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Can Analysts Analyze Mergers?

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After the completion of a merger and acquisition (M&A) transaction, the target firm is delisted, but some analysts who covered it retain coverage of the merged firm. We hypothesize that this decision is based on two factors: the analyst's ability to cover the merged firm and his or her assessment of the M&A deal. Consistent with these hypotheses, we find that the remaining target analysts provide more accurate earnings forecasts and more optimistic stock recommendations and growth forecasts for the merged firms than do the remaining acquirer analysts. We also find that a higher percentage of target analysts choosing to cover the merged firm is associated with better operating and long-term stock performance of that firm, but we do not find this relation with acquirer analysts. Our results extend the literature by showing that target analysts' coverage decisions reveal valuable information about a merged firm's future performance.

1. Introduction

Large-scale mergers and acquisitions (M&As) significantly transform the merging firms and therefore provide a unique setting to study financial analysts' decisions to drop, add, and maintain coverage of firms. For analysts covering the acquiring firm ("acquirer analysts"), the decision is whether to continue covering the same firm after the acquisition. Analysts covering the target firm ("target analysts"), however, have a different decision to make: Because the target is delisted after the completion of the M&A deal, covering the merged firm is similar to initiating coverage for a new firm—one that is larger and more complex than the target. Interestingly, with a sample of 1,787 M&A deals for the period 1985–2005, we find that 25% of target analysts retain coverage of the merged firms. Since target analysts face a more challenging decision than acquirer analysts, their decision process should reveal more information about their research quality and the prospects of the merged firm.

In this paper, we examine why some target analysts cover the merged firm and whether this process reveals information about the firm's future performance. Our conjecture is that target analysts choose to cover the merged firm if they can accurately forecast its earnings *and* if they have a favorable assessment of the M&A deal. First, prior literature has shown that reputational and career concerns motivate analysts

to cover firms for which they can provide accurate research.[1] Accordingly, only those target analysts who are able to compete with the best acquirer analysts should choose to cover the merged firm. Second, prior literature has also shown that analysts are more likely to cover a firm for which they see better prospects (e.g., McNichols and O'Brien 1997, Das et al. 2006). Therefore, we hypothesize that target analysts also self-select along this dimension—namely, their degree of optimism about the M&A deal and the merged firm.

M&As provide a powerful setting to examine these hypotheses for at least two reasons. First, a large-scale M&A transaction leads to heightened uncertainty and information asymmetry surrounding the merging firms. This allows us to examine and compare the forecasting ability of different groups of analysts. Second, the M&A setting also provides a natural control group—the acquirer analysts—for studying target analysts' coverage decisions and the implications of those decisions.

Our first hypothesis—that target analysts self-select on forecasting ability—implies that the average forecasting quality of the remaining target analysts is

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[1] There is an extensive literature on how the accuracy of analysts' earnings forecasts and recommendations affects their reputations, careers, and investment banking relationships (e.g., Stickel 1992, Lin and McNichols 1998, Mikhail et al. 1999, Michaely and Womack 1999, Dechow et al. 2000, Hong and Kubik 2003, Fang and Yasuda 2009; for a review, see Michaely and Womack 2005).

higher than that of the remaining acquirer analysts.[2] Consistent with this hypothesis, we find, after controlling for firm and deal characteristics, that the remaining target analysts provide more accurate earnings forecasts than do the remaining acquirer analysts. This result is also robust to the addition of a set of analyst quality measures in the regressions, including whether an analyst is an "All Star," whether she works for a large brokerage house, her experience in covering a merging firm, and the overall accuracy of her earnings forecasts relative to those of her peers prior to the M&A deal.

Consistent with our second hypothesis, we find that target analysts are attracted to acquiring firms with higher announcement-period returns and a lower deal premium (i.e., offer price over target price four weeks prior to the deal announcement date). In contrast, these deal characteristics are not related to acquirer analysts' coverage decisions. We further find that the remaining target analysts issue the most optimistic stock recommendations and long-term growth forecasts among all the analysts covering the merged firm. Taken together, these results support the hypothesis that only those target analysts with a favorable assessment of the M&A deal and the merged firm retain coverage.

In our final set of tests, we examine the merged firm's operating performance and long-term abnormal stock performance. If each target analyst who chooses to cover the merged firm does so because she has superior forecasting ability to cover the merged firm *and* a favorable view of the M&A deal, then the percentage of target analysts retaining coverage should be positively associated with higher returns on assets (ROA) and abnormal long-term stock performance. Indeed, this is what we find. The result on stock performance is robust to different postmerger time horizons (e.g., the first three years or the second and third years after deal completion) and different long-term stock-performance measures. We do not find the same relation for acquirer analysts.

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 research for companies that they have recently begun to cover, but less favorable research for companies they are soon to drop. We use a large sample of M&As, which provides a comparison group (acquirer analysts), to study target analysts' coverage decisions.

Moreover, we hypothesize that their decision is based on two factors—their ability to cover the merged firm and their assessment of the M&A deal—and we find evidence supporting both.

Das et al. (2006) examine analyst coverage decisions and the performance of firms making an initial public offering (IPO). They find that greater 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 research on the long-term stock performance of post-merger firms focuses on firm and deal characteristics without examining analysts' coverage decisions.[3] We extend this literature by documenting that the percentage of target analysts who choose to provide coverage for the merged firm is a predictor of the firm's 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 this paper is organized as follows. Section 2 describes our empirical methods, the M&A sample, and the analyst data. Section 3 presents results on (1) the determinants of analysts' coverage decisions, (2) the quality of analysts' research on merged firms, (3) analysts' stock recommendations and long-term growth forecasts, and (4) whether analyst coverage predicts a merged firm's future performance. Section 4 concludes. The appendix explains the variables.

2. Methodology and Data Descriptions

The key research question is why some target analysts choose to cover the merged firm—which is both larger and more complex than the target firm—following the completion of an M&A transaction and the delisting of the target. We hypothesize that only those target analysts with (1) the ability to cover the merged firm (H1) *and* (2) favorable views of the M&A deal (H2) choose to cover the merged

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[2] This approach is similar to that of Kumar (2010), who examines the forecasting ability of female and male analysts. He finds that, due to self-selection, female analysts are more accurate than male analysts in forecasting earnings.

[3] Our results also extend the literature on the investment value of analysts' research, a literature which generally focuses on 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.

firm. To examine these hypotheses, we run three sets of tests, using acquirer analysts as a comparison group. We first examine the determinants of target and acquirer analysts' coverage decisions. We then examine the implications of this coverage process for earnings forecast accuracy, recommendations, and long-term growth forecasts of individual analysts covering the merged firm. Finally, we examine whether analysts' coverage decisions predict a firm's long-term performance.

We estimate probit models to examine 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 0 otherwise. We include three sets of explanatory variables. First, we include firm and deal characteristics to capture merging firms' information environment and M&A deal quality. If target analysts choose to cover merged firms of which they hold a favorable view, we expect that they are more likely to cover higher-quality M&A deals and acquiring firms. But we expect a weaker relation or no relation between the quality of merging firms and M&A deals and the acquirer analysts' coverage decisions, as these analysts essentially continue to cover the same firm.

Second, we include a set of variables identified by prior literature as measuring analysts' research quality (e.g., Clement and Tse 2005). The literature finds that, due to reputational concerns, analysts are more likely to cover firms for which they can provide accurate earnings forecasts. Hence, we expect that higher-caliber acquirer and target analysts are more likely to retain coverage of merged firms.

Third, we include proxies for analysts' access to private information. Because an important source of information for analysts is communications with the executives and directors of the firm that they cover, we expect that (acquirer and target) analysts who have personal connections inside the merging firms are more likely to cover the merged firm. To proxy for such connections, we follow prior literature (e.g., Cohen et al. 2010) in using an indicator that takes the value of 1 if an analyst attended the same undergraduate or graduate school as the merging firm's CEO or any of its board members.

To examine how analysts' coverage decisions relate to the properties of their research on the merged firm, we estimate the following ordinary least squares (OLS) model:

Analyst Forecast Error

(or Recommendations/Growth Forecasts)$_{i,j,k,t+1}$

$$= \beta^1 Target_{k,t} + \gamma^1 New_{k,t} + Analyst, Firm,$$
$$M\&A \ Deal \ Controls \ and \ Interactions + e^1_{i,j,k,t}. \quad (1)$$

In Equation (1), the dependent variable is (a) the forecast error of individual analysts' earnings forecasts, (b) the average (numerical) value of their stock recommendations, or (c) their long-term growth forecasts for the merged firm (issued during the first full fiscal year after deal completion). The data vary by analyst i, acquiring firm j, deal k, and year t. Our key variables of interests are an indicator for former target analysts and an indicator for newly added analysts; former acquirer analysts are the default group. For control variables, we include the same set of firm, deal, and analyst characteristics as in the determinants regression since analyst coverage decisions should also affect the properties of their research.

