The Benefits and Costs of Managerial Earnings Forecasts in Mergers and Acquisitions

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Abstract

In this study we provide evidence on the benefits and costs of voluntary earnings forecasts by bidding firms during acquisitions, shedding light on the motives and capital market consequences of these voluntary disclosures. Specifically, we find a higher propensity of forecast disclosure when the acquisition is made with stock and the bidder's stock is highly valued. We document that merger forecasts are significantly positively biased (inflated) and that these forecasts are associated with a higher likelihood of deal completion, expedited deal closing, and with a lower acquisition premium. Forecast disclosure also attenuates the generally negative investor reaction to acquisition announcements with stock. The evidence suggests that the benefits of forecast disclosure only accrue to bidders that have built a good forecasting reputation prior to the acquisition. Explaining why not all bidders forecast, we provide evidence on high forecasting costs, particularly higher likelihood of post-merger litigation and CEO turnover for forecasting firms.

I. Introduction

We investigate the motives and consequences of bidding firms' decision to voluntarily disclose earnings forecasts in mergers and acquisitions. In the absence of disclosure costs, corporate managers are generally motivated to voluntarily disclose information in order to reduce information asymmetries and mitigate agency costs (Diamond and Verrecchia 1991; Grossman and Hart 1980; Jensen and Meckling 1976). In acquisitions, significant information asymmetries exist not only between acquiring managers and their own shareholders, but also between the acquiring firm and the target's shareholders. Managers will, therefore, be motivated to reduce these information asymmetries through credible disclosure about the benefits of the acquisition (Myers and Majluf 1984; Healy and Palepu 2001).

On the other hand, managers might also have incentives to use discretionary disclosures strategically to exploit information asymmetries and manipulate their firm's share price to their advantage. Prior research suggests that managers have incentives to strategically alter information flows around important corporate events, such as during equity offerings, in order to 'hype' their stock, and before share repurchases, in order to manipulate the stock price downwards (Lang and Lundholm 2000; Clarkson, Dontoh, Richardson and Sefcik 1991; Brockman, Khurana, and Martin 2008). In addition, bidder executives have strong incentives to complete mergers as they are typically associated with substantial personal wealth gains (Goel and Thakor 2009; Harford and Li 2007; Grinstein and Hribar 2004), and merger forecasts might further this motive by facilitating merger completion. Thus, bidding firms' managers have strong incentives to issue optimistic earnings forecasts to convince their own and target shareholders of the benefits of the deal, in particular if the latter are offered stock, and hence a share of future earnings of the combined firm.[1]

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[1] Management earnings forecasts by bidding firms during acquisitions provide an assessment of the synergies of the acquisition and the future earnings potential of the combined firm. They predict whether the acquisition will add (i.e., be accretive to) or detract from (i.e., be dilutive to) future EPS. We will refer to these forecasts as merger forecasts throughout the paper. These forecasts are distinct from regular earnings guidance that the acquirer might issue for the standalone firm before an acquisition announcement.

However, when forecasts are costly, managers who possess private information about the acquisition will only predict merger consequences when the benefits of such voluntary disclosure outweigh the costs (Verrecchia 1983, Dye 1985). Bidders may, for example, be reluctant to disclose merger forecasts if they reveal proprietary information to competitors or anti-trust regulators, or if such forecasts enhance litigation exposure to target shareholders alleging misleading forward-looking information during the acquisition (Baginski, Hassell, and Kimbrough 2002). Thus, a trade-off exists for bidding firms' managers between the benefits of disclosing optimistic merger forecasts, and the costs of disclosing proprietary information and inviting potential post-merger litigation.

Accordingly, in this paper we provide new evidence on the benefits and costs of managerial earnings forecasts in mergers and acquisitions, on their characteristics, and their capital market consequences. We hand-collect a sample of voluntary forecasts of post-acquisition earnings by bidding firms, disclosed in press announcements, conference calls and SEC filings for U.S acquisitions made during 1990 to 2007.

We first document a large cross-sectional variation in forecasting behaviour by bidding firms and variation in the type of forecast—quantitative or qualitative estimates. We find that the majority of bidders disclose qualitative forecasts and project a positive (accretive) impact of the acquisition on post-acquisition earnings per share (EPS), particularly in stock-financed deals. Analysing the subsample of quantitative forecasts we find a significantly positive bias compared to concurrent analyst consensus estimates for the pro-forma combined firm as well as compared to actual post-merger outcomes.

Furthermore, we show that bidding firms are more likely to disclose forecasts of post-acquisition earnings when they finance the acquisition with stock and when their stock is highly valued. The propensity to disclose forecasts increases by 30% when the bidder finances the acquisition fully with stock instead of cash. In particular, during stock-for-stock acquisitions, the cost of the acquisition is directly tied to the value of the bidder's shares and the bidder will be

able to lock in a permanent gain for its own shareholders if it succeeds using overvalued shares to gain control of the future earnings stream of the target. Thus, target shareholders will be concerned of receiving overvalued shares and will have to be persuaded of the future benefits of accepting shares of the combined firm. That is, although the overpayment costs are lower for the bidder in stock financed bids, the probability that the bid will fail is higher. Therefore, the bidding firm has special incentives to disclose (positively biased) merger forecasts in stock-financed acquisitions to convince target shareholders to vote in favour of the deal.

Indeed, we find that bidders' merger forecasts are more positively biased than their regular earnings guidance prior to the acquisition, but that this difference is statistically significant only for stock-financed deals. We further find that forecast disclosure significantly increases the likelihood of acquisition completion and reduces the time to completion. We report an almost 50% increase in the completion likelihood when forecasts are disclosed. We also find a positive association between the magnitude of the combined EPS growth forecast and the merger completion likelihood as well as the time to completion. Our findings on the benefits of disclosing earnings forecasts further suggest that disclosing bidders pay comparably lower acquisition premiums. Our findings thus indicate that the disclosure of merger forecasts, highlighting the expected synergies, positively affects the value perceptions of target shareholders.

Our results on bidder announcement returns suggest that the disclosure of merger forecasts also positively affects the value perceptions of the acquiring shareholders, as the forecast disclosure tends to attenuate the generally negative market reaction to announcements of acquisitions with stock. This suggests that bidding firms' shareholders either believe these merger forecasts to be credible or are aware of the bias in the forecasts but consent as they benefit from using highly valued stock to acquire target firms at comparably lower premiums.

If merger forecasts confer such considerable benefits, why do not all bidders forecast? In other words, what explains the cross-sectional variation in merger forecast behaviour? Consistent

with the existence of costs to disclosing inside information to competitors, we find that bidding firms are less likely to provide forecasts in acquisitions with competing bids and when the costs of disclosing proprietary information are high. More importantly, we show that in certain circumstances, there are serious consequences to disclosing (positively biased) earnings forecasts: a significantly higher propensity for bidding firms issuing such forecasts to become targets of post−acquisition shareholder lawsuits and a significantly higher CEO turnover propensity post-merger.

Finally, we ask: Why do target shareholders believe these forecasts and tender their shares? We find that the benefits of forecasting only accrue to acquiring firm managers that have built a credible forecasting reputation for their regular earnings guidance in the years prior to the acquisition. Target shareholders seem to infer the credibility of merger forecasts from the bidding firm's prior credible forecasting behaviour. We further find that the costs of disclosing positively biased merger forecasts are borne by those bidders with a low forecasting reputation. It thus seems that the benefits of exaggerated forecasts during mergers outweigh the reputational and litigation concerns associated with overly optimistic forecasts particularly for firms with high forecasting credibility. The incentives to issue overly optimistic merger forecasts in order to get the deal done– seem therefore higher than the incentives in regular guidance.[2]

Furthermore, the truthfulness of merger forecasts is not immediately verifiable because actual EPS outcomes are only observable for the first full year after the merger has been consummated. Thus, unanticipated economic shocks between the disclosure of the forecast at announcement of the acquisition and the earnings report years later weaken the ability of target shareholders to assess whether management made the forecasts in good faith (Rogers and Stocken

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[2]   Compared with routine forecasts provided by management, in the merger case, the forecast may have much more significant and lasting economic effects. In the ordinary course of business the stock price might be affected in the short-term by biased forecasts, but the main consequence, even if the market acted on the erroneous forecast, would at worst be a temporary distortion of portfolio allocation and cost of capital - corrected once the actual earnings results were published. Market participants will also discount any future forecasts if management has a reputation of biasing forecasts. However, during takeovers the forecast may affect whether a bidder gains control of a major business and bidding executives and their financial advisers typically stand to gain immediate benefits from completing a takeover.

2005). Accordingly, we find that shareholders revise their assessment of the acquisition downwards closer to the first actual earnings announcement date for the first full fiscal year of the combined firm.

In this study we highlight important differences between merger forecasts and regular earnings guidance with respect to managerial incentives, characteristics and verifiability, and we document both benefits and costs of disclosing these relatively infrequent but strategically important forecasts.

Our study differs from and extends previous research on several dimensions. First, prior work focused on the bidding firm's shareholders as the only target of increased disclosure by the bidding firms' managers. Prior related research on management estimates of synergies in acquisitions, for example, finds that these estimates are associated with higher acquisition announcement returns, suggesting that the acquiring shareholders perceive these as credible forecasts (Houston et al. 2001; Bernile and Bauguess 2011). We consider both bidder and target shareholders as recipients of the forecast. More closely related to our study, Kimbrough and Louis (2011) examine the determinants and consequences of supplemental merger information disclosed in conference calls by the acquiring managers. They find that acquiring firms are more likely to hold conference calls in stock-financed acquisitions, and that conference calls are associated with higher acquisition announcement returns. Once more, the focus is on bidders' shareholders. We show that shareholders of the target firm are at least as important an audience of the bidder's merger forecasts as its own shareholders. This is particularly relevant when the target is offered shares of the bidder, in which case, target shareholders will be reluctant to accept potentially overvalued shares. As mentioned above, we find that these forecasts are associated with higher merger completion rates, faster deal completion and a lower acquisition premium. Thus, our added focus on target shareholders enriches our analysis by enabling us to examine the impact of the forecasts on the merger consequences: success rate, time−to−completion, and acquisition premium.

Analysing a subsample of conference call transcripts, Kimbrough and Louis (2011) document that these supplemental disclosures contain more extensive information about the proposed acquisition compared to merger press releases, in particular with respect to forward looking information. We investigate in more detail one important aspect of the forward-looking information in conference calls that attracts special attention by all market participants: *Qualitative* and *quantitative* forecasts about the future earnings impact of the acquisition.

The second difference is that prior studies offer conjectures based on potential disclosure costs to explain why not all bidding firms disclose forward-looking information during acquisitions despite the well-documented cost of capital benefits.[3] It is often suggested in previous studies that proprietary, reputational and litigation costs might outweigh the benefits of disclosure. In contrast, we provide direct empirical evidence on the costs of disclosing ex-post verifiable earnings forecasts for the acquisition. In particular, we document that bidders that disclose earnings forecasts, in particular quantitative ones, are more frequently subject to target shareholder class-action lawsuits, and experience higher CEO turnover.

Third, and perhaps more importantly, our study differs from the prior literature in so far that we provide evidence that bidding firms strategically disclose positively biased forecasts in acquisitions to convince target shareholders to accept highly valued stock, and that these forecasts exaggerate the benefits of the deal. Kimbrough and Louis (2011) infer the credibility of the supplemental disclosures in conference calls from the positive market reaction and the subsequent long-term accounting performance of the acquiring firm. Our focus on earnings forecasts disclosed in conference calls and press releases enables us to directly compare the managerial disclosure with concurrent analyst estimates and post-merger outcomes, to determine their bias.[4] Consistent with Kimbrough and Louis (2011) we document a positive market reaction to merger

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[3] In Kimbrough and Louis (2011), for example, a large part of their sample (38%) does not hold conference calls despite the capital market benefits they document.

[4] Our study also differs from Houston et al. (2001) and Bernile and Bauguess (2011) in this respect, because synergy estimates are not verifiable ex-post. Acquiring firms' managers typically do not disclose how much of the estimated synergies have been realized in the years post merger and even if they do, these numbers are not externally validated.

forecasts, but contrary to their study, we show that these disclosures are used strategically and, on average, the promised earnings increases are not realized post-merger. Furthermore, Goodman et al. (2014) show that firms that issue more accurate regular earnings guidance experience higher announcement returns in subsequent acquisitions, suggesting that managerial skills of providing high quality forecasts extend to managerial forecasting abilities in an investment context such as acquisitions. We document a different scenario where the acquiring firms' managers exploit their prior forecasting reputation to signal credibility of their optimistic merger forecasts, and find that the market reverses its initial positive assessment of the acquisition benefits just before the actual first earnings release of the combined firm (when the full extent of the earnings impact of the acquisition becomes public knowledge). Consistent with the exaggerated earnings promises, we find that target shareholders file lawsuits against the acquirer alleging misinformation at time of the acquisition offer.[5]

Our study directly relates to two strands of the literature. First, the study contributes to the voluntary disclosure research by shedding light on the motives and consequences of a hitherto neglected disclosure: managerial earnings forecasts in mergers and acquisitions. Secondly, the study contributes to the M&A literature by providing evidence on the reasons why acquiring and target firm shareholders consent to often value-decreasing mergers financed with stock. With merger forecasts we examine a particular mechanism managers use to convince shareholders to accept a merger proposal. Our findings thus link various research strands in mergers and acquisitions and voluntary disclosure, highlighting the role of merger forecasts in changing the perceptions of *both* bidder and target shareholders in favour of the merger.

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[5] Our findings also relate to a large body of evidence indicating that acquisitions with stock are detrimental to bidder long-term shareholders (Loughran and Vijh 1997; Bouwman, Fuller and Nain 2009; Gu and Lev 2011; Fu, Lin and Officer, 2013). This raises the question of why bidder shareholders agree to acquisitions that often detract from share value long-term. Our findings indicate that that bidding firms pay comparably lower acquisition premiums when their management discloses earnings forecasts and that such forecasts tend to attenuate the generally negative bidder market reaction to announcement of acquisitions with stock. It is unclear whether these stock-acquirers would have not performed even worse had they not used their highly valued stock to secure the earnings stream of their acquired targets consistent with evidence in Savor and Lu (2009). This helps explain bidder shareholders' consent to these acquisitions.

II. Related Literature and Hypotheses Development

Extensive theoretical and empirical literature examines voluntary disclosure decisions and their capital market consequences. The literature dates back to Grossman and Hart (1980) and Grossman (1981) which predicts that, in the absence of disclosure costs, firms will truthfully disclose all private information in order to avoid agency costs and adverse selection (Jensen and Meckling 1976; Akerlof 1970). In the merger setting, the unravelling argument predicts that managers planning value-enhancing acquisitions will separate themselves from those with value-destroying acquisitions through full disclosure (Grossman 1981; Milgrom 1981; Trueman 1986). In the presence of disclosure costs, however, managers will only disclose private information when the perceived benefits exceed the associated costs of disclosure (Verrecchia 1983; Dye 1985).

The truthfulness of disclosure is a central assumption of the unravelling argument which is relaxed in cheap-talk models, in which managers not always truthfully disclose private information (Crawford and Sobel 1982). When the manager's payoff depends on the investor reaction to the disclosure and incentives are not perfectly aligned, full revelation does not occur. Prior empirical work suggests that managers strategically bias their voluntary disclosure, in particular forward-looking information, when the integrity of the disclosure is more difficult to assess (Rogers and Stocken 2005). As acquisitions are typically associated with substantial personal wealth gains for the bidding firms' executives (Goel and Thakor 2009; Harford and Li 2007; Grinstein and Hribar 2004) and the truthfulness of forecasts in acquisitions is difficult to assess for market participants ex-ante, we expect managers to have higher incentives to positively bias earnings forecasts in acquisitions.

