) or (c) of this section, that occurred during the past two years, between the filing person (including any person specified in Instruction C of the schedule) and:
1. The subject company or any of its affiliates that are not natural persons if the aggregate value of the transactions is more than one percent of the subject company's consolidated revenues for:
 - i. The fiscal year when the transaction occurred; or
 - ii. The past portion of the current fiscal year, if the transaction occurred in the current year; and

Instruction to Item 1005(a)(1):

The information required by this Item may be based on information in the subject company's most recent filing with the Commission, unless the filing person has reason to believe the information is not accurate.

2. Any executive officer, director or affiliate of the subject company that is a natural person if the aggregate value of the transaction or series of similar transactions with that person exceeds \$60,000.
- b. Significant corporate events. Describe any negotiations, transactions or material contacts during the past two years between the filing person (including subsidiaries of the filing person and any person specified in Instruction C of the schedule) and the subject company or its affiliates concerning any:
1. Merger;
 2. Consolidation;
 3. Acquisition;
 4. Tender offer for or other acquisition of any class of the subject company's securities;
 5. Election of the subject company's directors; or
 6. Sale or other transfer of a material amount of assets of the subject company.
- c. Negotiations or contacts. Describe any negotiations or material contacts concerning the matters referred to in paragraph (b) of this section during the past two years between:
1. Any affiliates of the subject company; or
 2. The subject company or any of its affiliates and any person not affiliated with the subject company who would have a direct interest in such matters.

Instruction to paragraphs (b) and (c) of Item 1005

Identify the person who initiated the contacts or negotiations.

- d. Conflicts of interest. If material, describe any agreement, arrangement or understanding and any actual or potential conflict of interest between the filing person or its affiliates and:
1. The subject company, its executive officers, directors or affiliates; or
 2. The offer or, its executive officers, directors or affiliates.

Instruction to Item 1005(d)

If the filing person is the subject company, no disclosure called for by this paragraph is required in the document disseminated to security holders, so long as substantially the same information was filed with the Commission previously and disclosed in a proxy statement, report or other communication sent to security holders by the subject company in the past year. The document disseminated to security holders, however, must refer specifically to the discussion in the proxy statement, report or other communication that was sent to security holders previously. The information also must be filed as an exhibit to the schedule.

- e. Agreements involving the subject company's securities. Describe any agreement, arrangement, or understanding, whether or not legally enforceable, between the filing person (including any person specified in Instruction C of the schedule) and any other person with respect to any securities of the subject company. Name all persons that are a party to the agreements, arrangements, or understandings and describe all material provisions.
-

Instructions to Item 1005(e)

1. The information required by this Item includes: the transfer or voting of securities, joint ventures, loan or option arrangements, puts or calls, guarantees of loans, guarantees against loss, or the giving or withholding of proxies, consents or authorizations.
 2. Include information for any securities that are pledged or otherwise subject to a contingency, the occurrence of which would give another person the power to direct the voting or disposition of the subject securities. No disclosure, however, is required about standard default and similar provisions contained in loan agreements.
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Appendix B
Sample background disclosure from Swift Transportation's announcement of a proposed acquisition of M.S. Carriers on December 11, 2000 (as disclosed in form S-4 filed by Swift on April 19, 2001)

Background of the Merger

The senior management of Swift and M.S. Carriers, particularly Mr. Moyes and Mr. Riley of Swift and Mr. Starnes and Mr. Barrow of M.S. Carriers, have known each other for more than ten years. Over that time the parties developed relationships of mutual respect and friendship.

In July 1999, Mr. Moyes wrote Mr. Starnes and proposed that the two companies open merger discussions. Mr. Starnes replied that he was not interested. No further communications ensued until July 2000.

In July 2000, several of Swift's directors discussed the possibility of attempting to engage M.S. Carriers in serious merger discussions. Swift had analyzed various internal and industry factors and identified M.S. Carriers as a favorable merger candidate. The factors considered included compatibility and quality of management, as well as the possibilities of purchasing economies of scale, expanded use of technology, improved customer service, unified recruitment of drivers, an enhanced position in the Mexican freight market, and more efficient asset utilization.