To examine H1, we compare forecast accuracy for merged firms among different groups of analysts. If, due to the self-selection process, the retained target analysts show, on average, greater forecasting ability than the retained acquirer analysts do, then β^1, the coefficient on the target indicator in the forecast error regressions, should be negative. Similar arguments imply that γ^1, the coefficient on new analysts, should be negative; that is, they might also self-select on ability.

To examine H2, we compare the degree of optimism in the stock recommendations and growth forecasts among different groups of analysts covering the merged firm. H2 predicts that β^1, the coefficient on the target indicator, should be positive because the remaining target analysts hold more positive views on the prospects of the merged firm than do the remaining acquirer analysts.

In our final set of tests, we examine the relationship between analysts' coverage decisions and the long-term performance of the merged firms. This approach is similar to that of many prior studies following a major corporate event.[4] We estimate the following OLS model:

Long-Term Abnormal Stock Performance

(Operating Performance)$_{k,t+3}$

$$= \beta^2 Target\_Stay\%_{k,t} + \gamma^2 New\%_{k,t}$$
$$+ \eta^2 Acquirer\_Stay\%_{k,t} + Firm,$$
$$M\&A \ Deal \ Controls \ and \ Interactions + e^2_{k,t}, \quad (2)$$

where the dependent variable is either (a) the long-term abnormal stock performance of the merged firm measured three years after the completion of the M&A deal or (b) the firm's operating performance (ROA) three years after deal completion. $T\_Stay\%$ is

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[4] See, for example, Loughran and Ritter (1997) for seasoned equity offerings and Loughran and Vijh (1997) and Rau and Vermaelen (1998) for M&As. Barber et al. (2001, 2006) show that the distribution of and changes in analysts' recommendations can predict long-term stock returns, whereas Das et al. (2006) show that greater analyst coverage predicts better post-IPO stock returns.

the percentage of former target analysts covering the merged firm and *A_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, *New%* is the number of new analysts scaled by the number of analysts covering the acquirer prior to the M&A deal. If both H1 and H2 hold—that is, if target analysts choose to cover a merged firm if they can forecast accurately *and* if they hold a favorable assessment of the M&A deal—then a greater percentage of target analysts covering the merged firm should be associated with better stock and operating performance. But we do not expect the same relation to hold for acquirer analysts. Moreover, the percentage of new analysts covering the merged firm may also convey more information about the prospects of the M&A deal than does the percentage of acquirer analysts. Therefore, we expect β^2 and γ^2 to be positive and significant while we expect η^2 to be insignificant.

2.1. M&A Sample

The initial sample is extracted from the Securities Data Company (SDC), using the following criteria commonly used in the literature: (1) A 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 United States; (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 statements and stock price data are extracted. We further require each acquiring firm to have a one-year preevent window and a one-year post event window during which there is no other M&A deal. 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 investment for the acquiring firms.[5] 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 Standard Industrial Classification (SIC) codes. Of the transactions, 62% (38%) are stock (cash) acquisitions, defined as more than half of the deal value being financed by the acquirer's stock (cash); 81% of the transactions are mergers and the remaining 19% are tender offers.[6] 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.[7]

2.2. Data on Analysts

To obtain analyst coverage variables, we construct a panel data set 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 and M&A deals. Information on analysts' one-year-ahead earnings forecasts is obtained from the Institutional Brokers' Estimate System (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. Information on stock recommendations (data before 1994 are sparse) and long-term growth forecasts are also from the I/B/E/S Detailed History file. The recommendation ratings range from 1 (strong buy) to 5 (sell); we recode the ratings in our regressions so that higher ratings correspond to *more favorable* recommendations. Following Ljungqvist et al. (2009), we assume a rating is outstanding if it has been confirmed by an analyst in the following 12 months; that is, if the I/B/E/S data field for "review date" is within 12 months of the recommendation announcement date.

Figure 1 presents our timeline for defining the coverage variables. To avoid obtaining noisy earnings forecasts immediately before the announcement of an M&A transaction, we define "premerger analysts" (for either merging firm) as those who provide

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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.

[6] Our results on long-term stock performance (Table 5) are robust to dropping tender offers from the sample.

[7] We find that, on average, an acquiring firm has three segments and a target firm has only one segment (based on their two-digit SIC codes).

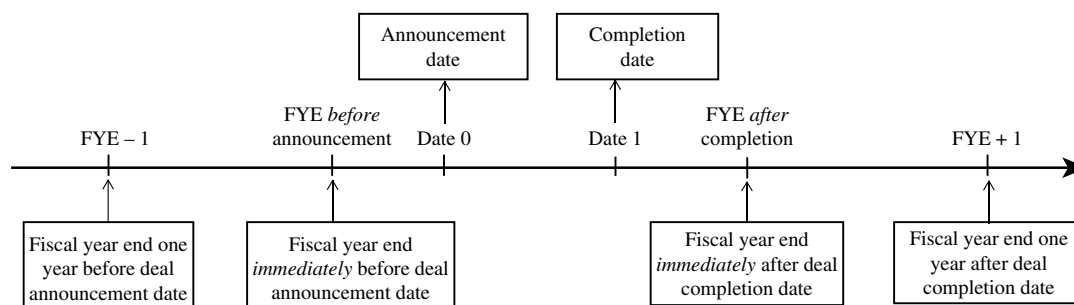**Table 1   Descriptive Statistics of the M&A and Analyst Sample**

	Panel A: M&A sample									
Time period:	1985–1989		1990–1994		1995–1999		2000–2005		All years	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
A_Assets	2,811.4	630.8	4,727.6	579.7	5,030.8	661.0	11,749.0	1,174.3	6,744.2	799.0
T_Assets	1,194.6	176.7	2,154.7	177.3	1,742.0	229.2	2,714.4	342.5	2,010.7	240.6
A_Market_Cap	1,089.9	396.8	1,843.2	457.9	2,890.9	569.0	5,962.0	944.8	3,445.5	609.5
T_Market_Cap	332.7	100.6	416.1	90.2	1,009.0	135.1	1,318.8	208.9	931.3	140.0
A_MTB	1.5	1.2	1.9	1.4	2.1	1.5	2.8	1.4	2.2	1.4
T_MTB	1.5	1.2	1.6	1.2	1.8	1.3	2.0	1.2	1.8	1.2
Deal_Value	878.9	259.1	805.9	196.2	1,840.9	276.3	2,132.8	327.7	1,663.5	272.1
Relative_Size (T/A)	0.6	0.3	0.4	0.3	0.5	0.3	0.4	0.2	0.5	0.3
Diversifying (%)	41	—	22	—	23	—	21	—	25	—
Stock (%)	37	—	69	—	69	—	63	—	62	—
Tender (%)	46	—	19	—	16	—	12	—	19	—
No. of deals	271		215		746		555		1,787	

	Panel B: Analyst sample													
Variables:	All deals		Diverse = 1		Diverse = 0		Large_Target = 1		Large_Target = 0		Stock = 1		Stock = 0	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
A_PreMA	11.95	9	12.36	9	11.80	9	10.86	8	13.14	11	12.02	9	11.82	9
A_Stay	5.40	4	5.41	4	5.39	4	4.81	3	6.04	4	5.40	4	5.40	4
T_PreMA	8.24	5	8.38	6	8.19	5	9.24	6	6.99	5	8.45	6	7.79	5
T_Stay	2.08	1	1.47	0	2.29	1	2.60	1	1.43	0	2.34	1	1.64	0
Cross-cover	2.89	1	1.99	0	3.19	1	3.59	1	2.01	1	3.24	1	2.29	1
Cross-cover_Stay	1.53	0	1.07	0	1.69	0	1.87	0	1.09	0	1.68	0	1.27	0
New	7.05	6	6.93	5	7.01	6	6.68	5	7.47	6	7.66	6	6.07	5
Total	13.00	11	12.77	11	13.08	11	12.23	10	13.86	12	13.76	11	11.79	10
No. of deals	1,787		448		1,339		893		894		1,102		685	

Notes. Panel A reports summary statistics of 1,787 mergers and acquisitions announced between 1985 and 2005. Mean and median values of each variable are reported for the four subperiods and for the total period. Acquiring firms' and target firms' assets (*A_Assets* and *T_Assets*), market capitalization (*A_Market_Cap* and *T_Market_Cap*), and market-to-book ratio of assets (*A_MTB* and *T_MTB*) are measured as of the fiscal year end prior to the merger announcement date. Panel B reports the number of analysts covering the acquirer (*A_PreMA*), the target (*T_PreMA*), and both the acquirer and the target (*Cross-cover*) prior to the M&As. It also reports the number of analysts who initiate coverage for the merged firm without having covered either merging firm before the M&A deal (*New*). *A_Stay* is the number of *A_PreMA* analysts retaining coverage for the merged firm, *T_Stay* is the number of *T_PreMA* analysts retaining coverage, and *Cross-cover_Stay* is the number of *Cross-cover* analysts retaining coverage. *Diversifying* is a dummy variable equal to 1 if it is a diversifying merger, defined on the basis of two-digit SIC codes, and equal to 0 otherwise. *Large_Target* is a dummy variable equal to 1 if the ratio of the size of the target firm to the size of the acquiring firm is greater than the sample median (0.3 for our sample) and 0 otherwise. *Stock* is a dummy variable equal to 1 if the merger is stock-financed and 0 otherwise. See the appendix for definitions of other variables.

one-year-ahead annual earnings forecasts for the fiscal year one year *before* the deal *announcement* year (FYE − 1). In Figure 1, premerger analysts provide annual earnings forecasts for the fiscal year ending on FYE − 1. Similarly, we define "postmerger 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 (FYE + 1). In Figure 1, postmerger analysts provide earnings forecasts for the fiscal year ending on FYE + 1. Therefore, an analyst who has covered either of the merging firms is defined as retaining coverage of the merged firm

Figure 1   Timeline for Defining Analyst Coverage Around M&As

if she is both a premerger analyst and a postmerger analyst.

