Can Analysts Analyze Mergers?

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Abstract

Merger and Acquisitions (M&As) provide a plausibly exogenous shock to analysts’ decision to drop, add or maintain coverage of the merged firms. Higher caliber analysts covering the acquiring and target firms before the M&A deal are more likely to cover the merged firm. The majority of target analysts drop coverage of the merged firm following the delisting of the target stock. However, the target analysts who retain coverage provide more accurate earnings forecasts than the remaining acquirer analysts. A greater percentage of target analysts retaining coverage is associated with better long-run stock performance. We do not find this relation with acquirer analysts. Our evidence is consistent with the hypothesis that the remaining target analysts exert more effort than the acquirer analysts in understanding the M&A transaction, and their coverage decision reveals more information about the prospects of the merged firms.

Keywords: Merger and acquisition, analyst coverage, forecast accuracy, abnormal return.

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I. Introduction

Large-scale mergers and acquisitions (M&As) significantly transform the merging firms. Since the M&A decision is primarily made by merging firms’ executives and directors, this event provides a plausibly exogenous shock and thus a better setting than prior studies (e.g., McNichols and O’Brien, 1997) to study financial analysts’ decision to drop, add and maintain coverage of the merged firms. In this paper, we study how M&As shape different groups of analysts’ coverage decisions and whether this process reveals information about the quality of analysts’ research and the future performance of merged firms.

We develop three hypotheses in studying the determinants of analysts’ decisions to cover the merged firm. First, since analysts prefer to cover firms for which they can provide accurate earnings forecasts due to reputational concerns, we hypothesize that among those covering the merging firms before the M&A deal, higher caliber analysts are more likely to cover the merged firm. Second, an important source of information for analysts comes from communications with the executives and directors of the firm that they cover. Our second hypothesis stipulates that those analysts with personal connections with corporate insiders of the merging firms are more likely to cover the merged firm. Such connections may provide the analysts with an advantage in obtaining information on the M&A transaction and prospects of the merged firm.

Third, in many M&As, the acquiring firm has multiple lines of businesses while the target firm is much smaller with fewer business segments; moreover, publicly traded targets are delisted after a completed M&A deal. Therefore, for analysts covering the target firm (“target analysts”) their decision to cover the merged firm is similar to initiating a new coverage for a firm that is larger and more complex. For analysts covering the acquirer (“acquirer analysts”), on the other hand, their decision is whether or not to continue covering the acquiring firm in its post-acquisition form. Based on these differences, we hypothesize that former target analysts expend more effort than former acquirer analysts in studying the M&A transaction before making the decision to cover the merged firm.

In testing these hypotheses, we look at three groups of analysts covering the merged firm: 1) “Former target analysts” are analysts who cover the target before the M&A and go on to cover the merged firm after the M&A; 2) “former acquirer analysts” are analysts who cover the acquirer before the M&A and continue to cover it in its merged form after the M&A; and 3) “new analysts” who had covered neither the target nor the acquirer but now cover the merged firm. While the first two

2 There is an extensive strand of literature on how analysts’ reputation, institutional investors’ evaluations of analysts’ research, and investment banking relationships affect the accuracy of analysts’ earnings forecasts and recommendations (e.g., Stickel, 1992; Michaely and Womack, 1999; Dechow, Hutton, and Sloan, 2000; Hong and Kubik, 2003, Fang and Yasuda, 2009; see Michaely and Womack, 2005, for a review).
hypotheses—those analysts with higher quality and an information advantage are more likely to cover the merged firm—apply to target and acquirer analysts symmetrically, the third hypothesis has different implications for these two groups. Since former target analysts must exert more effort in studying the acquiring firm and the M&A transaction, their decisions can reveal more information about the quality of their research for and the prospects of the merged firm.

In the second part of the paper we examine how analysts’ coverage decisions relate to the accuracy of their earnings forecasts and long run stock performance of the merged firm. The third hypothesis on the determinants of coverage implies that the former target analysts provide more accurate earnings forecasts than those provided by the former acquirer analysts. Prior literature has shown that analysts are more likely cover firms for which they see better prospects (e.g., McNichols and O’Brien, 1997; Das, Guo, and Zhang, 2006). In this regard, the third hypothesis suggests that a greater fraction of target analysts retaining coverage of the merged firm reveals more favorable information about the prospects of the merged firm. A merged firm that attracts a greater number of new analysts should also have better prospects.

We build a sample of 1,787 completed M&A deals from 1985 to 2005 with matched data on individual analysts, their affiliated investment banks and their earnings forecasts before and after the M&A deal. Not surprisingly, close to half of the acquirer analysts stay to cover the merged firm, while the majority of the target analysts drop coverage. Consistent with the first hypothesis, we find that higher quality acquirer and target analysts are more likely to retain coverage of the merged firm. We use an array of measures to capture analyst quality, including whether an analyst is an “All Star,” works for a large brokerage firm, and provides more accurate earnings forecasts relative to her peers prior to the M&A deal. For the second hypothesis, we follow prior literature (e.g., Cohen, Frazzini, and Malloy, 2010) and use an indicator that takes the value of one if an analyst attended the same school (undergraduate or graduate) with the merging firm’s CEO or board members to proxy for personal connections. However, we do not find analysts’ school ties to be a significant factor for acquirer or target analysts coverage decision on a subsample of deals with manually collected information on education.

More importantly, we find evidence consistent with the third hypothesis based on analysts’ effort in studying the M&A deal. A target analyst is more likely to cover the merged firm if the acquiring firm’s announcement period return and trading volume are higher, or when the deal premium (offer price over target price four weeks prior to the deal announcement date) is lower, all of which proxy for a higher quality M&A deal. When the acquirer’s stock has higher standard deviations, indicating higher uncertainty of the merged firm, target analysts are more likely to drop coverage.
These variables are not significant factors for acquirer analysts’ decision to cover the merged firms; in fact, they are more likely to cover the merged firm when the deal premium is higher. The contrast between the two groups is consistent with the hypothesis that, facing a more challenging decision, former target analysts have exerted considerable time and effort in studying both the acquiring firm and the M&A deal before choosing to cover the merged firm.

When we examine earnings forecasts for the merged firm, we find that the forecasts of the former target analysts who have no experience in covering the acquirer are more accurate than those of the former acquirer analysts and new analysts. In our final set of tests, we find that the percentage of target analysts covering the merged firm is positively associated with the firm’s long-term abnormal stock performance after controlling for firm and M&A-deal characteristics. This result is robust to different post-merger time horizons (e.g., the first three years or the second and third years after deal completion) and different long-run stock-performance measures. By contrast, we do not find that the percentage of acquirer analysts covering the merged firm is related to the firm’s long-run stock performance. There is some evidence that merged firms that attract a greater number of new analysts have better long-term stock performance.

Since the target firm accounts for a small portion of the merged firm’s assets and operations, target analysts who have not covered the acquirer face a potentially substantial disadvantage in covering the merged firm relative to the acquirer analysts. Our results on analysts’ school ties indicate that it is difficult to argue that the former target analysts have more information than acquirer analysts in covering the merged firm. Hence, the evidence from the determinants of coverage, earnings forecasts and long-term performance of the merged firms is more consistent with the hypothesis that the former target analysts have exerted more effort in studying the M&A transaction than the former acquirer analysts. The additional effort overcomes their lack of experience in covering the acquirer before the M&A deal and enhances their research quality of the merged firm.

