Specific Performance, Deal Tightness, and Merger Dynamics

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Abstract

Merger agreements are carefully crafted to balance the target's desire for certainty of closing versus the bidder's desire to maintain flexibility in the event of unexpected changes. Taking a holistic view of merger agreements, we construct a deal tightness index (DTI) which measures how tightly the agreement binds the bidder to complete the transaction. We do this by examining three key contractual provisions identified by legal scholars as crucial in limiting the bidder's flexibility: the specific performance provision, material adverse effect (MAE) exclusions, and bidder termination provisions. Deals with higher DTI are more likely to be completed, have a shorter time to completion, are less likely to see offer price reductions, and have lower arbitrage spreads, all of which are consistent with the idea that deal tightness provides more closing certainty for the target. DTI is negatively related to the offer premium and target announcement return, which suggests that bidders negotiate advantageous financial terms in exchange for a tighter agreement. Bidders also experience higher short- and long-term announcement returns in deals with high DTI. Examining the interactions of the constituents of DTI, we show that a strong specific performance provision often subsumes the effect of MAE exclusions. Overall, our study highlights how key contractual provisions interact to shape offer terms and merger dynamics.

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"*In strategic deals, the target company will usually negotiate something called a specific performance clause, allowing it to require a buyer to complete the deal and pay the full amount of the acquisition. The most famous example of this during the financial crisis was in Dow Chemical's acquisition of Rohm & Haas. Dow was boxed into completing that deal because its acquisition agreement had a specific performance clause, and Dow could not simply pay a reverse termination fee to exit the deal.* "

- Steven Davidoff Solomon, "Walking Away From Merger Deals," *New York Times*, May 2, 2012[1]

1 Introduction

The long time gap between a merger's announcement and its closing exposes the transacting parties to economic shocks that could materially affect the appeal of the initial deal, thereby impacting their desire to complete the deal (Bhagwat et al., 2016). Given the nontrivial costs associated with deal renegotiation or termination (Bates and Lemmon, 2003; Officer, 2004), bidder and target firms invest significant effort in crafting and negotiating various contractual features in their merger agreement to mitigate and allocate these risks between them (Manns and Anderson, 2013; Afsharipour, 2010). Of particular interest to the bidder is the desire to maintain flexibility in the event of unexpected changes, whereas the target seeks certainty of closing (Afsharipour, 2010). The existing literature has examined the effects of some important contractual provisions which bidders use to maintain flexibility, such as the material adverse event (MAE) clause (Gilson and Schwartz, 2005; Denis and Macias, 2013) and bidder termination provisions (Sekhon, 2010; Chen et al., 2022). However, the various provisions in a merger agreement are interrelated, and the effect of any provision on the merger outcome could depend on how other provisions are crafted. For example, Afsharipour (2010) provide many examples to show that the effects of bidder termination provisions and the MAE clause on merger outcomes vary with how the so called "specific performance" clause is structured. Therefore, it

[1]Article available at https://archive.nytimes.com/dealbook.nytimes.com/2012/05/02/walking-away-from-merger-deals/.

is important to examine the merger agreement as a whole to understand how the various deal provisions interact to shape offer terms, merger dynamics, and shareholder wealth.

In this paper, we take a holistic view of merger agreements, and combine several important contractual provisions to construct a *deal tightness index* ("DTI") which measures how tightly the agreement binds the bidder to complete the transaction. A high DTI means that the merger agreement is crafted in a manner that limits the bidder's flexibility in the event of unexpected changes, thus providing the target with greater certainty that the bidder will close the transaction. We focus on tightness from the bidder's perspective because a target can walk away from the agreement (by paying the termination fee) to pursue a superior offer via a "fiduciary out" clause that is typically required by the law to be included in a merger agreement.[2] We examine the cross-sectional determinants of DTI, and how the usage of its constituent provisions has evolved over time. We then seek to understand how these key contractual provisions jointly shape offer terms, merger dynamics, and shareholder wealth.