After reviewing publicly available financial information, on July 14, 2000, Mr. Moyes wrote Mr. Starnes proposing to open merger negotiations. The letter discussed various industry trends, identified several reasons for pursuing a merger, and analyzed the effect of various exchange ratios. Mr. Starnes responded that he would be willing to discuss a merger. On July 20, 2000, M.S. Carriers contacted Merrill Lynch to serve as its financial advisor with regard to the potential transaction. Over the next several days, a representative of Merrill Lynch and Earl Scudder, a member of Swift's board of directors and outside legal counsel, held telephone discussions. They discussed a number of issues relating to the proposed transactions. These issues included proposed exchange ratios, projected earnings of both companies for 2000 and 2001, potential cost-saving synergies, the value of investments by both companies in Transplace.com and partially owned Mexican subsidiaries, the eligibility of each company to engage in a pooling-of-interests, M.S. Carriers' desire for a merger agreement with reciprocal representations and warranties, the agreement of M.S. Carriers not to solicit any competing offer, and the prospect of employment and noncompetition agreements with M.S. Carriers executive officers after the merger. The results of these discussions were encouraging enough to schedule a meeting of the principals for each company.

On August 1, 2000, Messrs. Moyes, Riley, and Scudder for Swift and Messrs. Starnes and Barrow and a Merrill Lynch representative for M.S. Carriers, met in Memphis, Tennessee. At the meeting, the parties discussed the issues previously discussed by Mr. Scudder and Merrill Lynch. They also spent considerable time analyzing financial matters relating to each company, including accounting policies, equipment values and financing, equipment trade policies, and projections for 2000 and 2001. They also discussed customer overlap and cross-marketing opportunities.

During the month of August, the chief financial officers of Swift and M.S. Carriers exchanged key operating statistics, financial forecasts, and the assumptions underlying the forecasts. Based upon the forecasts and publicly available information, representatives of the two companies analyzed possible exchange ratios and exchanged several proposals but were unable to agree on an exchange ratio.

On September 11, 2000, representatives of Swift and M.S. Carriers met in Dallas, Texas to discuss the potential merger. On September 22, 2000, Swift's board of directors met for a regularly scheduled meeting. Mr. Riley informed the board of the ongoing discussions.

During September and October, the parties continued to evaluate the exchange ratio in light of updated earnings prospects of both companies as reflected in published analysts' estimates and internal forecasts. Between September 8 and October 31, published analysts' earnings estimates for M.S. Carriers were reduced by approximately 25% for both 2000 and 2001. During the same period, published analysts' earnings estimates for Swift were reduced by approximately 15% for both 2000 and 2001. The reductions in analysts' estimates were based primarily on high fuel prices and a slowing economy.

On October 30, 2000, representatives of Swift and M.S. Carriers met during the American Trucking Association convention in San Diego, California. Swift proposed an exchange ratio of 1.7 Swift shares for each share of M.S. Carriers stock. The parties discussed a plan for integrating the two companies' operations in a deliberate manner, the plan for M.S. Carriers to continue operating out of Memphis with existing personnel, and employment and noncompetition arrangements for the M.S. Carriers executives. The parties discussed a general timeline and the prospect of a closing in the spring of 2001. The parties did not reach agreement on the exchange ratio.

On November 21, 2000, Messrs. Moyes and Riley of Swift and Messrs. Starnes and Barrow of M.S. Carriers, along with the companies' respective legal counsel, met in Phoenix, Arizona. During the meeting, the principals agreed to an exchange ratio of 1.7 shares of Swift common stock for each share of M.S. Carriers common stock, subject to confirmatory due diligence, board approval, and the negotiation of an acceptable merger agreement. The parties directed their counsel to prepare a draft merger agreement and related documents for consideration by the companies' boards of directors. The parties also commenced due diligence investigations of each other, which continued until December 11, 2000.

On November 22, 2000, Swift engaged Credit Suisse First Boston as its financial advisor in connection with certain securities matters arising in connection with the acquisition of M.S. Carriers, including the potential issuance of previously repurchased shares of Swift common stock prior to the merger. Credit Suisse First Boston was not requested to, and did not, render an opinion with respect to the fairness of the consideration to be paid by Swift in the merger.

