The Role of External Regulators in Mergers and Acquisitions: Evidence from SEC Comment Letters

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Abstract: This study examines the role of the Securities and Exchange Commission (SEC) in improving information transparency for mergers and acquisitions (M&As) involving publicly traded firms. Using hand-collected M&A comment letter data, we document that the SEC issues comment letters on M&A filings for 31 percent of the deals announced between 2005 and 2017. We find that the SEC is more likely to issue a comment letter when deal characteristics suggest greater risk to target firm shareholder welfare, target firms have weaker corporate governance, or target firms have weaker pre-transaction financial reporting quality. Further, we examine the real effects of SEC comment letters on deal outcomes and provide evidence that while the SEC comment letter process increases deal duration, it improves the likelihood of deal completion and increases the probability of positive deal price revision. We address concerns of endogeneity using entropy balancing, an Impact Threshold of a Confounding Variable (ITCV) analysis, and an instrumental variable approach. Overall, our paper suggests the SEC's comment letter review process protects M&A shareholders by improving information transparency.

Keywords: SEC; Information transparency; M&A; Shareholder welfare
JEL Codes: M41; G34; K22

1. Introduction

Information transparency is crucial to the efficiency and fairness of mergers and acquisitions (M&As). We investigate the role of the Securities and Exchange Commission (SEC), an external regulator, in improving information transparency in M&As. The SEC requires that firms involved in M&As comply with specific disclosure requirements to ensure that investors have sufficient information to properly evaluate the transaction.[1] If the SEC determines that an M&A filing does not fully comply with disclosure requirements, the reviewer will issue a comment letter to the filing firm and the firm must address these issues before completing the deal. In this study, we examine two research questions. First, what are the determinants of the SEC issuing comment letters in M&As? Second and more importantly, do SEC comment letters impact deal outcomes?

A growing literature provides evidence on the determinants and consequences of the SEC review process for periodic filings (e.g., Blackburne, 2014; Bozanic et al., 2017; Cassell et al., 2013; Heese et al., 2017; Johnston and Petacchi, 2017). We believe that M&As provide a unique setting to study the SEC review process for two reasons. First, existing literature documents severe information asymmetry between bidder firms and target firms as well as between managers and shareholders (e.g., DeAngelo, 1990; Dhaliwal et al., 2016; Faccio and Masulis, 2005). For example, it is well documented that target firms' managers may offer lower acquisition prices to acquirers in exchange for personal benefits, such as prestigious positions in the new companies or increased golden parachutes (e.g., Hartzell et al., 2004; Moeller, 2005). A target firm manager might therefore not fully disclose information about the transaction because target shareholders and potential investors could use the information to infer the true value of the target firm. Thus,

[1] We summarize the specific disclosure requirements, which vary across different types of deals, in Figure 1. We also describe the detailed disclosure requirements in Section 2.

firms involved in M&As can particularly benefit from monitoring by an external regulator. Second, most previous studies document the effect of comment letters on corporate disclosures, while we study the real consequences of comment letters in M&As, including deal completion, price revision, and deal duration.[2]

We construct our sample of domestic M&A transactions announced between January 1, 2005 and December 31, 2017 using the Thomson One Banker SDC database. We focus on transactions involving publicly traded firms because they must submit filings to the SEC. We identify deals receiving SEC comment letters using Audit Analytics. We then manually review each comment letter to ensure that the content is indeed merger-related, and fix various issues with the Audit Analytics dataset.[3] Our final sample contains 2,527 deals after imposing standard filters.

We find that comment letters occur quite frequently in M&As. The SEC issues comment letters for approximately 31 percent of the transactions in our sample. A comment letter contains 18.3 comments and is resolved in 27.5 days, on average. To understand the types of comments, we manually classify all of the comments into those related to financial information and those related to non-financial information. We find that 67.4 percent of letters contain financial comments and 88.5 percent of letters contain non-financial comments. Comments related to the fairness opinion and valuation, general compliance, and transaction background occur the most frequently in our sample.

Because the SEC selectively reviews M&A filings and "does not publicly disclose the criteria it uses to identify firms and filings for review" (SEC 2019), we first study the determinants

[2] Li and Liu (2017) examine the effect of the SEC review process on price formation in Initial Public Offerings (IPOs). They find that IPO issuers receiving comment letters from the SEC reduce their offer price.

[3] For example, Form S-4 acceleration requests filed by bidder firms are often mistakenly classified as comment letters, and the types of comment letters are sometimes misclassified (e.g., M&A comment letters tagged as Form 10-K comment letters).

of the SEC issuing a comment letter on an M&A filing.[4] The SEC is concerned with protecting shareholders, and we posit that the SEC is likely more concerned about the welfare of target shareholders than bidder shareholders because target shareholders give up control of their firms.[5] We therefore examine three categories of potential determinants: (i) deal characteristics associated with potential target shareholder welfare risk (henceforth "deal risk"), (ii) target firm corporate governance, and (iii) pre-transaction financial reporting quality of filing firms. First, we expect the probability of receiving a comment letter is higher when deal characteristics suggest higher target shareholder welfare risk. Second, the SEC may exert greater effort in protecting shareholders via comment letters when the target firm has weak corporate governance because, as discussed earlier, conflicts of interests associated with target managers can reduce information transparency in M&As. Finally, the SEC could be more likely to issue comment letters for deals where the firms involved have weaker financial reporting quality prior to the transaction.

We estimate Probit regressions where the dependent variable equals one when the SEC issues a comment letter for a transaction, and zero otherwise. Consistent with our predictions, we find that the probability of receiving a comment letter is positively associated with deal risk, and negatively associated with target firm corporate governance and pre-transaction financial reporting quality. The variables capturing deal risk and target firm corporate governance appear to be the strongest predictors of receiving an SEC comment letter. We find similar results using alternative comment letter measures, including the number of comments and the number of specific categories of comments.

[4] We contacted the SEC to better understand their review process, and our understanding is that the SEC conducts some level of review for all M&A transactions and fully reviews only some of them.

[5] A notable lawsuit involving target shareholder welfare is *Smith v. Van Gorkom* in 1985, in which the Delaware Supreme Court held that the target board of directors breached its duty of care by approving a transaction despite the fact that target shareholders received an offer price that was approximately 60% higher than the pre-merger stock price (Davidoff, 2006). However, to present a balanced analysis, we also examine whether bidder shareholder welfare is a determinant of SEC comment letter issuance and find little evidence. We discuss this analysis in Section 4.1.

Next, we examine deal outcomes. Our prediction for the effect of SEC review on information transparency in M&As in unclear *ex ante*. On one hand, previous studies document that information transparency can positively impact deal outcomes (e.g., DeAngelo, 1986, 1990). To the extent that SEC comment letters facilitate more transparent disclosures, we expect SEC comment letters will positively affect deal outcomes given the severe information asymmetry in M&As. On the other hand, it is also possible that the SEC reviews have little impact on M&A outcomes because firms themselves can also take measures to mitigate information asymmetry such as methods of payment (e.g., Hansen, 1987), certifications from third parties (e.g., DeAngelo, 1990), conference calls (e.g., Kimbrough and Louis, 2011), and shared auditors (e.g., Dhaliwal et al., 2016). Therefore, whether SEC reviews affect M&A outcomes is an empirical question.

Previous studies document that increased information transparency helps ensure that shareholders perceive the offer price to be fair and vote in favor of the deal (DeAngelo, 1986, 1990). We therefore examine whether the SEC review process positively affects deal completion through improved information transparency. We estimate Probit regressions of an indicator variable for deal completion on an indicator variable for the receipt of an SEC comment letter or on an indicator variable for the receipt of a specific category of comment from the SEC (e.g., financial information), controlling for deal and firm characteristics. We find that receipt of a comment letter is associated with a 4% increase in the probability of deal completion. Interestingly, we find that receipt of a comment related to financial issues is associated with a 7% increase in the probability of deal completion, while receipt of a comment related to non-financial issues is associated with only a 3% increase. In additional analysis, we report that the positive effect of comment letters on deal completion is concentrated in the subsample of deals that require target

shareholder voting, suggesting that improved information transparency helps convince shareholders to support the deal.

One could argue that the positive relation between the receipt of a comment letter and deal completion is explained by the SEC choosing to fully review deals with a higher likelihood of completion. To address this possibility, we spoke with multiple SEC staff members in the Office of Mergers and Acquisitions of the Division of Corporate Finance. They informed us that the SEC does not consider the likelihood of deal completion and assumes all deals will be completed when selecting which deals to review and in the review decision. We nevertheless empirically examine this possibility using merger arbitrage spread as a proxy for the ex-ante likelihood of deal completion. We do not find a significant difference in arbitrage spread between deals with comment letters and deals without comment letters, which is also inconsistent with the SEC considering deal completion when selecting which filings to review.[6]

We further examine whether SEC comment letters have a positive effect on offer price revisions via improved information transparency because existing literature documents that information asymmetry in M&As can lower the bidder's offer price (e.g., Officer, 2007; Officer et al., 2009). We find that the receipt of an SEC comment letter is associated with a 3.6% higher probability of a positive price revision from the initial public offer price to the final offer price. This increase is economically significant given that only 10% of deals in our sample experience positive price revisions.

Despite the positive effects of the SEC review process, the time spent by M&A firms to address comment letter issues could significantly increase the amount of time to complete deals. We therefore examine the effect of the SEC reviews on deal duration, measured as the number of

[6] We also explicitly control for arbitrage spread in the regression analysis and our deal completion results remain unchanged.

days between the deal announcement and the deal completion. We find that the receipt of an SEC comment letter increases deal duration by 21.1 days on average. This result suggests that although the comment letter process increases the likelihood of deal completion and positive price revision, it lengthens the amount of time to complete the deal.

We use three approaches to address the concern that confounding variables possibly drive both the receipt of comment letter and deal outcomes. First, we use entropy balancing to match the first and second covariate moments between our treatment group and a control group. We continue to observe significant results for all deal outcomes. Second, we compute the impact threshold of a confounding variable (hereafter ITCV) for all three deal outcome tests following Frank (2000). The ITCV test implies that our deal outcome results are unlikely attributable to correlated omitted variables. Third, we implement a two-stage least squares regression (2SLS) analysis based on prior research that economic agents become less effective when faced with distractions (e.g., Hirshleifer et al., 2009; DellaVigna and Pollet, 2009). Our instrumental variable captures time periods in which SEC reviewers are particularly busy because of other work tasks and thus might be less likely to issue comment letters on M&A deals.[7] The 2SLS results are largely consistent with our baseline OLS regression results. Collectively, the three approaches analyses help alleviate concerns about endogeneity.

Our paper contributes to multiple streams of literature. First, we build on the literature examining the determinants and consequences of SEC comment letters (e.g., Bozanic et al., 2017; Heese et al., 2017; Johnston and Petacchi, 2017). While the existing literature heavily focuses on SEC review of periodic filings and financial reporting outcomes, we are the first to examine SEC comment letters in M&As and our findings provide new evidence on real consequences of SEC

[7] See Section 5.4.3 for a more detailed discussion of our instrumental variable construction.

comment letters. Our findings also illustrate that when firms are unable to resolve the information symmetry between themselves and investors, the SEC can play an important role in improving information transparency.

Our study also contributes to the literature on M&As. Information asymmetry is a central question in M&As, and existing literature focuses on the actions taken by firms to reduce information asymmetry (e.g., DeAngelo, 1990; Eckbo et al., 1990; Hansen, 1987). We differ from prior studies in that we examine the role of the SEC, an external regulator, in improving information transparency in M&As. We provide new evidence that SEC comment letters significantly improve information transparency in M&As and impact deal outcomes. These findings deepen our understanding of the M&A process, especially the role of information asymmetry.

Our study has important policy implications for regulators by showing that the SEC intervention in M&As provides significant economic benefits to shareholders, albeit at the cost of delaying the M&A process. These findings contribute to the ongoing debate on the benefits and costs of regulatory intervention in M&As, which is part of a broader and long-standing debate on the necessity and economic consequences of disclosure regulations (Leuz and Wysocki, 2016), as well as the benefits and costs of regulatory interventions in the business world.

2. Institutional background

2.1. Shareholder approval in M&As

Corporate control transactions often require shareholder approval. Shareholder approval requirements and information disclosure requirements depend on the form of the transaction (i.e., merger vs. tender offer) and the method of payment (i.e., cash vs. stock). Negotiated mergers always require a target shareholder vote before the transaction can be completed, while deals

structured as tender offers do not require a target shareholder vote (Boone et al., 2018; Cain and Denis, 2013; Offenberg and Pirinsky, 2015). A bidder shareholder vote is typically *not* required, with the exception of a bidder intending to issue more than 20 percent of new shares to finance a deal (Cain and Denis, 2013; Liu, 2018; Li, Liu and Wu, 2018).[8] For transactions in which a target and/or a bidder shareholder vote is required, the SEC requires the firm to disclose all material information to its shareholders when issuing a proxy statement soliciting votes.

Traditionally, tender offers have been associated with hostile takeovers, in which a bidder effectively bypasses the target firm's board of directors and solicits shares directly from target shareholders. However, the rise of state-level and firm-level anti-takeover provisions in the late 1980s and early 1990s dramatically reduced hostile takeover attempts (Bertrand and Mullainathan, 2003; Liu and Mulherin, 2018; Schwert, 2000). Indeed, Offenberg and Pirinsky (2015) show that tender offers are as 'friendly' as mergers in more recent years and the main motivation for structuring a deal as a tender offer in the recent era is to take advantage of faster deal execution because of different voting and filing requirements for tender offers.

2.2. Filing and disclosure requirements in M&As

2.2.1. Filing and disclosure in mergers

As previously discussed, in negotiated mergers, target shareholders must always vote to approve the transaction, and bidder shareholders could be required to vote depending on the level of new stock issuance. In such cases, the firm soliciting votes must issue a proxy statement (DEFM14A under Schedule 14A) to its shareholders prior to the shareholder vote. Under the proxy rules, firms must provide shareholders 20 business days to process the information in the proxy

[8] Under the listing rules of the NYSE, AMEX, and NASDAQ, a public bidder must obtain approval from their shareholders if the new stock issued to target shareholders is in excess of 20 percent of the number of shares of common stock outstanding before the stock issuance.

statement before the vote takes place. Before distributing the definitive proxy statement to shareholders, SEC Rule 14d-6 requires the target firm to first file a preliminary proxy statement (PREM14A) with the SEC.

If the deal consideration consists of bidder shares, the Securities Act requires the bidder to register the new shares. Specifically, the bidder files a Securities Act registration statement (Form S-4) containing a prospectus for the securities it is offering to target shareholders in exchange for their shares. The bidder must file the securities registration statement as long as the consideration involves new shares, regardless of whether the issuance is above or below the 20 percent threshold for a bidder shareholder vote. However, if the new issuance is above 20 percent, proxy rules apply to the registration statement Form S-4 (i.e., the transaction requires a bidder shareholder vote). For transactions that require both target shareholder and bidder shareholder approval, the target and the bidder often prepare and file with the SEC a joint proxy statement soliciting votes from their respective shareholders. More information on required filings for mergers is available on the SEC website: https://www.sec.gov/rules/final/33-7760.htm.

