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

Tingting Liu
Debbie and Jerry Ivy College of Business
Iowa State University
ttliu@iastate.edu

Tao Shu
School of Management and Economics
Chinese University of Hong Kong, Shenzhen
Shenzhen Finance Institute
shutao@cuhk.edu.cn

Erin Towery*
Terry College of Business
University of Georgia
etowery@uga.edu

Jasmine Wang
McIntire School of Commerce
University of Virginia
jasmine.wang@virginia.edu

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ABSTRACT

This study examines the role of the Securities and Exchange Commission (SEC) in mergers and acquisitions (M&As) involving publicly traded target firms. We find that M&As receiving comment letters have an increased likelihood of deal completion and deal price revision, consistent with the SEC review process reducing information asymmetry, albeit at the cost of delaying the M&A process. We then provide evidence that the comment letter process generates new value-relevant information via firms' disclosure amendments in response to comment letters. We address endogeneity concerns using multiple approaches. Our findings that the SEC review process reduces information asymmetry in M&As provide new insight into the real economic consequences of disclosure regulation.

1. Introduction

Information transparency is crucial to the efficiency and fairness of mergers and acquisitions (M&As). However, existing literature demonstrates severe information asymmetry in the M&A process not only between bidder and target firms, but also between firm managers and their shareholders (e.g., Hansen 1987; DeAngelo 1990; Hartzell et al. 2004; Moeller 2005). For example, bidder managers and target managers may withhold negative information in order to obtain more favorable deal outcomes. Target managers, because of agency conflicts, may also withhold positive information to lower the purchase price in exchange for obtaining private benefits from the acquirer.[1] Further, given the complex nature of M&A disclosure requirements, firm managers may unintentionally omit relevant information from their M&A filings due to a lack of ability or experience. Previous studies show that bidder and target firms attempt to alleviate information asymmetry using various internal mechanisms, such as methods of payment, third party certifications, conference calls, and shared auditors (e.g., Officer 2004; Kimbrough and Louis 2011; Dhaliwal et al. 2016). However, information asymmetry in M&As looms large despite these internal mechanisms because market forces alone often cannot fully resolve information asymmetry in capital markets (Coffee 1984).

In this paper, we investigate the role of an external force, the Securities and Exchange Commission (SEC), in reducing information asymmetry in M&As. Prior research suggests that the SEC plays a critical role in the capital markets via regulations and enforcement (e.g., Bonsall et al. 2019; Blackburne et al. 2020). In the M&A setting, the SEC requires firms involved in a transaction to comply with specific disclosure requirements to ensure that investors have sufficient

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[1] For example, Hartzell et al. (2004) and Moeller (2005) show 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.

information to properly evaluate the transaction.[2] 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. We therefore examine how the SEC review process affects M&A deal outcomes.

We construct our sample of M&A transactions involving domestic publicly traded target firms announced between 2005 and 2017 using the Thomson One Banker SDC database, and we identify deals receiving SEC comment letters using Audit Analytics.[3] Our final sample contains 2,527 deals after imposing standard filters. We document that comment letters occur quite frequently in M&As, with the SEC issuing comment letters for approximately 31% of the transactions in our sample. A comment letter contains 18.3 comments and is resolved in 27.5 days, on average. We manually categorize all of the comments and find that comments related to the fairness opinion and valuation, transaction background, and reasons and recommendations for the transaction occur the most frequently in our sample.

To investigate our primary research question on the effect of SEC comment letters on deal outcomes, we first examine the effect of SEC comment letters on deal completion. On one hand, target shareholder disagreement is one of the primary reasons that deals fail because shareholder cooperation is often required to complete the transaction. Existing literature documents that reduced information asymmetry in M&As can alleviate shareholder disagreement and help convince shareholders to support a transaction because they perceive the deal to be fair (DeAngelo 1986, 1990). In this case, the new information generated by the SEC review process can help reduce the divergence of shareholder opinions and facilitate transaction completion. However,

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[2] 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.
[3] We manually review each comment letter to ensure that the content is indeed merger-related, and we fix various issues with the Audit Analytics dataset. For example, Form S-4 acceleration requests filed by bidder firms are often mistakenly classified as comment letters.

because SEC comment letters are often issued after merger announcements, the new SEC-induced information disclosure may result in new discussions and/or negotiations among various parties. Moreover, the SEC review process can cause delays because it takes time for firms to address the comment letters. These uncertainties could adversely affect deal completion. Therefore, the directional effect of SEC comment letters on deal completion is unclear *ex ante*.

We find evidence consistent with our prediction that SEC comment letters help to resolve disagreement among shareholders. We document that receipt of a comment letter is associated with a 4% increase in the likelihood of deal completion. We also report that the positive effect of SEC review on deal completion is concentrated in the subsample of deals that require shareholder voting, suggesting that the reduced information asymmetry resulting from an SEC review helps to convince shareholders to support the proposed deal. An alternative explanation for these findings is that the SEC chooses to fully review deals with a higher likelihood of completion. We empirically examine this possibility using merger arbitrage spread as a proxy for the *ex ante* likelihood of deal completion. Inconsistent with the alternative explanation, we find no significant difference in the merger arbitrage spread between deals with comment letters and deals without comment letters. We also explicitly control for merger arbitrage spread in our regression analysis and our results remain unchanged.[4]

Next, we examine whether SEC comment letters affect deal offer prices. The SEC's review of M&As could impact offer prices if the review process provides new information to shareholders via amendment filings. SEC review could reveal price-increasing information to the extent target managers sacrifice offer premiums by withholding positive information about the target firm in initial M&A filings to obtain private benefits from the acquirer. The SEC review process could

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[4] Additionally, 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.

also reveal price-decreasing information to the extent target managers withhold value-relevant negative information about the target firm. Consistent with our expectation, we find that deals receiving SEC comments have a 4.6% higher probability of a price revision from the initial offer price to the final offer price. This increase is economically significant given that only 14% of the deals in our sample experience price revisions. We further document that SEC comment letters increase the likelihood of both positive and negative price revisions, suggesting that the SEC review process provides both positive and negative information about target firm value.

Finally, we examine the extent to which the SEC review process delays the M&A process. It is possible that the time spent addressing comment letter issues could significantly increase the amount of time to complete M&A deals. However, M&A firms could address SEC comments while working on other M&A procedures, which could mitigate the delays specifically caused by the SEC review process. We therefore examine the effect of SEC reviews on deal duration, measured as the number of days between the deal announcement and deal completion. We find that the receipt of an SEC comment letter increases deal duration by 20.3 days on average, consistent with the comment letter process lengthening the amount of time to complete a deal.

We next provide insight into the mechanism through which SEC comment letters generate new information that affects deal outcomes during the M&A process. Because comment letters are disclosed only after all issues raised by the SEC reviewer are resolved, a majority of the comment letters for our sample deals are disclosed after deal completion. As a result, comment letters generate new information during the M&A process primarily through firms amending their merger filings in response to comment letters. We first show that filing amendments for deals receiving SEC comment letters generate greater price movement around amendment dates than filing amendments for deals not receiving SEC comment letters, consistent with SEC-induced

amendment filings revealing new information to market participants. We further find that the filing amendments associated with comment letters are significantly related to deal outcomes. In contrast, voluntary filing amendments have minimal effects on deal completion and price revision, suggesting that amendments in response to comment letters can more effectively reduce information asymmetry than voluntary amendments. Consistent with SEC comment letters generating new information through amendments, we find that the observed effects of SEC comment letters on deal completion and price revision are statistically significant for comment letters resulting in disclosure amendments, but statistically insignificant for comment letters that do not result in disclosure amendments.

We acknowledge concerns that confounding unobservable firm characteristics could affect the observed relation between SEC comment letters and M&A outcomes. To address this endogeneity problem, we implement three approaches. Motivated by Ege et al.'s (2020) finding of lower-quality SEC comments on periodic filings when the SEC faces greater workloads, we construct a measure of exogenous shocks to SEC M&A reviewer busyness and design two empirical tests using the measure to address omitted variable concerns.[5] First, we examine the association between SEC M&A reviewer busyness and deal completion and price revision among the deals with comment letters. If our main findings are driven by an omitted variable that explains both the receipt of an SEC comment letter and deal outcomes, then the quality of SEC reviews (as captured by SEC M&A reviewer busyness) should not be associated with deal outcomes. We find that SEC M&A reviewer busyness is significantly negatively associated with deal completion and price revision among the deals with comment letters, and SEC M&A reviewer busyness is unrelated to deal completion and price revision for the deals that do not receive comment letters.

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[5] See Section 4.5.2 for a more detailed discussion of how we construct our SEC M&A reviewer busyness measure.

These results provide evidence that it is SEC comment letters rather than omitted variables that drive the deal outcomes.

Second, we implement a two-stage least squares (2SLS) regression analysis using SEC M&A reviewer busyness as an instrumental variable for comment letter issuance. This analysis is motivated by Gunny and Hermis' (2019) finding that SEC busyness decreases the likelihood of receiving a periodic filing comment letter. The first-stage regression confirms that the SEC busyness is negatively associated with the issuance of a comment letter, and the second-stage regression results are consistent with our baseline OLS regression results. Finally, we compute the impact threshold of a confounding variable (hereafter ITCV) for our three deal outcome tests following Frank (2000). The ITCV tests imply that our deal outcome results are unlikely attributable to correlated omitted variables. These additional analyses significantly alleviate concerns about endogeneity.[6]

Our paper contributes to the literature in the following ways. First, we provide new evidence to the literature on the real costs and benefits of disclosure regulation. Using the setting of M&As, one of the most important corporate events, we show that disclosure regulation reduces information asymmetry and in turn increases the likelihood of deal completion and offer price revision, albeit at the cost of delaying the M&A process. These results contribute to the ongoing debate on the necessity and economic consequences of disclosure regulation (e.g., Stigler 1964; Mahoney 1995).

Second, we build on the literature that examines the consequences of the SEC's review process. Prior studies have investigated the effect of SEC review on disclosure and the information environment (e.g., Bens et al. 2016; Dechow et al. 2016; Bozanic et al. 2017; Heese et al. 2017;

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[6] To address confounding observable differences between deals receiving comment letters and deals not receiving comment letters, we implement entropy balancing and find that our results remain robust.