On November 30, 2000, a special meeting of M.S. Carriers' board of directors was held in Memphis, Tennessee to consider the proposed merger with Swift. At this meeting, Mr. Starnes updated the board of directors on the proposed terms of the merger agreement, the exchange ratio, the executive employment contracts, the conversion of employee stock options, and other matters. The board unanimously approved moving forward, subject to completion of due diligence, negotiation of an acceptable merger agreement and related documents, and receipt of an opinion from Merrill Lynch with respect to the fairness of the exchange ratio from a financial point of view to holders of M.S. Carriers common stock other than Swift and each of its affiliates.

On December 1, 2000, Swift held a special meeting of its board of directors. Messrs. Moyes, Riley, and Scudder reported on the material terms of the proposed transaction and recommended that the board of directors approve a merger on substantially the terms discussed. The board unanimously approved the merger and issuance of shares of Swift common stock at an exchange ratio of 1.7 to one. The board authorized Jerry Moyes and Bill Riley to negotiate and sign a merger agreement on substantially the terms proposed, subject to completion of due diligence and negotiation of an acceptable merger agreement and related documents.

From December 1 to December 8, 2000, the parties negotiated outstanding issues in the merger agreement and employment agreements and continued due diligence.

On December 8, 2000, M.S. Carriers held a special meeting of its board of directors to consider the merger agreement. At this meeting, Merrill Lynch was asked to provide its opinion as to the fairness of the exchange ratio from a financial point of view to holders of M.S. Carriers common stock, other than Swift and each of its affiliates. For a detailed discussion of this opinion, see "Opinion of M.S. Carriers' Financial Advisor" below.

On December 11, 2000, M.S. Carriers' board of directors met again to consider the transaction. The board unanimously approved the merger agreement and authorized its Chief Executive Officer to sign and deliver the merger agreement and proceed with the proposed transaction.

The merger agreement was executed on December 11, 2000, and the companies issued a joint press release announcing the merger.

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Table 1: Sample means

The full sample consists of takeover attempts over the 1984 – 2007 period in which a bidder owns less than 50 percent of the target firm and seeks to gain control of the target and is identified using SDC. The background sample is a subset of the full sample and consists of 557 takeovers of targets included in the ExecuComp database that are acquired over the 1995-2006 period. Runup is a target firm's abnormal stock returns from days -63 to -1 relative to the first bid announcement. Premium is the total premium paid to target firm shareholders from day -63 relative to the first bid announcement until the delisting of the target firm's stock or 126 trading days after the first bid, whichever comes first. Parameters used to calculate abnormal stock returns are estimated using the CRSP value-weighted portfolio from days -379 to -127 relative to the first public bid announcement. Rumored deal refers to whether SDC reports that a rumor of the takeover is reported in the press prior to the first bid announcement.

	Full sample	Background sample
Sample period	1984-2007	1995-2006
Number of contests	6,703	557
Panel A: Deal characteristics		
Runup: CAR(-63, -1)	0.079	0.096
Premium: CAR(-63, 126)	0.214	0.289
$\ln(P_{-1}/P_{-63})^*$	0.084	0.109
$\ln(P_{\text{OFFER}}/P_{-63})^*$	0.312	0.321
Completed	0.773	1.000
All cash	0.445	0.416
All equity	0.247	0.293
Termination fee	0.470	0.792
Rumored deal	0.029	0.073
Competing bidder – post announcement	0.100	0.057
Competing bidder – pre announcement	-	0.382
Negotiation length (days)	-	181
Initiated by target	-	0.287
Insider trading prosecution	-	0.121
Panel B: Target characteristics		
Book assets (billions)	1.976	8.616
Market value of equity (billions)	0.807	3.045
Return on assets	-0.001	0.031
Market leverage	0.188	0.169
Target has poison pill	0.282	0.563
Panel C: Bidder characteristics		
Bidder is a public firm	0.688	0.835
Initial bidder has a toehold	0.128	0.036
Hostile bidder	0.047	0.016

* Number of observations equals 5,849 (547) for full (background) samples

Table 2: Preannouncement negotiation events and runups for the 557 contests with background data

In Panel A, we report the frequency of various negotiation events over different preannouncement windows. In Panel B, we report the results of regression models that explain runups as a function of the number of negotiation events and other control variables, including year and 1-digit SIC dummies. The number of events for a given firm is equal to the number of days during the runup period with at least one event disclosed in the background section and includes: an acquirer or target board meeting, bid, retaining a financial advisor, the signing of a confidentiality, standstill, termination fee, or exclusivity agreement, or the beginning of due diligence by an acquirer or a target firm. Accounting variables are calculated for the fiscal year prior to the year of the takeover announcement. Takeover rumor dummy equals one if SDC reports that a rumor of the takeover is reported in the press prior to the first bid announcement. Toehold dummy equals one if the first bidder holds a stake in the target prior to the announcement. Insider trading is an indicator variable for targets in which insider trading was later alleged to have occurred. *p*-values are in parentheses.