Panel B of Table 1 presents descriptive statistics on analyst coverage of merging/merged firms 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 these, 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*).[8]

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 in Table 1).[9]

3. Results

Table 2 presents results on the determinants of target and acquirer analysts' decisions to drop or cover the merged firm. We then test the hypothesis of self-selection based on forecasting ability by comparing the accuracy of different groups of analysts' earnings forecasts for the merged firms (Equation (1)). Results are presented in Table 3. Next, we test the hypothesis of self-selection based on favorable views by comparing the stock recommendations and long-term growth forecasts of different groups of analysts (Equation (1)). Results are presented in Table 4. Finally, we combine the two hypotheses and examine the relationship between the percentage of analysts retaining coverage and the long-term stock and operating performance of a merged firm (Equation (2)). Results are shown in Tables 5 and 6. At the end of the section, we briefly discuss a number of robustness checks.

3.1. Determinants of Analyst Coverage Around M&As

As discussed in §2, we use probit models to examine individual analysts' 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.[10]

From column (1) of both panels, we find that both acquirer and target analysts are more likely to cover the merged firm when the target firm has better operating performance (*ROA*) or when the acquirer operates in a single line of business. Target analysts are more likely to cover a merged firm when the size of the target is larger relative to the acquirer and when the deal is not diversifying. These results suggest that analysts in general and target analysts in particular are more likely to retain coverage when they face a less-steep learning curve. We also find that target analysts are more likely to retain coverage 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.

Not surprisingly, when an analyst has covered *both* merging firms before the M&A deal (*Cross-Cover* dummy equals 1), she is much more likely to retain coverage of the merged firm than analysts who have covered only one of the merging firms (columns (2)–(5), both panels). When a target analyst works for an investment bank that employs another analyst covering the acquirer prior to the M&A deal (*Same_Broker* equals 1), the target analyst is 17%–18% more likely to drop coverage of the merged firm (panel B). But for an acquirer analyst, the fact that her investment bank has another analyst covering the target firm does not affect her likelihood of retaining coverage (panel A). These results are intuitive since the target stock is delisted after the completion of the M&A deal and investment banks are unwilling to provide duplicate coverage for the merged firm.[11]

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[8] Note that the means of *A_Stay* and *T_Stay* in panel B of Table 1 include the remaining cross-cover analysts. On average, there are 13 analysts covering a merged firm, whereas a total of 17 analysts covered the acquiring and target firms prior to the M&A deal.

[9] We also find (but do not report) significant cross-sectional variations 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 in §3, we include industry dummies as controls.

[10] 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.

[11] Following recent work (e.g., Kolasinski and Kothari 2008, Haushalter and Lowry 2011, Sibilkov et al. 2013), we also include an indicator of whether or not an analyst is affiliated with a bank which is advising the M&A transaction. We find that the bank's advisor status has no effect on the analyst's coverage decision.

Table 2   Probit Models: Determinants of Individual Analysts' Coverage Decisions

	Panel A					
	Dependent variable = 1 if acquire analyst stays; = 0 otherwise					
Variables	(1)	(2)	(3)	(4)	(5)	(6)
A_Conglomerate	−0.02*	−0.03**	−0.03**	−0.03**	−0.02*	−0.00
	(−1.87)	(−2.54)	(−2.52)	(−2.28)	(−1.71)	(−0.20)
A_STDEV	−0.00	−0.01	−0.01	0.00	−0.00	0.01
	(−0.17)	(−0.39)	(−0.63)	(0.13)	(−0.18)	(0.25)
A_ROA	0.15***	0.10*	0.07	0.01	0.00	0.07
	(3.27)	(1.93)	(1.23)	(0.24)	(0.05)	(0.71)
T_ROA	0.07*	0.10**	0.09**	0.07*	0.07*	0.12*
	(1.96)	(2.46)	(2.17)	(1.68)	(1.74)	(1.89)
Deal_Value	0.01**	0.01	0.00	0.01	0.01	0.02
	(2.43)	(1.45)	(0.59)	(1.07)	(0.98)	(1.37)
Premium	0.03***	0.04**	0.03**	0.03**	0.03**	0.05**
	(2.59)	(2.42)	(2.07)	(2.69)	(2.45)	(2.06)
Relative_Size	−0.05***	−0.04***	−0.04**	−0.02	−0.03	−0.02
	(−3.60)	(−2.76)	(−2.40)	(−1.51)	(−1.51)	(−0.58)
A_CAR	0.00	0.03*	0.02	0.03*	0.02	−0.01
	(0.21)	(1.93)	(1.42)	(1.76)	(1.01)	(−0.23)
Paystock%	0.00	0.02	0.02	0.02	0.02	0.05*
	(0.10)	(1.40)	(1.50)	(1.05)	(1.28)	(1.71)
Diversifying	−0.02	0.01	0.01	0.00	−0.00	−0.00
	(−1.51)	(0.99)	(0.68)	(0.31)	(−0.34)	(−0.16)
Trade_Volume	0.01	0.00	0.01	0.01	0.01	−0.01
	(1.26)	(0.84)	(1.09)	(1.15)	(0.93)	(−0.77)
Same_Broker		0.00	−0.02	−0.02	−0.02	
		(0.21)	(−0.73)	(−0.96)	(−1.13)	
Cross-Cover		0.11***	0.10***	0.08***	0.08***	
		(5.22)	(4.52)	(3.63)	(3.41)	
MA_Advisor		0.06	0.07	0.05	0.11	
		(0.61)	(0.67)	(0.50)	(1.07)	
All_Star			0.15***	0.14***	0.11***	
			(9.16)	(8.44)	(6.26)	
Avg_Score			0.09***	0.10***	0.11***	
			(4.70)	(5.29)	(5.58)	
For_Frequency				0.20***	0.19***	
				(9.92)	(9.56)	
PreMA_FE				−0.54***	−0.62***	
				(−2.61)	(−2.82)	
Firm_Experience				0.01	0.01	
				(0.57)	(0.73)	
#Industries					−0.08***	
					(−3.24)	
#Companies					0.11***	
					(4.07)	
Broker_Size					0.03***	
					(3.71)	
Linked						0.01
						(0.32)
Top25_Undergrad						0.03
						(0.96)
Observations	14,471	11,754	10,429	10,376	9,920	2,811
Pseudo R-squared	0.05	0.05	0.05	0.06	0.06	0.03

Table 2   (Continued)

