Do Analysts Add Value When They Most Can? Evidence from Corporate Spinoffs*

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Abstract

This paper investigates how securities analysts help investors understand the value of diversification. By studying the research that analysts produce about companies that have announced corporate spinoffs, we gain unique insights into how analysts portray diversified firms to the investment community. We find that while analysts' research about these companies is associated with improved forecast accuracy, the value of their research about the spun-off subsidiaries is more limited. For both diversified firms and their spun-off subsidiaries, analysts' research is more valuable when information asymmetry between the management of these entities and investors is higher. These findings contribute to the corporate strategy literature by shedding light on the roots of the diversification discount and by showing how analysts' research enables investors to overcome asymmetric information.

Keywords: analysts, spinoffs, diversification discount, information asymmetry, corporate strategy

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INTRODUCTION

Do investors understand the value of corporate diversification? The recent wave of conglomerate breakups in response to undervaluation in the stock market seems to suggest they do not.[1] This sentiment is echoed in academic research on diversification, in which a key explanation for the so-called 'diversification discount' is the existence of asymmetric information between the management of diversified firms and outside investors.

As intermediaries between companies' management and investors, securities analysts should help reduce this information asymmetry. Yet several studies have found that analysts themselves may in fact contribute to, rather than mitigate, the discount at which diversified firms trade relative to their focused peers (Zuckerman, 1999; Gilson *et al.*, 2001). While existing explanations attribute analysts' difficulties in covering diversified firms to the institutional characteristics of securities research, in reality, little is known about *how* analysts go about portraying diversified firms to the capital market. The answer to this question is important because it can help explain why investors might not understand the value of diversification, and hence, why diversified firms may be undervalued in the first place.

Using a proprietary data set that includes both quantitative and qualitative information about analysts' coverage of diversified firms that undertake corporate spinoffs, we open the 'black box' of how analysts process information about diversified firms. Spinoffs are a useful empirical context in which to investigate this issue because once they have been announced, analysts must begin producing research about the two new entities created in these transactions, the spun-off subsidiaries and the remaining operations of their diversified parent companies. Thus, by studying analysts' research about firms that have announced spinoffs, we gain unique insights into how analysts go about understanding both the component parts of diversified firms and their combined value, thereby shedding light on the roots of the diversification discount.

[1]Recent examples of diversified companies breaking apart their component businesses include Fortune Brands, ITT, Tyco, Kraft, McGraw-Hill, Ralcorp, Motorola, and Sara Lee.

This study generates two main results. First, the value of analysts' research is significantly more limited for spun-off subsidiaries than it is for their diversified parent companies. While much of the research that analysts produce about diversified firms is associated with more accurate earnings forecasts, the only type of research that improves forecast accuracy for spun-off subsidiaries is when analysts explicitly study the parent companies' pre-spinoff segments. Second, for both the diversified firms and their spun-off subsidiaries, analysts' research is particularly valuable to investors when the characteristics of these entities make them more difficult to cover, that is, when information asymmetry is higher.

Taken together, these findings suggest that investors may misvalue diversified firms because analysts do not perform the detailed research about these firms that would be required to understand them. In situations where analysts do produce this kind of research, their work appears to play a key role in enabling investors to overcome the information asymmetry they experience vis-à-vis the managers of diversified firms.

THEORY AND HYPOTHESES

The value of corporate diversification has been the subject of significant debate over the past two decades. While early research found diversified firms as a whole to be worth less than the sum of their parts (Lang and Stulz, 1994; Berger and Ofek, 1995), subsequent research has questioned both this finding and its attribution to diversification (Villalonga, 2004a, 2004b). It is worth noting, however, that the focus of this debate has been on the average effect of diversification on firm value. Scholars on both sides of the debate have found significant variance across diversified firms in the discounts and premia at which they trade relative to single-segment firms, yet the sources of this variance have received much less attention.

One reason why investors may undervalue diversified firms is that information about these companies is either skewed or insufficient. For instance, Villalonga (2004b) finds that the diversification discount is contingent on how firms' operations are broken down into segments.

Moreover, various studies have established that diversified firms that undertake unrelated diversification or 'unique' corporate strategies are difficult for investors to understand (Bergh, Johnson, and Dewitt, 2008; Litov, Moreton, and Zenger, 2012).

As intermediaries between managers and investors, securities analysts are in a position to help reduce the asymmetry of information between these two groups of actors (Givoly and Lakonishok, 1979; Francis and Soffer, 1997). However, the existing literature has shown that analysts themselves have difficulty evaluating diversified firms. Producing research about diversified firms is costly for analysts, reducing both the quality of their work and their incentive to cover these companies (Bhushan, 1989). Moreover, analysts specialize by industry, but diversified firms operate in multiple industries, resulting in a mismatch between these companies' operations and analysts' expertise (Zuckerman, 1999, 2000; Gilson *et al.*, 2001). Finally, diversification causes firms to depart from their 'traditional' strategies, and analysts are often unable or unwilling to devote effort to understanding these new endeavors (Benner, 2010; Benner and Ranganathan, 2012; Litov *et al.*, 2012).

While prior research appears to attribute analysts' inability to produce high quality research about diversified firms to inappropriate expertise or simple lack of effort, no study has yet explored in any detail what kinds of research securities analysts perform about diversified firms and how this research influences their ability to produce accurate forecasts for these companies. The answers to these questions are important because they shed light on why the diversification discount might exist in the first place and whether analysts can help investors overcome the information asymmetry they experience vis-à-vis diversified firms.

Corporate spinoffs, transactions in which diversified companies divest business units by distributing shares in them *pro-rata* to shareholders,[2] are a useful empirical context in which to investigate these issues. Once a spinoff has been announced, analysts must begin evaluating the separate operations of the two new companies created from the diversified firm they used to cover: the spun-off subsidiary and the remaining operations of the divesting parent

[2]Corporate spinoffs are distinct from entrepreneurial spinoffs (also known as spin-outs or spawns), in which a group of employees founds a new venture in the same industry as their former parent company.

company. This is important because analysts do not usually disaggregate their research in this manner, meaning that spinoffs provide unique insights into how analysts understand the value of both diversified firms and their component parts.

The amount of information analysts incorporate into their reports about both diversified firms and spun-off subsidiaries is likely to help them make accurate forecasts about these entities' future performance (Mikhail, Walther, and Willis, 2003). Information on a firm's expected future financial condition, such as growth forecasts and pro-forma financial statements, is a key input into the production of accurate forecasts.

H1a: The more pro-forma forecasts analysts make about diversified parent companies, the more accurate their earnings forecasts about these firms will be.

H1b: The more pro-forma forecasts analysts make about spun-off subsidiaries, the more accurate their earnings forecasts about these units will be.

Moreover, when analysts attempt to understand the pre-spinoff conditions in diversified firms, such as why these companies are undertaking spinoffs, how large the diversification discount is, or how the pre-spinoff operations of their segments function, the accuracy of the forecasts they make about diversified firms and spun-off units will be higher.

