Have M&A delistings negatively impacted U.S. capital markets? Evidence from the effect on industry peer firms

Abstract

We provide evidence of negative information spillovers associated with delistings from mergers and acquisitions (M&A delistings), a key factor in the long-term decline in the number of publicly listed firms in the U.S. Specifically, we show that M&A delistings are associated with a decrease in the quality of analysts' information environment (increased absolute forecast errors and dispersion) for targets' industry peer firms; these results are stronger when targets are larger, and for public targets than for private targets. Additional tests, including a falsification test using non-completed M&As, suggest that our results are robust to endogeneity concerns arising from industry-level shocks.

1. Introduction

Since 1996, the number of publicly listed firms in the U.S. has decreased sharply. Doidge, Karolyi, and Stulz (2017) report that, at their peak in 1996, U.S. stock exchanges had 8,025 domestic listed firms, but by 2012 the number had dropped to 4,102 — the decreasing trend has continued since (see Table 1). While firms delist for various reasons, mergers and acquisitions (M&As)—hereafter "M&A delistings" —are a major contributing factor to this trend.[1] The reduction in the number of publicly listed firms in the U.S. is in sharp contrast with the growth in the overall size, i.e., total market capitalization, of public equity markets over this time period (Doidge et al. 2017; Mauboussin, Callahan, and Majd 2017). Public equity markets today are therefore characterized by a much smaller number of larger-sized firms than was the case just two decades ago. While concerns have been raised regarding the possible negative consequences of this trend for the U.S. capital markets and economy (e.g., Jensen 1997; Ljungqvist, Persson, and Tåg 2016; Fontenay 2017; The Economist 2017), to date there is little *empirical* evidence showing that this trend has had any negative spillover effects within U.S. capital markets. Our study aims to fill this gap in the literature, specifically by providing evidence that M&A delistings are associated with negative information spillovers in U.S. capital markets.

Documenting negative spillover effects in U.S. capital markets from the long-term trend of delistings due to M&As is obviously challenging due to the large number of other changes in the structure of U.S. capital markets over the last two decades. Given this challenge, we focus instead on whether there are relatively short-term (i.e., a few quarters) negative information spillover effects to other firms in the same industry (hereafter, "industry peer firms") as the acquired firm that delists due to M&A.[2] The

[1] A delisting is when a firm ceases to be publicly traded on an exchange and stops providing public financial disclosures in compliance with the requirements of the Securities and Exchange Commission (SEC). M&As are the major cause of delistings: Doidge et al. (2017) report that between 1996 and 2012, roughly 60% of delistings are due to M&As. Delistings can also result from firms going private or when firms no longer meet listing standards. Deregistrations by going dark are a distinctly different type of transaction: this is where a firm ceases to provide public disclosures in compliance with SEC requirements, but continues to be publicly traded on pink sheets.

[2] Because we are interested in the spillover effects to firms in the same industry as the target firm delisting due to an M&A, we define industry as the target firm's industry. The acquirer may be in the same industry (horizontal merger) or in a different industry (conglomerate merger) as the target firm. In cross-sectional analyses, we examine the effect of the different types of mergers (horizontal or conglomerate) on the spillover effects to industry peer firms.

delisting of a public target firm through acquisition will reduce available information about the target's industry (see Badertscher, Shroff, and White 2013), possibly leading to negative information spillover effects for industry peer firms. By documenting negative information spillovers to industry peer firms in the quarters following an M&A delisting, we provide evidence that speaks to the potential negative spillover effects for the broader U.S. capital markets resulting from the long-term trend of a decreasing number of listed firms in the U.S. Our focus is therefore distinctly different from much of the prior M&A literature. While a large body of literature has examined the market for corporate control and various characteristics of M&As,[3] this literature focuses on the properties of the acquiring firm or the combined firm. In contrast, our focus is on the other firms in the same industry as the target firm that are not directly involved in the M&A transaction. Specifically, we focus on how possible information spillover effects of M&A delistings negatively impact the information environment of industry peer firms.

To examine whether M&A delistings result in negative spillovers to industry peer firms, we test whether M&A delistings are associated with a deterioration in the quality of analysts' information environment for industry peer firms. Properties of analysts' forecasts are widely used as a proxy for the overall quality of a firm's information environment (e.g., see Lang and Lundholm 1996; Harford, Jiang, Wang, and Xie 2018). Specifically, we test whether M&A delistings are associated with significant increases in both analysts' absolute forecast errors and forecast dispersion for industry peer firms.

Using M&A delistings between 2001 and 2016, we identify a sample of 859 industry-quarters with at least one M&A delisting. Our sample consists of "event quarters" with one or more M&A delisting in an industry. We define industries using the target firm's eight-digit Global Industry Classifications

[3] Much of the prior literature in corporate finance that addresses the M&A setting focuses on various aspects of the market for corporate control. As such, the focus is more on the acquirer firm, its management (Roll 1986; Malmendier and Tate 2008), motives for acquisition (Nguyen, Yung, and Sun 2012), corporate governance (Masulis, Wang, Xie 2007), wealth effects, synergy (Hoberg and Phillips 2010), and the success of the resulting combined firm in both the short-run (merger announcements) and long-run (Jensen and Ruback 1983; Andrade, Mitchell, and Stafford 2001; Li 2013). The focus of our study is different, however. We examine the effect of M&A delistings on industry peer firms that are not directly involved in the M&A transaction.

Standard (GICS) code.[4] This sample of M&A delisting event quarters is matched with IBES data for analysts' earnings forecasts for industry peer firms (i.e., other firms in the same industry as the delisted firm) to measure analysts' absolute forecast errors and dispersion for industry peer firms in both the pre- (quarters q–6 to q–1) and post- (quarters q+2 to q+7) M&A delisting periods, where quarter q is the event quarter.

Consistent with industry peer firms experiencing negative information spillovers associated with M&A delistings, we find that between the pre- and post-M&A delisting periods, industry peer firms experience significant increases in both analysts' absolute forecast errors and dispersion. Further, we find that these results are significantly stronger when the delisted firm is larger in size relative to its industry. We include fixed effects for each industry peer firm-delisting event quarter pairing, which controls for any time-invariant unobservable firm characteristics of both the industry peer firm and the delisted firm(s). We also include year fixed effects to control for the average effect of any trend in analysts' information environment.

There is an obvious endogeneity challenge in our setting: the possibility that an M&A transaction and any associated deterioration in the quality of industry peer firms' information environment could both result from the same (omitted) industry-wide shock(s) (Mitchell and Mulherin 1996). Our main result, showing an increase in forecast errors and dispersion for industry peer firms, could therefore reflect an omitted industry-wide shock, and not the effects of M&A delistings per se.[5] We address this endogeneity challenge using three different approaches. First, we examine the robustness of our results to using a reduced sample of M&As in which the acquirer is relatively more overvalued than the target firm; these are M&As that are more likely driven by acquirers' firm-level market timing incentives, and therefore are less likely attributable to industry-wide shocks (see Rhodes–Kropf, Robinson, and Viswanathan 2005,

[4] GICS codes classify firms by their product market; Standard Industry Classification (SIC) codes classify firms by their production technology. We use GICS codes in preference to SIC codes, as Bhojraj, Lee, and Oler (2003) show that GICS codes provide a more appropriate industry classification in capital market settings. Additionally, in the case of sell-side analysts, prior studies show that GICS codes better reflect analysts' coverage choices (Boni and Womack 2006) and peer firm selection decisions (De Franco, Hope, and Larocque. 2015) than do SIC codes.

[5] The endogeneity challenge in our setting is a variant of the more general and well-known "reflection problem" that renders estimation of causal peer effects particularly challenging (see Manski 1993; Angrist 2014).

Shleifer and Vishny 2003; Fu, Lin, and Officer 2013; Duchin and Schmidt 2013). Using this reduced sample, we continue to find evidence of a significant deterioration in the quality of analysts' information environment for industry peer firms following M&A delistings; these results are also stronger when the delisted firm is larger in size relative to its industry.

Second, we undertake a falsification test using a sample of M&A transactions that are announced but never completed. In these transactions, any omitted industry-level shocks or trends giving rise to M&As – and also possibly increasing analysts' uncertainty about the future operating performance of industry peer firms – are likely still present, but there are no negative information spillovers caused by M&A delistings because the merger transactions are not completed. We find no significant results for this falsification sample, consistent with our main results being driven by negative information spillovers from M&A delistings, and not endogeneity bias from omitted industry-level shocks.

Third, using individual analysts' forecasts for industry peer firms before and after M&A delistings, we conduct an analyst-level analysis. Specifically, using a sample of all analysts who follow industry peer firms in our sample, we compare the changes in absolute forecast errors for analysts who also followed the delisted firm (in the pre-M&A period) with those that did not follow the delisted firm in the pre-period. As these analysts are all specialists in the same industry, all are affected by industry-wide shocks that may drive earnings uncertainty; however, the subset of analysts who followed the delisted firm in the pre-M&A period are likely more severely affected by any loss of useful information spillovers than analysts who did not follow the delisted firm. Therefore, to the extent that our main results are driven by negative information spillovers (and not omitted industry-wide shocks), we should observe stronger results for the subset of analysts who followed the delisted firm in the pre-M&A period. Consistent with this expectation, we document that, when forecasting earnings for industry peer firms, analysts who also followed a delisted firm in the pre-M&A delisting period experience a larger increase in their absolute forecast errors than those analysts who did not follow the delisted firm in the pre-period. This test provides more direct evidence of negative information spillovers from M&A delistings. Overall, the results from our three different analyses mitigate concerns that our main results are attributable to a potential endogeneity bias

because M&A announcements and changes in analysts' information environment for industry peer firms are jointly determined by unobservable industry-level shocks.

Our main results show that M&A delistings are associated with a deterioration in the quality of analysts' information environment for industry peer firms. These results could arise through (at least) two possible channels. First, a merger of two firms may result in changes in industry structure and competition (hereafter the "real effect"), which could potentially increase analysts' uncertainty about the future operating performance of industry peer firms. Second, with the loss of the publicly observable share price and financial disclosures of the delisted firm, analysts lose potentially useful sources of information (hereafter, the "information effect") for forecasting for industry peer firms. Both the real effect and information effect defined here could result in an increase in analysts' uncertainty regarding the future operating performance of industry peer firms, resulting in an increase in analysts' absolute forecast errors and forecast dispersion for industry peer firms. We undertake a number of cross-sectional analyses to examine the potential role of these two channels in driving our main results.

First, as already discussed, our analyst-level results show that, among analysts forecasting earnings for industry peer firms across the pre- and post-M&A delisting periods, the subset of these analysts who also followed the delisted target firm in the pre-period have a larger increase in their absolute forecast errors than those who did not follow the delisted firm in the pre-period. This result is consistent with the information effect outlined above. If an M&A delisting primarily affects analysts through the information effect channel, then we would expect that analysts who previously followed the delisted firm in the pre-period would suffer larger negative information externalities from the M&A delisting than other analysts in the same industry who did not follow the delisted firm in the pre-period. On the other hand, if the main effect of an M&A delisting on analysts who follow industry peer firms is to increase their uncertainty regarding the operating performance of industry peer firms because of the potential real effects of an M&A, then we would expect that the subset of analysts who previously followed the delisted firm would be less adversely affected than other analysts. Presumably, the subset of analysts who previously

followed the delisted firm in the pre-period would be in a better position to anticipate any real effects of the M&A delisting that may affect industry competition, etc.

Second, we compare a sample of M&As in which a public target firm is acquired (resulting in M&A delistings) with a sample of (similar sized) M&As in which a private target firm is acquired (resulting in no delisting and therefore no information effect). We find that the quality of analysts' information environment for industry peers decreases following M&As with private or public targets, but the effect is significantly greater for public target firms.

Third, we also compare the effect on industry peer firms when a merger takes place within the same industry ("horizontal" mergers) vs. across industries ("conglomerate" mergers). In a horizontal merger, the real effects on industry peer firms are likely stronger than in a conglomerate merger, in which the acquirer is in a different industry from the industry peer firms (Fee and Thomas 2004). Consistent with the presence of increased uncertainty from potential real effects, we document that our results are stronger for horizontal mergers than conglomerate mergers, but the results are still significant for conglomerate mergers. In summary, our cross-sectional analyses provide evidence consistent with both potential channels – real and informational – contributing to the overall negative spillovers associated with M&A delistings. The results for our analyst-level analysis and our public vs. private target firm comparison both provide evidence consistent with the information effect channel contributing to our main results. Consistent with negative spillovers from the loss of public disclosures by the delisted firm, our results indicate that M&A delistings are associated with negative information externalities for other firms in the same industry.

Finally, we examine and rule out two alternative possible explanations for our results arising from analysts' and peer firms possible reactions to an M&A delisting. First, if analysts react to an M&A delisting by reducing their coverage of industry peer firms between the pre- and post-M&A delisting periods, this could result in a deterioration in the quality of analysts' information environment for industry peer firms. Inconsistent with this conjecture, however, we find that there is a significant *increase* in analyst coverage for industry peer firms after an M&A delisting in the same industry. Second, our results could also be

attributable to a reaction on the part of peer firms to the M&A delisting; specifically, industry peer firms could react to an M&A delisting in the same industry by reducing the quality and/or quantity of their own financial disclosures—possibly because of proprietary cost/competition considerations (see Verrecchia 2001). Any such reduction in peer firms' own financial disclosures obviously presents another alternative possible explanation for our results. However, inconsistent with this alternative explanation, we find that industry peer firms significantly *increase* the frequency of their management forecasts, a key voluntary financial disclosure provided by firms, between the pre- and post-M&A delisting periods.

Our study contributes to the limited literature on the consequences of the trend of a decreasing number of publicly listed firms in the U.S. Roughly 60% of all delistings over the last several decades are due to M&A transactions (Doidge et al. 2017); our results provide new evidence regarding the possible negative consequences of M&A delistings. While this study focuses on the relatively short-run (few quarters) effects around M&A delistings, and individual M&A delistings may have relatively small effects, the cumulative effect of all M&A delistings over the last two decades could be substantial.