Johnston and Petacchi 2017; Brown et al. 2018; Duro et al. 2019; Ryans 2020). However, there is limited evidence on the *real* consequences of the SEC review process.[7] Our study offers new insight into the real effects of SEC review by providing evidence that SEC reviews of M&A transactions affect the likelihood of deal completion, the likelihood of price revision, and deal duration. Further, our manual classification of SEC review comments on M&A filings enables us to provide the first insight into the types of disclosure issues raised by the SEC related to M&As. A contemporaneous study by Johnson, Lisic, Moon, and Wang (2020) shows that firms receiving an SEC comment letter during the M&A process are less likely to restate their financial statements and are less likely to report goodwill impairments after the transaction. We complement their study in that we examine the effects of comment letters on M&A outcomes rather than the bidder's post-merger accounting quality.

Finally, our study also contributes to the literature on M&As. Information asymmetry is a central question in M&As, and much of the existing literature focuses on the actions taken by firms to reduce information asymmetry (e.g., DeAngelo 1990; Eckbo et al. 1990; Hansen 1987). However, information asymmetry in M&As remains severe despite these internal mechanisms because the sources of information asymmetry (e.g., market frictions, agency conflicts, managers lacking ability or experience) are often difficult for firms to address themselves. We differ from previous studies by providing new evidence that the SEC, an external force, helps alleviate information asymmetry in M&As and in turn affects important deal outcomes.

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[7] To our knowledge, only three studies have examined real effects of the SEC review process. Li and Liu (2017) and Lowry (2020) examine the effect of the SEC review process on Initial Public Offerings (IPOs). Kubick et al. (2016) examine the effect of receiving a tax-related SEC comment on tax avoidance behavior.

2. Institutional background: Shareholder approval & disclosure requirements in M&As

2.1 Shareholder approval in M&As

Corporate control transactions often require shareholder approval. Negotiated mergers always require a target shareholder vote before the transaction can be completed, while tender offers do not require a target shareholder vote (e.g., Cain and Denis 2013; Boone, Broughman, and Macias 2018). A bidder shareholder vote is typically *not* required, with the exception of a bidder intending to issue more than 20% of new shares to finance a deal (e.g., Li, Liu, and Wu 2018). If a target shareholder vote and/or a bidder shareholder vote is required, the SEC requires a firm to disclose all material information to its shareholders when issuing a proxy statement soliciting votes.

2.2 Filing and disclosure requirements in M&As

2.2.1 Requirements in negotiated mergers

When a deal requires target shareholder voting, the target firm must issue a proxy statement (DEFM14A) to its shareholders at least 20 business days prior to the vote. SEC Rule 14d-6 requires the firm to first file a preliminary proxy statement (PREM14A) with the SEC before distributing the definitive proxy statement to shareholders. If the deal consideration consists of bidder shares, then the bidder must file a Securities Act registration statement (Form S-4) for the securities being offered to target shareholders and the transaction requires a bidder shareholder vote if the new shares exceed 20% of existing bidder shares. 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 shareholders.

2.2.2 Requirements in tender offers

A target firm does not issue a proxy statement during a tender offer because target

shareholders do not vote on the transaction. In most cases, the bidder commences a cash tender offer by delivering tender offer materials to target shareholders. 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. 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, the target firm must file its response to the tender offer, including the target board of directors' recommendations to target shareholders, on a Schedule 14D-9 within 10 business days. In the rare case of a bidder using stock as consideration in tender offers, the bidder must file a security registration statement in addition to SC-TO. Further, similar to negotiated mergers, a bidder shareholder vote is required if the new share issuance is more than 20% of the common stock outstanding.

2.2.3 Requirements in going-private transactions

In a going-private transaction, a small group of investors seeks to acquire all publicly traded shares of a firm either as a negotiated merger or a tender offer. Managerial conflicts of interest in these going-private transactions are widely perceived as "unfair" to public shareholders (DeAngelo, DeAngelo, and Rice 1984). To address such 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.[8]

Figure 1 summarizes the specific filing and disclosure requirements for each type of deal discussed in this section.[9]

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[8] These additional disclosure requirements are summarized on the SEC's website: https://www.sec.gov/fast-answers/answersgoprivhtm.html.
[9] Bidder and target firms sometimes also discuss M&A transactions in Form 10-K, Form 10-Q, and/or Form 8-K. We do not examine these filings because they are generally not specific to M&As and contain only a small subset of information included in M&A filings.

3. Data, sample selection, SEC comment letter content, and summary statistics

3.1 Data and sample selection

To construct our sample of M&As, we identify all M&A transactions announced between January 1, 2005 and December 31, 2017 in the Thomson One Banker SDC database. We begin our sample period in 2005 because the SEC made comment letter correspondence publicly available starting in August 2004. Table 1 Panel A 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% 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.[10] The merged dataset has 2,647 observations. 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.

Table 1 Panel B presents the distribution of M&A deals in our sample by year. We observe greater M&A activity in 2005, 2006, and 2007, which is partially attributed to a leveraged-buyout boom during this period (e.g., Kaplan and Stromberg 2009; Officer, Ozbas, and Sensoy 2010).

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[10] 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 variables, 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.

3.2 Issue categories and descriptive statistics

We rely on Audit Analytics to identify deals for which the SEC provides comments on transaction filings between the public merger announcement date and the deal completion/withdrawal date. We manually review each comment letter to ensure that the filing(s) on which the SEC staff comments is (are) indeed an M&A-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 deal/firm non-financial information. We further refine our categorization by creating three financial category subgroups and twelve non-financial category subgroups.[11]

Table 2 Panel A lists the categories and subcategories and the frequency with which these issues are raised in the comment letters. The three most frequent categories relate to the background of the merger (raised in 49% of comment letters), the fairness opinion and valuation (48% of comment letters), and the reasons and recommendations for the merger (raised in 39% of comment letters).[12] The other categories present in at least 20% of comment letters include

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[11] To create these category subgroups, we first manually review each comment letter to identify all issues raised by the SEC. We then group the issues into fifteen categories based on the way that the SEC reviewers organize the comments in their letters. We chose not to apply textual analysis and machine learning techniques because hand collection allows us to better understand the nature of the comments and to classify them in a more accurate manner.
[12] Sixty-five percent of comment letters include issues in the 'general compliance' category, which contains miscellaneous issues that do not belong to a specific category in Table 2. Some of these issues relate to presentation

company financial information, terms and conditions of the deal, tax consequences, interests 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.

Table 2 Panel B reports summary statistics on the SEC comment letter variables and the deal outcome variables. Among the 2,527 sample M&As, about 31% of the transactions receive comment letters, 21% receive comment letters with issues related to financial information, and 27% receive comment letters with issues related to non-financial information. In untabulated analysis, we further find that 14.7% of deals receive comment letters containing issues related to the fairness opinion and valuation, and 14.1% of the deals receive comment letters containing issues related to non-valuation financial information. On average, the number of issues (categories of issues) raised by the SEC per deal is 5.5 (1.2).[13] Among the 772 deals that receive comment letters, the average length of time to resolve all issues is 27.5 calendar days. In terms of deal outcomes, 88% of deals are completed and 12% are withdrawn. Ten percent of deals experience positive offer price revisions, and the average duration of deals in our sample is 131 calendar days.

Table 2 Panel C 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% of the deals are classified as diversification transactions. About 17% of the deals are structured as tender offers, and 31% of the deals are classified as going-private transactions. Bidders use their stock as

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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.

[13] In our full sample, we assign a value of zero to the number of issues and the number of issue categories if the SEC does not issue a comment letter for a deal. In the sample of deals receiving comment letters, the average number of issues (categories of issues) raised by the SEC is 18.4 (4.1).

consideration in about one third of the deals. Approximately 95% of the deals are classified as friendly deals, 58% of the deals have public bidders, and about 27% of the deals involve serial acquirers. Consistent with prior research, including Boone and Mulherin (2007) and Andrade, Mitchell, and Stafford (2001), we find that on average, target firms receive a substantial offer premium of 32%. Overall, these deal characteristics are consistent with prior research on publicly traded targets.[14]

3.3 Additional disclosure after receiving SEC comment letters

Appendix C provides representative examples of three major categories of merger filing comments listed in Table 2 Panel A 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 criteria used in its selection of 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 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.

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[14] Appendix B provides a correlation matrix of the variables used in our analysis.

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. The company disclosed the range of multiples based on some comparable companies without discussing the selection criteria or whether any comparable companies were excluded from the analysis. The SEC comment letter requested additional information on the selection criteria. In response, the company filed an amendment to the preliminary proxy statement which 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 underlying rationale for the valuation range is significantly more detailed in the filing amendment relative to the original disclosure. The revised disclosures help address investors' concerns about the investment bank potentially 'cherry picking' the comparable companies in their valuation analysis.

4. Impact of comment letters on deal outcomes

In this section, we examine the effects of SEC comment letters on deal outcomes, including deal completion, offer price revision, and deal duration.

4.1 Impact of comment letters on deal completion

4.1.1 The relation between comment letters and deal completion

Information asymmetry in M&As can create disagreement among shareholders. When shareholder approval is required for deal completion, shareholder disagreement can prevent the

transaction from being completed (DeAngelo, 1990).[15] If the SEC review process successfully reduces information asymmetry by providing new information to shareholders and by improving disclosure quality, we expect that reduced information asymmetry alleviates shareholder disagreement and thus helps facilitate deal completion. On the other hand, the SEC review process could cause delays and uncertainty during the M&A process. For example, since comment letters are issued after deal announcement, the SEC-induced new information may cause new discussions or even new negotiations among various parties. Therefore, SEC comment letters could also negatively impact the likelihood of deal completion.

To test our predictions on the effect of SEC comment letters on deal completion, we estimate Equation (1), 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 an indicator variable for the receipt of a comment letter, a comment related to financial issues, a comment related to non-financial issues, or the number of comment letter issues depending on the specification. In addition to the commonly used deal and firm characteristics as control variables, we also control for the restatement and comment letter history of both target firms and bidder firms because prior literature documents that financial reporting quality affects the likelihood of receiving comment letters (e.g., Cassell, Dreher, and Myers 2013) and deal outcomes (e.g., Amel-Zadeh and Zhang 2015).

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[15] 83% of our sample deals require target shareholder approval and 13.6% of the deals require both target and bidder shareholder approval.