H2a: When analysts produce research about why diversified companies undertake spinoffs, their earnings forecasts for these firms will be more accurate.

H2b: When analysts produce research about the magnitude of the diversification discount, their earnings forecasts for diversified firms will be more accurate.

H2c: When analysts produce research about diversified firms' business segments, their earnings forecasts for the spun-off subsidiaries will be more accurate.

To the extent that analysts' research about diversified firms and their spun-off subsidiaries helps investors understand these companies' expected future performance, this benefit is

likely to be even more substantial when information asymmetry about these entities is high. Both private and newly-public firms have been shown to suffer from high information asymmetries vis-à-vis the external counterparts with which they must transact (Capron and Shen, 2007; Sanders and Boivie, 2004; Arikan and Capron, 2010). To mitigate the negative impact of these asymmetries, private firms sometimes undergo IPOs before undertaking mergers and acquisitions to release information about themselves (Reuer and Shen, 2004; Reuer and Ragozzino, 2008). For similar reasons, the research that analysts produce about diversified parent companies and their spun-off subsidiaries — which have no trading history and hence, no prior analyst coverage as stand-alone companies — should be especially valuable to actual or potential investors in these entities.

The asymmetry of information between management and investors is known to be particularly high in diversified firms. While the resource-based view holds that diversification allows firms to leverage key resources and capabilities (Penrose, 1959; Rumelt, 1974; Helfat and Eisenhardt, 2004; Levinthal and Wu, 2010), corporate managers are often unable to articulate what that core competence or 'parenting advantage' actually is (Prahalad and Bettis, 1986; Porter, 1987; Goold, Campbell, and Alexander, 1994; Prahalad and Doz, 2003).[3] Moreover, managers might take advantage of this opacity by making inefficient diversification decisions that serve their own private objectives (Amihud and Lev, 1981, Jensen, 1986, Scharfstein and Stein, 2000).[4] Investors are likely to experience these kinds of information asymmetry acutely, suggesting that the value of analysts' research will increase in a firm's level of diversification.

H3a: The impact of analysts' research on parent forecast accuracy will be greater for more highly diversified firms.

[3]This may provide one explanation for the importance attributed to business unit and industry effects relative to corporate effects in determining profitability differences (Schmalensee, 1985; Rumelt, 1991; McGahan and Porter, 1997), as well as the scarcity of studies finding large and significant corporate effects (Wernerfelt and Montgomery, 1988; Bowman and Helfat, 2001).

[4]These behaviors are similar in spirit to Villalonga's (2004b) idea of 'strategic accounting,' in which firms aggregate their activities for reporting purposes so as to avoid disclosing information about the profitability of their segment-level operations to competitors.

Additionally, corporate spinoffs are extraordinarily complex transactions, necessitating the separation of formal and informal linkages between the divesting parent companies and their spun-off subsidiaries, including common resources (Woo, Willard, and Daellenbach, 1992), residual ties among top management teams and boards of directors (Seward and Walsh, 1996; Semadeni and Cannella, 2011), shared debt and corporate overhead (Gilson, 2000), and connections in the identities and reputations of the new entities (Corley and Gioia, 2004). Investors are likely to have difficulty understanding the full ramifications of these changes for the parent company, which will be more pronounced when a large part of the firm is being spun off (Bergh, 1995). Thus, the value of analysts' research should increase in the size of a spinoff.

H3b: The impact of analysts' research on parent forecast accuracy will be greater when firms spin off larger subsidiaries.

Finally, diversified parent companies often undertake spinoffs to restructure themselves (Hoskisson, Johnson, and Moesel, 1994). One way in which firms might accomplish this is to undertake several spinoffs at the same time. However, investors are likely to find it difficult to understand the full implications of simultaneously-implemented spinoffs. Thus, the value of analysts' research will be greater when firms undertake multiple spinoffs at the same time.

H3c: The impact of analysts' research on parent forecast accuracy will be greater when firms spin off multiple subsidiaries simultaneously.

Turning now to spun-off subsidiaries, these entities typically have no stock price history as independent companies,[5] meaning that investors are likely to find it difficult to evaluate their future prospects as independent companies. Thus, the value of analysts' research will be higher when spun-off subsidiaries have no stock price history.

[5]The sole occasion in which a spun-off subsidiary might have a stock price history is when the divesting parent company created a tracking stock for it before spinning it off. Instances of this behavior will be used to represent spun-off subsidiaries in which more information is available to investors.

H4a: The impact of analysts' research on subsidiary forecast accuracy will be greater when spun-off units have no stock price history.

Similarly, both small subsidiaries and subsidiaries that operate in industries different from those of their parent companies are likely to be quite opaque to investors, as analysts are unlikely to have exerted much effort in covering them in the past (Bhushan, 1989). Indeed, this factor is often the reason why firms undertake spinoffs in the first place (Krishnaswami and Subramaniam, 1999; Zuckerman, 2000; Bergh *et al.*, 2008). Thus, analysts' research will be more valuable for small and unrelated spun-off subsidiaries.

H4b: The impact of analysts' research on subsidiary forecast accuracy will be greater when spun-off units are smaller.

H4c: The impact of analysts' research on subsidiary forecast accuracy will be greater when spun-off units are not in the same industry as their parent firms.

METHODS

Sample and data

Our sample consists of 1,793 analyst reports written about companies involved in a random sample of 62 spinoffs announced and completed between 1985 and 2001.

The dataset was constructed as follows. First, an initial sample of spinoffs was retrieved from the Securities Data Corporation (SDC) Mergers and Acquisitions database. Specifically, we searched for all completed divestitures of U.S. targets (i.e., subsidiaries) to parent company shareholders, announced after January 1, 1985 and effective before December 31, 2001. Additionally, the stock of these targets could not already be trading separately in the market due to an earlier equity carve-out (e.g., Agilent from Hewlett-Packard, or Lucent from AT&T). This yielded a sample of 350 transactions.

Second, we used Compustat to obtain financial data for the parent and subsidiary companies in the effective years of each of these 350 spinoffs. Data on sales, assets, and market value for both the parent and subsidiary companies were available for 267 of these spinoffs.[6] This number, as well as the other numbers of transactions reported so far, refers to the number of new companies that were spun off. Because some transactions involve the simultaneous spinoff of more than one subsidiary by the parent (e.g. Dun & Bradstreet's double divestiture of A.C. Nielsen and Cognizant),[7] the actual number of deals is lower (254).

Out of the 254 deals, we randomly selected 66 as our final sample for analysis, in which four deals were double divestitures and one deal was a triple divestiture. For each of these 66 deals, we retrieved from Investext all analyst reports that were issued about the parent, the subsidiary, or both, during the time period ranging from one month prior to the announcement date to one month after the effective date. When a deal was a multiple divestiture, we selected all reports issued about the parent or any of the subsidiaries during the time period ranging from one month prior to the earliest announcement date to one month after the latest effective date. This process yielded a sample of 2,512 reports.