Our paper extends the literature on M&As and on the role of analysts in facilitating information transmission. McNichols and O'Brien (1997) track the coverage process—from initiation to dropping coverage—of a small sample of analysts. They find that analysts tend to issue more favorable recommendations and forecasts for companies that they have recently added coverage, but their evaluations tend to be less favorable before dropping coverage of a firm. It is, however, difficult to establish a causal link between analysts’ coverage decision and the degree of optimism of their research given a number of reasons for analysts to add or drop coverage. By contrast, we use the M&A setting as an identification strategy to study analysts’ coverage decisions—since M&A is a decision made by the merging firms, it provides an exogenous shock to analysts’ coverage decisions. In
particular, the majority of target analysts drop coverage due to the delisting of the target stock and because investment banks do not want to provide duplicate coverage. Therefore, the target analysts’ endogenous decision to provide coverage can be based on their skills, information, and effort as we hypothesized, and, this decision process also has implications for their research quality and the subsequent performance of the merged firm.

Das et al. (2006) examine analyst coverage decisions and the performance of Initial Public Offering (IPO) firms. They find that greater (unexpected) analyst coverage is associated with better future performance. Because IPOs introduce private firms to the capital markets for the first time, all analysts are “symmetric” in that they decide whether or not to initiate coverage for firms that have had no prior coverage. Large scale M&As, however, lead to significant changes to merging firms that already have analyst coverage. This provides an opportunity to compare different groups of analysts covering the merged firms and to explore the source of the predictability of analysts’ coverage.

Prior work studying the long-term stock performance of post-merger firms focuses on firm and deal characteristics without examining analysts’ coverage decisions. We extend this literature by documenting that, as a group, the target analysts who choose to provide coverage for the merged firm can predict long-term stock performance. A strategy of long stocks of merged firms with high retention rates of target analysts and short stocks of merged firms with no retention of target analysts generates significant abnormal returns.

The rest of the paper is organized as follows. Section II describes our empirical methods, the M&A sample, and the analyst data. Section III presents results on the determinants of analyst coverage decisions, on the quality of analysts’ research on merged firms, and on whether analyst turnover reveals information on the future performance of merged firms. Section IV concludes.

II. Methodology and Data Descriptions

We study two related questions using large scale M&As as an exogenous shock to analysts’ decisions to cover merged firms. We first examine the determinants of different groups of analysts’ decisions to drop, maintain and add coverage of the merged firm. We then examine the implications of this coverage process on the research quality of individual analysts covering the merged firm and the firm’s long-run stock performance.

3 Our results also extend the literature on the investment value of analysts’ research, a literature which generally focuses on the overall and specific aspects of analysts’ earnings forecasts and recommendations (e.g., Stickel, 1995; Womack, 1996; Barber et al., 2001; Chen and Jiang, 2006). In addition, Kecskes and Womack (2008) show that firms added (dropped) by analysts generally have positive (negative) contemporaneous abnormal returns and zero (positive) future abnormal returns.
As discussed earlier, we develop three hypotheses on why analysts choose to cover the merged firm. Existing literature finds that analysts are more likely to cover firms for which they can provide accurate earnings forecasts due to reputational concerns. In addition, prior research shows that the quality of analyst coverage is related to firms’ choice of underwriters in security offerings (e.g., Krigman, Shaw, and Womack, 2001), a key line of business for investment banks that employ analysts. Based on these findings, our first hypothesis states that higher caliber acquirer and target analysts are more likely to cover the merged firms (H1). Our second hypothesis states that analysts covering the merging firms with personal ties to the executives and directors are more likely to retain coverage of the merged firm (H2). Such connections with corporate insiders may provide these analysts with an advantage in obtaining information on the M&A deal.

M&As provide a unique opportunity to study the potentially different decisions of target and acquirer analysts. As stated above, a target analyst’s decision to cover the merged firm after the M&A deal is similar to initiating coverage for a new firm, one that is much larger and more complex than the target firm. On the other hand, acquirer analysts decide whether or not to continue covering the acquiring firm. Since target analysts face a more challenging decision than acquirer analysts, we hypothesize that target analysts expend more effort than acquirer analysts in studying the M&A transaction before deciding to cover the merged firm (H3).

We estimate Probit models for the determinants of target and acquirer analysts’ decisions to cover the merged firm. The dependent variable equals 1 if an acquirer or target analyst (i) covers the merged firm following the completion of an M&A deal (k) in year t, and equals 0 otherwise. We include three sets of explanatory variables. First, we include measures of analyst research quality and reputation (before the M&A deal) as direct tests of (H1). Second, we include analysts’ school ties with corporate insiders as a measure for their information advantage and a direct test for (H2). Third, we include characteristics of the acquiring and target firms as well as those of the M&A transaction to test (H3). Specifically, if target analysts exert more effort studying the merging firms and the M&A transaction than acquirer analysts before deciding to cover the merged firm, we expect that target analysts are more likely to cover higher quality merging firms and M&A deals. But we expect weaker or no relations between the quality of merging firms and M&A deals and the acquirer analysts’ coverage decision.

In the second part of our empirical tests, we examine how analysts’ coverage decisions relate to the quality of their earnings forecasts for the merged firm. Specifically, we estimate the following OLS model:
Analyst Forecast Error_{i,j,k,t} = \beta^1 \text{Target}_{k,t} + \gamma^1 \text{New}_{k,t} + \text{Analyst, Firm, M&A Deal Controls & Interactions} + e^1_{i,j,k,t}.

In Equation (1), the dependent variable is the forecast error of individual analysts’ earnings forecasts for the merged firm, and the data vary by analyst (i), merged firm (j), deal (k), and year (t). Following prior literature, we define forecast error as the absolute value of the difference between the actual annual earnings and the first annual earnings forecast made by an analyst for the first fiscal year after the deal completion date, scaled by the stock price of the merged firm at the end of the forecasting month. We include an indicator for former target analysts and another indicator for newly added analysts (former acquirer analysts are the default group). We control for a set of firm and M&A deal characteristics that could potentially affect the quality of forecasts.

Given that the target firm typically accounts for only a small portion of the merged firm’s assets and operations, target analysts who have not covered the acquirer face a potentially substantial disadvantage in covering the acquiring firm relative to the acquirer analysts. On the other hand, (H3) predicts that that \( \beta^1 \), the coefficient on the target indicator should be negative, since target analysts have exerted more effort in studying the M&A deal before deciding to cover the merged firm. Similar arguments imply that \( \gamma^1 \), the coefficient on new analysts, can be negative (due to their lack of experience covering the acquiring firm) or positive (more effort exerted studying the M&A deal as compared to acquirer analysts).