Our results also contribute to the M&A literature. Consistent with spillovers to industry peer firms, prior studies document a *positive* stock price response by industry peer firms to the announcement of horizontal takeovers (see Eckbo 1983; Fee and Thomas 2004; Shahrur 2005; Servaes and Tamayo 2014). In contrast, our results provide new evidence of *negative* spillovers from M&A transactions that increase uncertainty for for industry peer firms. Consistent with publicly listed firms generating positive information externalities for other firms in the same industry (Badetscher et al. 2013; Shroff, Verdi, and Yu 2014), our results also indicate that industry peer firms experience negative information externalities from a decrease in the number of listed firms in the same industry. Our results also show that as industry specialists (Piotroski and Roulstone 2004; Boni and Womack 2006) who facilitate intra-industry information spillovers (Piotroski and Roulstone 2004), analysts are negatively affected when there is a decrease in the number of peer firms in an industry.

The remainder of the paper is organized as follows. Section 2 discusses the background of our research setting and discusses the development of our hypotheses. Sections 3 and 4 explain our research

design and sample selection. Section 5 discusses our main results; Section 6 analyzes and rules out two alternative explanations of our results. Section 7 discusses additional evidence regarding the robustness of our results; the paper concludes with Section 8.

2. Background, Literature Review, and Research Question

2.1 Background and Literature Review

The last two decades have seen a sharp decline in the number of publicly listed firms in the U.S. capital markets. Doidge et al. (2017) document that this trend is largely due to: (1) M&A delistings, and (2) a dearth of IPOs (Gao, Ritter, and Zhu 2013). Table 1 outlines data for the number of publicly listed firms in the U.S. over the period 2000 to 2017; columns (3) and (4) show the number of IPOs and M&A per year over the period 2000-2017. The decline in the number of listed firms over this period reflects, in part, the fact that the market for corporate control has become more active, with increased levels of M&A activity, than in previous time periods.

Consistent with Doidge et al. (2017), Table 1 shows that, over this time period, the number of publicly listed firms in the U.S. declined from 6,096 to 3,440 firms.[6] This implies that, over this time-period, the average number of listed industry peer firms for U.S. firms has decreased. Column (2) of Table 1 confirms that, across eight-digit GICS codes, the median number of listed firms in an industry has decreased from 96 in 2000 to 43 in 2017, a 55% decline. This large decline is also widespread across industries: of the 106 eight-digit GICS industry codes with available data to measure the number of industry peer firms over this period, the number of listed firms declined in 92 of these 106 industries (see Appendix). However, the overall size of U.S. capital markets, as measured by the total market capitalization of all publicly listed firms, has not declined markedly over this time period. As a result, the

[6] The number of listed firms from Table 1 varies slightly from those reported in Doidge et al. (2017), based on the data reported by World Development Indicators and World Federation of Exchanges. Table 4 of Doidget et al. (2017) reports the numbers as 6,962 in 1996 and 3,566 in 2012 using data downloaded from CRSP/Compustat. In terms of sampling method, Table 1 in this paper reports the number of listed firms that are comparable to those in Table 4 of Doidge et al. (2017); Table 1 of this paper reports the number of listed firms in 2012 as 3,579.

average size of listed firms has increased from approximately $2bn in 2000 to $2.7bn in 2017 (see column (5) of Table 1).

< Insert Table 1 About Here >

While there has been a very large and widespread decline in the number of listed firms in the U.S. over the last two decades, and a consequential decline in the average number of listed industry peers, we know very little about the effects of this trend on U.S. capital markets. Identifying the effects of this trend is challenging. Given the large number of other structural and regulatory changes in U.S. capital markets over the relatively long time period, it would be very difficult to separate the effects of M&A delistings from other market changes. As a result, in this study, we focus on the relatively short-run (i.e., few quarters) effects of M&A delistings on the information environment of other publicly-listed firms in the same industry as the target firm (industry peer firms). As mentioned already, M&A delistings are a key factor contributing to the long-term decline in the number of publicly listed firms in the U.S. (Doidge et al. 2017); evidence regarding the short-run spillover effects of M&A delisting can therefore shed some light on the possible longer-term consequences of the decline in the number of listed firms in the U.S.

We examine the effect of M&A delistings on the quality of analysts' information environment for industry peer firms. Sell-side analysts are a key group of information intermediaries who process and interpret publicly available information (Lang and Lundholm 1996) and act as monitors in capital markets (Yu 2008; Chen, Harford, and Lin 2015; Guo, Pérez-Castrillo, and Toldrà-Simats 2019). When forecasting earnings for a firm, analysts likely use all publicly available information regarding the industry, including information from the share prices and public disclosures of other firms in the same industry. Analysts also specialize by industry (Boni and Womack 2006) and facilitate the pricing of industry-level information (Piotroski and Roulstone 2004). Given their industry focus, sell-side financial analysts provide an ideal setting to detect any negative information spillovers to industry peer firms that may result from M&A delistings.

2.2 Hypothesis Development

There are two primary reasons why we expect that M&A delistings may result in a deterioration in the quality of analysts' information environment for industry peer firms. First, an M&A transaction may cause changes in industry structure and competition. Prior studies report that industry peer firms experience positive abnormal returns upon the announcements of horizontal mergers in the same industry (Eckbo 1983; Fee and Thomas 2005; Shahrur 2005). There could be a number of reasons for this effect: (1) industry peer firms might benefit from the decrease in competition resulting from a merger, (2) an acquisition might improve industry efficiency, and (3) the acquisition might increase the probability that the industry peer firms themselves become targets (Song and Walking 2000). Servaes and Tamayo (2014) provide evidence that industry peer firms respond to the control threat posed by other firms in the same industry experiencing a hostile takeover attempt by altering their own investment and financing policies. In addition, an unsuccessful merger might present industry peer firms with a competitive advantage. Finally, using data on the quality and price of goods sold, Sheen (2014) provides evidence that horizontal mergers result in an increase in price competition for industry peer firms.

As industry experts, analysts may be able to anticipate many of these changes in industry structure and competition, i.e., real effects, stemming from an M&A in the industry they follow. However, analysts may not be able to correctly anticipate all of the potential real effects stemming from an M&A; and, as a result, may not be able to correctly incorporate *all* of the potential real effects into their forecasts for industry peer firms. After an M&A in the same industry, analysts may face increased uncertainty when forecasting the future operating performance and earnings of industry peer firms of the target firm. This increased uncertainty stems directly from potential real effects arising from an M&A. Such an increase in uncertainty will be reflected, ex post, in a deterioration in the quality of analysts' earnings forecasts (i.e., increased absolute forecast errors and forecast dispersion) for industry peer firms.

Second, prior studies show that there are significant information spillovers among listed firms in the same industry.[7] Prior to an M&A delisting, industry peer firms can benefit from information spillovers from the target firm. After completion of an M&A, the acquired firm stops trading, so it no longer has a publicly observable share price, which aggregates investors' beliefs about the firm's future prospects. Additionally, the delisted firm no longer provides stand-alone financial disclosures as required by the Securities and Exchange Commission (SEC).[8] As a result, in the post-M&A delisting period, industry peer firms lose potentially useful sources of information.[9] Financial analysts will no longer be able to use the share price or financial disclosures of the delisted firm as a source of useful information when forecasting earnings for industry peer firms. We expect this information effect stemming from an M&A delisting—the loss of useful information spillovers from the delisted firm—will also result in a deterioration in the quality of analysts' information environment for industry peer firms.

On the other hand, there are also reasons to suspect that M&A delistings may not result in negative information spillovers for industry peer firms. First, since analysts are industry specialists (Piotroski and Roulstone 2004; Boni and Womack 2006), any effects of an M&A delisting on industry structure and competition may be relatively easy for analysts to anticipate, resulting in relatively little deterioration in the quality of their information regarding industry peer firms. Second, any loss of useful information from the delisted firm likely relates to industry-level information. Analysts may be able to use their industry knowledge to identify alternative sources of industry-level information to substitute for any lost information spillovers. Third, if targets are smaller firms that are acquired by larger public firms, then

[7] A substantial body of literature on "information transfers" shows that public disclosures (e.g., earnings announcements) by one firm are associated with information spillovers to other firms in the same industry (e.g., Foster 1981).

[8] Of course, after acquiring another public firm, the merged firm will provide public disclosures. If the acquired firm becomes an operating segment of the merged firm, then there will be summary financial information available for the acquired firm post-acquisition. However, these disclosures will be substantially less than was the case in the pre-acquisition period (when the acquired firm produced stand-alone financial disclosures). Therefore, there will still be a substantial decrease in public disclosures for the acquired firm.

[9] In the U.S., firms with securities (debt or equity) listed on an exchange—i.e., public firms—fall under the jurisdiction of the SEC. The SEC mandates that these firms make numerous public disclosures. In constrast, firms that do not have securities listed on an organized exchange—i.e., private firms—face no such public disclosure requirements.

changes in industry structure and competition may be slight, and any decrease in useful information spillovers to industry peer firms may be negligible or non-existent. Finally, larger firms have higher quality information environments than smaller firms. An M&A transaction that consolidates two smaller firms into one larger firm that attracts more analyst coverage, media attention, etc. may result in a new merged firm that can serve as an enhanced source of intra-industry information spillovers that enhances the overall industry information environment for peer firms (Badertscher et al. 2013). In conclusion, it is an open empirical question as to whether M&A delistings are associated with negative information spillovers to industry peer firms. Our first hypothesis, stated in the alternative form, is therefore:

H1: M&A delistings are associated with a deterioration in the quality of analysts' information environment for industry peer firms.

Prior to delisting, not all delisted firms are likely to be equally important in terms of their impact on other firms in the same industry. The acquisition of a firm that is large in size relative to its industry is likely to result in larger real effects, i.e., larger effects on industry structure and competition, and therefore potentially larger increases in uncertainty regarding the future operating performance of industry peer firms. Additionally, larger firms have a richer information environment than smaller firms and serve as a greater source of new market- and industry-wide information and, as a result, trigger more information spillovers to other firms (Bonsall, Bozanic, and Fischer 2013).[10] An M&A delisting of a larger firm can therefore result in larger information effects for industry peer firms. An M&A delisting involving a larger firm can thus result in larger real and informational effects for industry peer firms; therefore, our second hypothesis, stated in the alternative form, is:

H2: There is a larger deterioration in the quality of analysts' information environment for industry peer firms when the delisted firm is larger in size relative to its industry.

3. Research Design

[10] Larger firms are followed by more investors (O'Brien and Bhushan 1990), covered by more sell-side analysts (Bhushan 1989; Harford, Jian, Wang, and Xie 2018), provide more extensive disclosures (Lang and Lundholm 1993), and attract more media attention (Miller 2006). Larger firms also tend to have smaller spreads (Roll 1984), indicating lower levels of information asymmetry than is the case for smaller firms.

3.1 Measuring the Quality of Analysts' Information Environment for Industry Peer Firms

Similar to prior studies (e.g., Lang and Lundholm 1996; Byard, Li and Yu 2011), as our measure of the overall quality of analysts' information environment for industry peer firms, we use analysts' absolute forecast errors and forecast dispersion for earnings forecasts. Consistent with these studies, we expect that increased uncertainty about a firm will adversely affect the quality of analysts' earnings forecasts, resulting in larger absolute forecast errors and forecast dispersion.

3.2 Defining the Pre- and Post-M&A Delisting Periods

We first select a sample of public firms that delist due to M&As. Using this data, we construct a sample of industry-quarters with one or more M&A delisting(s). This provides a sample of M&A delisting "event-quarters," i.e., industry-quarters in which there is a decrease in the number of listed firms in an industry due to at least one M&A. Industry is defined using eight-digit GICS codes. These M&A delisting event-quarters are matched with IBES analysts forecast data for industry peer firms for the fiscal quarters around these event-quarters. The event quarter, *q*, is defined as the first fiscal quarter in which the delisted firm no longer releases a quarterly financial statement. We then define the pre-M&A delisting period as the six-quarter period that precedes quarter *q*, i.e., fiscal quarters *q*–6 to *q*–1; similarly, we define the post-M&A delisting period as the six-quarter period following the completion of the M&A delisting transaction, i.e., fiscal quarters *q*+2 to *q*+7. We leave a two-quarter gap between the pre- and post-M&A delisting periods [*q*, *q*+1] because some mergers take more than three months to complete.[11] Finally, we merge this sample of industry peer firm-quarters with IBES data for analysts' earnings forecasts to measure analysts' absolute forecast errors and forecast dispersion for industry peer firms in both the pre- (quarters *q*–6 to *q*–1) and post- (quarters *q*+2 to *q*+7) M&A delisting periods. This provides for a sample of analysts' earnings forecasts for industry peers for the periods six quarters before and after an M&A delisting event quarter.

3.3 Research Design

[11] M&As are excluded if it takes more than 6 months from end of the last fiscal quarter in which the firm released a quarterly report. This restriction results in 4 M&A delisting transactions being dropped from our sample.

We test *H1* and *H2* using the following model:

$$ForecastErr\ or\ Dispersion = \beta_1 PostMerger_{m,i} + \beta_2 PostMerger_{m,i} \times CMS_{m,i} + \boldsymbol{X'B} + \Sigma \beta_{m,i} MD_m \times Peer_i + \Sigma \beta_t Year_t + \varepsilon\ . \quad (1)$$

We estimate Equation (1) using a sample of peer firm-quarters that span both the pre- (*q*–6 to *q*–1) and post- (*q+2* to *q+7*) M&A delisting periods. For ease of exposition, we drop the time (quarter) subscripts in Equation (1) and subsequent equations. To measure our dependent variables, we first use the IBES detail file to select the last forecast of quarterly earnings issued by each individual analyst in the quarter before an earnings announcement. Using these forecasts, we then calculate our two dependent variables: (1) *ForecastErr* is the absolute value of the difference between actual EPS from IBES and the median of these individual earnings forecasts, scaled by share price at the beginning of the quarter, and (2) *Dispersion* is the standard deviation across these individual quarterly earnings forecasts, scaled by share price at the beginning of the quarter.