$Completion$

$$= \beta_0 + \beta_1 Cl + \beta_2 Deal\_size + \beta_3 Diversify + \beta_4 Going\_private + \beta_5 Stock$$

$$+ \beta_6 Premium + \beta_7 Board\_size + \beta_8 Ind\_director + \beta_9 Insider\_own$$

$$+ \beta_{10} Dual\_class + \beta_{11} Target\_cl + \beta_{12} Bidder\_cl + \beta_{13} Target\_res$$

$$+ \beta_{14} Bidder\_res + \beta_{15} Tender + \beta_{16} Friendly + \beta_{17} Public\_acquirer$$

$$+ \beta_{18} Serial\_acquirer + \varepsilon \tag{1}$$

Table 3 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 include an indicator variable for financial comment letter issues (*Cl_fin*) and an indicator variable for non-financial comment letter issues (*Cl_non_fin*), respectively.[16] 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. 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 reduction in information asymmetry as a result of SEC comment letters. Our results collectively are consistent with 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. [17]

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[16] 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 ($\rho=0.75$).

[17] 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, Qian, and Song 2009). Because fairness opinion comments account for the largest percentage of financial comments in our sample, our results are consistent with the SEC's review process leading to enhanced valuation analysis disclosure, which increases shareholder confidence in the underlying valuation analysis produced by investment banks.

With respect to the control variables, we find that going-private transactions are less likely to be completed, while tender offers, friendly deals, and deals involving serial acquirers are more likely to be completed. These findings are consistent with prior studies examining deal completion (e.g., Schwert 2000; Masulis, Wang, and Xie 2009; Chen, Harford, and Li 2007; Bates and Becher 2017). Overall, Table 3 provides evidence that the SEC comment letter process helps mitigate information asymmetry in M&A deals and increases the likelihood of deal completion.

If comment letters indeed affect deal completion by convincing shareholders to vote in favor of a deal, we expect the effect of SEC comment letters on deal completion to be more pronounced when shareholder voting is required. Mergers require target shareholder voting and tender offers do not, so we estimate our deal completion model separately for mergers and tender offers and report the results in the last two columns in Table 3. 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.

4.1.2 Addressing the reverse causality concern

One concern with our deal completion results is that 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 examine whether firms receiving comment letters have a higher *ex ante* likelihood of deal completion. A commonly used measure of the *ex ante* likelihood of deal completion is merger arbitrage spread, which captures the profit that merger arbitrageurs 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 amount of consideration offered by the bidder and the target firm stock price *after* the merger is publicly announced. A larger arbitrage spread implies a lower probability of deal completion.

We measure merger arbitrage using different approaches for cash mergers and stock mergers. For cash mergers, we calculate merger arbitrage spread as the difference between the cash offer price and the target stock price two days after the transaction is announced, scaled by the target firm's stock price. For stock mergers, we calculate merger arbitrage spread 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 firm's 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 cash merger calculation because arbitrageurs can elect to receive cash as payment. Because standard datasets such as SDC do not provide complete information on the exchange ratio and whether target shareholders are allowed to choose between cash and stock, we read through merger filings to manually collect the fixed exchange ratio and to determine whether target shareholders are offered the option to choose between cash and bidder shares.[18]

If the SEC chooses to review and issue comments on deals with a higher *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. Table 4 Panel A 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 difference in merger arbitrage spread between these two groups is

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[18] In some cases, the consideration involves both a cash component and a fixed number of shares, and 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 the bidder firm's stock price minus the target firm's stock price, scaled by the target firm's stock price.

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. We follow prior literature and also include an indicator variable, *Neg_spread*, for deals with negative arbitrage spreads.[19] We report the regression results controlling for arbitrage spreads in Table 4 Panel B. 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 Table 4 Panel A, suggesting that merger arbitrage spread is not significantly associated with the likelihood of receiving a comment letter from the SEC. In Column (2) of Panel B, we present our deal completion results after explicitly controlling for *Merger_spread* and *Neg_spread*. 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 arbitrage spread indeed captures the probability of deal completion. The coefficient on *Neg_spread* is significantly negative, suggesting a lower *ex post* likelihood of deal completion when merger arbitrageurs anticipate 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 subsample of tender offers and do not observe a significant coefficient on *Cl*, which is consistent with our main results in Table 3. Overall, the results in Table 4 help alleviate concerns about reverse causality.

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[19] While the arbitrage spread is normally positive because the target stock price upon announcement is usually below the bidder's offer price, the arbitrage spread can also be negative in some cases. Negative arbitrage spreads indicate that arbitrageurs anticipate that the bidder will offer a higher price (Officer 2007b; 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.

Finally, we also directly contacted SEC staff members in the Division of Corporate Finance Office of Mergers and Acquisitions. 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.[20]

4.2 Impact of comment letters on offer price revision

Next, we examine whether SEC comment letters increase the likelihood of offer price revisions. SEC comment letters often lead to filing amendments, which could impact offer prices to the extent they reveal new information about target firms and/or bidder firms. However, the SEC review process might not affect offer prices given that bidder and target firms conduct extensive due diligence during the deal negotiations preceding SEC review.

To test our predictions on the effect of SEC comment letters on offer price revisions, we estimate Equation (2), a Probit model in which the dependent variable, *Price_revision*, is an indicator variable equal to one if the final public offer price has changed from the initial public offer price, and zero otherwise. We present our results in Table 5. In Column (1), we find that receipt of a comment letter is significantly positively associated with offer price revision. In Columns (2) and (3), we find that both financial and non-financial comment letter issues positively affect the likelihood of offer price revisions. In Column (4), we find that the number of issues raised in the comment letter process is also significantly positively associated with price revisions. These results suggest that additional information disclosure resulting from the SEC comment letter process is value-relevant and is significantly associated with offer price changes.[21]

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[20] The SEC staff further communicated to us that they do not consider the merits of a deal when deciding whether to review the deal and they assume every deal will be completed when merger documents are filed with the SEC.

[21] With respect to the control variables, we find that going-private transactions and stock deals are more likely to experience offer price revisions. Consistent with Bates and Becher (2017), we find that offer price revisions are more likely for tender offers and less likely for friendly deals. Target firms with dual-class ownership, with public buyers, and with competing offers are also more likely to have price revisions.

$Price\_revision$

$$= \beta_0 + \beta_1 Cl + \beta_2 Deal\_size + \beta_3 Diversify + \beta_4 Going\_private + \beta_5 Stock$$

$$+ \beta_6 Premium + \beta_7 Board\_size + \beta_8 Ind\_director + \beta_9 Insider\_own$$

$$+ \beta_{10} Dual\_class + \beta_{11} Target\_cl + \beta_{12} Bidder\_cl + \beta_{13} Target\_res$$

$$+ \beta_{14} Bidder\_res + \beta_{15} Tender + \beta_{16} Friendly + \beta_{17} Public\_acquirer$$

$$+ \beta_{18} Serial\_acquirer + \beta_{19} Multiple\_bidder + \varepsilon \qquad (2)$$

Next, we explore the direction of offer price revision. Prior literature indicates that target firm managers sometimes have incentives to sacrifice deal premiums in exchange for obtaining private benefits from the acquirer (e.g., Moeller 2005), suggesting that target managers may withhold positive information in initial M&A filings. Thus, SEC review could result in positive price revision to the extent that the review process results in the disclosure of the previously-withheld positive information. Moreover, existing literature documents that information asymmetry in M&As can lower the bidder's offer price (e.g., Officer 2007a; Officer, Poulsen, and Stegemoller 2009). Thus, reduced information asymmetry resulting from the SEC review process may encourage other potential buyers to bid more aggressively, further suggesting that the SEC review process could increase the likelihood of positive offer price revisions. On the other hand, it is well documented in the accounting literature that managers have incentives to withhold bad news (Kothari, Shu, and Wysocki 2009). Because of the severe information asymmetry between bidders and targets in M&As, target managers could hide negative information about target firm value from bidder firms to increase their bargaining power. As a result, SEC comment letters may uncover negative information withheld by target managers, which might lead to negative price revisions. Finally, we realize that disclosure deficiencies identified in SEC comment letters may not always be intentional. For example, Bozanic, Choudhary, and Merkley (2019) document that

securities law expertise matters in the comment letter setting. It is possible that some target and bidder managers unintentionally omit value-relevant information from M&A filings due to a lack of securities law expertise, even though the directional effect of such information on offer price is less clear. In Columns (5) and (6) of Table 5, we examine the effect of SEC comment letters on positive offer price revision (*Pos_revision*) and negative offer price revisions (*Neg_revision*), respectively. Consistent with our expectations, we document that SEC comment letters are positively associated with the likelihood of both positive and negative price revisions.

4.3 Impact of comment letters on deal duration

Finally, we examine the extent to which the SEC comment letter process increases deal duration. We estimate Equation (3), an OLS model where the dependent variable, *Deal_duration*, equals the natural logarithm of one plus the number of calendar days between the deal announcement and deal completion. Table 6 reports the regression results. In Column (1), our independent variable of interest is the comment letter indicator variable (*Cl*). As expected, we find that receiving a comment letter from the SEC significantly increases deal duration. The coefficient on *Cl* indicates that receipt of a comment letter increases the length of deal duration by approximately 18.1%, or 20.3 days.[22] This delay is shorter than the 27.5 average number of days to resolve comment letter issues, suggesting that firms are somewhat able to alleviate the delay caused by the comment letter process. 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 letter issues separately and find that both types of issues increase deal duration. In addition, we test whether the number of comment letter issues affects

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[22] We derive the 20.3 days by multiplying 18.1% by [one plus the average number of days to complete a deal for the subsample of deals without comment letters included in this regression].

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.

$$
\begin{aligned}
Deal\_duration &= \beta_0 + \beta_1 Cl + \beta_2 Deal\_size + \beta_3 Diversify + \beta_4 Going\_private + \beta_5 Stock \\
&+ \beta_6 Premium + \beta_7 Board\_size + \beta_8 Ind\_director + \beta_9 Insider\_own \\
&+ \beta_{10} Dual\_class + \beta_{11} Target\_cl + \beta_{12} Bidder\_cl + \beta_{13} Target\_res \\
&+ \beta_{14} Bidder\_res + \beta_{15} Tender + \beta_{16} Friendly + \beta_{17} Public\_acquirer \\
&+ \beta_{18} Serial\_acquirer + \varepsilon
\end{aligned}
\tag{3}
$$

Overall, the results in Tables 3 through 6 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 asymmetry for investors in M&A deals, as evidenced by the higher likelihood of deal completion and price revision. On the other hand, the lengthy comment letter process can also significantly delay deal completion.