There is growing evidence that management strategically issue biased regular earnings guidance to move share prices to their advantage (e.g., Aboody and Kasznik 2000; Nagar et al. 2003; Rogers and Stocken 2005) and also strategically alter information flows before important corporate events, such as during equity offerings and share repurchases (Lang and Lundholm

2000; Clarkson et al. 1991; Brockman et al. 2008). In the merger setting, Ge and Lennox (2011) examine earnings guidance in the months *before* stock-financed acquisitions and find that acquirers tend to withhold bad information to keep their market valuation artificially high in anticipation of the stock-for-stock swap. Kimbrough and Louis (2011) investigate the determinants and effects of disclosures in conference calls after acquisition announcements and infer the credibility of the forward-looking statements in the disclosure from the initial positive announcement reaction. The authors do not find a reversal in the initial market reaction, inferring that bidding firms' managers provide more extensive information during conference calls to credibly convey positive news about the proposed acquisition instead of hyping the stock. Bernile and Baugess (2011) and Houston et al. (2001) who examine synergy estimates of the bidding firms disclosed in press releases and conference calls, however, find that the initial positive market reaction to these disclosures subsequently reverses over the long-run, suggesting that on average bidding firms' managers overestimate the synergy value from acquisitions.

The prior literature on voluntary disclosure during mergers and acquisitions has mainly focused on their cost of capital benefits (Myers and Majluf 1984; Healy and Palepu 2001) implying that the bidder's shareholders are the main audience of the disclosure. Particularly, when the acquisition is financed predominantly with stock, the bidder's management will have special incentives to voluntarily disclose earnings forecasts for the acquisition to reduce the firm's cost of capital. Kimbrough and Louis (2011), for instance, find that bidders are more likely to hold conference calls in stock-financed transactions and that these conference calls are associated with higher announcement stock returns. Bernile and Baugess (2011) and Houston et al. (2001) similarly find a positive association of synergy estimates provided by the bidding firm during acquisition announcements with announcement stock returns.

We contribute to this literature by hypothesizing and validating that during stock-financed acquisitions, both bidder *and* target investors' perceptions of the combined firm's value are of importance to the bidder managers, and through merger forecasts managers attempt to influence

particularly the target's perceptions. We therefore expect–consistent with Kimbrough and Louis (2011)–that bidders are more likely to disclose earnings forecasts in stock-financed acquisitions, but for reasons beyond cost of capital considerations. Perhaps even more important than impacting their own shareholders, the bidding firm's managers in stock-financed acquisitions aim to convince the target shareholders of the benefits of the deal in order to win their approval for the proposed deal. This is particularly important when the acquisition is financed with stock in which case the target will be reluctant to accept potentially overvalued shares. Thus, we expect a higher propensity of forecast disclosure, in particular when the bidder's stock is highly valued.[6] If target shareholders are indeed convinced by the optimistic earnings prospects of the combined firm, we furthermore expect that merger forecasts increase the likelihood that a deal is completed and reduce the time to completion. We validate these expectations.

In addition, we expect target shareholders to be willing to accept a lower number of shares of the combined firm (i.e., a lower premium) in expectation of higher post merger earnings growth. When considering takeover offers, rational target shareholders will only accept stock if they believe that the valuation of the bidder is justified given the potential future earnings growth of the combined firm. Target shareholders are, therefore, more likely to accept a bid if higher future earnings of the combined firm compensate for the lower immediate premium.[7] We validate this too.

Hutton et al. (2003) provide evidence that the market only reacts to good news disclosures when they are credible. Kimbrough and Louis (2011) infer the credibility of the supplemental disclosure in conference calls from the market reaction and subsequent long-term performance. By investigating earnings forecasts in our study we can, for a subsample of quantitative forecasts,

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[6] Recent research in finance suggests that acquisitions occur more frequently during periods of high market valuations and that these acquisitions are more likely to be financed with stock (Rhodes-Kropf, Robinson and Viswanathan 2005; Dong, Hirshleifer, Richardson, and Teoh 2006; Rau and Stouraitis 2011). In this literature merger waves are linked to managerial market timing motives (Shleifer and Vishny 2003; Baker, Stein and Wurgler 2003) conjecturing that managers have superior information about their firms' intrinsic value and exploit it to time investment and equity issuance during 'hot' markets.

[7] Since acquiring shareholders benefit from faster deal completion and a lower acquisition price when merger forecasts are disclosed, we should also expect to find a more positive market reaction to these deals compared to acquisition for which no earnings forecasts are disclosed consistent with the prior literature.

directly compare their accuracy with analyst consensus estimates and post-merger outcomes and are able to rely on prior forecasting reputation of the bidding firm's managers in their regular earnings guidance to construct an 'ex-ante' credibility measure observable by market participants at time of the merger similar to Hutton and Stocken (2009). We thus expect the benefits of forecast disclosure only to accrue to bidders that have built a good forecasting reputation.

Managers will weigh the immediate benefits of voluntarily disclosing earnings forecasts during acquisitions against the associated costs, particularly the costs of disclosing proprietary information to competitors and regulators, and the threat of litigation (Teoh and Hwang 1991; Skinner 1994; Rogers and Stocken 2005; Wang 2007). Furthermore, the credibility loss and reputational penalties in subsequent disclosures and subsequent acquisitions might also deter bidders from disclosing merger forecasts (Lev and Penman 1990).

Summarizing our hypotheses, we expect merger forecasts to be disclosed more frequently in stock, rather than in cash acquisitions, and when their shares are highly valued. Regarding consequences, we expect forecasting bidders to pay lower premiums, complete more deals and close the deals quicker than non-forecasting bidders; and we expect these benefits to be positively associated with the prior forecasting reputation of the bidding firm. Establishing the costs of merger forecasts, we expect forecasting bidders to be sued more frequently by target shareholders than bidders that do not disclose forecasts. We now turn to examine empirically these expectations.

III. Sample and Descriptive Statistics

A. Merger sample

We obtain our initial sample of takeovers from Thomson Reuters' SDC Platinum Mergers and Acquisition database for the period 1990-2007. Both completed and withdrawn bids are included. We apply the following criteria for our selection:

- The bidder is a US public company traded on NYSE, AMEX or NASDAQ.

- The acquisition announcement date lies between January 1, 1990 and December 31, 2007.

- The value of the transaction is larger than $100 million.

We then restrict the sample in each year to the largest 50 takeover announcements by deal value, due to limitations on hand-collection efforts of merger forecasts. Concentrating on large transactions enables us to examine a wider cross-sectional variation in post-merger EPS forecasts, since integrating a large target will most likely have a material impact on the combined firm's earnings. From this initial sample of 850 acquisitions, we first exclude stock repurchases, spin-offs, split-offs, reverse leverage buyouts, joint ventures, liquidation plans and transactions of real estate investment trusts (REITs), and further require the bidder to hold less than 50 percent of the shares of the target prior to the transaction and seek control of the majority of shares with the transaction. We then hand collect management earnings forecast for the final sample which includes 493 takeover announcements made during 1990-2007, of which 350 were subsequently completed and 143 were withdrawn. Although 493 acquisitions represent a fraction of the total transactions that were announced during the sample period, they nevertheless account for a large proportion of all transactions in terms of dollar value (35-40 percent of total value).[8] We augment the hand collected forecast dataset of the 493 bidding firms with data on the transaction

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[8] Our sample transactions are distributed relatively homogenously over the sample period 1990-2007 in terms of numbers, in absolute terms as well as for percentages of the total number. In terms of relative dollar value our sample accounts on average for a little more than 35% of all announced transactions. In 8 of the 18 years of our sample period, the sample accounts for more than 40% of the dollar value of all announced acquisitions in that year. In 1998 it even accounts for more than 55% of the total transaction value.

characteristics from SDC, and accounting and stock returns from COMPUSTAT and CRSP. Analyst consensus forecasts and management guidance data for the acquiring firms are obtained from I/B/E/S.

B. Management merger forecasts

The collection of merger estimates for the sample acquisitions involved several keyword searches of news announcements, press releases and regulatory filings.[9] In particular, for each acquisition announcement we made keyword searches on Factiva in the main business news sources, such as *Dow Jones News Service*, *Financial Times, Reuters News Service*, and the *Wall Street Journal,* for management announcements of the projected EPS impact of the proposed acquisition. We examined every article that Factiva retrieved from one day before the announcement of the merger to the effective or withdrawal date, as provided by SDC.

In addition to the keyword search on Factiva, for each acquiring firm we ran a query using the same keywords as above in the full-text SEC filings search engine of Capital IQ, for filings submitted to the SEC during the same time interval, from one day before the announcement date of the transaction until the effective or withdrawal date. We focused our search on current event disclosures (8-K), proxy statements (DEF 14, PREM 14) and prospectus disclosures (425, S-4).

The bidding firms' forecasts contain management's assessment of the EPS impact of the acquisition on the combined entity in the year of merger completion, and for the two following years. These EPS forecasts are sometimes qualitative, simply stating whether the proposed acquisition is expected to be accretive or dilutive to EPS; or they are quantitative assessments released as range or point EPS estimates. Figure 1 presents an overview of the timing of the forecasts and the frequency of the different types of forecasts and their disclosure medium. Sixty-eight percent of the forecasts are released on the day of the acquisition announcement (Figure 1, top left graph), and the majority of the forecasts are of qualitative nature (Figure 1, top right

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[9] A detailed description of the search algorithm is provided in Appendix A2.

graph), estimating accretive EPS (Figure 1, bottom left graph). The forecasts are mostly disclosed to the market in press releases or conference calls (Figure 1, bottom right graph). Often these forecasts are also included in the merger prospectus or proxy statements, which are filed with the SEC for material information relating to a merger, subsequent to the merger announcement. In a few instances, forecasts appear exclusively in the SEC filings. Overall, Figure 1 reveals a large cross-sectional and time-series variation of merger forecast characteristics.

C. *Descriptive Statistics*

Table 1 reports summary statistics for the acquisition transactions as well as for the bidding and target firms in our sample. The mean value of the acquisitions in our sample is close to $9 billion, and the median around $4 billion, considerably larger than the mean values of samples in related studies on mergers, such as Dong, et al. (2006) and Rhodes-Kropf, et al. (2005). The mean premium paid for the target, measured as the difference between the offer value per share and the share price of the target four weeks before the acquisition announcement, is 30% (median 30%), generally in line with premiums found in prior studies. Overall, our sample consists, by construction, of relatively large acquirers: the bidder mean size, measured by market value of equity, is $24 billion, with the median at $7.4 billion, and measured by book value of total assets, is $52 billion, with the median at $11 billion. Average sales are almost $13 billion. The target firms are smaller than the acquirers, but still relatively large, measured by market value ($8.3 billion) and by average book value of assets ($15 billion). All variables display large standard deviations and right skewness, pointing towards the existence of very large firms in our sample. On average, the bidding and target firms in our sample exhibit similar market valuations with mean market-to-book ratios around 3.9 and 3.6, respectively. These values are higher than the market-to-book ratios reported by Rhodes Kropf et al. (2005), but lower for bidding firms than in Dong et al. (2006).

IV.   Univariate Tests: Acquisition and Forecast Characteristics

Table 2 presents transaction characteristics of our sample broken down by disclosure of a forecast (Panel A), and by type of the forecast, quantitative or qualitative (Panel B). Consistent with the presumed benefits of increased disclosure, we find that more than two thirds of the bidding firms in the sample provide earnings estimates for the combined firm for at least one year after the merger (last row of Panel A). Of these, however, only one third disclose quantitative forecasts (last row of Panel B). These differences in proportion of forecasts are statistically significant at z=8.87 and z=-6.95, respectively. The firms that provide quantitative forecasts are involved in significantly larger acquisitions, with a difference of around $7 billion in terms of target value (t=6.42).

Notably, we observe a higher frequency of forecasts when stock is the means of payment, and more acquisition attempts completed successfully when forecasts are disclosed. The proportion of forecasts made in acquisitions with stock or mixed payments (40-42 percent) is significantly higher than in cash only deals—19 percent (z=2.22, z=2.06, z=-4.79, respectively, in Panel A, Table 2). Panel B in Table 2 reveals that acquirers with stock are also more likely to disclose quantitative forecasts. Only seven percent of quantitative forecasters are associated with cash only as payment for the acquisition, compared to 24 percent of qualitative forecasters (z=-3.66). Moreover, the data in Panel A suggest that forecasting bidders are more likely to be successful, at 79% versus 52% for non-forecasters (z=5.86), and even more so at 99%, if the forecast is quantitative rather than qualitative (z=6.21). Overall, we report that merger forecasts, particularly quantitative ones, are positively associated with stock payments and successfully completed mergers.

Table 2 also shows that forecasts are less frequent in acquisitions with multiple bidders and during hostile takeover attempts (rows 6 and 7, Panel A). Moreover, bidders are also less likely to disclose quantitative forecasts during hostile takeovers (row 7, Panel B). These findings point towards certain costs associated with revealing inside information to competitors and the

target firm, presumably because of a weaker bargaining position when potential synergies are disclosed. We do not find statistically significant differences in the acquisition premium in these univariate comparisons.

We also examine whether bidding firms in 'hot' (highly valued) industries are more likely to disclose forecasts when they offer stock. Extant literature documents that the market values of stock bidders are, on average, higher than those of cash bidders, consistent with the hypothesis that overvaluation encourages stock-financed acquisitions (Rau and Vermaelen, 1998; Dong et al. 2006). It is also reported that larger acquisitions are made predominantly with stock (Moeller et al. 2004). In Panel C we follow Rhodes-Kropf et al.'s (2005) decomposition of the market-to-book ratio into misvaluation and growth components and focus on the industry-wide misvaluation component *(INDERROR)*[10], to identify whether the bidder is in a 'hot' industry when the acquisition offer is made. Indeed, Panel C reports a significantly higher industry misvaluation measure (*INDERROR*) for acquirers that pay with stock and provide forecasts than stock acquirers that do not disclose forecasts (t=2.03), or cash acquirers (t=1.96). This misvaluation difference between forecasters and non-forecasters is not significant for cash acquirers. The misvaluation differential is even higher for stock bidders disclosing quantitative forecasts than for those releasing qualitative ones (t=1.65, not reported in the table).

Table 3 documents the characteristics of the merger forecasts including both quantitative and qualitative disclosures. Panel A cross-tabulates frequencies for the payment method and forecast news (whether positive or negative) and reports the χ^2 test of differences in the frequencies of positive news conditional on the payment method for both qualitative and quantitative forecasts. Positive news forecasts include all bidders that estimate the impact of the acquisition to be accretive to post-merger EPS. Negative news forecast include all bidders that estimate the impact of the acquisition to be neutral or dilutive to post-merger EPS and all bidders

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[10] *INDERROR* captures the misvaluation component of the firm which is due to contemporaneous industry-wide misvaluation relative to long-run valuations and is one of our variables of interest in our regression analyses. The decomposition of the market-to-book ratio and the estimation of the industry misvaluation measure are described in more detail in Appendix A3.

that do not provide a forecast. The results reveal that positive forecasts are significantly more likely when payment is made with stock than cash. Panel B reports merger forecast errors for the sub-sample of quantitative forecasts relative to analyst consensus estimates of the EPS impact of the merger as well as relative to ex-post actual EPS outcomes.[11] Forecast errors are calculated as the difference between the merger forecast and the analyst consensus or the actual EPS scaled by the share price at the end of the prior year.[12] The panel further reports differences in the forecast errors of merger forecasts compared to average errors in management guidance in the three years prior to the acquisition announcement, relative to analyst consensus estimates and actual outcomes, respectively. The panel distinguishes between forecasts made for the merger year (t) and the full fiscal year after merger completion (t+1). Panel B shows significant *positive* forecast errors in management merger forecasts compared to analyst estimates and ex-post outcomes. For example, merger forecasts are on average significantly higher (t=2.16) compared to analyst consensus estimates for the full fiscal year post-merger. Furthermore, the merger forecast errors are also significantly higher than managements' forecast errors (relative to analysts) during routine EPS guidance in the years prior to the merger (t=2.27). The results in Table 3, Panel B suggest that merger forecasts are on average significantly positively biased relative to actual outcomes as well as analyst consensus estimates.