	Panel B					
	Dependent variable = 1 if target analyst stays; = 0 otherwise					
Variables	(1)	(2)	(3)	(4)	(5)	(6)
A_Conglomerate	−0.03**	−0.02	−0.02	−0.02*	−0.02	0.04
	(−2.41)	(−1.62)	(−1.61)	(−1.70)	(−1.51)	(1.17)
A_STDEV	−0.18***	−0.18***	−0.16***	−0.17***	−0.16***	−0.23*
	(−3.72)	(−3.35)	(−2.97)	(−3.12)	(−2.80)	(−1.68)
A_ROA	0.03	0.07	0.11	0.12*	0.10	0.16
	(0.40)	(1.01)	(1.56)	(1.70)	(1.37)	(1.36)
T_ROA	0.17***	0.15***	0.18***	0.16***	0.15***	0.25**
	(3.71)	(2.84)	(3.29)	(2.81)	(2.58)	(2.26)
Deal_Value	0.01**	0.01*	0.00	0.00	0.00	0.02*
	(2.06)	(1.79)	(0.18)	(0.55)	(0.36)	(1.66)
Premium	−0.03*	−0.04**	−0.04**	−0.04**	−0.04**	−0.03**
	(−1.75)	(−2.11)	(−2.39)	(−2.36)	(−2.26)	(2.23)
Relative_Size	0.04***	0.06***	0.06***	0.06***	0.07***	0.05
	(3.39)	(3.52)	(3.67)	(3.69)	(3.79)	(1.48)
A_CAR	0.09***	0.10***	0.09***	0.09***	0.09***	0.11***
	(5.52)	(5.56)	(4.78)	(5.03)	(4.93)	(3.01)
Paystock%	0.06***	0.06***	0.06***	0.06***	0.06***	0.11***
	(4.28)	(3.79)	(3.47)	(3.58)	(3.08)	(2.58)
Diversifying	−0.09***	−0.06***	−0.06***	−0.06***	−0.06***	−0.11***
	(−7.33)	(−3.84)	(−3.62)	(−3.40)	(−3.43)	(−2.92)
Trade_Volume	0.04***	0.05***	0.05***	0.05***	0.06***	0.03*
	(7.54)	(6.79)	(7.64)	(7.29)	(7.53)	(1.99)
Same_Broker		−0.18***	−0.18***	−0.17***	−0.18***	
		(−9.65)	(−8.93)	(−8.63)	(−9.07)	
Cross-Cover		0.14***	0.14***	0.14***	0.13***	
		(4.72)	(4.57)	(4.39)	(3.98)	
MA_Advisor		0.17	0.19	0.20	0.25	
		(0.97)	(1.06)	(1.07)	(1.27)	
All_Star			0.15***	0.13***	0.09***	
			(8.06)	(7.18)	(4.68)	
Avg_Score			0.06***	0.09***	0.09***	
			(3.19)	(4.56)	(3.96)	
For_Frequency				0.16***	0.15***	
				(9.49)	(8.44)	
PreMA_FE				−0.08	−0.16	
				(−0.63)	(−1.25)	
Firm_Experience				0.04**	0.04**	
				(2.12)	(2.19)	
#Industries					−0.08***	
					(−3.51)	
#Companies					0.11***	
					(4.73)	
Broker_Size					0.05***	
					(5.54)	
Linked						0.04
						(1.11)
Top25_Undergrad						0.04
						(1.25)
Observations	8,853	7,502	6,773	6,738	6,451	1,518
Pseudo *R*-squared	0.09	0.08	0.10	0.11	0.12	0.08

Notes. This table reports regression results, using probit models, for the determinants of an analyst's coverage decision. Panel A (panel B) reports an acquiring (target) firm analyst's coverage decision. The dependent variable equals 1 if an analyst covered an acquiring firm (panel A) or a target firm (panel B) prior to the M&A and continues to cover the merged firm, and 0 otherwise. All the independent variables are measured as of the end of the fiscal year prior to the merger announcement date (fiscal year ending on "FYE before announcement" in Figure 1). Definitions of all the variables are provided in the appendix. The coefficients are estimates of the *marginal* effects on the probability of an analyst retaining coverage. All models include industry and year fixed effects. Robust *z*-statistics to heteroskedasticity are reported below the estimation coefficients. Standard errors are clustered by analyst.

*Significant at 10%; **significant at 5%; ***significant at 1%.

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Table 3   Analysts' Forecast Accuracy for the Merged Firms at FYE + 1

Variables	Dependent variable: *Analyst forecast errors at FYE + 1*				
	(1)	(2)	(3)	(4)	(5)
T_Stay	−0.06**	−0.06**	−0.06**	−0.07**	−0.04***
	(−2.53)	(−2.38)	(−2.38)	(−2.42)	(−2.62)
New	−0.03	−0.04	−0.05	−0.05	
	(−1.54)	(−1.50)	(−1.61)	(−1.61)	
Cross-cover_Stay	−0.05***	−0.05***	−0.05***	−0.05***	−0.03***
	(−2.77)	(−2.63)	(−2.65)	(−2.67)	(−2.93)
Horizon	0.01***	0.01***	0.02**	0.02**	0.01
	(4.19)	(3.80)	(2.28)	(2.25)	(0.60)
Paystock%	0.06***	0.07***	0.07***	0.07***	0.06
	(2.83)	(2.77)	(2.73)	(2.71)	(1.53)
Diversifying	0.10***	0.11***	0.11***	0.11***	0.07**
	(2.80)	(2.75)	(2.60)	(2.62)	(2.32)
Relative_Size	0.00	0.01	0.01	0.01	0.03**
	(0.84)	(1.27)	(1.12)	(1.19)	(2.52)
A_Conglomerate	0.03	0.03	0.03	0.03	0.06**
	(1.49)	(1.48)	(1.36)	(1.37)	(2.06)
Trade_Volume	−0.02***	−0.03***	−0.02***	−0.02***	−0.03**
	(−3.31)	(−3.25)	(−2.94)	(−2.63)	(−2.09)
MA_Advisor		−0.07**	−0.08***	−0.07**	−0.12*
		(−2.44)	(−2.65)	(−2.42)	(−1.92)
All_Star		−0.03	−0.03	−0.02	−0.03
		(−1.22)	(−1.21)	(−1.09)	(−1.43)
Avg_Score		−0.02	−0.02	−0.02	−0.03
		(−0.98)	(−1.26)	(−1.18)	(−1.01)
Elapse			0.08	0.08	0.04
			(1.25)	(1.26)	(0.71)
For_Frequency			0.02	0.02	0.01
			(0.40)	(0.38)	(0.36)
Experience				−0.04	−0.02
				(−1.20)	(−0.57)
#Industries				−0.03	−0.12*
				(−0.78)	(−1.89)
#Companies				0.07**	0.12**
				(2.06)	(2.14)
Broker_Size				0.01	0.00
				(0.72)	(0.78)
PreMA_FE					0.04*
					(1.69)
Constant	0.26***	0.27**	0.22	0.21	0.43**
	(2.91)	(2.41)	(1.48)	(1.15)	(2.10)
Observations	16,869	15,055	14,542	14,488	6,355
Adjusted *R*-squared	0.08	0.08	0.08	0.09	0.10

Notes. This table reports OLS regression of analyst forecast errors for the merged firm on four groups of analysts: those who have covered the target (*T_Stay*), the acquirer (*A_Stay*, the default group), both merging firms (*Cross-cover_Stay*), or neither merging firm (*New*) prior to the M&A transaction. *A_Stay* and *T_Stay* in this table exclude cross-cover analysts. The dependent variable is the individual analyst's earnings forecast error for the merged firm in the first full year after the M&A deal completion date (FYE + 1 in Figure 1), defined as the absolute proximity of the analyst's first forecast to actual earnings, scaled by the merged firm's stock price at the month of the forecast. Definitions of all the variables are provided in the appendix. All models include year and industry dummies. Robust *t*-statistics to heteroskedasticity are reported in parentheses. Standard errors are clustered by analysts.

   *Significant at 10%; **significant at 5%; ***significant at 1%.

Table 4   **Analysts' Recommendations and Long-Term Forecasts for the Merged Firms at FYE $+1$**

Variables	Dependent variable: Avg_Recommendation		Dependent variable: Avg_LTG_Forecasts	
	(1)	(2)	(1)	(2)
T_Stay	0.13**	0.13**	1.21**	1.17**
	(2.42)	(2.47)	(2.48)	(2.39)
New	0.04	0.06*	0.81***	0.69***
	(1.36)	(1.92)	(3.98)	(3.11)
Cross-cover_Stay	0.03	0.03	−0.47	−0.43
	(0.75)	(0.72)	(−1.55)	(−1.40)
Avg_Horizon	0.01	0.01	0.26**	0.24**
	(1.21)	(1.15)	(2.45)	(2.30)
Paystock%	0.06*	0.06	2.95***	2.88***
	(1.70)	(1.56)	(11.79)	(11.53)
Diversifying	0.07**	0.07**	−0.20	−0.22
	(2.20)	(2.19)	(−0.86)	(−0.94)
Relative_Size	0.06**	0.06**	−0.25	−0.29
	(2.42)	(2.51)	(−1.33)	(−1.50)
A_CAR	−0.05	−0.05	−2.19***	−2.14***
	(−1.62)	(−1.55)	(−7.33)	(−7.13)
A_ROA	0.43***	0.42***	−0.70	−0.47
	(4.90)	(4.72)	(−0.60)	(−0.40)
A_Conglomerate	0.02	0.02	−3.27***	−3.25***
	(0.52)	(0.50)	(−14.04)	(−13.95)
Trade_Volume	−0.02*	−0.02**	0.27***	0.32***
	(−1.74)	(−2.10)	(3.74)	(4.32)
MA_Advisor	0.23**	0.21*	3.03*	3.07*
	(2.07)	(1.86)	(1.65)	(1.71)
All_Star		0.02		−0.24
		(0.51)		(−0.76)
Avg_Score		−0.00		−0.03**
		(−1.11)		(−2.03)
Experience		0.01		−0.00***
		(1.42)		(−3.01)
#Companies		−0.03		0.56
		(−0.38)		(0.94)
#Industries		−0.04		1.19**
		(−0.64)		(2.38)
Broker_Size	−0.03**	−0.04***	−0.62***	−0.50***
	(−2.51)	(−2.61)	(−5.08)	(−3.87)
Constant	4.03***	4.19***	12.64***	12.46***
	(16.82)	(15.94)	(6.23)	(6.10)
Observations	4,571	4,544	4,384	4,374
R-squared	0.07	0.07	0.39	0.39

Notes. This table reports OLS regression of analyst average recommendation (columns (1) and (2)) and average long-term growth forecast (columns (3) and (4)) for the merged firm during the first full year after the M&A deal completion date (FYE $+1$ in Figure 1) on four groups of analysts: those who have covered the target (*T_Stay*), the acquirer (*A_Stay*, the default group), both merging firms (*Cross-cover_Stay*), or neither merging firm (*New*) prior to the M&A transaction. *A_Stay* and *T_Stay* in this table exclude cross-cover analysts. The recommendations range from 1 (strong buy) to 5 (sell). We reverse the coding so that higher ratings correspond to more favorable recommendations. The forecasts are in percentage terms. Definitions of all the variables are provided in the appendix. All models include year and industry dummies. Robust *t*-statistics to heteroskedasticity are reported in parentheses. Standard errors are clustered by analysts.