In our final set of tests, we examine the relationship between analysts’ coverage decisions and the long-run abnormal stock performance of the merged firms. This approach is similar to many prior studies following a major corporate event. We estimate the following OLS model:

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\text{Long-run Abnormal Stock Performance}_{k,t} = \beta^2 \text{Target}\_\text{Stay}\%_{k,t} + \gamma^2 \text{New}\_\%_{k,t} + \eta^2 \text{Acquirer}\_\text{Stay}\%_{k,t} + \text{Firm, M&A Deal Controls & Interactions} + e^2_{k,t},
\]

where \( \text{Target}\_\text{Stay}\% \) is the percentage of former target analysts covering the merged firm, and \( \text{Acquirer}\_\text{Stay}\% \) is the percentage of former acquirer analysts covering the merged firm. We interpret the new analysts’ role as partially replacing acquirer analysts who drop coverage. Hence, we use the number of new analysts scaled by the number of analysts covering the acquirer prior to the M&A deal as the independent variable (\( \text{New}\_\% \)). Equation (2) is estimated for merged firm \( k \) in year \( t \) during

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4 See, for example, Loughran and Ritter (1997) for SEOs, Loughran and Vijh (1997) and Rau and Vermaelen (1998) for M&As. Barber et al. (2001, 2006) show that the distribution and changes in analysts’ recommendations can predict stock returns, while Das et al. (2006) show greater analyst coverage predicts better post-IPO stock performance.
which the M&A deal is completed. If an analyst chooses to cover a merged firm based on her favorable assessment of the M&A deal, then a greater number of analysts covering the merged firm should be associated with better stock performance. Once again, given the differences in their decision processes and (H3), the percentage of target (and new) analysts cover the merged firm may convey more information about the prospects of the M&A deal than the percentage of acquirer analysts does. Therefore, we expect $\beta_2$ (and $\gamma_2$) to be positive and significant while we expect $\eta_2$ to be insignificant.

**M&A Sample**

The initial sample is extracted from the Securities Data Company (SDC), in accordance with the following criteria commonly used in the literature: (1) an M&A deal is announced between January 1, 1985 and December 31, 2005; (2) both the acquiring and target firms are publicly listed and traded in the U.S.; (3) the mode of the deals is “merger” or “acquisition” in which 100% of the target firm is acquired (that is, partial acquisitions are excluded); and, (4) the status of the deal is “completed.” For each completed deal, we manually cross-check the accuracy of the SDC information using both The Center for Research in Security Prices (CRSP) and Dow Jones News Retrieval Services to exclude deals in which the target firm is delisted for reasons other than the M&A. We also require that both the target and the acquiring firm are included in the CRSP database and S&P’s COMPUSTAT Research Tape, from which financial statement and stock price data are extracted. We further require each acquiring firm in the sample to have a one-year pre-event window and a one-year post-event window during which there is no other M&A transaction. This criterion ensures that any changes in analysts’ coverage and their research quality are not confounded by multiple events involving the same acquirer. Finally, we require that the target firm is at least 5% of the size of the acquiring firm and that the deal value is at least $10 million, so that the M&A transactions in our sample are substantial investments for the acquiring firms. The above selection procedure yields a sample of 1,787 completed deals from 1985 to 2005.

Panel A of Table 1 provides descriptive statistics for our M&A sample. Not surprisingly, most of the deals were announced during the booming stock market of the late 1990s; the average deal value increased from $879 million in the late 1980s to $2.133 billion after 2000 (inflation-adjusted, based on the 2005 dollar). One-quarter of the 1,787 transactions are diversifying mergers, defined by the target and acquiring firms having different two-digit SIC codes. 62% (38%) of the transactions are stock (cash) acquisitions, defined as more than half of the deal value being financed by the acquirer’s stock.

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5 Firm size is measured by the “enterprise value”—the sum of market value of equity and the book values of debt and preferred stocks—at the fiscal year end prior to the M&A announcement.
81% of the transactions are mergers and the remaining 19% are tender offers. There is a significant drop (increase) in the number of tender offers (stock-financed mergers) from the 1980s to the 1990s, consistent with previous studies (e.g., Holmstrom and Kaplan, 2001). Table 1 also shows that, on average, the acquirer has about twice the enterprise value as the target; the median acquirer-to-target ratio is more than three to one.

**Data on Analysts and Turnover around M&As**

A key set of our variables of interest is the identity and association of analysts covering merging firms before and after the M&A transactions. Following prior work, we define an analyst covering a merging/merged firm as one who has issued earnings forecasts for that firm. To obtain analyst coverage variables, we construct a panel dataset of over 40,000 one-year-ahead earnings forecasts for the sample firms around M&A transactions, made by 19,000 deal-specific analysts (some analysts cover multiple deals). We merge data on individual analysts and their affiliated investment banks with the characteristics of merging firms, industries, and M&A deals. Information on analysts’ one-year-ahead earnings forecasts is obtained from the I/B/E/S Detailed History file; comprehensive data coverage by I/B/E/S began in 1985, the first year of our M&A sample. Finally, we follow Cohen et al. (2010) to collect and construct variables on analysts’ educational background and school ties with merging firms’ CEOs and directors.

Figure 1 presents the timeline we use to define the coverage variables. To avoid obtaining noisy earnings forecasts immediately before the announcement of an M&A transaction, we define “pre-merger analysts” (for either merging firm) as those who provide one-year-ahead annual earnings forecasts for the fiscal year one year before the deal announcement year (FY−1). In Figure 1, “pre-merger analysts” provide annual earnings forecasts for the fiscal year ending on FYE−1. Similarly, we define “post-merger analysts” (for the merged firm) as those who provide one-year-ahead earnings forecasts for the fiscal year one year after the deal completion year (FY+1). In Figure 1, “post-merger analysts” provide earnings forecasts for the fiscal year ending on FYE+1. Therefore, an analyst who has covered either merging firm is defined as retaining coverage of the merged firm if she is both a “pre-merger analyst” and a “post-merger analyst.”

Panel B of Table 1 presents descriptive statistics on analyst coverage of merging/merged firms.

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6 Our results on long-run stock performance (Tables 4 and 5) are robust to dropping tenders offers from the sample.

7 Analysts’ educational background information is collected from Zoominfo.com, the Financial Industry Regulatory Authority website, Google search, among other web sources. Biographical information for CEOs and board members is from Boardex of Management Diagnostics Ltd., which began its coverage in 1999. For merging firms and M&A deals before 1999 we hand collect the names of the officers and board members from proxy statements, IRRC and ExecuComp, and use Zoominfo.com and other web sources to obtain their education background. Finally, we collect the rankings of undergraduate institutions from *U.S. News and World Report.*
before and after the M&A transactions. For the whole sample (1,787 deals), an average of 12 analysts, including cross-cover analysts, cover an acquiring firm prior to the M&A deal (A_PreMA). Of those, 5.4 (45%) retain coverage of the merged firm (A_Stay). An average of 8.2 analysts cover the target firm before the deal (T_PreMA). Of these, 2.1 (25%) retain coverage of the merged firm (T_Stay). An average of 7 new analysts cover the merged firm without having covered either merging firm before the M&A deal (New). We are also interested in analysts who have covered both merging firms prior to the M&A deal (Cross-cover); on average, there are 2.9 cross-cover analysts for each deal, of whom more than half (1.5) retain coverage of the merged firm (Cross-cover_Stay).

We find (not reported) a significant increase in analyst turnover from FY−1 to FY+1 for both merging firms. During the two years before FY−1, about 30% (32%) of the analysts drop coverage for the acquiring (target) firm per year. This is significantly lower than the turnover from FY−1 to FY+1 (reported above).

