Is there life after loss of analyst coverage?

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Abstract

In this paper we examine why analysts choose to drop coverage for firms and the consequences of this loss of coverage for the firm. Using a sample of 3,219 firms which lost analyst coverage during the 1983-2004 period, we find that the likelihood of losing coverage is inversely related to firm size and performance, and positively related to the degree of financial leverage and bankruptcy risk. In addition, firms with a higher level of investment banking underwriting activity are less likely to lose analyst coverage. Subsequent to the loss in coverage, the sample firms exhibit a higher delisting frequency relative to a sample matched on both the propensity to go bankrupt and to generate revenue for the covering investment bank. Overall, these results shed light on the importance of analyst coverage to the firm and underlying incentives of the analyst community in providing the research coverage.

Keywords: Analysts; Coverage decision; Benefits of coverage; Delisting.

The academic literature has documented that analyst coverage is valuable to firms. Bradley, Jordan, and Ritter (2003), for example, document that firms earn significant abnormal returns when analysts initiate coverage following the expiration of the quiet period for the initial public offering (IPO). They also show that abnormal returns are significantly larger when coverage is initiated by multiple analysts. Womack (1996) documents significant positive (negative) initial stock price reactions surrounding analyst recommendation upgrades (downgrades). These stock price effects are permanent and not mean reverting.

Why is analyst coverage valuable? Extant literature suggests that analyst coverage results in increased publicity and greater level of investor recognition, which in turn results in a higher share price. In addition, analyst coverage helps reduce informational asymmetries between investors and the managers of the firm. Both firms and banks recognize the value of analyst coverage. Krigman, Shaw, and Womack (2001) show that firms switch underwriters between the IPO and a seasoned equity offering (SEO) to get better analyst coverage. In addition, banks charge for analyst coverage. For start-up firms, Cliff and Denis (2004) argue that post-IPO analyst coverage is paid for in the form of a higher level of IPO underpricing. They find that the level of underpricing is negatively related to the presence of an all-star analyst (who can provide better quality coverage) at the lead underwriter. Rajan and Servaes (1997) show that underpricing is positively correlated with the number of analysts covering the newly listed stock. Irvine (2001) shows that total volume and brokerage market shares of trading volume are significantly higher for stocks where the brokerage analyst covers the stock, relative to stocks where coverage is not provided by the brokerage firm.

One conclusion that can be drawn is that firms that lose analyst coverage should be negatively affected. In this paper, we examine what happens to firms which lose analyst coverage. In a sample of 3,219 firms that lose analyst coverage permanently between 1983 and 2004, we examine the financial and other characteristics of these firms to analyze why analysts dropped coverage to these firms. We subsequently examine what happens to the firms after they lose all analyst coverage.

This topic is important. A number of firms have been losing coverage recently because financial

institutions, especially investment banks, do not seem to find it economically beneficial to provide such coverage. Traditional revenue models for financial institutions have been primarily based on the generation of investment banking fees and to a lesser extent, on revenues from trading activities. Recent pressure to separate a bank's investment banking activities from the analyst coverage decision has made it harder for banks to justify paying for the coverage function. The loss in analyst coverage may lead firms to choose to go private, reducing the benefits to investment banks of potential revenue generating activities such as share issuance from these firms. Consequently, if analyst coverage is valuable, it is important to document the negative effects of losing coverage. To our knowledge, this is the first paper to do so.

We find that the number of firms losing analyst coverage has stayed relatively constant between 1983 and 1996. Over this period, between 4-8% of firms covered on the I/B/E/S database lose coverage permanently every year. Over the 1997-2002 period, the percentage rises dramatically, peaking in 2000, when 20% of all firms listed on I/B/E/S lost coverage permanently.

Why do analysts choose to drop coverage for these firms? The two most obvious reasons are that analysts will choose to drop coverage of firms close to bankruptcy or are being acquired. To isolate the effect of the loss of coverage on otherwise healthy firms, in this paper, we analyze a sub-sample of 3,219 firms that continued to trade publicly for at least a year after losing coverage. We assume that analysts find it more difficult to predict bankruptcy or the probability of being acquired for these firms.

The pattern we observe for this sample is similar to the pattern for all firms that lose coverage. As in the sample of all firms that lost coverage, the proportion of firms that lost coverage permanently but continued to be publicly listed for at least a year stays relatively constant over the 1983-1996 period. There is a dramatic increase in the proportion of firms – from 2% to 4% - in the 1997-2002 period, with the proportion peaking at 7% in the year 2000.

Most of our sample firms are manufacturing firms, trading on Nasdaq. They are not fresh IPOs – fewer than 5% of these firms have been listed for less than a year. Over half of them have been listed between 2 to 10 years. While most of these firms are small (around 60% have market capitalizations of

less than $50 million), around a fifth of them have market capitalizations of greater than $100 million. In the years leading up to complete loss in coverage, the sample firms exhibit steadily declining analyst EPS estimates (both raw and industry-adjusted), a deterioration of analyst recommendation ratings, and a reduction in the number of analysts covering the firm.

We next examine two reasons why analysts might choose to drop coverage for these firms. First, analysts might choose to drop coverage of poorly performing firms. Second, they may choose to drop coverage of firms that are not likely to bring in investment banking business. We find that both these reasons are important. The sample firms are in the lowest quintiles of the universe of firms covered on I/B/E/S on almost every dimension of performance or potential revenue generating characteristics. In addition, over a three-year window preceding the loss in coverage, the sample firms exhibit a steady deterioration in control-adjusted (matched on size and industry) return on assets (ROA), operating ROA, sales, current and cash ratios, and higher potential bankruptcy risk (as measured by the firm's Altman Z-scores). Across almost all our measures, these firms are underperformers. They are unlikely to generate any substantial investment banking or trading revenues for the institutions covering these firms in the future. While it could be argued that these firms may actually need substantial financial assistance and the potential to generate revenues in the form of a merger, restructuring, or capital raising assistance, the limited resources at the disposal of the financial institution and better alternative revenue prospects from other firms in the universe, may result in a consequent drop in coverage of these firms.

Our results also hold in a multivariate logistic regression where we find that poorly performing small firms with a higher potential risk of bankruptcy are also more likely to lose coverage. In addition, the likelihood of losing analyst coverage is inversely related to both the number of capital raising deals conducted and the dollar value of capital raised by the firm in the year preceding the coverage loss. Overall, these results suggest that analyst banks are strategic in their stock coverage decisions with significant emphasis being given to the firm’s potential for generating future business for the bank providing the coverage.

What are the consequences of a loss in analyst coverage for the firm? To examine this issue, first,

we use a propensity score based technique to carefully match our sample firms to listed firms, matched on both the propensity to go bankrupt and the propensity to generate revenue to the investment bank in the year before they lose coverage. Even after matching on the propensity for bankruptcy and revenue generation however, we find that the sample firms continue to perform worse than the sample firms in the two years after losing coverage. For example, sales, operating ROA, ROA, current ratios, cash ratios, and Altman Z-scores are all significantly worse than their matched firms. Financial leverage is significantly higher for the sample firms than their matched firms.

We next examine survival rates for the firms experiencing a coverage loss. Twenty-seven percent of our sample firms delist within two years of loss in coverage and another 31% delist between two to five years. In contrast, the corresponding numbers for our matched firms are 9% and 20% respectively. A Cox proportional hazard model shows that, even after controlling for bankruptcy and revenue generating characteristics, analyst coverage is significant in explaining the delisting rate for the sample firms. Losing coverage increases the probability of delisting by 75%. In addition, the institutional holdings for sample firms is significantly negatively related to delisting, suggesting that the lack of attention from individual investors is responsible for the final delisting.

In summary, our results indicate that firms lose analyst coverage due to poor performance and poor deal flow in the years preceding the loss in coverage. Since analysts tend to largely make buy/strong buy recommendations, it is not unreasonable to expect an analyst to drop coverage of a poorly performing firm rather than provide negative coverage.[1] Since the potential clientele for negative research coverage might be limited to hedge funds, the analyst may have limited ability to generate trading revenues for their financial institutions based on such coverage. Even after controlling for all other factors that might lead to the delisting of the firm, we find that the drop in coverage leads to a dramatic increase in the probability that the firm delists, providing evidence in support of the importance of analyst coverage to

[1] These results are consistent with McNichols and O'Brien (1997) who document that analysts are more likely to report good news than bad news, since good news is easier to sell to a broader audience. Similar results are documented by Clarke, Khorana, Patel, and Rau (2005) who find that over 56% of the recommendations by analysts at either investment banks or brokerages are either a Buy or a Strong Buy.

the firm.

The remainder of the paper is organized as follows. In Section I we discuss the data and sample descriptive statistics. Section II provides evidence on the determinants of the loss of analyst coverage. Section III reports consequences of the loss in coverage. We conclude in Section IV.

I. Data and sample descriptive statistics

A. Data

Our initial sample consists of all publicly traded companies on the NYSE, AMEX and Nasdaq exchanges experiencing a permanent loss in analyst coverage. To construct the sample, we obtain the date of the last analyst estimate for each firm listed in the I/B/E/S detail file from 1983 to 2004. We retain only firms whose last coverage dates were in the year 2004 or before, to ensure that every firm we identify as having permanently lost coverage has not been covered for at least one year. We then obtain CRSP delisting data and Compustat accounting data for these firms. This results in a sample of 9,634 firms.