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[11] A difficulty with analysing the bidder's quantitative earnings estimates for the merger is that management's definition of EPS might differ from the definition of actual reported earnings. Merger forecasts typically include expected synergies from the acquisition and exclude goodwill write-offs and extraordinary items, such as merger related costs. Items which are included in reported earnings. In order to compare the forecasts with the reported earnings of the combined firm, and with analyst consensus estimates, we collect IBES analyst consensus estimates and IBES adjusted earnings for each acquiring firm. IBES consensus estimates are collected for the last available date before the merger completion date to ensure they include the analysts' updated projections for the combined firm. Both IBES consensus estimates and actuals, adjust earnings numbers for extraordinary items, merger and restructuring charges, and goodwill write-offs or amortization, and are accordingly comparable to the merger forecasts provided by management. Since the IBES-adjusted numbers are generally higher than reported EPS, we are more likely to under-state managers' forecasts errors, reducing any potential upward bias in the merger forecasts. Although the estimates and adjusted actual earnings provided by IBES will in most cases be comparable to management merger forecasts, we cannot be certain that in all cases the IBES adjusted actual earnings number exactly matches the definition initially used by the bidders' management when it issues the forecast. We investigate this potential source of bias further in robustness tests in section IX adjusting actual reported earnings by hand for a subsample of acquisitions. Our inferences remain the same.

[12] The tenor of our results remains the same if we scale the errors by the analyst consensus or actual outcome, respectively.

Panel C tabulates abnormal forecast errors by method of payment. Abnormal forecast errors are estimated as the intercept of the univariate regression of merger forecast errors on the three-year average regular earnings guidance errors with standard errors clustered by firm. The intercept in the regression captures the variation in the merger forecast errors that is not explained by factors that induce variation in management guidance errors. In other words, the intercept captures merger-specific forecast errors. The results in Panel C show that in particular for stock financed deals abnormal forecast errors are significantly positive (t=2.4 and t=1.84 compared to analyst consensus and actual, respectively), suggesting that the positive bias in merger forecasts seems to be especially prevalent in stock deals.[13]

Overall, the univariate analysis reveals significant differences in deal characteristics for acquisitions in which forecasts are disclosed: forecasts are positively associated with deal size, stock payment, and takeover completion, and negatively associated with bid competition and hostile takeovers. Moreover, bidders that disclose forecasts and pay with stock are more highly valued than those that pay with cash or those that do no forecast, and the forecasts are significantly positively biased, in particular for stock bidders.

V. Determinants of Merger Forecasts

A. Research design

In this section we investigate the determinants or motives of disclosing merger forecasts. We estimate probit regressions on the dependent variable *FORECAST*, which is an indicator variable equal to one if the bidding firm disclosed an earnings forecast for the combined firm, and zero otherwise. We classify the forecast determinants into: bidder characteristics, deal characteristics, proxies for management's predisposition to disclose voluntarily and variables capturing the regulatory environment. As hypothesized, we expect the incentives to forecast to be

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[13] The average abnormal errors are, however, also marginally significantly positive for cash deals, but only when estimated using comparison to actual outcomes.

higher when the bidder is offering stock as part of the payment (*PSTOCK*), particularly when the bidder operates in a 'hot' industry at the time of the offer (*INDERROR*), as the target shareholders will be concerned about receiving overvalued stock. In contrast, the incentives to forecast are lower when the acquisition is financed entirely with cash (*CASH*). Moreover, if our hypothese holds, we expect bidders to be more likely to disclose forecasts in tender offers (*TENDER*), when the offer is firm and communicated directly to the target firm's shareholders. Tender offers are often open only for a limited time and bidders are motivated to provide targets with enhanced information to motivate them to tender their shares quickly to reach a certain ownership threshold before the deadline.

We control for potential costs of disclosure. Prior research shows that the risk of litigation mitigates disclosure in general (Skinner 1994, 1997), and forecasts in particular (Francis et al. 1994). We, therefore, include in our regressions an indicator variable for industries prone to litigation risk (*LITIGIOUS)*, as well as prior 24 months return volatility (*VOLATILITY*), following Rogers and Stocken (2005). Furthermore, we include a proxy for proprietary costs (*PROPCOST*), measured as prior year R&D expenditures to total sales, which is assumed to negatively impact the decision to forecast (Wang 2007).[14] We also expect that bidders are reluctant to disclose earnings forecasts that include potential cost savings and revenue projections for the acquisition when competing bids are involved in the transaction (*COMPETITION*).

We hypothesized above that forecasts of post-acquisition earnings serve as a means to increase the likelihood of deal completion. Given disclosure costs, we therefore expect the propensity to disclose merger forecasts to be low when the likelihood of completing the deal is already high. The prior literature on mergers finds that acquisitions in which the bidder already has a stake in the target are more likely to get completed than other acquisitions (Betton and Eckbo 2000; Akhigbe, Martin and Whyte 2007). We, therefore, expect forecast disclosures to be less prevalent if the bidder already has a toehold in the target (*TOEHOLD*).

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[14] Intensive R&D companies develop extensively new products and therefore have considerable proprietary information.

Prior literature has also found past forecasting behaviour to influence the decision to forecast—forecasting inertia (Graham, Harvey, Rajgopal 2005; Skinner 1994). We control for forecasting history using an indicator variable equal to one if the bidder has disclosed earnings guidance during the full year prior to acquisition announcement (*GUIDANCE*), and an indicator variable for forecast disclosures in prior acquisitions of similar size (*PAST*).[15]

Finally, several regulatory changes took place during our sample period that might affect the decision to voluntarily disclose merger forecasts. The most important of which for acquisitions is the introduction of Regulation M-A by the SEC in January 2000. Regulation M-A permitted increased communication between public companies involved in stock mergers and their shareholders before the filing of a registration statement. Its introduction presumably had a positive effect on the propensity to disclose forecasts during mergers.[16] Similarly, the introduction of Regulation FD (Fair Disclosure) in October 2000, prohibiting selective sharing of material information with investors, was found to increase the likelihood of public disclosure (Heflin, Subramanyam, and Zhang 2003).[17] We combine both regulations into one indicator variable equal to one for the years after 2000 (*REGULATION*). We control for other confounding variables by prior earnings volatility (*VOLATILITY)*, a proxy for ambiguity which was found to increase the likelihood of management forecasts (Rogers and Stocken 2005), firm size (*SIZE)* (Kasznik and Lev 1995), and the introduction of the Sarbanes-Oxley Act (*SOX*) in 2002.

B. Empirical results

Table 4 reports probit regression estimates of the forecast decision of bidding firms (dependent variable FORECAST). The table shows the marginal effects (evaluated at zero) on the propensity to forecast of a unit change of the independent variables. Columns (1) and (2) show

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[15] Appendix A2 provides a detailed description of the Factiva search algorithm to identify prior disclosure of earnings guidance and merger forecasts.

[16] Pre-Regulation MA, acquiring firms were constrained in the disclosure of forward-looking information associated with equity offerings (so called gun jumping). Although, disclosures were not prohibited, they were limited in their form and content.

[17] Heflin et al (2003) find increased disclosure of regular (quarterly) management earnings forecasts in the years post Regulation-FD.

our base line results, while the estimates in columns (3) and (4) include additional control variables, as explained in the table description. Variables with consistently insignificant coefficients are not shown, but listed in the table description, for ease of exposition. In addition, column (4) controls for industry and year fixed effects. Test statistics are calculated using heteroscedasticity robust standard errors.

Our main variables of interest are *PSTOCK,* the percentage of stock used as payment, and *INDERROR,* the industry misvaluation measure (hot industries), described earlier. The estimates confirm that the propensity to disclose a merger forecast increases with the percentage of stock used in the acquisition (*PSTOCK*) and with the bidder's industry-wide misvaluation (*INDERROR*). Specifically, the base regression results in columns (1) and (2) show a significantly positive effect of the percentage of stock used in the acquisition, *PSTOCK* (0.003, z=5.07) and the industry-wide misvaluation, *INDERROR (0.38, z=2.87)* on the propensity to forecast, respectively. These effects are also economically significant: The forecast propensity increases by around 30% (from an unconditional likelihood of disclosure of 48% to 78%) when the bidder increases the proportion of stock offered from zero to 100%, all other variables held constant at zero. Similarly, an increase of the bidder's valuation from fairly valued, i.e. *INDERROR*=0, by one standard deviation, increases the propensity to forecast by 7.5% (=0.2x0.376). In contrast, the coefficient on *CASH* is not significant. Rather, there is a negative marginal effect of the interaction of *CASH*INDERROR* in columns (2)-(4), (-0.645, z=-2.21 in column 2), indicating that when the bidder offers cash only as payment, the marginal effect of the bidder's misvaluation on the propensity to forecast diminishes. The marginal effect of *TENDER* is positive and significant (0.26, z=2.55, in column 3), consistent with our hypothesis that forecasts are more likely to be disclosed in tender offers to motivate quick completion.

Table 4 also provides initial insight into the costs of forecasting. The presence of a competing offer (COMPETITION) deters bidders from disclosing an earnings forecast, presumably because of bidders' reluctance to reveal to competitors the expected synergies, growth

opportunities, and other proprietary information about the acquisition. The marginal effect of *COMPETITION* is significantly negative (-0.138, z=-2.41 in column 3). Also confirming the negative effect of proprietary costs on the propensity to forecast is the significantly negative marginal effect of *PROPCOST* in column (4), (-0.02, z=-3.27). We will discuss more important costs of forecasting in section VI. The results in Table 3 also reveal that prior disclosure behaviour has a significantly positive effect on the propensity to disclose merger forecasts. Particularly, disclosure of prior regular guidance (*GUIDANCE*) has a significantly positive marginal effect on merger forecast disclosure (0.32, z=6.65).

Overall, Table 4 estimates reinforce the insights from the univariate analysis on the determinants of merger forecasts and confirm our hypotheses. Bidders are more likely to disclose forecasts of post-acquisition earnings when they pay with stock and when their stock is highly valued (in an attempt to alleviate target shareholders' concerns about receiving overvalued shares), and less inclined to forecast when there are competing bids and when bidders have propriety information. These results establish the main motives of disclosing merger forecasts.

VI.   Consequences of Merger Forecasts

A. Research design

In this section we provide evidence on consequences of merger forecasts for the acquisition completion likelihood, time to completion, the acquisition premium, and bidder announcement returns. The univariate analysis of section IV and the probit analysis of section V revealed significant differences in acquisition and bidder characteristics between merger forecasters and non-forecasters, suggesting that the decision to forecast may be determined endogenously. This decision is a matter of choice by the bidding firm's management that might not only be dependent on the observable characteristics explored in the probit regressions of section V, but also on unobservable preferences or private information of the bidder's management. Therefore, standard probit and OLS regressions on merger outcome variables, such

as acquisition completion and the merger premium, possibly produce unreliable estimates due to the self-selection or omitted variable bias.

We address the selection problem by employing Heckman's (1979) two-step sample selection model and its extensions by Maddala (1983), developed to evaluate treatment effects. In this procedure we model the endogenous choice dummy variable *FORECAST* by first estimating the propensity score of a bidder choosing to disclose a forecast (the selection equation), and then using the estimated propensity scores, in a second step, to estimate the coefficients in the regressions on the outcome variables of interest (the outcome equation). The bias in the outcome regression is corrected by explicitly using information about the covariance structure of the joint distribution of the observed outcomes gained from the selection regression.[18] Since we observe merger outcomes for the bidders that disclose forecasts and those that do not, we can run treatment effects regressions, in which the dummy variable that indicates the selection (*FORECAST*) directly enters the outcome regression in order to evaluate the effect of merger forecast disclosure on merger completion and its premium.

Our research design is equivalent to an instrumental variable regression in which the latent variable is modelled using a single variable that is assumed highly predictive of the endogenous dummy variable. For robust identification, it is necessary that the selection equation contains an instrumental variable that introduces exogenous variation, but is itself uncorrelated with the error term in the outcome equation; that is, it should satisfy the exclusion restrictions for valid instruments (Lennox et al. 2012). Any firm fundamentals or acquisition related characteristics will likely be related to both the propensity to forecast and the likelihood of merger completion and therefore not qualify as an instrument. We accordingly construct the instrument *PREDISPOSITION* that measures the predisposition of the bidder's management to disclose merger forecasts. *PREDISPOSITION* is constructed using our insights gained from the probit

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[18] A detailed discussion of Heckman-type selection models can be found in Heckman (1979) and Maddala (1983). The applications of selection models in corporate finance and accounting are more recently discussed in Li and Prabhala (2009) and Lennox et al (2012).

regressions on the determinants of forecast disclosure by combining the three indicator variables *GUIDANCE*, *PAST* and *REGULATION* to one instrument. Hence, *PREDISPOSITION* takes the value zero if the bidder has not provided regular earnings guidance in the immediate past, has not disclosed merger forecasts in previous acquisitions, and if the acquisition took place in a regulatory environment not conducive to market-wide disclosure, that is, pre Regulation FD and Regulation MA described above. The variable takes the value of one if any one of these indicators applies, the value two if two apply and the value three if all three indicators are switched on. We thus argue that under a regulatory environment conducive to voluntary disclosure, and if the bidder has a forecasting history, bidder managers will more likely disclose merger forecasts. Therefore, we expect *PREDISPOSITION* to be positively correlated with the propensity to forecast as well as the propensity to disclose quantitative forecasts, but not correlated with acquisition completion rates or the acquisition premium, other than through its effect on forecast disclosure.

While the condition that prior forecasting does not affect merger outcomes directly cannot be tested, we cannot think of a compelling reason why *prior* guidance issuance or forecasts in *prior* mergers should affect the *current* merger outcomes, such as completion rates and acquisition premiums. However, Goodman et al. (2014) show that past management guidance *accuracy* is a determinant of positive merger announcement returns. Their study finds an association of past forecasting precision with subsequent merger outcomes, suggesting that managers that are better forecasters are also able to make better acquisition decisions. In contrast, our instrument does not depend on the *precision* of prior management guidance, but solely on whether or not management did forecast previously. In untabulated results we do not find that our results depend on the precision of prior forecasts.[19] Nevertheless, the Goodman et al. paper raises a more general concern that higher quality managers are also more transparent managers, and because they are managers of high quality, they are also able to complete better acquisitions. Our findings,

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[19] Although guidance accuracy influences our credibility measure discussed in section VIII, we do not find evidence that managerial guidance accuracy *alone* explains our results.

however, indicate that these managers disclose too optimistic merger forecasts, that they are more frequently sued, experience higher job uncertainty post-acquisition, and that their firms underperform in the long-run those acquirers that did not disclose merger forecasts. Thus, the evidence points to the opposite effects one would expect if this alternative channel through managerial quality was the main causal link. Nevertheless, in order to rule out further alternative confounding effects and to provide additional evidence we run several robustness tests and use two alternative instruments in Section VIII.

B. Closing the deal

Table 4 reports estimates of the likelihood of merger completion. First, ordinary probit regression results, assuming the choice to forecast is exogenously determined, are reported in the left column for benchmark comparison. The results of the Heckman-style treatment effect regressions are presented in the middle two columns. The right-hand columns of each of the two-stage models (1) and (2) present the marginal effects, evaluated at the mean, from the selection equation which models the choice to forecast in (1) and the choice to disclose quantitative forecasts in (2). The left hand-side columns report the marginal effects of the outcome regressions in which the outcome variable *COMPLETION*—the dependent variable— is an indicator variable equal to 1, if the acquisition was completed and zero otherwise. Selection and outcome regressions are estimated using probit regressions. The explanatory variables of the selection and outcome regressions are identical, except for the instrument, *PREDISPOSITION,* that is excluded from the outcome regressions and the inverse Mill's ratio (*INVERSE MILLS*) which is included in the outcome regressions. The right column of Table 4 shows the results of probit regressions on *COMPLETION* conditional on a forecast being made. In this regression, the explanatory variable of interest is *EPSGROWTH* which is a continuous variable measuring the merger EPS growth forecast disclosed by the bidders. The variable is set equal to zero if no quantitative forecast has

been made.[20] All regressions of Table 4 are estimated controlling for industry and year fixed effects and using heteroscedasticity robust standard errors.