4.4 Mechanism through which comment letters affect deal outcomes: Disclosure amendments

The SEC generally makes M&A comment letters publicly available *after* deal completion. Therefore, prior to deal completion, shareholders primarily observe new information generated during the comment letter process via disclosure amendments to M&A filings.[23] In this subsection, we examine disclosure amendments as the channel through which SEC comment letters generate new information and in turn impact deal completion and price revision.

First, we directly investigate whether filing amendments related to comment letters reveal new information to shareholders by examining stock price movements around amendment filings.

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[23] Over 80% of the comment letters in our sample are disclosed after deal completion, and firms file amendments in response to comment letters for 92% of the comment letter observations in our sample.

This analysis includes deals with at least one filing amendment (e.g., PRER14A; S-4/A) between deal announcement and deal completion or withdrawal. If firms indeed disclose new information in response to comment letters via filing amendments, we should observe a significant market reaction to filing amendments for deals with comment letters.[24] In addition, the market reaction to filing amendments for deals receiving comments letters should be stronger than the market reaction to filing amendments for deals not receiving SEC comment letters if the disclosure changes requested by the SEC are more informative than information that firms voluntarily disclose in filing amendments unrelated to comment letters.

In Panel A of Table 7, we estimate an OLS model where the dependent variable, *Amend_price_reaction*, is the 3-day absolute cumulative abnormal return surrounding each filing amendment aggregated at the deal level.[25] Our independent variable of interest is the comment letter indicator variable (*Cl*). We estimate our model both with and without control variables in Columns (1) and (2). Consistent with the SEC review process providing new value-relevant information, we find that, on average, filing amendments for deals with comment letters generate significantly stronger price movements relative to the filing amendments for deals without comment letters. In Columns (3) and (4), we repeat this analysis excluding withdrawn deals and document similar results.

Second, we study the relation between filing amendments and deal outcomes. To do so, we construct three indicator variables based on whether a comment letter is issued and an amendment is filed. *Cl_amendment* is an indicator variable equal to one if a deal both receives a comment

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[24] Although amendment filings for non-comment letter deals are certainly not driven by the SEC review process, amendment filings for comment letter deals may occasionally include voluntary amendments in addition to amendments responding to comment letters. One limitation of our analysis is that we are not able to distinguish voluntary amendments from SEC-induced amendments for comment-letter deals. This limitation biased against us finding significant results in our Table 7 analysis.

[25] We focus on unsigned price movement to test whether the amendment filings contain new information because price changes can be either positive or negative depending on the nature of the information.

letter and makes a filing amendment, and zero otherwise. *Cl_noamendment* is an indicator variable equal to one if a deal receives a comment letter but does not make a filing amendment, and zero otherwise. *Nocl_amendment* is an indicator variable equal to one if a deal makes a filing amendment but does not receive a comment letter, and zero otherwise. We regress our deal completion and price revision variables on the three amendment indicator variables and report the results in Table 7 Panel B.

Column (1) of Table 7 Panel B presents the deal completion results. The coefficient on *Cl_amendment* is significantly positive (t-stat=3.37) and the coefficient on *Cl_noamendment* is insignificant (t-stat=0.26), consistent with amendments being the channel through which comment letters reduce information asymmetry and increase the likelihood of deal completion. The coefficient on *Nocl_amendment* is economically smaller and less significant (t-stat=1.87) than the coefficient on *Cl_amendment*, indicating that amendments in response to comment letters have a stronger effect on deal completion than voluntary amendments.[26] We observe a similar pattern of results in the offer price revision analysis reported in Column (2). In contrast, Column (3) suggests that deal duration is longer for deals with SEC comment letters than deals not receiving SEC comment letters, regardless of whether the SEC review process results in filing amendments. Overall, the results in Table 7 shed light on the mechanism through which SEC comment letters generate new information prior to deal completion.

4.5 Robustness tests to address endogeneity concerns

We acknowledge that deals receiving SEC comment letters could be systematically different from deals not receiving comment letters, meaning that deal-specific or firm-specific characteristics could drive both the receipt of an SEC comment letter and deal outcomes. The

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[26] The difference between the coefficient on *Cl_amendment* and the coefficient *Nocl_amendment* is statistically significant in Columns (2) and (3), and marginally significant in Column (1).

endogeneity concern is to some extent alleviated by our cross-sectional analyses. In this section, we conduct several additional tests to further alleviate concerns about confounding variables.

4.5.1 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 propensity score matching (PSM) is commonly used in accounting and finance research, more recent literature highlights that the approach is subject to several caveats.[27] 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 use the firm and deal characteristics in our regression analysis of comment letter receipt determinants (Table 3). 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 8. Each regression consists of treated deals and control deals based on their weights. We examine deal completion, offer 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 8 thus provide

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[27] Our results are also robust to propensity score matching.

further evidence that SEC comment letters facilitate deal completion and increase the likelihood of price revision, albeit at the cost of increasing deal duration.

4.5.2 Examination of comment letter quality: Evidence from SEC busyness

Existing literature shows that workload compression, or busyness, negatively affects performance. For example, Bonsall, Holzman, and Miller (2020) document that the SEC is less likely to open new investigations when there is a high case backlog. With respect to SEC reviewers, Gunny and Hermis (2019) find that periodic filing reviewers issue fewer comment letters when they have a greater workload, and Ege, Glenn, and Robinson (2020) find that the quality of SEC periodic filing reviews is lower when SEC periodic filing reviewers face greater workloads.[28] Motivated by Ege, Glenn, and Robinson (2020), we examine if there is a differential effect of comment letters on deal outcomes if they are issued during a time period in which SEC M&A reviewers are busy. If our findings are explained by an omitted variable that drives both the receipt of an SEC comment letter and deal outcomes, then we should not observe significant relations between the *quality* of SEC review (as captured by SEC M&A reviewer busyness) and deal outcomes among the deals receiving SEC comment letters.

To measure SEC M&A reviewer busyness, we contacted the SEC staff from the Division of Corporate Finance. We learned that the M&A filing reviewers are faced with 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 September 30 fiscal year end due to various year-end closing activities. We therefore construct our SEC M&A reviewer busyness measure, *SEC_busyness,* as an indicator variable equal to one if: (1)

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[28] 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.

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.[29]

Panel A of Table 9 presents the results of regressing our deal outcome variables on *SEC_busyness* for the subsample of deals that receive comment letters. We find that, conditional on deals receiving comment letters, *SEC_busyness* is significantly negatively associated with both deal completion and offer price revision, but not associated with deal duration.[30] These results suggest that it is the SEC review process itself that affects deal outcomes rather than an omitted variable. As a falsification test, we also estimate these regressions for the subsample of deals that do not receive comment letters. Because these deals do not receive a comment letter, *SEC_busyness* should not affect deal outcomes. Panel B of Table 9 shows that the *SEC_busyness* coefficient is insignificant in all three regressions. Overall, the results in Table 8 help to alleviate endogeneity concerns because the pattern of results is unlikely to be explained by a correlated omitted variable.

4.5.3 Instrumental variable (IV) analysis

We next conduct a two-stage least squares analysis using our SEC M&A reviewer busyness measure as an instrument. We expect a negative association between comment letter issuance and *SEC_busyness*, which satisfies the relevance condition for a valid instrument. Consistent with our expectation, Table 10 Panel A shows that the SEC is less likely to issue M&A comment letters when *SEC_busyness* is equal to one. Additionally, as discussed earlier, SEC M&A reviewer

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[29] 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.
[30] The insignificant association between SEC M&A reviewer busyness and deal duration is not surprising given that the delay in deal duration related to SEC comment letters could be a function of the amount of time firms spend on responding to comment letters.

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 for a valid instrument.

Table 10 Panel B presents the 2SLS results for deal completion in Columns (1) and (2), offer price revision in Columns (3) and (4), and deal duration in Columns (5) and (6). Columns (1), (3), and (5) report the first-stage regressions of comment letter receipt on our instrument and other control variables. Consistent with our expectation, in all three first stage models, the coefficients on our instrument, *SEC_busyness*, are significantly negative at the 5% level and the Stock and Yogo (2005) test rejects the null hypothesis that our instrumental variable is weak. Columns (2), (4), and (6) report the second-stage regressions of our three deal outcome variables on the fitted value of comment letter likelihood. The second stage coefficients on the fitted comment letter likelihood are positive and at least significant at the 5% level for all three deal outcome variables. In sum, the 2SLS results generally support our main OLS results. Taken together, Tables 8 and 9 provide further evidence that the SEC review process has an impact on deal completion and offer price revisions at the cost of delaying deal completion.

4.5.4 The impact threshold of a confounding variable

As a final attempt to address the omitted variable concern, 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 correlated omitted variables. This method has been used in recent finance and accounting studies (e.g., Dai, Fu, Kang, and Lee 2016; Fu, Kraft, and Zhang 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 correlated omitted 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 11. In Columns (1) and (2), we report the ITCV for our deal completion test in the bottom row. The ITCV of 0.018 implies that the correlation between *Cl* and the confounding variable and the correlation between *Completion* and the confounding variable must each be approximately 0.133 to overturn the deal completion results. The magnitude of the ITCV suggests that our deal completion results are unlikely explained by correlated omitted variables. To further assess the severity of the endogeneity problem, we report Impact and Impact$_{raw}$ for each of our control variables in Columns (1) and (2), respectively, to serve as a benchmark for the ITCV. 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 *Completion* and the control variable. In Column (1), *Tender* has the greatest value of Impact among all control variables. However, the impact of *Tender* is only about 0.013 and is smaller than the ITCV of 0.018. These results suggest that a confounding variable must have higher correlations with *Cl* and *Completion* than any of our existing control variables in order to overturn the deal completion results.

We also perform similar analyses for our offer price revision and deal duration tests and tabulate the results in Table 11 Columns (3) through (6). For the offer price revision analysis, the ITCV is approximately 0.032, suggesting that the correlation between *Cl* and the confounding variable and the correlation between *Price_revision* and the confounding variable needs to be at least 0.18 to cause an insignificant relationship between *Cl* and *Price_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 0.087 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 0.295 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 Table 11 again suggests that our deal outcome results are unlikely driven by omitted correlated variables.