Of these 2,512 analyst reports, we eliminated those that were issued prior to the spinoff announcement date, when analysts may not have been aware that it was coming, or after the effective date, when the spun-off entity began trading independently and analysts therefore had actual stock prices to guide their analysis. Within the remaining 1,932 reports, 139 more were identified as duplicate reports and removed, leaving a final sample of 1,793 reports. These eliminations resulted in the removal of four more deals from the sample, as all the reports on the parties to these transactions were written either before the announcement

[6] In addition to company names and CUSIPs from SDC and Compustat, we used information from the Center for Research on Security Prices (CRSP)-Compustat Header File, the CCH Capital Changes Reporter, and the Securities and Exchange Commission (SEC) website (which lists firms' former names) to maximize the number of merged SDC-Compustat observations. Whenever data were not available for the spinoff's effective year, we used data from the latest year in which the parent company's old stock was listed in Compustat, and/or from the first year in which the spun-off company was included in Compustat (as far as two years before or after the spinoff became effective).

[7] We define two or more spinoffs by the same parent as a multiple divestiture when either the announcement or the effective dates of the transactions occur within a week of each other. Choosing a different threshold (e.g. a month or five days, instead of a week) does not make a difference.

date or after the effective date. Thus, the 1,793 reports analyzed in this paper cover 62 transactions in total, representing 52 parent companies due to multiple spinoff transactions.

The third and most distinctive step in our data collection process consisted of reading the 1,793 analyst reports in their entirety (10,160 pages altogether) and manually coding their content. Specifically, for both parents and subsidiaries, we gathered data on the types of financial analyses conducted and valuation methods employed, the earnings and price forecasts made, the types of analyses performed about each spinoff, and analyst sentiment about the parent company and the spinoff.

Given the magnitude of this task, we hired and trained a team of advanced undergraduate students with financial knowledge to gather these data. Several steps were taken to ensure the reliability of the data they collected. First, to verify the quality of their work, the reports pertaining to several spinoffs were assigned to more than one student (unbeknownst to them), so that each student's work was cross-checked by at least one other student.[8] When discrepancies were found, we personally checked the original analyst reports to ascertain which student was mistaken and instructed him or her to correct the mistakes in that and any other reports he or she had coded. Second, to ensure consistency across students in the way the more subjective information was coded, we had a different student go over the coding of the qualitative items across all reports. Third, we had three other students, including a graduate student, go over the entire dataset and recode some of the quantitative items whenever serious errors, omissions, or inconsistencies became apparent. Fourth, we conducted ANOVA tests of whether the mean values of key variables differed according to which of our research assistants coded them, and the F-statistics from these tests (available upon request from the authors) are not statistically different from zero.

Finally, we collected data from Thomson's I/B/E/S, Capital IQ, and Institutional Investor magazine about the analysts in our sample and the investment banks they were working for at the time they issued each report.

[8] As a check on the validity of these data, we ran t-tests comparing the mean values of the variables double-coded by each pair of students, and these differences were not statistically significant.

Variables

The empirical tests in this paper examine how the quality of the research that analysts produce about spun-off subsidiaries and their divesting parent companies influences the accuracy of the forecasts they make about these newly-created firms. This subsection of the paper, as well as Table 1, describes the variables used to investigate these relationships.

——— Table 1 here ———

Dependent variable

We measure EPS Forecast Error as the absolute value of the difference between forecasted earnings-per-share (EPS) and actual EPS on the forecast date (i.e., the date to which the forecast refers), scaled by the company's stock price. Higher values of EPS Forecast Error indicate that a forecast is less accurate, and vice versa. For the Parent EPS Forecast Error variable, we measure the parent company's stock price at the end of the fiscal year prior to the forecast period (Gilson *et al.*, 2001; Agrawal, Chadha, and Chen, 2006). Since spun-off subsidiaries do not have a stock price in the year prior to the forecast, we use the subsidiary's stock price at the end of the first fiscal year in which the stock trades to construct the Subsidiary EPS Forecast Error variable. We eliminate outliers in which the relevant stock price used to construct these variables is less than one dollar, and those for which EPS Forecast Error is greater than or equal to two (Agrawal *et al.*, 2006).

Analysts' research

We employ several different variables to test how the research that analysts produce about diversified parent companies and their spun-off subsidiaries influences forecast accuracy.

Hypotheses 1a and 1b predict that the more pro-forma forecasts analysts produce about diversified parent companies and their spun-off subsidiaries, the more accurate the earnings forecasts they will make about these entities. To test these predictions, first, # Annual EPS Forecasts is a count of the number of years for which an analyst forecasts annual EPS for the parent companies and their spun-off subsidiaries. Second, EPS Growth Forecast is an

indicator variable taking the value one if an analyst forecasts the expected growth in either of these entities' EPS. Finally, Financial Statement Index is a count (zero, one, two, or three) of the number of pro-forma financial statements (balance sheet, income statement, and cash flow statement) produced for either of these units. All of these variables are expected to be negatively associated with Parent EPS Forecast Error and Subsidiary EPS Forecast Error in their respective regressions.[9]

Analysis of Spinoff Rationale is an indicator variable taking the value one if an analyst describes the rationale for an upcoming spinoff, and Analysis of Conglomerate Discount is an indicator variable taking the value one if an analyst discusses the conglomerate discount in his report. These two variables are expected to be negatively associated with Parent EPS Forecast Error (Hypotheses 2a and 2b), as they reflect situations in which analysts put more effort into understanding diversified companies.

To test the prediction that the forecasts analysts make about a spun-off subsidiary will be more accurate when they analyze the business segments in its diversified parent company (Hypothesis 2c), Analysis of Segments is an indicator variable taking the value one if an analyst includes segment-level financial information in his reports. This variable should be negatively associated with Subsidiary EPS Forecast Error.

Firm characteristics and interaction terms

To test Hypotheses 3a-c, we begin by defining several variables measuring the characteristics of the diversified parent companies. Herfindahl Index is calculated as the sum of the squared shares of a firm's total sales provided by each of its segments, representing the level of diversification within these firms. Then, Diversified Firm is defined as an indicator variable taking the value one if Herfindahl Index exceeds the mean value in its distribution. Similarly, Relative Size is the total assets of the spun-off subsidiary over the total assets of its parent company, and Large Spinoff is an indicator variable taking the value one if Relative Size

[9] As will be discussed, our control variables allow us to rule out the possibility that analysts who produce more research are more motivated or have a greater ability to generate information about upcoming spinoffs.

exceeds the mean value in its distribution. Finally, Multiple Divestiture is defined as an indicator variable taking the value one if a firm undertakes multiple spinoffs simultaneously.

Having defined these characteristics, we create interaction terms between the above-described indicator variables (Diversified Firm, Large Spinoff, and Multiple Divestiture) and each of the variables representing analysts' research about the diversified parent firms (# Annual EPS Forecasts, EPS Growth Forecast, Financial Statement Index, Analysis of Spinoff Rationale, and Analysis of Conglomerate Discount). These interaction terms represent the value of analysts' research in parent firms where information asymmetry is high. If Hypotheses 3a-c are supported and analysts' research is more valuable in such firms, the coefficients on all of these interaction terms are expected to be negative.