*Significant at 10%; **significant at 5%; ***significant at 1%.

Table 5   Analyst Coverage and Long-Term Abnormal Stock Performance of the Merged Firm

Panel A: Summary statistics of abnormal stock performance				
	Mean	SD	p25	p50	p75
CAR_3yrs	−0.035	0.854	−0.367	0.007	0.356
BHAR_3yrs	−0.060	0.951	−0.634	−0.173	0.332

Panel B: Groups of analysts and stock performance								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables	CAR_3yrs		BHAR_3yrs		CAR_2yrs		BHAR_2yrs	
T_Stay%	0.32***	0.31**	0.21***	0.21***	0.22**	0.19*	0.33**	0.29**
	(3.26)	(2.75)	(3.03)	(3.64)	(2.79)	(1.79)	(2.76)	(2.12)
A_Stay%		0.11		−0.01		0.16		0.19
		(0.90)		(−0.07)		(1.12)		(0.98)
New%		0.07**		0.03**		0.06**		0.06*
		(2.33)		(2.33)		(2.22)		(1.93)
Cross-cover_Stay%		0.21		0.05		0.19		0.10
		(1.41)		(0.50)		(1.26)		(0.61)
A_Market_Cap	0.06**	0.09**	0.06***	0.07***	0.04	0.08**	0.00	0.08**
	(2.30)	(2.57)	(3.13)	(3.14)	(1.54)	(2.57)	(0.02)	(2.66)
Premium	0.00	0.00	0.00	0.00	−0.00	−0.00	0.00	0.00
	(0.70)	(0.42)	(1.67)	(1.69)	(−0.04)	(−0.17)	(0.72)	(0.48)
Deal_Value	−0.06**	−0.10***	−0.03	−0.05*	−0.05	−0.10***	−0.00	−0.10***
	(−2.10)	(−3.61)	(−1.59)	(−2.03)	(−1.44)	(−3.11)	(−0.07)	(−3.35)
Diversifying	−0.16***	−0.15**	−0.08*	−0.08	−0.14**	−0.12**	−0.09	−0.11*
	(−3.50)	(−2.55)	(−2.05)	(−1.68)	(−2.56)	(−2.41)	(−1.40)	(−1.96)
Paystock%	0.01	0.01	−0.07	−0.07	−0.04	−0.04	−0.14	−0.06
	(0.07)	(0.12)	(−0.99)	(−1.11)	(−0.54)	(−0.60)	(−1.18)	(−0.70)
A_MTB	−0.01***	−0.01**	−0.01***	−0.01***	−0.02**	−0.02**	−0.01***	−0.01***
	(−3.07)	(−2.75)	(−4.21)	(−3.77)	(−2.75)	(−2.68)	(−4.75)	(−6.21)
Constant	−1.99***	−2.18***	−1.34***	−1.55***	−0.64***	−0.81**	−0.72*	−0.96**
	(−2.91)	(−2.97)	(−8.04)	(−7.39)	(−3.20)	(−2.47)	(−1.89)	(−2.43)
Observations	1,073	935	1,073	935	1,073	935	1,073	935
Adjusted R-squared	0.10	0.12	0.15	0.15	0.09	0.12	0.09	0.08

Panel C: Fama–MacBeth monthly return regression			
	(1)	(2)	(3)	(4)
Variables	RET_2yrs	RET_2yrs	RET_3yrs	RET_3yrs
T_Stay%	0.142*	0.249**	0.192*	0.248*
	(1.95)	(2.06)	(1.86)	(1.70)
A_Stay%		−0.097		0.033
		(−1.38)		(0.46)
New%		−0.026		−0.081
		(−0.72)		(−1.39)
Cross-cover_Stay%		−0.028		−0.324
		(−0.27)		(−1.13)
A_Market_Cap	−0.013	−0.027	−0.013	−0.033
	(−0.44)	(−0.62)	(−1.15)	(−1.19)
Premium	0.025	0.020	0.068	0.036
	(0.99)	(0.47)	(1.47)	(1.03)
Deal_Value	0.003	0.009	−0.018	0.003
	(0.21)	(0.38)	(−1.27)	(0.18)
Diversifying	−0.037	−0.012	0.030	0.005
	(−0.90)	(−0.31)	(0.72)	(0.16)
Paystock%	0.041	0.026	0.089*	0.055
	(1.38)	(0.64)	(1.96)	(1.28)
A_MTB	−0.008	−0.025	−0.042*	−0.036*
	(−0.24)	(−0.70)	(−1.74)	(−1.94)

Table 5   (Continued)

	Panel C: Fama–MacBeth monthly return regression			
Variables	(1) RET_2yrs	(2) RET_2yrs	(3) RET_3yrs	(4) RET_3yrs
Momentum	−0.098**	−0.071	−0.033	0.043
	(−2.04)	(−1.26)	(−0.67)	(0.85)
Constant	0.188*	0.326**	1.306***	1.368***
	(1.67)	(2.02)	(12.36)	(7.42)
Observations	18,377	16,530	16,139	14,569
Average *R*-squared	0.031	0.062	0.048	0.067
Number of months	221	220	209	208

Notes. This table reports results on postmerger long-term (abnormal) stock performance and the percentage of different groups of analysts retaining coverage for merged firms. Panel A presents the distributions of abnormal returns. Panel B reports regressions of abnormal stock returns on the percentage of different groups of analysts covering the merged firm. The dependent variables are two-year and three-year cumulative abnormal returns (*CAR_2yrs, CAR_3yrs*) and buy-and-hold abnormal returns (*BHAR_2yrs, BHAR_3yrs*) after the merger completion date. The returns are adjusted by the benchmark portfolio obtained from Daniel et al. (1997) and Wermers (2004). *T_Stay%* is the percentage of target analysts retaining coverage of the merged firm. *A_Stay%* is the percentage of acquirer analysts retaining coverage of the merged firm. *New%* is the ratio of newly added analysts to the analysts who covered the acquiring firm, expressed as a percentage. *Cross-cover_Stay%* is the percentage of analysts who covered both the acquirer and the target retaining coverage of the merged firm. Panel C reports time-series Fama–MacBeth regressions of monthly returns for firms that had engaged in an M&A deal in the previous 24 (*RET_2yrs*) or 36 months three-year (*RET_3yrs*) on percentages of different groups of analysts covering merged firms. In calculating A_Stay% and T_Stay%, we exclude cross-cover analysts. Definitions of other variables are provided in the appendix. Robust *t*-statistics to heteroskedasticity are reported below the estimation coefficients. All regressions include industry and year dummies. Standard errors are clustered by year.

*Significant at 10%; **significant at 5%; ***significant at 1%.

When we introduce a set of variables measuring analysts' research quality, the results are largely consistent with prior literature on how an analyst's coverage decision is affected by her reputation and research quality. 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 *Institutional Investor* magazine) prior to the M&A deal (columns (3)–(5) in both panels). Second, following Hong et al. (2000), we construct *Avg_Score* to measure the overall accuracy, relative to her peers, of an analyst's earnings forecasts for all the firms that she covers; a higher *Avg_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) and (5), panel A). But the same does not hold for target analysts.[12] These results support the notion that higher-caliber analysts are more likely to retain coverage. Following Clement and Tse (2005), we construct an additional set of variables describing an analyst's coverage experience prior to the M&A deal. These results again suggest that analysts tend to cover firms of which they have some prior knowledge.

The more 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 the 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] These variables, however, do not affect acquirer analysts' decisions to cover the merged firms. Second, while target analysts are more likely to cover the merged firm when the deal premium is lower, the opposite is true for acquirer analysts. 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 of analysts provides preliminary evidence for our hypothesis that target analysts choose to cover the merged firms if they hold favorable views of the M&A deal. While analysts, in general, are more likely to retain coverage of a merged firm of which they have some prior knowledge, the former target analysts are more selective in terms of deal quality than are the former acquirer analysts.