5. Conclusion

This study explores the role of the SEC review process in mergers and acquisitions (M&As). We first document that the SEC issues comment letters for 31% of the transactions in our sample, and the letters contain comments related to both financial and non-financial information disclosures. In our main analysis, 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 disclosures associated with comment letters help convince target shareholders to vote in favor of the deal. We also find that the receipt of an SEC comment letter significantly increases the likelihood of price revisions, indicating that comment letters likely reveal new value-relevant information in the M&A process. The positive effects of the SEC comment letter process on deal completion and offer price revisions come at the cost of significantly increasing the length of time between the deal announcement and deal completion.

We also show that the mechanism through which investors can observe new information generated during the SEC comment letter process prior to deal completion is firms' amendment

filings. Specifically, filing amendments for deals receiving SEC comment letters generate significantly stronger short window price reactions than amendments for deals not receiving SEC comment letters. Further, our main results related to deal completion and offer price revisions are primarily driven by comment letters associated with filing amendments. Finally, to alleviate concerns about endogeneity, we implement entropy balancing, an analysis based on SEC review quality (Ege, Glenn, and Robinson 2020), an instrumental variable approach, and an Impact Threshold of a Confounding Variable analysis.

Our study contributes to the literature on the consequences of SEC reviews and the M&A literature. First, while many prior studies the SEC review process examine the effect of SEC comments on financial reporting outcomes, we provide evidence of *real* consequences of SEC review of M&As. Second, we provide new insight into the M&A process by documenting that the SEC has a significant impact on M&A deal completion and price revision, albeit at the cost of increasing deal duration. Further, our result that an external regulator alleviates information asymmetry when firm managers are unable to fully resolve information asymmetry between themselves and outside investors informs the debate on the necessity of financial markets regulation.

REFERENCES

Amel-Zadeh, A. and Y. Zhang. 2015. The economic consequences of financial restatements: Evidence from the market for corporate control. The Accounting Review, 90(1), pp.1-29.

Andrade, G., M. Mitchell, and E. Stafford. 2001. New evidence and perspectives on mergers. *Journal of Economic Perspectives* 15: 103-120.

Bates, T.W., and D.A. Becher. 2017. Bid resistance by takeover targets: Managerial bargaining or bad faith? *Journal of Financial and Quantitative Analysis* 52: 837-866.

Bebchuk, L.A., and M. Kahan. 1989. Fairness in opinions: how fair are they and what can be done about them? *Duke Law Journal* 1989: 27–53.

Bens, D.A., M. Cheng, and M. Neamtiu. 2016. The impact of SEC disclosure monitoring on the uncertainty of fair value estimates. *The Accounting Review* 91(2): 349-375.

Blackburne, T., J.D. Kepler, P.J. Quinn, and D.J. Taylor. 2020. Undisclosed SEC investigations. *Management Science*, Forthcoming.

Bonsall, S., E. Holzman, and B. Miller. 2019. Wearing out the watchdog: SEC case backlog and investigation likelihood. *Working Paper*.

Boone, A., B. Broughman, and A.J. Macias. 2018. Shareholder approval thresholds in acquisitions: Evidence from tender offers. *Journal of Corporate Finance* 53: 225-245.

Boone, A.L., and J.H. Mulherin. 2007. How are firms sold? *Journal of Finance* 62: 847-875.

Bozanic, Z., P. Choudhary and K.J. Merkley. 2019. Securities law expertise and corporate disclosure. The Accounting Review, 94(4), pp.141-172.

Bozanic, Z., J.R. Dietrich, and B.A. Johnson. 2017. SEC comment letters and firm disclosure. *Journal of Accounting and Public Policy* 36(5): 337-357.

Bradley, M., A. Desai, and E.H. Kim. 1988. Synergistic gains from corporate acquisitions and their division between the stockholders of target and acquiring firms. *Journal of Financial Economics*, *21*(1), pp.3-40.

Brown, S.V., X. Tian, and J.W. Tucker. 2018. The spillover effect of SEC comment letters on qualitative corporate disclosure: Evidence from the risk factor disclosure. *Contemporary Accounting Research* 35(2): 622-656.

Cain, M.D., and D.J. Denis. 2013. Information production by investment banks: Evidence from fairness opinions. *Journal of Law and Economics* 56: 245-280.

Cassell, C.A., L.M. Dreher, and L.A. Myers. 2013. Reviewing the SEC's review process: 10-K comment letters and the cost of remediation. *The Accounting Review* 88(6): 1875-1908.

Chen, X., J. Harford, and K. Li. 2007. Monitoring: Which institutions matter? *Journal of Financial Economics* 86: 279-305.

Coffee Jr, J.C., 1984. Market failure and the economic case for a mandatory disclosure system. *Virginia Law Review*, pp.717-753.

Dai, L, R. Fu, J. Kang, and I. Lee. 2016. Corporate governance and the profitability of insider trading. *Journal of Corporate Finance* 40: 235-253.

Davidoff, S.M. 2006. Fairness opinions. *American University Law Review* 55: 1557–1625.

DeAngelo, L.A. 1986. Accounting numbers as market valuation substitutes: A study of management buyouts of public stockholders. *The Accounting Review* 61: 400-420.

DeAngelo, L.A. 1990. Equity valuation and corporate control. *The Accounting Review* 65: 93-112.

DeAngelo, H., L. DeAngelo, and E.M. Rice. 1984. Going private: Minority freezeouts and stockholder wealth. *Journal of Law and Economics* 27: 367-401.

Dechow, P.M., A. Lawrence, and J.P. Ryans. 2016. SEC comment letters and insider sales. *The Accounting Review* 91(2): 401-439.

DellaVigna, S., and J.M. Pollet. 2009. Investor inattention and Friday earnings announcements. *Journal of Finance* 64(2): 709-749.

Dhaliwal, D.S., P.T. Lamoreaux, L.P. Litov, and J.B. Neyland. 2016. Shared auditors in mergers and acquisitions. *Journal of Accounting and Economics* 61: 49-76.

Duro, M., J. Heese, and G. Ormazabal. 2019. The effect of enforcement transparency: Evidence from SEC comment-letter reviews. *Review of Accounting Studies*, *24*(3), pp.780-823.

Eckbo, B.E., R.M. Giammarino, and R.L. Heinkel. 1990. Asymmetric information and the medium of exchange in takeovers: Theory and tests. *Review of Financial Studies* 3: 651–675.

Ege, M., J.L. Glenn, and J.R. Robinson. 2020. Unexpected SEC resource constraints and comment letter quality. *Contemporary Accounting Research* 37(1): 33-67.

Frank, K. A. 2000. Impact of a confounding variable on a regression coefficient. *Sociological Methods & Research* 29: 147-194.

Fu, R., A. Kraft, and H. Zhang. 2012. Financial reporting frequency, information asymmetry, and the cost of equity. *Journal of Accounting and Economics* 54: 132-149.

Gunny, K. A., and J.M. Hermis. 2019. How busyness influences SEC compliance activities: Evidence from the filing review process and comment letters. *Contemporary Accounting Research*, forthcoming.

Hainmueller, J. 2012. Entropy balancing for causal effects: A multivariate reweighting method to produce balanced samples in observational studies. Political analysis, pp.25-46.

Hainmueller, J. and Y. Xu. 2013. Ebalance: A Stata package for entropy balancing. Journal of Statistical Software, 54(7).

Hansen, R.G. 1987. A theory for the choice of exchange medium in mergers and acquisitions. *Journal of Business* 60: 75-95.

Hartzell, J.C., E. Ofek, and D. Yermack. 2004. What's in it for me? CEOs whose firms are acquired. *Review of Financial Studies* 17: 37-61.

Heese, J., M. Khan, and K. Ramanna, 2017. Is the SEC captured? Evidence from comment-letter reviews. *Journal of Accounting and Economics*, *64*(1), pp.98-122.

Hirshleifer, D., S.S. Lim, and S.H. Teoh. 2009. Driven to distraction: Extraneous events and underreaction to earnings news. *Journal of Finance* 64: 2289-2325.

Hoberg, G. and G. Phillips. 2010. Product market synergies and competition in mergers and acquisitions: A text-based analysis. *The Review of Financial Studies*, *23*(10), pp.3773-3811.

Hsieh, J., and R.A. Walkling. 2005. Determinants and implications of arbitrage holdings in acquisitions. *Journal of Financial Economics* 77: 605-648.

Jindra, J., and R.A. Walkling. 2004. Speculation spreads and the market pricing of proposed acquisitions. *Journal of Corporate Finance* 10: 495-526.

Johnson, B. A., L.L. Lisic, J.S. Moon, and M. Wang. 2020. SEC comment letters on Form S-4 and M&A accounting quality. Working paper, George Mason University, Virginia Polytechnic Institute & State University, George Washington University, and State University of New York-Buffalo.

Johnston, R., and R. Petacchi. 2017. Regulatory oversight of financial reporting: Securities and Exchange Commission comment letters. *Contemporary Accounting Research* 34(2): 1128-1155.

Kaplan, S.N., and P. Stromberg. 2009. Leveraged buyouts and private equity. *Journal of Economic Perspectives* 23: 121-46.

Kothari, S.P., S. Shu, and P.D. Wysocki, P.D. 2009. Do managers withhold bad news?. Journal of Accounting research, 47(1), pp.241-276.

Kimbrough, M.D., and H. Louis. 2011. Voluntary disclosure to influence investor reactions to merger announcements: An examination of conference calls. *The Accounting Review* 86: 637-667.

Kisgen, D.J., J. Qian, and W. Song. 2009. Are fairness opinions fair? The case of mergers and acquisitions. *Journal of Financial Economics* 91: 179-207.

Kubick, T.R., D.P. Lynch, M.A. Mayberry, and T.C. Omer. 2016. The effects of regulatory scrutiny on tax avoidance: An examination of SEC comment letters. *The Accounting Review* 91(6): 1751-1780.

Li, B., and Z. Liu. 2017. The oversight role of regulators: Evidence from SEC comment letters in the IPO process. *Review of Accounting Studies* 22(3): 1229-1260.

Li, K., T. Liu, and J. Wu. 2018. Vote avoidance and shareholder voting in mergers and acquisitions. *Review of Financial Studies* 31: 3176–3211.

Lowry, M., R. Michaely, and E. Volkova. 2020. Information revelation through regulatory process: Interactions between the SEC and companies ahead of the IPO. *Review of Financial Studies*, Forthcoming.

Mahoney, P.G. 1995. Mandatory disclosure as a solution to agency problems. *The University of Chicago Law Review* 62(3): 1047-1112.

Masulis, R.W., C. Wang, and F. Xie. 2009. Agency problems at dual-class companies. *Journal of Finance* 64: 1697-1727.