2.2.2. Filing and Disclosure in Tender Offers

A tender offer does not require a proxy statement filing because target shareholders do not vote on the transaction. The most common tender offers are cash tender offers. The bidder commences a cash tender offer by delivering tender offer materials to target shareholders, including a request that they tender their shares. On the same day, the bidder must file a tender offer statement (SC-TO) with the SEC, which includes the materials sent to target shareholders and a tender offer schedule containing additional information. Under SEC Rule 14d-1, the offer must remain open for at least 20 business days; the bidder can then purchase the tendered shares if all conditions to the offer have been either satisfied or waived.

Once a bidder has initiated a tender offer by filing SC-TO, the target firm must file its response to the tender offer on a Schedule 14D-9 within 10 business days of the tender offer.[9] This response document must contain the target board of directors' recommendations and the reasons for their recommendations. The main purpose of the response is to provide target shareholders with the information necessary to make an informed decision regarding whether they should tender their shares.

A bidder could also use stock as consideration in tender offers, although empirical evidence suggests that bidders offer cash in most cases and rarely issue a significant amount of shares in tender offers.[10] If the bidder uses stock as its method of payment, then the bidder must file a security registration statement in addition to SC-TO. Further, similar to mergers, if the new share issuance is more than 20 percent of the common stock outstanding prior to the stock issuance, a bidder shareholder vote is required to approve the equity issuance. More information on required filings for tender offers is available on the SEC website: https://www.sec.gov/corpfin/cf-manual/topic-14.

2.2.3. Filing and Disclosure in Going-Private Transactions

In a going private transaction, a small group of investors seeks to acquire all publicly traded shares from their shareholders. Going private transactions can be structured as either mergers or tender offers, and the public shareholders usually receive cash as consideration. Incumbent management either seeks sole ownership or chooses to work with third-party financial sponsors in leveraged buyout deals. DeAngelo et al. (1984) state that managerial conflicts of interest in these going-private transactions are widely perceived as "unfair" to public shareholders. To address such

[9] See: https://www.sec.gov/Archives/edgar/data/802481/000119312506199094/dex996.htm.

[10] As discussed in Offenberg and Pirinsky (2015), bidders are less likely to initiate tender offers when the expected time to complete the deal is longer. The additional securities registration statement (Form S-4), related SEC review, and the process of obtaining bidder shareholder approval effectively eliminate the key benefit of a faster execution speed for tender offers.

conflicts of interest, the SEC adopted Rule 13e-3 in 1979, which requires extensive disclosures related to the purpose and fairness of going-private transactions in addition to regular merger/tender offer filings.[11]

2.3. The M&A Filing Review Process

The SEC website states, "The Division of Corporation Finance selectively reviews filings made under the Securities Act of 1933 and the Securities Exchange Act of 1934 to monitor and enhance compliance with the applicable disclosure and accounting requirements." The Division selectively reviews transactional filings including those related to IPOs, M&As, and proxy solicitations.[12]

The stated purpose of reviewing corporate filings is to "improve the disclosure or enhance its compliance with the applicable disclosure requirements" by providing the filing firm with comments if the filings do not fully comply with disclosure requirements. For example, if a target firm files a preliminary proxy statement (PREM14A) with the SEC before soliciting a shareholder vote, the SEC staff may review the filing and request supplemental information or additional disclosure by issuing a comment letter. In a response letter to the SEC staff, the firm addresses each comment and, when appropriate, amends its filing. The SEC and the firm can have multiple rounds of communication depending on how long it takes to resolve all of the comments. Once the review process is complete, the Division of Corporate Finance provides the firm with a letter to

[11] Schedule 13E-3 requires a firm to discuss the purpose of the transaction, any alternatives that the firm considered, and whether the transaction is fair to unaffiliated shareholders. The Schedule must also disclose whether and why any of its directors disagreed with the transaction or abstained from voting on the transaction and whether a majority of directors who are not firm employees approved the transaction (https://www.sec.gov/fast-answers/answersgoprivhtm.html).

[12] The SEC website further states: "To preserve the integrity of the selective review process, the Division does not publicly disclose the criteria it uses to identify firms and filings for review." In order to better understand the Division's selective review process, we corresponded with their employees via phone calls. Our understanding from these conversations is that the SEC performs some level of review for each M&A filing, and then selectively conducts full reviews for a number of filings.

confirm that its review of the filing is complete and the firm can distribute the definitive proxy statement (DEFM14A) to its shareholders.

After the Division of Corporate Finance completes a filing review, it posts both the comment letters and firm responses on the SEC's EDGAR website at least 20 days after the resolution of all issues. On one hand, investors have immediate access to the amended filings of the deal resulting from SEC comment letters as soon as the firm submits a filing amendment; on the other hand, investors do not know if such additional disclosure is due to comment letters until the SEC makes comment letter correspondence publicly available because firms also file amendments in M&As for reasons other than responding to a comment letter, such as updating deal relevant information.[13] We compare the posting date of SEC comment letters to the completion or withdrawal date for deals that have received comment letters. We find that over 80% of the comment letters are made publicly available after a deal is completed or withdrawn.[14]

Figure 1 summarizes the timeline of SEC filings and comment letters for M&A transactions based on the form of the merger and the method of payment. For transactions structured as cash mergers, the target firm first files a preliminary proxy statement (PREM14A), and the SEC reviews the filing. After resolving any comments provided by the SEC, the target firm distributes the definitive proxy statement prior to the shareholder vote. If a deal is structured as a tender offer, the bidder files SC-TO and the target responds by filing SC 14D9. Securities registration statement

[13] We manually reviewed 150 deals with filing amendments. Approximately 40% of these deals received SEC comment letters, while the remaining 60% did not receive SEC comment letters. We further notice that even within the deals that received comment letters, there are often multiple amendments associated with each deal and not all of the amendments are caused by SEC comment letters. These results suggest that it is difficult for investors to precisely infer whether filings amendments are in response to SEC comment letters given that comment letters are usually not made publicly available until after deal completion.

[14] More information on the review process is available at: https://www.sec.gov/divisions/corpfin/cffilingreview.htm.

(S-4) is required for deals involving bidder stock, and SC 13E3 is required for going-private transactions.

3. Data, sample selection, and summary statistics

3.1. Sample selection and distribution

To construct our sample of M&As, we begin with all M&A transactions announced between January 1, 2005 to December 31, 2017 in the Thomson One Banker SDC database. We start our sample period in 2005 because the SEC started making comment letter correspondence publicly available in August 2004. Panel A of Table 1 summarizes our sample selection process. Following prior literature, we impose the following filters: 1) the target firm is classified as 'Public'; 2) the deal is classified as 'Merger (stock or asset)', 'Acquisition of Assets', or 'Acquisition of Majority Interest'; 3) the deal value reported by SDC is at least $1 million; 4) the deal status is classified as either 'completed' or 'withdrawn'; and 5) the bidder is seeking to purchase 50 percent or more of the target firm's shares. These criteria yield a sample of 3,529 deals.

Next, we merge our list of target firms with securities pricing data from CRSP and SEC comment letter data from Audit Analytics.[15] The merged dataset has 2,647 observations. Finally, for each transaction, we manually verify whether merger documents were filed with the SEC. We identify 120 withdrawn deals where the bidder and target firms did not file merger documents with the SEC and exclude them from our analysis because they were not subject to the SEC review process. Our final sample contains 2,527 deals from 2005 to 2017.

[15] Audit Analytics organizes SEC comment letter data at the conversation level, where a conversation is defined as all rounds of exchange between the SEC and the firm for the transaction filing(s). Among other things, Audit Analytics provides the date of the first letter issued by the SEC, the date of the last letter issued by the SEC, and the name of the filings for which the SEC provides comments.

Panel B of Table 1 presents the distribution of M&A deals in our sample by year. We observe greater M&A activity from 2005 to 2007 than other years, which is consistent with prior studies that show an unprecedented leveraged buyout boom from the mid-2000s to 2007 (e.g., Kaplan and Stromberg, 2009; Officer et al., 2010).

3.2. Issue categories and descriptive statistics

To construct our sample of comment letters, we first identify deals where the SEC provides comments on transaction filings between the public merger announcement date and the deal completion/withdrawn date using Audit Analytics. We manually review each comment letter to ensure that the filing(s) on which the SEC staff comments is (are) indeed a merger-related filing(s). Our review revealed that Audit Analytics often incorrectly includes Form S-4 acceleration requests filed by bidder firms in its comment letter database. In addition, Audit Analytics sometimes misclassifies the type of comment letter (e.g., tagging an M&A comment letter as a Form 10-K comment letter). Thus, our review helps address various problems with the Audit Analytics database. Our final sample includes 1,238 comment letters issued to 772 deals.

For each comment letter, we hand collect the number of issues raised in the comment letter and the specific content of each issue. We classify the comment letter issues into two broad categories: deal/firm financial information and non-financial information. We further refine our categorization by creating three subgroups in the financial category and twelve subgroups in non-financial category.

Panel A of Table 2 lists all of the subcategories and the frequency with which these issues are raised in the comment letters. 65 percent of comment letters include issues in the 'general compliance' category. Some of these issues are simply about presentation or formality, such as requesting the firm make certain information more prominent, while others may result in additional

material disclosures, such as pointing out a missing summary term sheet or requesting managers explain steps to realize synergies. Among the more specific categories, the three most frequent categories relate to the background of the merger (raised in 49 percent of comment letters), fairness opinion and valuation (48 percent of comment letters), and reasons and recommendations for the merger (raised in 39 percent of comment letters). The other categories present in at least 20 percent of comment letters include company financial information, terms and conditions of the deal, tax consequences, interest of managers, and financing and payments. Less frequent categories include shareholder meeting and voting, risk factors, litigation and legal issues, solicitation, appraisal rights, and regulatory approval.

Panel B of Table 2 reports summary statistics on variables related to comment letters. Among the 2,527 sample M&As, about 31 percent of the transactions receive comment letters, 21 percent receive comment letters with issues related to financial information, and 27 percent receive comment letters with issues related to non-financial information. We further find that 14.7 percent of deals receive comment letters with issues related to the fairness opinion and valuation, and 14.1 percent of the deals receive comment letters with issues related to non-valuation financial information. On average, the number of issues per deal is 5.45 and the number of categories is 1.2.[16] Among the 772 deals that receive comment letters, the average number of calendar days to resolve all issues is 27.5 days.

Panel C of Table 2 reports summary statistics on deal and firm characteristics. Definitions of all variables are provided in Appendix A. All continuous variables are winsorized at the 1st and 99th percentiles. The mean (median) deal value is $2.1 (0.45) billion. Approximately 46 percent of

[16] For the full sample, we assign a value of zero to the number of issues and the number of issue categories if there is no comment letter issued for a deal. Conditional on deals receiving comment letters, the average number of issues is 18.4 and the average number of issue categories is 4.1 after winsorizing at the 1th and 99th percentiles.

the deals are classified as diversification transactions. About 17 percent of the deals are structured as tender offers and 31 percent of the deals are classified as going-private transactions. Bidders use their stock as consideration in about one third of the deals. Approximately 95 percent of the deals are classified as friendly deals, 58 percent of the deals have public bidders, and about 10 percent of the deals face competitive bidders. The high frequency of friendly deals is consistent with Betton et al. (2009) and Liu and Mulherin (2018), who report that hostile takeovers and toeholds decline dramatically beginning in the 1990s. Eighty-eight percent of deals are completed, and 12 percent are withdrawn. Consistent with prior research such as Boone and Mulherin (2007) and Andrade et al. (2001), we find that on average, target firms receive a substantial offer premium of 32%. Overall, these summary statistics show that deal characteristics in our data mirror prior research on publicly traded targets.[17]

3.3. Additional information disclosure after receiving SEC comment letters

Appendix C provides representative examples of three major categories of merger filing comments listed in Panel A of Table 2 and the filing firm's responses to resolve the issues. We first provide an example of a merger background issue. In the comment letter, the SEC requested additional information on "strategic alternatives" discussed by the firm in its proxy statement. In response to the comment letter, the firm revised its disclosure by providing additional information in the amended proxy statement. The second example relates to a fairness opinion issue, where the SEC asked the firm to further discuss the selection criteria used in its analysis of selected comparable public firms. In response, the firm enhanced its discussion of the criteria in an amendment to the proxy statement. The last example illustrates an issue related to the reasons and recommendations category. The SEC questioned one of the reasons for the merger that the firm

[17] Appendix B provides a correlation matrix of the variables.

provided in its proxy statement. The firm elaborated on the reason in its response to the SEC and also included the revised disclosure in its amended proxy statement. These examples suggest that firms generally comply with the SEC's requests and make revised disclosures publicly available to investors through filing amendments that include additional information requested by the SEC comment letters.

To further illustrate what type of information can be disclosed through the review process, in Appendix D, we compare disclosures before and after an SEC comment letter using the fairness opinion example from Appendix C. We first provide the company's original disclosure on comparable company analysis from the preliminary proxy statement. Liu (2019) shows that the public company multiple analysis is the most commonly used valuation method in M&As. In the original filing, the company disclosed the range of multiples based on some comparable companies, but did not provide a discussion of whether or why certain comparable companies are excluded from the analysis. In the SEC comment letter issued to the firm, the SEC requested additional information on the selection criteria. In response to the SEC comment letter, the company filed an amendment to the preliminary proxy statement. In the amendment, the company disclosed that four out of the nine comparable companies were not used in the analysis because the investment bank determined that any comparable company ratios less than zero or higher than twenty were not meaningful. The company also disclosed the multiples for each of the remaining five comparable companies to justify the range used in the analysis. In this example, although the valuation range remains the same after the comment letter, the disclosure transparency of valuation analysis has significantly improved in the additional filing amendment. The revised disclosures help address investors' potential concerns of the investment bank cherry picking the comparable companies in their valuation analysis.

4. Determinants of SEC comment letters

4.1. Determinants of receiving a comment letter in M&As

In this section, we examine the determinants of the SEC issuing a comment letter in M&As using multivariate Probit regressions. Our Probit model is specified as follows:

$$\Pr(Cl) = f(deal\ risk, target\ firm\ corporate\ governance,\ past\ disclosure\ quality,\ controls) \quad (1)$$

where the dependent variable, comment letter (*Cl)*, is an indicator variable equal to one if the SEC issues a comment letter on the transaction, and zero otherwise. Given that the main purpose of the SEC review process is to protect investors and reduce information asymmetry, we conjecture that the probability of receiving an SEC comment letter is a function of: (i) deal characteristics indicative of potential target shareholder welfare risk ("deal risk"), (ii) target firm corporate governance, and (iii) the historical disclosure quality of bidder and target firms.