MD_m is a set of indicator variables coded one (zero) for each M&A delisting event quarter *m*. $Peer_i$ is a set of indicator variables coded one (zero) for each industry peer firm *i* ($\neq i$). Equation (1) includes a set of fixed effects for each delisting event quarter *m* and industry peer firm *i* pair (i.e., $MD_m \times Peer_i$). This fixed effect structure controls for the effect of any unobservable time-invariant (i.e., that are common in both pre- and post-M&A delisting period) firm characteristics of both the industry peer firms and firm(s) that delist in that event-quarter, such as *CMS*. We also include a set of year fixed effects: $Year_t$ is coded one for year *t*, or zero otherwise.

For our test of *H1*, the variable of interest is $PostMerger_{m,i}$ which is an indicator variable coded one if a firm-quarter observation for a peer *i* is in the post-M&A delisting period [*q+2, q+7*] of an M&A delisting event-quarter *m*, and zero if it is in the pre-M&A delisting period [*q–6, q–1*]. The coefficient on $PostMerger_{m,i}$, β_1, can be interpreted as the incremental effect of an M&A delisting on *ForecastErr* or *Dispersion* of an industry peer firm in the post-M&A delisting period relative to the pre-M&A delisting period; note, the level of *ForecastError* or *Dispersion* is captured by the fixed effect $MD_m \times Peer_i$. From *H1*, we test the prediction that $\beta_1 > 0$.

We use the interaction variable $PostMerger \times CMS_{m,i}$ to test *H2*. Capital Market Share (*CMS*) measures the relative importance of a firm in its industry, and is defined as the delisted firm's market capitalization at the end of the last quarter in which it issued its last quarterly financial report, scaled by the market capitalization of all firms in the same industry at the end of that quarter. For delisting event quarter *m*, CMS_m measures the fraction of total industry market capitalization represented by the firm(s) that delisted in event quarter *m*. Larger values of *CMS* indicate that the delisted firm represents a relatively larger presence in its industry. The coefficient on the interaction term $PostMerger \times CMS$ therefore identifies the incremental impact on the quality of analysts' information environment of industry peer firms when there is a relatively larger delisting in the same industry. From *H2* we test the prediction that $\beta_2 > 0$.[12] We do not have a similar prediction for the effect of acquirer firm size.[13] Nevertheless, as an additional analysis, we also examine cross-sectional variation in our results driven by variation in the size of the acquiring firm (measured as *CMS* of the acquirer).

We also include a set of control variables for firm characteristics of the industry peer firms, in order to control for any changes in firm characteristics or analysts' forecasting behavior for peer firms between the pre- and post-M&A delisting periods. Specifically, $\boldsymbol{X}$ is a vector of control variables, where $\boldsymbol{X}$ = {log(*avgDays*), log(*Coverage*), log($MktVal_{q-1}$), log(*MTB*), log(*Volume*), *IndRet*}, where *avgDays* is the average number of days between analysts' forecast issue dates and earnings announcement date for peer firm *i*; *Coverage* is the number of analysts who forecast for peer firm *i*; $MktVal_{q-1}$ is the market valuation of peer firm *i* at the beginning of a quarter; *MTB* is the market-to-book ratio of equity of peer firm *i*; *Volume* is the trading volume of peer firm *i* during the current quarter; *IndRet* is the value-weighted industry return of an industry, classified by eight-digit GICS codes, during the current quarter. This

[12] Note, we do not include the stand-alone variable *CMS* in our regression model as *CMS* is a firm characteristic of the delisted firm, and the regression model already includes a set of fixed effects for each pairing of an industry peer firm and delisted firm(s).

[13] A larger acquiring firm may signal greater potential competitive challenges for industry peer firms, possibly leading to greater "real effects" for industry peer firms in the case of horizontal mergers. On the other hand, there is no reason to expect a larger information effect when the acquiring firm is larger, as the acquiring firm will continue to provide public financial disclosures after the M&A. Further, since the acquiring firm is likely to be larger than the target firm, the public financial disclosures of the larger acquiring firm will not change as much as a result of the M&A.

controls for changes in important firm-level determinants of analysts' forecast accuracy and dispersion, or changes in analysts' forecasting behavior, for industry peer firms between the pre- and post-M&A delisting periods. log(*avgDays*) and log(*Coverage*) are analyst-level control variables; log($MktVal_{q-1}$), log(*MTB*), and log(*Volume*) are firm-level control variables, and *IndRet* is an industry-level control variable.

3.4 Addressing the Endogeneity Challenge

Identifying causal peer effects is challenging because of the well-known "reflection problem" (see Manski 1993; Angrist 2014). In a general sense, the reflection problem refers to the endogeneity challenge that arises when one tries to identify whether a group characteristic (e.g., industry membership) affects actions or outcomes for members of the group. This leads to a particular omitted variable endogeneity problem. Firms that are part of the same group—e.g., the same industry—will share many common (latent) economic characteristics and, as a result, will be exposed to similar shocks. In our research setting, the omitted variable endogeneity challenge arises from the possibility that M&A activities can result from industry-wide technology or demand shocks (Mitchell and Mulherin 1996; Harford 2005), which might also affect the level of earnings uncertainty for industry peer firms. For example, an industry-wide technology shock could increase the likelihood of an M&A transaction in an industry and, at the same time, increase uncertainty about the future operating performance of all firms in the industry, including industry peer firms that are not involved in the M&A transaction. Such an industry-wide shock could result in an M&A delisting in an industry and also increased uncertainty regarding the future operating performance and earnings of industry peer firms, potentially resulting in a deterioration in the quality of analysts' information environment for industry peer firms. As a result, an increase in analysts' absolute forecast errors and dispersion for industry peer firms could be driven by the same (omitted) industry-wide shock(s) that caused the M&A transaction, and not be driven by the M&A delisting per se; hence, our identified negative spillover effects from M&A delistings may be affected by an omitted variable endogeneity bias.

We address this endogeneity challenge using three distinct tests. First, we select a sub-sample of M&A delistings that are less likely driven by industry-wide shocks, i.e., a subset of M&As that are more likely driven by acquirers' market timing incentives. Second, we undertake a falsification test—specifically, we examine M&As that are announced but never completed. We expect that in this setting, any industry-wide shocks that drive M&A are present, but because the M&A is not completed and there is no delisting, any real and information effects that are caused by the M&A delisting are not present. Third, we conduct an analyst-level test, which we argue is less sensitive to the specific endogeneity bias arising from potentially omitted industry-level shocks.

As our first approach to tackle the endogeneity issue, we alter our sample selection procedures to use a sub-sample of M&A delistings, which we argue are less exposed to possible omitted industry-level shocks that may cause an M&A. M&A transactions can result from industry-wide technology or demand shocks (Harford 2005). However, M&A transactions can also be driven by firm-specific factors, such as acquiring firms' market timing incentives (Shleifer and Vishny 2003; Rhodes-Kropf and Viswanathan 2004). When an acquiring firm is more over-priced than a target firm, i.e., the acquirer has access to cheaper equity financing, the acquiring firm has a stronger incentive to swap its own relatively over-priced stock for that of the target firm. Thus, when the acquirer is over-priced relative to the target firm, the M&A transaction is more likely to be driven by the market timing incentives of the acquiring firm, a firm-specific factor, and is less likely attributable to industry-wide shocks. With this in mind, we identify a reduced sample of M&A delistings in which the acquiring firm is overvalued relative to the target firm (Rhodes-Kropf et al. 2005; Fu, Lin, and Officer 2013).[14] We test whether our results are robust to using this reduced sample of M&A delistings that are more likely attributable to acquiring firms' market timing incentives.

As our second approach to address the endogeneity challenge, we undertake a falsification test. Specifically, we exploit M&A transactions that are announced, but subsequently not completed, as a setting to conduct a falsification test for our main tests. M&As that are announced but not completed are,

[14] See also Schleifer and Vishny (2003) and Gu and Lev (2011).

presumably, exposed to industry-wide shocks that may cause M&A transactions. However, since the transaction is not completed, there is no increase in analysts' uncertainty resulting from any real or information effects caused by the M&A per se. A sample of non-completed M&A transaction therefore provides an ideal setting to undertake a falsification test for our main test outlined above.

Finally, our third empirical approach to address the endogeneity challenge arising from the effect of potential omitted industry-level shocks is to undertake an analyst-level analysis. This test exploits the fact that analysts specialize by industry, so presumably, all analysts specializing in an industry are affected by the same industry-wide shocks. However, within the pool of analysts specializing in an industry, some follow the delisted firm in the pre-M&A delisting period, while others do not. Therefore, using a sample of analysts' forecasts for industry peer firms across the pre- and post-M&A delisting periods, we compare analysts who also covered the delisted firm in the pre-M&A delisting period with those who did not cover the delisted firm. Those analysts who covered the delisted firm are presumably more affected by any loss of useful information spillovers than are other analysts; however, we can think of no reason why different analysts covering the same industry would be differently affected by factors endogenously driving M&A, based on whether or not they covered the delisted firm. For this reason, to the extent that our main results are driven by negative information spillovers (and not omitted industry-level shocks), we should observe a greater increase in forecast errors for analysts who also followed the delisted firm in the pre-M&A delisting period.

4. Sample Selection

4.1 Selection of Our Full and Reduced Samples

Using data from CRSP, we first identify a sample of 3,407 U.S. M&A delistings (DLSTCD between 200 and 399) over the period 2001 to 2015. We delete observations with missing Compustat data for GICS codes, fiscal quarter year-end data, and missing acquirer data in SDC, resulting in a sample of 1,327 unique M&A delistings. From this sample of 1,327 M&A delistings, we identify 859 unique industry-quarters with at least one M&A delisting in an industry (eight-digit GICS code). Of these 859

unique industry "event quarters" with one or more M&A delisting(s) in an industry, we can identify data for industry peer firms available in both the pre- and post-M&A delisting periods for 838 of these event quarters. These 838 event quarters are evenly distributed over the sample period 2001 to 2015, with no obvious clustering by year. Following the approach in Rhodes-Kropf et al. (2005), from this full sample of 838 M&A delisting event-quarters, we identify a reduced sample of 363 M&A delisting event-quarters consisting of M&A delistings in which the acquirer firm is more over-valued than the target firm.[15]

< Insert Table 2 About Here >

Table 2 describes our sample selection procedures. We match our full (reduced) sample of 838 (363) delisting event-quarters with (1) IBES data to measure analysts' absolute forecast errors and dispersion for industry peer firms [i.e., other firms in the same eight-digit GICS code as the delisted firm(s)] in both the pre- and post-M&A delisting periods. Panel B of Table 2 shows that, for these 838 (363) delisting event-quarters, the full (reduced) sample consists of data for 273,920 (110,564) firm-quarter observations for industry peer firms across the pre- (quarters q–6 to q–1) and post- (quarters q+2 to q+7) M&A delisting periods.

5. Main Results

5.1 Descriptive Statistics and Univariate Analysis

Table 3 shows descriptive statistics for our full sample of 273,920 firm-quarter observations. Mean *ForecastErr* (*Dispersion*) is 0.584 (0.279), which is consistent with that reported in prior studies (e.g., Byard et al. 2011). The descriptive statistics also show that our sample industry peer firms tend to be large: mean market capitalization is $4.9bn, with average analysts following of 8.7 analysts. Finally, consistent

[15] We form a subsample consisting of M&A transactions that are more likely to be motivated by firm-specific incentives such as market timing based on investors' mispricing (Shleifer and Vishny 2003; Rhodes-Kropf and Viswanathan 2004); a setting in which the acquirer is more over-valued than the target firm. Rhodes-Kropf, Robinson, and Viswanathan (2005) decompose market mispricing (market-to-book) into three components: the firm specific, the sector-wide, and short-run deviation from the long-run pricing. Using this approach, we identify 363 M&A transactions in which the acquirer's firm-specific component of mispricing is higher than that of the target firm.

with both M&A activity and analyst coverage being skewed more towards high growth industries, the mean market-to-book ratio for our sample industry peer firms is 5.057.

Figure 1 plots the mean values of *ForecastErr* and *Dispersion* for industry peer firms across the pre- and post-M&A delisting periods for our full sample of 273,930 M&A delisting-peer-quarter observations. To clarify, M&A delistings are completed between quarters q and q+1. As can be seen in Figure 1, consistent with a deterioration in the overall quality of analysts' information environment for industry peer firms, we see that there is a pronounced increase in both *ForecastErr* and *Dispersion* in the post-M&A delisting period relative to the pre-M&A delisting period.

< Insert Table 3 and Figure 1 About Here >

5.2 Main Results

Our main results from estimating Equation (1) for *ForecastErr* and *Dispersion* using both our full and reduced samples of M&A delisting event quarters are shown in Table 4. Using the full sample, consistent with the prediction of *H1*, the results show that *PostMerger* is significantly positively associated with both *ForecastErr* and *Dispersion* (p<0.01, two-tailed, for both), confirming that, on average, the quality of analysts' information environment for industry peer firms deteriorates in the post-M&A delisting period relative to the pre-M&A delisting period. Consistent with the prediction of *H2*, we also find a significant positive coefficient on the interaction term *PostMerger*×*CMS* for both *ForecastErr* and *Dispersion* (p<0.05 or better, two-tailed, for both). That is, when a relatively larger target firm delists as a result of an M&A, there is a greater deterioration in the quality of analysts' information environment for industry peer firms. In additional analyses, we also examine if the size of acquiring firms (*CMS* for the acquirer firm) is related to the magnitude of the change in the quality of analysts' information environment for industry peer firms; the untabulated results of this analysis are not statistically significant at conventional levels.