We next compare the CRSP delisting date to the date of last analyst coverage, and retain only those firms that have not been delisted from the relevant exchange for at least a year after losing analyst coverage. This eliminates firms that have lost coverage solely because they were liquidated, acquired, or stopped trading for other reasons in the immediate short term around the loss of coverage date. We are left with a final sample of 3,219 firms that continue to operate as publicly traded firms for at least a year after experiencing a complete loss in analyst coverage.

B. Sample descriptive statistics

Table 1 reports descriptive statistics for the sample firms. In Panel A, we report the sample breakdown by year of losing coverage. The number of firms losing coverage appears to rise and fall with the business cycle, with more firms being dropped by analysts during economic expansions and fewer firms being dropped during economic contractions. Over the period 1990-1991, for example, a period that marked both a US business cycle contraction and a drop in the number of new issues on the market, a

total of 546 firms lost analyst coverage. Of these, 246 firms continued to be listed for at least a year after losing coverage. The corresponding figures for the 1999-2000 period, at the peak of the business cycle, are 1,932 and 618, respectively. The average annual frequency of firms losing coverage (as a percentage of all firms listed on I/B/E/S) is about 7% and 19%, respectively, over the two sample periods. Since analyst numbers are likely to be limited in the short term, this may in part be due to analysts choosing to add newly public firms to their stock portfolios and dropping out-of-favor poorly performing firms.

Panel B presents the sample breakdown by industry. Industry is defined by the first two digits of the NAICS industry code from Compustat. Over half the sample firms are manufacturing (36%) or financial firms (18%). The surge in loss of coverage over the 1997-2002 period is not due to the delisting of high-tech and internet firms – these firms account for 3% of the sample.

Panel C reports data on the listing exchange, trading age, market capitalization and B/M ratio distribution for the sample firms. Not surprisingly, around two-thirds of the sample firms are listed on Nasdaq, because most of our sample firms are young and small. The median firm has a market capitalization of equity of only $38 million. While 49% of the sample firms are in the $10 million to $50 million range, 45 firms are over $1 billion in size, with the largest firm having a market capitalization (size) of over $6.1 billion. Since the median size is $38 million, it is not surprising that most sample firms fall in the smallest Fama-French size quintile. However, they are not fresh IPOs – fewer than 5% of these firms have been listed for less than a year. Over half of them have been listed between 2 to 10 years. The median trading age is about 6 years. However, 670 firms have trading ages in the 10 to 20 year range, while 372 firms have traded for more than 20 years. This suggests that firms losing coverage are not merely out-of-favor recent initial public offerings.

The median sample firm has a book-to-market ratio of 0.68. The sample firms appear to be distributed over the value/growth spectrum, as evident from the breakdown by the Fama-French book-to-market quintiles. Interestingly, the largest sample sizes are at the two extremes with 836 firms in the first quintile, and 903 firms in the fifth quintile, implying that it is not just out-of-favor value firms who experience losses in analyst coverage.

II. Determinants of loss in coverage

Why do analysts choose to provide coverage of a stock? As mentioned earlier, previous studies have examined these issues by focusing on firms for whom coverage is initiated following an initial public offering. According to the extant literature, the benefits of coverage to the firm being covered include an increase in stock price (Bradley, Jordan, and Ritter (2003)), an increase in share turnover (Irvine (2001)), a decrease in information asymmetries and bid-ask spreads (Brennan and Subrahmanyam (1995)), and a decrease in the cost of equity capital.[2] For the financial institution providing the coverage, the benefits include increased trading and investment banking revenues. However one problem with the analyses above is that firms that receive coverage after an initial public offering typically cluster in time. Hence it is difficult to distinguish between the effects of the public listing of the firm from the incremental benefits offered by the analyst coverage.

In contrast, we study the value of analyst coverage by focusing on firms that lose all coverage by analysts. By comparing firms losing coverage to a control group of firms who do not lose coverage, we can answer several questions. Specifically, do firms lose coverage because they fall out of favor? If so, do they fall out of favor because of poor performance, the likelihood of being acquired or liquidated, or because they provide low investment-banking or trading revenues to the bank employing the analyst?

A. Are firms that lose coverage out of favor with analysts?

Table 2 reports analyst earnings estimates and recommendations on the firms losing coverage in the four years prior to loss in coverage. The data indicate that the median earnings per share estimate declines steadily from \$0.62 four years before loss in coverage to \$0.30 for the year coverage is dropped. The median earnings per share estimate is \$0.17 below the industry four years before losing coverage and \$0.56 below the industry estimate in the year coverage is dropped. The fact that the median industry-adjusted estimate is negative for all five years, and increases in magnitude over time, indicates that analysts believe that the median sample firm is performing significantly worse than the industry. The

[2] Drucker and Puri (2005) document that linking lending and underwriting activities benefit firms in the form of price discounts, lowering their overall borrowing costs.

change in median earnings per share estimate and median industry-adjusted estimate is significant for each of the four periods examined.

Recommendation data (with Strong Buy = 1 and Sell= 5), indicate that the median sample firm is falling out of favor. Four years prior to losing coverage, the mean recommendation is 2 drifting down to 2.4 in the year coverage is dropped. Relative to the industry, the average firm is in line with the industry four years before losing coverage (mean industry-adjusted recommendation of 0), but significantly out of favor the year before and even more out of favor the year coverage is dropped (mean industry-adjusted recommendation of 0.31). Consistent with the decline in recommendations, the mean number of annual estimates for the stock decreases from 9 to 4 over the five year period examined. The decline in coverage is significant in each of the four periods examined.

B. Performance of sample firms before loss in coverage

Table 3 reports univariate statistics on several descriptive statistics for the sample firms. We divide these descriptive statistics into two categories. The first category is related to the operating performance of our sample firms, while the second is related to their potential for generating revenue for investment banks through the bank's trading activities, merger and acquisitions advisory services, and underwriting activities. From an operating performance standpoint, in the year before losing coverage, the median sample firm is less profitable (operating ROA is 5.36% versus 10.71% and sales are $46 million versus $151 million), more levered (debt to equity is 80% versus 70%), more liquid (based on both the current and cash ratios), and less financially stable (based on the Altman's Z-score of 1.24 versus 2.11) than the median firm covered on I/B/E/S.

From a revenue generation standpoint, these are small firms. The median firm has a market capitalization of equity of only $38 million.[3] Data on the book value of assets are consistent with our findings on market capitalization. While most of our sample firms are small with median asset size of $62 million, the largest firm in our sample has assets of $26 billion. Our data suggests that while small firms

[3] We use size as a proxy for the ability of investment banks to generate revenue from the sample firm. Larger firms are expected to raise larger quantities of capital, have more shares traded, and engage in larger acquisitions. Each of these factors increases the investment bank's incentive to provide coverage of the firm.

are more likely to lose coverage, analysts do not drop coverage solely because of size considerations. From a direct revenue generation standpoint, the median firm in our sample does not engage in any M&A activity in the three years prior to losing coverage. However, this is also true for the typical firm on I/B/E/S over the same three-year period. Both the median and average share turnover (a proxy for the bank's ability to generate trading revenues) is lower for our sample firms than comparable statistics for the universe of firms on I/B/E/S. The median share turnover for our sample firms is 0.48 versus 0.51 for the firms in the remainder of the universe. These univariate findings suggest that in the year prior to losing coverage, our sample firms provide less revenue for investment banks than the typical firm on I/B/E/S.

We next examine the performance and revenue generating characteristics for the sample firms over the three years before the year of loss in coverage. Table 4 reports univariate statistics on the operating performance of our sample firm on a yearly basis, from three years preceding the drop in coverage to the year in which coverage is dropped. The data presented in Table 4 are descriptive statistics for the median firm in our sample adjusted by the corresponding value for a control firm matched on size and industry in the year preceding the drop in coverage, year -1. On a control-firm adjusted basis, in Table 4, the industry and size adjusted operating ROA for the sample firms is significantly positive (1.52%) in year -3, insignificant in years -2 and -1, and a significantly negative 1.77% in year 0. The changes in adjusted performance are significant. Our conclusions are unchanged when we examine absolute performance. A similar pattern holds for ROA. In contrast, sales are significantly higher than those for the sample firms.

While operating performance declines, leverage increases significantly during the period examined. On a control-firm adjusted basis, the (excess) debt-equity ratio increases from 0.17 in year -3, to 0.32 by year -1. While the decline in market value of equity is responsible for much of the increase in leverage, data in Table 4 also indicate that liquidity (current ratio and cash ratio) decreases on a control-firm adjusted basis. The decline in operating performance and liquidity with a simultaneous increase in leverage is consistent with the decline in the firm's Altman's Z-score, indicating an increase in the risk of

bankruptcy. On a control-sample adjusted basis, the Z-score is significantly positive in year -3 (0.71) and -2 (0.45), and becomes significantly negative in year -1 (-0.43) and increases in magnitude to -1.14 in year 0.