The top panel of Figure 2 compares the timing of acquirer and target analysts dropping coverage, based on the date (month) of the last reported annual earnings forecast. Most of the target analysts stop issuing forecasts for the target three months before Month 0, the deal announcement month. Some acquirer analysts who eventually drop coverage of the merged firm do not stop issuing annual earnings forecasts for the acquiring firm until one year after the deal announcement date. We do not observe a significant difference between the timing of cross-cover analysts dropping coverage and that of acquirer analysts (who do not cover the target) dropping coverage. Finally, while a few new analysts begin to issue annual earnings forecasts for the acquiring firm a few months before the deal announcement, most of them begin to issue their first annual forecast three months after the deal is announced (bottom panel).

III. Results

Table 2 presents results on the determinants of target and acquirer analysts’ decisions to drop or cover the merged firm. We then compare the accuracy of different groups of analysts’ earnings forecasts for the merged firms (Equation (1)). Results are presented in Table 3. Finally, we examine the relationship between the percentage of analysts retaining coverage and the long-run abnormal stock performance of a merged firm (Equation (2)), and the results are shown in Tables 4 and 5. We briefly

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8 Note that the means of “A_Stay” and “T_Stay” in Table 1, Panel B, include the remaining cross-cover analysts.

9 We also find (but do not report) significant cross-sectional variation in analyst turnover across deals and industries. The utility industry experiences the highest percentage of analysts dropping coverage after M&As, followed by the business equipment and telecommunications industries. The nondurable goods industry has the best record in retaining analyst coverage. In our empirical tests below, we include industry dummies as controls.
discuss a number of robustness checks at the end of the section. Appendix A lists the definitions of all the variables used in the paper.

**Determinants of analyst coverage around M&As**

As discussed in Section II, we use Probit models to examine an individual analyst’s coverage decisions. The dependent variable equals 1 if a former acquirer analyst (Panel A of Table 2) or a former target analyst (Panel B) continues to cover the post-merger firm, and 0 otherwise. We report marginal probabilities in all the models. All the analyst and firm variables are measured as of “FYE before announcement” in Figure 1 or the fiscal year end immediately before the year in which the M&A deal is announced. We also include year and industry fixed effects in all the models. Standard errors are clustered by analyst to allow for possible dependence in coverage decisions for multiple firms made by the same analyst.

In our baseline model (Column 1 in both panels), we only include firm and M&A deal characteristics. We then add different sets of analyst characteristics in Columns (2)-(5). Among the first set of analyst variables, we include an indicator for cross-coverage, that is, an analyst has covered both merging firms before the M&A deal. Not surprisingly, the cross-coverage status enhances both acquirer and target analysts’ likelihood of covering the merged firm given the advantage of her knowledge of both firms. When a target analyst works for an investment bank that employs another analyst covering the acquiring firm prior to the M&A deal (the indicator Same_Broker takes the value of 1), the target analyst is 17% to 18% more likely to drop coverage of the merged firm (Columns 2-5, Panel B). But for an acquirer analyst, the fact that her investment bank has another analyst covering the target firm does not affect her chance of retaining coverage of the merged firm (Columns 2-5, Panel A). These results are not surprising since the target stock is delisted after the completion of the M&A deal and investment banks are unwilling to provide duplicate coverage of the merged firm. We also include an indicator of whether or not an analyst is affiliated with an M&A advisory bank and find that the advisor status of the bank has no effect on the analyst’s coverage decision.10

We add a second set of analyst variables to measure their research quality and reputation. The results from both panels of Table 2 are largely consistent with prior literature on how an analyst’s coverage decisions are affected by her reputation and research quality, and support hypothesis (H1). First, an analyst covering either the acquiring or the target firm is more likely to cover the merged firm if she has been elected an “All Star” (by the Institutional Investor magazine) prior to the M&A deal.

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10 Recent work examines how an analyst’s affiliation with an investment bank serving as an advisor on an M&A deal affects her forecasts and recommendations (e.g., Kolasinski and Kothari, 2008; Haushalter and Lowry, 2011; and Sibilkov, Straska, and Waller, 2010).
Second, following Hong, Kubik and Solomon (2000), we construct “Ave_Score” to measure the overall accuracy of an analyst’s earnings forecasts for all the firms that she covers relative to her peers; a higher “Ave_Score” is associated with a greater probability of retaining coverage. An acquirer analyst is also more likely to cover the merged firm if her earnings forecasts for the acquiring firm (before the M&A deal) are more accurate (PreMA_FE, Columns 4-5, Panel A). But the same does not hold for target analysts.11

Third, we construct an additional set of variables describing an analyst’s coverage experience prior to the M&A deal following Clement and Tse (2005). For example, when an analyst issues earnings forecasts more frequently (For_Frequency) or covers a greater number of firms (#Companies), both of which proxies for more effort in conducting research on the firms, she is also more likely to cover the merged firm (Columns 4-5 in both panels). In addition, analysts who are employed by larger brokerage houses, which tend to have more resources in assisting analysts’ research, are more likely to retain coverage. On the other hand, analysts covering multiple industries are more likely to drop coverage of the merged firm (#Industries), consistent with the notion that most analysts are specialists of a few industries. When a target analyst covers the target firm for a longer period of time (Firm_Experience), she is more likely to cover the merged firm, but the same does not hold for acquirer analysts.

The final set of analyst variables includes their school ties (the indicator “Linked” equals 1 if an analyst attended the same institution with the merging firm’s CEO or a member of the Board) and educational background (Top25_Undergrad). Adding these variables based on manually collected data significantly reduces sample size. From Column 6 of both panels, we do not find analysts’ school ties or the quality of their undergraduate institution to be associated with their decision to cover the merged firm. While undergraduate institution is a proxy for ability, the fact that school ties does not matter implies that we do not find support for hypothesis (H2).12

Regarding the impact of firm characteristics, both acquirer and target analysts are more likely to cover the merged firms when the target firm has better operating performance (ROA) or when the acquirer operates in a single line of business (A_Conglomerate dummy equals 0). We also find that target analysts are more likely to cover a merged firm when the size of the target is larger relative to the acquiring firm. However, when we add analyst quality and reputation variables to Column 6 (both panels of Table 2), which further reduces sample size, we still do not find school ties or undergraduate institution to be related to analysts’ decision to cover the merged firm. Results on the analyst quality and reputation variables remain qualitatively similar in these models.

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11 Forecast error is the absolute value of the difference between an analyst’s first annual earnings forecast and the actual earnings (scaled by the firm’s stock price during the forecasting month) for the fiscal year ending on “FYE before Announcement” in Figure 1. We focus on the unsigned forecast errors because prior literature finds that when analysts face conflicts of interest, they can either be optimistic or pessimistic in their forecasts.