To test Hypotheses 4a-c, we now define several variables measuring the characteristics of the spun-off subsidiaries. First, No Tracking Stock is an indicator variable taking the value one if a spun-off subsidiary did not previously have a tracking stock. Returning to the Relative Size variable, Small Spinoff is defined as an indicator variable taking the value one if Relative Size is less than the mean value in its distribution. Finally, Unrelated is defined as an indicator variable taking the value one if the parent company and its spun-off subsidiary do not share a four-digit SIC code.

We create interaction terms between these three indicator variables (No Tracking Stock, Small Spinoff, and Unrelated) and each of the variables representing analysts' research about the spun-off subsidiaries (# Annual EPS Forecasts, EPS Growth Forecast, Financial Statement Index, and Analysis of Segments). These interaction terms represent the value of analysts' research in spun-off subsidiaries where information asymmetry is high. If Hypotheses 4a-c are supported and analysts' research is more valuable in these spun-off subsidiaries, the coefficients on all of these interaction terms should be negative.

Control variables

In addition to the above-described variables, we also include several control variables in the upcoming regressions to rule out potential alternative explanations for our results.

The first of these is Days Announce to Report Date, defined as the number of days that elapse from a spinoff's announcement date to the date on which a report was written. This variable accounts for the benefit of analysts having more time to conduct research about the entities involved in upcoming spinoffs. As such, Days Announce to Report Date is expected to be negatively associated with both Parent and Subsidiary EPS Forecast Error.

Similarly, Days Report to Effective Date is defined as the number of days that elapse from the date on which a report was written to a spinoff's effective date. This variable is included to represent the possibility that analysts have more information about the implications of an upcoming spinoff the closer to the completion of that transaction they write their reports. Accordingly, Days Report to Effective Date is expected to be positively associated with both Parent and Subsidiary EPS Forecast Error.

To represent the impact of analysts' reputation on the accuracy of the forecasts they produce, we use Institutional Investor's analyst rankings, which identify the top three analysts and runners-up in different industrial sectors (Stickel, 1992; Fang and Yasuda, 2009). Analyst Ranking by II takes the value one if an analyst is a runner-up, two if the analyst is ranked third, three if the analyst is ranked second, and four if the analyst is ranked first. If reputable analysts produce better research about the firms they cover, Analyst Ranking by II should be negatively associated with both Parent and Subsidiary EPS Forecast Error.

Analyst Advisor is a count of the number of deals in the ten years preceding a spinoff in which the investment bank issuing the analyst report (or a predecessor bank that merged into it) participated as an advisor of some sort (Michaely and Womack, 1999).[10] This variable is included because analysts' abilities to provide information to investors may be higher when the investment banks they work for have prior advisory relationships with the same firms they cover. While such relationships are viewed negatively from a regulatory perspective (Agrawal *et al.*, 2006; Kadan *et al.*, 2009), they might in fact improve analysts' abilities to make accurate forecasts by increasing the flow of information from companies to the analysts

[10]'Deals' include mergers and acquisitions, spinoffs, divestitures, and equity issues.

covering them. This implies that Analyst Advisor will be negatively associated with both Parent and Subsidiary EPS Forecast Error.

Recommendation is an indicator variable taking the value one if an analyst expresses either a 'buy' or a 'sell' recommendation about a company's stock, and zero if he expresses a neutral or no opinion about that firm. Analysts have a tendency to display mimetic behavior, or 'herd,' due to career concerns (Hong, Kubik, and Solomon, 2000; Rao, Greve, and Davis, 2001), reducing their incentive to express strong positive or negative opinions about a company's stock (Kadan *et al.*, 2009). When analysts do express such opinions, it may reflect confidence in the accuracy of their research, so Recommendation should be negatively associated with both Parent and Subsidiary EPS Forecast Error.

Finally, ln(Total Assets) and Debt/Assets are included in the upcoming regressions to represent the financial conditions of the spun-off subsidiaries and their divesting parent companies. The upcoming regressions also include year fixed effects. Summary statistics and correlation matrices are available upon request from the authors.

RESULTS

Methodology

Because not every analyst report includes EPS forecasts for the divesting parent company and the spun-off subsidiary, we use Heckman two-stage models to conduct our analyses of analyst forecast accuracy. Of the 1,793 reports comprising the sample, only 263 of them provide EPS forecasts for the subsidiaries, and 1,400 include such forecasts for the parent companies. Consequently, the factors driving analysts to include EPS forecasts in their reports may be correlated in unobserved ways with their ability, or lack thereof, to make accurate forecasts, making Heckman models the appropriate methodology to employ.[11]

[11]To ensure that our results are not being driven by this choice of methodology, we also estimated our models using ordinary least squares regressions, yielding consistent results.

Heckman's estimator requires an instrumental variable that is correlated with analysts' propensities to include EPS forecasts in their reports but not with the accuracy of those forecasts. This variable should therefore be included in the first-stage specification but excluded from the second. We propose and use as our instrument Subsidiary IPO/Parent IPO, the ratio of the dollar value of IPO issues in the subsidiary's industry to the dollar value of IPO issues in the parent's industry, both measured in the year in which each analyst report was written. The logic behind this instrument is as follows. We are unaware of any direct mechanism that would systematically link the relative volume of new equity issues in particular industries to earnings forecast accuracy, so our instrument satisfies the exclusion restriction. However, we expect Subsidiary IPO/Parent IPO to be correlated with analysts' propensities to provide EPS forecasts, in that analysts should include greater detail in their coverage of companies operating in 'hot' industries (Rajan and Servaes, 1997).

More specifically, we predict a negative relation between this instrument and Parent EPS Forecast Inclusion (an indicator variable taking the value one if a report contains an EPS forecast for the divesting parent company), because analysts will be more likely to include an EPS forecast about a parent company when it operates in a more active industry, represented by smaller values of Subsidiary IPO/Parent IPO. Analogously, we expect a positive relation between the instrument and Subsidiary EPS Forecast Inclusion (an indicator variable taking the value one if a report contains an EPS forecast about a spun-off subsidiary), as analysts will be more likely to make EPS forecasts about subsidiaries operating in more active industries, represented by higher values of Subsidiary IPO/Parent IPO.

Diversified parent firms

Analysts' research and forecast accuracy in diversified parent firms

Table 2 presents the results of the Heckman model for the divesting parent companies. In this table, Regression [1] presents the results of the first-stage regression taking Parent EPS Forecast Inclusion as its dependent variable, and Regression [2] presents the results

of the second-stage regression taking Parent EPS Forecast Error as the dependent variable. Subsidiary IPO/Parent IPO is the instrument included in the first-stage regression. Both the first- and second-stage regressions include the independent and control variables described previously, as well as year fixed effects.