[12] 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.

[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).

Table 6 **Analyst Coverage and Long-Term Operating Performance of Merged Firms**

Variables	(1) EBIT_3yrs	(2) EBIT_3yrs	(3) EBIT_3yrs	(4) EBIT_3yrs	(5) EBIT_3yrs
T_Stay%	0.16***	0.12**			
	(5.01)	(2.19)			
A_Stay%		0.07	0.07		
		(1.00)	(1.23)		
New%		0.00			0.02
		(0.13)			(0.77)
Cross-cover_ Stay%		0.08		0.06	
		(1.52)		(1.27)	
A_Market_ Cap	0.08***	0.08***	0.08***	0.08***	0.11***
	(7.22)	(5.86)	(6.93)	(6.15)	(3.99)
Premium	−0.00	−0.00	−0.00	−0.00	−0.00
	(−0.59)	(−0.93)	(−1.20)	(−0.92)	(−1.02)
Deal_Value	−0.03***	−0.04*	−0.03*	−0.03*	−0.04**
	(−3.16)	(−1.88)	(−2.03)	(−1.90)	(−2.68)
Diversifying	−0.02	−0.03	−0.02	−0.02	−0.01
	(−0.66)	(−1.01)	(−0.83)	(−0.56)	(−0.20)
Paystock%	−0.11**	−0.12***	−0.10**	−0.10**	−0.15**
	(−2.37)	(−3.02)	(−2.69)	(−2.64)	(−2.42)
A_MTB	−0.03***	−0.03***	−0.03***	−0.03***	−0.04***
	(−20.12)	(−12.50)	(−11.25)	(−12.24)	(−8.93)
Constant	−0.10	−0.14	−0.15	−0.04	−0.38*
	(−0.68)	(−0.86)	(−1.02)	(−0.32)	(−1.98)
Observations	952	818	922	1,007	991
R-squared	0.31	0.31	0.31	0.30	0.20

Notes. This table reports regressions of postmerger long-term operating performance on the percentages of different groups of analysts retaining coverage for merged firms. EBIT are earnings before interest and taxes scaled by total assets for the merged firms. The dependent variables are the average EBIT for the merged firm over the three years after the merger completion year (*EBIT_3yrs*). *T_Stay%* is the percentage of target analysts retaining coverage of the merged firm. *A_Stay%* is the percentage of acquirer analysts retaining coverage of the merged firm. *New%* is the ratio of newly added analysts to the analysts who covered the acquiring firm, expressed as a percentage. *Cross-cover_Stay%* is the percentage of analysts who covered both the acquirer and the target retaining coverage of the merged firm. In calculating *A_Stay%* and *T_Stay%*, we exclude cross-cover analysts. Definitions of other variables are provided in the appendix. Robust *t*-statistics to heteroskedasticity are reported below the estimation coefficients. All regressions include industry and year dummies. Standard errors are clustered by year.

*Significant at 10%; **significant at 5%; ***significant at 1%.

3.2. Accuracy of Earnings Forecasts

Our first hypothesis states that, given the challenging task of covering the merged firm, only those target analysts who have superior forecasting ability to cover the merged firm and who can compete with the best acquirer analysts choose to retain coverage. This self-selection process implies that the average forecasting ability of the remaining target analysts will be higher than that of the remaining acquirer analysts. Results from Table 2 show that higher-caliber target and acquirer analysts are more likely to retain coverage of the merged firms. We also find (not reported) that the average quality of the remaining target analysts (along the same dimensions as examined in

Table 2, measured before the M&A deal) is as good as that of the remaining acquirer analysts.

In addition to these observable dimensions of analyst quality, there can be unobservable (or imprecisely observed) aspects of (a) an analyst's innate ability and (b) the effort she exerts to cover the merged firm (e.g., hours spent on communicating with merged firms' executives). To examine the first hypothesis, we use the accuracy of earnings forecasts for the merged firm as an "outcome" of an analyst's forecasting ability and the self-selection process, an approach similar to that of Kumar (2010). If the overall ability (and effort) of the retained target analysts is greater than that of the retained acquirer analysts, then the retained target analysts' earnings forecasts should be more accurate.

We compare the accuracy of the earnings forecasts among four groups of analysts covering the merged firm: former acquirer analysts (who have *not* covered the target firm), former target analysts (who have *not* covered the acquiring 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, controlling for firm, deal, and analyst characteristics. The dependent variable is forecast error, defined 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—FYE+1 in Figure 1—scaled by the stock price of the merged firm at the end of the forecasting month.[14] To ensure that all the annual earnings forecasts for the post-merger firms 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.

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 groups of analysts. The default group is those who have covered the acquiring firm (*A_Stay*).

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[14] Whereas prior literature often uses the last forecast to define forecast accuracy (e.g., O'Brien 1990, Clement 1999, Jacob et al. 1999), we consider the first forecast for the merged firm to be more appropriate in this context. The first forecast better reflects an analyst's innate forecasting ability than the last forecast, which could be affected by information the analyst has gathered from various sources, including access to management (e.g., Ke and Yu 2006) or by the herding of other analysts who have issued forecasts earlier (e.g., Clement and Tse 2005). In robustness checks, we rerun the regressions of forecast errors as in Table 3 but using the last forecast to calculate forecast errors; our results continue to hold.

In addition to including all the analyst attributes in Table 2, we add two new variables: *Horizon* and *Elapse*. *Horizon* is the number of days between the forecast date and fiscal period end and is used to control for the mechanical relation between *Horizon* and forecast error. *Elapse* is the number of days elapsed since the most recent forecast for the firm by any analyst and captures the likelihood of issuing a lead forecast versus a piggyback forecast. 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.

Table 3 shows that the forecast error of the former cross-cover analysts (*Cross-cover_Stay*) is 5% lower than that of the former acquirer analysts, a superiority even more pronounced for diversifying mergers (not reported) due to a cross-cover analyst's knowledge of both firms. The coefficient on the *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.

More importantly, after controlling for firm, deal, and the analyst characteristics, we find that the forecast errors of former target analysts who have *not* covered the acquiring firm are lower than those of the former acquirer analysts. The coefficient on *T_Stay* in columns (1)–(4) of Table 3 suggests that a former target analyst's forecast error is 6%–7% lower than that of a former acquirer analyst (significant at 1%) during the first year of the postmerger period. The former target analysts' forecast errors are slightly greater than those of former cross-cover analysts (6% versus 5%). However, *F*-test on comparing the coefficients on target and cross-cover analyst dummies indicates that they are not statistically significantly different from each other. This suggests that the former target analysts are as accurate as the former cross-cover analysts—further evidence that only those target analysts with superior forecasting ability for the merged firm are retained as a result of the self-selection process.[15]

Finally, regarding the control variables, 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* dummy equals 1), (c) when the acquirer is a conglomerate (*A_Conglomerate* dummy equals 1), (d) when the target is large relative to the acquirer (*Relative_Size*), or (e) when the acquirer's stock has low trading volumes (*Trade_Volume*) 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. Interestingly, we find that forecast accuracy is higher when the investment bank an analyst works for also serves as the advisor for the M&A deal (*MA_Advisor*). Not surprisingly, when an analyst issues her first annual earnings forecast for the merged firm closer to the actual earnings announcement date (*Horizon*), her forecast is more accurate than that of other analysts, as she has more information about the merged firm than those who issued their forecasts earlier. Of the remaining analyst attributes, only *#Companies* and *PreMA_FE* seem to have a significant effect on forecast accuracy. The results indicate that if an analyst is accurate in forecasting the earnings of the firms she covers prior to the merger, then she is likely to be more accurate in forecasting the merged firm's earnings; but as the number of companies an analyst covers increases, her accuracy relative to her peers decreases.

Overall, our results support the hypothesis that, due to self-selection, only those target analysts with superior forecasting ability retain coverage. As a result, the remaining target analysts are more accurate than the remaining acquirer analysts in forecasting the merged firm's earnings.

3.3. Stock Recommendations and Long-Term Growth Forecasts

Our second hypothesis stipulates that, as part of the self-selection process, only those target analysts with a favorable view of the M&A deal retain coverage of the merged firm. As a result, the remaining target analysts should collectively have a more optimistic assessment of the merged firm than do the remaining acquirer analysts. We test this hypothesis by using multivariate regressions to compare stock recommendations and long-term growth forecasts among the four groups of analysts (Equation (1)). We report the results in Table 4.