12 When we add analyst quality and reputation variables to Column 6 (both panels of Table 2), which further reduces sample size, we still do not find school ties or undergraduate institution to be related to analysts’ decision to cover the merged firm. Results on the analyst quality and reputation variables remain qualitatively similar in these models.
the acquirer (*Relative_Size*) and when a greater fraction of the deal is paid for with the acquirer’s stock (*Paystock%* is a continuous variable). In stock deals, some of the target shareholders will become shareholders of the merged firm and may therefore have a continuing interest in reading the same (former target) analysts’ research reports. On the other hand, acquirer analysts are more likely to drop coverage when the target is larger relative to the acquirer, while the method of payment of the M&A deal has no impact on their decisions.

The most interesting results from Table 2 are the different effects of M&A deal characteristics on acquirer and target analysts’ coverage decisions. First, a target analyst is more likely to cover the merged firm if the acquirer’s announcement period return (*A_CAR*) and trading volume (*Trade_Volume*, measured between deal announcement and completion dates) are higher, indicating a higher quality M&A deal and a merged firm that can generate more trading business for investment banks.13 Second, when the acquirer’s stock has higher standard deviations, which proxy for higher uncertainty of the merged firm, target analysts are less likely to cover the merged firm. These variables, however, do not affect acquirer analysts’ decision to cover the merged firms.

The result on the effects of the deal premium—calculated as the offer price over target stock price four weeks before the announcement date—has on target and acquirer analysts’ coverage decisions are particularly interesting. While target analysts are more likely to cover the merged firm when the deal premium is lower, the opposite is true for acquirer analysts. From Panel B (Panel A), the likelihood of a target analyst (acquirer analyst) covering the merged firm increases by 3-5% (decreases by 3-5%) when the premium falls by 10%. Finally, the results on how M&A deal characteristics affect target and acquirer analysts’ coverage decisions are robust to the inclusion of all the analyst variables.

The contrast between how M&A deal characteristics affect the coverage decisions of the two groups analysts is consistent with hypothesis (H3). Since target analysts face a more challenging decision to cover the merged firm, they must spend considerable time and effort to study both the acquirer and M&A transaction before deciding to cover the merged firm. For (at least some) acquirer analysts, since they view the merged firm as essentially the same as the pre-M&A acquiring firm, they are under less pressure to study the target firm and the M&A deal.

Overall, the results from Table 2 provide support for the hypotheses that higher caliber analysts are more likely to retain coverage of the merged firm, and that the former target analysts have expended more effort in studying the M&A transaction before deciding to cover the merged firm than the former acquirer analysts. In addition, we find that target analysts are attracted to merged firms with

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13 Prior work finds that analysts’ compensation is tied to their success in generating investment banking business and trading commissions for their employers (e.g., Stickel, 1992; Michaely and Womack, 1999).
better prospects—higher acquirer announcement period returns, lower acquirer stock uncertainty and M&A deal premium. These results motivate us to examine the implications of analysts’ coverage decisions on their research quality and whether a greater fraction of target analysts covering a merged firm predicts better long-term performance for that merged firm.

**Accuracy of earnings forecasts**

We use multivariate regressions to examine and compare the quality of the earnings forecasts among four groups of analysts covering the merged firm: former acquirer and target analysts (who have not covered the other merging firm), former cross-cover analysts (who have covered both merging firms), and newly added analysts (who have not covered either merging firm). Table 3 presents the regression results from OLS, controlling for firm and M&A deal characteristics. The dependent variable is an individual analyst’s forecast error for the merged firm during the first full fiscal year after the deal completion date—FYE+1 in Figure 1. To ensure that all the annual earnings forecasts for the post-merger firm included in our sample are made without the uncertainty of whether or not the M&A deal will go through, we drop a few forecasts issued before the deal completion date; in other words, all the forecasts included in Table 3 are made between Date 1 and “FYE after Completion” in Figure 1. In unreported results, we also use the forecast errors for the merged firm during the second full fiscal year after deal completion—the fiscal year beginning immediately after FYE+1 in Figure 1 as the dependent variable. Obviously, all the annual earnings forecasts for this year are issued after the deal completion date.

As indicated in Equation (1), we include dummy variables to indicate whether an analyst has covered the target firm (T_Stay), both merging firms (Cross-cover_Stay), or neither merging firm (New) prior to the M&A deal in order to compare the forecast accuracy of these different groups of analysts. We assign those who have covered the acquiring firm to be the default group. We do not include analyst variables in the regressions as we view them as determinants for analysts’ coverage decisions (recall Table 2). Once again, we include year and industry fixed effects in all the models and we cluster standard errors at the analyst level to allow for possible dependence among errors in a single analyst’s forecasts of different firms.

We find that analyst forecast error increases (a) when the acquirer’s stock is the main method of payment (Paystock%), (b) after a diversifying merger (Diversifying), (c) when the acquirer is a conglomerate (before the M&A deal), or d) when the acquirer’s stock has higher bid-ask spreads (A_Bid_Ask) during the year prior to the deal announcement. All of these variables proxy for an M&A deal that is more complex and a merged firm that faces more information uncertainty. When an analyst issues her first annual earnings forecast for the merged firm less than three months before the firm
announces its actual earnings figure (\textit{Late\_Forecast} dummy equals 1), her forecast is 2% more accurate than that of other analysts, as she has much more information about the merged firm than those who issued their forecasts several months earlier.

Table 3 also shows that, in the first year after deal completion, the forecast errors of the former cross-cover analysts (\textit{Cross-cover\_Stay}) are 5% lower than those of the former acquirer analysts, a superiority in forecasting accuracy that is even more pronounced for diversifying mergers (not reported) due to a cross-cover analyst’s knowledge of both firms. The coefficient on the \textit{New} indicator is negative but not statistically significant in most of the models, indicating that the forecasting accuracy of a former acquirer analyst is not higher than that of an analyst who has not covered either merging firm prior to the M&A.

After controlling for firm and M&A deal characteristics, we find that the forecast errors of former target analysts who have \textit{not} covered the acquiring firm are lower than those of the former acquirer analysts. The coefficient on \textit{T\_Stay} in Column 1 of Table 3 suggests that a former target analyst’s forecast error is 6% lower than that of a former acquirer analyst (significant at 1%) during the first year of the post-merger period. The difference in forecast error between these two groups is even greater when the acquirer’s stock is the main method of payment for the deal (Column 3), or when the acquirer stock has greater bid-ask spreads (Column 2). While target analysts are less likely to cover the merged firm following a diversifying deal (Table 2, Panel B), the forecast error of those who retain coverage is 12% lower than that of the remaining acquirer analysts (Column 4, Table 3). A deal based on the acquirer’s stock is more complicated than a deal paid mostly in cash, given the uncertainty of the acquirer’s stock price, while in a diversifying merger or a merged firm with higher bid-ask spreads the cost of gathering information is greater than it is for other deals/firms. Our results suggest that former target analysts have a significant advantage over former acquirer analysts in forecast accuracy for deals with more uncertainty and deals for which the cost of gathering and processing information is greater. Finally, the former target analysts’ forecast errors are slightly lower than those of former cross-cover analysts (6% vs. 5%). However, F-test on comparing the coefficients on target and cross-cover analyst dummies indicates that they are not significantly different from each other. This suggests that the accuracy of former target analysts’ earnings forecasts is not significantly different from that of the former cross-cover analysts.