< Insert Table 4 About Here >

5.3 Analyses to Address Endogeneity Challenge

5.3.1 Reduced Sample of M&A Delistings More Likely Driven by Acquirer Market Timing

Our first empirical approach for addressing the endogeneity concern arising from the possible impact of omitted industry-level shocks is to use a sample of M&A delistings that are less likely driven by industry-level shocks. Table 4 shows that the results are unchanged using a reduced sample of M&A delistings that are more likely attributable to acquirer market timing incentives, a firm-specific incentive, and therefore are less likely driven by industry-wide shocks. Using this reduced sample, consistent with the predictions of *H1* and *H2*, we find significant positive coefficients on both *PostMerger* ($p<0.01$, two-tailed) and the interaction term *PostMerger*×*CMS* ($p<0.05$ or better, two-tailed) for both *ForecastErr* and *Dispersion.* These results mitigate concerns that our results arise because the quality of analysts' information environment for industry peer firms and M&A delistings are both jointly determined by some unobservable industry-level shock(s).

5.3.2 A Falsification Test Using Non-Completed M&A Announcements

As our second approach to address the endogeneity challenge in our setting, we conduct a falsification test using a sample of M&A that are announced, but not completed. If an M&A is announced, but not completed, we expect that the industry peer firms will still experience any underlying industry shocks that may have given rise to the M&A attempt. However, because the M&A is not completed, the industry peer firms do not experience any increase in earnings uncertainty caused by (1) any real effects resulting from actual structural changes in the industry caused by the M&A per se, or (2) any information effects from the loss of useful information spillovers from the delisted firm.

< Insert Table 5 About Here >

Using the same sample selection procedures used to construct our main sample, we identify a sample of 107 industry quarters in which an M&A is announced and not completed. For these 107 non-completed M&A announcements, we measure *ForecastErr* and *Dispersion* for 22,194 industry peer firm-quarters that straddle both the pre- and post-M&A announcement periods (see endnotes of Table 5 for details). Table 5 shows the results from re-estimating Equation (1) using this sample of data for industry peer firms around a set of non-completed M&As. As can be seen in Table 5, the results of this analysis are

not reliably statistically significant (none of the results are significant at the 5% level). These results provide further evidence indicating that our main findings are not attributable to endogeneity bias arising because M&A announcements and changes in analysts' information environment for peer firms are jointly determined by unobservable industry-level shocks.

5.3.3 Analyst-Level Test

Our third set of analyses to address the endogeneity concern uses a sample of individual analysts' earnings forecasts for industry peer firms that are made by analysts who cover the industry peer firms in both the pre- and post-M&A delisting periods. Specifically, we compare changes in analysts' forecast errors (for industry peer firms) for analysts who did vs. those who did not cover the delisted firm in the pre-M&A delisting period.

We include a set of fixed effects for merger-peer-analyst groups, which means that we are able to compare analysts who covered the delisted firm with other analysts in the same industry who did not cover the delisted firm. If negative information spillovers are one of the primary factors driving the increase in analysts' absolute forecast errors (and dispersion) documented in our main results, we expect that analysts who followed the delisted firm in the pre-M&A delisting period should experience a larger increase in their absolute forecast errors for industry peer firms compared to other analysts who also forecast earnings for industry peer firms, but who did not follow the delisted firm in the pre-M&A delisting period.

< Insert Table 6 About Here >

In Table 6, the variable *AnalystDelisted* is coded as one if an analyst released a forecast for the delisted firm during the pre-M&A delisting period, and zero otherwise. The variable of interest is the interaction term *PostMerger*×*AnalystDelisted*; we predict a positive coefficient on this interaction term, indicating that, in their forecasts for industry peer firms, analysts who covered the delisted firm (in the pre-period) experience a greater increase in forecast errors after the M&A delisting than analysts who did not cover the delisted firm. Consistent with this expectation, in Table 6, the coefficient on *PostMerger*×*AnalystDelisted* is positive and significant at the 1% level. Since both analysts follow firms in the same industry, presumably they are exposed to the same industry-level shocks; however, the analysts

who also covered the delisted firm in the pre-M&A period are presumably more exposed to a negative "information shock" from the delisting. Taken together, the results of our three different tests to address the endogeneity challenge suggest that our main results are not attributable to a possible endogeneity bias arising from the potential effects of omitted industry-level shocks.

5.4 Real vs. Information Effects

As explained earlier, the information environment of an industry may be negatively affected by an M&A delisting through both real and information effects. As our study focuses on the information effects, we perform three tests to ascertain that our results are, at least in part, attributable to information effects: (1) our analyst-level test described earlier; (2) a comparison of public vs. private targets; and (3) a comparison of horizontal vs. conglomerate mergers.

5.4.1 Analyst-Level Test

As already discussed, the results in Table 6 show that, in their forecasts for industry peer firms, there is a significantly larger increase in forecast errors (for industry peer firms) for those analysts who previously also followed the delisted firm (in the pre-period) than for other analysts. This shows that, when forecasting earnings for industry peer firms, analysts who previously also followed the delisted firm are more adversely affected by the M&A delisting event. This result is more consistent with the "information effect" channel than the "real effect" channel. If an M&A delisting primarily affects analysts forecasting earnings for industry peers via real effects, then we would expect that the subset of those analysts who previously also followed the delisted firm should be *less adversely affected* by the M&A delisting than other analysts. Presumably, those analysts who previously followed the delisted firm would be in a better position to anticipate any changes in industry structure and competition (i.e., real effects) that may follow from the M&A. Because of this, we would expect to see a smaller increase in forecast errors for these analysts (than for other analysts). On the other hand, if an M&A delisting primarily affects analysts forecasting earnings for industry peers via information effects, then it follows that the subset of analysts who previously also followed the delisted firm in the pre-period should be *more adversely affected* by the M&A delisting. In this case, one would expect that, for forecasts of industry peer firms, there should be a

larger increase in forecast errors for those analysts who previously also followed the delisted firm in the pre-period (because this subset of analysts experiences a larger negative information externality than other analysts). The results for our analyst-level analysis are therefore more consistent with the information effect channel and provide evidence that the information effect channel contributes to the overall negative spillovers associated with M&A delistings.

5.4.2 Public vs. Private Target Firms

As another test to provide evidence as to the separate contribution of the real and information effects in driving the overall negative spillovers associated with M&A delistings, we also compare M&As involving public with those involving private target firms. In Table 7 we compare the change in the quality of analysts' information environment for industry peer firms around M&As in which a public target firm is acquired (i.e., resulting in delistings) with a sample of M&As in which a private target firm is acquired (and there is no delisting). If the delisting itself —and the accompanying loss of the delisted firm's share price and public financial disclosures—has negative information spillover effects on industry peer firms, then we expect to observe a greater deterioration in analysts' information environment for industry peer firms when the target firm is public rather than private.

To construct our sample, we start with our initial sample of M&A delistings—which represent public target firms—and add to it a sample of M&As involving private target firms over the same time period. For this analysis, we must first modify our definition of industries to use SIC rather than GICS codes, as private firms do not have data for GICS codes.[16] Second, because private targets tend to be smaller on average, than public target firms, we include M&As with private targets that are not too small or too large relative to public targets. To do so, we restrict the sample to: (1) M&As for private targets in which the estimated firm value of the private target (deal value/percent of shares acquired) is equal to or greater than the minimum market value of all public target firms over the sample period, and (2) M&As

[16] This is why our initial sample of M&As with public targets is significantly smaller in Table 5 than in Table 4. Additionally, we impose size restrictions on our sample of public vs. private target M&As as explained above.

for public targets in which the target firm value is equal to or smaller than the maximum of the estimated firm values for private target firms over the sample period. We also eliminate industries with only public or private target firms. This ensures that the public and private target firms are comparable, in terms of size and industry.[17] Using this sample, we compare the spillovers to industry peer firms from M&As involving public targets with those involving private targets. We use the following model:

$$\begin{aligned} ForecastErr\ or\ Dispersion = {} & \beta_1 PostMerger_{m,i} + \beta_2 PostMerger_{m,i} \times PublicTarget_{m,i} \\ & + \boldsymbol{X'B} + \Sigma\, \beta_{m,i} MD_m \times Peer_i + \Sigma\, \beta_t Year_t + \varepsilon\,, \end{aligned} \quad (2)$$

where *PublicTarget* is an indicator variable coded one (zero) when the M&A involves a public (private) target firm. The results of this comparison are reported in Table 7. *PostMerger*=0 for pre-period (quarters q–6 to q–1) and 1 for the post-period (quarters $q+2$ to $q+7$).

Table 7 shows that the coefficient on *PostMerger* is positive and significant (p<0.01, two-tailed, for both), indicating that there are negative information spillovers to industry peers from M&As in the same industry, *whether or not such an M&A results in a delisting.* This is consistent with some of our main results being attributable to the real effects, i.e., increased uncertainty induced by possible structural or competition changes resulting from an M&A. We also find a positive and significant coefficient on *PostMerger*×*PublicTarget* (p<0.05, two-tailed, for both), indicating that there is a larger decrease in the quality of analysts' information environment for industry peer firms following M&As involving public target firms (and hence a delisting) than private target firms. Consistent with negative information externalities from a delisting in the same industry, these results indicate that there are incremental negative spillover effects on the information environment of industry peer firms when an M&A in the same industry also involves a delisting.

< Insert Table 7 and 8 About Here >

5.4.3 Horizontal vs. Conglomerate Mergers

[17] As an alternative, we also use an entropy-balancing approach to match our private and public target firm samples on size and industry (two-digit SIC); the results using this alternative matching approach are similar.

Next, we compare the effect on industry peer firms of horizontal (*HMerger=1*) vs. conglomerate mergers (*HMerger*=0) using the following model:

$$ForecastErr\ or\ Dispersion = \beta_1 PostMerger_{m,i} + \beta_2 PostMerger_{m,i} \times HMerger_{m,i} + \boldsymbol{X'B} + \Sigma\, \beta_{m,i} MD_m \times Peer_i + \Sigma\, \beta_t Year_t + \varepsilon\,. \quad (3)$$

In horizontal mergers, the acquirer and target firms are in the same industry, and therefore the effects on industry structure and competition are likely stronger—there are larger real effects—than in a conglomerate merger, in which the acquirer and target firms are in different industries (Fee and Thomas 2004). Consistent with this argument, in Table 8, the coefficient on the interaction term *PostMerger*×*HMerger* is positive and significant (p<0.05, for both), indicating that the deterioration in the quality of analysts' information environment for industry peer firms is significantly greater for horizontal mergers than for conglomerate mergers. However, the results are still significant for conglomerate mergers. In summary, the results reported in Tables 6-8 suggest that both real and information effects are present and contribute to our main results reported in Table 4. The results for our analyst-level analyses (Table 6) and our comparison of M&As involving public vs. private target firms (Table 7) provide evidence supporting the information effect channel, indicating that M&A delistings result in negative information externalities for industry peer firms.

6. Ruling out Alternative Explanations

In addition to an omitted variable problem, the reflection problem can also lead to a simultaneity issue in peer effects studies. Members of a group—in this case firms in an industry—are likely to react to and influence each other's decisions. Our dependent variables are measures of the quality of analysts' information environment for industry peer firms. A concern in our setting therefore is the possibility that either the analysts who follow the peer firms, or the peer firms themselves, may strategically react to an M&A delisting in the same industry and, as a result, alter their behavior in a way that leads to a decrease in the observed quality of analysts' information environment for the industry peer firms. That is to say,

our main results may not be driven by M&A delisting per se but, rather, by peer firms' (or the analysts who cover peer firms) reactions to M&A delisting. We examine both of these possibilities.

6.1 A Decrease in Analyst Coverage for Industry Peer Firms

If analysts who follow industry peer firms react to an M&A delisting by providing less effort to cover industry peer firms—thus lowering the quality of analysts' information environment for industry peer firms—then this reaction by analysts may provide an alternative explanation for our main results. Such a reaction by analysts would be reflected in a drop in analyst coverage for industry peer firms in the post-M&A delisting period relative to the pre-M&A delisting period. In our main analysis using *ForecastErr* and *Dispersion*, we include analyst coverage of peer firms, log(*Coverage*), as a control variable. Nevertheless, as an additional analysis, we also re-estimate a variation of Equation (1) using analyst coverage of industry peer firms as the dependent variable. Inconsistent with this alternative possible explanation, the untabulated results show that there is a statistically significant *increase* in analyst coverage of industry peer firms between the pre- and post-M&A delisting periods.[18]

6.2 A Decrease in Public Disclosure by Industry Peer Firms

A second key simultaneity issue in our setting is the possibility that the industry peer firms react to the M&A delisting by altering their own public disclosures. The quality of analysts' information environment is positively related to the quality of firms' public disclosures (Lang and Lundholm 1996). A second alternative explanation for our main findings is therefore the possibility that industry peer firms react to M&A delistings by strategically reducing the quality and/or quantity of their own public disclosures, possibly because of competitive effects.[19] We directly test for this possibility next. Using data

[18] These results may be mechanical and, as a result, we do not include this analysis as part of our main results. The increase in analyst coverage for industry peer firms could arise because those analysts that cover the industry (and previously covered the delisted firm) may be re-assigned to cover other firms in the same industry, thus increasing the coverage of industry peer firms.