We use two variables to measure the degree of optimism in analysts' research. The first one is the average numerical value of an analyst's recommendations issued between the deal completion date and

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[15] In unreported results, we 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. Most of the results from Table 3 continue to hold during the second year after deal completion, 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 should decrease over time as the analysts learn more about the merged firms. 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.

the end of FYE + 1 (columns (1) and (2)).[16] The second measure is the average value of an analyst's long-term growth forecasts made during the same period (columns (3) and (4)). The key independent variables are the indicators *T_Stay*, *Cross-cover_Stay*, and *New*. Again, we assign the former acquirer analysts as the default group. We control for a set of firm, deal, and analyst characteristics that might affect analyst optimism. We also include year and industry fixed effects in all the models and we cluster standard errors at the analyst level.

Table 4 shows that, after controlling for firm, deal, and known analyst characteristics, our key independent variable, *T_Stay*, enters into all four regressions positively and its coefficient is significant at the 5% level. Everything else equal, compared to recommendations (long-term growth forecasts) made by former acquirer analysts, the average score of the ratings made by former target analysts is higher by 0.13, while the average value of growth forecasts is higher by 1.17%–1.21%. On the other hand, the ratings and growth forecast of the former cross-cover analysts are not statistically significant from those of the former acquirer analysts. This contrasts with the results in Table 3, where we find that the former cross-cover analysts—with their knowledge of both firms—are much more accurate in earnings forecasts than are acquirer analysts. The coefficient on the *New* indicator is significant in the growth forecasts regressions (and marginally significant in the full model of the recommendation regression), although the magnitudes are smaller than those of the coefficient on *T_Stay*. These results are consistent with target analysts choosing to cover merged firms of which they hold favorable views.

We also find that the recommendation level increases (a) when the acquirer's stock is the main method of payment (*Paystock%*), (b) after a diversifying merger (*Diversifying* dummy equals 1), (c) when the target is large relative to the acquirer (*Relative_Size*), or (d) when the acquirer has better operating performance (*A_ROA*). There is some evidence that an analyst tends to issue more optimistic ratings when her investment bank is the advisor of the M&A deal (*MA_Advisor*). When an analyst works for a larger broker (*Broker_Size*), however, she tends to be more conservative in issuing ratings. As for the growth forecasts, we find that they increase

(a) when the acquirer's stock is the main method of payment, (b) when the firm has high trading volume (*Trade_Volume*), or (c) when an analyst's investment bank is the advisor of the M&A deal. On the other hand, analysts who have more experience, are more accurate (*Avg_Score*), or are employed by large brokers tend to issue more conservative forecasts.

To summarize, the results from Table 4 support our hypothesis that target analysts choose to cover merged firms about which they hold favorable views. Next, we combine the results from both hypotheses—self-selection based on forecasting ability and self-selection based on optimism about the merged firm's prospects—and examine the merged firms' long-term stock returns and operating performance.

3.4. Long-Term Stock and Operating Performance of Merged Firms

If, on average, retained target analysts have superior forecasting ability with respect to the merged firm and hold favorable views of the M&A deal (as we find in Tables 3 and 4), then, as a group, their decision to cover the merged firm ought to be associated with stronger firm performance. This is the motivation for our last set of tests, as specified by Equation (2). We use *A_Stay%* to denote the percentage of acquirer analysts (who have not also covered the target) retaining coverage after the M&A deal; we use *T_Stay%* to denote the percentage of target analysts (who have not also covered the acquirer) retaining coverage; 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; and we use *New%* to denote the number of new analysts scaled by the number of acquirer analysts prior to the merger. We examine both the long-term postmerger abnormal stock returns and the operating performance.

To measure long-term stock performance, we use several approaches common in the long-term event study literature (e.g., Loughran and Ritter 1997).[17] First, we consider cumulative abnormal return (CAR) and buy-and-hold abnormal return (BHAR). Specifically, the variables *CAR_2yrs* and *CAR_3yrs* denote the cumulative abnormal returns (over benchmark returns) during the two and three years after the merger completion date, whereas *BHAR_2yrs* and *BHAR_3yrs* measure the two- and three-year abnormal

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[16] There has been a rating scheme change due to the National Association of Securities Dealers Rule 2711 in 2002. In response, some analysts switched from a five-point scale (strong buy, buy, hold, underperform, and sell) to a three-point scale (buy, hold, and sell). We account for this structural break by rerunning the recommendation regressions using an indicator variable that equals 1 if a rating is "buy" or "strong buy" and 0 otherwise as the dependent variable. Our results continue to hold under this alternative specification.

[17] For example, Barber and Lyon (1997) find that the control firm approach eliminates the skewness bias associated with the long-term BHAR 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 preevent performance can explain its post acquisition long-term abnormal performance. Finally, Fama (1998) suggests that abnormal returns can be estimated by using returns on matching portfolios or by using an asset-pricing model.

buy-and-hold returns. Following Daniel et al. (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.[18] For each acquiring firm, we measure its monthly abnormal returns by subtracting its benchmark return from its monthly raw stock return. Moreover, as recommended by Petersen (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 the DGTW benchmark portfolios, generates unbiased standard errors.[19]

Second, we adopt the Fama and MacBeth (1973) panel regression methodology to examine the long-run returns.[20] Third, we examine the abnormal performance using the Fama and French (1993) factors and the Carhart (1997) momentum time-series regressions. Finally, we define operating performance (ROA) as earnings before interest and taxes (EBIT) scaled by the total assets. We use the average ROA for the three years after merger completion as the dependent variable.

Panel A of Table 5 reports the unconditional distributions of the two sets of abnormal returns, calculated over the first three years after the deal completion date. While the means of both CAR and BHAR are negative, the median of the CAR distribution over our sample of merged firms is positive and the 75th percentile of the BHAR distribution is 33.2%. Panel B of Table 5 reports OLS regression results with two- and three-year abnormal CAR and BHAR as the dependent variables. We control for firm and deal characteristics that have been shown to influence long-term abnormal stock performance.

We find a positive and significant relationship between the percentage of target analysts who choose to cover the merged firm (T_Stay%) and the firm's long-term stock performance. The coefficient in column (1) suggests that a 1% increase in T_Stay% leads to a 0.32% increase 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. We find a slightly lower effect when we

use BHAR in column (3). These results are robust to the inclusion of the percentages of acquirer analysts, new analysts, and cross-cover analysts retaining coverage. We obtain similar results for two-year CAR and BHAR, as shown in columns (5)–(8).

In panel C, we adopt the Fama and MacBeth (1973) monthly cross-sectional regressions, which allow us to assess the robustness of T_Stay%, a continuous variable, in predicting subsequent M&A performance after controlling for known determinants that affect returns. In each month during the sample period, cross-sectional regressions are estimated among firms that have engaged in an M&A transaction during the last two and three years. We control for firm characteristics, including firm size and market-to-book ratio, which are shown by Daniel and Titman (1997) to be better predictors of returns than the Fama–French factors. We also include the same set of M&A deal characteristics as in panel B of Table 5 as additional controls. The reported coefficients are the averages of the monthly regression coefficients of each independent variable with their t-statistics adjusted by the Newey-West standard errors. The regression results of the two-year and three-year returns are similar. Both sets of results show that the average estimated coefficient on T_Stay% is positive and significant, while no such relation is found for the other coverage variables.

To further assess the robustness of the stock return results, we use a calendar Fama–French and momentum time-series regression approach (results not reported). For each month, we create high- and low-T_Stay% event portfolios, consisting of all sample firms that had engaged in an M&A deal in the previous 36 months. Our cutoffs for high-T_Stay% and low-T_Stay% merged firms are more than 50% of target analysts retaining coverage and no target analysts retaining coverage, respectively. The portfolio excess returns are then regressed on the Fama and French (1993) factors and the Carhart (1997) momentum factor. We follow Bouwman et al. (2009) and first estimate the portfolio alpha for each portfolio, then test the difference between the calendar-time returns of high- and low-T_Stay% event portfolios. We find that, for the high-T_Stay% portfolios, the intercept term is significantly positive, while for the low-T_Stay% portfolios, the intercept term is significantly negative. Moreover, portfolios with high-T_Stay% have significantly higher alphas than those with low-T-Stay%. The results suggest that merged firms with no target analyst retained have significantly worse long-term abnormal returns than do those with a high percentage of retained target analysts.

Finally, in Table 6, we present evidence that T_Stay% is also positively related to operating performance three years after the M&A completion date.

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[18] We obtain DGTW benchmark data from http://www.rhsmith.umd.edu/faculty/rwermers/ftpsite/Dgtw/coverpage.htm (accessed July 2011).

[19] Table 6 of Petersen (2009, p. 472) 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."

[20] See, for example, Daniel and Titman (2006) and Pontiff and Woodgate (2008) for prior studies on long-term returns.