To capture deal characteristics indicative of potential target shareholder welfare risk (i.e., the price offered to target shareholders is more likely to be 'unfair'), we use deal complexity, a 'going-private' indicator variable, and the deal premium. The SEC could be more likely to issue comment letters for more complex deals to ensure that shareholders are able to process the information. We use two proxies for deal complexity: deal size and an indicator variable for whether the bidder firm and the target firm are in different industries (based on the Fama-French 48 industry classifications). We choose these proxies because acquisitions of larger targets and cross-industry acquisitions tend to be more complex (e.g., Bhagwat et al., 2016; Grinstein and Hribar, 2004). As discussed in the institutional background section, the SEC is concerned about shareholders being treated unfairly in going-private transactions because of high managerial conflicts of interest. We also anticipate that the SEC is more likely to issue a comment letter for deals with low premiums because the offer price might not reflect the fair value of target shares.

We include a 'stock payment' indicator variable as an additional determinant of receiving comment letters. In deals with stock consideration, valuation becomes more complex and the fluctuation in the bidders' stock prices creates more uncertainty for target shareholders. Furthermore, prior studies find that stock consideration is more likely if information asymmetry between the target and the bidder is high (e.g., Brown and Ryngaert, 1991; Faccio and Masulis, 2005; Hansen, 1987; Officer, 2004).

As discussed in the introduction, it is well documented that agency problems exist with target managers, which can distort their incentives and discourage information disclosure during the M&A process. Therefore, we anticipate that the SEC is more likely to protect target shareholders if the target firm has weak corporate governance and/or powerful management. We follow the literature and construct four variables to capture governance and management power: board size, director independence, officer and director ownership, and an indicator variable for firms with dual-class shares. First, prior studies find that firms with larger boards have weaker governance because larger boards face greater communication and free-riding problems and are therefore less able to control management (e.g., Jensen 1993; Yermack, 1996). Second, prior studies also suggest that firms with a higher percentage of independent directors have better governance (e.g., Armstrong et al., 2014; Byrd and Hickman, 1992; Core et al., 1999). Third, prior literature documents a positive association between insider ownership and management entrenchment and exacerbate managers' consumption of private benefits (e.g. Fama and Jensen, 1983; Morck et al., 1988).[18] Finally, dual class structures can empower management to extract private benefits at the expense of minority shareholders due to the separation of voting and cash

[18] Alternatively, high insider ownership could suggest that management interest is more aligned with shareholder interests because it reduces agency conflicts that result from the separation of ownership and control (e.g., Jensen and Meckling, 1976). Therefore, our tests can also provide evidence on how officer/director ownership affects corporate governance and in turn the SEC's decision to fully review M&A filings.

flow rights (Masulis et al., 2009).[19] We obtain information on board size and independent directors from BoardEx, and we construct the insider ownership and dual-class ownership measures using information from Institutional Shareholder Services (ISS) and ExecuComp. While the BoardEx coverage is relatively complete, ISS and ExecuComp cover less than 40% of our target firms because both include only S&P 1500 firms. For the target firms not covered by these datasets, we manually collect the governance variables from the most recent annual proxy statement (DEF 14A) prior to the merger announcement.

Finally, because prior studies find that financial reporting quality affects the likelihood of receiving comment letters (e.g., Cassell et al., 2013; Johnston and Petacchi, 2017), we use two indicator variables to capture past disclosure quality for the target/bidder: 1) An indicator variable equal to one if the firm receives at least one comment letter in the previous three years before the merger and zero otherwise; 2) An indicator variable equal to one if the firm has had a restatement in the previous three years before the merger and zero otherwise.

We include standard deal characteristics in the Probit regression as additional control variables, including a tender offer indicator variable, a friendly deal indicator variable, and an indicator for whether the bidder firm is a public firm. We also include industry and year fixed effects in all specifications to control for potential industry factors and regulatory changes during our sample period.[20]

Panel A of Table 3 reports the Probit regression results. We report marginal effects rather than coefficient estimates to facilitate the interpretation of economic significance.[21] In Column (1),

[19] Grossman and Hart (1988) predict that dual-class stock can perpetuate the control of those who receive private benefits. Masulis, Wang and Xie (2009) find that the divergence between insider voting and cash flow rights in dual-class companies significantly increases managerial extraction of private benefits of control.
[20] Our results are robust to using a linear probability model instead of a Probit model for this analysis.
[21] For indicator variables, the marginal effect represents the change in the probability of receiving a comment letter associated with moving the indicator from zero to one. For continuous variables, the marginal effect reflects the

we report the results of regressing our comment letter indicator variable on our proxies for deal risk. Column (2) reports the results of regressing our comment letter indicator variable on our proxies for target firm governance, and Column (3) reports the results of regressing our comment letter indicator variable on our proxies for past financial reporting quality. Column (4) reports results of regressing our comment letter indicator variable on all deal characteristics in the same regression.

We focus our discussion on the full model in Panel A Column (4). When examining the deal risk proxies, we find strong evidence that stock deals and going-private transactions are significantly more likely to receive comment letters. Specifically, Column (4) shows that the probability of receiving a comment letter increases by 17 percent for going-private transactions, and by 24 percent for stock deals. Given that the unconditional probability of receiving a comment letter is 31 percent, the magnitude of these coefficients is economically significant. Consistent with our expectation, the deal premium is significantly negatively related to the likelihood of getting a comment letter in Columns (4). Regarding target firm corporate governance, we find that insider ownership and dual class indicator strongly predict the likelihood of receiving a comment letter, indicating that the SEC is particularly concerned about protecting shareholders when the target firm has weak internal corporate governance. The signs of the coefficients on the percentage of independent directors and board size in Column (4) are consistent with the other two governance measures, but they are statistically insignificant. Compared to the deal risk and target firm corporate governance determinants, evidence on the effect of past financial reporting quality on the likelihood of receiving a comment letter is weaker. When examining the effects of pre-transaction disclosure quality, only target firm comment letter history is positively associated with

average change in the probability of receiving a comment letter associated with one-unit increase in the independent variable.

the probability of receiving a comment letter.

Among our control variables, we find that tender offers are significantly more likely to receive comment letters compared to mergers. As discussed in the institutional background section, both targets and bidders must submit filings in tender offers while the number of required filings is usually lower for merger deals, which could explain the higher probability of receiving a comment letter.

To present a balanced analysis, we also examine if the SEC more closely scrutinizes transactions where bidder shareholder welfare is at greater risk. We include the 5-day cumulative market-adjusted bidder announcement return as an additional comment letter determinant. If the SEC is motivated to protect bidder shareholders, we predict that the SEC is more likely to issue a comment letter when the bidder announcement return is lower. In untabulated results, the coefficient on bidder announcement return is negative but insignificant. Therefore, we do not find a significant relation between SEC comment letter issuance and bidder shareholder value, consistent with our expectation that the SEC is more concerned with protecting target shareholder welfare.

We further investigate the determinants of the number of comment letter issues and the number of comment letter categories in Panel B of Table 3. The results are generally similar to those reported in Panel A. Taken together, we interpret these results as consistent with our expectation that deal risk and target firm corporate governance strongly predict the likelihood of the SEC issuing a comment letter, and we also find some evidence that pre-transaction financial reporting quality affects the likelihood of receiving an SEC comment letter.

4.2. Length of the SEC comment letter process

We next analyze how deal and firm characteristics influence the length of the SEC comment letter process. We perform regression analysis on the sub-sample of 772 deals that receive SEC comment letters. Our dependent variable is the duration of the comment letter process, calculated as the natural logarithm of one plus the number of calendar days between the first SEC comment letter date and the last SEC comment letter date for a deal. The independent variables include our proxies for deal risk, target shareholder welfare, past disclosure quality, and our control variables.

Table 4 reports our OLS results. Similar to Table 3, Columns (1), (2), and (3) include independent variables that capture deal risk, target firm corporate governance, and past financial reporting quality, respectively. Column (4) includes all independent variables. The full model in Column (4) shows that the duration of the comment letter process is significantly greater for stock deals and deals where target firm have dual class share structures, indicating that the SEC devotes more time and resources to deals with potential high valuation uncertainty and information asymmetry. Regarding control variables, the coefficient on *Tender* is significantly negative, suggesting it takes less time to resolve comment letters issued in tender offers. This finding is consistent with the timing advantage of tender offers documented in prior research (Offenberg and Pirinsky, 2015). The results also provide empirical support for the anecdotal evidence that firms sometimes choose tender offers over mergers to avoid the lengthy SEC review process for merger deals (Latham & Watkins, 2015).

5. Impact of comment letters on deal outcomes

Thus far, we have documented factors that affect the likelihood of receiving comment letters from the SEC. Next, we investigate whether comment letters affect the following deal outcomes: the likelihood of deal completion, the likelihood of having a positive price revision after

the announcement, and deal duration (i.e., the number of days from announcement to completion). As discussed in the introduction, our predictions for the effect of the SEC review process on deal outcomes is unclear *ex ante*. If the SEC improves information transparency in M&As, we expect the SEC review process will have a positive effect on deal outcomes. However, we might not observe an effect of the SEC review process on deal outcomes if firms themselves take measures to mitigate information asymmetry.

5.1. Comment letters and deal completion

5.1.1. The relation between comment letters and deal completion

In this section, we investigate whether the receipt and content of an SEC comment letter impacts the likelihood of deal completion. We estimate a Probit model where the dependent variable is an indicator variable equal to one for completed deals and zero for withdrawn deals. Our independent variable of interest is either an indicator variable for the receipt of a comment letter, an indicator variable for the receipt of a comment related to financial issues, an indicator variable for the receipt of a comment related to non-financial issues, or the number of comment letter issues depending on the specification.

Table 5 presents our results for the effects of comment letters on the probability of deal completion. The independent variable in Column (1) is an indicator variable for the receipt of an SEC comment letter (*Cl*). We find that receiving a comment letter significantly increases the likelihood of deal completion. In Columns (2) and (3), we separately examine comment letters containing financial issues and those containing non-financial issues by including an indicator variable for financial comment letter issues (*Cl_fin*) and an indicator variable for non-financial comment letter issues (*Cl_non_fin*), respectively.[22] The significant positive coefficients on both

[22] We do not include these two variables in the same regression because of potential multicollinearity given the high correlation between financial issues and non-financial issues (ρ=0.75).

Cl_fin and *Cl_non_fin* indicate that receiving comments related to financial and non-financial information about the deal increases the probability of deal completion. However, the receipt of a financial related comment is associated with a seven percent higher probability of deal completion, while the receipt of a non-financial related comment is associated with a three percent higher probability of deal completion. These results suggest that SEC comments requiring greater disclosure of financial information more effectively facilitate deal completion. In Column (4), we examine whether the number of issues in an SEC comment letter (*Cl_issue*) also influences the probability of deal completion. The coefficient on *Cl_issue* is positive and significant, suggesting that deals are more likely to be completed when there is a greater improvement in information transparency as a result of SEC comment letters. Our results collectively support the arguments in DeAngelo (1986, 1990) that more transparent financial information helps ensure that shareholders perceive the offer price as fair and vote in favor of the deal. [23]

Regarding control variables, we find that going-private transactions are less likely to be completed, and tender offers and friendly deals are more likely to be completed. These findings are consistent with prior studies examining deal completion (e.g., Bates and Becher, 2017; Chen et al., 2007; Masulis et al., 2009; Schwert, 2000). Overall, Table 5 provides convincing evidence that the SEC comment letter process helps mitigate information asymmetry in M&A deals and improves the likelihood of deal completion.

We further examine a specific channel through which the comment letter process affects deal completion. Because M&As often require voting by target shareholders, the reduced information uncertainty associated with SEC comment letters could convince target shareholders

[23] Several prior studies argue that the fairness opinion valuations produced by investment banks are biased because of potential conflicts of interest (e.g., Bebchuk and Kahan, 1989; Davidoff, 2006; Kisgen et al., 2009). Our results suggest that the SEC's review of fairness opinion valuations leads to more disclosure on the valuation analysis, which increases shareholder confidence on the underlying valuation analysis produced by investment banks.

to vote in favor of the deal. We therefore investigate whether the effect of SEC comment letters on deal completion is more pronounced when shareholder voting is required. Specifically, because mergers require target shareholder voting and tender offers do not, we estimate our deal completion model separately for mergers and tender offers. We expect the results to be stronger in the merger subsample.

The last two columns in Table 5 report the results of this analysis; Column (5) presents the results for mergers and Column (6) presents the results for tender offers. We observe a significant and positive coefficient on *Cl* in Column (5) and an insignificant coefficient on *Cl* in Column (6), consistent with our expectation that SEC comment letters are more likely to affect deal completion for transactions with shareholder voting requirements. These results provide additional evidence on how the SEC comment letter process improves information transparency and facilitates deal completion.

5.1.2. Addressing the reverse causality concern

One concern with our results on deal completion is reverse causality. Specifically, the SEC might consider the likelihood of deal completion when selecting which transactions to review, and intentionally choose to review deals that are more likely to be completed. We attempt to address this concern in multiple ways. First, we directly contacted SEC staff members in the Office of Mergers and Acquisitions of the Division of Corporate Finance. We explicitly asked them whether they consider the likelihood of deal completion during their review process, and they informed us that they do not consider the likelihood of deal failure in their review decision.[24]

[24] The SEC staff further communicated to us that the review process is not driven by the merits of a deal and that deal completion likelihood is not one of the factors they consider. In fact, they assume every deal will be completed successfully when merger documents are filed with the SEC.

Second, we empirically test whether firms receiving comment letters have a higher ex ante likelihood of deal completion. A commonly used measure of ex-ante likelihood of deal completion is merger arbitrage spread, which captures the profit merger arbitragers realize only if the deal is successfully completed (e.g., Mitchell and Pulvino, 2001; Mitchell, Pulvino, and Stafford, 2004). Merger arbitrage spread is the difference between the promised consideration offered by the bidder and the target firm stock price *after* the merger is publicly announced, and a larger arbitrage spread implies a lower probability of deal completion.

We carefully measure merger arbitrage using different approaches for cash mergers and stock mergers. For cash mergers, merger arbitragers simply buy the target firm's stock and hold the stock until the merger closes. We therefore measure merger arbitrage spread in cash deals as the difference between the cash offer price and the target stock price two days after the transaction is announced, scaled by the target stock price. For stock deals in which the consideration involves a fixed number of the bidder shares, merger arbitragers sell short a fixed number of bidder shares for each target share they purchase based on the exchange ratio specified in the merger agreement. Merger arbitrage spread for such stock deals is thus calculated as the difference between the fixed exchange ratio multiplied by bidder stock price and target stock price two days after the merger is announced, scaled by the target stock price. For deals in which the bidder allows target shareholders to receive either a cash payment or a fixed number of bidder shares, we use the same method as the cash deals because arbitragers can elect to receive cash as payment. We read through merger filings to manually collect the fixed exchange ratio and determine whether the bidder offers target shareholders the option to choose between cash and bidder shares.[25]

[25] Standard dataset such as SDC does not provide complete information on the exchange ratio and whether target shareholders are offered to choose between cash and stock. We also note that in some cases, the consideration involves both a cash component and a fixed number of shares. Target shareholders do not have an option to choose between cash and stock. For those deals, merger arbitrage spread is the cash component plus the fixed exchange ratio multiplied by bidder stock price subtract the target stock price, scaled by the target stock price.