Mitchell, M., and T. Pulvino. 2001. Characteristics of risk and return in risk arbitrage. *Journal of Finance* 56: 2135-2175.

Mitchell, M., T. Pulvino, and E. Stafford. 2004. Price pressure around mergers. *Journal of Finance* 59: 31-63.

Moeller, T. 2005. Let's make a deal! How shareholder control impacts merger payoffs. *Journal of Financial Economics* 76: 167-190.

Officer, M.S. 2004. Collars and renegotiation in mergers and acquisitions. *Journal of Finance* 59: 2719-2743.

Officer, M.S. 2007a. The price of corporate liquidity: Acquisition discounts for unlisted targets. *Journal of Financial Economics* 83: 571-598.

Officer, M. S. 2007b. Are performance based arbitrage effects detectable? Evidence from merger arbitrage. *Journal of Corporate Finance* 13: 793-812.

Officer, M.S., A.B. Poulsen, and M. Stegemoller. 2009. Target-firm information asymmetry and acquirer returns. Review of Finance 13: 467–493.

Officer, M.S., O. Ozbas, and B.A. Sensoy. 2010. Club deals in leveraged buyouts. *Journal of Financial Economics* 98: 214-240.

Ryans, J.P. 2020. Textual classification of SEC comment letters. Forthcoming at *Review of Accounting Studies*.

Schwert, G.W. 2000. Hostility in takeovers: in the eyes of the beholder? *Journal of Finance* 55: 2599-2640.

Securities and Exchange Commission. 2019. Filing Review Process. Available from the US Securities and Exchange Commission website.

Stigler, G.J. 1964. Public regulation of the securities markets. *The Journal of Business* 37(2): 117-142.

Stock, J., and M. Yogo. 2005. Testing for weak instruments in linear IV regression, *In Identification and Inference for Econometric Models: Essays in Honor of Thomas Rothenberg*, ed. D. W. Andrews and J. H. Stock, 80-108.

Appendix A

Variable Definitions

Variable	Definition
Comment Letter Variables	
Cl	An indicator variable equal to one if the target or bidder receives at least one SEC comment letter between deal announcement and deal completion/withdrawal.
Cl_fin	An indicator variable equal to one if the target or bidder receives at least one SEC comment letter that contains issues related to deal financial information.
Cl_non_fin	An indicator equal to one if the target or bidder receives at least one SEC comment letter that contains issues related to deal non-financial information.
Cl_issue	The number of issues in all SEC comment letters that a deal receives.
Deal and Firm Characteristics	
Deal_size	The natural logarithm of the dollar value of the deal in millions.
Diversify	An indicator variable equal to one if the target and the bidder are in different Fama-French 48 industries.
Tender	An indicator variable equal to one for tender offers and zero for mergers.
Going_private	An indicator variable equal to one if the target goes private as a result of the deal.
Stock	An indicator variable equal to one if a deal at least partially uses stock financing.
Friendly	An indicator variable equal to one for friendly deals based on the classification in SDC.
Public_acquirer	An indicator variable equal to one if the bidder is public.
Serial_acquirer	An indicator variable equal to one if the bidder has conducted at least one M&A deal in the last five years.
Premium	The initial offer price divided by the target stock price one week prior to the deal announcement minus one; The final offer price is used if the initial offer price is missing in SDC.
Board_size	The number of directors on the target's board of directors disclosed in the most recent proxy statement prior to deal announcement.
Ind_director	The percentage of independent directors on the target's board of directors disclosed in the most recent proxy statement prior to deal announcement.
Insider_own	The percentage of target shares owned by the target's officers and directors prior to deal announcement.
Dual_class	An indicator variable equal to one if the target has more than one class of shares prior to deal announcement.
Target_res	An indicator variable equal to one if the target had a restatement during the three years prior to deal announcement.

Variable	Definition
Target_res	An indicator variable equal to one if the target had a restatement during the three years prior to deal announcement.
Bidder_res	An indicator variable equal to one if the bidder had a restatement during the three years prior to deal announcement.
Target_cl	An indicator variable equal to one if the target has received at least one SEC comment letter during the three years prior to deal announcement.
Bidder_cl	An indicator variable equal to one if the bidder has received at least one SEC comment letter during the three years prior to deal announcement.
Completion	An indicator variable equal to one if a deal is completed and zero if a deal is withdrawn.
Merger_spread	The difference between the offer price and the target's stock price two days after the deal announcement scaled by the target's stock price two days after the deal announcement.
Neg_spread	An indicator variable equal to one if *Merger_spread* is negative.
Price_revision	An indicator variable that equals one if there is a price revision from the initial offer price to the final offer price.
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.
Neg_revision	An indicator variable that equals one if there is a negative 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 equal to one if there is more than one bidder in a deal.
Amend_price_reaction	The sum of absolute 3-day cumulative abnormal return to all filing amendments related to a deal.
Cl_amendment	An indicator variable equal to one if a deal receives at least one comment letter and makes at least one filing amendment.
Cl_noamendment	An indicator variable equal to one if a deal receives at least one comment letter but does not make any filing amendments.
Nocl_amendment	An indicator variable equal to one if a deal does not receive any comment letter but makes at least one filing amendment.
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 (i.e., September).

Appendix B
Examples of SEC Comment Letters and Company Responses

1. SEC Comment Letter on Merger Background

Below is an example of an SEC comment related to the merger background. This 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 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

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 C
An Example of Original and Revised Filings

1. Before SEC Comment Letter: Preliminary Proxy Statement (PREM14A)[31]

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)[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"). *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*

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[31] https://www.sec.gov/Archives/edgar/data/913165/000119312517359740/d497992dprem14a.htm.
[32] 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 the method 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 statement to shareholders, a preliminary proxy statement (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).
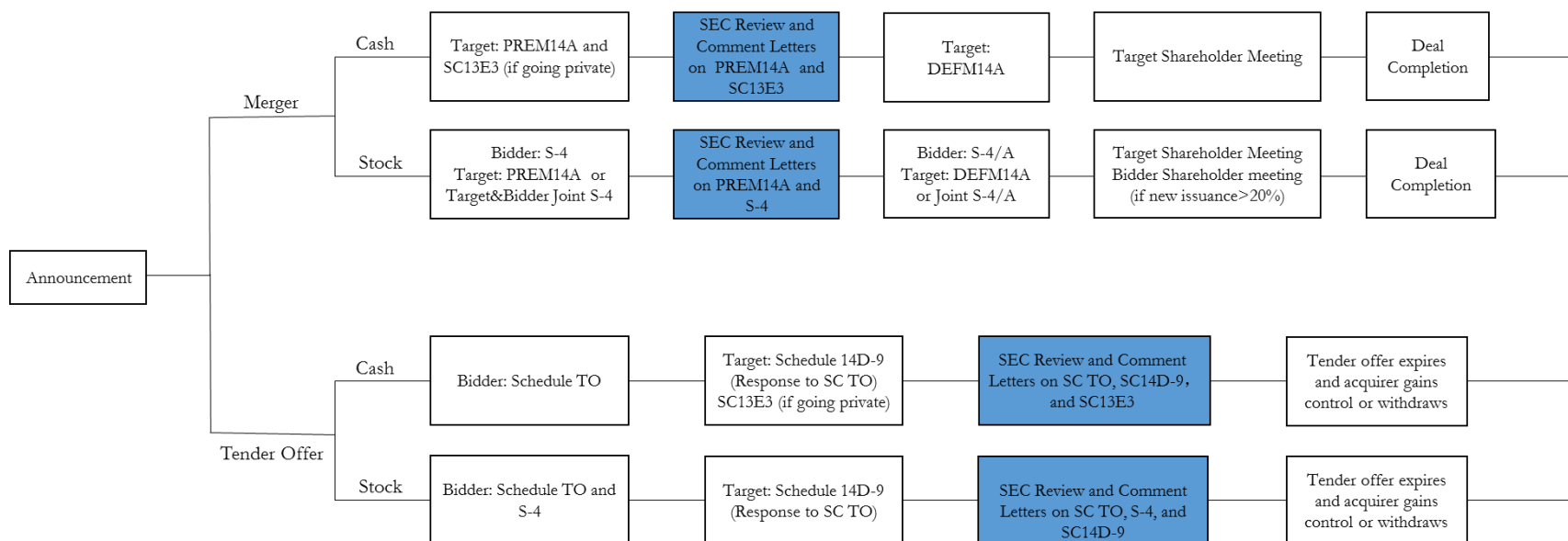
Table 1
Sample Construction

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

Panel A: Sample construction

Sample filters	# of deals
Domestic public target deals announced from 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 returns information available on CRSP	2,707
SEC comment letter data available in Audit Analytics	2,647
Remove withdrawn deals without SEC filings to obtain final observations	2,527

Panel B: Number of deals in sample by year

Year	# of deals	% of deals
2005	244	9.66%
2006	280	11.08%
2007	300	11.87%
2008	178	7.04%
2009	169	6.69%
2010	209	8.27%
2011	180	7.12%
2012	172	6.81%
2013	163	6.45%
2014	153	6.05%
2015	181	7.16%
2016	170	6.73%
2017	128	5.07%
Total	2,527	100.00%

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. The "general compliance" category includes all issues about deal non-financial information that do not belong to a specific category listed. Panel B reports descriptive statistics for comment letter variables and deal outcome 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. Panel C reports summary statistics for deal and firm characteristics. 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 and Deal Outcome 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_issue	2,527	5.45	12.59	0.00	0.00	3.00
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
Price_revision	2,527	0.14	0.34	0.00	0.00	0.00
Pos_revision	2,527	0.10	0.30	0.00	0.00	0.00
Neg_revision	2,527	0.04	0.19	0.00	0.00	0.00

Panel C: Descriptive Statistics on Deal and Firm Characteristics

VARIABLES	N	mean	sd	p25	p50	p75
Deal_size ($M)	2,527	2,109.00	4,983.00	133.90	451.80	1,682.00
Diversify	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_acquirer	2,527	0.58	0.49	0.00	1.00	1.00
Serial_acquirer	2,527	0.27	0.45	0.00	0.00	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
Amend_price_reaction	1,437	0.07	0.12	0.01	0.03	0.07
Cl_amendment	2,527	0.28	0.45	0.00	0.00	1.00
Cl_noamendment	2,527	0.02	0.15	0.00	0.00	0.00
Nocl_amendment	2,527	0.29	0.45	0.00	0.00	1.00