Panel A: Frequency of negotiation events with precise dates

Negotiation event	Runup window (-63,-1)		Runup window (-126,-1)	
	total #	ave. per firm	total #	ave. per firm
All events	3,622	6.503	4,272	7.670
Target board meeting	1,889	3.391	2,177	3.908
All bids	846	1.519	921	1.654
Acquirer board meeting	560	1.005	606	1.088
Bid revision	531	0.953	558	1.002
Confidentiality agreement	300	0.539	395	0.709
Due diligence begins	247	0.443	279	0.501
Initiation	175	0.314	287	0.515
Target retains fin. advisor	154	0.276	200	0.359
Standstill agreement	61	0.110	74	0.133
Acquirer retains fin. advisor	50	0.090	62	0.111
Exclusivity agreement	50	0.090	57	0.102
Termination fee (target)	42	0.075	42	0.075

Panel B: Association between runups and negotiation events

Dependent var..	# events	ln(Asset)	Leverage	Market- to-book	ROA	Rumor	Toehold	R ²
CAR(-63,-1)	0.616 (0.093)							0.005
CAR(-63,-1)	0.821 (0.032)	-1.768 (0.020)	10.379 (0.147)	-3.486 (0.007)	-30.753 (0.003)	14.205 (0.001)	7.237 (0.156)	0.141

Table 3: The relation between negotiation events and daily abnormal stock returns

The table reports the results of regression models that explain daily abnormal stock returns over various windows during the 126 day period prior to the first public bid announcement for the 557 targets with background disclosures. The general pooled model used to estimate these effects is:

$$AR_{it} = a + b_1 Event_{it} + b_2 Event_{it-1} + c_i + e_{it}$$

where AR is the abnormal return for firm i on day t , $Event_{it}$ and $Event_{it-1}$ are indicator variables if a negotiation event occurs on the day of or prior to the return measurement date t , c represents firm fixed effects. In Panel A, we present the results in which $Event$ takes a value of 1 if any negotiation event occurs on day t (see Table 2). In Panel B, we present the results from expanding the general model to include separate indicator variables for k different events. p -values are in parentheses.

Event window: t =	(-126, -64)	(-63, -1)	(-63, -43)	(-42, -22)	(-21, -1)	(-5, -1)
Panel A: All negotiation events						
Event _t	0.098 (0.396)	0.219 (0.001)	0.142 (0.305)	0.251 (0.026)	0.124 (0.109)	0.123 (0.486)
Event _{t-1}	0.104 (0.374)	0.249 (0.001)	0.067 (0.629)	0.032 (0.778)	0.310 (0.001)	0.604 (0.001)
R ² -adjusted	0.018	0.016	0.047	0.047	0.048	0.197
N	35,154	35,154	11,718	11,718	11,718	3,905
Panel B: Specific negotiation events						
Target board meeting _t	0.135 (0.437)	0.228 (0.002)	-0.181 (0.366)	0.236 (0.148)	0.219 (0.029)	0.263 (0.204)
Target board meeting _{t-1}	-0.159 (0.650)	0.200 (0.011)	0.033 (0.867)	0.001 (0.999)	0.207 (0.057)	0.492 (0.036)
Acquirer board meeting _t	0.042 (0.921)	0.359 (0.006)	0.098 (0.836)	0.143 (0.662)	0.473 (0.004)	0.635 (0.033)
Acquirer board meeting _{t-1}	-0.410 (0.342)	0.279 (0.062)	-0.489 (0.310)	0.659 (0.053)	0.306 (0.110)	0.392 (0.307)
Bid _t	-0.192 (0.565)	0.093 (0.387)	0.463 (0.163)	0.292 (0.221)	-0.146 (0.290)	-0.400 (0.179)
Bid _{t-1}	0.346 (0.305)	0.275 (0.015)	0.083 (0.787)	-0.045 (0.852)	0.325 (0.023)	0.199 (0.548)
Target retains fin. advisor _t	0.848 (0.046)	0.049 (0.841)	-0.140 (0.779)	0.007 (0.987)	0.421 (0.283)	1.000 (0.337)
Target retains fin. advisor _{t-1}	0.895 (0.033)	0.278 (0.259)	0.792 (0.114)	0.537 (0.234)	0.044 (0.908)	1.010 (0.301)
R ² -adjusted	0.018	0.016	0.048	0.047	0.049	0.199
N	35,154	35,154	11,718	11,718	11,718	3,905