——— Table 2 here ———

In Regression [2], the research that analysts produce about the diversified parent companies is associated with improved forecast accuracy. The coefficients on # Annual EPS Forecasts and EPS Growth Forecast are both negative and significant, supporting Hypothesis 1a. These estimates indicate that each additional EPS forecast an analyst produces is associated with forecast errors that are lower by 5.1 percentage points. When an analyst forecasts a diversified firm's EPS growth, his forecast errors are lower by 2.5 percentage points. By contrast, the coefficient on Financial Statement Index is positive and significant.

When analysts do more work to understand why diversified firms undertake spinoffs, their earnings forecasts are more accurate. The coefficients on Analysis of Spinoff Rationale and Analysis of Conglomerate Discount are both negative and significant, providing support for Hypotheses 2a and 2b. These coefficient estimates indicate that when an analyst studies a diversified firm's rationale for undertaking a spinoff or the magnitude of its diversification discount, his forecast errors are 4.4 and 3.3 percentage points lower, respectively.

The variables representing the characteristics of diversified firms behave largely as expected. The coefficient on Herfindahl Index is negative and significant, indicating that forecast accuracy is worse for more highly diversified firms. The positive and significant coefficient on Relative Size suggests that analysts produce less accurate forecasts about firms that undertake larger spinoffs. The coefficient on Multiple Divestiture is also positive and significant, revealing that analysts produce less accurate forecasts about diversified firms that undertake multiple spinoffs simultaneously.

Among the control variables, the amount of time elapsed between the announcement, report, and effective dates of spinoffs is not related to forecast accuracy (Days Announce

to Report Date and Days Report to Effective Date). The positive and significant coefficient on Analyst Ranking by II indicates that analysts who are ranked by Institutional Investor produce less accurate earnings forecasts than unranked analysts. This result may be driven by the fact that these analysts' expertise and talent, as defined by Institutional Investor's industry-based classification system, does not match well with the reality of the highly-complex, diversified firms they are covering. The negative and significant coefficient on Analyst Advisor suggests that analysts produce more accurate forecasts about companies with which the investment banks they work for had prior advisory relationships. Consistent with a career concerns-type explanation, the negative and significant coefficient on Recommendation suggests that forecast accuracy improves when analysts express an opinion about a stock. Finally, the positive and significant coefficients on ln(Total Assets) and Debt/Assets reveal that analysts produce less accurate research about large and highly-levered firms.

In Regression [1], the negative and significant coefficient on the instrumental variable, Subsidiary IPO/Parent IPO, indicates that analysts are more likely to include EPS forecasts about parent companies that operate in more active industries, represented by smaller values of the instrument. Additionally, the significant coefficient on lambda in Regression [2] indicates that the effects of selection bias in the reports that do (and do not) include EPS forecasts for the parent companies are substantial, thereby justifying our empirical approach.

Analysts' research and forecast accuracy in diversified parent firms in which information asymmetry is high

The findings described thus far suggest that the research that analysts produce about diversified firms can help investors gain insight into the functioning of these companies. Building on these results, Hypotheses 3a-c predict that the value of analysts' research will be greater when information asymmetry is higher between diversified companies and their investors. Tables 3, 4, and 5 present the key coefficients from regressions testing Hypotheses 3a-c.

———— Tables 3, 4, 5 here ————

The coefficients in these three tables come from the second-stage regressions of Heckman selection models taking Parent EPS Forecast Error as their dependent variable. The key independent variables are the interaction terms between the variables representing analysts' research (# Annual EPS Forecasts, EPS Growth Forecast, Financial Statement Index, Analysis of Spinoff Rationale, and Analysis of Conglomerate Discount) and the variables representing firms in which less exogenous information is available (Diversified Firm, Large Spinoff, and Multiple Divestiture).

In Table 3, the coefficients on Diversified Firm × # Annual EPS Forecasts, Diversified Firm × Analysis of Spinoff Rationale, and Diversified Firm × Analysis of Conglomerate Discount are all negative and significant. The coefficients on the main effects of # Annual EPS Forecasts, Analysis of Spinoff Rationale, and Analysis of Conglomerate Discount lose their significance in these regressions. This suggests that the benefits of these types of analysts' research are greater in more diversified firms.

In Table 4, the coefficients on Large Spinoff × # Annual EPS Forecasts, Large Spinoff × Financial Statement Index, Large Spinoff × Analysis of Spinoff Rationale, and Large Spinoff × Analysis of Conglomerate Discount are all negative and significant. The coefficients on the main effects (# Annual EPS Forecasts, Financial Statement Index, Analysis of Spinoff Rationale, and Analysis of Conglomerate Discount) do not lose their significance in these regressions. This suggests that while analysts' research is beneficial in general, it is even more valuable in firms that undertake large spinoffs.

Table 5 reveals that only the production of pro-forma financial statements improves the accuracy of analysts' forecasts about firms that undertake multiple divestitures (Multiple Divestiture × Financial Statement Index). None of the coefficients on the other interaction terms is statistically significant. This result may be driven by the fact that only ten of the firms in our sample undertook multiple divestitures at the same time.

The results in this subsection reveal that when information asymmetry is higher in diversified firms, the research that analysts produce helps investors overcome this imbalance.

The next subsection investigates how analysts cover spun-off subsidiaries, shedding light on how their research helps investors understand the component parts of diversified firms.

Spun-off subsidiaries

Analysts' research and forecast accuracy in spun-off subsidiaries

Table 6 presents the results of the Heckman model for the spun-off subsidiaries. Regression [1] presents the first-stage regression taking Subsidiary EPS Forecast Inclusion as its dependent variable, and Regression [2] presents the second-stage regression taking Subsidiary EPS Forecast Error as the dependent variable. Subsidiary IPO/Parent IPO is the instrument in the first-stage regression, and both the first- and second-stage regressions include the independent and control variables described previously, as well as year fixed effects.

——— Table 6 here ———

Regression [2] in Table 6 reveals that the research that analysts produce about spun-off subsidiaries is not strongly associated with improved forecast accuracy: only the coefficient on Analysis of Segments is negative and significant, supporting Hypothesis 2c. This coefficient estimate indicates that forecast errors for spun-off subsidiaries are lower by 3.1 percentage points when analysts produce research about the segments operating within parent companies. The coefficient estimates on # Annual EPS Forecasts, EPS Growth Forecast, and Financial Statement Index are all *positive* and significant; instead of improving forecast accuracy, analysts' production of pro-forma forecasts about spun-off subsidiaries is associated with higher forecast errors. Thus, Hypothesis 1b is not supported.

The variables representing the characteristics of the spun-off subsidiaries all behave as expected. The coefficient on No Tracking Stock is positive and highly significant, suggesting that when a spun-off subsidiary has no prior stock price history, analysts produce less accurate forecasts about it. The negative and significant coefficient on Relative Size reveals that forecast errors are higher for smaller spun-off subsidiaries, as these are precisely the business

units about which analysts are likely to have less information. Finally, the positive and significant coefficient on Unrelated indicates that analysts produce less accurate forecasts about spun-off subsidiaries that are unrelated to their parent companies' main operations, since these units are likely to be further from analysts' primary areas of specialization.