Legal scholars have identified several important contractual provisions as crucial in determining the bidder's flexibility in the event of unexpected changes. The most notable of these are: the specific performance clause, the MAE clause, and the reverse (or bidder) termination fee (RTF) provisions. Specific performance—which legal scholars describe as "an extraordinary equitable remedy that compels a party to execute a contract according to the precise agreed terms or to execute it substantially so that under the circumstances, justice will be served" (Goldstein, 2004; Listokin, 2005)—is arguably the most important contractual provision that provides closing certainty to the target. Anecdotal evidence suggests that a strongly worded specific performance clause makes it nearly impossible for the bidder to walk away from the deal, regardless of other contractual provisions (see Section 2.1 for details). Next, the MAE clause is among the most intensely negotiated provisions in a merger agreement, and (in theory) allows the bidder to walk away from the transaction if an MAE, as defined in the agreement,

[2]The target company's board of directors have a fiduciary duty to their shareholders to consider superior alternative bids. Delaware courts have significantly limited the parties' ability to use deal protection covenants in such a way that the acquisition agreement prevents the target from accepting a superior offer from a third-party bidder. This series of Delaware cases has been described by scholars as resulting in a "judicially-created fiduciary put."

occurs between deal announcement and completion. MAE exclusions are important because they make it harder for the bidder to invoke the MAE clause and exit the deal. Finally, RTF provisions are designed to provide the bidder with an option to walk away from the transaction at the cost of paying a termination fee to the target (Afsharipour, 2010; Quinn, 2010). All else equal, it is easier for the bidder to terminate the agreement if it contains a RTF provision with a low termination fee for the bidder, especially if it is specified as the sole and exclusive remedy for the target.

The importance of these deal provisions is illustrated by two contrasting merger agreements discussed by Afsharipour (2010): the agreement between Dow Chemical Company and Rohm and Haas Company in July 2008 ("Dow-Rohm"); and the agreement between Mars Incorporated and Wm. Wrigley Jr. Company in April 2008 ("Mars-Wrigley"). The Dow-Rohm agreement was a very tight contract from the bidder's perspective. Among other things, it included a strong specific performance clause and a weak MAE clause with lots of exclusions. Therefore, although the agreement contained a reverse termination provision, Dow could not exercise it to terminate the deal even after the great financial crisis and the ensuing recession upended the economics of the merger; and was ultimately forced to close the transaction with Rohm as per the originally agreed terms.[3] In sharp contrast, the Mars-Wrigley agreement included an "option-style" reverse termination provision which granted the bidder an option to walk away by simply paying a reverse termination fee that would be the "sole and exclusive remedy for the target without an option to seek specific performance." These contrasting examples highlight the importance of taking a holistic view of merger agreements and understanding the interactions of key contractual provisions.

Measuring deal tightness presents significant challenges due to the inherent complexity and interconnected nature of various provisions. Merger agreements are intricate contracts containing numerous provisions that can appear vague or ambiguous, making it difficult to assess their binding force in isolation. When disputes arise, courts must interpret these agreements

[3]See the article titled *"Dow Imperiled by Its Deal for Rohm & Hass,"* in the New York Times on February 6, 2009: https://www.nytimes.com/2009/02/07/business/07nocera.html.

by examining the interplay between various clauses. This judicial approach reflects the reality that the binding effect of any single provision—whether related to specific performance remedies, MAE clauses, or termination rights—cannot be evaluated independently, as its impact on merger dynamics fundamentally depends on how other provisions are structured and crafted.[4] The cumulative effect of these interwoven contractual elements creates a complex web of obligations and escape mechanisms that defies simple quantitative measurement, requiring instead a nuanced analysis of the entire agreement's architecture. Rather than cataloging individual contractual elements, a more effective approach involves analyzing the entire merger agreement holistically using computational methods such as keyword searches and regular expression (*regex*) measures that can capture the relationships between different sections and identify patterns that might not be apparent through traditional clause-by-clause review. This is the approach we take to construct DTI (see Section 3.3 for details).