Table 4: Firm-level evidence of the sensitivity of runups to negotiation events and their effect on acquisition pricing

In Panel A, we report the average coefficient estimates obtained from firm-specific regressions of daily abnormal returns over the 63 days prior to the first public announcement on indicators for any negotiation event that occurs on that day or the prior day for the 557 targets with background disclosures. In Panel B, we report the average coefficient estimates obtained from firm-specific regressions of daily abnormal returns over the 63 days prior to the first public announcement on indicators for four different negotiation events if they occur on that day or the prior day. The t-statistics presented are for the cross sectional average coefficient. In Panel C, we use firm specific coefficient estimates (as summarized in Panels A and B) to derive estimates of the runup attributable to the negotiations. Specifically, a negotiation event runup for firm i is defined as $(b_{i1} + b_{i2}) \times \text{Number of events}_i$, where the number of events is measured using negotiation events occurring for firm i during the 63-day runup period. The component of runups unrelated to negotiation events is equal to total runup minus the negotiation event runup. In Panel D, we report the results of regressions of the total premium, CAR(-63,126), on the runup and components of the runup related to negotiations. Standard errors are in italics. p -values are in parentheses. Return measures reported in %.

Panel A: Mean regression coefficients from the following regression model (i indexes firms):

$$AR_{it} = a_i + b_{i1}Event_{it} + b_{i2}Event_{it-1} + e_{it}$$

Independent variable:	Mean coeff.	t-stat	N
Event _t	0.237	3.14	557
Event _{t-1}	0.303	4.25	557

Panel B: Mean regression coefficients from a general regression model (i indexes firms, k indexes events):

$$AR_{it} = a_i + \sum_{k=1}^K b_{ik1}Event_{ikt} + \sum_{k=1}^K b_{ik2}Event_{ikt-1} + e_{it}$$

Event _k	Mean coeff.	t-stat	N
Target board meeting _t	0.267	2.13	522
Target board meeting _{t-1}	0.157	1.46	522
Acquirer board meeting _t	0.688	2.07	253
Acquirer board meeting _{t-1}	0.234	1.53	253
Bid _t	0.018	0.11	381
Bid _{t-1}	0.483	3.46	381
Target retains fin. advisor _t	0.077	0.28	139
Target retains fin. advisor _{t-1}	-0.002	0.14	139

Panel C: Firm specific estimates of runup associated with negotiation events

Runup source	All observations			
	Mean	Q1	Median	Q3
All negotiation events	2.710	-2.850	1.540	8.040
Non-negotiation events	6.990	-6.040	5.400	19.460
Target board meetings	1.200	-2.850	0.000	4.530
Acquirer board meetings	0.610	0.000	0.000	0.360
Bids	0.630	-0.940	0.000	1.510
Retain financial advisor	0.010	0.000	0.000	0.000
All other	7.240	-5.560	5.940	20.500

Table 4 (cont'd)**Panel D: Markup pricing and runups around negotiation events**

Dependent variable	<i>Premium</i>				
			Event vs. non-event (<i>p</i> -value)	Event vs. non-event (<i>p</i> -value)	
Independent variable	(1)	(2)	(3)		
Runup (Total)	1.110				
s.e.	0.047				
Runup (Non-event)		1.125		1.122	
s.e.		0.047		0.047	
Runup (Event)		0.841	(0.001)		
s.e.		0.093			
Runup (Target board meeting)				0.836	(0.005)
s.e.				0.109	
Runup (Acquirer board meeting)				0.912	(0.271)
s.e.				0.192	
Runup (Target retains fin adv.)				0.977	(0.681)
s.e.				0.354	
Runup (Bid)				0.581	(0.004)
s.e.				0.191	
R ²	0.534	0.540		0.544	