[19] There could be a number of reasons why industry peer firms may choose to alter their disclosure policies in response to an M&A delisting in the same industry. First, since the delisting will decrease the aggregate supply of information about the industry, industry peer firms may choose to increase their own disclosures to compensate for the resulting increase in uncertainty (see Baginski and Hinson 2016). Second, if the M&A delisting has competitive effects within the industry, then this may change peer firms' disclosure incentives. The potential effect

from IBES/First Call, we test whether there is a decrease in industry peer firms' management forecasts, a key voluntary financial disclosure provided by firms, between the pre- and post-delisting periods. Specifically, we test whether there is a change in the frequency with which industry peer firms provide management forecasts between the pre- and post-delisting periods. Table 9 reports the results from estimating the following model:

$$\log(MForeFreq) = \beta_1 PostMerger_{m,i} + \boldsymbol{X'B} + \Sigma\, \beta_{m,i} MD_m \times Peer_i + \Sigma\, \beta_t Year_t + \varepsilon, \quad (4)$$

where *MForeFreq* is the number of management forecasts issued (including forecasts of earnings, cash flows, sales, etc.) by an industry peer firm in each quarter. As in our main analysis, $\boldsymbol{X}$ is a vector of control variables for firm characteristics associated with the issuance of management forecasts (e.g., see Lang and Lundholm 1996). For Equation (4), $\boldsymbol{X}$ = {log(*Issue*), log(*MTB*), *RetVol*, log(*Coverage*), log($MktVal_{q-1}$)}. *Issue* is defined as the sum of net equity issuances and debt issuances (Compustat variables (SSTKQ-PRSTKCQ + DLTISQ)/ATQ); the other control variables are also used in our estimates of Equation (1) and are therefore previously defined. Equation (4) includes the same paired fixed effects previously used in our estimates of Equations (1) – (3). The variable of interest is *PostMerger*, which measures the change in the frequency with which peer firms issue management forecasts between the pre- and post-M&A delisting periods.

< Insert Table 9 About Here >

The results from estimating Equation (4) for our full and reduced samples are shown in Table 9. Using our full sample, we find a significant positive coefficient on *PostMerger*, indicating that peer firms significantly *increase* (p<0.05, two-tailed) the frequency with which they issue their management forecasts in the post-M&A delisting period relative to the pre-M&A delisting period. The coefficient on *PostMerger* is not statistically significant in our reduced sample. In sum, our analysis of the change, between the pre-

of delisting on industry competition and, hence, peer firms' disclosure incentives, are complex and difficult to predict in aggregate (see Verrecchia 2001). Nevertheless, we acknowledge that it is possible that in aggregate, the competitive effects of M&A delisting may be to decrease peer firms' incentives to provide disclosures. If true, this would result in peer firms providing less disclosure in the post-delisting period relative to the pre-delisting period.

and post-M&A delisting periods, in a key voluntary disclosure provided by peer firms provides no support for the alternative possible explanation for our main results—that industry peer firms decrease their disclosures between the pre- and post-M&A delisting periods.

7. Robustness

7.1 Industries Represented in the Sample

In untabulated analyses, we verify that our results are robust to excluding financial and utilities firms. Our main analysis is industry-based in which we define a firm's industry using GICS codes. In untabulated analyses, we verify that our results are robust to using SIC codes as an alternative definition of firms' industry.

7.2 Overlapping M&A Delisting Transactions in the Same Industry

In our full (reduced) sample tests, we use a sample of 838 (363) event quarters in which there are one or more M&A delistings in a particular industry. For these event quarters, we then measure and compare the quality of analysts' information environment across a pre-M&A delisting period, defined as quarters q–6 to q–1, and a post-M&A delisting period, defined as quarters q+2 to q+7. A key concern in our study design is the possibility of an effect from overlapping M&A transactions in the same industry. Intuitively, if there is a second M&A delisting in the same industry in the pre-M&A delisting period, this may further reduce the quality of analysts' information environment for industry peer firms, thus biasing against our results. On the other hand, a second M&A delisting in the same industry that occurs in the post-M&A delisting period may reduce the quality of analysts' information further in the post-period relative to the pre-period, with the result that we over-estimate the effect of an individual M&A transaction on the quality of analysts' information environment for industry peer firms.

< Insert Table 10 About Here >

To assess the impact of any such potential biases from overlapping event periods in our sample, we re-estimate our main model, including additional indicator variables to control for periods in which

there is an additional M&A delisting event in the same industry in either the pre- or post-M&A delisting periods used in our study. The results of this additional analysis are reported in Table 10. As can be seen in Table 10, our main results are robust to including additional controls for the potential effect of overlapping M&A delisting events in the same industry.

7.3 Measuring the Pre- and Post-M&A Delisting Period and Scaling

In our main analysis, we use a six-quarter pre- and post-M&A delisting periods. We verify that our inferences are unchanged using four-quarter pre- and post-M&A delisting periods. Further, in our main analysis, we use price-scaled absolute forecast errors and dispersion. We verify that our inferences are unchanged using unscaled absolute forecast error and dispersion, or using alternative scaling variables (e.g., total assets per share).

8. Conclusion

In this study, we document that M&A delistings are associated with a significant decline in the quality of analysts' information environment of industry peer firms, as measured by an increase in analysts' absolute forecast errors and dispersion; these results are stronger when the delisted firm is larger relative to its industry, and for public vs. private target firms. These results do not appear to be attributable to endogeneity bias arising from omitted industry-wide shocks. First, our results hold for transactions in which the acquirer is overvalued relative to the target, and therefore the M&A is more likely driven by acquirer market timing incentives (Shleifer and Vishny 2003, Rhodes-Kropf and Viswanathan 2004), rather than industry-wide shocks (Harford 2005). Second, we find no significant results in a falsification test using a sample of non-completed M&A announcements. Third, in an analyst-level analysis, we find that in forecasts for industry peer firms, there is a larger increase in forecast errors for those analysts who previously followed the delisted firm in the pre-M&A delisting period compared with other analysts forecasting earnings for the same industry peer firms but who did not follow the delisted firm in the pre-M&A delisting period. This analyst-level analysis is plausibly less exposed to endogeneity bias from

omitted industry-level shocks since all analysts that follow firms in the same industry should be similarly affected by any common industry-level shocks.

Our main results are consistent with industry peer firms experiencing negative information externalities from M&A delistings. First, our analyst-level analysis points to lost information spillovers from the delisted firm adversely affecting analysts who previously covered the delisted firm. Second, we find that the deterioration in the quality of analysts' information environment of industry peer firms is significantly larger for public targets than for private target firms. Finally, we also document that our results are stronger for horizontal mergers, but still significant for conglomerate mergers.

Our results provide new evidence that industry peer firms experience negative information externalities associated with M&A delistings. Since M&A delistings are one of the main causes of the long-term trend of a declining number of publicly listed firms in the U.S. (Doidge et al. 2017), our results also provide new evidence of negative consequences for U.S. capital markets from the trend of a declining number of publicly-listed firms in the U.S.[20] Our results also contribute to the M&A literature: specifically, our results provide new evidence of negative spillovers to the broader capital markets from M&A. Consistent with information spillovers/externalities in capital markets (Badertscher et al. 2013; Shroff et al. 2014), our results point to negative information spillovers from a decrease in the number of listed firms in an industry. Additionally, our results show that, as information intermediaries that specialize by industry (Boni and Womack 2006), sell-side analysts are negatively affected by a loss of industry firms resulting from M&A delistings in the same industry.

[20] Doidge et al. (2017) show that the decreasing number of listed firms in the U.S. is attributable to both: (1) delistings due to M&As and (2) a relative dearth of IPOs. Our results only speak to negative externalities from (1) and provide no evidence as to the consequences of (2).

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Appendix
Industry Distribution of our Sample

GICS		2000			2017			Δ (%)		
		Listed Firms (A)	Mkt. Cap. (B)	Firm Size (C) = B/A	Listed Firms (D)	Mkt. Cap. (E)	Firm Size (F) = E/D	Listed Firms (G) = (D-A)/A	Mkt. Cap. (H) = (E-B)/B	Firm Size (I) = (F-C)/C
45205010	Semiconductor Equipment	56	118,560	2,117						
45204010	Office Electronics	7	14,913	2,130						
40401010	Real Estate Investment Trusts	1	11	11						
45201010	Networking Equipment	63	743,219	11,797						
20201040	HR & Employment Svcs.	40	22,050	551						
45202010	Computer Hardware	34	677,189	19,917						
20201020	Data Processing Services	30	164,104	5,470						
45205020	Semiconductors	101	760,687	7,532						
30202020	Meat Poultry & Fish	9	11,712	1,301						
40201010	Consumer Finance	50	143,729	2,875						
45202020	Comp. Storage & Peripherals	75	298,177	3,976						
25202020	Photographic Products	6	18,531	3,089						
40401020	Real Estate Mngmt. & Dvpmt.	42	12,573	299						
25502010	Catalog Retail	26	16,315	627						
20201030	Divsf. Cmmrcl. & Prof. Svcs.	151	146,128	968						
40101010	Diversified Banks	720	1,306,057	1,814	5	1,246,694	249,339	−99%	−5%	13645%
40201020	Other Diversified Fin. Svcs.	99	1,185,913	11,979	1	8,508	8,508	−99%	−99%	−29%
35102010	Health Care Distributors	131	151,192	1,154	8	87,560	10,945	−94%	−42%	848%
25203030	Textiles	19	2,518	133	3	1,115	372	−84%	−56%	181%
50102010	Wireless Tele. Svcs.	45	183,018	4,067	8	87,385	10,923	−82%	−52%	169%
50101020	Integrated Tele. Svcs.	69	844,722	12,242	14	460,693	32,907	−80%	−46%	169%
25201050	Housewares & Specialties	27	26,017	964	6	18,874	3,146	−78%	−28%	226%
15104020	Diversified Metals & Mining	18	15,963	887	4	3,484	871	−78%	−78%	−2%
25401040	Publishing	48	165,856	3,455	11	22,457	2,042	−77%	−87%	−41%

45203010	Elec. Eqpmt. & Instruments	198	195,319	986	46	68,460	1,488	−77%	−65%	51%
25504020	Computer & Electronics Retail	17	28,968	1,704	4	20,020	5,005	−77%	−31%	194%
25201040	Household Appliances	17	18,415	1,083	4	14,438	3,610	−77%	−22%	233%
25504040	Specialty Stores	96	78,925	822	23	54,271	2,360	−76%	−31%	187%
10102010	Integrated Oil & Gas	11	663,112	60,283	3	649,357	216,452	−73%	−2%	259%
45102010	IT Consulting & Other Svcs.	115	107,156	932	32	268,870	8,402	−72%	151%	802%
25501010	Distributors	28	2,126	76	8	33,759	4,220	−71%	1488%	5459%
25503020	General Merchandise Stores	23	375,448	16,324	7	80,894	11,556	−70%	−79%	−29%
45101010	Internet Software & Services	347	351,927	1,014	108	1,495,432	13,847	−69%	325%	1265%
45103010	Application Software	248	350,170	1,412	78	452,203	5,797	−69%	29%	311%
25401010	Advertising	36	68,927	1,915	12	28,853	2,404	−67%	−58%	26%
25203020	Footwear	21	25,986	1,237	7	113,399	16,200	−67%	336%	1209%
10101010	Oil & Gas Drilling	21	68,072	3,242	7	16,396	2,342	−67%	−76%	−28%
30101030	Food Retail	29	103,887	3,582	10	29,652	2,965	−66%	−72%	−17%
25202010	Leisure Products	55	24,809	451	19	37,733	1,986	−66%	52%	340%
25401020	Broadcasting	57	369,839	6,488	20	66,292	3,315	−65%	−82%	−49%
20304010	Railroads	14	56,351	4,025	5	210,620	42,124	−64%	274%	947%
30202010	Agricultural Products	19	18,050	950	7	36,061	5,152	−63%	100%	442%
45201020	Communications Equipment	148	592,090	4,001	55	304,445	5,535	−63%	−49%	38%
55102010	Gas Utilities	32	87,888	2,746	12	47,301	3,942	−63%	−46%	44%
30201010	Brewers	8	68,962	8,620	3	20,269	6,756	−63%	−71%	−22%
20104010	Elec. Components & Eqpmt.	93	146,216	1,572	37	119,784	3,237	−60%	−18%	106%
20201060	Office Services & Supplies	36	34,840	968	15	16,755	1,117	−58%	−52%	15%
15101020	Diversified Chemicals	12	134,086	11,174	5	196,399	39,280	−58%	47%	252%
55101010	Electric Utilities	67	516,504	7,709	28	475,091	16,968	−58%	−8%	120%
25203010	Apparel, Acces. & Luxury Gds.	63	29,705	472	27	97,999	3,630	−57%	230%	670%
40301020	Life & Health Insurance	39	179,902	4,613	17	219,923	12,937	−56%	22%	180%
15103010	Metal & Glass Containers	18	10,227	568	8	43,936	5,492	−56%	330%	867%
30101010	Drug Retail	9	101,021	11,225	4	147,758	36,939	−56%	46%	229%
45103020	Systems Software	75	685,403	9,139	34	1,027,257	30,213	−55%	50%	231%