Our main hypothesis is that the transacting parties negotiate tighter agreements when the bidder is confident about value creation from the merger, and that the bidder trades off deal tightness for a lower offer premium. Legal scholars believe that it is efficient for the bidder to bear the risk of unforeseen (or exogenous) events because the bidder is typically much larger than the target and is gaining control of the target (e.g., see Gilson and Schwartz, 2005; Quinn, 2010). However, a tight agreement also exposes the bidder to moral hazard on the target side, and may reduce the target's incentives to make non-contractible synergy investments. Hence, in equilibrium, the bidder will accept a tight agreement only if it is confident about the target's value and the value of synergies. Moreover, the bidder will bargain for a lower offer premium in exchange for providing greater closing certainty to the target. We refer to this as the efficient contracting hypothesis.

An alternative hypothesis is that the tightness of the agreement and other offer terms are driven by bidder overconfidence or hubris. Overconfident bidders tend to overestimate the target value and the value of synergies from the merger. Therefore, they are more likely to

[4]This is evident from the two examples cited above, and many other examples presented by Afsharipour (2010).

agree to a tighter agreement as well as a higher offer premium, especially if they are worried about competing bidders. Anecdotally, this seems to have been the case in the Dow-Rohm agreement. In a similar vein, other factors that drive bidders to undertake bad acquisitions, such as managerial entrenchment (Masulis et al., 2007) and excess free cash flows (Jensen, 1986), may also cause them to agree to tighter deals. We refer to these collectively as the agency hypothesis. Finally, the null hypothesis is that the merger agreement tightness has no significant effect on merger dynamics. Indeed, some legal scholars believe that transacting parties publicly committed to a merger have strong incentives to complete the deal regardless of what legal contingencies are triggered (Manns and Anderson, 2013). Moreover, while the parties spend considerable time negotiating the definition of MAE, courts have interpreted this provision very narrowly. A series of landmark decisions by the Delaware courts (*IBP, Inc. v. Tyson Foods, Inc. (2001)*; *Hexion Specialty Chemicals, Inc. v. Huntsman Corp. (2008)*) weaken the bidder's ability to back out of deals by invoking the MAE clause in response to adverse economic and industry outcomes, with Somogie (2009) noting that the Delaware courts have never found a material adverse effect to have occurred in a merger deal.

Our results are broadly consistent with the efficient contracting hypothesis. First, we show that deals with higher DTI are more likely to be completed ex post, have a shorter time to completion, and are less likely to see a downward renegotiation in the offer price, all of which are consistent with the idea that deal tightness provides more closing certainty for the target. The market also seems to share this belief as evidenced by the negative relation between DTI and the merger arbitrage spread, which past literature has shown to capture the risk that the deal is not completed at the announced terms (Brown and Raymond, 1986; Mitchell and Pulvino, 2001). DTI is negatively related to offer premium, which suggests that, at the margin, bidders decrease the offer price in exchange for providing greater closing certainty to the target. In other words, a bidder that is committed to the deal could strategically use deal tightness to negotiate favorable financial terms. Consistent with this interpretation, we find a negative relation between target announcement return and DTI, and a positive relation between both short- and long-run bidder announcement return and DTI. Another possibility is that a high

DTI signals to the market that the bidder is more confident about value creation from the merger. Consistent with this explanation, we find that the (synthetic) combined announcement return is positively related to DTI.

We also separately examine how the components of DTI interact with each other to shape merger dynamics. On their own, both the specific performance provision and MAE exclusions have a strong positive relation with the likelihood of deal completion, whereas RTF provisions have no effect. Interestingly, however, a strong specific performance provision subsumes the effect of other provisions on the likelihood of deal completion. Specifically, the positive effect of MAE exclusions on likelihood of completion is present only in deals with weak specific performance provisions, and is absent in deals with strong specific performance provisions. The negative effect of deal tightness on likelihood of an offer price reduction is also driven by the specific performance provision, whereas MAE exclusions and RTF provisions have no effect.