Table 3
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 variable equal to one if the deal is completed, and zero otherwise. Key independent variables include an indicator variable for the receipt of a comment letter (*Cl*), an indicator variable for the receipt of a comment related to financial issues (*Cl_fin*), an indicator variable for the receipt of a comment related to non-financial issues (*Cl_non_fin*), and the number of issues raised by the SEC in the comment letter (*Cl_issue*). Columns 1 through 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 fixed 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	0.037***				0.047***	-0.010
	(2.78)				(2.95)	(-0.49)
Cl_fin		0.068***				
		(4.05)				
Cl_non_fin			0.033**			
			(2.37)			
Cl_issue				0.002***		
				(3.65)		
Deal_size	0.004	0.004	0.004	0.004	0.005	-0.001
	(0.88)	(0.80)	(0.88)	(0.77)	(0.82)	(-0.08)
Diversify	-0.016	-0.018	-0.016	-0.016	-0.007	-0.059**
	(-1.05)	(-1.18)	(-1.06)	(-1.10)	(-0.40)	(-2.07)
Going_private	-0.059***	-0.059***	-0.058***	-0.059***	-0.070***	-0.007
	(-2.70)	(-2.73)	(-2.64)	(-2.70)	(-2.71)	(-0.22)
Stock	-0.031*	-0.034**	-0.030*	-0.033*	-0.029	-0.065**
	(-1.83)	(-2.03)	(-1.76)	(-1.95)	(-1.52)	(-2.33)
Premium	-0.021	-0.020	-0.021	-0.020	-0.027	-0.036
	(-0.98)	(-0.96)	(-0.99)	(-0.95)	(-1.04)	(-1.40)
Board_size	0.003	0.003	0.003	0.003	0.004	0.005
	(1.19)	(1.14)	(1.15)	(1.09)	(1.25)	(1.13)
Ind_director	-0.051	-0.049	-0.051	-0.050	-0.054	-0.224**
	(-1.03)	(-0.99)	(-1.02)	(-1.01)	(-0.94)	(-2.41)
Insider_own	0.035	0.032	0.034	0.030	0.053	-0.036
	(0.88)	(0.80)	(0.84)	(0.75)	(1.19)	(-0.50)
Dual_class	-0.011	-0.011	-0.010	-0.013	-0.014	
	(-0.35)	(-0.37)	(-0.34)	(-0.44)	(-0.42)	
Target_cl	0.015	0.014	0.016	0.015	0.026*	-0.000
	(1.17)	(1.07)	(1.21)	(1.12)	(1.69)	(-0.01)
Bidder_cl	-0.002	-0.001	-0.001	0.000	-0.006	0.040
	(-0.09)	(-0.05)	(-0.06)	(0.00)	(-0.32)	(1.36)
Target_res	-0.014	-0.015	-0.015	-0.014	-0.017	-0.017
	(-1.15)	(-1.24)	(-1.19)	(-1.18)	(-1.15)	(-0.97)
Bidder_res	-0.009	-0.007	-0.010	-0.008	-0.009	0.012
	(-0.45)	(-0.36)	(-0.47)	(-0.42)	(-0.37)	(0.42)
Tender	0.070***	0.070***	0.070***	0.071***		
	(3.70)	(3.80)	(3.69)	(3.80)		
Friendly	0.341***	0.340***	0.343***	0.343***	0.353***	0.271***
	(15.06)	(15.04)	(15.08)	(15.05)	(13.44)	(6.95)
Public_acquirer	-0.009	-0.010	-0.009	-0.010	-0.005	-0.069*
	(-0.33)	(-0.38)	(-0.32)	(-0.37)	(-0.15)	(-1.82)
Serial_acquirer	0.040**	0.039**	0.040**	0.040**	0.042**	0.056
	(2.49)	(2.46)	(2.49)	(2.51)	(2.29)	(1.46)
Observations	2,348	2,348	2,348	2,348	1,947	356
Industry&Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.254	0.260	0.253	0.258	0.226	0.630

Table 4
Merger Arbitrage Spread and Deal Completion

This table addresses concerns about reverse causality in our deal completion tests by examining whether merger arbitrage spread is a determinant of comment letter issuance. Key variables include an indicator variable for the receipt of a comment letter (*Cl*), an indicator variable for deal completion (*Completion*), a continuous measure of merger arbitrage spread (*Merger_spread*), and an indicator variable for negative merger arbitrage spread (*Neg_spread*). Panel A reports the average merger arbitrage spread between deals with comment letters and deals without comment letters. Panel B reports regression results of regressing *Cl* and *Completion* on the merger arbitrage spread variables and the 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 fixed effects are included in all regression specifications. ***, **, and *indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Univariate Analysis of Merger Arbitrage Spread

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

Panel B: Regression Analysis including Merger Arbitrage Spread

	Dependent Variable		
	Cl	*Completion*	
	Full Sample	Full Sample	Merger Sample
	(1)	(2)	(3)
Merger_Spread	0.025	-0.104***	-0.118***
	(0.37)	(-2.87)	(-2.93)
Neg_Spread	-0.007	-0.111***	-0.133***
	(-0.28)	(-8.08)	(-8.51)
Cl		0.036***	0.044***
		(2.68)	(2.75)
Control variables	Yes	Yes	Yes
Industry&Year FE	Yes	Yes	Yes
Observations	2,267	2,248	1,872
Pseudo R-squared	0.111	0.285	0.266

Table 5
SEC Comment Letters and Offer Price Revision

This table reports the marginal effects of SEC comment letters on offer price revision for the sample of completed deals. The dependent variable in Columns 1 to 4, *Price_revision*, is an indicator variable equal to one if the final public offer price is different from the initial public offer price and zero otherwise. The dependent variable in Column 5, *Pos_revision*, is an indicator variable for deals where the final offer price is higher than the initial offer price. The dependent variable in Column 6, *Neg_revision*, is an indicator variable for deals where the final offer price is lower than the initial offer price. Key independent variables include an indicator variable for the receipt of a comment letter (*Cl*), an indicator variable for the receipt of a comment related to financial issues (*Cl_fin*), an indicator variable for the receipt of a comment related to non-financial issues (*Cl_non_fin*), and the number of issues raised in the comment letter (*Cl_issue*). 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 fixed effects are included in all regression specifications. ***, **, and *indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable					
	Price_revision				Pos_revision	Neg_revision
	(1)	(2)	(3)	(4)	(5)	(6)
Cl	0.046***				0.032***	0.018*
	(3.36)				(2.99)	(1.85)
Cl_fin		0.029*				
		(1.90)				
Cl_non_fin			0.040***			
			(2.85)			
Cl_issue				0.002***		
				(3.60)		
Deal_size	-0.004	-0.004	-0.004	-0.004	-0.001	-0.002
	(-0.83)	(-0.85)	(-0.85)	(-0.98)	(-0.33)	(-0.64)
Diversify	-0.002	-0.004	-0.003	-0.004	0.006	-0.008
	(-0.13)	(-0.22)	(-0.15)	(-0.25)	(0.41)	(-0.84)
Going_private	0.048*	0.054**	0.051*	0.050*	0.066***	-0.026
	(1.80)	(2.00)	(1.90)	(1.84)	(3.10)	(-1.33)
Stock	0.073***	0.079***	0.075***	0.072***	0.018	0.053***
	(3.74)	(4.00)	(3.84)	(3.61)	(1.10)	(3.85)
Premium	-0.026	-0.028	-0.026	-0.026	-0.042**	0.018
	(-1.05)	(-1.13)	(-1.06)	(-1.07)	(-2.00)	(1.12)
Board_size	0.000	0.000	0.000	0.000	0.002	-0.002
	(0.01)	(0.09)	(0.02)	(0.00)	(0.67)	(-1.04)
Ind_director	-0.075	-0.076	-0.075	-0.069	-0.067	-0.012
	(-1.48)	(-1.48)	(-1.46)	(-1.36)	(-1.63)	(-0.36)
Insider_own	-0.060	-0.057	-0.061	-0.060	-0.033	-0.029
	(-1.44)	(-1.36)	(-1.46)	(-1.45)	(-1.06)	(-0.96)
Dual_class	0.085***	0.088***	0.085***	0.084***	0.061***	0.017
	(3.25)	(3.41)	(3.24)	(3.23)	(3.02)	(1.13)
Target_cl	-0.001	-0.000	-0.000	-0.000	-0.001	0.001
	(-0.09)	(-0.02)	(-0.03)	(-0.02)	(-0.04)	(0.14)
Bidder_cl	-0.023	-0.021	-0.023	-0.022	0.008	-0.028**
	(-1.26)	(-1.12)	(-1.21)	(-1.17)	(0.50)	(-2.50)
Target_res	0.020	0.020	0.020	0.019	0.004	0.013
	(1.29)	(1.29)	(1.26)	(1.21)	(0.30)	(1.27)
Bidder_res	0.019	0.020	0.020	0.021	0.036**	-0.014
	(0.88)	(0.94)	(0.93)	(0.98)	(2.01)	(-0.93)
Tender	0.042**	0.047**	0.042**	0.045**	0.044***	-0.016
	(2.27)	(2.57)	(2.25)	(2.51)	(3.11)	(-0.98)
Friendly	-0.142***	-0.142***	-0.141***	-0.135***	-0.107***	-0.025
	(-3.50)	(-3.48)	(-3.46)	(-3.27)	(-3.58)	(-0.73)
Public_acquirer	0.059**	0.060**	0.059**	0.058**	0.043*	0.010
	(2.03)	(2.05)	(2.03)	(1.99)	(1.76)	(0.57)
Serial_acquirer	-0.024	-0.025	-0.024	-0.023	-0.026*	0.001
	(-1.49)	(-1.60)	(-1.53)	(-1.47)	(-1.88)	(0.07)
Multiple_bidder	0.201***	0.206***	0.202***	0.204***	0.167***	-0.017
	(9.38)	(9.55)	(9.37)	(9.53)	(10.40)	(-0.72)
Observations	2,082	2,082	2,082	2,082	2,082	1,903
Industry&Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.157	0.153	0.156	0.159	0.217	0.142