Most of the results from Table 3 continue to hold during the second year after deal completion (results not reported), with the magnitude of the coefficients on the identities of analysts and on some deal characteristics falling slightly. This is reasonable, as the superiority of former target and cross-cover analysts with respect to acquirer analysts and new analysts ought to decrease over time as the
other groups learn more about the post-merger firms.\footnote{We also find that both the former target and former cross-cover analysts are more accurate in their forecasts than the new analysts in both years, using new analysts as the default group.}

**Long-term stock performance of merged firms**

Following Equation (2), we denote the percentage of acquirer analysts retaining coverage after the M&A deal as $A_{Stay\%}$; we use $New\%$ to denote the number of new analysts scaled by the number of analysts covering the acquirer prior to the merger; and we use $T_{Stay\%}$ to denote the percentage of target analysts (who have not also covered the acquirer) retaining coverage; after the M&A and we use $Cross-cover_{Stay\%}$ to indicate the number of cross-cover analysts retaining coverage over the number of target analysts prior to the M&A.

We have shown that the former target analysts have higher forecasting accuracy than that of the former acquirer analysts (Table 3). We have also shown that a target analyst is more likely to cover a merged firm with better prospects and when the acquirer pays a lower premium for the target (Table 2). Moreover, Pearson correlation tests show that the percentage of target analysts covering the merged firm ($T_{Stay\%}$) is negatively correlated with the deal premium ($p$-value is 0.012), but no such relation is found for any other group of analysts covering the merged firm. Since overpaying for the target is an important reason for poor performance of the merged firm, these results lead us to hypothesize that the percentage of target analysts providing coverage is positively associated with the merged firm’s long-term abnormal stock performance.

To measure long-term stock performance, we use two sets of return measures common in the long-run event study literature, Cumulative Abnormal Return (CAR) and Buy-and-Hold Abnormal Return (BHR).\footnote{For example, Barber and Lyon (1997) find that the control firm approach eliminates the skewness bias associated with the long-run BHR returns and that the size and market-to-book matched control firm approach yields well-specified statistics. Rau and Vermaelen (1998) and Barber et al. (1999) show that the acquirer’s pre-event performance can explain its post-acquisition long-run abnormal performance. Finally, Fama (1998) suggests that abnormal returns can be estimated by using returns on matching portfolios or by an asset-pricing model.} Specifically, the variable $CAR_{3yr}$ is the cumulative abnormal returns (over benchmark returns) during the three years after the merger completion date, whereas $BHR_{3yrs}$ measures the three-year abnormal buy-and-hold returns. Following Daniel, Grinblatt, Titman, and Wermers (1997) and Wermers (2004) (hereafter DGTW), we choose characteristic-based benchmark portfolios. DGTW benchmark portfolios are based on firm size measured as market capitalization, industry-adjusted book-to-market ratio, and momentum.\footnote{We obtain DTGW benchmark data via http://www.smith.umd.edu/faculty/rwermers/ftpsite/Dgtw/coverpage.htm. We thank Russ Wermers for making the data available.} For each acquiring firm, we measure the monthly abnormal returns by subtracting its benchmark return from its monthly raw stock return. In
addition, since we create our sample to include acquiring firms that do not engage in another M&A transaction during the sample M&A period, one year before it, and one year after it, we do not have enough deals to create a calendar portfolio for each month. Therefore, as recommended by Peterson (2009), we include year indicators and cluster standard errors by year to control for the cross-correlation among acquiring firms each year. This approach, along with calculating abnormal returns based on DGTW benchmark portfolios, generates unbiased standard errors.\footnote{In Petersen (2009: p.472), Table 6 shows that the “Fama-MacBeth standard errors are close to the standard errors clustered by time, as both methods are designed to account for dependence in the time dimension.”} Our results do not change if we cluster our standard errors by both year and firm.

Panel A, Table 4 reports the distributions of the two sets of abnormal returns, calculated over the first three years after the deal completion date. While the mean of both CAR and BHR is negative, the median of the CAR distribution over our sample merged firms is positive and the 75\textsuperscript{th} percentile of the BHR distribution is 33.2\%. Table 4, Panel B reports OLS regression results with the dependent variable the two sets of three-year abnormal returns. We control for firm and deal characteristics that have been shown to influence the long-term abnormal stock performance. For example, consistent with previous studies (e.g., Loughran and Vijh, 1997 and Rau and Vermaelen, 1998), we find that acquirer size is positively related to the long-term abnormal returns, while diversifying transactions are negatively related to the long-term performance.

In Panel B of Table 4, we find a positive and significant relationship between the percentage of target analysts who choose to cover the merged firm ($T_{Stay\%}$) and long-run stock performance. The coefficient in Column 1 suggests that a 1\% increase in $T_{Stay\%}$ leads to an increase of 0.32\% in the merged firm’s three-year CAR. Hence, each additional target analyst covering the merged firm (an increase in $T_{Stay}$ of 12\%) is associated with an increase of about 4\% in abnormal returns. This effect doubles when we use BHR in Column 4. This result is robust both to measures of long-run stock returns and to the inclusion of the percentages of acquirer analysts, new analysts, and cross-cover analysts retaining coverage. We also interact $T_{Stay\%}$ with deal characteristics (the Diversifying and Paystock dummies), and find that higher retention rates of target analysts in these deals do not predict better performance than in related or cash deals.

In the rest of the table, we only show the key results to save space. We do not find that the percentage of acquirer analysts retaining coverage is associated with long-run stock performance (Panel C). There is, however, some evidence that more new analysts initiating coverage indicates better long-run performance for the merged firm (Panel D).\footnote{We also use the log of the number of new analysts as the explanatory variable (results not reported) and find it to be positively and significantly related to better long-run performance. In these models, we also include the size of the} Finally, we do not find the percentage of
cross-cover analysts to be associated with better long-term performance (Panel E).

In Panel F, we sort merged firms with at least one retained target analyst into terciles and compare them with merged firms with no target analyst retained. Both the BHR and CAR are negative for firms with no target analyst retained for all three years after merger completion. By contrast, for the firms in the top tercile of positive target analyst retention, both the BHR and CAR are positive with the exception of the first year. A strategy of long firms in the top tercile of positive target analyst retention and short firms with no retention yields BHR of 1.07%, 19.6% and 25.6% for one, two and three years after merger completion. For CARs, the corresponding returns are 2.67%, 11.4% and 19.3%, respectively. These hedge returns are statistically different from 0 with the exception of CAR for the first year.

In relation to the prior literature on the underperformance of high market-to-book asset ratios (M/B), ‘glamour’ acquirers, we first sort acquiring firms into quintiles based on their M/B ratios at the end of the fiscal year immediately before the deal announcement date (FYE before announcement in Figure 1). The acquirers in the highest quintile of M/B are defined as ‘glamour’ firms and those in the lowest quintile as ‘value’ firms. Consistent with prior literature (e.g., Loughran and Vijh, 1997; Rau and Vermaelen, 1998), glamour acquirers significantly underperform value acquirers by 4.2%, 34.3% and 22.4% in terms of BHR for one, two and three years after merger completion. In terms of CARs, the corresponding figures are 5.4%, 19.0% and 9.0%, respectively. These abnormal returns are comparable to the hedge returns generated by our portfolio of long firms in the top tercile of positive target analyst retention and short firms with no retention. Finally, for each of the two groups, we compare the long run abnormal returns between merged firms with positive target analyst retention and those with no target analyst retained. We find that for glamour acquirers, both the BHR and CAR are negative for firms with no target analyst retained for all three years after merger completion. By contrast, for glamour acquirers with positive target analyst retention, all the BHRs and CARs are positive. The differences in the returns between the two subgroups are statistically significant. On the other hand, among value acquirers, there is no significant difference in the abnormal returns between those with positive target analyst retention and those with no target analyst retained. These results suggest that target analyst retention provides particularly valuable information for glamour acquirers’ shareholders.