Consistent with earlier evidence that our sample firms fall out of favor, the market capitalization of the median firm (not reported in the tables) steadily declines from $48 million three years before losing coverage (year -3) to $38 million in the year before coverage is lost (year -1). On a control-firm adjusted basis (in Table 3), market capitalization is significantly positive in year -3, and significantly negative in year 0. The decline in market capitalization is statistically significant over the year -3 to -1 period.

From a revenue generation standpoint, the median sample firm becomes less of a glamour firm over the period year -3 and year -1, both in terms of levels and on an adjusted basis. Share turnover for our sample firm is significantly higher than that for the control firm over each of the three years prior to loss in coverage; however, there appears to be a decline in excess share turnover over the three-year period. Neither M&A activity, nor underwriting activity, appears to be significantly different for our sample firms when compared to the control firms investigated over the three years prior to loss in coverage.

C. Multivariate analysis of the causes of loss in coverage

The univariate time-series analysis above indicates that firms that lose coverage exhibit poor operating performance, a decrease in liquidity and a simultaneous increase in leverage. They also steadily fall out of favor in the years prior to losing coverage. In this section, we further examine the causes of loss in coverage through a multivariate logistic analysis of our sample firms against three sets of control firms. First, we use the universe of firms on I/B/E/S as the control set to better understand the factors that cause firms to lose coverage against the set of all firms that are covered by analysts. Second, similar to our earlier analysis, we evaluate our sample firms against a size and industry matched control set to examine what factors cause analysts to drop coverage of firms within an industry when the firms are also matched by size. Year and industry fixed effects are included in each of the regressions. Third, using the variables that are significant in explaining the loss of coverage in the first set of regressions, we use a propensity

score matching methodology to create a sample of traded firms that are matched on their propensity for bankruptcy and propensity for revenue generation. Our final regressions evaluate our sample firms against this propensity-score matched group of control firms.

Table 5, Panel A presents results for the entire universe of firms covered on I/B/E/S between 1983 and 2003. The dependent variable is a binary variable that takes on a value of one for the year in which coverage is lost, and zero otherwise. Explanatory variables include proxies for measures of operating and financial performance, and the ability of firms to generate revenue for the investment bank providing research coverage.

In our model specifications, we use both lagged (year -1) values of the explanatory variables and changes in values from year -2 to -1 and year -3 to -1, respectively. We find that the likelihood of losing coverage increases when the risk of bankruptcy increases (the Altman Z-score is significantly negatively related to the loss in coverage), firm size decreases (the market capitalization is significantly negatively related to the loss in coverage), and the ability of the investment bank to generate underwriting revenues decreases (the B/M ratio is positively and the M&A deal amount, the number of M&A deals, the issue amount, and the number of issues are all significantly negatively related to the probability of loss in coverage). This suggests that relative to the universe of firms that are covered by analysts, coverage is related to factors that either capture revenues generated for the investment bank or factors that proxy for the survival of the firm being covered. Apart from market capitalization however, which is significantly negatively related to the probability of losing coverage, the other variables are not significant across all regressions, perhaps because market capitalization can act as a proxy for both revenue generation potential as well as survival.

Consequently, in our second set of regressions, we evaluate our sample firms against a set of control firms matched on size and industry in the year prior to losing coverage. Panel B of Table 5 reports our results. We find that the likelihood of coverage being dropped increases as the risk of bankruptcy increases. In this framework, profitability and liquidity do not matter after controlling for the risk of bankruptcy as proxied by Altman's Z-score. Interestingly, the current ratio of the firm is significantly

positively related to the probability of losing coverage. Overall, we find that the likelihood of losing coverage increases as the sample firm becomes less of a glamour stock than the control firm. However, in contrast to our earlier results, underwriting activity as captured by the number of deals in the year before losing coverage is no longer important. The number or value of deals undertaken by the sample firms is unrelated to the probability of losing coverage relative to a size and industry-matched control firm. This is not surprising since both sample and control firms matched on size are unlikely to generate very much investment banking activity.

In the third set of regressions, we use proxies developed in the literature to create a set of control firms matched on bankruptcy risk and the propensity to generate revenue for the investment bank from the universe of firms covered on I/B/E/S. Prior studies have developed several proxies for the risk of bankruptcy, such as working capital/assets, retained earnings/assets, earning before interest and taxation/assets, market value of equity/liabilities, and sales/assets (Altman (1968)). Zmijewski (1984) uses net income/assets, liabilities/assets, and current assets/current liabilities as proxies of default risk. Shumway (2001) finds that market-driven variables, such as relative size, cumulative excess returns, and the idiosyncratic standard deviation of stock returns, explain the risk of bankruptcy better than accounting ratios do. We use these eleven proxies as determined in the year -1 prior to loss of coverage to find the control firms. In addition, we use the number of deals and the number of issues as proxies for the ability to generate revenue for the investment bank. To create the control sample of firms, we use the relatively new and innovative methodology of "propensity score" matching (Villalonga, 2004; Cooper, Gulen and Rau, 2005). This matching method has the advantage of identifying a control group of firms screened along multiple dimensions, not just a few, and allowing for a closer match on the propensity for bankruptcy as well as the propensity to generate revenue.

In Panel C of Table 5, regression models 1 and 2 report the likelihood of losing analyst coverage for our sample firms against control firms matched on propensity to bankruptcy. Only the book-to-market ratio and current ratio significantly explain the probability of being dropped. Finally, we improve our matching procedure to identify 1,880 control firms with a similar propensity to bankruptcy and a similar

propensity to generate banking revenues. In addition to the proxies of bankruptcy already mentioned, we use market capitalization, B/M ratio, and share turnover as proxies of revenue generation. As suggested in regression models 3 and 4, there is a full matching between sample firms and control firms. No coefficient is significant, suggesting that our propensity score matching method does a good job in matching firms.

III. Consequences of loss in coverage

Having determined the factors that cause analysts to drop coverage, we now turn to the consequences of that loss in coverage for the firm. We begin by examining whether firm performance continues to decline relative to the matched sample on the propensity both to bankruptcy and to revenue generation, and whether the firm provides fewer opportunities for revenue generation to an investment bank in the two years following loss in coverage relative to the matched sample. Next, we examine whether the firm continues to trade on an organized exchange, or, if the firm delists, how long it takes for the firm to do so. Finally, we compare the delisting likelihood for our sample firms against that for the set of control firms who do not lose coverage to examine whether the loss in coverage influences the delisting of the sample firms.

Table 6 reports the changes in performance indicators and revenue generation indicators from the year before to two years after the loss in coverage. Since the firms are matched in the year prior to losing coverage, performance is similar to the control firms in the year -1. However, performance declines following a loss in coverage even after matching on propensity for bankruptcy and revenue generation. For example, operating return on assets for the sample firms is significantly below the performance for its control firm in the year of and the two years subsequent to loss in coverage (control sample adjusted OROA is -3.30%, -4.70% and -2.90%, in years 0, +1, and +2 respectively). This declining pattern also exists for return on assets and for the level of sales. Leverage, on a market value basis, continues to increase, with the market debt-equity ratio for the median firm being 0.16 above that for the appropriate

control firm in year +2. Liquidity, on a control-firm adjusted basis, decreases in the years following loss in coverage, while the risk of bankruptcy increases sharply relative to the control firm.

The size of the firm, based on both the market capitalization of equity and the book value of total assets, decreases significantly relative to the control firm, in the years following loss in coverage. Not surprisingly, over this time period, the firm becomes, and remains, less of a glamour stock that the control firm. From a revenue generation standpoint, our results are consistent with our priors. Share turnover falls significantly in the years following loss in coverage. This is expected because with no coverage, fewer investors are likely to trade the stock. The sample firm also engages in fewer M&A transactions than the control firm. Given the decline in performance, and the loss in coverage, once again, this is expected.

Overall, our results indicate that the decline in performance and increase in bankruptcy risk, that we previously documented prior to loss in coverage, continues in the two years following the decision by all analysts to drop coverage of the firm. Similarly, the decline in revenue generation potential for investment banks, in the years before loss in coverage, also continues in the years following loss in coverage. These findings suggest that the analyst's decision to drop coverage, for either performance or risk related reasons, or for lack of expected investment banking revenue generation capabilities, appear to be rational in hindsight.

In the last stage of the analysis, we examine whether the decision to drop coverage of the firm causes the firm to delist. Table 7 indicates that of the 3,219 sample firms, 2,443 delist.[4] Of these delistings, 859 occur between the first and second year following loss in coverage, while another 1,000 firms delist between two and five years of losing coverage. In other words, fully 58% of our sample firms delist within five years of losing coverage. Very few firms survive more than five years. 453 firms delist between five and ten years, and only 131 firms delist more than ten years following loss in coverage. Delistings by our sample firms are primarily for liquidation purposes (1,452). The remaining firms (991) delist due to mergers. For our control firms, the results are considerably less striking. Only 26% of the control firms that are matched on the propensity to bankruptcy and revenue generation delist during the

[4] 776 firms are still trading at the end of our period of our period of analysis.

five years after the sample firm experiences a coverage loss. Our results are similar across the other matching methods, suggesting that the loss in coverage does indeed exacerbate a firm's demise, despite the fact that the firms losing coverage are underperformers with a higher potential risk of bankruptcy to begin with.