Table 5: Earnings news and preannouncement runups in target firms

In Panel A we provide descriptive statistics on various sources of earnings news during five quarters before the deal announcement. In Panel B, we provide the results of OLS regressions in which the dependent variable is the preannouncement runup measured as cumulative abnormal returns over the 63-day window prior to the first announcement of the acquisition and the independent variables are various indicators whose value depends on the sign of four news events. Col (1) includes firms that announced earnings during the runup window per Compustat; the indicator equals 1 if the earnings per share for that quarter meets or exceeds earnings per share from four quarters earlier. Col. (2) includes firms with earnings announcements with analyst coverage on IBES; the indicator equals 1 if the earnings per share meets or exceeds analyst consensus forecast for the same quarter (defined as the average of analyst EPS in the final period prior to the earnings announcement). Col. (3) includes firms in which at least one analyst revised a forecast of future EPS; the indicator equals 1 if the average of all analyst revisions over the runup period are positive (i.e. higher expected EPS). Col. (4) includes firms where management released guidance of future earnings; the indicator equals 1 if the forecast conveys good news according to FirstCall, *p*-values reported in parentheses.

	Event quarter relative to merger announcement (quarter -1 = day -63 to -1)				
	-5	-4	-3	-2	-1
Earnings announcements (Compustat)					
Unexpected earnings ($EPS_q - EPS_{q-4}$)/Price	1.15	1.09	0.83	0.57	0.63
Meet or beat (%)	60.59	60.72	58.66	57.53	58.14
CAR (0,1) – meet/beat	0.79	0.62	0.63	0.66	1.10
CAR (0,1) - miss	-0.80	-0.72	-0.89	-1.07	-0.69
Earnings announcements (IBES)					
Unexpected earnings ($EPS_q - \text{Analyst}EPS_q$)/Price	-0.96	-1.21	-1.32	-1.61	-1.37
Meet or beat (%)	62.15	61.28	60.55	59.38	62.28
CAR (0,1) - meet or beat	0.94	0.89	0.82	0.85	1.13
CAR (0,1) - miss	-1.10	-1.89	-1.89	-1.79	-1.25
Analysts forecast revisions					
Negative (%)	58.09	59.28	60.45	61.86	60.47
Neutral (%)	2.26	2.12	2.06	1.91	1.90
Positive (%)	39.65	38.60	37.48	36.23	37.62
CAR (0,1) – negative	-0.35	-0.39	-0.42	-0.38	-0.09
CAR (0,1) - neutral	-0.05	0.33	0.07	0.01	0.18
CAR (0,1) - positive	0.36	0.45	0.43	0.46	0.74
Management earnings forecasts					
Negative (%)	28.79	28.42	28.21	26.76	24.13
Neutral (%)	57.45	57.90	57.38	56.45	55.20
Positive (%)	13.77	13.68	14.40	16.79	20.67
CAR (0,1) - negative	-7.60	-8.55	-11.50	-10.06	-8.01
CAR (0,1) - neutral	-0.39	-0.38	-1.20	-0.86	-0.07
CAR (0,1) - positive	5.30	3.58	3.34	3.41	4.48

Table 5 (cont'd)**Panel B: Earnings surprises and runups**

Dependent variable	CAR (-63,-1)			
Independent variable	(1)	(2)	(3)	(4)
Intercept	6.629 (0.001)	4.181 (0.001)	5.847 (0.001)	-2.447 (0.001)
Earnings _t > Earnings _{t-1}	2.861 (0.001)			
Earnings _t > Consensus earnings _t		6.054 (0.001)		
Analyst revisions positive			6.482 (0.001)	
Management forecasts positive				12.450 (0.001)
Year fixed effects	Yes	Yes	Yes	Yes
R ² -adjusted	0.002	0.010	0.010	0.029
N	5,586	3,664	4,378	643

Table 6: Firm-level analysis of the effect of earnings news on runups and markup pricing

In Panel A, we report the average coefficient estimates obtained from firm-specific regressions of daily abnormal returns over the 63 days prior to the first public announcement on indicators for three different earnings news events if they occur on that day or the prior day. The t-statistics presented are for the cross sectional average coefficient. In Panel B, we use firm-specific coefficient estimates (as summarized in Panel A) to derive estimates of the runup attributable to information contained in the news event. Specifically, the earnings news runup for news source j in firm i is defined as $(b_{ij1} + b_{ij2}) \times \text{Number of news events}_{ij}$, where the number of news events is measured over the 63-day runup period. The component of runup unrelated to the news event equals the total runup minus the sum of the earnings news runups. In Panel C, we report the results of regressions of the total premium to target firm shareholders on the runup and components of the runup related to earnings news. Standard errors reported in italics; p -values in parentheses.