The extant literature in law recognizes the importance of the specific performance provision in merger agreements (Goldstein, 2004; Listokin, 2005; Afsharipour, 2010; Eisenberg and Miller, 2015; Arnold et al., 2021). Traditionally, the specific performance remedy was sought by bidders claiming irreparable damage if they were prevented from acquiring the target. However, in a series of landmark cases (e.g., *IBP v. Tyson (2001)*; *Genesco v. Finish Line (2007)*), courts in Delaware and Tennessee have granted specific performance to target companies as well. Possibly as a result of these landmark cases, we find a significant increase in the usage and strength of specific performance provisions in the post-2005 period. Afsharipour (2010) provides many anecdotes to highlight the importance of the specific performance provision in shaping merger outcomes. Based on interviews with M&A lawyers, Arnold et al. (2021) emphasize that courts are more likely to grant specific performance if the merger agreement includes multiple recitals stating the parties' preference for specific performance over monetary damages. Using their insight, we quantify commonly used recitals in specific performance provisions and use these to measure the strength of the specific performance provision in a large sample of merger agreements. To the best of our knowledge, we are the first to empirically document the effect of the specific performance provision on offer terms, merger dynamics, and shareholder returns

in a large sample of mergers.

Several existing studies have examined the role of MAE clause (Gilson and Schwartz, 2005; Denis and Macias, 2013; Macias and Moeller, 2016) and bidder termination provisions (Scott and Triantis, 2004; Davidoff, 2008; Sekhon, 2010; Chen et al., 2022) in merger agreements. The papers most closely related to ours are Denis and Macias (2013) and Chen et al. (2022). Using a sample of US mergers over the 1998–2005 period, Denis and Macias (2013) show that deals with more MAE exclusions (i.e., tighter deals from the bidder's perspective) are more likely to be completed, less likely to be renegotiated, have higher offer premium, and lower arbitrage spread. Using a sample of US deals over the 1997–2013 period, Chen et al. (2022) find that bidder termination provisions are more likely to be included when the bidder's and target's asset volatility is high, and when the covariance between their asset values is low. They further find that bidder termination provisions are associated with larger combined bidder and target announcement returns only when bidder and target termination fees are not mechanically set equal to each other.

We contribute to this literature by examining how the MAE clause and bidder termination provisions interact with other contractual provisions in the merger agreement to shape merger dynamics. While the standalone effects of MAE exclusions we find are generally consistent with the findings of Denis and Macias (2013), a key finding is that a strong specific performance provision subsumes the effect of MAE exclusions on the likelihood of deal completion and the offer premium. That is, consistent with the anecdotes in Afsharipour (2010), we find that there is no relation between MAE exclusions and likelihood of deal completion or the offer premium, when the agreement features a strong specific performance provision. This is an important finding because the contracting landscape has changed significantly after 2005 (which is the end of the sample period analyzed by Denis and Macias). First, As noted above, a couple of landmark judgments delivered by Delaware courts in the early 2000s have weakened bidders' ability to back out of deals by invoking the MAE clause regardless of the contract language (Bhagwat et al., 2016). Second, the use of specific performance has also increased significantly starting in the early 2000s. We fail to find any evidence of bidder termination provisions on

likelihood of deal completion or renegotiation. However, deals with weak bidder termination provisions (i.e., tighter deals from the bidder's perspective) are associated with lower offer premium, higher bidder announcement returns, and lower target announcement returns.

Our paper is related to studies of other contractual features of merger agreements, such as target termination provisions (Bates and Lemmon, 2003; Officer, 2003; Boone and Mulherin, 2007; Jeon and Ligon, 2011), collars (Officer, 2004, 2006), go-shop provisions (Gogineni and Puthenpurackal, 2017), and lock-up options (Burch, 2001).