Finally, we use a Cox proportional hazard model to explain the probability that a firm will be delisted after losing analyst coverage. Time-to-event or survival studies arise when an event of delisting in year *t* may occur for an observation unit. The year when the coverage is lost marks time 0, and data are thus left-censored by construction. Also, data are right-censored, since the survival analysis covers the ten years after the loss of coverage. Observation units are sample firms and their control companies matched on the propensity to bankruptcy and revenue generation in year -1. The covariates include the time-constant 'Loss of Coverage' dummy and time-varying indicators of performance and potential revenue generation. Table 8 reports the coefficients for the Cox regression models. Lin and Wei's (1989) heteroskedasticity-robust *z*-statistics are reported in parentheses.

In regression models 1 and 2, the hazard probability of delisting is negatively associated with the Altman Z-score, sales, and the number of M&A deals that a firm realizes as an acquirer; while it is positively related to the loss of analyst coverage. Models 3 and 4 include four more covariates. Three variables derive from the well-known Dupont identity, which separates ROE into net profit margin (i.e., net income divided by sales), asset turnover (sales divided by total assets), and equity multiplier (total assets divided by common equity). The fourth variable is the Standard and Poor's long-term debt rating, ranging on Compustat from 2 (AAA) to 27 (D) and 28 (Not Meaningful). The coefficients for the new regressors significantly explain the hazard rate of delisting in year *t*. As expected, the lower the net profit margin and equity multiplier, the more likely a stock will be delisted. The S&P long-term debt rating is positively related to the time to delist. In regression models 5 and 6, we include an interaction variable between 'Loss of Coverage' and institutional holding that is determined as the total number of shares held by all institutions at the end of year *t* (out of shares outstanding). The signs of coefficients are generally stable across regression models. In the last models, the coefficient of 'Loss of Coverage' experiences an

increase in statistical significance. Although hazard ratios are not reported in Table 8, they support a clearer interpretation than do the coefficients. Losing the analyst coverage increases the likelihood that a firm's stock will be delisted by 75%, after we control for other factors.

One reason why the loss in coverage results in an increased likelihood of delisting is suggested by the investor makeup of the firms. Significantly, the average institutional holding is negatively related to the time to delisting, suggesting that the lack of attention from individual investors is responsible for the final delisting decision. Figure 2 draws the relation between delisting rates and the average institutional holding in the years after the loss of analyst coverage. Sample firms especially experience the higher rates of delisting in the three first years after the loss of coverage. During these years the institutional presence is significantly lower for sample firms than control firms matched on propensity to bankruptcy and revenue generation.

IV. Conclusions

In this paper we examine the determinants and consequences of the loss of coverage to a sample of publicly listed firms to answer three questions: What are the characteristics of the firms experiencing a loss in analyst coverage? To what extent do the incentives of the financial institutions providing coverage play a role in the stock coverage decision? What are the effects of losing analyst coverage on the firm experiencing the coverage loss? The overall goal is to ascertain the value of analyst coverage to both the firm and the financial institution providing the coverage.

Using a sample of 3,219 firms that lost analyst coverage during the period 1983-2004, we find that the likelihood of experiencing a coverage loss is inversely related to firm size and performance, and positively related to the degree of financial leverage and bankruptcy risk. Moreover, firms exhibiting a higher level of equity and debt underwriting activity are less likely to lose analyst coverage. In the years leading up to the loss in coverage, the sample firms experience a deterioration in analyst recommendation ratings and a consistent decrease in the number of analysts covering the firm.

Subsequent to the loss in coverage, the sample firms exhibit a higher delisting frequency relative to a sample matched on propensity to bankruptcy and revenue generation. Fifty-eight percent of the sample firms delist within five years of loss in coverage, versus only 26% for the control firms. Our results also hold in a multivariate framework, suggesting that the loss in coverage does indeed contribute to a firm's demise, despite the fact that these firms are underperformers with a higher potential risk of experiencing bankruptcy to begin with.

Overall, our results shed light on the importance of analyst coverage to the firm and underlying incentives of the analyst community in providing the research coverage.

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Table 1

Sample Descriptive Statistics

In Panel A, 'All Analysts' and 'All Covered Firms' are, respectively, analysts and firms that are reported on the I/B/E/S database in each year from 1983 to 2004. 'Firms Losing Coverage' are U.S. firms whose common stocks are listed on the main domestic exchanges and whose analyst coverage has been terminated during a given year. Among the 'Firms Losing Coverage,' 'Sample Firms' are those firms that have been trading publicly for at least one calendar year after the loss of analyst coverage. Panel B and C categorize sample firms by two-digit NAICS industry codes and listing exchange, respectively. 'Internet and Technology Firms' are defined by the four-digit SIC codes that are reported in Loughran and Ritter (2004) and then matched to the NAICS codes. In Panel D, the trading age of a firm is the number of years from the first trading day to the day when the analyst coverage is lost. Panel E and F report all numbers at the end of the year prior to the loss of coverage. Market capitalization is common shares outstanding multiplied by calendar year closing price. B/M ratio is defined as the algebraic sum of common equity, deferred taxes, investment tax credit and preferred stock, divided by market capitalization. The Fama-French quintile breakpoints in Panel F are obtained from Ken French's website. Data come from I/B/E/S, Compustat, CRSP, and CRSP/Compustat Merged databases.

Panel A: Firms Losing Coverage by Year

Year	All Analysts (1)	All Covered Firms (2)	Firms Losing Coverage (3)	As % of All Covered Firms (4)=(3)/(2)	Sample Firms (5)	As % of All Covered Firms (6)=(5)/(2)
1983	2,324	2,673	108	4.04%	52	1.95%
1984	2,320	3,217	246	7.65%	79	2.46%
1985	2,535	3,513	259	7.37%	71	2.02%
1986	2,525	3,786	332	8.77%	103	2.72%
1987	3,146	4,126	387	9.38%	143	3.47%
1988	3,284	4,146	398	9.60%	106	2.56%
1989	3,756	4,066	361	8.88%	124	3.05%
1990	4,221	3,930	311	7.91%	139	3.54%
1991	4,145	3,807	235	6.17%	107	2.81%
1992	4,751	3,929	188	4.78%	82	2.09%
1993	6,387	4,288	283	6.60%	131	3.06%
1994	7,249	4,660	370	7.94%	158	3.39%
1995	9,039	5,050	399	7.90%	122	2.42%
1996	9,929	5,534	478	8.64%	159	2.87%
1997	11,403	5,845	774	13.24%	235	4.02%
1998	12,241	5,811	828	14.25%	248	4.27%
1999	12,771	5,378	977	18.17%	295	5.49%
2000	13,147	4,817	955	19.83%	323	6.71%
2001	13,301	3,953	628	15.89%	174	4.40%
2002	12,884	3,671	421	11.47%	158	4.30%
2003	12,661	3,677	326	8.87%	92	2.50%
2004	11,499	3,803	370	9.73%	118	3.10%
Total	165,518	93,680	9,634	10.28%	3,219	3.44%

Panel B: Sample Firms by Industry

Industry	Number	Percentage
Accommodation and Food Services	81	2.52%
Administrative and Support	71	2.21%
Agriculture	14	0.43%
Construction	63	1.96%
Education, Health and Social	84	2.61%
Entertainment, and Recreation	19	0.59%
Finance and Insurance	583	18.11%
Information, of which:	318	9.88%
- Internet and Technology Firms	57	1.77%
Manufacturing, of which:	1,175	36.50%
- Computer and Electronic Product Manufacturing	368	11.43%
- Chemical Manufacturing	160	4.97%
- Machinery Manufacturing	126	3.91%
- Internet and Technology Firms	30	0.93%
Mining	107	3.32%
Professional, Scientific, and Technical, of which:	161	5.00%
- Internet and Technology Firms	20	0.62%
Real Estate	99	3.08%
Retail Trade	144	4.47%
Transportation and Warehousing	47	1.46%
Utilities	40	1.24%
Wholesale Trade	135	4.19%
Other/Not Available	78	2.42%
Total	3,219	100.00%

Panel C: Sample Firms by Listing Exchange

Exchange	Firms	Percentage
NYSE	472	14.66%
AMEX	547	16.99%
Nasdaq	2,200	68.35%
Total	3,219	100.00%

Panel D: Trading Age Distribution for Sample Firms

Trading Age	Firms	Percentage
< 1 year	155	4.82%
1 to 2 years	304	9.44%
2 to 5 years	961	29.85%
5 to 10 years	757	23.52%
10 to 20 years	670	20.81%
> 20 years	372	11.56%

Panel E: Market Capitalization and B/M Ratio Distributions for Sample Firms

Market Capitalization	Firms	Percentage
< 10 $ millions	323	10.52%
10 to 50	1,504	48.97%
50 to 100	639	20.81%
100 to 500	507	16.51%
500 to 1000	53	1.73%
> 1000 $ millions	45	1.47%