Panel A: Mean earnings news coefficients from firm-specific regressions (i indexes firms, j indexes

earnings events):
$$AR_{it} = a_i + \sum_{j=1}^J b_{ij1} \text{News}_{ijt} + \sum_{j=1}^J b_{ij2} \text{News}_{ijt-1} + e_{it}$$

News event	Mean coeff.	t-stat	N
Earnings announcement _t	0.039	-0.57	5,586
Earnings announcement _{t-1}	-0.209	-2.50	5,586
Analyst forecast revision _t	-0.053	-1.25	4,562
Analyst forecast revision _{t-1}	-0.030	-0.80	4,562
Management forecast _t	-2.111	-3.60	327
Management forecast _{t-1}	-2.570	-4.13	327

Panel B: Firm specific estimates of runup associated with news events

Runup source	Mean	Q1	Median	Q3
Runup (earnings announcement)	-0.272	-2.493	0.000	2.146
Runup (analyst forecast revisions)	0.062	-2.483	0.000	2.353
Runup (management forecasts)	-0.268	0.000	0.000	0.000
Runup (other sources)	8.357	-6.933	6.913	23.292

Panel C: Markup pricing and runups around news events

Dependent variable	<i>Premium</i>		Event vs. non-event (<i>p</i> -value)
Independent variable	(1)	(2)	
Runup (total)	1.261		
s.e.	0.016		
Runup (other)		1.267	
s.e.		0.016	
Runup (earnings announcements)		1.313	(0.421)
s.e.		0.057	
Runup (analyst forecast revisions)		1.299	(0.419)
s.e.		0.041	
Runup (management forecasts)		0.898	(0.001)
s.e.		0.103	
R ²	0.514	0.503	
N	6,703	6,703	

Figure 1
Cumulative frequency of selected negotiation events during the 126 period prior to the first public announcement

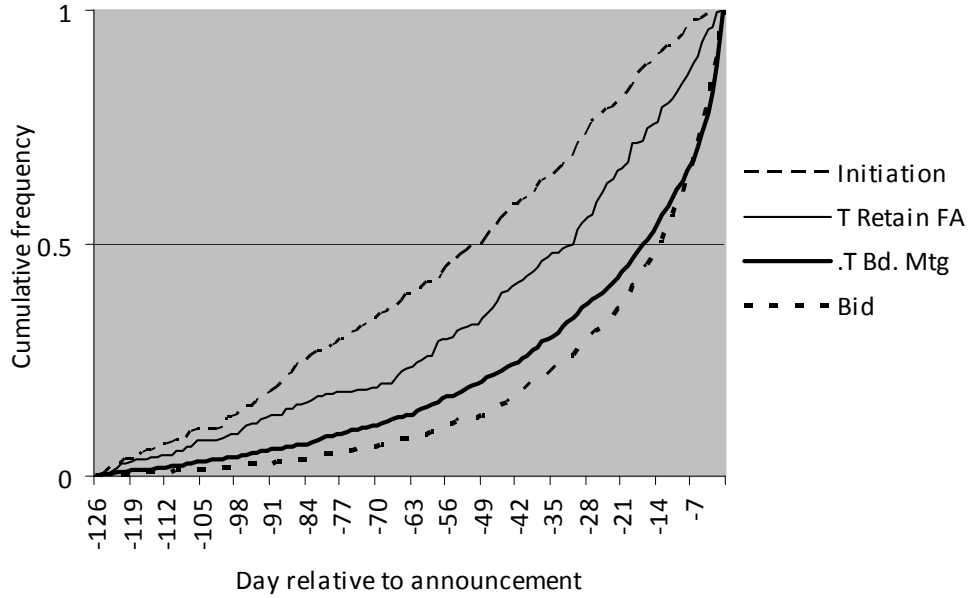


Figure 2
Cumulative abnormal returns prior to a bid revision by size of bid revision: $\ln(\text{Current offer}/\text{Prior offer})$