The probit regression in the left column of Table 4 shows that the disclosure of merger forecasts significantly increases the likelihood that an acquisition is completed, after controlling for various confounding factors. The marginal effect of *FORECAST* on the likelihood to complete an acquisition is an incremental 18% (coefficient=0.176). This positive effect of the forecast on the merger completion is further corroborated in the more robust treatment effects regressions reported in column (1). Here, the marginal effect of *FORECAST* on merger completion increases to 49%. The marginal effect of the disclosure of a *quantitative* forecast (*QUANTITATIVE*), reported in column (2) is statistically and economically significant at 64%, indicating that disclosing a more specific EPS forecast increases the likelihood of merger completion by an additional 15%, compared to disclosing a qualitative forecast. The results of the selection regressions confirm the highly statistically significant coefficient on the instrument *PREDISPOSITION* (z-statistic=3.61-5.39). All the coefficients of the control variables are consistent with the results on the determinants of forecast disclosure presented in the previous section.

The significantly negative marginal effect of the inverse Mills ratio (*INVERSE MILLS*) in the outcome regressions (-0.21, z=-1.96, in (1)) suggests that certain unobserved characteristics that are associated with the propensity to disclose a forecast are negatively associated with merger completion likelihood and hence reflect self-selection (Li and Prabhala (2009) interpret the inverse Mills ratio as a proxy for unobserved private information). Ex ante, the expectation of the unobserved private information driving the disclosure decision should be zero.[21] Ex post, once the decision to forecast is observed, this expectation, conditional on forecast disclosure, is the inverse Mills ratio. According to this interpretation, our results suggest that controlling for management's

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[20] This requirement ensures that we are able to estimate the regression since conditioning on quantitative forecasts perfectly predicts the outcome *COMPLETION*.
[21] The unconditional expectation of the private information is the expected value of the error term in the selection regression which is per definition equal to zero.

private information that drives the decision to disclose merger forecasts, which itself has a negative effect on the likelihood of completion, the disclosure of the forecast, which is generally positive, increases the likelihood of merger completion. We interpret these results as suggesting that the bidder's management strategically discloses merger forecasts to exploit their information advantage during the acquisition in order to convince target shareholders to agree to the deal.

The right column in Table 4 further suggests that for the subset of bidders that do disclose forecasts, the magnitude of the EPS growth estimate for the combined firm (*EPSGROWTH*) has a significantly positive marginal effect on the likelihood of merger completion. A ten percent increase in the EPS growth forecast increases the likelihood of completion by an additional 1.7% (z=3.51).

Table 4 estimates are robust to the inclusion of various control variables. The propensity of completing the acquisition is significantly negatively associated with *COMPETITION*, *FOCUS*, and *VOLATILITY*, and positively associated with *TERMFEE* (termination fee), consistent with our expectations and the prior literature (Schwert 2000; Officer 2003; Bhanot, Mansi and Wald, 2010; Bates and Lemmon, 2003). Further controls (insignificant coefficients and not reported in the table for ease of exposition) include *LITIGIOUS*, *PREMIUM*, *TENDER*, *TOEHOLD*, *SOX*, *FIRMERROR* and *GROWTH* (Bates and Lemmon, 2003; Moeller, Schlingemann and Stulz 2004; Betton, Eckbo and Thorburn 2009; Golubov, Petmezas and Travlos 2012). In sum, we identified an important outcome of merger forecast—enhancing the likelihood of deal completion. The high estimates of marginal effects (49% and 64%) indicate that forecasts are a potent tool for merger completion.

C. Time to completion

If merger forecasts have a positive effect on the target's decision to accept the offer, we should expect forecast-backed takeover bids to generate less resistance from the target and thus close *faster* the acquisitions. The estimates presented in Table 5 are consistent with this

hypothesis. The table presents results of a duration, or time to event, analysis in which the event is the acquisition completion, and duration is measured in days from the acquisition announcement to completion. Hazard rates are estimated using the Cox proportional hazard model. Positive coefficients are interpreted as an improvement (shortening) of time to completion. All regressions are estimated with controls for industry and year fixed effects.[22]

The hazard rates are derived by taking the exponential of the coefficients presented in the table. The results in column (1) show that *FORECAST* enhances the rate of merger completion by 41% ($haz = e^{0.346} - 1 = 41\%$). In other words, bidders that disclose forecasts are 41% more likely to close the deal at any given day after the announcement than bidders that do not provide forecasts. Furthermore, decomposing forecasts by specificity, as in column (2), shows that the disclosure of quantitative forecasts has an even greater impact on the rate of completion (haz=127%), increasing the rate of completion by a factor of more than two.

Column (3) in Table 5 presents estimates for the subset of bidders that disclose forecasts, examining whether the magnitude of the EPS growth forecast (*EPSGROWTH*) impacts the speed of deal closure. The results suggest a significantly positive, albeit weak, effect of expected EPS growth on the speed of deal closure; with a ten percent increase in growth forecast improving the time to completion by approximately 0.7%. Table 5 results are robust to control variables used in the related literature (e.g. Golubov, Petmezas and Travlos 2012, Wangerin 2012). The presence of competing bidders (*COMPETITION*), a higher percentage of stock used as payment (*PSTOCK*), and higher information uncertainty surrounding the bidder (*VOLATILITY*) are negatively associated with the speed of completion, as expected, and higher bidder valuation

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[22] We repeat the analysis running similar Heckman-style two-step regressions on the days to completion as robustness test controlling for the self-selection in the forecasting decision as in the preceding section. The results remain qualitatively similar and are available on request. The advantage of the Cox proportional hazards model is that it is a semi-parametric model requiring fewer assumptions on the functional form of the baseline regression. The model allows us to make comparisons between bidders that forecasts and those that do not and assess how much shorter is the time to completion is for any of the two groups at any given time after the acquisition announcement (Cox 1972).

(*INDERROR*), the presence of termination fees (*TERMFEE*) and higher litigation risk (*LITIGIOUS*) are positively associated with the speed of completion.

D. Acquisition premium

We observed in the analyses summarized in Tables 4 and 5 that the coefficient on the offer *PREMIUM* is insignificant (coefficients suppressed in the table), counter intuitively suggesting that the premium the bidder offers does not play a role in the target decision to accept or reject the offer. This decision, however, is rather complex, as target shareholders weigh the premium offered against the expected merger synergies, benefitting them if they keep the bidder's stock. Accordingly, a target may accept a lower premium in return for higher expected synergies, if the sum of the two compensates target shareholders for giving up control. This tradeoff naturally provides bidding firms with an additional incentive to disclose positive merger forecasts, informing target shareholders of the expected synergies, or future gains, particularly when the offered stock is highly valued, as the target shareholders have difficulties disentangling the merger synergy from the overvaluation component of the bidder's stock.

To examine the relationship between the forecast decision and the offer premium, Table 6 presents results of treatment-effects regressions on the acquisition premium (dependent variable). The right-hand columns of each of the two-stage models (1) and (2) present the marginal effects, evaluated at the mean, in the selection equation, which models the choice to forecast in (1) and the choice to disclose quantitative forecasts in (2). The left hand-side columns report the marginal effects of the outcome regressions in which the outcome variable *PREMIUM* is measured as the percentage difference between the offer price per share and the targets share price 30 days before the acquisition announcement. The results of the selection regression are consistent with the previous results shown in Table 3 and 4.

We note that the coefficient of *FORECAST* is significantly negative in Table 6 confirming our supposition that merger forecasts reduce the premium necessary to convince target

shareholders to give up control. The coefficient on *FORECAST* indicates a mean of −12.5% (z=-2.42) lower premium paid to the target by bidders that disclose forecasts. Economically, this result translates into a very meaningful saving of around $1 billion for our average bidder, given an unconditional mean premium of 30% and a market value of almost $9 billion for the average target in our sample. The coefficient on *QUANTITATIVE* is also negative and even higher. The 14.3% reduction of the premium in column (2) suggests that with the disclosure of a quantitative forecast the bidder achieves a further marginal reduction in the acquisition premium. The right column in the table shows the results of the OLS regression on *PREMIUM*, conditional on quantitative forecasts having been disclosed. The results for this subsample show a significantly negative coefficient of the magnitude of the EPS growth forecast (*EPSGROWTH*) of -1.553 (t=-2.12). Thus, a ten percent increase in after-merger *EPSGROWTH* decreases the acquisition premium by about 0.15 percentage points. According to the average EPS growth forecast in our sample, this translates approximately into a saving in the premium of almost $120 million for the average bidder that discloses quantitative forecasts (=$9 billion x 0.0015 x 8.8). Merger forecasts have large effect on premium paid.

The results also show a statistically significant positive coefficient of the inverse Mills ratio (*INVERSE MILLS*) in the outcome regressions (10.37, t=3.08, in (1)). This again reflects self-selection and suggests that certain unobserved characteristics that are associated with an increase in the propensity to disclose a forecast are positively associated with the acquisition premium. Controlling for this selection bias, disclosing a merger forecast significantly reduces the premium necessary to persuade target shareholders to give up control. Other control variables in the regressions are consistent with the prior literature. The coefficients on *PSTOCK* and *TOEHOLD* are significantly negative (Betton and Eckbo 2000; Schwert 2000; Officer 2003), and the coefficients on *COMPETITION*, and *POOLING* are significantly positive (Moeller, Schlingemann and Stulz 2004; Robinson and Shane 1990).

In the preceding treatment effects regressions the impact of forecast disclosure on the acquisition premium is captured by the endogenous indicator variable *FORECAST* in the outcome regression run over the entire sample of the two groups of bidding firms (the ones that forecasts and those that do not). This two stage model in effect restricts the coefficients on all other control variables to be the same across forecasters and non-forecasters in the outcome regression. We relax this assumption by additionally running a switching-regression model with endogenous switching. This specification allows us to compare the actual premium paid by the two groups of bidders with an estimated (hypothetical) counterfactual premium had they been in the respective other group. This 'what-if'-analysis attempts to answer the following question: In an acquisition where the bidder disclosed an earnings forecast, what would the acquisition premium have been, had the bidder not disclosed the forecast; and equally, in an acquisition for which the bidder did not disclose an earnings forecasts, what would the acquisition premium have been, had the bidder disclosed the a forecast.[23]

Table 7 presents the estimates of the switching regressions on the acquisition premium. Panel A presents the coefficient estimates and Panel B the results of the counterfactual analysis. In Panel A, the left column shows the coefficients of the selection regression and in the second and third columns the coefficients of the separate outcome regressions for forecasting and non-forecasting bidders. The coefficients on the selection equation are consistent with previous results. The significantly positive coefficient on *INVERSE MILLS* in the regression on forecasting bidders re-confirms the positive effect of the selection bias. Panel B shows the results of the hypothetical counterfactual analysis. The results reveal that those bidders that disclosed forecasts would have paid an 8.72 percentage points *higher* premium had they not disclosed a forecast. More strikingly, those bidders that did not forecast would have paid a 34 percentage point *lower* premium if they had disclosed merger forecasts. Both figures are statistically significant at the 1% level. We

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[23]   A detailed discussion of the switching regression model can be found in Maddala (1983) and Li and Prabhala (2009); and an application of a similar hypothetical counterfactual analysis in an investigation on the effect of investment bank reputation on the price and quality of underwriting services, in Fang (2005) and on mergers in Golubov et al (2012).

conclude that disclosing merger forecasts, particularly quantitative ones, is associated with a significantly lower payment for the target.

E. Bidder CARs at announcement

The preceding analysis focuses on the target firm and its shareholders as the primary audience of merger forecasts. However, we mentioned earlier that the bidding firms management might also have their own shareholders in mind as audience of these disclosures. Prior evidence shows that bidder cumulative abnormal returns are generally negative around merger announcements, particularly for large acquisitions and those financed with stock (Andrade et al. 2001; Moeller et al. 2005, Dong et al. 2006), reflecting the signalling cost of issuing equity (Myers and Majluf 1984, Travlos 1987). In stock acquisitions, the acquiring firm is required to get shareholder approval if the newly issued shares are equal to or exceed 20% of the common shares outstanding. In acquisitions financed with large share issuance the acquiring firm's shareholders will be naturally concerned about the earnings dilution, and positive earnings forecasts is a means to reassure them of the non-dilutive impact of the acquisition (high synergies). We, therefore, hypothesize that the generally negative market reaction to stock-financed merger announcements motivates bidding managers to disclose positive merger forecasts in an attempt to convince the market of the benefits of the deal and to attenuate the negative reaction. We expect the magnitude of EPS accretion (dilution) to have a positive (negative) effect on the bidder's announcement CARs (cumulative abnormal returns).

Table 8 reports results of OLS regressions on the 3-day announcement CARs. The left pair of columns includes only bidders that disclosed forecasts on the *same day* of the announcement of the acquisition; the results presented in the columns (2) include all bidders that disclosed forecasts; and columns (3) show results of a propensity score matched sample of bidders that disclose forecasts on the acquisition announcement day with bidders that did not disclose forecasts. Propensity scores are estimated from the probit regression in Table 3, column 4. The

regressions are run on the sample of all bidders that disclosed forecasts (left-hand side) and on the subsample of bidders that only disclosed quantitative forecasts for the full fiscal year after the merger completion year (right-hand side).

Notably, it is evident that *EPSGROWTH* is consistently significantly positive (0.004, t=2.2-2.6) across all columns in Table 8, indicating that higher EPS growth forecasts are associated with higher (less negative) announcement CARs. The magnitudes are also economically meaningful. A ten percent EPS growth forecast is associated with a four basis points higher CAR, which for the average growth forecast translates into an increase in announcement CARs of about 35 basis points (approximately $100 million in market value terms). These results are robust to propensity score matching in columns (3). Consistent with prior evidence, *PSTOCK*, *INDERROR*, *PREMIUM*, and *GROWTH* are negatively associated with announcement returns (Moeller et al. 2005; Dong et al. 2006; Rau and Vermaelen 1998). Other control variables include *SIZE* (Moeller et al. 2004), *TENDER,* (Agrawal et al. 1992), *LEVERAGE* (Maloney et al. 1993), *COMPETITION* (Moeller et al. 2004), *POOLING* (Davies 1990), *FOCUS* (Maquieira et al. 1998; DeLong 2001), and *RELSIZE* (Fuller et al. 2002), and the coefficient signs are generally as expected. Thus, a positive growth forecast for the combined entity mitigates to a certain extent bidder shareholders' concerns with stock-financed acquisitions.

Table 9 presents the results of the switching regressions on the bidder CARs. Panel A presents the coefficient estimates and Panel B the results of the counterfactual analysis. In Panel A, the left column shows the coefficients of the selection regression and the second and third columns to the right present the coefficients of the separate outcome regressions for forecasting and non-forecasting bidders. The coefficients on the selection equation are consistent with previous results. The estimates in Panel B reveal that bidders that disclosed forecasts would have experienced a 1.5% lower CAR had they not disclosed (significant on the 5% level). The differences in CARs are insignificant for those bidders that did not disclose, had they disclosed merger forecasts. The evidence suggests that controlling for observable firm and deal

characteristics, the market is more sceptical about the announced deals by forecasting bidders, and disclosing earnings forecasts for these deals attenuates this scepticism.

Overall, the findings presented in this section indicate that bidders' merger forecasts are associated with a higher likelihood of acquisition completion and a shorter time to completion. The results also indicate that in acquisitions for which bidders disclose earnings forecasts the target firms accept lower premiums, on average. Furthermore, disclosing forecasts attenuates the otherwise negative bidder shareholders' reaction to these deals. These are evidently compelling reasons to provide merger forecasts, particularly quantitative ones. So, why do many bidders refrain from forecasting? The next section provides evidence on the costs of forecasting.