B/M	Firms	Percentage
< 0	135	4.46%
0 to 0.25	484	16.00%
0.25 to 0.5	507	16.76%
0.5 to 0.75	505	16.69%
0.75 to 1	425	14.05%
> 1	969	32.04%

Panel F: Fama-French Market Capitalization and B/M Ratio Quintiles for Sample Firms

FF Market Capitalization Quintiles		
Quintile	Firms	Percentage
1	2,735	89.06%
2	315	10.26%
3	14	0.46%
4	5	0.16%
5	2	0.06%

FF B/M Quintiles		
Quintile	Firms	Percentage
1	836	27.64%
2	408	13.49%
3	388	12.82%
4	490	16.20%
5	903	29.85%

Table 2

Analyst Earnings Estimates and Recommendations for Sample Firms in the Years Prior to the Loss of Coverage

This table reports median analyst earnings-per-share (EPS) estimates and mean recommendations on a sample firm in the four years prior to year 0, which marks the year when the firm loses coverage. From I/B/E/S Detail tapes, EPS estimate is determined as the median EPS estimate for sample firms. Industry-adjusted EPS estimate is the median difference between sample EPS estimate and the mean industry EPS estimate. From I/B/E/S Recommendation tapes, recommendation is the mean analyst recommendation on sample firms. Industry-adjusted recommendation is the mean difference between the sample recommendation and the mean industry recommendation. Recommendations range from 1 (Strong Buy) to 5 (Sell). While I/B/E/S reports EPS estimates since 1981, analyst recommendations are available since 1994. Number of estimates is the mean number of EPS estimates in year *t*. Number of analysts is the mean number of analysts covering sample firms by at least one report during year *t*.

	Levels					Changes			
Year *t*	-4	-3	-2	-1	0	-4 to 0	-3 to 0	-2 to 0	-1 to 0
Median EPS Estimate	0.62	0.60	0.52	0.39	0.30	-0.16	-0.13	-0.10	-0.03
Median Industry-Adjusted EPS Estimate	-0.17	-0.23	-0.31	-0.47	-0.56	-0.26	-0.20	-0.17	-0.07
Mean Recommendation	1.97	1.98	2.04	2.22	2.38	0.59	0.60	0.61	0.46
Mean Industry-Adjusted Recommendation	0.00	0.00	0.05	0.20	0.31	0.38	0.45	0.48	0.39
Mean Number of Estimates	9	9	8	7	4	-5	-5	-4	-3
Mean Number of Analysts	3	3	3	3	2	-2	-2	-1	-1

Table 3

Performance Indicators and Potential Revenue Generation Characteristics for Sample Firms

All performance indicators and potential revenue characteristics are determined at the end of the year -1, that is, the year prior to the loss of analyst coverage, except for M&A and Issues characteristics. Operating ROA is defined as operating income before depreciation divided by total assets, (Data13/Data6). ROA is net income divided by total assets, (Data258/Data6). Sales are equal to Data12. Total Liabilities/Total Assets is (Data181/Data6). Market D/E Ratio is defined as total liabilities divided by market capitalization, (Data181/Data25×Data24). Current Ratio is current assets divided by current liabilities, (Data4/Data5). Cash Ratio is cash divided by current liabilities, (Data162/Data5). Altman's Z-score is defined as 3.3×((pretax income + interest expense)/total assets) + 0.999×(sales/total assets) + 0.6×(market capitalization/total liabilities) + 1.2×(working capital/total assets) + 1.4×(retained earnings/total assets), or 3.3×((Data170+Data15)/Data6) + 0.999×(Data12/Data6) + 0.6×(Market Cap/Data181) + 1.2×(Data179/Data6) + 1.4×(Data36/Data6). Market Capitalization ($ millions) is common shares outstanding multiplied by calendar year closing price, (Data25×Data24). Assets ($ millions) is equal to Data6. B/M ratio is (common equity + deferred taxes + investment tax credit-preferred stock)/market capitalization, or (Data60+Data74+Data208-Data130)/Market capitalization. Data items come from Compustat database. Share Turnover is the annual trading volume divided by common shares outstanding, (volume/Data25). Volatility is the idiosyncratic standard deviation of stock monthly returns in year -1. Volume and price data come from CRSP. M&A deal amount and Number of M&A deals are the accumulative transaction value and number of M&A deals, respectively, over the prior three years, i.e., years -3, -2, and -1. Issues amount and number of issues are the accumulative value and number of new equity issues over the prior three years. Data on M&A deals and new equity issues come from SDC database. The table reports *p*-values from a nonparametric test for difference in medians, except in the cases of M&A deals and issues amounts and numbers where it reports *p*-values from a *t*-test for difference in means. The last five columns report the distributions of performance indicators and potential revenue generation characteristics for sample firms relative to 'All Covered Firms' quintile breakpoints.

	All Covered Firms			Sample Firms				Quintiles				
	Median	Mean	N	Median	Mean	N	*P*-value	1	2	3	4	5
Performance Indicators												
Operating ROA	10.71%	7.36%	84,801	5.36%	-0.42%	2,866	0.0000	38%	21%	18%	12%	11%
ROA	2.85%	-4.25%	86,724	0.43%	-11.08%	2,925	0.0000	38%	23%	15%	13%	11%
Sales ($ millions)	150.80	1,475.69	86,637	45.99	161.78	2,922	0.0000	41%	30%	18%	9%	2%
Total Liabilities/Total Assets	0.55	0.57	86,866	0.53	0.56	2,928	0.0002	25%	19%	16%	18%	20%
Market D/E Ratio	0.70	25.99	85,914	0.80	2.99	2,897	0.0027	21%	18%	19%	20%	22%
Current Ratio	2.01	2.95	71,898	2.12	3.23	2,427	0.0006	21%	18%	18%	18%	25%
Cash Ratio	0.18	0.79	65,625	0.22	1.02	2,297	0.0001	21%	18%	16%	16%	29%
Altman Z-Score	2.11	4.33	70,279	1.24	3.09	2,372	0.0000	36%	20%	15%	14%	15%
Potential Revenue Generation Characteristics												
Market Capitalization ($ millions)	127.92	1,620.36	88,634	38.23	116.50	2,996	0.0000	41%	33%	17%	7%	2%
Assets ($ millions)	196.49	3,327.00	87,142	61.57	372.51	2,943	0.0000	39%	29%	18%	10%	4%
B/M Ratio	0.55	7.73	74,464	0.68	0.83	2,642	0.0000	21%	14%	15%	19%	31%
Share Turnover	0.51	1.08	93,680	0.48	1.01	3,033	0.0344	25%	19%	17%	16%	23%
Volatility	0.10	0.12	75,640	0.13	0.16	2,564	0.0000	12%	12%	17%	25%	34%
M&A Deal Amount (3 years) ($ millions)	0.00	2,285.28	93,680	0.00	203.66	3,095	0.0000	38%	28%	18%	11%	5%
Number of M&A deals (3 years)	0.00	18.77	93,680	0.00	9.35	3,095	0.0000	43%	18%	17%	14%	8%
Issues Amount (3 years) ($ millions)	0.00	134.73	93,680	0.00	30.96	3,095	0.0000	37%	26%	23%	9%	5%
Number of Issues (3 years)	0.00	1.69	93,680	0.00	0.88	3,095	0.0000	91%	0%	0%	0%	9%

Table 4

Time Series of Performance Indicators and Potential Revenue Generation Characteristics for Sample Firms, Before the Loss of Coverage

This table reports the time series of performance indicators and potential revenue generation characteristics for sample firms, relative to control firms matched on size and industry, in the three years before the loss of coverage. For each sample firm, the control firm is a firm from the same industry which is closest in size to the sample firm in the year prior to the loss of analyst coverage, i.e., year -1. Year 0 marks the year when the analyst coverage is terminated. Industry is the two-digit NAICS code. Control group-adjusted values are determined as median end-of-year differences between sample firms and control firms.