We have shown that the target analysts who retain coverage for merged firms provide more

merged firm as a control because prior literature finds that larger firms attract more analysts. This result is similar to that of Das et al. (2006), who find that, for IPO firms—which all analysts are covering for the first time—more coverage is associated with better long-run performance.
accurate earnings forecasts than the former acquirer analysts. We also find that the percentage of target analysts providing coverage is associated with better long-run stock performance for the merged firm. Taken together, these results indicate that the former target analysts are particularly good at identifying high-quality merged firms and that their favorable evaluations of the M&A deal and the merged firm are accurate. For our M&A sample, the acquiring firm is on average twice as large as the target firm. Thus, target analysts who have not covered the acquirer face a potentially substantial disadvantage in covering the acquiring firm relative to the acquirer analysts and cross-cover analysts. Our results on analysts’ school ties in Table 2 indicate that it is difficult to argue that the former target analysts have more information than acquirer analysts in covering the merged firm. However, the evidence from Table 3 and Table 4 is consistent with the hypothesis that the former target analysts have exerted more effort in studying the M&A transaction than the remaining acquirer analysts and cross-cover analysts before deciding to cover the merged firm.

Robustness Checks

Our empirical tests illustrate the superiority of former target analysts over former acquirer analysts in forecast accuracy and show that, as a group, the former target analysts can predict the merged firm’s long-run stock performance. One can argue that our results are driven by a forward-looking” bias; that is, these analysts may wait until they have received favorable (publicly available) information about the M&A deal—for example, observing the performance of the merged firm after deal completion—before deciding to cover the merged firm, while other groups of analysts are quicker to make that decision. Recall from the top panel in Figure 2 that most target analysts stop issuing earnings forecasts for the target (that is, they drop their coverage) three months before deal announcement, while some acquirer analysts continue to issue forecasts six months (or even one year) after the announcement date before dropping coverage. Hence, it is unclear which group of analysts, target or acquirer, is more likely to have the forward-looking bias. Additionally, we show that the superiority of former target analysts’ forecast accuracy persists in the second full (fiscal) year after deal completion, which contradicts this argument.

Moreover, we repeat the tests on the merged firms’ long-run stock returns, calculating the abnormal returns over the second and third years after deal completion. Table 5 (with the same four panels as in Table 4) reports the results on key analyst variables and interaction terms. The association between the percentage of target analysts covering the merged firm ($T_{Stay\%}$) and the merged firm’s long-run stock performance is robust to skipping the first year after deal completion. We repeat our analyses on abnormal returns over the three-year period beginning in the second year after deal completion, obtaining similar results (not reported). We conclude that the forward-looking bias
argument cannot explain our key results.

Next, we briefly discuss results using alternative definitions of analyst turnover and of the categories of analysts covering merged firms. First, to avoid obtaining noisy earnings forecasts during the announcement and completion of an M&A transaction, we use an event window and fiscal years to define pre-merger analysts and post-merger analysts as in Figure 1. However, the calculation of analyst turnover based on these definitions may overstate the percentage of analysts dropping coverage of the merged firm and understate the percentage of analysts retaining coverage of it. To correct for the possible over- or understatement of analyst turnover, we reconstruct these variables using a shorter event window and calendar time periods. We then recalculate the changes in analyst coverage variables and, not surprisingly, observe a lower (higher) percentage of analysts dropping (retaining) coverage of the merged firm around the M&A transaction. We also redo all the analyses pertaining to the determinants of analyst coverage and its impact on the quality of research on the merged firm, using the new variables. All our main results continue to hold.

Second, the calculation of the percentage of analysts dropping coverage of the merged firm is based on identifying those who no longer make earnings forecasts for the merged firm. But this definition may include analysts who did cover one of the merging firms prior to the M&A deal but disappeared from the I/B/E/S database after deal completion—not because they dropped coverage but because they changed profession or retired. Our measure of the percentage of analysts dropping coverage may therefore be biased upward. We recalculate the percentage of analysts dropping coverage, excluding analysts who disappear from the I/B/E/S database after the deal completion date. Replicating the analyses using the new measure, we find similar results.

IV. Conclusions

Large-scale M&A transactions significantly transform the merging firms and provide an exogenous shock to analysts’ coverage decisions. Despite extensive work on M&As and analysts, prior research has not examined what—if anything—investors can learn from analysts’ endogenous decisions to add, drop, or maintain coverage of merging firms. With a large sample of M&A deals with matched data on analysts and their earnings forecasts during 1985-2005, we study analyst turnover around M&As and find that this process reveals valuable information on the quality of analysts’ research and on the merged firm’s long-term stock performance.

We develop and test three hypotheses in studying the determinants of analysts’ decisions to cover the merged firm. First, we hypothesize and find evidence that among those covering the merging firms before the M&A deal, higher caliber analysts are more likely to cover the merged firm. Our
second hypothesis stipulates that those analysts with personal connections with the CEO and directors of the merging firms are more likely to cover the merged firm. However, we do not find analysts’ school ties with corporate insiders, a proxy for personal connections, to be a significant factor for acquiring or target analysts to retain coverage of the merged firm.

M&As also provide a unique opportunity to examine different decision processes of target and acquirer analysts. Publicly traded targets are delisted after a completed M&A deal. Target analysts’ decision to cover the merged firm is therefore similar to initiating a new coverage for a firm that is larger and more complex than the target firm. Acquirer analysts, on the other hand, have a simpler decision to make—whether to continue covering essentially the same firm. We hypothesize that target analysts expend more effort than acquirer analysts in studying the M&A transaction before making the decision to cover the merged firm. Such effort can overcome their inexperience of covering the acquiring firm and improve their research quality of the merged firm.

To this end, we find that a target analyst is more likely to cover an acquiring firm that has completed a higher-quality M&A transaction and a merged firm with better prospects and less uncertainty. We do not find measures of M&A deal quality and prospects of the merged firm to be significant factors in acquirer analysts’ decision to cover the merged firms. Consistent with target analysts expending more effort, we find that the earnings forecasts of the former target analysts for the merged firm with no experience covering the acquiring firm are more accurate than those of the former acquirer analysts. Finally, we find that the percentage of target analysts covering the merged firm is positively associated with the firm’s long-term abnormal stock performance. By contrast, we do not find that the percentage of acquirer analysts covering the merged firm is related to the firm’s long-run stock performance.