VII.   The Costs of Forecasting

In Table 3 we saw initial evidence of the negative impact of competing bids and proprietary information costs on the propensity to forecast. The coefficients on *COMPETITION* and *PROPCOST* were significantly negative, indicating that bidders are reluctant to disclose acquisition information via forecasting, particularly when their proprietary costs are high and competing bids exist. The results of our previous analyses also indicate the additional costs to the bidder of competing bids: The presence of competition in the bidding process has a negative effect on the likelihood of acquisition completion and increases the time to completion. There is also evidence that the acquisition premium is, on average, higher when there is competition for control over the target, by as much as 14% points, as evident from the significantly positive coefficient on *COMPETITION* in the last column of Table 6. These are obviously deterrents to forecasting, explaining why some bidders don't forecast.

To examine further the costs of disclosing earnings forecasts in acquisitions, we match our sample with a sample of shareholder lawsuits following acquisitions, alleging misinformation by bidders.[24] In particular, we define an indicator variable *LITIGATION,* set equal to one when the

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bidding firm was subject to litigation related to the acquisition within three years of completing the deal. We found a match for 60 cases in our sample in which suing shareholders alleged they have been given misleading information about the acquisition. For example, in one of the litigation cases the complaint reads: *"as a result of defendant's materially false and misleading statements [...], the value of shares of the St Paul's common stock was artificially inflated and former Travellers shareholders who acquired shares of St Paul's common stock pursuant to the merger were damaged thereby"*.[25]

It is important to note that both merger forecasting and the exposure to ligitation may be jointly determined by unobserved managerial traits, such as a managerial tendency for fraudulent behaviour. This unobserved heterogeneity may not be specific to forecasting or to acquisitions, but might lead to an endogenous relation between forecasting and litigation likelihood. We, therefore, employ the same identification strategy as before within a two-stage Heckman regression framework, using *PREDISPOSITION* as the excluded instrument for the first-stage selection equation that predicts the propensity to forecast.

Table 10 present the results of a regression analysis on the likelihood to be involved in post-acquisition litigation. The left hand-side columns report the marginal effects on the outcome (dependent) variable *LITIGATION*. The regressions are run on the subsample of firms conditional on merger completion, and marginal effects are evaluated at the mean. Columns (1) are for forecasts in general and columns (2) for quantitative forecasts. The estimates show that disclosing a (quantitative) forecast increases the likelihood of post-acquisition litigation by 26% (39%)—a considerable enhancement of litigation exposure by the forecast, and a serious cost consideration. This compares to an unconditional likelihood of post-merger litigation of 19% for all completed acquisitions in our sample. Disclosing a quantitative forecast increases the litigation likelihood by 13% compared to the disclosure of a qualitative forecast, explaining why the majority of bidders that do decide to forecast prefer to give qualitative estimates. The results on the control variables

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[25] See In re St. Paul Travelers Securities Litigation I, United States District Court, District of Minnesota, Civil No. 04-3801 (JRT/FLN), 2004.

are largely consistent with the prior literature. Bidders in high litigation industries (*LITIGIOUS*) are more likely to be sued by shareholders (Krishnan et al. 2012), and lawsuits are generally less likely after the regulation changes encouraging more market-wide disclosures. The coefficient on *INVERSE MILLS* is significant, confirming the necessity to control for self-selection.

Table 10 further shows a 26% (z=1.92) higher propensity of CEO turnover post merger for bidders that disclose forecasts, and a 64% (z=7.25) higher propensity of CEO turnover post merger for bidders that disclose quantitative forecasts. These results further indicate the severity of the potential costs to the CEO of the bidding firm in disclosing forecasts, particularly quantitative forecasts that are easily verified ex post.[26]

Overall, the results of this section indicate that there are substantial costs to disclosing merger forecasts, explaining the cross-sectional variation in forecasting behaviour among bidders.

VIII.   Robustness Tests

A. *Credibility of forecasts*

Our findings indicate that merger-related earnings forecast are, on average, upward biased and that these forecasts enhance completion of the deal, decrease the time to completion, and most importantly, reduce the acquisition premium. These benefits likely explain why bidder shareholders do not discipline managers for the upward forecast bias. But why do target shareholders accept the inflated forecasts? Why do they tender their shares and accept lower bid premiums based on these forecasts? Particularly in light of the evidence inHutton et al. (2003,) indicating that the market only reacts to positive news disclosures when these are credible.

To test the robustness of our results, we rely on prior forecasting reputation of the bidding firm's managers in their regular earnings guidance to construct an 'ex-ante' credibility measure observable by market participants at the time of the merger. We construct a measure of credibility of the merger forecasts using managers' prior accuracy, bias and consistency of their earnings

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[26] Although it is generally the case that the CEO of the acquiring firm will also become CEO of the combined firm we cannot determine whether the CEO's departure post-merger is forced or part of a negotiated succession plan at time of the merger.

guidance in comparison with the same characteristics for analyst forecasts, similar to Hutton and Stocken (2009). Specifically, the credibility measure is constructed is the sum of three indicator variables that are set equal to 1, respectively, if:

$$accuracy_{management} < accuracy_{analyst}$$

$$bias_{management} < bias_{analyst}$$

$$consistency_{management} < consistency_{analyst}$$

and 0 otherwise. The *accuracy*, *bias* and *consistency* of management and analyst consensus forecasts are measured as the absolute forecast error, signed forecast error, and standard deviation of the forecast error, respectively, in the three years prior to the merger announcement:

$$accuracy_i = \frac{1}{t} \sum_{t-4}^{t-1} abs(forecast_{i,t} - actual_{i,t})$$

$$bias_i = \frac{1}{t} \sum_{t-4}^{t-1} (forecast_{i,t} - actual_{i,t})$$

$$consistency_i = \sqrt{\sum_{t-4}^{t-1} \left[(forecast_{i,t} - actual_{i,t}) - \frac{1}{t} \sum_{t-4}^{t-1} (forecast_{i,t} - actual_{i,t}) \right]^2}$$

If the bidders earnings forecasts in the three years prior to the acquisition announcement have been consistently more accurate, less biased and more consistent than analyst consensus estimates, *credibility* is equal to 3. If, on the other hand, the bidders forecasts have been consistently worse on these dimensions compared to analysts, *credibility* is equal to 0. *Credibility* is equal to 1 (2) if the bidder is better on one (two) of the dimensions than analysts, respectively.

We repeat our tests of the consequences of merger forecasts for separate sub-samples of bidders with and without credible forecasting reputation, partitioning the sample into firms with a strong forecasting reputation if credibility>0, and the remaining (credibility = 0), having weak forecasting reputation.[27] Table11 summarizes the coefficient estimates of regressions of the tests

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[27] We also repeat the analysis partitioning the sample into credible forecasting firms with a minimum credibility score of 1 instead of 0. Our results remain similar.

on the completion likelihood, time to completion, acquisition premium and litigation likelihood, following Section VI, partitioned into credibility>0 and credibility=0. The results in Table 11 show that the beneficial effects of forecasting only accrue to those bidders that have built a credible forecasting reputation prior to the acquisition, suggesting a possible explanation why target shareholders believe the merger forecasts. Similarly, the cost of disclosing overly optimistic forecasts are borne by bidders with low prior forecasting credibility.

We further test the robustness of our results by investigating the effects of negative merger (EPS dilutive) forecasts. Our results that forecasts enhance completion of the deal and reduce the acquisition premium should be stronger (or only hold) for those bidders that promise target shareholders growth in earnings per share, but not for the (small) sub-sample of bidders that forecast declining earnings per share. Untabulated tests on the separate sub-sample confirms the robustness of our previous results. In Tables 5 and 7, for example, we find that the disclosure of a *positive* forecast increases the acquisition completion likelihood by 47% and decreases the acquisition premium by 8%. A *negative* forecast, on the other hand, has no explanatory power for acquisition completion likelihood or the magnitude of the acquisition premium.

B. Endogeneity and alternative instruments

In addition to the discussion in section VI.A of our research design, to further allay concerns that our instrument might be related to managerial quality through prior forecasting behaviour, we repeat our tests replacing *PREDISPOSITION* with two alternative instruments. The first alternative instrument is *REGULATION* alone.[28] The regulatory changes to disclosures enacted with Regulation M-A and Regulation FD are likely to be exogenous to managerial quality. Yet, one could argue that the disclosure regulation change might have had an impact on merger outcomes directly for exogenous reasons other than through changes in disclosure behaviour. However, in time-series analyses we do not find any unconditional effect of the regulation changes

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[28] We acknowledge that *REGULATION* does not vary in the cross-section and thus might suffer from weak instrument bias. However, the chi-squared statistic for weak identification ranges from slightly above 7 to 11 depending on specification rejecting that the first stage probit is only weakly identified with this restricted instrument.

on merger outcomes such as completion rates. In untabulated results we find that repeating our analyses with the regulatory instrument only does not change our results.

As second alternative instrument we use the residuals of a regression of *PREDISPOSITION* on the individual indicator variables, *accuracy*, *bias* and *consistency,* used in our credibility measure. In so far that these variables are correlated with managerial forecasting ability we purge our predisposition measure from characteristics that reflect managerial ability which in turn might affect merger outcomes, as suggested in Goodman et al. (2014). The residuals of this regression are likely to reflect innate managerial traits that predispose these managers to be more forthcoming with disclosures other than due to the fact that they are good forecasters. In untabulated results we find that the instrument is highly predictive of forecasting in the first-stage regression and that it does not change our inferences in the outcome regressions.

C. Post-merger performance

Merger forecasts are on average significantly positively biased as we find in Section IV, and investors seem to believe these forecasts. Investors will, however, revise their valuation of the combined firm downwards if information becomes available near the post−merger earnings release that indicates that actual earnings growth will fall short of the forecast. We therefore examine daily cumulative abnormal returns in the two months before the earnings announcement of the first full year after the acquisition for which the forecast was initially disclosed until one day after (-60;+1). Figure 2 shows that bidders that disclosed positive forecasts around the acquisition announcement experience significantly negative CARs (-5.03%, p-value<0.001). This result compares to less negative CARs, -1.36% (p-value<0.01) and -1.84% (p-value<0.05), for bidders that did not disclose forecasts and those that did not complete acquisitions, respectively. Thus, investors seem to update their expectations about the earnings impact of the merger close to the post−merger earnings announcement. This is also consistent with many of these firms becoming targets of shareholder lawsuits after the merger, alleging misinformation by management about the earnings prospects of the combined firm.

D. Further investigation on the positive bias in management forecasts

In section III B. we report that the quantitative forecasts disclosed by the bidding firm are significantly positively biased compared to analyst consensus estimates and ex-post actual earnings per share. In the analysis we rely on IBES adjusted earnings figures as the benchmark to the managerial forecast and argue that IBES' adjustments to actual earnings are based on similar adjustments made by the bidder's management when providing the forecast. We acknowledge, that although we believe that the estimates and adjusted actual earnings provided by IBES will in most cases be comparable to management merger forecasts, we cannot be certain that in all cases the IBES adjusted actual earnings number exactly matches the definition y used by the bidders' management when they issue the forecast. To investigate this potential source of bias further, we make our own adjustments to post-merger reported earnings for a subset of 50 firms of the sample for the years 1998-2001. This involved the hand collection, and parsing of, relevant data such as goodwill amortization, merger-related costs and restructuring charges that are included in extraordinary items and other non-recurring items related to the merger from the financial statements and footnotes of the annual reports for each acquiring firm from one year prior to the acquisition to three years after. For each firm, we then adjust reported net income on a like-for-like basis according to management's explanations to the forecasts given in the press releases and SEC filings. We divide the adjusted earnings figure by the average number of shares outstanding to get to our adjusted EPS figure.

For example, one of the cases in the 50 firms subset is Pfizer's $89 billion acquisition of Warner-Lambert announced in 1999. For this acquisition management forecasted combined EPS for the acquisition completion year (2000) of $0.99, and $1.23 for the following year (2001), excluding one-time expenses, and merger related costs, but including projected synergies of $200 million and $1.0 billion, respectively.[29] Pfizer subsequently reported EPS of $0.59 and $1.22 for

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[29] Pfizer's management provided the following explanation in the merger prospectus: *"These [forecasts] exclude the impact of one time unusual charges such as Warner−Lambert's $1.8 billion termination fee to AHP, both Pfizer's and Warner−Lambert's transaction fees and merger−related costs (estimated at $200 million) and the restructuring charges and other related costs for the combined company (estimated to be between $1.5 billion*

the years 2000 and 2001, respectively, thereby missing its earnings forecast. However, IBES adjusted Pfizer's actual earnings for 2000 and 2001 to $1.05 and $1.31, respectively, and our own reconciled earnings figures that adjust for the non-recurring items, come to $1.09 and $1.44. Thus, based on both sets of adjusted figures, Pfizer indeed beat its merger forecast by a wide margin. Although, in some cases, like in the Pfizer example above, the IBES reported figures differ slightly from our own calculations, the results of our empirical analysis are not materially different for the subset of 50 firms, whether we use IBES or our own adjustment. Therefore, we are sufficiently confident of the accuracy of the IBES figures the empirical analysis of the full sample.

E.   Overconfidence

Finally, can managerial overconfidence explain our results? Evidence shows that managerial overconfidence influences acquisition decisions (Malmendier and Tate, 2005) as well as forecasting behaviour (Hribar and Yang 2011). In particular, Hribar and Yang (2011) report that overconfident managers are more likely to disclose earnings forecasts and more likely to overestimate earnings growth. If, however, overconfidence is an explanation to merger forecasting—our focus of analysis—we should observe bidders *overpaying* for targets and predominantly using cash rather than stock in acquisitions (Malmendier and Tate 2005). We should also observe more quantitative than qualitative forecasts. We, however, find the contrary, suggesting that over confidence doesn't explain our results. To further examine this alternative explanation, we construct an overconfidence measure similar to Malmendier and Tate (2005), using compensation data collected from Execucomp on the value of the CEO's unexercised vested options in proportion to his total compensation. In untabulated results, we find no evidence that this overconfidence measure has any influence on the propensity of the bidders to forecast.

IX.   Concluding Remarks

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and $2.0 billion). The Combined EPS Growth assumes that the $1.6 billion of cost savings are phased in over this time period." (Pfizer Inc. Form S4/A, March 9, 2000)

We ask: Why do some bidders voluntarily disclose merger earnings forecasts, and what are the consequences of such forecasts? We show that merger forecasts are mainly disclosed in stock-based acquisitions and during periods of high bidder valuations, when target shareholders are concerned about receiving overvalued shares. We furthermore show that these forecasts are significantly positively biased and enhance the likelihood of merger completion and shorten time to completion. Notably, such forecasts seem to persuade target shareholders to accept lower bid premia. All good things from bidder managers' and shareholders', perspectives explaining why merger forecasts attenuate the generally negative investor reaction to acquisition announcements with stock.

Given these benefits of merger forecasts, why don't all bidders release forecasts? We show that there are considerable costs to merger forecasting: Primarily, revealing proprietary information to other bidders, and enhancing litigation exposure for hyped acquisitions. Indeed we show that these two factors are negatively associated with the propensity to release merger forecasts.

We furthermore find that target shareholders infer the credibility of these forecasts from the bidders prior forecasting reputation and that the benefits of forecasting only accrue to those bidders with high forecasting credibility. Our findings, overall explain the motivation to release merger earnings forecasts and their economic consequences, a phenomenon not investigated thus far.