	Levels				Changes	
Year *t*	-3	-2	-1	0	-3 to -1	-2 to -1
Performance Indicators						
Operating ROA	1.52%	0.29%	-0.44%	-1.77%	-1.34%	-0.81%
	(0.00)	(0.21)	(0.13)	(0.00)	(0.00)	(0.00)
ROA	0.53%	0.07%	-0.73%	-2.91%	-0.75%	-0.82%
	(0.00)	(0.57)	(0.00)	(0.00)	(0.00)	(0.00)
Sales	2.04	3.46	5.04	6.24	-0.43	-0.79
	(0.02)	(0.00)	(0.00)	(0.00)	(0.40)	(0.00)
Total Liabilities/Total Assets	0.07	0.03	0.03	0.08	-0.01	0.01
	(0.00)	(0.00)	(0.00)	(0.00)	(0.07)	(0.00)
Market D/E Ratio	0.17	0.12	0.13	0.32	0.02	0.03
	(0.00)	(0.00)	(0.00)	(0.00)	(0.12)	(0.01)
Current Ratio	0.26	-0.08	0.00	0.00	-0.15	0.08
	(0.00)	(0.00)	(0.47)	(0.73)	(0.00)	(0.11)
Cash Ratio	0.04	0.02	0.01	0.01	-0.02	-0.01
	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)	(0.20)
Altman Z-Score	0.71	0.45	-0.43	-1.14	-0.94	-0.63
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Potential Revenue Generation						
Market capitalization	11.28	6.25	0.00	-4.15	-11.06	-5.97
	(0.00)	(0.00)	(0.07)	(0.00)	(0.00)	(0.00)
Assets	11.12	9.13	7.94	6.82	-0.64	-0.59
	(0.00)	(0.00)	(0.00)	(0.00)	(0.10)	(0.90)
B/M Ratio	0.18	0.14	0.13	0.24	-0.03	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.10)	(0.90)
Share Turnover	1.95	1.73	1.13	1.27	-0.83	-0.51
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
M&A Deal Amount (3 years)	8.15	4.71	5.87	0.22	-3.43	2.59
	(0.10)	(0.02)	(0.06)	(0.87)	(0.26)	(0.54)
Number of M&A Deals (3 years)	0.07	0.12	0.08	0.03	0.00	-0.04
	(0.06)	(0.00)	(0.00)	(0.25)	(0.96)	(0.31)
Issues Amount (3 years)	0.49	-0.41	-2.23	-1.93	-4.09	-2.36
	(0.77)	(0.91)	(0.53)	(0.32)	(0.40)	(0.20)
Number of Issues (3 years)	0.03	0.01	-0.03	-0.05	-0.05	-0.03
	(0.02)	(0.30)	(0.01)	(0.00)	(0.00)	(0.06)

Table 5

Logistic Regressions for Probability of Losing Coverage

This table reports logistic regression models for the probability that a firm will lose analyst coverage in one year. The dependent variable is a 'Loss of Coverage' dummy that has a value of one for sample firms, and zero for other firms. Regression models in Panel A regard 'All Covered Firms' reported on I/B/E/S as the other firms. Regression models in Panel B regard control firms matched on size and industry as the other firms. For each sample firm, the control firm is a firm operating in the same industry (based on two-digit NAICS code) which is the closest in size to the sample firm, in the year prior to loss of coverage. Regression models in Panel C regard control firms matched on propensity to bankruptcy and revenue generation as the other firms. Proxies of the propensity to bankruptcy are working capital/assets, retained earnings/assets, earning before interest and taxation/assets, market value of equity/liabilities, sales/assets, net income/assets, liabilities/assets, current assets/current liabilities, relative size, cumulative excess returns, and volatility. Proxies of the propensity to revenue generation are market capitalization, B/M ratio, and share turnover. Observations are firm-years, and variables are calculated at the end of year -1, and winsorized at the 1% and 99% levels. Industry and year fixed effects are included in all regressions. White's heteroskedasticity-adjusted *z*-statistics are in parentheses.

Panel A: Sample Firms vs. All Covered Firms

	Levels		Changes			
	Year -1		Year -2 to -1		Year -3 to -1	
	Deal Amts	No. of Deals	Deal Amts	No. of Deals	Deal Amts	No. of Deals
Intercept	-0.62	-0.59	-2.24	-2.26	-2.20	-2.25
	(-1.25)	(-1.19)	(-8.02)	(-8.10)	(-6.60)	(-6.76)
ROA	0.09	0.11	-0.13	-0.13	0.05	0.03
	(0.44)	(0.53)	(-0.74)	(-0.74)	(0.22)	(0.13)
Ln(Sales)	-0.12	-0.12	-0.09	-0.08	0.04	0.05
	(-5.35)	(-5.05)	(-0.90)	(-0.79)	(0.56)	(0.72)
Liabilities/Assets	0.15	0.14	0.46	0.47	0.29	0.32
	(1.16)	(1.08)	(1.61)	(1.67)	(1.22)	(1.35)
Current Ratio	0.01	0.01	-0.01	-0.01	-0.01	-0.01
	(1.53)	(1.32)	(-0.57)	(-0.58)	(-0.46)	(-0.48)
Altman Z-Score	-0.01	-0.01	0.00	0.00	0.01	0.01
	(-3.16)	(-3.16)	(0.20)	(0.19)	(1.16)	(1.25)
Ln(Market Capitalization)	-0.31	-0.32	-0.36	-0.36	-0.33	-0.33
	(-12.62)	(-13.69)	(-6.76)	(-6.80)	(-6.83)	(-6.87)
B/M Ratio	0.11	0.11	0.08	0.09	0.08	0.09
	(3.55)	(3.60)	(1.76)	(1.88)	(1.50)	(1.70)
Share Turnover	0.07	0.07	-0.02	-0.02	-0.01	-0.01
	(3.70)	(3.68)	(-1.00)	(-1.02)	(-0.22)	(-0.28)
Volatility	0.46	0.39	-0.23	-0.23	-0.26	-0.25
	(1.59)	(1.32)	(-0.53)	(-0.52)	(-0.58)	(-0.56)
M&A Deal Amount	-0.00		-0.00		-0.00	
	(-1.30)		(-2.93)		(-4.84)	
Number of M&A Deals		-0.01		-0.00		-0.00
		(-4.26)		(-3.56)		(-6.18)
Issues Amount	-0.00		-0.00		-0.00	
	(-1.91)		(-3.11)		(-3.71)	
Number of Issues		-0.03		-0.01		-0.00
		(-4.08)		(-1.76)		(-0.16)
Pseudo-R^2	0.0959	0.0970	0.0291	0.0292	0.0305	0.0307
N	55,860	55,860	48,708	48,708	42,591	42,591

Panel B: Sample Firms vs. Control Firms (Matched on Size and Industry)

	Levels		Changes			
	Year -1		Year -2 to -1		Year -3 to -1	
	Deal Amts	No. of Deals	Deal Amts	No. of Deals	Deal Amts	No. of Deals
Intercept	0.08	0.09	0.18	0.20	0.06	0.10
	(0.26)	(0.28)	(0.27)	(0.29)	(0.09)	(0.15)
ROA	-0.10	-0.10	-0.77	-0.77	-0.06	-0.07
	(-0.71)	(-0.70)	(-2.12)	(-2.12)	(-0.26)	(-0.30)
Ln(Sales)	0.04	0.04	0.09	0.09	0.05	0.06
	(1.32)	(1.34)	(0.88)	(0.82)	(0.75)	(0.78)
Liabilities/Assets	0.34	0.35	0.47	0.45	0.95	0.96
	(1.89)	(1.90)	(1.12)	(1.09)	(2.50)	(2.52)
Current Ratio	0.05	0.05	0.01	0.01	0.01	0.02
	(3.04)	(3.08)	(0.49)	(0.47)	(0.51)	(0.57)
Altman Z-Score	-0.02	-0.02	-0.00	-0.00	0.01	0.01
	(-2.51)	(-2.54)	(-0.04)	(-0.04)	(0.95)	(0.95)
Ln(Market Capitalization)	-0.08	-0.08	-0.07	-0.07	-0.04	-0.04
	(-1.99)	(-1.99)	(-1.91)	(-1.93)	(-1.06)	(-1.16)
B/M Ratio	0.15	0.15	-0.03	-0.03	0.10	0.10
	(2.75)	(2.80)	(-0.28)	(-0.29)	(1.00)	(1.06)
Share Turnover	0.01	0.01	0.00	0.00	0.02	0.02
	(2.46)	(2.51)	(0.56)	(0.60)	(2.94)	(2.98)
Volatility	0.26	0.24	-0.38	-0.39	-0.51	-0.56
	(0.60)	(0.55)	(-0.66)	(-0.67)	(-0.84)	(-0.92)
M&A Deal Amount	-0.00		-0.00		-0.00	
	(-0.32)		(-0.01)		(-1.77)	
Number of M&A Deals		-0.01		0.04		-0.06
		(-0.43)		(0.67)		(-1.04)
Issues Amount	-0.00		0.00		0.00	
	(-0.45)		(0.60)		(0.10)	
Number of Issues		-0.12		-0.07		-0.24
		(-1.08)		(-0.24)		(-0.82)
Pseudo-R^2	0.0154	0.0156	0.0205	0.0206	0.0213	0.0210
N	3,785	3,785	1,470	1,470	1,318	1,318

Panel C: Sample Firms vs. Control Firms (Matched on Propensity to Bankruptcy and Revenue Generation)