If the SEC indeed chooses to review and issue comments on deals with a high ex-ante probability of deal completion, then we expect to find a significantly smaller arbitrage spread for deals with comment letters than for deals without comment letters. Panel A of Table 6 shows that the average arbitrage spread is 3.9% for deals receiving comment letters, similar to the 3.3% for deals not receiving comment letters. The t-test further indicates that the difference in merger arbitrage spread between these two groups is not significantly different from zero (t-stat = 0.83). This result is inconsistent with the SEC selectively reviewing deals with a higher ex-ante likelihood of completion.

Next, we directly control for arbitrage spread in our regression analysis. While the spread is normally positive because the target stock price upon announcement is usually below the bidder's offer price, the spread can also be negative in some cases. Negative spreads indicate that arbitragers anticipate that the bidder will offer a higher price (Officer, 2007; Jindra and Walkling, 2004; Hsieh and Walkling, 2005), causing the price of the target stock at announcement to be higher than the bidder's offer price. For completeness, we follow the literature and create an indicator variable, *Neg_spread*, for deals with negative spreads.

We report the regression results controlling for arbitrage spreads in Panel B of Table 6. In Column (1), we first re-estimate our Probit model of SEC comment letter receipt with *Merger_spread* and *Neg_spread* as additional control variables. The coefficients on both variables are insignificant. These results are consistent with the univariate evidence in Panel A of Table 6, suggesting that merger spread is not significantly associated with the likelihood of receiving a comment letter from the SEC. In Column (2) of Panel B, we present the deal completion results after explicitly controlling for *Merger_spread* and *Neg_spread* for the full sample. Our independent variable of interest, *Cl*, remains significantly positive. In addition, the coefficient on

Merger_spread is negative and significant at the 1% level, indicating that merger spread indeed captures the probability of deal completion. The coefficient on *Neg_spread* is significantly negative, suggesting that a deal is less likely to be completed ex post when merger arbitragers anticipates a higher bidder offer price. In Column (3) of Panel B, we re-estimate the model in Column (2) for merger deals only. We continue to observe a positive and significant coefficient on *Cl*, suggesting that comment letters help to facilitate deal completion. In untabulated analysis, we also estimate the model for the sub-sample of tender offers and do not observe a significant coefficient on *Cl*, which is consistent with our main results in Table 5. Overall, the results in Table 6 and our conversations with the SEC staff members provide evidence that our deal completion results are unlikely to be attributable to reverse causality.

5.2. Impact of comment letters on offer price revision

In this section, we investigate whether receiving a comment letter has value implications for target shareholders. Panel A of Table 7 reports the results of Probit regressions in which the dependent variable, *Pos_revision*, is an indicator variable equal to one if the final public offer price is higher than the initial public offer price (i.e., the offer price is positively revised), and zero otherwise. In Column (1), we find that receiving a comment letter is significantly positively associated with a positive price revision at the 1 percent level. In Columns (2) and (3), we investigate the effects of comment letters with financial issues and comment letters with non-financial issues separately. We find that both financial and non-financial related comment letter issues positively affect price revisions. As discussed earlier, comments related to financial information, such as the fairness opinion valuation, focus more on clarifying the valuation analysis thus ensuring the fairness of the price, while comments related to non-financial information, such as details about the negotiation process and other strategic alternatives considered, often result in

disclosing new information. In Column (4), we find that the number of issues raised in the comment letter process is also significantly positively associated with positive price revisions. These results suggest that additional information disclosure resulting from the SEC comment letter process reduces information asymmetry.

Regarding control variables, we find that going-private transactions are more likely to experience positive price revisions. Not surprisingly, deals with lower initial premiums and multiple public bidders are more likely to have positive price revisions. Consistent with Bates and Becher (2017), we find that tender offers are more likely to have positive price revisions and friendly deals are less likely to have positive price revisions.

Next, we explore two mechanisms through which the SEC comment letter process could impact price revisions in Panel B of Table 7. Specifically, we examine two groups of investors who can effectively utilize the additional public information disclosed due to SEC comment letter process. We first examine institutional shareholders of the target firm because of their well-documented monitoring role.[26] Not only are these sophisticated investors able to utilize information disclosed in M&A filings, but they are also more likely to have access to managers and the ability to pressure managers to revise deal prices. In contrast, retail investors are less likely to have either the knowledge or the resources to pressure target managers to negotiate a higher price. We then examine other potential bidders because the new information revealed through SEC comment letters could either attract new bidders or provide more information to existing bidders, thus facilitating competition among these bidders. Therefore, we predict that the effects of SEC comment letters on positive price revision are concentrated in sub-samples where: 1) institutional ownership is high, and 2) there are multiple bidders.

[26] A large literature has documented that institutional investors are active in improving corporate governance and addressing agency problems. See surveys by Gillan and Starks (2003) and Yermack (2010).

We report results for these two cross-sectional tests in Panel B of Table 7, which include the interaction terms of the two variables with a comment letter indicator variable, respectively. Because we already control for multiple bidders in our model, we further include the first-degree term of institutional ownership in these two models for completeness. Specifically, in Column (1), we interact *Cl* with *High_IO* in the price revision model. *High_IO* is an indicator variable for deals in the top tercile of target firm institutional ownership prior to the deal announcement. We observe a positive and marginally significant interaction between *Cl* and *High_IO*, suggesting that positive price revisions in response to comment letters are more likely when target institutional ownership is high. In Column (2), we interact *Cl* with *Multiple_bidder*. We observe a positive and significant coefficient on the interaction between *Cl* and *Multiple_bidder*, suggesting that the effects of SEC comment letters on positive price revisions are more pronounced when there is more than one bidder competing for the target firm.

5.3. Impact of comment letters on deal duration

Although we find evidence that SEC comment letters benefit the M&A process, the comment letter process can potentially impose costs on M&A firms by causing a significantly longer deal duration. In this section, we examine the effect of the SEC comment letter process on deal duration. We estimate an OLS model where the dependent variable is deal duration, defined as the natural logarithm of one plus the number of calendar days between the deal announcement and deal completion. Table 8 reports the regression results. In Column (1), our independent variable of interest is the comment letter indicator, *Cl*. As expected, we find that receiving a comment letter significantly increases deal duration. The coefficient on *Cl* indicates that receipt of a comment letter increases the length of deal duration by approximately 18.8%, or 21.1 days.[27]

[27] We multiply 18.8% by one plus the average number of days to complete a deal for the sub-sample of deals without comment letters included in this regression to interpret the magnitude in terms of the number of days.

The effect is economically significant given that the average time to complete a deal is 131 days for our sample firms. In Columns (2) and (3), we examine financial and non-financial comment letters separately. The coefficients on C*l_fin* and *Cl_non_fin* are similar in terms of economic magnitude and statistical significance, suggesting that comments related to both financial issues and non-financial issues increase deal duration. In addition, we test whether the number of comment letter issues affects deal duration in Column (4). The significantly positive coefficient on *Cl_issue* suggests that comment letters with more issues cause significantly longer delays in the M&A process.

We also explore cross-sectional variation in the effect of the SEC comment letter process on deal duration. Because Table 4 suggests that firms are able to resolve tender offer comment letters in a timelier manner than merger comment letters, we predict that the delay in deal completion caused by SEC comment letters is longer for mergers than for tender offers. We estimate the deal duration model separately for mergers and tender offers in Column (5) and (6) in Table 8; Column (5) presents the results for mergers and Column (6) presents the results for tender offers. We find that a comment letter delays merger deal completion by 20.1%, or 25.6 days, while a comment letter delays tender offer deal completion by 16.1%, or 10 days. The results suggest that the delay associated with comment letters for merger deals is more than twice the delay associated with comment letters for tender offers. These results are consistent with our Table 4 results and imply that the potential costs of delaying deal completion as a result of comment letters are greater for merger deals.[28]

[28] We communicate with the SEC staff regarding the delay difference between mergers and tender offers. The SEC staff informed us that they try to resolve tender offer more quickly, normally in 10 days. This is because as discussed in Section 2.2.2, tender offers must remain open for at least 20 business days. Resolving the comment letter process in 10 days leaves investors at least another 10 days to decide whether or not to tender their shares.

Overall, the results from Table 5 to Table 8 suggest there is a trade-off between the costs and benefits of the SEC review process. On the one hand, SEC comment letters mitigate information uncertainty in M&A deals for investors, as evidenced by the higher likelihood of deal completion and positive price revision. On the other hand, the lengthy comment letter process could also significantly delay deal completion.

5.4. Robustness Tests

We acknowledge that deals receiving SEC comment letters might be systematically different than deals not receiving comment letters. In other words, deal-specific or firm-specific characteristics could explain the deal completion, price revision, and deal duration results we observe. In this subsection, we address this potential concern using three approaches: entropy balancing, an impact threshold of a confounding variable analysis, and an instrumental variable analysis.

5.4.1. Entropy balancing analysis

We first use entropy balancing, a matching technique developed in Hainmueller (2012), to address potential differences in observable characteristics between deals with comment letters and deals without comment letters. Although the propensity score matching (PSM) approach is commonly used in accounting and financial research (Shipman et al., 2017), more recent literature highlights that it is subject to several caveats.[29] First, propensity score matching often selects random matches and fails to meet the covariate balance condition (King and Nielsen, 2016). Second, the nearest neighbor method disregards a subset of control observations, which can lead to loss of information or lack of power (Hainmueller, 2012).

[29] In untabulated tests, we use propensity score matching to match each comment letter deal with a deal without comment letter but with similar deal and firm characteristics. We observe similar results when applying propensity score matching. Therefore, all of our deal outcome results are also robust to propensity score matching.

Unlike propensity score matching, entropy balancing almost always achieves a high covariate balance. It appropriately reweights each control observation through an iterative process until the first, second, and even higher moments of the control group equal those of the treated group. To implement entropy balancing, we select the same matching variables used in propensity score matching, which include various firm and deal characteristics. Next, we match the mean and variance of deals receiving comment letters (treated sample) with deals not receiving comment letters (control sample) using the entropy balancing technique provided in Hainmueller and Xu (2013). After multiple iterations, each control observation is assigned a weight and we use these weights to estimate the regressions.

We report our deal outcome results using entropy balancing in Table 9. Each regression consists of treated deals and control deals based on their weights. We examine deal completion, positive price revision, and deal duration in Columns (1) to (3) respectively. We continue to observe positive and significant coefficients on *Cl* across all three tests and the magnitudes of the coefficients are comparable to those observed in our main tests. The results in Table 9 thus provide further evidence that SEC comment letters facilitate deal completion and increase the likelihood of positive price revision, albeit at the cost of increasing deal duration.

5.4.2. The Impact Threshold of a Confounding Variable

While the entropy balancing approach efficiently matches on observable characteristics, it does not necessarily remove bias arising from unobservable characteristics. Therefore, we compute the Impact Threshold of a Confounding Variable (hereafter ITCV) following Frank (2000) to empirically assess the robustness of our deal outcome results to omitted correlated variables. This method has been used in recent accounting studies (e.g., Badertscher et al., 2013; Feng et al., 2009; Fu et al., 2012). The bias arising from an omitted correlated variable depends on the correlation

between the omitted variable and: (1) the dependent variable, and (2) the independent variable of interest. Frank (2000) computes the ITCV as the lowest product of the two correlations that could cause the coefficient of interest to be statistically insignificant. A larger ITCV indicates that the results are more robust to omitted correlated variables.

We report the ITCV for each of our three deal outcome tests and the impact of each control variable as a benchmark in Table 10. In Columns (1) and (2), we report the ITCV for our deal completion test in the bottom row. The ITCV of 0.015 implies that the correlation between *Cl* and the confounding variable and the correlation between *Completion* and the confounding variable must each be approximately 0.123 to overturn the deal completion results. The magnitude of the ITCV suggests that our deal completion results are unlikely explained by a correlated omitted variable. To further assess the severity of the endogeneity problem, we report Impact and $\text{Impact}_{\text{raw}}$ for each of our control variables in Columns (1) and (2), respectively, to serve as a benchmark for ITCV. Impact ($\text{Impact}_{\text{raw}}$) is computed as the product of the partial (raw) correlation between *Cl* and the control variable and the partial (raw) correlation between *Completion* and the control variable. In both Columns (1) and (2), *Tender* has the greatest value of Impact among all control variables. However, the impact (raw impact) of *Tender* is only about 0.013 (0.005) and is smaller than the ITCV of 0.015. Furthermore, our completion results remain highly significant after we remove tender offers from the full sample (see Column 5 of Table 5). The results suggest that a confounding variable must have higher correlations with *Cl* and *Completion* than any of the existing control variables in order to overturn the deal completion results.

We also perform similar analyses for our price revision and deal duration tests and tabulate the results in Table 10 Columns (3) to (6). For the price revision analysis, the ITCV is approximately 0.025, suggesting that the correlation between *Cl* and the confounding variable and

the correlation between *Pos_revision* and the confounding variable needs to be at least 0.159 to cause an insignificant relationship between *Cl* and *Pos_revision*. This ITCV is greater than the Impact or $Impact_{raw}$ for all of the control variables in the price revision model. For the deal duration analysis, the ITCV of 0.09 implies that the correlation between *Cl* and the confounding variable and the correlation between *Deal_duration* and the confounding variable needs to be at least 0.30 to overturn the deal duration results. The ITCV is also greater than the Impact or $Impact_{raw}$ for all of the control variables in the deal duration model. Overall, the evidence from in Table 10 supports the argument that our deal outcome results are unlikely driven by omitted correlated variables.

5.4.3. The Instrumental Variable (IV) Analysis

The ITCV analysis provides strong evidence that our deal outcome results are unlikely attributable to omitted correlated variables. We nevertheless make a further attempt to address the concern of by potential correlated omitted variables by performing an instrumental variable (IV) analysis.

A valid instrumental variable must be correlated with the endogenous regressor (i.e., the likelihood of receiving a comment letter), but uncorrelated with the error term in the structural equation. In our setting, a valid instrumental variable should affect deal outcomes only through its effect on the likelihood of receiving an SEC comment letter. We construct a measure of SEC reviewer busyness as our instrument. This approach is motivated by the literature that suggests that workload compression, or busyness, negatively affects performance. For example, prior studies show that auditor busyness is negatively associated with measures of auditing quality (Lopez and Peters, 2012). Most recently, Gunny and Hermis (2019) find that Form 10-K/10-Q filing reviewers issue fewer comment letters when they have a greater workload.[30]

[30] Consistent with this argument, Hirshleifer, Lim, and Teoh (2009) and DellaVigna and Pollet (2009) find that investor responses to earnings announcements are weaker on days with more announcements or on Fridays.

After directly contacting the SEC staff from the Division of Corporate Finance, we are informed that the M&A filing reviewers face a greater workload during periods with a high volume of annual proxy statement filings (i.e., DEF 14A) because these reviewers are also responsible for reviewing annual proxy statements when board of director elections are contested. In addition, SEC reviewers tend to become busier near the SEC's fiscal year end on September 30 due to various year-end closing activities. We therefore construct our instrumental variable, *SEC_busyness*, as an indicator that equals one if: (1) the number of annual proxy statements (Form DEF 14A) filed by the target's industry peers in the deal announcement month falls within the top tercile of the sample, or (2) the deal is announced during the SEC's fiscal year end month (September), and zero otherwise.[31] As discussed above, we expect a negative relation between receiving a comment letter and SEC reviewer busyness, which satisfies the relevance condition. Additionally, SEC busyness is largely driven by the SEC's own fiscal year-end activities or the clustering of the annual proxy filings by *other* firms; thus, our instrumental variable likely also meets the exclusion condition.