Among the controls, the negative and significant coefficient on Days Announce to Report Date means that the further in time a report is written after a spinoff announcement, the more accurate an analyst's forecasts will be, since more information about the transaction has been revealed. The negative and significant coefficient on Analyst Advisor indicates that analysts produce more accurate research about spun-off subsidiaries when their investment banks had prior advisory relationships with their parent companies. The coefficient on Analyst Ranking by II is not significant, meaning that more highly-reputed analysts do not produce more accurate forecasts about spun-off subsidiaries than their lower-ranked or unranked peers. This null result may be driven by the fact that the industry expertise Institutional Investor assigns to analysts might not correspond to the industry of the spun-off subsidiary. Finally, the positive and significant coefficients on ln(Total Assets) and Debt/Assets reveal that analysts produce less accurate research about larger and more levered firms.

In Regression [1], the positive and significant coefficient on the instrument suggests that analysts will be more likely to make EPS forecasts about subsidiaries operating in more active industries, as reflected by higher values of Subsidiary IPO/Parent IPO. Additionally, the significant coefficient on lambda indicates that the effects of non-random selection in the reports that include EPS forecasts for the spun-off subsidiaries are substantial.

Analysts' research and forecast accuracy in spun-off subsidiaries in which information asymmetry is high

Hypotheses 4a-c predict that analysts' research will contribute more to the accuracy of the forecasts they make about spun-off subsidiaries when less exogenous information is available. Tables 7, 8, and 9 present the key coefficients from regressions testing these hypotheses.

——— Tables 7, 8, 9 here ———

The results in these tables come from the second-stage regressions of Heckman selection models taking Subsidiary EPS Forecast Error as their dependent variable. The key independent variables are the interaction terms between the variables representing analysts' research (# Annual EPS Forecasts, EPS Growth Forecast, Financial Statement Index, and Analysis of Segments) and the variables representing spun-off subsidiaries in which less exogenous information is available (No Tracking Stock, Small Spinoff, and Unrelated).

In Table 7, the coefficients on No Tracking Stock × # Annual EPS Forecasts, No Tracking Stock × EPS Growth Forecast, and No Tracking Stock × Financial Statement Index are all negative and significant, as are the coefficients on Unrelated × # Annual EPS Forecasts, Unrelated × EPS Growth Forecast, and Unrelated × Financial Statement Index in Table 9. By contrast, the coefficients on the main effects (# Annual EPS Forecasts, EPS Growth Forecast, and Financial Statement Index) in these tables are positive and significant. Thus, analysts' pro-forma forecasts are more valuable in spun-off subsidiaries that did not previously have a tracking stock and that are unrelated to their parent companies.

In Table 8, the coefficient on Small Spinoff × Financial Statement Index is the only interaction term that is negative and significant, though the coefficients on Small Spinoff × # Annual EPS Forecasts and Small Spinoff × EPS Growth Forecast are also negative. These results provide suggestive evidence that the value of analysts' pro-forma forecasts is higher among smaller spun-off subsidiaries.

In all three tables, the coefficients on No Tracking Stock × Analysis of Segments, Small Spinoff × Analysis of Segments, and Unrelated × Analysis of Segments are all *positive* and significant, while the coefficients on Analysis of Segments are negative and significant. This suggests that the value of analysts' research about the segments within diversified firms is *lower* when less exogenous information is available about spun-off subsidiaries. Because analysts' efforts along this dimension were already productive, this result is not surprising.

In sum, the evidence in support of the value of analysts' research about spun-off subsidiaries is mixed. On average, the only kind of research that appears to be associated with

improved forecast accuracy for these business units is when analysts study the pre-spinoff segments within diversified firms. However, more general types of analysts' research — pro-forma forecasts — are more valuable in situations in which information asymmetry is higher, suggesting that analysts' research can help investors overcome this imbalance.

DISCUSSION AND CONCLUSION

This study has investigated the value of analysts' research in helping investors understand diversified firms. Securities analysts should play a key role in mitigating the problem of asymmetric information between companies and investors. However, analysts are as challenged by the opacity of diversified firms as investors are, due to their industry specializations and to the costliness of gathering information about such companies.

This paper examines *how* analysts go about understanding diversified firms. Using detailed information collected from analyst reports about firms that announce corporate spinoffs, we consider how the research that analysts produce impacts the accuracy of their earnings forecasts for spun-off subsidiaries and the remaining operations of the divesting parent firms. Studying analyst reports written about these entities is a unique way to gain insights into the component parts of diversified firms and their combined value.

The results in this paper reveal that while analysts' research is associated with more accurate earnings forecasts for diversified firms, the only type of research that helps them produce more accurate forecasts about spun-off subsidiaries is when they explicitly study the pre-spinoff segments within diversified companies. Moreover, analysts' research is particularly valuable when the characteristics of both the diversified firms and their spun-off subsidiaries make them more difficult to cover, suggesting that analysts are able to surmount the challenge of understanding entities about which little information is available.

This study has important implications for corporate strategy research on the value of diversification. First, this study sheds light on why investors may not understand diversified

firms well, and hence, why these firms may be undervalued in the market. In steady state, analysts may not perform detailed research about the expected future performance of the individual components of diversified firms. Only when a spinoff has been announced do analysts produce the kinds of research that are helpful in understanding these companies.

Further to this point, the contrast between the consistent value that analysts' research adds in evaluating diversified firms and the more mixed value of their research about spun-off subsidiaries suggests that one reason why investors might have difficulty understanding diversified firms is that analysts themselves do not understand the subsidiaries of these companies well. This paper finds that two factors mitigate this problem. First, when analysts specifically study the individual business segments within diversified firms, the value of their research improves. Second, when analysts are forced by a relative lack of exogenous information about these spun-off subsidiaries to devote more effort to understanding these units, the value of their research also improves. These findings elucidate how analysts overcome the information asymmetry they experience vis-à-vis diversified firms.

Additionally, our findings also shed light on the process by which managers whose companies are experiencing high information asymmetry vis-à-vis their outside investors reveal information to these parties through major corporate events. This paper shows that only when a diversified firm announces that it will spin off a business unit do analysts begin to evaluate the antecedent conditions that might drive it to undertake that spinoff, such as a high conglomerate discount. By considering how the detailed components of analysts' research influence forecast accuracy, we are able to examine how these intermediaries overcome valuation challenges in entities about which little information is available.