Overall, the contrast between former target and acquirer analysts—determinants of coverage, forecast accuracy and whether their retention decision as a group predicts the long-term performance of the merged firms—is consistent with the hypothesis that, facing a more challenging decision, the former target analysts have exerted more effort than the acquirer analysts in studying the M&A transaction before choosing to cover the merged firm. Our methodology—using the M&A as an identification strategy to study analysts’ coverage decisions and their implications—as well as our results, extend the literature on the role of analysts in facilitating information transmission and the performance of M&As.
Appendix A

A_ROA – earnings before interest and depreciation over the book value of total assets of the acquiring firm measured at the end of the fiscal year before deal announcement date.
T_ROA – earnings before interest and depreciation over the book value of total assets of the target firm measured at the end of the fiscal year before deal announcement date.
A_Conglomerate – a dummy variable equal to 1 if an acquiring firm has more than one reporting segment in Compustat and 0 otherwise.
A_STDDEV – standard deviation of monthly stock returns of the acquiring firm for the year before deal announcement date.
A_CAR – cumulative abnormal returns of an acquiring firm between merger announcement and completion date. The method used to calculate A_CAR is the standard market model with the CRSP value-weighted market portfolio as the benchmark portfolio.
Paystock% – a continuous variable between 0 and 1 indicating the fraction of the deal paid for with the acquirer’s stock (1 means the deal is 100% paid for with the acquirer’s stock).
Diversifying – a dummy variable equal to 1 if the merger is diversifying and 0 otherwise. A diversifying merger is defined as one in which the target firm and the acquiring firm do not have the same two-digit primary SIC code.
Deal_Value – log of the total dollar amount of consideration paid by the acquirer, excluding fees and expenses.
Relative_Size – the ratio of target firm size to acquiring firm size. Firm size is measured as market value of equity plus the book value of debt and preferred stocks at the end of the fiscal year before deal announcement date.
MA_Advisor – a dummy variable equal to 1 if an analyst’s investment bank is also the financial advisor for the M&A deal and 0 otherwise.
Trade_Volume – log of the trading volume of an acquiring firm between merger announcement and completion date.
Stock – a dummy variable equal to 1 if the fraction of the deal paid for with the acquirer’s stock is more than 50% of the total consideration paid and 0 otherwise.
Large_Target – a dummy variable equal to 1 if the relative size of target firm to acquiring firm is greater than the sample median (0.3 for our sample) and 0 otherwise.
A Bid_Ask – average absolute value of the difference between bid price and ask price scaled by stock price during the year prior to deal announcement.

A.2 Analyst Coverage and Analyst Composition
A_Stay (T_Stay) – the group of analysts who covered the acquiring (target) firm prior to the M&A deal and retain coverage of the merged firm.
Cross-cover_Stay – the group of analysts who covered both the acquiring and target firms prior to the M&A deal and retain coverage of the merged firm.
A_PreMA (T_PreMA) – a dummy variable equal to 1 if an analyst covered only the acquiring (target) firm prior to the merger and 0 otherwise.
New – a dummy variable equal to 1 if an analyst did not cover either merging firm prior to the merger and 0 otherwise.
A_Stay% (T_Stay%) – the percentage of the number of acquirer (target) analysts retaining coverage of the merged firm over the number of analysts covering the acquiring firm prior to the M&A transaction (excluding those analysts who cover both target and acquiring firms prior to the merger).
New% – the percentage of the number of newly added analysts covering the merged firm over the number of analysts covering the acquirer firm prior to the M&A transaction.

A.3 Analyst Research Quality
All_Star – a dummy variable equal to 1 if, prior to the merger, an analyst has been elected an All Star analyst, based on the annual survey conducted by the Institutional Investor magazine.
Avg_Score – average of an analyst’s forecast scores of all the firms that he/she covers in the fiscal year before the deal announcement date. Forecast score for an analyst is constructed as follows: first, we sort all the analysts who cover a firm in a year based on their forecast errors, which is the absolute difference between the forecast and the actual EPS. Second, we assign a ranking based on the sorting, where the best receives the first rank, the second best receives the second rank and onward until the worst analyst receives the highest rank. Third, we scale an analyst’s rank for a firm by the number of analysts who cover that firm. The formula is:

\[ score = 100 - \left( \frac{rank - 1}{number\ of\ analysts - 1} \right) \times 100 \]
Higher average scores correspond to better analyst performance in terms of forecast accuracy.

Same_Broker – a dummy variable equal to 1 if an acquirer analyst works for the same investment bank as a target analyst prior to a merger and 0 otherwise.

For_Frequency – a measure of an analyst’s forecast frequency for the acquiring or target firm. It is calculated as the number of forecasts made by an acquiring or target firm analyst for their respective firm in the fiscal year before deal announcement, minus the minimum number of forecasts for the analysts following the acquiring or target firm in the same year, with the difference scaled by the difference between the maximum and minimum number of forecasts for all analysts following the acquiring or target firm.

PreMA_FE – analyst earnings forecast error prior to the merger, defined as the absolute proximity of an analyst’s first forecast to actual earnings, scaled by the acquiring or target firm’s stock price at the forecasting month.

Firm_Experience – a measure of an analyst’s firm specific experience. It is calculated as the difference between the number of years that an analyst covers the acquiring firm (target firm) and the minimum number of years of coverage among all acquiring firm (target firm) analysts during the fiscal year before the deal announcement, scaled by the difference between the maximum and the minimum number of years of coverage among all acquiring firm (target firm) analysts.

#Industries – a measure of the number of industries an analyst follows in the fiscal year before deal announcement. It is calculated as the number of two digit SICs followed by an analyst covering the acquiring or target firm in the fiscal year before deal announcement, minus the minimum the number of two digit SICs followed by all the analysts following the acquiring or target firm in the same year, with this difference scaled by the difference between the maximum and minimum number of two digit SICs followed by all analysts following the firm.

#Companies – a measure of the number of companies an analyst follows in the fiscal year before deal announcement. It is calculated as the number of companies followed by an analyst covering acquiring or target firm in the fiscal year before deal announcement, minus the minimum the number of companies followed by all the analysts following the acquiring or target firm in the same year, with this difference scaled by the difference between the maximum and the minimum number of companies followed by analysts following the firm.

Broker_Size – a measure of the analyst’s brokerage size. It is calculated as the number of analysts employed by the analyst’s brokerage firm in the fiscal year before deal announcement, minus the minimum the number of analysts employed by the brokerages among all analysts following the acquiring or target firm in the same year, with this difference scaled by the difference between the ranges of brokerage size for analysts following the firm.

Linked – a dummy variable equal to 1 if an analyst is linked to executives or board of directors of the acquiring or target firm via education network through undergraduate or graduate school, and 0 otherwise.

Top25_Undergrad – a dummy variable equal to 1 if an analyst attended an undergraduate school that is ranked top 25 in the U.S.News.

Late_Forecast – a dummy variable equal to 1 if an analyst gives an earnings forecast within three months of the earnings reporting date and 0 otherwise.

A.4 Long-run Stock Performance Post Merger

CAR_3yr – cumulative abnormal returns over the three years after the merger completion date. The benchmark portfolio to calculate the abnormal returns is obtained from Russ Wermers’s website and is constructed based on size, book-to-market, and momentum.

BHR_3yrs – three-year abnormal buy-and-hold returns after the merger completion date. The benchmark portfolio to calculate the abnormal returns is obtained from Russ Wermers’s website and is constructed based on size, book-to-market, and momentum.
References