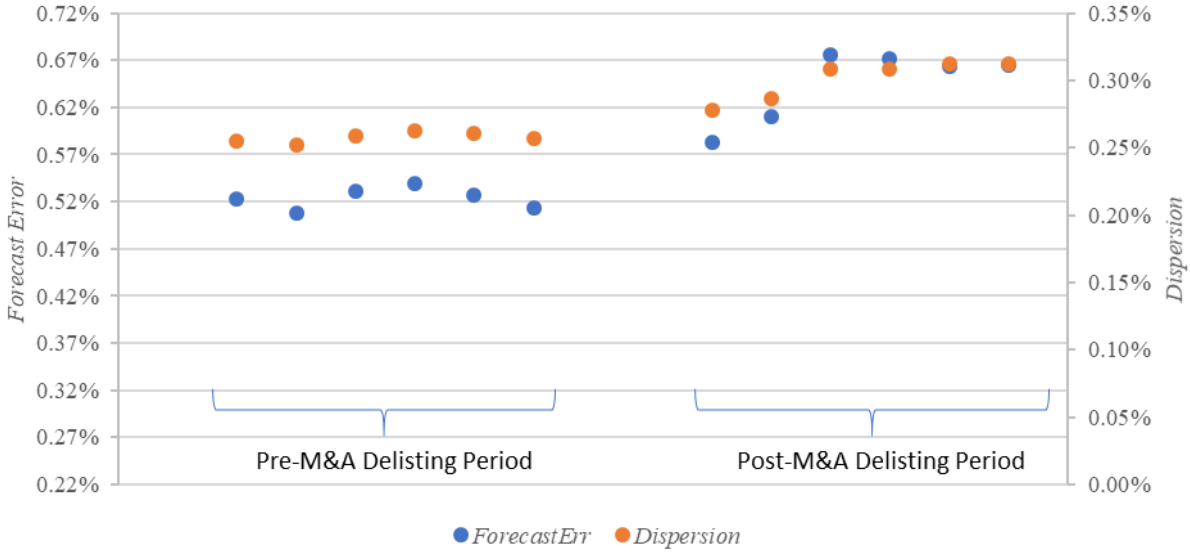
20302010	Airlines	22	64,117	2,914	10	148,756	14,876	−55%	132%	410%
25504030	Home Improvement Retail	11	174,202	15,837	5	265,255	53,051	−55%	52%	235%
35102030	Managed Health Care	24	97,825	4,076	11	450,920	40,993	−54%	361%	906%
20304020	Trucking	48	26,301	548	22	69,588	3,163	−54%	165%	477%
25201020	Home Furnishings	26	16,503	635	12	33,805	2,817	−54%	105%	344%
25301010	Casinos & Gaming	45	32,801	729	21	124,877	5,947	−53%	281%	716%
20201010	Commercial Printing	17	9,778	575	8	10,603	1,325	−53%	8%	130%
25301020	Hotels, Resorts & Cruise Lines	27	28,140	1,042	13	113,677	8,744	−52%	304%	739%
15104050	Steel	45	19,423	432	22	62,393	2,836	−51%	221%	557%
15104010	Aluminum	6	1,129	188	3	13,489	4,496	−50%	1095%	2290%
20105010	Industrial Conglomerates	12	765,876	63,823	6	441,429	73,571	−50%	−42%	15%
40301010	Insurance Brokers	12	65,918	5,493	6	61,137	10,190	−50%	−7%	85%
35102020	Health Care Facilities	44	94,394	2,145	22	62,683	2,849	−50%	−34%	33%
25101020	Tires & Rubber	4	7,453	1,863	2	9,560	4,780	−50%	28%	157%
15105010	Forest Products	6	21,519	3,586	3	6,460	2,153	−50%	−70%	−40%
25401030	Movies & Entertainment	37	316,973	8,567	19	336,774	17,725	−49%	6%	107%
25101010	Auto Parts & Equipment	62	49,029	791	32	69,173	2,162	−48%	41%	173%
25503010	Department Stores	13	76,042	5,849	7	22,273	3,182	−46%	−71%	−46%
20201050	Env. & Facilities Svcs.	48	39,699	827	26	93,210	3,585	−46%	135%	333%
50101010	Alternative Carriers	20	52,674	2,634	11	37,873	3,443	−45%	−28%	31%
25102010	Automobile Manufacturers	9	103,060	11,451	5	168,478	33,696	−44%	64%	194%
25301040	Restaurants	95	121,486	1,279	54	325,048	6,019	−43%	168%	371%
25502020	Internet & Direct Mkt. Retail	42	25,945	618	24	794,897	33,121	−43%	2964%	5262%
35101010	Health Care Equipment	185	306,707	1,658	107	571,295	5,339	−42%	86%	222%
30101020	Food Distributors	12	34,555	2,880	7	46,324	6,618	−42%	34%	130%
15105020	Paper Products	17	63,465	3,733	10	12,470	1,247	−41%	−80%	−67%
15103020	Paper Packaging	15	21,976	1,465	9	84,443	9,383	−40%	284%	540%
40301050	Reinsurance	5	13,988	2,798	3	19,400	6,467	−40%	39%	131%
15101040	Industrial Gases	5	23,384	4,677	3	80,291	26,764	−40%	243%	472%
30202030	Packaged Foods & Meats	73	212,668	2,913	44	420,768	9,563	−40%	98%	228%

30302010	Personal Products	37	95,763	2,588	23	76,606	3,331	−38%	−20%	29%
20106020	Industrial Machinery	122	113,318	929	76	320,378	4,215	−38%	183%	354%
40301040	Property & Casualty Insurance	72	352,746	4,899	45	223,379	4,964	−38%	−37%	1%
25201010	Consumer Electronics	12	1,480	123	8	7,585	948	−33%	412%	669%
20101010	Aerospace & Defense	70	280,604	4,009	47	700,611	14,907	−33%	150%	272%
35101020	Health Care Supplies	52	18,883	363	35	76,306	2,180	−33%	304%	500%
25201030	Homebuilding	37	25,635	693	25	89,007	3,560	−32%	247%	414%
15101010	Commodity Chemicals	22	9,935	452	15	37,063	2,471	−32%	273%	447%
15102010	Construction Materials	13	15,163	1,166	9	42,575	4,731	−31%	181%	306%
20102010	Building Products	41	36,200	883	29	91,955	3,171	−29%	154%	259%
30203010	Tobacco	9	154,931	17,215	7	305,063	43,580	−22%	97%	153%
20303010	Marine	5	3,513	703	4	5,718	1,430	−20%	63%	103%
20301010	Air Freight & Logistics	15	126,468	8,431	12	206,399	17,200	−20%	63%	104%
25504010	Apparel Retail	45	98,342	2,185	37	120,125	3,247	−18%	22%	49%
40301030	Multi-line Insurance	13	381,919	29,378	11	116,131	10,557	−15%	−70%	−64%
15101050	Specialty Chemicals	48	60,709	1,265	41	211,635	5,162	−15%	249%	308%
35202010	Pharmaceuticals	112	1,863,548	16,639	98	1,028,139	10,491	−13%	−45%	−37%
10102020	Oil & Gas Expl. & Production	108	168,247	1,558	95	477,853	5,030	−12%	184%	223%
20104020	Heavy Electrical Equipment	9	5,639	627	8	2,415	302	−11%	−57%	−52%
20103010	Construction & Engineering	30	18,723	624	27	59,186	2,192	−10%	216%	251%
15101030	Fertilizers & Agr. Chemicals	11	16,340	1,485	10	91,568	9,157	−9%	460%	516%
25301030	Leisure Facilities	13	8,746	673	12	22,343	1,862	−8%	156%	177%
20106010	Constr. Mach. & Heavy Trucks	29	53,179	1,834	28	206,136	7,362	−3%	288%	301%
30301010	Household Products	13	266,446	20,496	13	388,553	29,889	0%	46%	46%
30201020	Distillers & Vintners	7	2,879	411	7	65,842	9,406	0%	2187%	2187%
15104040	Precious Metals & Minerals	3	2,262	754	3	105	35	0%	−95%	−95%
15104030	Gold	6	5,813	969	6	26,482	4,414	0%	356%	356%
10102030	Oil & Gas Refining & Mkt.	19	26,719	1,406	20	164,774	8,239	5%	517%	486%
10101020	Oil & Gas Equipment & Svcs.	50	102,006	2,040	54	108,006	2,000	8%	6%	−2%
55104010	Water Utilities	11	8,326	757	13	34,408	2,647	18%	313%	250%

30201030	Soft Drinks	10	341,532	34,153	12	426,348	35,529	20%	25%	4%
55103010	Multi-Utilities	14	164,783	11,770	17	247,158	14,539	21%	50%	24%
35201010	Biotechnology	210	451,485	2,150	305	902,301	2,958	45%	100%	38%
40201030	Multi-Sector Holdings	2	497	248	3	499,706	166,569	50%	100493%	66957%
20107010	Trading Companies & Distr.	18	17,232	957	35	103,597	2,960	94%	501%	209%
25102020	Motorcycle Manufacturers	1	17,092	17,092	2	8,616	4,308	100%	−50%	−75%
20305030	Marine Ports & Services	1	666	666	2	1,547	773	100%	132%	16%

Some industries contain no firm as of 2017, as GICS classifications of these industries were discontinued. Further information about historical changes in GICS structure, as of January 2019, is available at: https://www.msci.com/gics. These discontinued GICS classifications do not affect our main analyses, as we use only firms that are classified as the same GICS consistently over the pre- and post-M&A delisting periods.

FIGURE 1
Changes in Absolute Forecast Errors and Forecast Dispersion for Industry Peer Firms Around M&A Delistings



This figure shows the change in analysts' absolute forecast errors and dispersion for industry peer firms around M&A delistings in the same industry. This figure plots average *ForecastErr* and *Dispersion* across the pre- and post-M&A delisting periods for the sample of 273,920 firm-quarter observations (described in Table 2) for industry peer firms. The pre-M&A delisting period consists of quarters *q-6* to *q-1*, where *q=0* is the fiscal quarter-end where a target firm stops releasing financial disclosures after the M&A. Quarters *q* and *q*+1 are excluded from the sample as these quarters include the period between the merger announcement and when shares are delisted from exchanges. The post-M&A delisting period consists of quarters *q+2* to *q+7*. For each of the 273,920 fiscal quarters, using IBES data, we select the last forecast of one quarter ahead earnings (IBES FPI=6) issued by each analyst. We then calculate our two dependent variables as: *ForecastErr* is the absolute value of the difference between actual EPS from IBES and the median forecast, scaled by the share price at the beginning of the quarter; and *Dispersion* is the standard deviation of these forecasts, scaled by the share price at the beginning of the quarter. *ForecastErr* and *Dispersion* are averaged each quarter across all industry peer firms (firms in the same industry as the target firm but which are neither the target firm nor the acquirer in the M&A transaction). Industry is defined as the target firm's 8-digit GICS. For any industry peer firm *i* in our sample, we also require that any analyst who forecasts earnings for firm *i* does so, at least once, in both the pre- and post-M&A delisting period. Firms with fewer than 3 quarter observations for the pre- [q−6, q−1] or post-M&A delisting period [q+2, q+7] are also eliminated.

TABLE 1

Trend of Listed Firms

	Counts				Dollar values in millions		
Year	*Listed Firms*	*Median # of Peers* (A)	*# of IPOs*[1]	*# of M&A*	*Mkt. Cap. of Listed Firms*	*Median Industry Mkt. Cap.* (B)	*Avg. Mkt. Value of a Listed Firm* (B/A)
	(1)	***(2)***	***(3)***	***(4)***	***(5)***	***(6)***	***(7)***
2000	6,096	96	380	515	20,728,276	195,319	2,035
2001	5,431	87	79	396	17,382,218	145,629	1,674
2002	5,037	80	66	231	13,656,828	114,492	1,431
2003	4,736	64	63	228	17,196,962	143,711	2,245
2004	4,674	65	173	248	18,526,151	169,269	2,604
2005	4,587	60	159	227	18,529,319	171,923	2,865
2006	4,502	57	157	257	19,971,040	174,551	3,062
2007	4,380	53	159	326	19,626,140	174,050	3,284
2008	4,156	49	21	216	11,485,250	88,006	1,796
2009	3,953	46	41	118	14,353,329	123,201	2,678
2010	3,802	44	91	191	16,258,603	146,599	3,332
2011	3,674	44	81	190	15,434,969	130,888	2,975
2012	3,579	41	93	173	16,958,109	160,252	3,909
2013	3,563	42	157	167	21,904,858	202,670	4,825
2014	3,656	44	206	142	23,318,188	227,701	5,175
2015	3,643	40	115	172	22,473,993	203,609	5,090
2016	3,498	43	74	196	23,747,524	249,858	5,811
2017	3,440	43	108	183	27,393,199	304,445	7,080

1 From Jay Ritter: Initial Public Offerings: Updated Statistics 2018, available at: https://site.warrington.ufl.edu/ritter/ipo-data/

This table presents data showing the trends in the number of listed firms, the number of delisted firms, the median number of industry peer firms, and related market values over the period 2000-2017. Listed firm data are from CRSP, and include only common shares (share code 10 and 11) listed on Amex, NYSE, or NASDAQ. Similar to Table 3 of Doidge et al. (2017), we exclude firms classified as REITs (defined as SIC codes 6722, 6726, 6798, or 6799). We only count firms with available Compustat data. Data for delisted firms is also from CRSP, using delisting codes between 200 and 399. The same data selection procedures for the listed firms are also applied to the data selection of delisted firms.

We count the number of industry peers based on 8-digit GICS codes. For the number of peers, all firms in an industry are counted across firms with available market value data as of the fiscal quarter-end during the fourth calendar quarter (October to December). For the market capitalization of listed firms, market values of all firms are summed using their values as of the fiscal quarter-end during the fourth calendar quarter. Similarly, for industry market capitalization, market values of all firms in an industry are summed using their values as of the fiscal quarter-end during the fourth calendar quarter. Median values are taken from the entire firm-quarter sample during a year. All dollar values are adjusted to the average price level (CPI for all urban consumers) of 2017. All numbers in this table are based on raw data, not winsorized or trimmed data.