	Propensity to Bankruptcy		Propensity to Bankruptcy and Revenue Generation	
	Levels in Year -1		Levels in Year -1	
	1	2	3	4
Intercept	-0.88	-0.81	-0.16	-0.16
	(-2.16)	(-2.00)	(-0.42)	(-0.42)
ROA	-0.10	-0.09	-0.04	-0.04
	(-0.55)	(-0.49)	(-0.24)	(-0.24)
Ln(Sales)	0.07	0.06	0.05	0.05
	(1.84)	(1.67)	(1.44)	(1.43)
Liabilities/Assets	0.27	0.28	-0.30	-0.31
	(1.33)	(1.36)	(-1.62)	(-1.67)
Current Ratio	0.05	0.05	-0.00	-0.00
	(2.17)	(2.14)	(-0.06)	(-0.05)
Altman Z-Score	-0.01	-0.00	-0.01	-0.01
	(-0.42)	(-0.32)	(-1.47)	(-1.49)
Ln(Market Capitalization)	0.03	0.02	0.05	0.05
	(0.67)	(0.39)	(1.14)	(1.11)
B/M Ratio	0.17	0.17	-0.04	-0.04
	(3.25)	(3.19)	(-0.77)	(-0.79)
Share Turnover	0.00	-0.00	-0.01	-0.01
	(0.03)	(-0.02)	(-0.26)	(-0.19)
Volatility	0.29	0.23	0.34	0.34
	(0.67)	(0.53)	(0.82)	(0.81)
M&A Deal Amount	-0.00		-0.00	
	(-0.75)		(-0.15)	
Number of M&A Deals		-0.00		0.00
		(-0.43)		(0.21)
Issues Amount	-0.00		-0.00	
	(-1.22)		(-0.61)	
Number of Issues		-0.01		-0.01
		(-1.40)		(-1.20)
Pseudo-R^2	0.0130	0.0111	0.0051	0.0052
N	3,392	3,392	3,659	3,659

Table 6

Time Series of Performance Indicators and Potential Revenue Generation Characteristics for Sample Firms, After Loss of Coverage

This table reports the time series of performance indicators and revenue generation potential characteristics for sample firms, relative to control firms matched on propensity to bankruptcy and revenue generation in year -1. Year 0 marks the year when analyst coverage is terminated. Control group adjusted values are calculated as median end-of-year differences between sample firms and control firms. *P*-values for the nonparametric sign-test of difference from zero are reported in parentheses.

	Levels				Changes	
Year	-1	0	+1	+2	-1 to +1	-1 to + 2
Performance Indicators						
Operating ROA	-0.75%	-3.30%	-4.70%	-2.90%	-3.30%	-3.30%
	(0.13)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
ROA	-1.15%	-3.70%	-4.30%	-2.05%	-3.20%	-2.80%
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Sales	2.84	1.45	-6.91	-11.83	-9.45	-18.08
	(0.12)	(0.33)	(0.00)	(0.00)	(0.00)	(0.00)
Total Liabilities/Total Assets	-0.01	0.04	0.04	0.02	0.02	0.00
	(0.71)	(0.00)	(0.00)	(0.27)	(0.01)	(0.71)
Market D/E Ratio	0.00	0.18	0.19	0.16	0.24	0.23
	(1.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Current Ratio	0.00	-0.10	-0.35	-0.36	-0.01	-0.01
	(0.22)	(0.18)	(0.03)	(0.00)	(0.18)	(0.56)
Cash Ratio	-0.00	-0.00	-0.01	-0.03	-0.21	-0.08
	(1.00)	(0.06)	(0.00)	(0.00)	(0.00)	(0.39)
Altman Z-Score	-0.10	-0.83	-1.19	-1.13	-0.85	-0.75
	(0.30)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Potential Revenue Generation						
Market capitalization	1.86	-7.36	-14.51	-16.83	-16.23	-20.28
	(0.16)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Assets	4.12	2.36	-9.29	-14.10	-7.60	-15.75
	(0.00)	(0.16)	(0.00)	(0.00)	(0.00)	(0.00)
B/M Ratio	-0.01	0.13	0.05	0.01	0.12	0.07
	(0.60)	(0.00)	(0.18)	(0.63)	(0.00)	(0.14)
Share Turnover	0.04	0.02	-0.07	-0.11	-0.12	-0.19
	(0.04)	(0.45)	(0.00)	(0.00)	(0.00)	(0.00)
M&A Deal Amount	-5.50	-6.00	-7.00	-8.46	0.00	-2.44
	(0.00)	(0.00)	(0.00)	(0.00)	(0.74)	(0.01)
Number of M&A Deals	-1	-1	-1	-1	0	0
	(0.00)	(0.00)	(0.00)	(0.00)	(0.82)	(0.53)
Issues Amount	-18.90	-22.00	-24.70	-28.95	0.00	-14.75
	(0.00)	(0.00)	(0.00)	(0.00)	(0.03)	(0.04)
Number of Issues	-1	-1	-1	-1	0	0
	(0.00)	(0.00)	(0.00)	(0.00)	(0.66)	(0.84)

Table 7

Eventual Status of Sample Firms

This table reports the percentage of delisted sample firms in the years after losing coverage. Sample firms are firms that continue to trade publicly for at least one year after losing coverage. For each sample firm, the control firm is, alternatively, a firm from the same industry that is closest in size to the sample firm, or a firm that is matched on the propensity to bankruptcy, or a firm that is matched on the propensity to bankruptcy and revenue generation, in the year prior to loss of coverage. Industry is the two-digit NAICS code.

	Sample Firms		Control Firms					
			Industry and Size		Propensity to Bankruptcy		Propensity to Bankruptcy and Revenue Generation	
Delisted After	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Less than 1 year			287	9.06%	264	14.65%	315	16.76%
1 to 2 years	859	26.69%	220	6.94%	152	8.44%	167	8.88%
2 to 5 years	1,000	31.07%	480	15.15%	355	19.70%	362	19.26%
5 to 10 years	453	14.07%	403	12.72%	256	14.21%	245	13.03%
More than 10 years	131	4.07%	368	11.61%	125	6.94%	130	6.91%
Still Trading	776	24.11%	1,411	44.53%	650	36.07%	661	35.16%
Total	3,219	100.00%	3,169	100.00%	1,802	100.00%	1,880	100.00%
Delisting Reason	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Liquidation	1,452	59.44%	920	52.33%	669	58.07%	655	53.73%
Merger	991	40.56%	838	47.67%	483	41.93%	564	46.27%
Total	2,443	100.00%	1,758	100.00%	1,152	100.00%	1,219	100.00%

Table 8

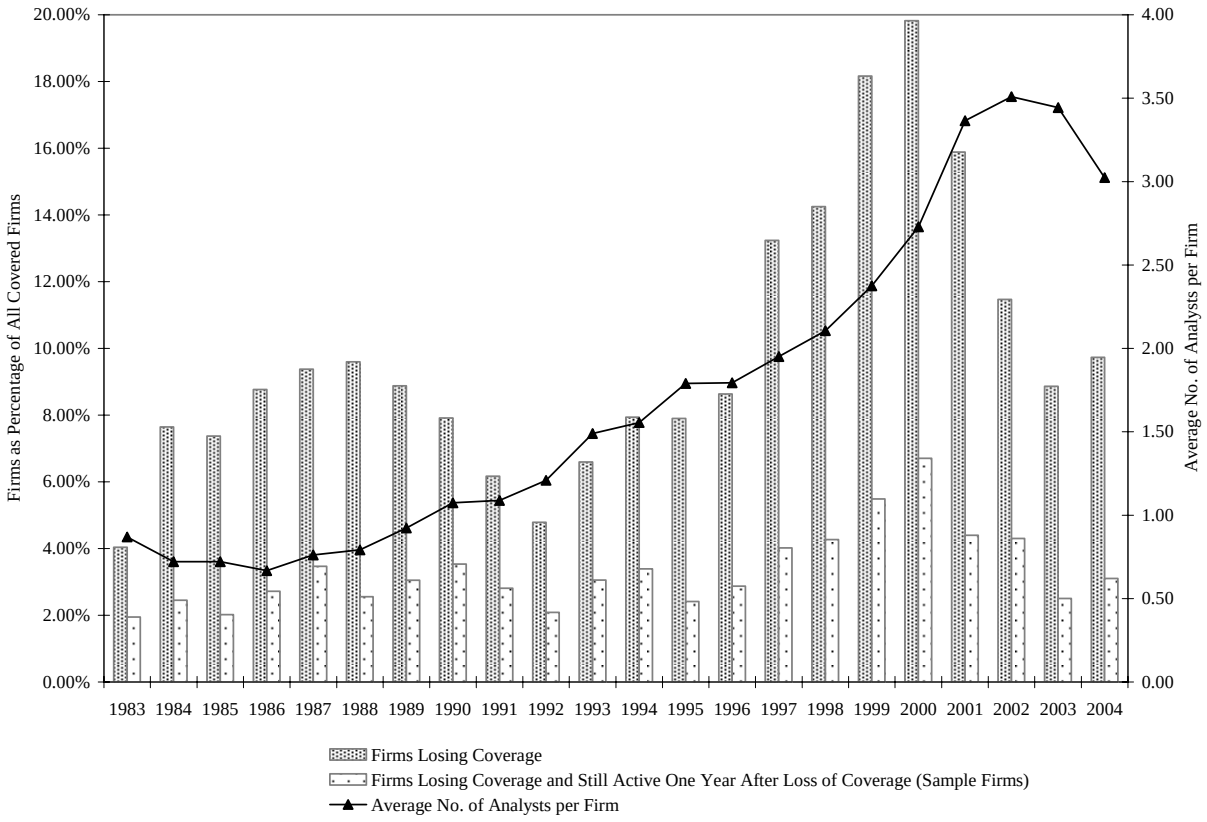
Cox Regression for Probability that Firm Will Be Delisted after Losing Analyst Coverage

The table presents Cox regression results for the hazard rate of delisting (Breslow method for ties). Failure event is a stock delisting in year *t*. Analysis time is over ten years. The year when sample firms lose analyst coverage marks time 0. 'Loss of Coverage' is a dummy equal to one for sample firms or zero for control firms matched on propensity to bankruptcy and revenue generation. All other covariates are time-varying variables. Consistent with the Dupont analysis, ROE is partitioned into ROA and equity multiplier, which is the ratio between total assets and common equity (Data6/Data60). ROA is further broken into net profit margin, and asset turnover. Net profit margin is the net income divided by sales (Data172/Data12). Asset turnover is determined as yearly sales divided by total assets (Data12/Data6). S&P Long-Term Debt rating is the Standard and Poor's rating on corporate bonds with long-term maturity. Ratings come from Compustat (Data280), and they range from 2 (AAA) to 27 (D) and 28 (Not Meaningful). Institutional Holdings are determined as total shares held by institutional investors reporting at the end of year *t*. Data on institutional holdings come from 13f database. Lin and Wei's (1989) heteroskedasticity-adjusted *z*-statistics are in parentheses.