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Table 1: Variable descriptions

Analysts' research	Description
# Annual EPS forecasts	Count of the number of years for which an analyst forecasts annual EPS
EPS growth forecast	Indicator variable taking the value one if an analyst forecasts EPS growth
Financial statement index	Number of pro-forma financial statements (balance sheet, income statement, and cash flow statement) included in a report
Analysis of spinoff rationale	Indicator variable taking the value one if a report discusses the rationale for the spinoff
Analysis of conglomerate discount	Indicator variable taking the value one if a report mentions the conglomerate discount
Analysis of segments	Indicator variable taking the value one if a report provides segment-level financial information

Firm characteristics	Description
Herfindahl index	Sum of the squared shares of a firm's total sales provided by each of its segments
Diversified firm	Indicator variable taking the value one if Herfindahl Index exceeds the mean value of its distribution
Relative size	Total assets of the spun-off subsidiary divided by the total assets of the parent company
Large spinoff	Indicator variable taking the value one if Relative Size exceeds the mean value of its distribution
Small spinoff	Indicator variable taking the value one if Relative Size is less than the mean value of its distribution
Multiple divestiture	Indicator variable taking the value one if a spinoff is part of a multiple divestiture
No tracking stock	Indicator variable taking the value one if the stock of the spun-off subsidiary did not previously have a tracking stock
Unrelated	Indicator variable taking the value one if the parent company and its spun-off subsidiary do not share a four-digit SIC code

Additional controls	Description
Days announce to report date	Number of days elapsed between announcement of spinoff and the date on which a report is written
Days report to effective date	Number of days elapsed between the date on which a report is written and the spinoff effective date
Analyst ranking by II	Categorical variable taking the value one if an analyst is a runner-up, two if an analyst is ranked third, three if an analyst is ranked second, and four if an analyst is ranked first by Institutional Investor
Analyst advisor	Count of the number of deals in the decade preceding a spinoff in which an investment bank also had an advisory relationship
Recommendation	Indicator variable taking the value one if an analyst makes either a buy or sell recommendation about a company's stock, and zero if s/he makes a neutral or no recommendation
ln(total assets)	Natural log of a firm's total assets
Debt/assets	Ratio of a firm's total debt to its total assets

Table 2: Heckman selection model, parent companies

Regression	(1) First-stage	(2) Second-stage
Dependent variable:	EPS forecast inclusion	EPS forecast error
Subsidiary IPO/parent IPO	-0.030**	
	(0.015)	
# Annual EPS forecasts	1.858***	-0.051***
	(0.094)	(0.011)
EPS growth forecast	0.005	-0.025***
	(0.129)	(0.008)
Financial statement index	-0.096	0.022***
	(0.088)	(0.006)
Analysis of spinoff rationale	0.187	-0.044***
	(0.146)	(0.010)
Analysis of conglomerate discount	-0.208	-0.033**
	(0.197)	(0.013)
Herfindahl index	0.075	-0.063***
	(0.299)	(0.022)
Relative size	-0.731***	0.270***
	(0.268)	(0.029)
Multiple divestiture	0.607**	0.132***
	(0.240)	(0.018)
Days announce to report date	0.000	0.000
	(0.001)	(0.000)
Days report to effective date	0.001*	0.000
	(0.001)	(0.000)
Analyst ranking by II	0.034	0.009***
	(0.042)	(0.003)
Analyst advisor	-0.020	-0.019***
	(0.082)	(0.006)
Recommendation	0.120	-0.031***
	(0.125)	(0.009)
ln(total assets)	-0.000	0.000***
	(0.000)	(0.000)
Debt/assets	0.254	0.184***
	(0.636)	(0.048)
Lambda		-0.059**
		(0.029)
Constant	-1.739**	-0.058
	(0.678)	(0.044)
Year fixed effects	Yes	Yes
Observations	1,793	1,793

*** p<0.01, ** p<0.05, * p<0.10

Table 3: Analysts' research about highly-diversified parent firms

DV: Parent EPS forecast error	(1)	(2)	(3)	(4)	(5)	(6)
Diversified firm	0.054***	0.131***	0.068***	0.044***	0.070***	0.067***
	(0.011)	(0.029)	(0.014)	(0.012)	(0.013)	(0.012)
# Annual EPS forecasts	-0.020**	-0.009	-0.020**	-0.019**	-0.020**	-0.019**
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Diversified firm × # Annual EPS forecasts		-0.040***				
		(0.014)				
EPS growth forecast	-0.025***	-0.026***	-0.013	-0.024***	-0.024***	-0.025***
	(0.008)	(0.008)	(0.011)	(0.008)	(0.008)	(0.008)
Diversified firm × EPS growth forecast			-0.026			
			(0.016)			
Financial statement index	0.020***	0.021***	0.019***	0.008	0.019***	0.019***
	(0.005)	(0.005)	(0.005)	(0.008)	(0.005)	(0.005)
Diversified firm × Financial statement index				0.025**		
				(0.011)		
Analysis of spinoff rationale	-0.035***	-0.037***	-0.034***	-0.032***	-0.015	-0.036***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.013)	(0.010)
Diversified firm × Analysis of spinoff rationale					-0.046**	
					(0.018)	
Analysis of conglomerate discount	-0.041***	-0.038***	-0.041***	-0.041***	-0.037***	-0.004
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.019)
Diversified firm × Analysis of conglomerate discount						-0.061**
						(0.024)

Regressions include all the control variables from Table 2 as well as year fixed effects.

*** p<0.01, ** p<0.05, * p<0.1

Table 4: Analysts' research about parent firms that undertake large spinoffs

DV: Parent EPS forecast error	(1)	(2)	(3)	(4)	(5)	(6)
Large spinoff	0.161***	0.275***	0.167***	0.174***	0.182***	0.180***
	(0.014)	(0.036)	(0.017)	(0.016)	(0.016)	(0.015)
# Annual EPS forecasts	-0.043***	-0.028***	-0.043***	-0.042***	-0.043***	-0.044***
	(0.010)	(0.011)	(0.010)	(0.010)	(0.010)	(0.010)
Large spinoff × # Annual EPS forecasts		-0.055***				
		(0.016)				
EPS growth forecast	-0.023***	-0.022***	-0.021**	-0.023***	-0.022***	-0.022***
	(0.008)	(0.008)	(0.009)	(0.008)	(0.008)	(0.008)
Large spinoff × EPS growth forecast			-0.012			
			(0.022)			
Financial statement index	0.019***	0.020***	0.019***	0.024***	0.019***	0.019***
	(0.005)	(0.005)	(0.005)	(0.006)	(0.005)	(0.005)
Large spinoff × Financial statement index				-0.021*		
				(0.013)		
Analysis of spinoff rationale	-0.036***	-0.035***	-0.036***	-0.036***	-0.026**	-0.037***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.011)	(0.010)
Large spinoff × Analysis of spinoff rationale					-0.055**	
					(0.025)	
Analysis of conglomerate discount	-0.041***	-0.043***	-0.041***	-0.040***	-0.042***	-0.025*
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.014)
Large spinoff × Analysis of conglomerate discount						-0.075***
						(0.028)

Regressions include all the control variables from Table 2 as well as year fixed effects.