TABLE 2

Sample Selection of M&A Delistings and Industry Peer Firms

Panel A. Sample Selection of M&A Delistings		
Delistings over 2001-2015		5,687
(Delistings for cause)	(2,012)	
(Voluntary delisting)	(268)	
Delistings by Merger		3,407
(Not matched with Compustat)	(91)	
(Not matched with acquirer data from SDC)	(1,882)	
(Not having fiscal quarter-end in March, June, September, and December)	(107)	
Mergers		1,327
(Multiple mergers in an industry-quarter)	(468)	
Number of industry-quarters with one or more M&A delisting		859
Full Sample: Number of industry-quarters with industry peer firms available in both pre- and post-merger period		838
Reduced Sample: Number of industry-quarters with one or more M&A delisting in which firm-specific overpricing of acquirer > that for target		363
Panel B. Sample Selection of Quarterly Observations for Industry Peer Firms		
Full Sample (From Panel A): Delisting "event quarters" with IBES data for listed industry peer firms		838
Merger-peer-quarters over pre-M&A delisting period [q-6,q-1] and post-merger period [q+2,q+7] matched to the mergers above		672,386
(Merger-peer-analyst where an analyst follows only pre-M&A delisting or only post-M&A delisting period)	(88,399)	
(Missing *ForecastErr*, *Dispersion*, or control variables)	(259,635)	
(Fewer than 3 quarters available for either the pre- and post-M&A delisting period, respectively, for a merger-peer)	(50,432)	
Full Sample: Industry peer firm quarters observations (around M&A delisting quarters)		273,920
Reduced Sample: Industry peer firm quarters observations (around M&A delisting quarters) in which firm-specific overpricing of acquirer > that of target		110,564

This table summarizes our sample selection procedure. Panel A summarizes the selection of our sample of M&A delisting "event quarters," i.e., fiscal quarters with one or more M&A delisting(s) in a particular industry. We begin with 5,687 delisting events identified from CRSP during the sample period between 2001 and 2015. We categorize delistings into delistings for cause (firms delisted since they cannot maintain listing requirements), voluntary delistings (e.g., LBOs), and delistings by merger, following Doidge et al. (2017) and Fama and French (2004). Delistings with a CRSP delisting code (DLSTCD) 400 or higher are classified as delistings for cause, except for DLSTCD = 570 or 573; delistings with DLSTCD = 570 or 573 are classified as voluntary delistings; delistings with DLSTCD between 200 and 399 as delistings by merger. This yields a sample of 3,407 delistings resulting from mergers.

We eliminate 91 delisting observations since they are not matched with Compustat data, or the gap between the delisting date and the last quarterly reporting date is more than 6 months; 1,882 observations with no acquirer data available from SDC; 107 observations with fiscal quarter-end different from March, June, September, and December. The final sample of delisted firms consists of 1,327 M&A delistings. From this sample of M&A delistings, we identify 859 unique industry-quarters with one or more delistings in a particular industry. Of these 859 M&A delisting event quarters, there is available IBES data to measure the quality of analysts' information environment for industry peer firms in the pre- and post-M&A delisting periods for 838 of these event-quarters. This constitutes our full sample. Using the approach of Rhodes-Kropf et al. (2005), from this full sample, we identify our reduced sample of 363 M&A delistings event quarters composed of M&As more likely attributable to acquirer firm market timing. See Rhodes-Kropf et al. (2005) for details of the calculation of firm-specific mispricing.

Panel B explains the selection of our sample of firm-quarters used to measure the quality of analysts' information environment for industry peer firms. For our full sample, we match the 838 M&A delisting "event quarters" with financial data for all available listed industry peers over the period 6 quarters before the event quarter (pre-M&A delisting period) and 6 quarters subsequent to the event quarter (post-M&A delisting period). We allow a two quarters' gap between the end of the pre-M&A delisting period and the beginning of the post-M&A delisting period, as it can take more than 6 months to complete an M&A transaction. To make sure only listed peers are included in the sample, only common shares (CRSP SHRCD = 10 or 11) listed on NYSE, NASDAQ, or AMEX (CRSP HEXCH = 1, 2, or 3) are retained, excluding investment funds and trusts (SIC code = 6722, 6726, 6798, or 6799). Peer-quarters included in the sample meet the following criteria: they have fiscal quarter-ends in March, June, September, and December; the firm name (*CONM* in Compustat) does not contain the terms "ADR", "Holdings", "Group", or variations of these; with more than 2 quarters data available in both of the pre- and post-M&A delisting periods; where the peer is neither the acquired firm nor the acquirer. These restrictions result in a final usable sample of 838 M&A delistings event quarters, which are matched with data for 672,386 firm-quarters for industry peer firms across both the pre- and post-M&A delisting periods.

This firm-quarterly data for industry peer firms is then matched with IBES detailed analyst forecast data. We require that each analyst releases at least one forecast for a peer firm during both the pre- and post-M&A delisting periods. This eliminates 88,399 merger-peer-quarter observations. Further eliminated are: 259,635 observations with missing *ForecastErr*, *Dispersion*, or control variables; 50,432 observations for firms with fewer than 3 quarters of observations for the pre-M&A delisting period [q-6, q-1] or 3 quarters of observations for the post-M&A delisting period [q+2, q+7]. The final full (reduced) sample consists of 273,920 (110,564) firm-quarter observations for industry peer firms. For the reduced sample, mergers have firm-specific overpricing of the acquirer that is greater than that for the target, representing mergers that are more likely caused by an acquirer's market timing rather than industry-wide shocks.

TABLE 3

Descriptive Statistics for Full Sample

	N	Mean	Std. Dev.	1st Pctl.	Q1	Median	Q3	99th Pctl.
ForecastErr (%)	273,920	0.584	1.484	0.000	0.054	0.163	0.459	11.268
Dispersion (%)	273,920	0.279	0.553	0.000	0.046	0.104	0.262	3.942
avgDays	273,920	80.9	17.6	35.7	72.5	82.7	89.8	122.3
Coverage	273,920	8.7	6.8	2	4	6	12	32
$MktVal_{q-1}$	273,920	4,894	19,038	45	331	852	2,516	77,195
MTB	273,920	5.057	139.624	0.371	1.342	2.101	3.601	24.250
Volume	273,920	0.868	2.521	0.004	0.079	0.232	0.659	10.528
IndRet	273,920	0.019	0.125	-0.356	-0.040	0.031	0.092	0.313

This table presents descriptive statistics of the variables used in our main analyses for our full sample of 273,920 fiscal quarters for industry peer firms in both the pre- and post-M&A delisting periods. For each fiscal quarter in the pre- and post-M&A delisting periods, for the industry peer firms, using IBES data we select the last forecast of one quarter ahead earnings (IBES FPI=6) issued by each analyst. We then calculate our two dependent variables as follows: *ForecastErr* is the absolute value of the difference between actual EPS from IBES and the median forecast, scaled by share price at the beginning of the quarter; and *Dispersion* is the standard deviation of these forecasts, scaled by share price at the beginning of the quarter. *avgDays* is the average number of days between the forecast date and the earnings announcement date. *Coverage* is the number of analysts following the peer firm. $MktVal_{q-1}$ is the market value of a peer firm at the beginning of the quarter. *MTB* is the market-to-book ratio of equity of a peer firm. *Volume* is the trading volume for a peer firm summed over the quarter. *IndRet* is the value-weighted average returns across firms in an industry (eight-digit GICS code) during a quarter.

TABLE 4

Main Results: Change in Analysts' Information Environment of Industry Peer Firms Around M&A Delistings

	Full Sample				Reduced Sample			
	Dep. var. = *ForecastErr* (%)		Dep. var. = *Dispersion* (%)		Dep. var. = *ForecastErr* (%)		Dep. var. = *Dispersion* (%)	
PostMerger	**0.141*** **	**0.130*** **	**0.031*** **	**0.029*** **	**0.185*** **	**0.173*** **	**0.046*** **	**0.043*** **
	(13.77)	**(11.86)**	**(9.08)**	**(7.98)**	**(11.46)**	**(10.16)**	**(8.20)**	**(7.16)**
PostMerger×CMS		**1.269*** **		**0.255** **		**1.388*** **		**0.408** **
		(3.87)		**(2.19)**		**(2.73)**		**(2.35)**
Control variables:								
log(*avgDays*)	0.252***	0.252***	−0.031***	−0.031***	0.264***	0.264***	−0.029***	−0.029***
	(19.73)	(19.72)	(−6.76)	(−6.76)	(12.63)	(12.63)	(-3.91)	(−3.91)
log(*Coverage*)	0.093***	0.093***	0.094***	0.094***	0.083***	0.083***	0.089***	0.089***
	(8.28)	(8.25)	(22.75)	(22.70)	(4.58)	(4.58)	(13.23)	(13.23)
log($MktVal_{q-1}$)	–1.095***	–1.096***	–0.466***	–0.467***	–1.127***	–1.128***	–0.476***	–0.476***
	(–61.64)	(–61.64)	(–71.66)	(–71.66)	(–40.96)	(–40.97)	(–47.41)	(–47.41)
log(*MTB*)	0.064***	0.064***	0.010*	0.010	0.059**	0.058**	–0.000	–0.000
	(4.02)	(3.99)	(1.66)	(1.63)	(2.30)	(2.29)	(–0.04)	(–0.04)
log(*Volume*)	0.804***	0.806***	0.397***	0.398***	0.812***	0.810***	0.392***	0.392***
	(22.77)	(22.78)	(33.03)	(33.03)	(14.95)	(14.94)	(20.44)	(20.43)
IndRet	–0.456***	–0.457***	–0.128***	–0.129***	–0.500***	–0.498***	–0.156***	–0.156***
	(–16.34)	(–16.35)	(–14.43)	(–14.45)	(–11.37)	(–11.34)	(–10.97)	(–10.94)
Firm fixed effect	Merger-peer	Merger-peer	Merger-peer	Merger-peer	Merger-peer	Merger-peer	Merger-peer	Merger-peer
Time fixed effect	Year	Year	Year	Year	Year	Year	Year	Year
Adjusted std. error	Merger-peer	Merger-peer	Merger-peer	Merger-peer	Merger-peer	Merger-peer	Merger-peer	Merger-peer
Adjusted R^2	14.27%	14.31%	20.76%	20.80%	15.92%	15.93%	22.02%	22.02%
# of observations	273,920	272,665	273,920	272,665	110,564	110,564	110,564	110,564

This table presents the results of our analysis of changes in analysts' absolute forecast errors (*ForecastErr*) and dispersion (*Dispersion*) for industry peer firms around M&A delistings in the same industry. *ForecastErr* is defined as the absolute value of the difference between actual EPS from IBES and the median forecast, scaled by share price at the beginning of the quarter. *Dispersion* is the standard deviation of forecasts, scaled by share price at the beginning of the quarter. *PostMerger* equals one if a peer-quarter observation is for forecasts made during the 6-quarter period after an M&A delisting [q+2, q+7] (zero if it is for a six-quarter period before the merger [q-6, q-1]), where q is the quarter that the delisted firm stops issuing quarterly reports. *CMS* is the acquired firm's market value at the end of the quarter when the acquired firm last issues a quarterly financial report, scaled by the market capitalization of the acquired firm's industry. *avgDays* is

the average number of days between the forecast issue date and the earnings announcement date. *Coverage* is the number of analysts following the peer firm. $MktVal_{q-1}$ is the market value of a peer firm at the beginning of the quarter. *MTB* is the market-to-book ratio of equity of a peer firm. *Volume* is the trading volume of a peer firm summed over the quarter. *IndRet* is the value-weighted average return across firms in an industry during the quarter. Merger-peer and year fixed effects are included. Year fixed effects are defined using the calendar year-end of industry peer firms. Standard errors are adjusted clustering by each merger-peer. Data are winsorized at the 1% and 99% levels. Significance levels are based upon two-tailed p-values; 10%, 5%, and 1% are indicated by *, **, and ***, respectively.

TABLE 5

Engodonetiy Test: Falsification using Non-Completed M&A Announcements

	Dep. var. = *ForecastErr* (%)		Dep. var. = *Dispersion* (%)	
PostMerger	**0.017**	**0.012**	**−0.029***	**−0.030***
	(0.39)	**(0.26)**	**(−1.92)**	**(−1.91)**
PostMerger×CMS		**0.380**		**0.061**
		(0.50)		**(0.18)**
Control variables:				
log(*avgDays*)	0.236***	0.236***	0.012	0.012
	(5.22)	(5.23)	(0.80)	(0.80)
log(*Coverage*)	0.062	0.062	0.097***	0.097***
	(1.60)	(1.60)	(6.35)	(6.35)
log($MktVal_{q-1}$)	−1.030***	−1.030***	−0.511***	−0.511***
	(−17.03)	(−17.03)	(−21.15)	(−21.16)
log(*MTB*)	−0.039	−0.039	−0.041*	−0.041*
	(−0.71)	(−0.70)	(−1.70)	(−1.70)
log(*Volume*)	0.465***	0.464***	0.361***	0.361***
	(4.25)	(4.25)	(8.90)	(8.90)
IndRet	−0.259***	−0.259***	−0.092***	−0.092***
	(−2.67)	(−2.67)	(−2.98)	(−2.98)
Firm fixed effect	Merger-peer	Merger-peer	Merger-peer	Merger-peer
Time fixed effect	Year	Year	Year	Year
Adjusted std. error	Merger-peer	Merger-peer	Merger-peer	Merger-peer
Adjusted R^2	10.88%	10.88%	19.92%	19.92%
# of observations	22,194	22,194	22,194	22,194

This table presents the results of a falsification test of our main analyses reported in Table 4. For this table, the sample consists of firm-quarter observations for industry peer firms of target firms where an M&A is announced and subsequently withdrawn, i.e., a sample of non-completed M&A. Data on non-completed mergers are available in the SDC, which contains 1,191 non-completed merger announcements over the period between 2001 and 2015. The same sample selection procedures as the main sample are applied, as described in Table 2. Additionally, all industry-quarters that contain both a completed and a non-completed merger are excluded to avoid any confounding effects from the completed merger. The final sample consists of 22,194 merger-peer-quarter observations for 107 merger announcements that are subsequently not completed. All variables are the same as in our main analysis and are defined in the endnotes of Table 4. Data are winsorized at the 1% and 99% levels. Significance levels are based upon two-tailed p-values; 10%, 5%, and 1% are indicated by *, **, and ***, respectively.