Table 11 presents the 2SLS results for deal completion in Columns (1) and (2), positive price revisions in Columns (3) and (4), and deal duration in Columns (5) and (6). Column (1), (3), and (5) report the first-stage regressions of comment letter receipt on our instrument and other control variables. In all three first stage models, the Stock and Yogo (2005) test rejects the null hypothesis that our instrumental variable is weak. Columns (2), (4), and (6) of Table 11 report the second-stage regressions of our three deal outcome variables on the fitted value of comment letter likelihood. Consistent with our prediction, the first stage coefficients on the instrument,

[31] We use proxy statements by the target firm's industry peers because they are the most relevant to reviewer busyness. Specifically, SEC reviewers often specialize in filings from one industry (we find that over 80% of the comment letters issued by a reviewer relate to one single industry), and most M&A filings are filed by target firms.

SEC_busyness, are significantly negative at the 5% level. The second stage coefficient on the fitted comment letter likelihood is positive and significant at the 5% level for all three deal outcome variables. In sum, the 2SLS results generally support our main OLS results and the entropy balancing results. Taken together, our deal outcome results suggest that the SEC review process has a positive impact on M&A outcomes at the cost of delaying deal completion.

6. Conclusion

This study explores the role of the SEC in improving information transparency for mergers and acquisitions. Using a hand collected sample of SEC comment letters, we first provide descriptive information about SEC comment letters in M&As. The SEC issues comment letters for 30 percent of the transactions in our sample, and the letters contain comments related to both financial and non-financial information disclosures. The most common issues relate to general compliance with disclosure requirements, the fairness opinion and deal valuation, and background and reasons for the transaction. The SEC's focus on the fairness opinion and valuation issues provides preliminary evidence that the SEC is concerned with target shareholder welfare.

We then investigate the determinants of the SEC issuing a comment letter for a transaction. We predict and find that the SEC is more likely to issue a comment letter for deals with characteristics indicative of greater risk to target shareholder welfare, deals where target firms have weak corporate governance, and deals with poorer pre-transaction financial reporting quality. Deal risk and target firm corporate governance appear to be the strongest predictors of an SEC comment letter. The comment letter resolution process is also longer for deals with greater risk to target shareholder welfare.

Next, we examine the effects of SEC comment letters on multiple deal outcomes. We find that the receipt of an SEC comment letter increases the likelihood of deal completion. Cross-

sectional results reveal that the effect is concentrated in deals requiring target shareholder voting, suggesting that additional disclosure associated with comment letters help convince target shareholders to vote for the deal. We also find that the receipt of an SEC comment letter significantly increases the likelihood of positive price revision, especially when target firms have higher institutional ownership or when there are multiple bidders in a transaction. These benefits of the SEC comment letter process come at the cost of significantly increasing the length of time between the deal announcement and deal completion. We alleviate concerns about endogeneity using entropy balancing, Impact Threshold of a Confounding Variable analysis, and an instrumental variable approach.

Our study contributes to both the literature examining the determinants and consequences of SEC comment letters and the M&A literature. While prior studies have largely focused on the impact of SEC comment letters on firms' disclosures and the information environment, our study is the first to investigate the effect of SEC comment letters on M&As and our results suggest that SEC comment letters can have important real consequences, including facilitating deal completion, protecting shareholder welfare, and increasing deal duration. These results also emphasize the importance of the SEC as an external regulator in improving information asymmetry in cases where firm managers are unable to fully resolve the information asymmetry between themselves and outside investors. These findings therefore have important implications for regulator intervention in corporate disclosures and in the business world.

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Appendix A
Variable Definitions

Variable	Definition
Comment Letter Variables	
Cl	An indicator that equals one if the target or bidder has received at least one SEC comment letter between deal announcement and deal completion/withdrawal.
Cl_fin	An indicator that equals one if the target or bidder has received at least one SEC comment letter that contains issues on deal financial information.
Cl_non_fin	An indicator that equals one if the target or bidder has received at least one SEC comment letter that contains issues on deal non-financial information.
Cl_duration	The natural logarithm of one plus the number of days between the first SEC comment letter date and the last SEC comment letter date.
Cl_issue	The number of issues in all SEC comment letters that a deal has received.
Cl_category	The number of issue categories in all SEC comment letters that a deal has received.
Deal and Firm Characteristics	
Deal_size	The natural logarithm of the dollar value of the deal in millions.
Diversify_ff	An indicator that equals one if the target and the bidder come from different Fama-French 48 industries.
Num_seg	The number of business segments in the target firm.
Tender	An indicator variable that equals one for tender offers and zero for mergers.
Going_private	An indicator variable that equals one if the target firm is going private as a result of the deal and zero otherwise.
Stock	An indicator variable that equals one if a deal at least partially uses stock financing and zero otherwise.
Manager	An indicator variable that equals one if managers are involved in the deal as buyers and zero otherwise.
Friendly	An indicator variable that equals one for friendly deals based on the classification in SDC and zero otherwise.
Public_acquiror	An indicator variable that equals one if the bidder firm is public and zero otherwise.
Premium	Initial offer price divided by target stock price one week before the deal announcement minus one, final offer price is used if initial offer price is missing in SDC.
Board_size	The number of directors on the target firm's board disclosed in the most recent proxy statement prior to deal announcement.
Ind_director	The percentage of independent directors on the target firm's board disclosed in the most recent proxy statement prior to deal announcement.
Insider_own	The percentage of target shares owned by the target firm's officers and directors prior to deal announcement.

Dual_class	An indicator variable that equals one if the target firm has more than one class of shares prior to deal announcement.
Target_res	An indicator variable that equals one if the target firm has had any restatement over the past three years prior to deal announcement.
Bidder_res	An indicator variable that equals one if the bidder firm has had any restatement over the past three years prior to deal announcement.
Target_cl	An indicator variable that equals one if the target firm has received at least one SEC comment letter over the past three years prior to deal announcement.
Bidder_cl	An indicator variable that equals one if the bidder firm has received at least one SEC comment letter over the past three years prior to deal announcement.
Completion	An indicator variable that equals one for completed deals and zero for withdrawn deals.
Merger_spread	The difference between offer price and target price two days after deal announcement scaled by target price two days after deal announcement.
Neg_spread	An indicator variable that equals one if *Merger_spread* is negative and zero otherwise.
Pos_revision	An indicator variable that equals one if there is a positive price revision from the initial offer price to the final offer price.
Deal_duration	The number of days between deal announcement and deal completion.
Multiple_bidder	An indicator variable that equals one if there is more than one bidder in a deal.
High_IO	An indicator variable that equals one if the institutional ownership of the target company at the fiscal year end right before deal announcement falls into the top tercile, and zero otherwise.
SEC_busyness	An indicator variable that equals one if: (1) the number of annual proxy statements (Form DEF 14A) filed by the target's industry peers in the deal announcement month falls within the top tercile of the sample, or (2) the deal is announced during the SEC's fiscal year end month (September), and zero otherwise.

Appendix B
Pearson Correlations

This appendix presents Pearson and Spearman correlations for our main variables. The sample consists of 2,527 M&A deals announced between 2005 and 2017. The lower diagonal reports Pearson correlations and the upper diagonal reports Spearman correlations. Superscripts a, b, and c correspond to statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
(1) *Cl*		0.77^{a}	0.92^{a}	0.98^{a}	0.98^{a}	0.05^{b}	-0.03^{c}	0.11^{a}	0.02	0.16^{a}	-0.01	0.06^{a}	-0.04^{b}	0.03	-0.02	-0.02	0.09^{a}	0.00	0.03	0.08^{a}	0.07^{a}	0.05^{b}	0.18^{a}	0.10^{a}
(2) *Cl_fin*	0.77^{a}		0.75^{a}	0.82^{a}	0.83^{a}	0.08^{a}	-0.02	0.04^{c}	-0.01	0.19^{a}	0.01	0.08^{a}	-0.04^{c}	0.06^{a}	-0.03	-0.03	0.09^{a}	0.01	0.01	0.06^{a}	0.07^{a}	0.08^{a}	0.20^{a}	0.04^{c}
(3) *Cl_non_fin*	0.92^{a}	0.75^{a}		0.93^{a}	0.94^{a}	0.06^{a}	-0.04^{c}	0.12^{a}	0.00	0.16^{a}	-0.03	0.06^{a}	-0.05^{b}	0.04^{b}	-0.01	-0.01	0.11^{a}	0.01	0.03	0.06^{a}	0.08^{a}	0.04^{c}	0.18^{a}	0.09^{a}
(4) *Cl_issue*	0.65^{a}	0.72^{a}	0.69^{a}		0.99^{a}	0.06^{a}	-0.03	0.11^{a}	0.02	0.17^{a}	-0.02	0.06^{a}	-0.05^{b}	0.03	-0.03	-0.02	0.11^{a}	0.01	0.03	0.06^{a}	0.07^{a}	0.05^{b}	0.20^{a}	0.10^{a}
(5) *Cl_category*	0.78^{a}	0.82^{a}	0.82^{a}	0.90^{a}		0.06^{a}	-0.03	0.10^{a}	0.01	0.17^{a}	-0.02	0.06^{a}	-0.05^{b}	0.04^{c}	-0.03	-0.02	0.10^{a}	0.01	0.03	0.07^{a}	0.07^{a}	0.05^{a}	0.20^{a}	0.10^{a}
(6) *Deal_size*	0.08^{a}	0.10^{a}	0.07^{a}	0.11^{a}	0.10^{a}		-0.02	-0.01	-0.13^{a}	0.12^{a}	-0.05^{b}	0.15^{a}	-0.11^{a}	0.32^{a}	0.13^{a}	-0.44^{a}	0.10^{a}	-0.01	0.05^{b}	0.05^{a}	0.19^{a}	0.02	0.15^{a}	0.06^{a}
(7) *Diversify_ff*	-0.03^{c}	-0.02	-0.04^{c}	0.00	-0.02	-0.05^{b}		0.02	0.35^{a}	-0.30^{a}	-0.02	-0.37^{a}	-0.02	-0.06^{a}	-0.06^{a}	0.06^{a}	0.01	0.05^{b}	-0.10^{a}	0.01	-0.27^{a}	-0.05^{a}	-0.12^{a}	0.01
(8) *Tender*	0.11^{a}	0.04^{c}	0.12^{a}	0.03	0.04^{b}	-0.07^{a}	0.02		-0.02	-0.25^{a}	-0.04^{b}	-0.03	0.12^{a}	-0.12^{a}	0.02	0.01	-0.05^{a}	0.00	0.03	0.08^{a}	0.02	0.04^{b}	-0.39^{a}	0.08^{a}
(9) *Going_private*	0.02	-0.01	0.00	0.01	0.01	-0.07^{a}	0.35^{a}	-0.02		-0.43^{a}	-0.03	-0.74^{a}	-0.08^{a}	-0.09^{a}	-0.06^{a}	0.11^{a}	0.03^{c}	0.06^{a}	-0.22^{a}	-0.02	-0.51^{a}	-0.10^{a}	-0.07^{a}	0.08^{a}
(10) *Stock*	0.16^{a}	0.19^{a}	0.16^{a}	0.16^{a}	0.17^{a}	0.18^{a}	-0.30^{a}	-0.25^{a}	-0.43^{a}		0.05^{b}	0.53^{a}	-0.11^{a}	0.19^{a}	0.04^{b}	-0.14^{a}	0.04^{c}	-0.08^{a}	0.17^{a}	-0.02	0.32^{a}	0.04^{c}	0.39^{a}	-0.02
(11) *Friendly*	-0.01	0.01	-0.03	-0.03	-0.02	-0.05^{b}	-0.02	-0.04^{b}	-0.03	0.05^{b}		0.05^{a}	0.05^{b}	-0.01	-0.02	0.08^{a}	0.00	-0.06^{a}	0.02	-0.03	0.04^{c}	0.46^{a}	-0.04^{b}	-0.21^{a}
(12) *Public_acquiror*	0.06^{a}	0.08^{a}	0.06^{a}	0.05^{b}	0.06^{a}	0.10^{a}	-0.37^{a}	-0.03	-0.74^{a}	0.53^{a}	0.05^{a}		0.05^{b}	0.08^{a}	0.07^{a}	-0.11^{a}	-0.03	-0.08^{a}	0.28^{a}	-0.02	0.68^{a}	0.08^{a}	0.13^{a}	-0.03^{c}
(13) *Premium*	-0.05^{b}	-0.06^{a}	-0.05^{b}	-0.05^{a}	-0.06^{a}	-0.06^{a}	-0.01	0.12^{a}	-0.07^{a}	-0.09^{a}	0.04^{c}	0.04^{b}		-0.03^{c}	0.02	0.08^{a}	-0.09^{a}	-0.01	-0.03	0.06^{a}	0.07^{a}	0.03	-0.12^{a}	-0.06^{a}
(14) *Board_size*	0.03	0.06^{a}	0.05^{b}	0.05^{a}	0.05^{b}	0.30^{a}	-0.08^{a}	-0.13^{a}	-0.10^{a}	0.22^{a}	-0.02	0.10^{a}	-0.05^{b}		0.24^{a}	-0.13^{a}	0.02	-0.02	-0.02	-0.03^{c}	0.05^{b}	0.03	0.27^{a}	0.00
(15) *Ind_director*	-0.02	-0.03	-0.02	-0.04^{b}	-0.04^{c}	0.12^{a}	-0.05^{a}	0.03^{c}	-0.05^{b}	0.03	-0.03	0.06^{a}	0.05^{b}	0.17^{a}		-0.23^{a}	-0.12^{a}	-0.02	0.01	0.05^{b}	0.09^{a}	-0.01	0.09^{a}	-0.03
(16) *Insider_own*	0.01	0.01	0.02	0.03	0.03	-0.22^{a}	0.04^{c}	0.00	0.09^{a}	-0.11^{a}	0.06^{a}	-0.10^{a}	0.06^{a}	-0.11^{a}	-0.21^{a}		0.04^{b}	0.01	-0.03	-0.09^{a}	-0.12^{a}	0.04^{b}	-0.13^{a}	-0.03
(17) *Dual_class*	0.09^{a}	0.09^{a}	0.11^{a}	0.11^{a}	0.09^{a}	0.10^{a}	0.01	-0.05^{a}	0.03^{c}	0.04^{c}	0.00	-0.03	-0.08^{a}	0.02	-0.15^{a}	0.06^{a}		0.02	-0.03	-0.02	-0.03	0.00	0.09^{a}	0.07^{a}
(18) *Target_res*	0.00	0.01	0.01	0.02	0.02	-0.04^{c}	0.05^{b}	0.00	0.06^{a}	-0.08^{a}	-0.06^{a}	-0.08^{a}	0.00	-0.03	-0.03	0.01	0.02		0.02	0.07^{a}	-0.06^{a}	-0.06^{a}	-0.01	0.06^{a}
(19) *Bidder_res*	0.03	0.01	0.03	0.00	0.01	-0.01	-0.10^{a}	0.03	-0.22^{a}	0.17^{a}	0.02	0.28^{a}	-0.03	-0.03	0.01	-0.03	-0.03	0.02		-0.02	0.29^{a}	0.02	0.02	0.03^{c}
(20) *Target_cl*	0.08^{a}	0.06^{a}	0.06^{a}	0.01	0.03	0.03	0.01	0.08^{a}	-0.02	-0.02	-0.03	-0.02	0.07^{a}	-0.04^{b}	0.04^{c}	-0.05^{a}	-0.02	0.07^{a}	-0.02		0.11^{a}	0.00	-0.07^{a}	0.00
(21) *Bidder_cl*	0.07^{a}	0.07^{a}	0.08^{a}	0.04^{c}	0.05^{b}	0.12^{a}	-0.27^{a}	0.02	-0.51^{a}	0.32^{a}	0.04^{c}	0.68^{a}	0.06^{a}	0.06^{a}	0.09^{a}	-0.09^{a}	-0.03	-0.06^{a}	0.29^{a}	0.11^{a}		0.06^{a}	0.04^{b}	-0.01
(22) *Completion*	0.05^{b}	0.08^{a}	0.04^{c}	0.05^{a}	0.06^{a}	-0.04^{b}	-0.05^{a}	0.04^{b}	-0.10^{a}	0.04^{c}	0.46^{a}	0.08^{a}	0.00	0.03	-0.02	0.03	0.00	-0.06^{a}	0.02	0.00	0.06^{a}		-0.03	-0.20^{a}
(23) *Deal_duration*	0.17^{a}	0.18^{a}	0.17^{a}	0.21^{a}	0.20^{a}	0.24^{a}	-0.09^{a}	-0.28^{a}	-0.06^{a}	0.28^{a}	-0.07^{a}	0.09^{a}	-0.10^{a}	0.26^{a}	0.10^{a}	-0.10^{a}	0.11^{a}	-0.01	0.00	-0.04^{c}	0.03	-0.08^{a}		0.14^{a}
(24) *Pos_revision*	0.10^{a}	0.04^{c}	0.09^{a}	0.11^{a}	0.09^{a}	0.06^{a}	0.01	0.08^{a}	0.08^{a}	-0.02	-0.21^{a}	-0.03^{c}	-0.05^{a}	0.00	-0.02	-0.01	0.07^{a}	0.06^{a}	0.03^{c}	0.00	-0.01	-0.20^{a}	0.16^{a}	