	1	2	3	4	5	6
'Loss of Coverage' Dummy	0.31	0.26	0.31	0.26	0.61	0.56
	(4.87)	(4.08)	(4.83)	(4.11)	(7.27)	(6.81)
Institutional Holding					0.02	0.02
					(10.17)	(13.10)
'Loss of Coverage' x Inst. Holding					-0.01	-0.01
					(-4.61)	(-4.78)
Performance Indicators						
ROA	0.02	0.01				
	(0.53)	(0.39)				
Net Profit Margin			-0.00	-0.00	-0.00	-0.00
			(-2.93)	(-3.05)	(-2.66)	(-2.76)
Asset Turnover			0.01	0.00	0.00	-0.00
			(0.27)	(0.01)	(0.10)	(-0.12)
Equity Multiplier			-0.00	-0.00	-0.00	-0.00
			(-2.38)	(-2.09)	(-2.38)	(-2.09)
Ln(Sales)	-0.07	-0.05	-0.09	-0.05	-0.13	-0.09
	(-2.49)	(-1.68)	(-2.89)	(-1.76)	(-4.44)	(-3.45)
Total Liabilities/Total Assets	0.00	-0.01	-0.02	-0.02	-0.00	-0.00
	(0.04)	(-0.37)	(-0.40)	(-0.48)	(-0.03)	(-0.10)
Current Ratio	-0.01	-0.01	-0.01	-0.01	-0.02	-0.02
	(-1.24)	(-1.33)	(-1.45)	(-1.46)	(-1.83)	(-1.90)
Altman Z-Score	-0.02	-0.01	-0.01	-0.01	-0.01	-0.01
	(-2.48)	(-2.44)	(-4.92)	(-4.45)	(-4.32)	(-3.99)
S&P Long-Term Debt Rating			0.03	0.02	0.03	0.20
			(3.14)	(1.80)	(3.97)	(2.63)
Potential Revenue Generation						
Ln(Market Capitalization)	0.01	0.01	-0.00	-0.00	-0.10	-0.11
	(0.20)	(0.33)	(-0.17)	(-0.07)	(-3.49)	(-4.14)
B/M Ratio	-0.00	-0.00	-0.00	-0.00	0.00	0.00
	(-0.44)	(-0.20)	(-0.41)	(-0.14)	(0.93)	(1.55)
Share Turnover	0.05	0.05	0.05	0.05	0.05	0.51
	(7.56)	(7.04)	(7.77)	(7.19)	(8.87)	(8.44)
Volatility	-12.00	-11.97	-12.10	-12.03	-12.15	-12.07
	(-16.95)	(-17.34)	(-17.73)	(-17.95)	(-17.62)	(-17.92)
M&A Deal Amount	-0.00		-0.00		-0.00	
	(-0.76)		(-0.78)		(-0.86)	
Number of M&A Deals		-0.07		-0.07		-0.07
		(-8.55)		(-8.49)		(-8.83)
Issues Amount	0.00		0.00		0.00	
	(1.81)		(1.59)		(0.37)	
Number of Issues		0.17		0.17		-0.04
		(0.91)		(0.96)		(-0.23)
Wald Chi2	476.31	641.98	521.88	678.62	652.39	810.83
Prob. > Chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Number of Failures	1,073	1,073	1,073	1,073	1,073	1,073
Number of Observations	13,389	13,389	13,389	13,389	13,389	13,389

Figure 1

Firms Losing Coverage, 1983- 2004

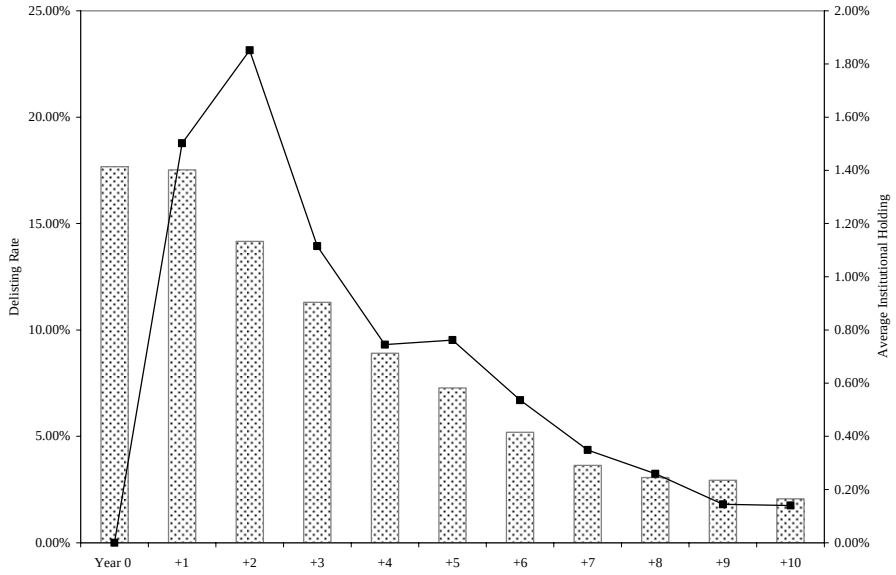


The figure 1 draws the evolution from 1983 to 2003 of the firms losing coverage, compared to sample firms −as percentage of all firms covered on I/B/E/S. Sample firms continue to be publicly traded on the main U.S. exchanges within one calendar year since the loss of their coverage. Also, the figure reports the average number of analysts per firm determined as the ratio between all individual analysts and all firms covered on I/B/E/S.

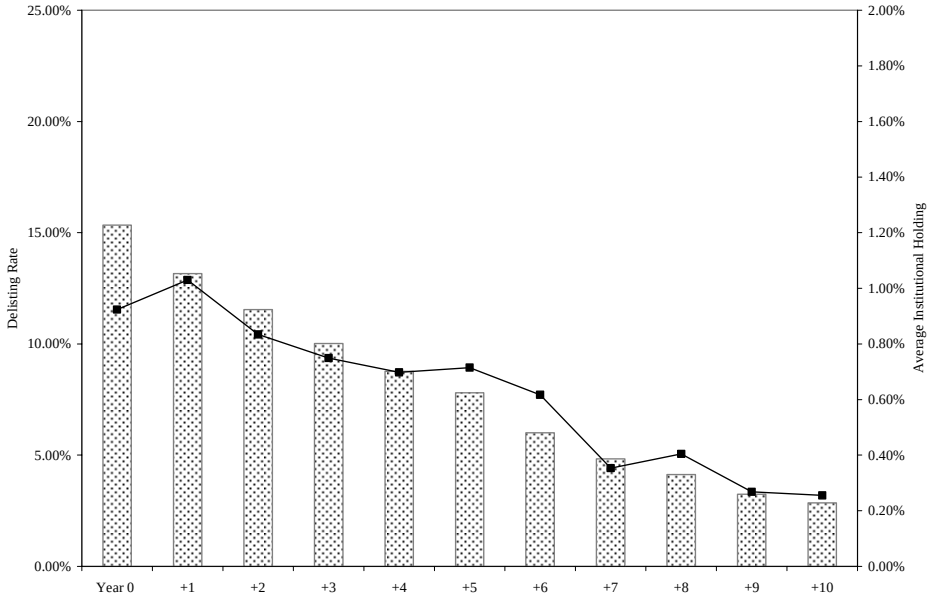
Figure 2

Delisting Rate and Institutional Presence in the Years after the Loss of Analyst Coverage

Panel A: Sample Firms



Panel B: Control Firms Matched on the Propensity to Bankruptcy and Revenue Generation



Panel A of figure 2 draws the delisting rate and the average institutional holding for sample firms in ten years after the loss of analyst coverage. Average institutional holding is determined as total percent institutional holding divided by the number of all institutions reporting to 13f at the end of year *t*. Panel B draws the evolution of delistings and institutional presence for control firms matched –in the year prior to the loss of coverage– on propensity to bankruptcy and revenue generation.