*** p<0.01, ** p<0.05, * p<0.1

Table 5: Analysts' research about parent firms that undertake multiple divestitures

DV: Parent EPS forecast error	(1)	(2)	(3)	(4)	(5)	(6)
Multiple divestiture	0.132***	0.075*	0.146***	0.148***	0.135***	0.126***
	(0.018)	(0.045)	(0.023)	(0.020)	(0.019)	(0.020)
# Annual EPS forecasts	-0.051***	-0.055***	-0.050***	-0.049***	-0.051***	-0.051***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Multiple divestiture × # Annual EPS forecasts		0.032				
		(0.023)				
EPS growth forecast	-0.025***	-0.026***	-0.022**	-0.025***	-0.025***	-0.025***
	(0.008)	(0.008)	(0.009)	(0.008)	(0.008)	(0.008)
Multiple divestiture × EPS growth forecast			-0.030			
			(0.028)			
Financial statement index	0.022***	0.022***	0.022***	0.024***	0.022***	0.022***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Multiple divestiture × Financial statement index				-0.051**		
				(0.025)		
Analysis of spinoff rationale	-0.044***	-0.045***	-0.045***	-0.043***	-0.043***	-0.044***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.011)	(0.010)
Multiple divestiture × Analysis of spinoff rationale					-0.017	
					(0.037)	
Analysis of conglomerate discount	-0.033**	-0.033**	-0.033**	-0.031**	-0.033**	-0.037**
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.014)
Multiple divestiture × Analysis of conglomerate discount						0.020
						(0.035)

Regressions include all the control variables from Table 2 as well as year fixed effects.

*** p<0.01, ** p<0.05, * p<0.1

Table 6: Heckman selection model, spun-off subsidiaries

Regression	(1) First-stage	(2) Second-stage
Dependent variable:	EPS forecast inclusion	EPS forecast error
Subsidiary IPO/parent IPO	0.036**	
	(0.015)	
# Annual EPS forecasts	1.421***	0.036**
	(0.075)	(0.016)
EPS growth forecast	0.122	0.045**
	(0.258)	(0.020)
Financial statement index	-0.019	0.020**
	(0.104)	(0.009)
Analysis of segments	0.422***	-0.031**
	(0.131)	(0.015)
No tracking stock	0.737	0.317***
	(0.611)	(0.060)
Relative size	-0.167	-0.071**
	(0.237)	(0.028)
Unrelated	-0.160	0.134***
	(0.290)	(0.034)
Days announce to report date	-0.001	-0.000*
	(0.001)	(0.000)
Days report to effective date	-0.002**	-0.000
	(0.001)	(0.000)
Analyst ranking by II	-0.055	-0.000
	(0.042)	(0.005)
Analyst advisor	-0.102	-0.027***
	(0.105)	(0.011)
Recommendation	-0.042	-0.016
	(0.120)	(0.014)
ln(total Assets)	0.000	0.000***
	(0.000)	(0.000)
Debt/assets	0.803*	0.098**
	(0.430)	(0.049)
Lambda		0.075**
		(0.030)
Constant	-2.070***	-0.461***
	(0.794)	(0.099)
Year fixed effects	Yes	Yes
Observations	1,793	1,793

*** p<0.01, ** p<0.05, * p<0.10

Table 7: Analysts' research about spun-off subsidiaries with no prior tracking stock

DV: Subsidiary EPS forecast error	(1)	(2)	(3)	(4)	(5)
No tracking stock	0.317***	0.453***	0.413***	0.340***	0.090
	(0.060)	(0.069)	(0.058)	(0.060)	(0.120)
# Annual EPS forecasts	0.036**	0.064***	0.028*	0.037**	0.035**
	(0.016)	(0.017)	(0.015)	(0.016)	(0.016)
No tracking stock × # Annual EPS forecasts		-0.071***			
		(0.021)			
EPS growth forecast	0.045**	0.044**	0.303***	0.040**	0.038*
	(0.020)	(0.019)	(0.047)	(0.020)	(0.020)
No tracking stock × EPS growth forecast			-0.303***		
			(0.050)		
Financial statement index	0.020**	0.024***	0.015*	0.066***	0.022**
	(0.009)	(0.008)	(0.008)	(0.021)	(0.009)
No tracking stock × Financial statement index				-0.054**	
				(0.023)	
Analysis of segments	-0.031**	-0.038**	-0.024*	-0.027*	-0.258**
	(0.015)	(0.015)	(0.014)	(0.015)	(0.105)
No tracking stock × Analysis of segments					0.230**
					(0.106)

Regressions include all the control variables from Table 6 as well as year fixed effects.

*** p<0.01, ** p<0.05, * p<0.1

Table 8: Analysts' research about small spun-off subsidiaries

DV: Subsidiary EPS forecast error	(1)	(2)	(3)	(4)	(5)
Small spinoff	-0.036	0.014	-0.026	-0.031	-0.060**
	(0.022)	(0.044)	(0.023)	(0.024)	(0.026)
# Annual EPS forecasts	0.037**	0.040**	0.039**	0.038**	0.037**
	(0.017)	(0.017)	(0.017)	(0.017)	(0.016)
Small spinoff × # Annual EPS forecasts		-0.031			
		(0.024)			
EPS growth forecast	0.043**	0.046**	0.059***	0.043**	0.041**
	(0.020)	(0.020)	(0.022)	(0.020)	(0.020)
Small spinoff × EPS growth forecast			-0.082*		
			(0.047)		
Financial statement index	0.021**	0.021**	0.021**	0.023**	0.021**
	(0.009)	(0.009)	(0.009)	(0.010)	(0.009)
Small spinoff × Financial statement index				-0.012	
				(0.021)	
Analysis of segments	-0.040**	-0.043***	-0.042***	-0.041**	-0.051***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.017)
Small spinoff × Analysis of segments					0.063*
					(0.037)

Regressions include all the control variables from Table 6 as well as year fixed effects.
*** p<0.01, ** p<0.05, * p<0.1

Table 9: Analysts' research about unrelated spun-off subsidiaries

DV: Subsidiary EPS forecast error	(1)	(2)	(3)	(4)	(5)
Unrelated	0.134***	0.244***	0.151***	0.150***	0.077**
	(0.034)	(0.049)	(0.032)	(0.034)	(0.039)
# Annual EPS forecasts	0.036**	0.061***	0.034**	0.039**	0.035**
	(0.016)	(0.017)	(0.015)	(0.016)	(0.016)
Unrelated × # Annual EPS forecasts		-0.062***			
		(0.020)			
EPS growth forecast	0.045**	0.047**	0.322***	0.042**	0.039**
	(0.020)	(0.019)	(0.051)	(0.020)	(0.020)
Unrelated × EPS growth forecast			-0.317***		
			(0.054)		
Financial statement index	0.020**	0.024***	0.016*	0.058***	0.020**
	(0.009)	(0.008)	(0.008)	(0.020)	(0.008)
Unrelated × Financial statement index				-0.046**	
				(0.021)	
Analysis of segments	-0.031**	-0.039***	-0.023	-0.028*	-0.164***
	(0.015)	(0.015)	(0.015)	(0.015)	(0.049)
Unrelated × Analysis of segments					0.144***
					(0.050)

Regressions include all the control variables from Table 6 as well as year fixed effects.
*** p<0.01, ** p<0.05, * p<0.1