Appendix C
Examples of SEC Comment Letters and Company Response

1. SEC Comment Letter on Merger Background

Below is an example of an SEC comment related to the merger background. This issue is one of four merger background issues that the SEC raised in this comment letter. Please see the following link for more details:

https://www.sec.gov/Archives/edgar/data/1397821/000119312513101769/0001193125-13-101769-index.htm

SEC's Comment:

Please revise your disclosure on page 34 to provide further detail on the "strategic alternatives" discussed by the Board of Directors and Centerview. In addition, please provide more detailed disclosure regarding the reasons the Board chose not to pursue those alternatives.

Company's Response:

As requested, the Company has revised the disclosure to address the Staff's comment. Please see pages A-39 and A-40 of the blackline of the Preliminary Proxy Statement attached as Exhibit A.

2. SEC Comment Letter on Fairness Opinion

Below is an example of an SEC comment related to the fairness opinion. This issue is one of four fairness opinion issues that the SEC raised in this comment letter. Please see the following link for more details:

https://www.sec.gov/Archives/edgar/data/913165/000119312518004738/0001193125-18-004738-index.htm

SEC's Comment:

Please further describe the selection criteria used for the selected publicly traded companies and transactions. If any companies or transactions meeting the selection criteria were excluded from the analyses, please state the reasons for making such exclusions.

Company's Response:

In response to the Staff's comment, the Company has modified the disclosures appearing on pages 36 and 37 of Amendment No. 1 to the Proxy Statement to include additional detail surrounding the selection criteria used for the selected public traded companies and transactions. No companies or transactions meeting the selection criteria were excluded from the analyses.

3. SEC Comment Letter on Reasons and Recommendations

Below is an example of an SEC comment related to the reasons and recommendations for the merger. Please see the following link for more details:

https://www.sec.gov/Archives/edgar/data/886835/000095012311102170/0000950123-11-102170-index.htm

SEC's Comment:

Explain why the Board believes that being the only "mid-cap" oilfield services company will make "the combined company better equipped to compete with the largest oilfield services companies".

Company's Response:

Large oil and gas producers in North America typically prefer to contract for services from larger service providers. The reasons for this are primarily because these service providers typically have a wider variety of products and services, more engineered solutions, and better balance sheets to support larger and complex projects, as well as potential liabilities. Because of this, Superior's board of directors believes that the combined company will have a competitive advantage over smaller oilfield service companies which will afford Superior a better opportunity to gain market share in the North American land market. In addition, larger service companies tend to attract new employees and retain employees before smaller ones. This is especially a strong barrier to growth in the North American land market. Labor is attracted to larger companies as a result of better recruiting efforts, benefits, training and career growth opportunities. Finally, Superior's board of directors also believes that it will be more successful in expanding into new international markets as a larger company due to better product line diversity and reputation, and a stronger balance sheet.

Appendix D
An Example of Original and Revised Filings

1. Before SEC Comment Letter: Preliminary Proxy Statement (PREM14A)[32]

Using publicly available information, J.P. Morgan calculated, for each selected company, the ratio of the company's firm value (calculated as the market value of the Common Stock on a fully diluted basis, plus preferred equity, any debt and minority interest, less cash and cash equivalents) to the consensus equity research analyst estimate for the company's EBITDA (calculated as earnings before interest, taxes, depreciation and amortization) for the year ending December 31, 2018 (the "2018E FV/EBITDA").

Based on the results of this analysis, J.P. Morgan selected a multiple reference range for 2018E FV/EBITDA of 9.0x –14.0x. After applying such range to the projected adjusted EBITDA for the Company for the year ending December 31, 2018 based on projections provided by the Company's management, the analysis indicated the following implied per share equity value range for the Common Stock, rounded to the nearest one quarter US dollar.

	Implied Per Share Equity Value	
	Low	High
2018E FV/EBITDA	$ 33.25	$ 51.00

2. After SEC Comment Letter: Amendment (PRER14A)[33]

Using publicly available information, J.P. Morgan calculated, for each selected company, the ratio of the company's firm value (calculated as the market value of the Common Stock on a fully diluted basis, plus preferred equity, any debt and minority interest, less cash and cash equivalents) to the consensus equity research analyst estimate for the company's EBITDA (calculated as earnings before interest, taxes, depreciation and amortization) for the year ending December 31, 2018 (the "2018E FV/EBITDA"). *J.P. Morgan determined, in its professional judgment, that any ratios less than 0.0x or greater than 20.0x were not meaningful ("NM") to the analysis. Results of the analysis are as follows:*

Company	***2018E FV/EBITDA***
Globus Medical, Inc.	*13.7x*
NuVasive, Inc.	*12.4x*
Wright Medical Group N.V.	*NM*
CONMED Corporation	*13.8x*
Orthofix International N.V.	*11.3x*
K2M Group Holdings, Inc.	*NM*
RTI Surgical, Inc.	*9.6x*
ConforMIS, Inc.	*NM*
SeaSpine Holdings Corporation	*NM*

[32] https://www.sec.gov/Archives/edgar/data/913165/000119312517359740/d497992dprem14a.htm

[33] https://www.sec.gov/Archives/edgar/data/913165/000119312518004739/d497992dprer14a.htm

Based on the results of this analysis, J.P. Morgan selected a multiple reference range for 2018E FV/EBITDA of 9.0x –14.0x. After applying such range to the projected adjusted EBITDA for the Company for the year ending December 31, 2018 based on projections provided by the Company's management, the analysis indicated the following implied per share equity value range for the Common Stock, rounded to the nearest one quarter US dollar.

	Implied Per Share Equity Value	
	Low	High
2018E FV/EBITDA	$ 33.25	$ 51.00

Figure 1
The Timeline of SEC Filings and Comment Letters in M&As

This figure illustrates the relevant filings M&A bidder and target firms file with the SEC and provides a timeline of the comment letter review process in M&As based on the form of the transaction and methods of payment. For mergers that require a target shareholder vote, the definitive proxy statement (DEFM14A) must be filed 20 business days prior to the scheduled target shareholder meeting. Before distributing the definitive proxy to shareholders, a preliminary proxy (PREM14A) must be filed. For tender offers, the bidder files SC-TO on the same day that the tender offer begins. The subject of the tender offer (the target) must file its response on a Schedule 14D-9 within 10 business days of the tender offer. If the bidder's stock is issued as a method of payment, the bidder files a Securities Act registration statement (Form S-4).

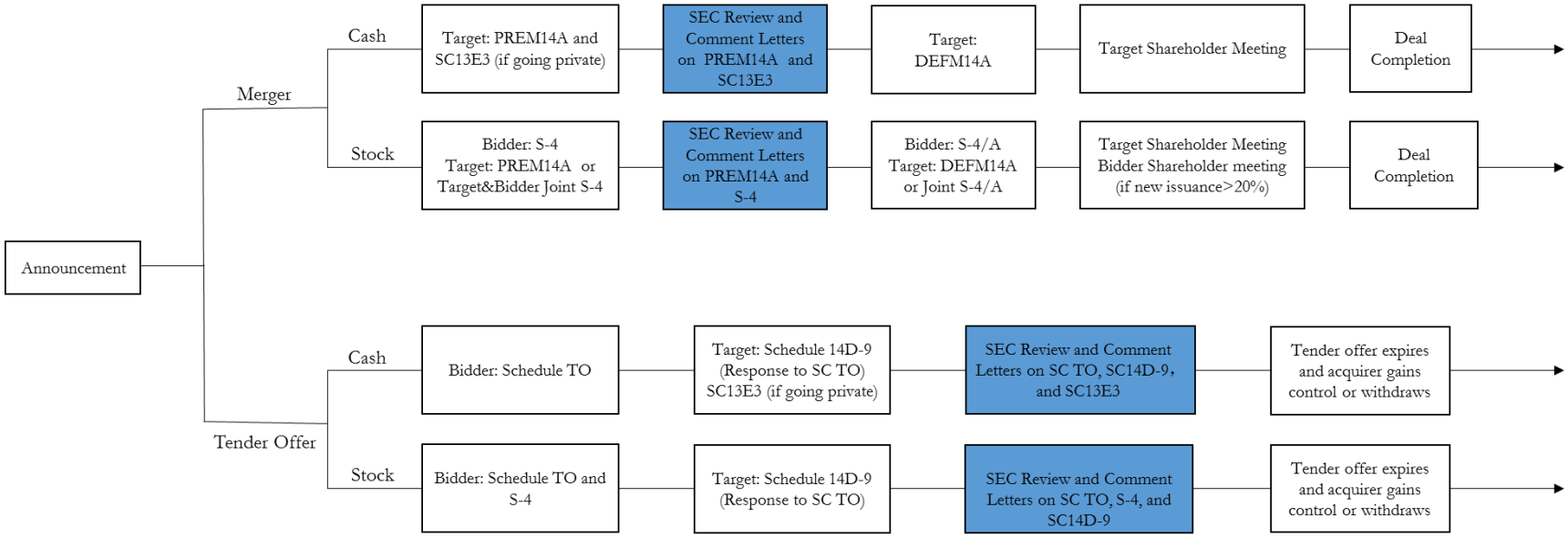

Table 1
Sample Construction

This table summarizes the construction of our M&A sample. Panel A reports sample filters and the number of observations under each filter. Panel B reports the number of deals by year. Our sample includes deals announced between 2005 and 2017.

Panel A: Sample selection

Sample filters	# of deals
Domestic public target deals announced: 01/01/2005 to 12/31/2017	16,424
Form of the deal: Merger (stock or asset), Acquisition of Assets, or Acquisition of Majority Interest (M, AA, AM)	4,838
Deal value: > $1 million	3,732
Deal status: Completed or withdrawn	3,587
Percent of shares acquirer is seeking to purchase >= 50%	3,529
Target with return information available on CRSP	2,707
Merge with SEC Comment letter data	2,647
Remove withdrawn deals without SEC filings to obtain final observations	2,527

Panel B: Sample distribution by year

Year	# of deals	% of deals	# of CL	% with CL
2005	244	9.66%	63	25.82%
2006	280	11.08%	78	27.86%
2007	300	11.87%	49	16.33%
2008	178	7.04%	42	23.60%
2009	169	6.69%	66	39.05%
2010	209	8.27%	79	37.80%
2011	180	7.12%	54	30.00%
2012	172	6.81%	57	33.14%
2013	163	6.45%	73	44.79%
2014	153	6.05%	57	37.25%
2015	181	7.16%	64	35.36%
2016	170	6.73%	63	37.06%
2017	128	5.07%	27	21.09%
Total	2,527	100.00%	772	30.55%

Panel C: Sample distribution by target industry

Fama-French Industry	# of deals	# of CL	% with CL
Consumer NonDurables	97	34	35.05%
Consumer Durables	37	11	29.73%
Manufacturing	135	53	39.26%
Oil, Gas, and Coal Extraction and Products	97	38	39.18%
Chemicals and Allied Products	38	14	36.84%
Business Equipment	610	153	25.08%
Telephone and Television Transmission	93	31	33.33%
Utilities	79	35	44.30%
Wholesale, Retail, and Some Services	192	69	35.94%
Healthcare, Medical Equipment, and Drugs	313	84	26.84%
Finance	558	160	28.67%
Other	278	90	32.37%
Total	2,527	772	30.55%

Table 2
Summary Statistics

This table presents summary statistics for SEC comment letters and key variables in our sample. Panel A reports comment letter issue categories. Panel B reports descriptive statistics for comment letter variables. We assign a value of zero to the number of issues and the number of issue categories if there is no comment letter issued for a deal. The variable *Cl_duration* is calculated based on deals that receive comment letters. Panel C reports summary statistics for deal and firm characteristics. Panel D reports separate descriptive statistics for deals receiving comment letters and deals without comment letters. Our sample includes deals announced between 2005 and 2017. Variable definitions are provided in Appendix A.