APPENDIX

A1. Variable Definitions

CAR(-1,+1)	Cumulative abnormal announcement returns during the three-day period from one day before the acquisition announcement to one day after calculated as Fama-French three factor model residuals.
CASH	Indicator variable equal to 1 if acquisition payment is made with cash only, 0 if at least some stock is offered.
COMPETITION	Indicator variable equal to 1 if target received rival bid from at least one other third party other than the bidder, 0 otherwise.
COMPLETION	Indicator variable equal to 1 if acquisition consummated, 0 if withdrawn/ cancelled.
EPSGROWTH	Managerial estimate of the EPS growth rate for the combined firm for the full fiscal year after the acquisition completion or if unavailable for the year of the merger completion.
FIRMERROR	Firm-specific valuation error measured following Rhodes-Kropf, Robinson, Viswanathan (2005) as described in Appendix A3.
FOCUS	Indicator variable equal to 1 if acquisition in the same 12 Fama-French industry, 0 otherwise.
FORECAST	Indicator variable equal to 1 if the bidder disclosed earnings forecast for the acquisition, 0 otherwise.
GROWTH	Long-run value to book measured following Rhodes-Kropf, Robinson, Viswanathan (2005) described in Appendix A3.
GUIDANCE	Indicator variable equal to 1 if the bidder has provided earnings guidance during the previous fiscal year prior to the acquisition, 0 otherwise.
INDERROR	Industry-wide valuation error measured following Rhodes-Kropf, Robinson, Viswanathan (2005) as described in Appendix A3.
INVERSE MILLS	Inverse Mills ratio from respective selection equations of the Heckman selection regressions.
LEV	Book leverage measured as the ratio of total assets to equity.
LITIGIATION	Indictor variable equal to 1 if the bidder is involved in a shareholder lawsuit related to the acquisition within three years of the acquisition.
LITIGIOUS	Indicator variable equal to 1 if the bidding firm belongs to biotechnology, computers, and retail industries and 0 otherwise based on Francis et al. (1994) findings that these industries have higher litigation risk.
PAST	Indicator variable equal to 1 if the bidder has disclosed earnings forecasts in acquisitions of similar size in the past, 0 otherwise.
POOLING	Indicator variable equal to 1 if accounting method for the acquisition is pooling-of-interest, 0 if purchase method.
PREDISPOSITION	Sum of the indicator variables *GUIDANCE*, *PAST* and *REGULATION*. Takes values of 0 (if none of the indicator variables is switched on, 1, 2, or 3 (if all of the indicator variables are switched on).
PREMIUM	Offer premium measure as the percentage premium of offer price per share over the stock price of the target firm one week before the acquisition announcement winsorized at the 0.01 level.

PROPCOST	Proprietary cost measured as R&D expense to prior year sales.
PSTOCK	Proportion of stock offered as payment as percentage to total consideration paid.
QUALITATIVE	Indicator variable equal to 1 if management earnings forecast disclosed as qualitative statement, 0 if otherwise.
QUANTITATIVE	Indicator variable equal to 1 if management earnings forecast disclosed as quantitative forecast, 0 if otherwise.
REGULATION	Indicator variable equal to 1 if acquisition occurred after the introduction of Regulation M-A and Regulation Fair Disclosure in the year 2000, zero otherwise.
RELSIZE	Relative size of acquirer to target measured by sales.
RUNUP	Cumulative abnormal stock returns of the bidder for the days -30 to -2 before the acquisition announcement.
SIZE	Natural logarithm of the market value of equity.
SOX	Indicator variable equal to 1 if acquisition occurred after the introduction of Sarbanes-Oxley Act in 2002, 0 otherwise.
TENDER	Indicator variable equal to 1 if tender offer, 0 otherwise.
TERMFEE	Indicator variable equal to 1 if a either the bidder or the target have a termination fee in place, 0 otherwise.
TOEHOLD	Indicator variable equal to 1 if the bidder has an equity stake in the target prior to the acquisition, 0 otherwise.
VOLATILITY	Pre-merger earnings volatility measured as the variance of annual changes in EBIT.

A2. Factiva and Capital IQ search algorithms

Acquisition earnings forecasts

We employed several keyword searches of news announcements on Factiva and of regulatory filings on Capital IQ for the collection of the earnings estimates for the acquisitions using as search period one day before date of announcement of the transaction until the date of completion or withdrawal provided by SDC. We then, first, examined every article that Factiva retrieved for each transaction based on our search criteria beginning with the oldest and noted whether a forecast was made, what type of forecast was made (quantitative or qualitative), whether positive or negative (i.e., EPS accretion or dilution), and in the case of quantitative forecasts the estimated EPS for the merger year and one or two years after (if available). In the second step we repeated the search for the same keywords in Capital IQ. In particular, we used the following keywords, keyword parts or combinations thereof in both searches: *Bidder name* [AND *target name*] AND (*earnings* OR *EPS* OR *income* OR *profit*) AND (*accretive* OR *accretion* OR *additive* OR *add* OR *positive* OR *increase* OR *contribute* OR *dilutive* OR *dilution* OR *decline* OR *negative* OR *decrease* OR *neutral* OR *impact*).

In Factiva we included the following sources in our search algorithm: *Bloomberg* website, *CQ FD Disclosure* (formerly *Voxant FD Disclosure*), which includes conference call transcripts (starts from 2002), *Dow Jones News Services*, *Financial Times*, *Reuters News*, The *Wall Street Journal*. And in Capital IQ the following sources were included: Current event disclosures (*8-k*), proxy statements (*DEF 14A, PREM 14A*), tender offer notices (*SC TO, SC 14D9C*) and prospectuses (*S-4*).

Management earnings guidance

To obtain data on management earnings guidance in the year prior to the acquisition for the construction of our instrument we employed several keyword searches on Factiva using the same news sources above for the search period starting with the full calendar year prior to the acquisition announcement date and ending one day before the merger announcement date. We then examined every article that Factiva retrieved for each firm based on our search criteria beginning with the oldest. In particular, we used the following keywords, keyword parts or combinations thereof in the search: *Bidder name* AND (*earnings guidance* OR *earnings forecast* OR *earnings target* OR *sees earnings* OR *EPS target* OR *expects earnings* OR *report earnings*).

A3. Misvaluation measures

The main misvaluation measure we use follows Rhodes-Kropf et al's (2005) decomposition of the market-to-book ratio into two misvaluation components and one long-run value to book component. We use their model 3 which links the market value of equity to book value, net income and leverage in a residual income type valuation model. In specific, we run the following annual cross-sectional regressions on the entire universe of Compustat firms in our sample period for each industry within the 12 Fama-French industry groups:

$$ln(M_{it}) = \alpha_{0it} + \alpha_{1it} \, ln(B_{it}) + \alpha_{2it} \, ln(|NI|_{it}) + \alpha_{3it} \, I * ln(|NI|_{it}) + \alpha_{4it}(ML_{it}) + \varepsilon_{it} \text{ (B1)}$$

M is the market value of equity, *B* the book value of equity, *NI* stands for net income (in absolute values), *I* is an indicator if *NI* is negative and *ML* is the market leverage ratio. The coefficients can be interpreted as annual industry multiples capturing time-varying risk-premia and growth rates. As in Rhodes-Kropf et al. (2005) the coefficients are used to obtain predicted values for each firm, which in turn are used to decompose the market to book ratio into a firm-specific (or contemporaneous) valuation error (*FIRMERROR*), an industry-wide (or time-series) valuation error (*INDERROR*) and long-run value to book as a proxy of growth opportunities (*GROWTH*). The industry-wide valuation error (*INDERROR*) captures the misvaluation component of the firm which is due to contemporaneous industry-wide misvaluation relative to long-run valuations and is one of our main variables of interest in our regression analyses. It indicates whether the firm is operating in a temporarily 'hot' industry.

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Figure 1

Overview of earnings forecast data

The top left graph shows the proportion of the earnings forecasts disclosed on or after the merger announcement day (t=0). The top right graph breakes down the sample by forecast type, and the other two brake down the forecasts by earnings impact (bottom left) and by the medium of disclosure (bottom right).

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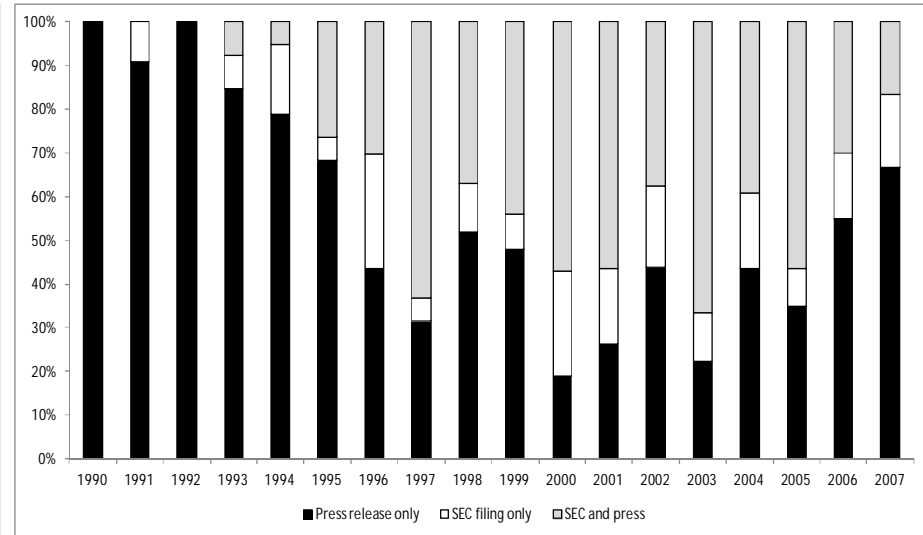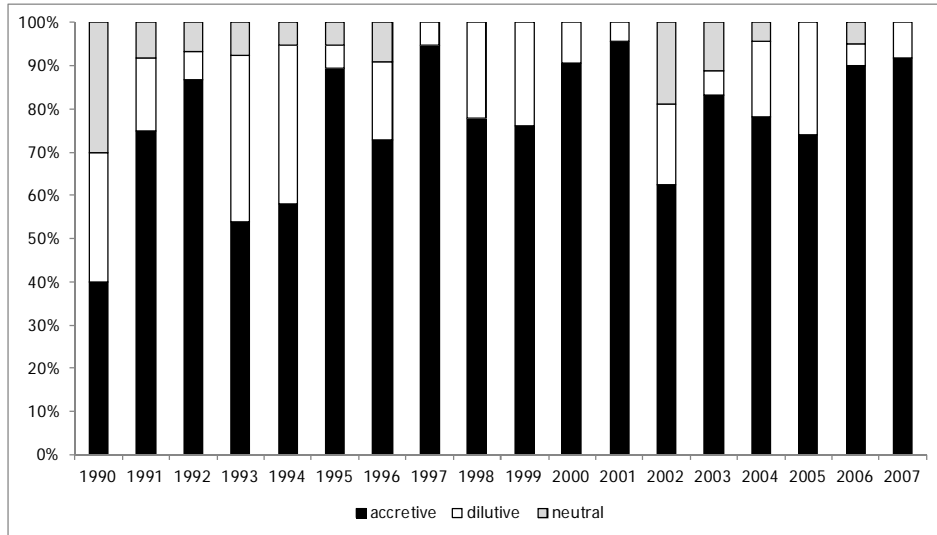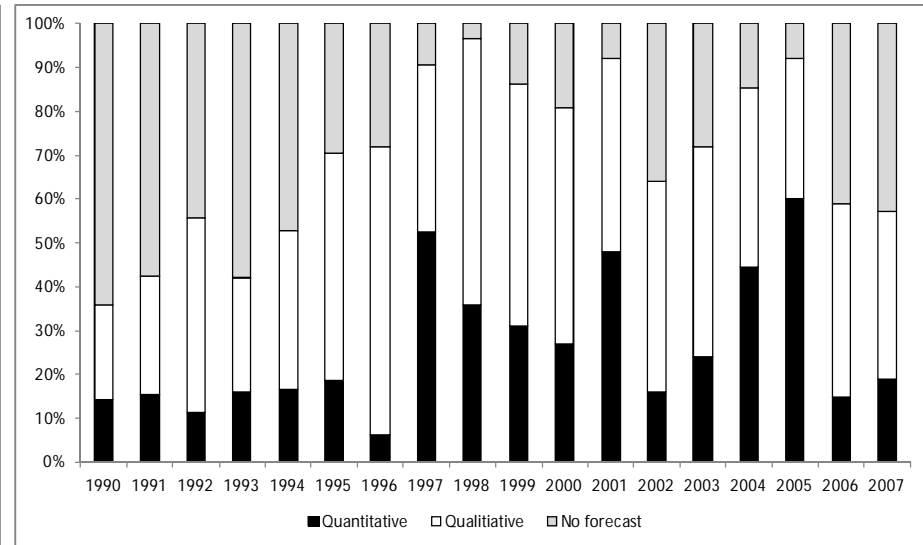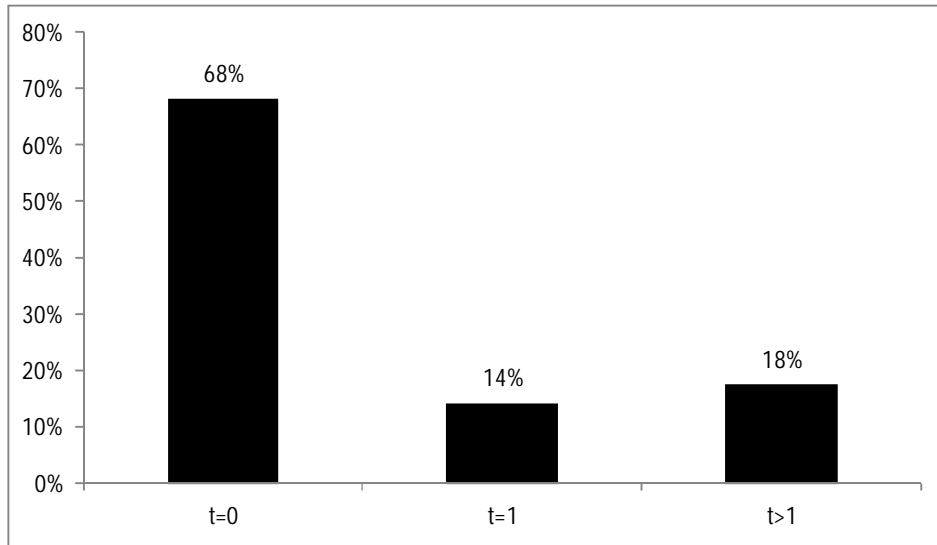
Figure 2

Daily CAR (-60,+1) around first earnings announcement date for first full fiscal year after acquisition
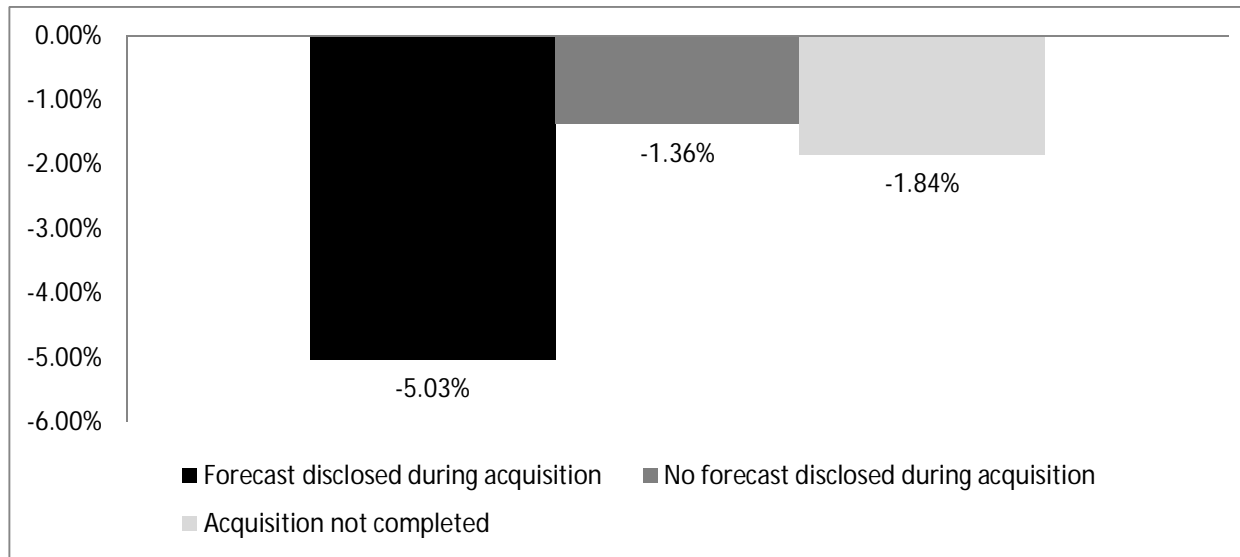
Table 1

Sample descriptive statistics

The table presents descriptive statistics for a sample of U.S. bids over the period of Jan 1, 1990 to December 31, 2007 drawn from Thomson Financial SDC Mergers and Acquisitions Database. The table describes the mean, median, maximum, minimum and standard deviation for acquisition, bidder and target characteristics in the sample. Figures are for the full sample of 493 acquisitions and measured in US$ millions unless stated otherwise.