TABLE 6

Endogeneity Test: Analysts Who Previously Followed Delisted Firms vs. Analsts Who Did Not

	Dep. var. = *ForecastErr_Analyst* (%)	
	Coeff.	t-stat.
PostMerger	**0.100*** **	**(25.79)**
PostMerger×AnalystDelisted	**0.039*** **	**(6.37)**
Control variables:		
log(*Days*)	0.076***	(40.89)
log(*Coverage*)	0.129***	(22.64)
log($MktVal_{q-1}$)	-0.844***	(-118.93)
log(*MTB*)	0.043***	(6.52)
log(*Volume*)	0.528***	(48.11)
IndRet	-0.398***	(-34.44)
Analyst fixed effect	Merger-peer-analyst	
Time fixed effect	Year	
Adjusted std. error	Merger-peer-analyst	
Adjusted R^2	39.34%	
# of observations	1,250,177	

This table presents the results of an analyst-level analysis. In this analysis, we consider two groups of analysts who follow an industry peer firm: (1) those who also followed the delisted firm during the pre-M&A delisting period, and (2) those who never followed the delisted firm. For this analysis, we match analyst data from IBES with the 672,386 merger-peer-quarter data described in Panel B of Table 2. Including only analysts who follow a peer at least three times during pre-merger and post-merger periods, respectively, the final sample consists of 1,250,177 merger-peer-analyst-quarter observations with available control variables. *ForecastErr_Analyst* is defined as the absolute value of the difference between actual EPS from IBES and individual analysts' last forecasts that are released a quarter ahead of the fiscal quarter-end, scaled by the share price at the beginning of the quarter. *AnalystDelisted* is coded one if an analyst released at least one forecast for a delisted firm during the pre-M&A delisting period; zero otherwise. The rest of the variables used are the same as those used in our main analysis and are defined in the endnotes of Table 4. Data are winsorized at the 1% and 99% levels. Significance levels are based upon two-tailed p-values; 10%, 5%, and 1% are indicated by *, **, and ***, respectively

TABLE 7

Exploring Two Possible Channels, Real versus Information Effects: Private vs. Public Target Firms

	Dep. var. = *ForecastErr* (%)		Dep. var. = *Dispersion* (%)	
	Coeff.	*t-stat.*	*Coeff.*	*t-stat.*
PostMerger	**0.049*** **	**(6.01)**	**0.012*** **	**(3.62)**
PostMerger×PublicTarget	**0.023** **	**(2.35)**	**0.008** **	**(2.14)**
Control variables:				
log(*avgDays*)	0.199***	(24.35)	-0.000	(-0.05)
log(*Coverage*)	0.033***	(3.59)	0.062***	(17.47)
log($MktVal_{q-1}$)	-0.826***	(-57.91)	-0.429***	(-71.44)
log(*MTB*)	0.001	(0.05)	-0.030***	(-4.71)
log(*Volume*)	0.520***	(17.49)	0.291***	(27.10)
IndRet	-0.262***	(-11.90)	-0.093***	(-10.79)
Firm fixed effect	Merger-peer		Merger-peer	
Time fixed effect	Year		Year	
Adjusted std. error	Merger-peer		Merger-peer	
Adjusted R^2	13.52%		22.41%	
# of observations	241,405		241,405	

This table presents the results of an analysis of a comparison of the changes in *ForecastErr* and *Dispersion* for industry peer firms around M&As in the same industry involving private vs. public target firms. We merge our main sample of data for mergers of public firms (i.e., M&A delistings) with data for mergers of private firms. We use data on private-target mergers from SDC. Since SDC includes only SIC and not GICS codes for private targets, for this analysis we identify industry peers using two-digit SIC codes. In addition to data requirements for the public target sample, we also require the availability of deal value and the percentage of shares acquired data for private target firms. Private-targets merged around a public-target merger (6 months beginning from the public-target's last quarterly report balance sheet date) are excluded, to eliminate confounding effects arising from both public- and private-targets. To make the private and public target firms roughly comparable by size, we only use private target firms for which (1) estimated firm value (=deal value/the percentage of shares acquired) is equal to or greater than the minimum market value of all public targets over the sample period, when both firms' values are adjusted for the price rate, and (2) industry is included in the final public target sample. Likewise, we only use public target firms for which (1) firm value is equal to or smaller than the maximum of the estimated firm values (=deal value/the percentage of shares acquired) of all private targets over the sample period, and (2) industry is included in the final private target sample. All variables are the same as those used in our main analysis and are defined in the endnotes of Table 4. Data are winsorized at the 1% and 99% levels. Significance levels are based upon two-tailed p-values; 10%, 5%, and 1% are indicated by *, **, and ***, respectively.

TABLE 8

Further Analyses: Horizontal vs. Conglomerate Mergers

	Full Sample		Reduced Sample	
	Dep. var. =*ForecastErr* (%)	Dep. var. =*Dispersion* (%)	Dep. var. =*ForecastErr* (%)	Dep. var. =*Dispersion* (%)
PostMerger	**0.083*** **	**0.018*** **	**0.132*** **	**0.039*** **
	(5.90)	**(3.67)**	**(6.26)**	**(5.15)**
PostMerger×HMerger	**0.107*** **	**0.031*** **	**0.091*** **	**0.023*** **
	(7.46)	**(5.97)**	**(4.20)**	**(2.94)**
Control variables:				
log(*avgDays*)	0.235***	–0.025***	0.238***	–0.030***
	(16.98)	(–5.12)	(10.98)	(–3.90)
log(*Coverage*)	0.096***	0.092***	0.069***	0.078***
	(7.81)	(20.43)	(3.62)	(11.06)
log($MktVal_{q-1}$)	–1.082***	–0.470***	–1.077***	–0.460***
	(–54.09)	(–63.80)	(–36.30)	(–42.24)
log(*MTB*)	0.054***	0.010	0.046*	0.002
	(3.05)	(1.41)	(1.68)	(0.22)
log(*Volume*)	0.747***	0.380***	0.719***	0.374***
	(19.88)	(28.34)	(12.60)	(17.80)
IndRet	–0.396***	–0.106***	–0.424***	–0.131***
	(–13.20)	(–11.14)	(–9.39)	(–8.87)
Firm fixed effect	Merger-peer	Merger-peer	Merger-peer	Merger-peer
Time fixed effect	Year	Year	Year	Year
Adjusted std. error	Merger-peer	Merger-peer	Merger-peer	Merger-peer
Adjusted R^2	13.79%	20.64%	15.23%	21.57%
# of observations	226,134	226,134	96,160	96,160

This table presents a comparison of horizontal with conglomerate mergers. Horizontal (conglomerate) mergers are mergers in which the acquirer and target firm are in the same (different) industry (8 digit GICS code). *HMerger* is coded one if the eight-digit GICS code of the acquirer is the same as that of the target; 0 otherwise. If there are multiple mergers in an industry-quarter with mixed *HMerger* values, we exclude that industry-quarter from the sample; therefore, the sample in this analysis is composed of industry-years with either horizontal or *conglomerate* merger(s) (and not both). The rest of the variables are the same as those used in our main analysis and are defined in the endnotes of Table 4. Standard errors are adjusted clustering by each merger-peer. Data are winsorized at the 1% and 99% levels. Significance levels are based upon two-tailed p-values; 10%, 5%, and 1% are indicated by *, **, and ***, respectively.

TABLE 9

Ruling out Alternatives: Changes in Industry Peer Firms' Voluntary Disclosures

	Full Sample		Reduced Sample	
	Coeff.	*t-stat.*	*Coeff.*	*t-stat.*
PostMerger	**0.006****	**(2.00)**	**0.006**	**(1.22)**
Control variables:				
log(*Issue*)	–0.010	(–0.84)	0.015	(0.85)
log(*MTB*)	–0.051***	(–12.04)	–0.036***	(–5.44)
RetVol	0.120	(1.48)	0.505***	(3.79)
log(*Coverage*)	0.085***	(26.14)	0.091***	(17.22)
log($MktVal_{q-1}$)	0.062***	(21.09)	0.081***	(17.02)
IndRet	0.061***	(9.88)	0.065***	(6.43)
Firm fixed effect	Merger-peer		Merger-peer	
Time fixed effect	Year		Year	
Adjusted std. error	Merger-peer		Merger-peer	
Adjusted R^2	6.55%		7.84%	
# of observations	361,048		142,922	

This table presents the results of an analysis of changes in the frequency with which industry peer firms provide management forecasts (*MForeFreq*) across the pre- and post-M&A delisting periods. The analysis includes fixed effects for each M&A delisting-industry peer firm pair, along with year fixed effects. We begin the sample selection with the 672,368 merger-peer-quarters described in Panel B of Table 2, which is merged with management forecast data from IBES/FirstCall. Management forecast observations released over the current quarter are counted and defined as *Management Forecast Frequency*. All merger-peers that contain fewer than two observations in each of pre-merger and post-merger periods are excluded. The control variables are: log(*Issue*), log(*MTB*), *RetVol*, log(*Coverage*), and log($MktVal_{q-1}$) and *IndRet* are used. *Issue* is defined as the sum of net equity issuance and debt issuance (Compustat variables (SSTKQ- PRSTKCQ + DLTISQ)/ATQ). *RetVol* is the standard deviation of daily stock returns over the quarter. The rest of the variables are the same as those used in our main analysis and are defined in the endnotes of Table 4. Standard errors are adjusted clustering by each merger-peer. Data are winsorized at the 1% and 99% levels. Significance levels are based upon two-tailed p-values; 10%, 5%, and 1% are indicated by *, **, and ***, respectively.

TABLE 10

Robustness Test: Other Overlapping M&A Delistings in the Same Industry

	Full Sample				Reduced Sample			
	Dep. var. = *ForecastErr* (%)		Dep. var. = *Dispersion* (%)		Dep. var. = *ForecastErr* (%)		Dep. var. = *Dispersion* (%)	
PostMerger	**0.124*** **	**0.104*** **	**0.031*** **	**0.028*** **	**0.118*** **	**0.095*** **	**0.039*** **	**0.033*** **
	(8.87)	**(7.10)**	**(6.23)**	**(5.35)**	**(5.65)**	**(4.30)**	**(5.24)**	**(4.23)**
PostMerger×CMS		**1.402*** **		**0.268** **		**1.703*** **		**0.449** **
		(4.29)		**(2.31)**		**(3.34)**		**(2.57)**
PreMergerOverlap	**0.014**	**0.009**	**0.005**	**0.005**	**-0.030***	**-0.035** **	**-0.001**	**-0.002**
	(1.37)	**(0.88)**	**(1.42)**	**(1.20)**	**(–1.84)**	**(–2.15)**	**(–0.17)**	**(–0.40)**
PostMergerOverlap	**0.054*** **	**0.058*** **	**0.009** **	**0.010*** **	**0.077*** **	**0.082*** **	**0.012** **	**0.013** **
	(5.20)	**(5.51)**	**(2.50)**	**(2.64)**	**(4.72)**	**(4.97)**	**(1.97)**	**(2.17)**
Control variables:								
log(*avgDays*)	0.247***	0.248***	–0.032***	–0.032***	0.261***	0.261***	–0.029***	–0.029***
	(19.24)	(19.24)	(–6.98)	(–6.96)	(12.44)	(12.43)	(–4.00)	(–4.01)
log(*Coverage*)	0.093***	0.093***	0.094***	0.094***	0.084***	0.085***	0.089***	0.089***
	(8.31)	(8.30)	(22.78)	(22.73)	(4.65)	(4.66)	(13.26)	(13.27)
log($MktVal_{q-1}$)	–1.095***	–1.097***	–0.466***	–0.467***	–1.127***	–1.128***	–0.476***	–0.476***
	(–61.63)	(–61.63)	(–71.65)	(–71.66)	(–40.99)	(–41.00)	(–47.41)	(–47.41)
log(*MTB*)	0.065***	0.065***	0.010*	0.010*	0.061**	0.061**	–0.000	–0.000
	(4.07)	(4.05)	(1.67)	(1.65)	(2.38)	(2.38)	(–0.01)	(–0.01)
log(*Volume*)	0.805***	0.808***	0.397***	0.398***	0.814***	0.811***	0.393***	0.392***
	(22.80)	(22.82)	(33.03)	(33.04)	(14.98)	(14.97)	(20.45)	(20.44)
IndRet	–0.458***	–0.459***	–0.129***	–0.129***	–0.506***	–0.504***	–0.157***	–0.157***
	(–16.44)	(–16.45)	(–14.48)	(–14.50)	(–11.48)	(–11.46)	(–11.01)	(–10.99)
Firm fixed effect	Merger-peer	Merger-peer	Merger-peer	Merger-peer	Merger-peer	Merger-peer	Merger-peer	Merger-peer
Time fixed effect	Year	Year	Year	Year	Year	Year	Year	Year
Adjusted std. error	Merger-peer	Merger-peer	Merger-peer	Merger-peer	Merger-peer	Merger-peer	Merger-peer	Merger-peer
Adjusted R^2	14.28%	14.32%	20.76%	20.80%	15.95%	15.97%	22.02%	22.03%
# of observations	273,920	272,665	273,920	272,665	110,564	110,564	110,564	110,564

This table presents a robustness test of our main analyses in Table 4 in which we include fixed effects to control for the presence (absence) of other M&A delistings in the same industry in either the pre- or post-M&A delisting periods, using two indicator variables *PreMergerOverlap* and *PostMergerOverlap*. Specifically, if another peer firm stops disclosing financial reports because it is merged-and-delisted during the pre-merger (post-merger) period of [q-6, −q-1] ([q+2, q+7]), then *PreMergerOverlap* (*PostMergerOverlap*) is coded one for the merger-peer-quarter observation and the merger-peer's subsequent quarters during the pre-merger (post-merger) period; zero otherwise. Of the 136,149 (137,771) pre-merger (post-merger) firm-quarter observations for industry peer firms, 99,900 (100,541) observations have *PreMergerOverlap* = 1 (*PostMergerOverlap* = 1). The rest of the variables are the same as those used in our main analysis and are defined in the endnotes of Table 4. Standard errors are adjusted clustering by each merger-peer. Data are winsorized at the 1% and 99% levels. Significance levels are based upon two-tailed p-values; 10%, 5%, and 1% are indicated by *, **, and ***, respectively.