Panel A: Comment Letter Issues

Broad Category	%	Specific Category	No.	%
Deal Financial Information	67.36%	Fairness opinion and valuation	371	48.06%
		Company financial information	273	35.36%
		Tax consequences	182	23.58%
Deal Non-Financial Information	88.47%	General compliance	502	65.03%
		Shareholder meeting and voting	131	16.97%
		Solicitation	60	7.77%
		Appraisal rights	43	5.57%
		Background	380	49.22%
		Reasons and recommendations	299	38.73%
		Terms and conditions	223	28.89%
		Financing and payment	178	23.06%
		Interest of managers	186	24.09%
		Risk factors	103	13.34%
		Litigation and legal issues	105	13.60%
		Regulatory approval	38	4.92%

Panel B: Descriptive Statistics on Comment Letter Variables

VARIABLES	N	mean	sd	p25	p50	p75
Cl	2,527	0.31	0.46	0.00	0.00	1.00
Cl_fin	2,527	0.21	0.40	0.00	0.00	0.00
Cl_non_fin	2,527	0.27	0.44	0.00	0.00	1.00
Cl_duration	772	27.45	28.23	8.00	19.00	36.00
Cl_issue	2,527	5.45	12.59	0.00	0.00	3.00
Cl_category	2,527	1.24	2.39	0.00	0.00	1.00

Panel C: Descriptive Statistics on Deal and Firm Characteristics

VARIABLES	N	mean	sd	p25	p50	p75
Deal_size	2,527	2109.00	4983.00	133.90	451.80	1,682.00
Diversify_ff	2,527	0.46	0.50	0.00	0.00	1.00
Tender	2,527	0.17	0.37	0.00	0.00	0.00
Going_private	2,527	0.31	0.46	0.00	0.00	1.00
Stock	2,527	0.32	0.47	0.00	0.00	1.00
Friendly	2,527	0.95	0.23	1.00	1.00	1.00
Public_acquiror	2,527	0.58	0.49	0.00	1.00	1.00
Premium	2,380	0.32	0.31	0.14	0.27	0.43
Board_size	2,520	8.17	2.24	7.00	8.00	9.00
Ind_director	2,520	0.76	0.13	0.67	0.78	0.86
Insider_own	2,518	0.15	0.16	0.04	0.09	0.21
Dual_class	2,522	0.05	0.22	0.00	0.00	0.00
Target_res	2,527	0.24	0.43	0.00	0.00	0.00
Bidder_res	2,527	0.10	0.30	0.00	0.00	0.00
Target_cl	2,527	0.68	0.47	0.00	1.00	1.00
Bidder_cl	2,527	0.39	0.49	0.00	0.00	1.00
Completion	2,527	0.88	0.33	1.00	1.00	1.00
Deal_duration	2,527	131.00	91.52	69.00	107.00	164.00
Pos_revision	2,527	0.10	0.30	0.00	0.00	0.00

Panel D: Descriptive Statistics by Comment Letter Indicator

	Cl=1 (N=772)			*Cl*=0 (N=1,755)			Test of difference	
VARIABLES	mean	median	sd	mean	median	sd	Diff	t-test
Deal_size	2,680.00	511.40	6,106.00	1,857.00	425.40	4,377.00	823.00	3.83***
Diversify_ff	0.44	0.00	0.50	0.47	0.00	0.50	-0.04	-1.75*
Tender	0.22	0.00	0.42	0.14	0.00	0.35	0.09	5.38***
Going_private	0.32	0.00	0.47	0.30	0.00	0.46	0.02	0.86
Stock	0.43	0.00	0.50	0.27	0.00	0.44	0.16	8.21***
Friendly	0.94	1.00	0.24	0.95	1.00	0.22	-0.01	-0.73
Public_acquiror	0.62	1.00	0.49	0.56	1.00	0.50	0.06	2.81***
Premium	0.30	0.25	0.29	0.33	0.27	0.32	-0.03	-2.35**
Board_size	8.28	8.00	2.29	8.13	8.00	2.22	0.16	1.62
Ind_director	0.75	0.78	0.13	0.76	0.78	0.13	-0.01	-0.93
Insider_own	0.15	0.09	0.17	0.15	0.10	0.15	0.00	0.69
Dual_class	0.08	0.00	0.27	0.04	0.00	0.19	0.04	4.74***
Target_res	0.24	0.00	0.43	0.24	0.00	0.43	0.00	0.14
Bidder_res	0.11	0.00	0.32	0.09	0.00	0.29	0.02	1.63
Target_cl	0.74	1.00	0.44	0.66	1.00	0.47	0.08	3.84***
Bidder_cl	0.45	0.00	0.50	0.37	0.00	0.48	0.08	3.68***
Completion	0.90	1.00	0.30	0.87	1.00	0.34	0.03	2.35**
Deal_duration	154.00	129.00	100.50	120.80	98.00	85.34	33.20	8.51***
Pos_revision	0.14	0.00	0.35	0.08	0.00	0.27	0.06	4.88***

Table 3
Determinants of SEC Comment Letters

This table presents results on the determinants of receiving an SEC comment letter on M&A filings. Panel A reports the *marginal effects* of probit regressions. The dependent variable in Panel A, *Cl*, is an indicator that equals one if a deal receives at least one SEC comment letter, and zero otherwise. Panel B presents the results of OLS regression for the number of issues and categories in SEC comment letters. All variables are defined in Appendix A. Standard errors are clustered at the bidder firm level to account for potential serial acquirers. Robust Z-statistics (t-statistics) are reported in parentheses in Panel A (Panel B). Industry and year effects are included in all regression specifications. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Determinants of CL Indicator

	Dependent Variable: *Cl*			
	(1)	(2)	(3)	(4)
Deal_size	0.006			0.004
	(1.08)			(0.67)
Diversify_ff	-0.028			-0.024
	(-1.17)			(-1.02)
Going_private	0.112***			0.171***
	(4.29)			(5.12)
Stock	0.209***			0.239***
	(9.04)			(9.55)
Premium	-0.053			-0.055*
	(-1.60)			(-1.68)
Board_size		0.009**		0.006
		(2.13)		(1.42)
Ind_director		-0.074		-0.080
		(-0.99)		(-1.09)
Insider_own		0.058		0.134**
		(1.00)		(2.28)
Dual_class		0.167***		0.151***
		(3.96)		(3.43)
Target_cl			0.054**	0.059***
			(2.51)	(2.67)
Bidder_cl			0.053**	0.022
			(2.47)	(0.80)
Target_res			0.009	0.017
			(0.42)	(0.76)
Bidder_res			0.031	0.012
			(0.93)	(0.36)
Tender				0.203***
				(8.47)
Friendly				-0.001
				(-0.04)
Public_acquiror				0.048
				(1.26)
Observations	2,380	2,513	2,527	2,367
Industry&Year FE	Yes	Yes	Yes	Yes
Pseudo R-squared	0.0760	0.0483	0.0452	0.110

Panel B: Determinants of the Number of CL Issues and Categories

	Dependent Variable	
	Cl_issue	*Cl_category*
	(1)	(2)
Deal_size	0.502***	0.088***
	(2.85)	(2.67)
Diversify_ff	0.056	0.005
	(0.09)	(0.04)
Going_private	3.239***	0.597***
	(4.92)	(4.37)
Stock	6.509***	1.247***
	(8.71)	(9.19)
Premium	-1.177	-0.267*
	(-1.43)	(-1.73)
Board_size	0.188	0.032
	(1.35)	(1.26)
Ind_director	-3.202	-0.623
	(-1.44)	(-1.50)
Insider_own	5.216***	1.060***
	(2.84)	(2.82)
Dual_class	4.682***	0.636**
	(2.98)	(2.37)
Target_cl	0.693	0.165
	(1.21)	(1.52)
Bidder_cl	0.188	0.004
	(0.24)	(0.03)
Target_res	0.718	0.175
	(1.21)	(1.55)
Bidder_res	-0.618	-0.104
	(-0.69)	(-0.61)
Tender	3.156***	0.710***
	(5.50)	(5.97)
Friendly	-0.698	-0.082
	(-0.55)	(-0.37)
Public_acquiror	1.166	0.193
	(1.42)	(1.19)
Observations	2,367	2,367
Industry&Year FE	Yes	Yes
R-squared	0.122	0.130

Table 4
Analysis of the Length of the SEC Comment Letter Process

This table reports OLS regression results on the length of the SEC comment letter process. The dependent variable, *Cl_duration*, is the natural logarithm of one plus the number of days between the first SEC comment letter and the last SEC comment letter for a deal. All variables are defined in Appendix A. Standard errors are clustered at the bidder firm level to account for potential serial acquirers. Robust t-statistics are reported in parentheses. Industry and year effects are included in all regression specifications. Intercepts are not reported for brevity. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable: *Cl_duration*			
	(1)	(2)	(3)	(4)
Deal_size	0.034			0.029
	(1.44)			(1.16)
Diversify_ff	-0.059			-0.041
	(-0.59)			(-0.40)
Going_private	0.172			0.121
	(1.20)			(0.68)
Stock	0.674***			0.425***
	(5.91)			(3.19)
Premium	-0.018			0.016
	(-0.11)			(0.11)
Board_size		0.037*		0.015
		(1.90)		(0.67)
Ind_director		-0.003		-0.172
		(-0.01)		(-0.56)
Insider_own		-0.130		0.115
		(-0.52)		(0.48)
Dual_class		0.410***		0.266*
		(2.91)		(1.84)
Target_cl			-0.076	-0.095
			(-0.70)	(-0.89)
Bidder_cl			0.094	-0.041
			(0.92)	(-0.34)
Target_res			0.012	0.037
			(0.12)	(0.39)
Bidder_res			-0.092	-0.070
			(-0.71)	(-0.57)
Tender				-0.585***
				(-4.91)
Friendly				-0.362*
				(-1.83)
Public_acquiror				0.109
				(0.53)
Observations	738	771	772	737
Industry&Year FE	Yes	Yes	Yes	Yes
R-squared	0.161	0.115	0.103	0.206

Table 5
SEC Comment Letters and Deal Completion

This table reports the *marginal effects* of probit regressions of SEC comment letters on deal completion. The dependent variable, *Completion*, is an indicator that equals one if the deal is completed and zero otherwise. Key independent variables include an indicator variable for comment letters (*Cl*), an indicator variable for financial issues (*Cl_fin*), an indicator for non-financial issues (*Cl_non_fin*), and the number of issues raised in the comment letter (*Cl_issue*). Columns 1 to 4 report results based on the full sample. Columns 5 and 6 present results separately for mergers and tender offers. All variables are defined in Appendix A. Standard errors are clustered at the bidder firm level to account for potential serial acquirers. Robust Z-statistics are reported in parentheses. Industry and year effects are included in all regression specifications. Intercepts are not reported for brevity. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable: *Completion*					
	Full Sample				Merger	Tender Offer
	(1)	(2)	(3)	(4)	(5)	(6)
Cl	0.036***				0.046***	-0.007
	(2.66)				(2.83)	(-0.36)
Cl_fin		0.068***				
		(4.01)				
Cl_non_fin			0.031**			
			(2.24)			
Cl_issue				0.002***		
				(3.52)		
Deal_size	0.006	0.005	0.006	0.005	0.006	0.001
	(1.12)	(1.02)	(1.12)	(1.00)	(1.07)	(0.12)
Diversify_ff	-0.015	-0.017	-0.015	-0.015	-0.005	-0.054**
	(-0.99)	(-1.12)	(-1.00)	(-1.04)	(-0.31)	(-2.05)
Going_private	-0.058**	-0.058***	-0.057**	-0.058**	-0.068**	-0.004
	(-2.56)	(-2.60)	(-2.50)	(-2.56)	(-2.57)	(-0.13)
Stock	-0.036**	-0.039**	-0.034**	-0.037**	-0.033*	-0.080***
	(-2.08)	(-2.28)	(-2.00)	(-2.21)	(-1.76)	(-2.86)
Premium	-0.020	-0.019	-0.021	-0.020	-0.026	-0.029
	(-0.95)	(-0.93)	(-0.96)	(-0.92)	(-1.02)	(-1.18)
Board_size	0.004	0.003	0.004	0.003	0.004	0.005
	(1.29)	(1.24)	(1.25)	(1.20)	(1.35)	(1.31)
Ind_director	-0.054	-0.052	-0.054	-0.053	-0.056	-0.203**
	(-1.08)	(-1.05)	(-1.07)	(-1.06)	(-0.99)	(-2.48)
Insider_own	0.037	0.033	0.035	0.031	0.055	-0.043
	(0.91)	(0.83)	(0.88)	(0.77)	(1.23)	(-0.61)
Dual_class	-0.008	-0.009	-0.008	-0.011	-0.011	
	(-0.27)	(-0.29)	(-0.26)	(-0.35)	(-0.32)	
Target_cl	0.015	0.013	0.015	0.014	0.025	-0.007
	(1.12)	(1.02)	(1.16)	(1.07)	(1.64)	(-0.35)
Bidder_cl	0.000	0.001	0.001	0.002	-0.005	0.044
	(0.01)	(0.05)	(0.04)	(0.10)	(-0.25)	(1.49)
Target_res	-0.014	-0.015	-0.015	-0.014	-0.016	-0.011
	(-1.14)	(-1.23)	(-1.18)	(-1.16)	(-1.13)	(-0.72)
Bidder_res	-0.011	-0.009	-0.011	-0.010	-0.010	0.020
	(-0.51)	(-0.42)	(-0.53)	(-0.49)	(-0.40)	(0.71)
Tender	0.068***	0.068***	0.068***	0.070***		
	(3.60)	(3.68)	(3.59)	(3.69)		
Friendly	0.340***	0.338***	0.341***	0.342***	0.351***	0.252***
	(14.55)	(14.53)	(14.56)	(14.53)	(12.94)	(7.57)
Public_acquiror	0.001	-0.000	0.002	0.000	0.006	-0.049
	(0.05)	(-0.01)	(0.05)	(0.02)	(0.20)	(-1.58)
Observations	2,348	2,348	2,348	2,348	1,947	356
Industry&Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.250	0.256	0.249	0.254	0.222	0.621

Table 6
Arbitrage Spread and Deal Completion

This table reports the results from additional tests of arbitrage spread as a potential determinant for comment letter issuance and deal completion to address reverse causality problem. Key variables include an indicator variable for comment letters (*Cl*), an indicator for deal completion (*Completion*), a continuous measure of arbitrage spread (*Merger_spread*), and an indicator for negative spread (*Neg_spread*). Panel A reports the average arbitrage spread between deals with comment letters and deals without comment letters. Panel B reports regression results of regressing *Cl* and *Completion* on arbitrage spread variables. The control variables include all independent variables in Table 5. All variables are defined in Appendix A. Standard errors are clustered at the bidder firm level to account for potential serial acquirers. Robust Z-statistics are reported in parentheses. Industry and year effects are included in all regression specifications. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Univariate Analysis of Arbitrage Spread

Variable	*Cl*=1	*Cl*=0
Merger_Spread	0.039	0.033
	Difference:	0.006
	t-stat:	(0.83)

Panel B: Regression Analysis of Arbitrage Spread

	Dependent Variable		
	Cl	*Completion*	
	Full Sample	Full Sample	Merger Sample
	(1)	(2)	(3)
Merger_Spread	0.025	-0.104***	-0.119***
	(0.38)	(-2.90)	(-2.99)
Neg_Spread	-0.008	-0.109***	-0.131***
	(-0.31)	(-7.94)	(-8.32)
Cl		0.035**	0.042***
		(2.56)	(2.63)
Control variables	Yes	Yes	Yes
Industry&Year FE	Yes	Yes	Yes
Observations	2,267	2,248	1,872
Pseudo R-squared	0.108	0.275	0.261