	Mean	Median	Max	Min	Std. Dev.
Deal value incl. Net debt	8,955	4,112	181,569	288	15,392
Deal value to EBIT	29.71	15.09	591.09	2.4	68.39
Premium (%)	30.30	29.75	134.37	-31.00	22.62
Market value - bidder	24,057	7,400	310,389	52	44,007
Market value - target	8,319	3,399	120,022	8	14,139
Total assets - bidder	51,592	11,061	1,110,457	5.51	137,331
Total assets - target	15,059	4,097	326,563	18.25	36,284
Sales - bidder	12,809	5,258	162,405	2.15	20,569
Sales- target	4,694	2,084	58,399	2.46	7,185
Market to book - bidder	3.87	2.49	17.35	0.10	3.80
Market to book - target	3.63	2.40	17.07	0.24	3.73
Relative size bidder to target (logs)	1.19	1.08	3.75	0.67	0.44

Table 2

Acquisition Characteristics by Forecast – Univariate Analysis

The table presents acquisition characteristics for a sample of U.S. bids from 1990-2007 conditioned on whether the bidder disclosed a forecast (Panel A) and by type of forecast disclosed (Panel B). Panel A describes deal-specific characteristics and test statistics of differences in means between the group of acquisitions in which the bidder disclosed a forecast and those in which no forecast was disclosed. Panel B describes deal-specific characteristics and test statistics of differences in means between the groups of bids in which quantitative forecast compared to qualitative forecasts are disclosed. Panel C shows the bidder's industry misvaluation measure *(INDERROR)* described in Appendix A3 by method of payment and forecast. The t-statistics are provided in the right hand column based on two-sided t-tests of means with unequal variances. The symbols ***, **, * denote statistical significance at p<0.01, p<0.05, p<0.1 levels, respectively.

Panel A: Acquisition characteristics by forecast

	Forecast	No forecast	*test of difference*
Deal size (US$ million)	11,164	4,016	*6.423****
Cash only (%)	0.188	0.392	*-4.785****
Stock only (%)	0.388	0.284	*2.222****
Mixed (%)	0.423	0.324	*2.059***
Completion (%)	0.788	0.527	*5.861****
Challenge (%)	0.258	0.324	*-1.507**
Hostile (%)	0.064	0.101	*-1.452**
Premium (%)	30.77	29.19	*0.762*
N (%)	0.68	0.32	*8.872****

Panel B: Acquisition characteristics by forecast type

	Quantitative	Qualitative	*test of difference*
Deal size (US$ million)	14,680	9,561	*2.547****
Cash only (%)	0.074	0.241	*-3.666****
Stock only (%)	0.389	0.388	*0.012*
Mixed (%)	0.537	0.371	*2.889****
Completion (%)	0.991	0.696	*6.211****
Challenge (%)	0.259	0.257	*0.036*
Hostile (%)	0.028	0.080	*-1.847***
Premium (%)	31.445	34.263	*-0.765*
N (%)	0.37	0.62	*-6.945****

Panel C: Industry misvaluation (*INDERROR*) by forecast and method of payment

	Forecast	No forecast	*t-stat of difference*
Stock included	0.360	0.280	*2.025***
Cash only	0.302	0.260	*0.928*
t-stat of difference	1.960**	0.396	

Table 3

Forecast Characteristics

The table presents merger forecast characteristics for a sample of U.S. bids over the period 1990 to 2007. Panel A cross-tabulates forecast news frequencies for all qualitative and quantitative forecasts conditional on the payment method. Panel B shows the difference in average merger forecast compared to analyst consensus forecasts and actual ex-post outcomes scaled by prior end-of-year share price (merger forecast errors) in (1) and the difference in average merger forecast errors compared to guidance errors relative to analysts and actual outcomes to in (2) for the acquisition completion year (t) and the year following the acquisition completion (t+1). The t-statistics for testing the null hypothesis of a zero forecast error are given in italics. The number of observations is given in parentheses. Panel C tabulates abnormal forecast errors by method of payment. Abnormal forecast errors are estimated as the intercept of the univariate regression of merger forecast errors on the three-year average management guidance errors with standard errors clustered by firm. The t-statistics for testing the null hypothesis of a zero intercept are given in italics. The number of observations is given in parentheses. The symbols ***, **, * denote statistical significance at p<0.01, p<0.05, p<0.1 levels, respectively.

Panel A: Forecast news frequencies conditional on payment method				
		Forecast news		Total
		negative	positive	
Payment	cash only	76	47	123
		15.4%	9.5%	24.9%
	stock	152	218	370
		30.8%	44.2%	75.1%
	Total	274	63	493
		46.3%	53.7%	100%
χ^2			15.92	
p-value			<.0001	

Panel B: Forecast errors for quantitative forecasts		
	t	**t+1**
(1) Merger forecasts		
... compared to analyst consensus	0.0046	0.0085
	*1.28**	*2.16***
	(138)	(115)
... compared to actuals	0.0065	0.0159
	*1.75***	*3.64****
	(133)	(108)
(2) Merger forecast error		
... compared to guidance error relative to analysts	0.0051	0.0094
	*1.38**	*2.27***
	(138)	(115)
... compared to guidance error relative to actuals	0.0016	0.0065
	0.37	*1.46**
	(114)	(94)

Panel C: Abnormal forecast errors		
	cash only	**stock**
... compared to analyst consensus	0.237	0.250
	1.19	*2.40***
	(23)	(133)
... compared to actuals	0.995	0.362
	*1.81**	*1.84**
	(21)	(128)

Table 4

Determinants of Forecast Disclosure

The table presents results of probit regressions on the bidder's decision to disclose forecasts for a sample of U.S. bids from 1990-2007. The probit regressions of the dependent indicator variable *FORECAST*, which is equal to 1 if the bidder discloses a forecast and 0 otherwise, are run on the percentage of stock used as payment (*PSTOCK*), on an indicator variable equal to 1 if the bidder has provided earnings guidance during the previous year (*GUIDANCE*), an indicator variable equal to 1 if the bidder has disclosed forecasts in acquisitions of similar size in the past (*PAST*), the bidder's industry valuation error (INDERROR), an indicator variable for cash only deals (*CASH*) and a set of regulatory (*REGULATION*, *SOX*), deal and bidder control variables. Coefficients on other controls are suppressed. Regression (3) and (4) include other control variables such as *LITIGIOUS, GROWTH, FIRMERROR, FOCUS, VOLATILITY*. Regression (4) also includes industry and year fixed effects. The coefficients displayed in the table are marginal effects evaluated at zero on the propensity to forecast of a one unit change in the independent variables (or a change from zero to one for indicator variables). All variables are defined in Appendix A1. Heteroskedasticity robust z-statistics are reported in parentheses. The symbols ***, **, * denote statistical significance at p<0.01, p<0.05, p<0.1 levels, respectively.

	(1)	(2)	(3)	(4)
PSTOCK	0.003	0.002	0.002	0.001
	(5.07)***	(2.32)**	(2.22)**	(1.99)**
INDERROR		0.376	0.297	0.224
		(2.87)***	(2.08)**	(2.09)**
CASH		0.096	0.163	0.074
		(0.85)	(1.21)	(0.65)
*CASH*INDERROR*		-0.645	-1.010	-0.535
		(-2.21)**	(-2.76)***	(-1.95)*
TENDER			0.261	0.250
			(2.55)**	(2.17)**
TOEHOLD			-0.205	-0.101
			(-2.70)***	(-1.50)
COMPETITION			-0.140	-0.094
			(-2.44)**	(-1.66)*
PROPCOST			-0.097	-0.016
			(-0.48)	(-3.27)***
GUIDANCE	0.325	0.338	0.325	0.292
	(6.65)***	(6.56)***	(5.90)***	(3.53)***
PAST	0.159	0.146	0.101	0.084
	(2.38)**	(2.01)**	(1.24)	(1.08)
REGULATION	0.150	0.160	0.221	0.120
	(1.54)	(1.53)	(2.14)**	(1.08)
SOX	-0.147	-0.137	-0.152	-0.068
	(-1.93)*	(-1.84)*	(-2.02)**	(-1.03)
Observations	493	451	432	400
Pseudo adjusted R-squared	0.134	0.155	0.190	0.321

Table 4

The Effect of Forecast Disclosure on Acquisition Completion

The table presents results of probit and Heckman-type two-step treatment effects regressions on acquisition completion for a sample of U.S. bids from 1990-2007. The dependent variable *COMPLETION* is equal to 1 if the acquisition bid is successful and the acquisition consummated and zero if the acquisition bid is withdrawn/ unsuccessful. The first column presents the results of a single stage probit regression. The second set of columns show the results of the two-step Heckman-type treatment effects regressions, where in the first step (selection equation) the dependent variable *FORECAST* (1), *QUANTITATIVE* (2), is regressed in a probit estimation on the excluded instrument *PREDISPOSITION* and a set of control variables. The predicted propensity of the dependent variable from the first step estimation is included as regressor in the second stage probit regression with *COMPLETION* as dependent variable and the same set of control variables (excluding the instrument). The coefficients displayed in the selection column are marginal effects evaluated at the mean. The inverse Mills ratio is included in the outcome equation. The last column presents the results of the probit regression on *COMPLETION* for the subsample of bidders conditional on a forecast having been disclosed. The independent variable *EPSGROWTH* is the managerial estimate of the EPS growth rate for the combined firm for the full fiscal year after the acquisition completion (or if unavailable the managerial estimate of the EPS growth rate for the combined firm for the year of merger completion). Coefficients on other controls are suppressed in all regressions. Other controls include *LITIGIOUS, PREMIUM, TENDER, TOEHOLD, SOX, FIRMERROR,* and *GROWTH*. All regressions control for industry and year fixed effects. All variables are defined in Appendix A1. Heteroskedasticity robust z-statistics are reported in parentheses. The symbols ***, **, * denote statistical significance at p<0.01, p<0.05, p<0.1 levels, respectively.

| | Probit | Two-Step Treatment Effects Regression | | | | Probit |
| | | (1) | | (2) | | |
	All	Outcome	Selection	Outcome	Selection	Forecaster
FORECAST	0.176	0.486				
	(3.27)***	(2.71)***				
QUANTITAITVE				0.635		
				(4.95)***		
EPSGROWTH						0.167
						(3.51)***
PREDISPOSITION			0.464		0.267	
			(5.39)***		(3.61)***	
INDERROR	0.300	0.030	0.709	0.007	0.910	0.262
	(2.26)**	(1.03)	(1.90)*	(0.26)	(2.44)**	(2.53)**
PSTOCK	0.001	-0.001	0.007	-0.001	0.007	-0.000
	(0.33)	(-1.01)	(3.78)***	(-1.98)**	(3.76)***	(-0.13)
FOCUS	-0.099	-0.122	0.274	-0.114	0.219	-0.047
	(-2.26)**	(-2.76)***	(1.77)*	(-2.81)***	(1.42)	(-1.65)*
CHALLENGE	-0.471	-0.365	-0.497	-0.369	-0.280	-0.305
	(-6.50)***	(-6.00)***	(-2.54)**	(-6.83)***	(-1.38)	(-4.20)***
RELSIZE	0.001	0.000	0.000	0.000	0.000	0.000
	(1.76)*	(0.68)	(0.68)	(0.31)	(0.38)	(1.19)
TERMFEE	0.201	0.158	0.259	0.154	0.163	0.078
	(3.93)***	(3.40)***	(1.59)	(3.48)***	(1.01)	(2.59)***
VOLATILITY	-5.425	-3.495	-10.032	-2.821	-21.111	-3.890
	(-2.39)**	(-2.20)**	(-1.53)	(-1.92)*	(-2.41)**	(-2.90)***
INVERSE MILLS		-0.212		-0.619		
		(-1.96)**		(-2.57)***		
Observations	418	419	419	419	419	266
Chi2	139.5	263.8	263.8	233.6	233.6	96.14

Table 5

The Effect of Forecast Disclosure on Time to Completion

The table presents results of a Cox proportional hazard model for the duration from announcement until acquisition completion for a sample of U.S. bids from 1990-2007. The dependent variable is the time to event (in days) until acquisition completion. The table reports coefficients on the indicator variable *FORECAST*, which is equal to 1 if the bidder disclosed a forecast and 0 otherwise (columns 1), on the type of forecast with QUANTITATIVE equal to 1 if a quantitative forecast is disclosed and QUALITATIVE equal to 1 if a qualitative forecast is disclosed (column 2) and a set of deal and bidder characteristics. The last column presents the results for the subsample of bidders conditional on a forecast having been disclosed. The independent variable *EPSGROWTH* is the managerial estimate of the EPS growth rate for the combined firm for the full fiscal year after the acquisition completion (or if unavailable the managerial estimate of the EPS growth rate for the combined firm for the year of merger completion). Hazard rates can be derived from the coefficients by taking the exponential of the coefficients. Coefficients on industry and year fixed effects as well as on other controls are suppressed. Other control variables include *TENDER, PREMIUM, RELSIZE*. All variables are defined in Appendix A1. The z-statistics are reported in parentheses. The symbols ***, **, * denote statistical significance at $p<0.01$, $p<0.05$, $p<0.1$ levels, respectively.