Results in column (2) of Table 6 indicate that the average EBIT of the merged firm increases by 1.92% with the addition of one target analyst retaining coverage ($0.16 \times 12\%$; an additional target analyst retaining coverage implies an increase of 12% in $T\_Stay\%$). We do not find such a relation for $A\_Stay\%$, $New\%$, or $Cross\text{-}cover\_Stay\%$. Taken together, the evidence from Tables 3–6 is consistent with our hypotheses that the former target analysts choose to retain coverage if (1) they have superior forecasting ability with respect to the merged firm and (2) they hold favorable views of the M&A deal and the merged firm. Consequently, a higher percentage of retained target analysts predicts better future stock and operating performance.

3.5. Robustness Checks

Our empirical tests illustrate the superiority of former target analysts over former acquirer analysts in forecast accuracy and show that a higher percentage of retained target analysts predicts better long-term stock performance of the merged firm. One may argue that our results are driven by a "forward-looking" bias; that is, these target 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 were quicker to make that decision. We find that most target analysts stop issuing earnings forecasts for the target (i.e., 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 is more likely to have the forward-looking bias. Additionally, we show that the higher accuracy of former target analysts' forecasts persists in the second full (fiscal) year after deal completion, which contradicts the forward-looking bias argument.

Moreover, we repeat the tests on the merged firms' long-term stock returns, calculating the abnormal returns over the second and third years after deal completion. The results (unreported) show that the association between the percentage of target analysts covering the merged firm ($T\_Stay\%$) and the merged firm's long-term 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. We therefore 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 premerger analysts and postmerger 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 this, 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, our calculation of the percentage of analysts dropping coverage of the merged firm is based on identifying those who no longer make earnings forecasts for that 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 this new measure, we find similar results. Other robustness tests are discussed throughout the paper.

4. Conclusions

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. Analysts covering the acquiring firm have to decide whether to continue covering it in its post-acquisition form. Analysts covering the target firm have to make quite a different decision. Since the target firm is delisted following the completion of the M&A transaction, covering the merged firm is similar to initiating coverage for a new firm that is much larger and more complex than the target. Since target analysts face a more challenging decision than acquirer analysts do, their decision process should reveal more about the prospects of the merged firm.

Based on the prior literature, we hypothesize that, in determining whether to cover the merged firm, target analysts go through a self-selection process in which only those with superior forecasting ability and

a favorable view of the M&A deal retain coverage. Using a large sample of M&A deals with matched data on analysts and their earnings forecasts during 1985–2005, we first find that a number of analyst quality metrics are associated with a higher likelihood of both acquiring and target analysts retaining coverage. However, we find that the remaining target analysts provide more accurate earnings forecasts for the merged firms than do the remaining acquirer analysts. These results support our first hypothesis that only those target analysts whose forecasting ability is better than that of the average (remaining) acquirer analyst choose to cover the merged firms.

In examining the determinants of analyst coverage decisions, we find that target analysts (but not acquirer analysts) are attracted to higher-quality M&A deals (higher announcement period returns and lower deal premiums). In addition, we find that the remaining target analysts issue more optimistic recommendations and long-term growth forecasts than do the remaining acquirer analysts. These results support our second hypothesis that target analysts self-select to cover the merged firm along another dimension—their optimism concerning the M&A deal and the merged firm.

In our final set of tests, we find that the percentage of target analysts retaining coverage is associated with higher ROA and higher abnormal long-term stock performance. We do not find this relation with acquirer analysts. These results further support our hypotheses that each target analyst chooses to cover the merged firm because she has superior ability to do so *and* a favorable view of the M&A deal. Hence, a higher percentage of remaining target analysts predicts better long-term performance of the merged firm. Both our methodology—studying target analysts' coverage decisions and their implications by using the M&A setting, which is characterized by heightened information asymmetry, and by using acquirer analysts as a comparison group—and our results extend the literature on the role of analysts in facilitating information transmission and on the performance of M&As.

Acknowledgments

Appendix

A.1. Firm and Deal Characteristics

A_ROA (*T_ROA*)—earnings before interest and depreciation over the book value of total assets of the acquiring (target) firm measured at the end of the fiscal year before the 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_STDEV—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 have different two-digit primary SIC codes.

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 the 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.

Premium—Deal offer price over target price four weeks prior to deal announcement.

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 ratio of the size of the target firm to the size of the acquiring firm is greater than the sample median (0.3 for our sample) and 0 otherwise.

A_Assets (*T_Assets*)—Acquiring firms' (target firms') assets measured as of the fiscal year end prior to the merger announcement date.

A_Market_Cap (T_Market_Cap)—Acquiring firms' (target firms') market capitalization measured as of the fiscal year end prior to the merger announcement date.

A_MTB (T_MTB)—Acquiring firms' (target firms') market-to-book ratio of assets measured as of the fiscal year end prior to the merger announcement date.

Tender—A dummy variable equal to 1 if the M&A deal is a tender offer and 0 otherwise.

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.

Cross-cover—The group of analysts who covered both the acquiring and target firms prior to the M&A deal.

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 number of acquirer (target) analysts retaining coverage of the merged firm over the number of analysts covering the acquiring firm (target) prior to the M&A transaction (excluding those analysts who cover both target and acquiring firms prior to the merger).

Cross-cover_Stay%—The number of cross-cover analysts retaining coverage over the number of target analysts prior to the M&A deal.

New%—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 magazine *Institutional Investor*.

Avg_Score—Average of an analyst's forecast scores for all the firms that he or she covers in the fiscal year before the deal announcement date (or, for merged firm, in the first fiscal year after deal completion). 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 error, which is the absolute difference between the forecast and the actual earnings per share (EPS). Second, we assign a ranking based on the sorting, in which the best receives the first rank, the second-best receives the second rank, and so on 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 greater 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.

Horizon—Number of days from the forecast date to the end of the fiscal period.

Avg_Horizon—The average number of days from the forecast date to the end of the fiscal period for each analyst.

For_Frequency—A measure of an analyst's forecast frequency for the acquiring firm, target firm, or merged 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 (or, for a merged firm, in the first fiscal year after deal completion), minus the minimum number of forecasts for the analysts following the acquiring firm, target firm, or merged 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 firm, target firm, or merged firm.

PreMA_FE—A measure of an analyst's forecast accuracy for the acquiring firm or target firm, calculated as the maximum forecast error of an acquiring or target firm analyst in the fiscal year before deal announcement, minus the forecast error of the analyst during the announcement year, with this difference scaled by the range of forecast errors for all analysts following that firm. An analyst's earnings forecast error prior to the merger is defined as the absolute proximity of his or her first forecast to actual earnings, scaled by the acquiring or target firm's stock price in 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.

Experience—A measure of an analyst's experience. It is calculated as the difference between the number of years of experience for an analyst covering the merged firm and the minimum number of years of experience among all analysts covering the merged firm during the first fiscal year after deal completion, scaled by the difference between the maximum and the minimum number of years of experience among all analysts covering the merged firm.

Elapse—A measure of the days elapsed since the previous forecast by any analyst following the merged firm in $FYE + 1$. It is calculated as the days between an analyst's forecast of the merged firm's earnings in $FYE + 1$ and the most recent forecast of the merged firm's earnings by any analyst, minus the minimum number of days between two adjacent forecasts of the merged firm's earnings by any two analysts in $FYE + 1$, with this difference scaled by the range of days between two adjacent forecasts of the merged firm's earnings in $FYE + 1$.

#Industries—A measure of the number of industries an analyst follows in the fiscal year before deal announcement

(or, for a merged firm, in the first fiscal year after deal completion). 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 (or, for a merged firm, in the first fiscal year after deal completion) 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 (or, for a merged firm, in the first fiscal year after deal completion). It is calculated as the number of companies followed by an analyst covering the acquiring or target firm in the fiscal year before deal announcement (or, for a merged firm, in the first fiscal year after deal completion) 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 size of the analyst's brokerage. It is calculated as the number of analysts employed by the analyst's brokerage in the fiscal year before deal announcement, minus the minimum number of analysts employed by the brokerages of all analysts following the acquiring or target firm in the same year, with this difference scaled by the range of brokerage size for analysts following the firm.

Linked—A dummy variable equal to 1 if an analyst is linked to executives or directors of the acquiring or target firm by having gone to the same 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 among the top-25 in the *U.S. News & World Report* annual college ranking.

Avg_Recommendation—An average value of an analyst's recommendations made for merged firms between deal completion date and first fiscal year end after deal completion. Analyst recommendations are standardized ratings: 1 = strong buy, 2 = buy, 3 = hold, 4 = underperform, 5 = sell. We reverse the rating order so that 1 denotes a "sell" while 5 denotes a "strong buy."

Avg_LTG_Forecast—An average value of an analyst's long-term growth forecasts made for merged firms between deal completion date and first fiscal year end after deal completion. The forecasts are expressed as percentages.

A.4. Postmerger Long-Term Stock Performance
CAR_3yrs—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.

BHAR_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.

CAR_2yrs—Cumulative abnormal returns over the two 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.

BHAR_2yrs—Two-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.

EBIT_3yrs—Average value of earnings before interest and taxes scaled by beginning total assets over the three years after deal completion.

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