Table 7
SEC Comment Letters and Price Revision

This table reports the *marginal effects* of SEC comment letters on positive price revision for completed deals. The dependent variable, *Pos_revision*, is an indicator variable that equals one if the final public offer price is higher than the initial public offer price (i.e., the offer price is positively revised between the initial public announcement and deal completion), and zero otherwise. Key independent variables include an indicator variable for comment letters (*Cl*), an indicator variable for financial issues (*Cl_fin*), an indicator for non-financial issues (*Cl_non_fin*), and the number of issues raised in the comment letter (*Cl_issue*). Panel A present results estimated using the full sample. Panel B reports cross-sectional results after including the interactions of comment letter receipt with an indicator variable for high institutional ownership of the target and an indicator variable for multiple bidders, respectively. The high institutional ownership indicator variable equals one if the institutional ownership of the target firm before deal announcement is in the top tercile, and zero otherwise. In Panel B, the control variables include all independent variables in the Panel A regressions. All variables are defined in Appendix A. Standard errors are clustered at the bidder firm level to account for potential serial acquirers. Robust Z-statistics are reported in parentheses. Industry and year effects are included in all regression specifications. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Main Analysis of Price Revision				
	Dependent Variable: *Pos_revision*			
	(1)	(2)	(3)	(4)
Cl	0.033***			
	(3.06)			
Cl_fin		0.020*		
		(1.68)		
Cl_non_fin			0.028**	
			(2.56)	
Cl_issue				0.001***
				(3.85)
Deal_size	-0.002	-0.002	-0.002	-0.003
	(-0.56)	(-0.63)	(-0.59)	(-0.77)
Diversify_ff	0.005	0.004	0.005	0.004
	(0.35)	(0.28)	(0.33)	(0.24)
Going_private	0.065***	0.069***	0.067***	0.065***
	(3.01)	(3.15)	(3.09)	(3.00)
Stock	0.023	0.027*	0.024	0.019
	(1.41)	(1.66)	(1.50)	(1.16)
Premium	-0.042**	-0.043**	-0.042**	-0.042**
	(-2.02)	(-2.07)	(-2.03)	(-2.02)
Board_size	0.002	0.002	0.002	0.001
	(0.56)	(0.63)	(0.57)	(0.51)
Ind_director	-0.065	-0.066	-0.065	-0.061
	(-1.59)	(-1.60)	(-1.58)	(-1.51)
Insider_own	-0.034	-0.032	-0.035	-0.037
	(-1.10)	(-1.03)	(-1.13)	(-1.18)
Dual_class	0.062***	0.064***	0.062***	0.061***
	(3.01)	(3.12)	(3.02)	(2.96)
Target_cl	-0.000	0.001	0.001	0.001
	(-0.03)	(0.05)	(0.04)	(0.07)
Bidder_cl	0.007	0.008	0.008	0.007
	(0.44)	(0.52)	(0.48)	(0.45)
Target_res	0.004	0.004	0.004	0.003
	(0.35)	(0.35)	(0.33)	(0.20)
Bidder_res	0.035*	0.036**	0.036**	0.037**
	(1.96)	(2.00)	(2.00)	(2.05)
Tender	0.045***	0.049***	0.045***	0.047***
	(3.16)	(3.47)	(3.15)	(3.39)
Friendly	-0.105***	-0.105***	-0.104***	-0.099***
	(-3.45)	(-3.42)	(-3.41)	(-3.25)
Public_acquiror	0.035	0.036	0.035	0.035
	(1.44)	(1.44)	(1.43)	(1.41)
Multiple_bidder	0.167***	0.171***	0.168***	0.169***
	(10.32)	(10.44)	(10.29)	(10.51)
Observations	2,082	2,082	2,082	2,082
Industry&Year FE	Yes	Yes	Yes	Yes
Pseudo R-squared	0.214	0.209	0.211	0.218

Panel B: Cross-Sectional Analysis of Price Revision		
	Dependent Variable: *Pos_revision*	
	(1)	(2)
Cl	0.020	0.025**
	(1.44)	(2.06)
High_io	-0.033**	-0.012
	(-1.98)	(-0.86)
*Cl * High_io*	0.042*	
	(1.86)	
Multiple_bidder	0.169***	0.136***
	(9.77)	(5.43)
*CL * Multiple_bidder*		0.061*
		(1.65)
Observations	1,863	1,863
Control	Yes	Yes
Industry&Year FE	Yes	Yes
Pseudo R-squared	0.219	0.219

Table 8
SEC Comment Letters and Deal Duration

This table reports results on the relation between the receipt of SEC comment letters and deal duration for completed deals. The dependent variable, *Deal_duration*, is the natural logarithm of one plus the number of days between deal announcement and completion. Key independent variables include an indicator variable for comment letters (*Cl*), an indicator variable for financial issues (*Cl_fin*), an indicator for non-financial issues (*Cl_non_fin*), and the number of issues raised in the comment letter (*Cl_issue*). Columns 1 to 4 include all completed deals. Columns 5 and 6 present results separately for mergers and tender offers. All variables are defined in Appendix A. Standard errors are clustered at the bidder firm level to account for potential serial acquirers. Robust t-statistics are reported in parentheses. Industry and year effects are included in all regression specifications. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable: *Deal_duration*					
	Full Sample				Merger	Tender Offer
	(1)	(2)	(3)	(4)	(5)	(6)
Cl	0.172***				0.183***	0.149**
	(6.77)				(6.37)	(2.53)
Cl_fin		0.181***				
		(6.14)				
Cl_non_fin			0.183***			
			(6.75)			
Cl_issue				0.007***		
				(8.33)		
Deal_size	0.030***	0.028***	0.029***	0.027***	0.040***	-0.006
	(4.02)	(3.80)	(3.91)	(3.64)	(5.21)	(-0.25)
Diversify_ff	-0.038	-0.045*	-0.038	-0.044*	-0.044	-0.057
	(-1.53)	(-1.79)	(-1.53)	(-1.80)	(-1.59)	(-0.99)
Going_private	0.082	0.092	0.086	0.084	0.075	0.037
	(1.48)	(1.63)	(1.54)	(1.54)	(1.12)	(0.42)
Stock	0.246***	0.252***	0.249***	0.238***	0.239***	0.369**
	(8.05)	(8.20)	(8.13)	(7.90)	(7.80)	(2.38)
Premium	0.013	0.011	0.014	0.011	0.067*	-0.111
	(0.37)	(0.31)	(0.41)	(0.32)	(1.72)	(-1.43)
Board_size	0.019***	0.019***	0.019***	0.019***	0.019***	0.021
	(3.55)	(3.53)	(3.49)	(3.55)	(3.48)	(1.14)
Ind_director	0.319***	0.325***	0.318***	0.344***	0.336***	0.180
	(3.85)	(3.91)	(3.83)	(4.06)	(3.88)	(0.68)
Insider_own	-0.174**	-0.175**	-0.182**	-0.185**	-0.133	-0.390**
	(-2.02)	(-2.03)	(-2.12)	(-2.17)	(-1.36)	(-1.98)
Dual_class	0.177***	0.181***	0.173***	0.172***	0.160***	0.270
	(3.33)	(3.47)	(3.27)	(3.38)	(2.87)	(1.35)
Target_cl	-0.033	-0.030	-0.030	-0.021	-0.033	-0.022
	(-1.58)	(-1.43)	(-1.44)	(-1.01)	(-1.52)	(-0.34)
Bidder_cl	-0.086***	-0.081***	-0.086***	-0.080***	-0.096***	-0.032
	(-3.14)	(-2.97)	(-3.13)	(-2.94)	(-3.36)	(-0.35)
Target_res	0.020	0.017	0.017	0.014	0.039	-0.051
	(0.88)	(0.77)	(0.75)	(0.64)	(1.61)	(-0.87)
Bidder_res	-0.030	-0.021	-0.026	-0.020	-0.054	0.013
	(-0.79)	(-0.56)	(-0.70)	(-0.55)	(-1.36)	(0.12)
Tender	-0.513***	-0.499***	-0.519***	-0.499***		
	(-15.65)	(-15.35)	(-15.71)	(-15.67)		
Friendly	-0.357***	-0.355**	-0.349**	-0.326**	-0.271	-0.601***
	(-2.58)	(-2.54)	(-2.55)	(-2.39)	(-1.64)	(-4.14)
Public_acquiror	0.091*	0.085*	0.087*	0.087*	0.099*	0.056
	(1.93)	(1.80)	(1.85)	(1.86)	(1.77)	(0.62)
Observations	2,082	2,082	2,082	2,082	1,710	372
Industry&Year FE	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.457	0.455	0.457	0.463	0.349	0.185

Table 9
Entropy Balancing: SEC Comment Letters and Deal Outcomes

This table reports results on the relationship between SEC comment letters and deal completion, price revision, and deal duration using entropy balancing. Deal completion tests include both withdrawn and completed deals; price revision and deal duration tests include completed deals only. Each regression includes treated deals and control deals with different weights. The weight assigned to each control observation is obtained through an iterative process that ensures the mean and variance of all matching variables are approximately the same between the treated sample and the control sample. In Column 1, the dependent variable, *Completion*, is an indicator variable that equals one if the deal is completed and zero otherwise. In Column 2, the dependent variable, *Pos_revision*, is an indicator variable that equals one if the final public offer price is higher than the initial public offer price, and zero otherwise. In Column 3, the dependent variable, *Deal_duration* is the natural logarithm of one plus the number of days between deal announcement and completion. The control variables include all independent variables in the corresponding OLS/Probit regressions. All variables are defined in Appendix A. Standard errors are clustered at the bidder firm level to account for potential serial acquirers. Robust Z-statistics (t-statistics) are reported in parentheses in Columns 1 and 2 (Column 3). Industry and year effects are included in all regression specifications. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable		
	Completion	*Pos_revision*	*Deal_duration*
	(1)	(2)	(3)
Cl	0.041***	0.039***	0.168***
	(3.26)	(2.67)	(6.61)
Observations	2,348	2,082	2,082
Controls	Yes	Yes	Yes
Industry&Year FE	Yes	Yes	Yes
R-squared	0.252	0.224	0.492

Table 10
The Impact Threshold of a Confounding Variable

This table reports the impact threshold of a confounding variable (ITCV) for deal completion, price revision, and deal duration tests. *Completion* is an indicator variable that equals one if the deal is completed and zero otherwise. *Pos_revision* is an indicator variable that equals one if the final public offer price is higher than the initial public offer price, and zero otherwise. *Deal_duration* is the natural logarithm of one plus the number of days between deal announcement and completion. Deal completion tests include both withdrawn and completed deals; price revision and deal duration tests include completed deals only. We report the ITCV for each test in the bottom row and the Impact of each control variable to serve as a benchmark. ITCV is the minimum product of the correlation between *Cl* and the confounding variable and the correlation between the dependent variable and the confounding variable that is required to overturn the significant results. Impact ($Impact_{raw}$) is computed as the product of the partial (raw) correlation between *Cl* and the control variable and the partial (raw) correlation between the dependent variable and the control variable.

Dependent Variable:	*Completion*		*Pos_revision*		*Deal_duration*	
	Impact	$Impact_{raw}$	Impact	$Impact_{raw}$	Impact	$Impact_{raw}$
	(1)	(2)	(3)	(4)	(5)	(6)
Deal_size	0.000	0.001	0.000	0.001	0.001	0.009
Diversify_ff	0.000	0.002	0.000	-0.001	0.001	0.005
Going_private	-0.007	-0.002	0.008	0.001	0.005	-0.001
Stock	-0.004	0.006	0.008	-0.001	0.043	0.062
Premium	0.001	-0.001	0.001	0.003	0.001	0.005
Board_size	0.000	0.001	0.000	0.000	0.003	0.014
Ind_director	0.000	0.000	0.001	0.001	-0.001	-0.002
Insider_own	0.001	0.001	0.000	0.000	-0.002	-0.002
Dual_class	0.000	0.001	0.007	0.010	0.012	0.016
Target_res	0.001	0.001	0.001	0.000	0.000	-0.002
Bidder_res	0.000	0.004	0.001	-0.001	-0.001	0.003
Target_cl	0.000	0.000	0.000	0.000	0.000	0.000
Bidder_cl	0.000	0.001	0.000	0.001	0.000	0.000
Tender	0.013	0.005	0.012	0.006	-0.037	-0.026
Friendly	-0.002	-0.002	0.001	0.004	0.001	0.003
Public_acquiror	0.000	0.004	0.000	-0.002	0.000	0.006
Multiple_bidder			0.018	0.022		
ITCV	0.015		0.025		0.090	

Table 11
2SLS: SEC Comment Letters and Deal Outcomes

This table reports two-stage least square regression analysis on the effects of SEC comment letters on deal completion, positive price revisions, and deal duration. *Completion* is an indicator variable that equals one if the deal is completed and zero otherwise. *Pos_revision* is an indicator variable that equals one if the final public offer price is higher than the initial public offer price, and zero otherwise. *Deal_duration* is the natural logarithm of one plus the number of days between deal announcement and completion. Deal completion tests include both withdrawn and completed deals; price revision and deal duration tests include completed deals only. In the first stage, we obtain coefficients using Probit regression. We then use the predicted values of the endogenous variable, comment letter (*Cl*), obtained from the Probit regression as the instrument in a standard 2SLS approach. In the first stage, we use the busyness of SEC staff who review M&A filings as our instrument. The instrumental variable, *SEC_busyness*, is an indicator variable that equals one if: (1) the number of annual proxy statements (Form DEF 14A) filed by the target firm's industry peers in the deal announcement month falls within the top tercile of our sample, or (2) the deal is announced during the SEC's fiscal year end month (September), and zero otherwise. Panel A reports univariate evidence on the validity of our instrumental variable, and Panel B reports two-stage regression results on the three deal outcome variables. In Panel B, the coefficients of the control variables and a constant term are not reported for brevity. The control variables include all independent variables in the corresponding OLS/Probit regressions. All variables are defined in Appendix A. Standard errors are clustered at the bidder firm level to account for potential serial acquirers. Robust Z-statistics (t-statistics) are reported in parentheses in the probit models (OLS models). Industry and year effects are included in all regression specifications. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Univariate Analysis of SEC Busyness

Variable	*SEC_busyness*=0	*SEC_busyness*=1
Cl	0.332	0.266
	Difference:	0.066
	t-stat:	3.53***

Panel B: Two-Stage Least Squares Analysis

	(1)	(2)	(3)	(4)	(5)	(6)
	Completion		*Pos_revision*		*Deal_duration*	
VARIABLES	1st stage	2nd stage	1st stage	2nd stage	1st stage	2nd stage
SEC_busyness	-0.133**		-0.153**		-0.149**	
	(-1.96)		(-2.18)		(-2.14)	
Cl		0.369**		0.358**		0.539**
		(2.11)		(2.22)		(2.10)
Observations	2,367	2,367	2,082	2,082	2,082	2,082
Control	Yes	Yes	Yes	Yes	Yes	Yes
Industry&Year FE	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.111	0.064	0.121	-0.092	0.118	0.391