2 Institutional Background

Every M&A deal is governed by a set of contract terms that are described in detail in the merger agreement. These contract terms are negotiated between the bidder and target in order to communicate deal terms, specify risk sharing between the parties, and lay out dispute management provisions in case of litigation (e.g., see Coates, 2016; Coates et al., 2019, for details). With respect to the allocation of deal risk, the merger agreement seeks to balance the bidder's desire to maintain flexibility in the event of unexpected changes versus the target's desire for certainty of closing (Afsharipour, 2010). In this section, we provide more details on three key contractual provisions that affect this balance: specific performance, MAE clause, and reverse termination provisions. We also describe how these provisions may interact with each other to determine the outcome of the deal.

2.1 Specific Performance

Specific performance is described as "an extraordinary equitable remedy that compels a party to execute a contract according to the precise agreed terms or to execute it substantially so that under the circumstances, justice will be served. The goals of specific performance are to ensure that the promisee receives the full benefits of his bargaining efforts and to deter opportunistic promisers from breaching the contract" (Goldstein, 2004; Listokin, 2005).

Legal scholars note that although money damages are the preferred remedy in Anglo-

American law for contract breach, it has become increasingly common for parties in M&A transactions to choose specific performance as their preferred remedy (Eisenberg and Miller, 2015; Arnold et al., 2021). They offer several potential explanations for why parties to merger agreements may prefer specific performance over monetary damages. Monetary damages in a merger transaction may be hard for a court to estimate given the challenges in estimating synergy values; and this problem is particularly severe on the seller's side. Legal practitioners also believe that courts are uncomfortable offering big monetary damages that jilted parties in a merger transaction may seek. Moreover, specific performance rewards and enforces the socially valuable investments that contracting parties make in their relationship with one another and may enhance efficiency by assuring non-breaching parties ex post power to decide what remedy is preferable.

Although specific performance is generally viewed as an extraordinary remedy, courts have shown their willingness to grant specific performance in the merger context. Prior to the early 2000s, the specific performance remedy was generally sought by and granted to buyers who claimed that they cannot be made whole unless they can specifically enforce the acquisition agreement, and that damages would not be an adequate remedy (Goldstein, 2004). However, in the landmark *IBP v. Tyson* case in 2001, the Delaware Court of Chancery granted specific performance to the target company (IBP) after the acquirer (Tyson) sought to exit the merger following a cyclical downturn in the beef industry. The court mentioned the difficulty in calculating monetary damages while ruling for specific performance. Similarly, in the *Genesco v. Finish Line* case in 2007, the Tennessee Chancery Court granted specific performance to the target company (Genesco) after the acquirer (Finish Line) refused to close the transaction.

Arnold et al. (2021) note that, to reconcile their preference for specific performance with the law's preference for money damages, parties to a merger agreement include various *recitals* in their specific performance clauses, essentially agreeing in advance that the elements of specific performance have been met and waiving the argument that monetary damages are the most appropriate. The lawyers they interview emphasize the importance of reciting the correct formula to ensure that the courts grant their parties the preferred remedy. For example: parties

agree "that irreparable damage would occur in the event that any of the provisions of [the] Agreement were not performed in accordance with their specific terms... and that monetary damages, even if available, would not be an adequate remedy" and agree "not to oppose the granting of an injunction, specific performance or other equitable relief..."

Analyzing a randomly collected sample of merger agreements between 2010 and 2019, Arnold et al. (2021) note that the vast majority (about 90%) of merger agreements include a specific performance provision. However, they note that a 'standard' form specific performance clause has not yet gained prominence, and that there is substantial cross-sectional variation in the strength of this provision and the number of recitals. For example, some contracts employ the stronger phrase "entitled to specific performance," whereas others use the weaker phrase "entitled to seek specific performance" and/or attach conditions or limits to this provision. Focusing on recitals including "irreparable harm", "unique", "promise not to challenge", they find that the use of these recitals has increased over time, reflecting parties' desire to give judges a doctrinal hook with which to rule in their favor, as they are asking for an equitable remedy. These recitals suggest an anticipation by the parties (and their lawyers) that courts, before simply granting the parties the remedy they asked for, will run through the elements of the rule on specific performance.