	(1) All	(2) All	(3) Forecaster
FORECAST	0.346		
	(1.97)**		
- *QUANTITATIVE*		0.822	
		(4.05)***	
- *QUALITATIVE*		0.131	
		(0.70)	
EPSGROWTH			0.071
			(1.75)*
PSTOCK	-0.005	-0.007	-0.006
	(-3.08)***	(-3.78)***	(-2.64)***
INDERROR	0.174	0.147	0.087
	(2.42)**	(1.99)**	(1.12)
COMPETITION	-1.407	-1.379	-1.068
	(-6.03)***	(-5.91)***	(-3.82)***
CAR(-1,+1)	1.370	1.306	1.558
	(1.72)*	(1.63)	(1.33)
FOCUS	-0.219	-0.235	-0.216
	(-1.58)	(-1.68)*	(-1.31)
TERMFEE	0.396	0.403	0.108
	(2.53)**	(2.53)**	(0.56)
LITIGIOUS	0.663	0.573	0.896
	(2.11)**	(1.86)*	(2.56)**
VOLATILITY	-17.440	-14.031	-20.107
	(-2.16)**	(-1.78)*	(-1.97)**
TOEHOLD	-0.213	-0.213	-0.486
	(-0.87)	(-0.86)	(-1.38)
Observations	397	397	279
Pseudo R-squared	0.05	0.05	0.06

Table 6

The Effect of Forecast Disclosure on Acquisition Premium

The table present results of a Heckman-type two-step treatment effects regression on the acquisition premium in U.S. bids from 1990-2007. The selection column reports coefficients of the first-stage selection equation estimated by probit, in which the dependent variable is *FORECAST* (columns under (1)), which is equal to 1 if the bidder disclosed a forecast and 0 otherwise, *QUANTITATIVE* (columns under (2)), which is equal to 1 if the bidder disclosed a quantitative forecast and 0 otherwise. The predicted propensity of dependent variable from the first step estimation is included as regressor in the second stage OLS regression with *PREMIUM* as dependent variable and the same set of control variables (excluding the instrument). The coefficients displayed in the selection column are marginal effects evaluated at the mean. The inverse Mills ratio is included in the outcome equation. The last column presents the results of the OLS regression on *PREMIUM* for the subsample of bidders conditional on a forecast having been disclosed. The independent variable *EPSGROWTH* is the managerial estimate of the EPS growth rate for the combined firm for the full fiscal year after the acquisition completion (or if unavailable the managerial estimate of the EPS growth rate for the combined firm for the year of merger completion). Coefficients on other controls are suppressed in all regressions. Other controls include *SIZE, RELSIZE, FOCUS.* All regressions control for industry and year fixed effects. All variables are defined in Appendix A1. The t-statistics (z-statistics for the probit regression) are reported in parentheses. The symbols ***, **, * denote statistical significance at p<0.01, p<0.05, p<0.1 levels, respectively.

| | Two-Step Treatment Effects Regression | | | | Probit |
| | (1) | | (2) | | |
	Outcome	Selection	Outcome	Selection	Forecaster
FORECAST	-12.487				
	(-2.42)**				
QUANTITATIVE			-14.273		
			(-2.23)**		
EPSGROWTH					-1.553
					(-2.12)**
PREDISPOSITION		0.766		0.235	
		(5.53)***		(3.05)***	
PSTOCK	-0.041	0.006	-0.036	0.007	-0.171
	(-1.29)	(2.80)***	(-1.10)	(3.64)***	(-3.09)***
INDERROR	0.360	0.067	0.283	0.019	-0.301
	(0.39)	(0.48)	(0.31)	(0.36)	(-.28)
CHALLENGE	1.338	-0.591	2.529	-0.293	14.135
	(0.45)	(-2.78)***	(0.87)	(-1.43)	(2.34)**
TERMFEE	-0.228	0.304	-0.854	0.163	-5.272
	(-0.10)	(1.70)*	(-0.37)	(1.03)	(-1.13)
TENDER	11.116	0.910	8.424	0.062	9.604
	(2.81)***	(3.18)***	(2.22)**	(0.23)	-0.85
TOEHOLD	-6.377	-0.621	-5.444	-0.280	-17.028
	(-1.47)	(-2.15)**	(-1.27)	(-0.91)	(-2.11)**
POOLING	8.907		8.694		14.505
	(3.02)***		(2.99)***		(2.20)**
INVERSE MILLS	10.37		0.399		
	(3.08)***		(2.27)**		
Observations	451	451	451	451	155
Chi2/ Adj. R-Squared	57.64	57.64	27.26	27.26	0.385

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Table 7

Acquisition Premium – Endogenous Switching Regressions

The table present results of the endogenous switching regression analysis on the acquisition premium in U.S. bids from 1990-2007. In Panel A the selection column reports coefficients of the first-stage selection equation estimated by probit, in which the dependent variable is *FORECAST,* which is equal to 1 if the bidder disclosed a forecast and 0 otherwise. The coefficients displayed in the selection column are marginal effects evaluated at the mean. The second and third columns show results of the second-stage OLS regressions on the acquisition premium for bidders that disclose forecasts and those that do not, respectively. Coefficients on other controls are suppressed. Other controls include *SIZE, RELSIZE, FOCUS.* All regressions control for industry and year fixed effects. All variables are defined in Appendix A1. Panel B reports results of the what-if analysis based on the switching regression estimates. The t-statistics (z-statistics for the probit regression) are reported in parentheses. The symbols ***, **, * denote statistical significance at p<0.01, p<0.05, p<0.1 levels, respectively.

Panel A: Switching Regressions			
	Selection	Forecast	No Forecast
PREDISPOSITION	0.318		
	(4.32)***		
PSTOCK	0.007	-0.028	-0.017
	(4.38)***	(-0.68)	(-0.30)
INDERROR	0.305	0.949	-10.062
	(1.08)	(0.90)	(-1.44)
COMPETITION	-0.486	1.872	-0.082
	(-2.86)***	(0.47)	(-0.02)
TERMFEE	0.238	-1.846	9.601
	(1.71)*	(-0.61)	(2.22)**
TENDER	0.695	12.944	13.496
	(3.17)***	(2.63)***	(1.66)*
TOEHOLD	-0.567	-11.382	-7.702
	(-2.34)**	(-1.86)*	(-1.04)
POOLING		5.814	-2.545
		(1.74)*	(-0.37)
INVERSE MILLS		1.366	0.306
		(8.40)***	(0.67)
Observations	451	451	451
Chi2	16.03	16.03	16.03
Panel B: Counterfactual Analysis			
		Forecast	No Forecast
Actual Premium		30.41%***	29.50%***
Hypothetical Premium		39.13%***	-4.40%***
Difference		8.72%***	-33.90%***

Table 8

Bidder Announcement Abnormal Returns and EPS Growth Forecast

The table presents the results of OLS regressions on bidder three-day cumulative abnormal returns (CARs) around the forecast announcement of the sample of U.S. acquisitions over the period 1990-2007. Columns (1) present results for the sub-sample of bidders that disclose forecasts on the same day with the merger announcement (i.e, the forecast announcement day is equal to the merger announcement day). Columns (2) present results for all forecasts (i.e, the forecast announcement day is equal to or after the merger announcement day). Columns (3) present results for the sub-sample of bidders that disclose forecasts on the same day with the merger announcement matched with bidders that do not disclose forecasts. The matching algorithm uses propensity score matching based on the Epanechnikov kernel using propensity scores estimated from the probit regression in Table 4, column 4. *EPSGROWTH* is the managerial forecast of the growth in EPS due to the impact of the acquisition for the first full fiscal year after the acquisition (t+1) and the acquisition completion year (t). Other control variables included in the regressions, but not shown in the table include *RELSIZE, FIRMERROR, FOCUS, COMPETITION, POOLINGS, LEVERAGE*. All regressions control for industry and year fixed effects. All variables are defined in Appendix A1. Heteroskedasticity robust t-statistics are reported in parentheses. The symbols ***, **, * denote statistical significance at $p<0.01$, $p<0.05$, $p<0.1$ levels, respectively.

	(1)		(2)		(3)	
	Forecasts at merger announcement		All forecasts		Forecasts at merger announcement (matched sample)	
EPSGROWTH	0.004		0.003		0.004	
	(2.40)**		(2.12)**		(2.43)**	
EPSGROWTH [t+1 only]		0.005		0.004		0.005
		(2.64)**		(2.11)**		(2.20)**
PSTOCK	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	(-2.16)**	(-1.15)	(-2.05)**	(-1.07)	(-1.85)*	(-0.68)
INDERROR	-0.030	0.071	-0.023	0.009	0.008	0.059
	(-3.01)***	(1.40)	(-2.71)***	(0.53)	(0.24)	(1.08)
GROWTH	-0.032	0.003	-0.025	0.008	-0.034	0.003
	(-3.19)***	(0.20)	(-2.86)***	(0.47)	(-3.12)***	(0.10)
PREMIUM	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	(-3.29)***	(-1.67)	(-3.70)***	(-2.74)***	(-2.59)**	(-1.08)
SIZE	0.004	-0.016	0.003	-0.013	0.002	-0.017
	(1.06)	(-1.95)*	(0.98)	(-2.42)**	(0.50)	(-1.73)*
TENDER	0.014	-0.087	0.022	-0.011	0.013	-0.083
	(0.62)	(-2.53)**	(1.49)	(-0.43)	(0.50)	(-1.67)
Observations	200	71	293	107	177	60
Adjusted R-squared	0.1	0.08	0.08	0.06	0.08	0.01

Table 9

Bidder CARs – Endogenous Switching Regressions

The table present results of the endogenous switching regression analysis on the bidder three-day cumulative abnormal returns around the merger announcement in U.S. bids from 1990-2007. In Panel A the selection column reports coefficients of the first-stage selection equation estimated by probit, in which the dependent variable is *FORECAST,* which is equal to 1 if the bidder disclosed a forecast and 0 otherwise. The coefficients displayed in the selection column are marginal effects evaluated at the mean. The second and third columns show results of the second-stage OLS regressions on bidder CARs for bidders that disclose forecasts and those that do not, respectively. Coefficients on other controls are suppressed. Other controls include *FIRMERROR, RELSIZE, POOLING, LEVERAGE.* All regressions control for industry and year fixed effects. All variables are defined in Appendix A1. Panel B reports results of the what-if analysis based on the switching regression estimates. The t-statistics (z-statistics for the probit regression) are reported in parentheses. The symbols ***, **, * denote statistical significance at p<0.01, p<0.05, p<0.1 levels, respectively.

Panel A: Switching regressions			
	Selection	Forecast	No Forecast
PREDISPOSITION	0.408		
	(5.07)***		
PSTOCK	0.006	-0.001	-0.000
	(3.58)***	(-1.73)*	(-1.65)*
INDERROR	0.439	-0.025	-0.067
	(1.40)	(-2.67)***	(-2.11)**
GROWTH	0.060	-0.028	-0.017
	(0.46)	(-3.17)***	(-1.16)
COMPETITION	-0.397	-0.014	0.005
	(-2.20)**	(-1.20)	(0.23)
TENDER	0.479	0.037	-0.001
	(2.03)**	(2.42)**	(-0.02)
FOCUS	0.282	-0.003	-0.004
	(2.02)**	(-0.38)	(-0.22)
SIZE	0.027	0.007	0.004
	(0.51)	(1.99)**	(0.61)
PREMIUM		-0.001	-0.000
		(-3.98)***	(-0.47)
INVERSE MILLS		0.660	-0.066
		(2.13)**	(-0.21)
Observations	416	416	416
Chi2	11.47	11.47	11.47
Panel B: Counterfactual Analysis			
		Forecast	No Forecast
Actual CAR		-2.60%***	-2.88%***
Hypothetical CAR		-4.13%***	-2.44%***
Difference		-1.53%**	0.44%

Table 10

The Costs of Forecast Disclosure: Post Acquisition Litigation & CEO Turnover

The table present results of a Heckman-type two-step treatment effects regression on post-acquisition litigation and CEO turnover in U.S. bids from 1990-2007. The selection column reports coefficients of the first-stage selection equation estimated by probit, in which the dependent variable is *FORECAST* (columns under (1)), which is equal to 1 if the bidder disclosed a forecast and 0 otherwise, *QUANTITATIVE* (columns under (2)), which is equal to 1 if the bidder disclosed a quantitative forecast and 0 otherwise. The predicted propensity of dependent variable from the first step estimation is included as regressor in the second stage probit with *LITIGATION* and *TURNOVER* as dependent variable, respectively, and the same set of control variables (excluding the instrument). *LITIGATION* is an indicator variable equal to 1 if the bidder is involved in a shareholder lawsuit related to the acquisition within three years after the acquisition completion *TURNOVER* is an indicator variable equal to 1 if the bidder CEO left the firm within two years after the acquisition completion or withdrawal. The coefficients displayed in the table are marginal effects evaluated at the mean. The inverse Mills ratio is included in the outcome equation. Coefficients on other controls are suppressed. Other controls include *FIRMERROR, RELSIZE, SOX* as well as industry and year fixed effects. All variables are defined in Appendix A1. The z-statistics for the probit regressions are reported in parentheses. The symbols ***, **, * denote statistical significance at p<0.01, p<0.05, p<0.1 levels, respectively.

| | LITIGATION | | | | CEO TURNOVER | | | |
| | (1) | | (2) | | (1) | | (2) | |
	Outcome	Selection	Outcome	Selection	Outcome	Selection	Outcome	Selection
FORECAST	0.262				0.236			
	(1.97)**				(1.87)*			
QUANTITATIVE			0.388				0.645	
			(4.74)***				(7.29)***	
PREDISPOSITION		0.643		0.200		0.597		0.313
		(4.77)***		(2.19)**		(6.22)***		(4.22)***
PSTOCK	0.000	0.008	-0.000	0.005	0.000	0.007	-0.001	0.006
	(0.46)	(3.72)***	(-0.44)	(2.77)***	(-0.74)	(4.13)***	(-2.03)**	(3.92)***
INDERROR	-0.007	0.445	-0.045	0.568	-0.014	0.554	-0.016	0.019
	(-0.29)	(1.17)	(-1.73)*	(1.52)	(-0.84)	(1.82)*	(-0.87)	-0.4
CHALLENGE	-0.049	0.031	-0.095	0.232	-0.015	-0.39	-0.015	-0.323
	(-0.74)	(0.10)	(-1.32)	(0.83)	(-0.28)	(-2.18)**	(-0.26)	(-1.71)*
LITIGIOUS	0.168	0.288	0.155	-0.013	0.017	0.074	0.066	-0.123
	(3.38)***	(1.20)	(1.89)*	(-0.06)	-0.21	-0.41	-0.78	(-0.73)
FOCUS	-0.012	-0.005	-0.004	-0.112	0.027	0.264	-0.002	0.156
	(-0.33)	(-0.03)	(-0.10)	(-0.71)	(-0.63)	(1.91)*	(-0.05)	-1.19
TENDER	-0.061	0.210	-0.013	-0.064	0.014	0.449	0.072	-0.024
	(-0.92)	(0.69)	(-0.18)	(-0.23)	-0.2	(1.90)*	(-0.92)	(-0.11)
PREMIUM	0.000	0.000	0.000	-0.002	-0.001	0.004	0	0.002
	(0.21)	(-0.04)	(0.44)	(-0.75)	(-0.69)	-1.33	(-0.48)	(-0.66)
REGULATION	-0.194	-0.455	-0.136	-0.390	0.003	-0.506	-0.052	-0.017
	(-2.39)**	(-0.69)	(-0.44)	(-0.88)	(-0.01)	(-2.58)***	(-0.17)	(-0.10)
INVERSE MILLS	-0.144		-0.899		-0.253		-1.009	
	(-1.78)*		(-4.56)***		(-1.27)		(-5.96)***	
Observations	323	323	323	323	451	451	451	451
Chi2	51.37	51.37	102.5	102.5	43.72	43.72	98.79	98.79

Table 11

Robustness Test: Merger outcomes and management forecast credibility

The table present results of a Heckman-type two-step treatment effects regression of merger forecasts on completion likelihood, time to completion, acquisition premium, post-acquisition litigation and CEO turnover in U.S. bids from 1990-2007 conditioning on prior forecasting credibility of the acquiring firm's management. The respective columns report coefficients of the second stage regressions on the respective dependent variables stated on top of each column, with the same set of control variables as in the previous tables conditioning on whether credibility==1 (Panel A) or credibility==0 (Panel B). The variables and the regression design are the same as in Tables 4-10. The coefficients displayed in the table are marginal effects evaluated at the mean. The inverse Mills ratio is included in the outcome equation. Coefficients on all other controls are suppressed. All variables are defined in Appendix A1. The statistics for the regressions are reported in parentheses. The symbols ***, **, * denote statistical significance at $p<0.01$, $p<0.05$, $p<0.1$ levels, respectively.

Panel A: Credibility==1	COMPLETION	DURATION	PREMIUM	LITIGATION	TURNOVER
FORECAST	0.44	-376.83	-10.48	-0.01	-0.33
	(2.21)**	(-2.74)***	(-1.76)*	(-0.04)	(-1.76)*
OTHER CONTROLS	yes	yes	yes	yes	yes
INDUSTRY & YEAR FE	yes	yes	yes	yes	yes
Observations	200	187	221	160	221
Panel B: Credibility==0					
FORECAST	-0.111	-253.17	-4.62	0.55	0.67
	(-0.34)	(-0.57)	(-0.65)	(1.97)**	(3.11)***
OTHER CONTROLS	yes	yes	yes	yes	yes
INDUSTRY & YEAR FE	yes	yes	yes	yes	yes
Observations	143	136	150	103	150