Table 6
SEC Comment Letters and Deal Duration

This table reports OLS regression results of deal duration on the receipt of SEC comment letters 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 the receipt of a comment letter (*Cl*), an indicator variable for the receipt of a comment related to financial issues (*Cl_fin*), an indicator variable for the receipt of a comment related to non-financial issues (*Cl_non_fin*), and the number of issues raised in the comment letter (*Cl_issue*). 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 fixed effects are included in all regression specifications. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable: *Deal_duration*			
	(1)	(2)	(3)	(4)
Cl	0.166***			
	(6.58)			
Cl_fin		0.177***		
		(6.05)		
Cl_non_fin			0.178***	
			(6.60)	
Cl_issue				0.007***
				(8.28)
Deal_size	0.033***	0.032***	0.032***	0.030***
	(4.46)	(4.26)	(4.36)	(4.09)
Diversify	-0.033	-0.039	-0.033	-0.039
	(-1.34)	(-1.59)	(-1.33)	(-1.59)
Going_private	0.087	0.097*	0.091*	0.089
	(1.59)	(1.74)	(1.65)	(1.64)
Stock	0.234***	0.239***	0.237***	0.226***
	(7.71)	(7.82)	(7.78)	(7.54)
Premium	0.016	0.015	0.018	0.015
	(0.48)	(0.43)	(0.52)	(0.43)
Board_size	0.020***	0.020***	0.020***	0.020***
	(3.83)	(3.82)	(3.77)	(3.84)
Ind_director	0.316***	0.321***	0.314***	0.339***
	(3.83)	(3.89)	(3.81)	(4.04)
Insider_own	-0.166*	-0.167*	-0.174**	-0.177**
	(-1.94)	(-1.96)	(-2.04)	(-2.09)
Dual_class	0.174***	0.178***	0.170***	0.170***
	(3.34)	(3.46)	(3.28)	(3.38)
Target_cl	-0.037*	-0.034	-0.034	-0.024
	(-1.75)	(-1.62)	(-1.62)	(-1.20)
Bidder_cl	-0.082***	-0.076***	-0.082***	-0.076***
	(-2.97)	(-2.80)	(-2.97)	(-2.78)
Target_res	0.016	0.014	0.013	0.011
	(0.73)	(0.61)	(0.60)	(0.48)
Bidder_res	-0.029	-0.021	-0.026	-0.020
	(-0.79)	(-0.57)	(-0.70)	(-0.55)
Tender	-0.514***	-0.500***	-0.519***	-0.501***
	(-15.90)	(-15.61)	(-15.97)	(-15.94)
Friendly	-0.365***	-0.364***	-0.358***	-0.335***
	(-2.78)	(-2.74)	(-2.75)	(-2.58)
Public_acquirer	0.120**	0.116**	0.117**	0.116**
	(2.46)	(2.37)	(2.40)	(2.41)
Serial_acquirer	-0.103***	-0.107***	-0.104***	-0.104***
	(-4.34)	(-4.46)	(-4.40)	(-4.41)
Observations	2,082	2,082	2,082	2,082
Industry&Year FE	Yes	Yes	Yes	Yes
Pseudo R-squared	0.462	0.460	0.463	0.468

Table 7
M&A Disclosure Amendments

This table reports results related to M&A filing amendments. Panel A presents the market reaction to filing amendments aggregated at the deal level. The dependent variable, *Amend_price_reaction*, is the sum of absolute 3-day cumulative abnormal return around each filing amendment for a given deal. Columns 1 and 2 report results based on the full sample. Columns 3 and 4 present results for completed deals. Panel B presents results on the effects of filing amendments on deal completion, offer price revision, and deal duration. *Completion* is an indicator variable equal to one if the deal is completed, and zero otherwise. *Price_revision* is an indicator variable equal to one if the final public offer price is different from the initial public offer price, and zero otherwise. *Deal_duration* equals the natural logarithm of one plus the number of days between deal announcement and completion. Key independent variables include an indicator variable for deals that receive comment letters and also file amendments (*Cl_amendment*), an indicator variable for deals that receive comment letters but do not file amendments (*Cl_noamendment*), and an indicator variable for deals with voluntary amendments without receiving any comment letters (*Nocl_amendment*). The coefficients on the control variables and the intercept are not reported for brevity. The control variables are the same as those included in main analyses. 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. Industry and year fixed effects are included in all regression specifications. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Price Reaction to Filing Amendments

	Dependent Variable: *Amend_price_reaction*			
	All Deals		Completed Deals	
	(1)	(2)	(3)	(4)
Cl	0.019***	0.020***	0.019***	0.026***
	(3.00)	(3.08)	(3.44)	(4.26)
Observations	1,437	1,380	1,300	1,252
Control	No	Yes	No	Yes
Industry&Year FE	No	Yes	No	Yes
R-squared	0.006	0.179	0.009	0.123

Panel B: Filing Amendments and Deal Outcomes

	Completion	Price_revision	Deal_duration
	(1)	(2)	(3)
Cl_amendment	0.056***	0.059***	0.190***
	(3.37)	(3.01)	(4.81)
Cl_noamendment	0.010	-0.011	0.183***
	(0.26)	(-0.22)	(2.67)
Nocl_amendment	0.031*	0.014	0.041
	(1.87)	(0.62)	(0.99)
Observations	2,348	2,082	2,082
Controls	Yes	Yes	Yes
Industry&Year FE	Yes	Yes	Yes
Pseudo R-squared	0.257	0.159	0.462

Table 8
Entropy Balancing: SEC Comment Letters and Deal Outcomes

This table reports results on the relations between SEC comment letters and deal completion, price revision, and deal duration using entropy balancing. The deal completion test includes both withdrawn and completed deals; the 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, *Price_revision*, is an indicator variable that equals one if the final public offer price is different from 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	*Price_revision*	*Deal_duration*
	(1)	(2)	(3)
Cl	0.043***	0.055***	0.162***
	(3.34)	(3.15)	(6.46)
Observations	2,348	2,082	2,082
Controls	Yes	Yes	Yes
Industry&Year FE	Yes	Yes	Yes
R-squared	0.250	0.159	0.496

Table 9
SEC M&A Reviewer Busyness and Deal Outcomes

This table reports the effect of SEC M&A reviewer busyness on deal outcomes. The key independent variable, *SEC_busyness*, is an indicator variable equal to 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. The three outcome variables are deal completion, price revision, and deal duration. Panel A reports regression results for the subsample of deals with comment letters. Panel B reports regression results for the subsample of deals without comment letters. The coefficients on the control variables and the intercept are not reported for brevity. The control variables are the same as those included in main analyses. 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 fixed effects are included in all regression specifications. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Deals with Comment Letters

	Dependent Variable		
	Completion	Price_revision	Deal_duration
	(1)	(2)	(3)
Sec_busyness	-0.051**	-0.130***	-0.052
	(-2.28)	(-3.89)	(-1.14)
Observations	633	666	666
Control	Yes	Yes	Yes
Industry&Year FE	Yes	Yes	Yes
R-squared	0.332	0.215	0.470

Panel B: Deal without comment letters

	Dependent Variable		
	Completion	Price_revision	Deal_duration
	(1)	(2)	(3)
Sec_busyness	-0.018	-0.001	-0.032
	(-1.10)	(-0.06)	(-1.29)
Observations	1,618	1,390	1,416
Control	Yes	Yes	Yes
Industry&Year FE	Yes	Yes	Yes
R-squared	0.264	0.146	0.454

Table 10
2SLS: SEC Comment Letters and Deal Outcomes

This table reports two-stage least square regression results for the effects of SEC comment letters on deal completion, price revisions, and deal duration. *Completion* is an indicator variable equal to one if the deal is completed, and zero otherwise. *Price_revision* is an indicator variable equal to one if the final public offer price is different from 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. The deal completion test includes both withdrawn and completed deals; the price revision and deal duration tests include completed deals only. In the first stage, we obtain coefficients using Probit regression of comment letter receipt (*Cl*). We then use the predicted values of *Cl*, obtained from the Probit regression, as the key independent variable in the second stage. 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 equal to 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 average *Cl* for the two subsamples where *SEC_busyness*=0 and *SEC_busyness*=1, as well the difference between the two subsamples and the associated statistics. 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 fixed 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		Price_revision		Deal_duration	
VARIABLES	1st stage	2nd stage	1st stage	2nd stage	1st stage	2nd stage
SEC_busyness	-0.132**		-0.150**		-0.147**	
	(-1.96)		(-2.15)		(-2.11)	
Cl		0.484**		0.736***		0.505**
		(2.53)		(3.03)		(1.96)
Observations	2,367	2,367	2,082	2,082	2,082	2,082
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry&Year FE	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.111	-0.092	0.121	-0.711	0.118	0.402

Table 11
The Impact Threshold of a Confounding Variable

This table reports the impact threshold of a confounding variable (ITCV) for our deal completion, price revision, and deal duration tests. *Completion* is an indicator variable equal to one if the deal is completed, and zero otherwise. *Price_revision* is an indicator variable equal to one if the final public offer price is different from the initial public offer price, and zero otherwise. *Deal_duration* equals the natural logarithm of one plus the number of days between deal announcement and completion. The deal completion test includes both withdrawn and completed deals; the 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 we observe. 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. All variables are defined in Appendix A.

Dependent Variable:	Completion		Price_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	0.002	0.009
Diversify	0.000	0.002	0.000	0.000	0.001	0.005
Going_private	-0.007	-0.002	0.006	0.001	0.005	-0.001
Stock	-0.002	0.006	0.020	0.016	0.039	0.062
Premium	0.001	-0.001	0.001	0.002	0.000	0.005
Board_size	0.000	0.001	0.000	0.000	0.004	0.014
Ind_director	0.000	0.000	0.001	0.001	-0.001	-0.002
Insider_own	0.001	0.001	-0.001	0.000	-0.002	-0.002
Dual_class	0.001	0.001	0.007	0.010	0.012	0.016
Target_res	0.000	0.000	0.000	0.000	0.000	0.000
Bidder_res	0.000	0.001	0.000	0.001	0.000	0.000
Target_cl	0.002	0.001	0.001	0.000	0.000	-0.002
Bidder_cl	0.000	0.001	-0.001	-0.001	-0.001	0.003
Tender	0.013	0.005	0.008	0.002	-0.038	-0.026
Friendly	-0.002	-0.002	0.001	0.004	0.002	0.003
Public_acquirer	0.000	0.004	0.001	0.000	0.000	0.006
Serial_acquirer	-0.004	-0.004	0.004	0.005	0.009	0.006
Multiple_bidder			0.014	0.017		
ITCV	0.018		0.032		0.087	