2.2 MAE Clause

The material adverse change (MAC) or MAE clause gives the acquirer the right to terminate the deal, without any penalty, if a MAE occurs—many of which pertain to the seller—between the announcement and the completion of the deal.[5] The strength of this termination right is potentially limited, however, by specifying particular events that are excluded from being MAEs (Gilson and Schwartz, 2005; Quinn, 2010; Denis and Macias, 2013). Legal scholars argue that MAE exclusions are "efficient" because they transfer the risk of exogenous events (i.e., events beyond the target's control) to the buyer, which is "better able to bear" these risks in the long

[5]It is also possible, but less common, that the seller may negotiate the right to terminate the agreement if a MAE occurs with respect to the buyer.

run, because the buyer is typically much larger than the target and is gaining long-term control of the target (Gilson and Schwartz, 2005; Quinn, 2010).

In practice, it is ultimately up to the court to determine whether a certain event or change constitutes an MAE. Afsharipour (2010) notes that while the parties to merger agreements spend considerable time negotiating the definition of MAE, courts have interpreted this provision very narrowly. A series of landmark decisions by the Delaware courts (*IBP, Inc. v. Tyson Foods, Inc. (2001)*; *Hexion Specialty Chemicals, Inc. v. Huntsman Corp. (2008)*) weaken the bidder's ability to back out of deals by invoking the MAE clause in response to adverse economic and industry outcomes. In *Hexion Specialty Chemicals, Inc. v. Huntsman Corp.*, the Delaware Chancery Court specifically reiterated that the Delaware courts take a *long-term view* with respect to determining whether an MAE has occurred. The court noted that the important consideration is whether "there has been an adverse change in the target's business that is consequential to the company's long-term earnings power over a commercially reasonable period, which one would expect to be measured in years than in months..." Indeed, Somogie (2009) notes that the Delaware courts have never found a material adverse effect to have occurred in a merger deal. Despite this, Afsharipour (2010) notes that MAE provisions, in combination with reverse termination fee clause, may give the bidder significant negotiation leverage, because of the threat that the bidder may walk away either without paying any fee (by claiming MAE) or by paying the reverse termination fee.

Denis and Macias (2013) examine the MAC/MAE clause in a large sample of acquisitions announced between 1998 and 2005. They note that while this clause is present in virtually all merger agreements, there is substantial cross-sectional variation in the number and type of MAE exclusions, which range from fairly general market-wide events to firm-specific events, such as the failure to meet projections. They find that MAEs are common and that the structure of MAC clauses is associated with acquisition outcomes. Specifically, deals with a large number of MAE exclusions are more likely to be completed, are less likely to be renegotiated, and have smaller merger arbitrage spreads. It is, however, important to point out that their sample period precedes the landmark judgments cited in the previous paragraph, which severely limit

the bidders' ability to terminate merger agreements by invoking the MAE clause.

2.3 Reverse Termination Fee Provisions

The vast majority of merger agreements include a standard termination fee (STF) which is payable by the target to the buyer in the event that the target terminates the agreement prior to closing under certain circumstances (Bates and Lemmon, 2003; Boone and Mulherin, 2007). For example, courts mandate that targets must have the option to terminate the merger agreement if they receive a superior third-party offer ("fiduciary put"). Unlike targets, bidders are generally constrained in being able to terminate an acquisition that loses its appeal. This constraint may be alleviated by the inclusion of reverse termination fee (RTF) provisions which provide the bidder with the right to terminate the agreement in exchange for a fee payable to the target under some circumstances. Law scholars have argued that RTF provision effectively gives the bidder a real call option on the target (Scott and Triantis, 2004; Davidoff, 2008; Sekhon, 2010). Moreover, in the absence of an RTF provision, the bidder is effectively liable for completing the deal, except in the unlikely event that it can successfully invoke the MAE clause (Afsharipour, 2010).

Examining a sample of acquisitions announced between 2003 and 2008, Quinn (2010) identifies five categories of triggers used in RTF provisions (also see Chen et al., 2022): fiduciary out trigger which may be triggered if the bidder itself receives a takeover bid; regulatory/antitrust trigger if regulators do not approve the deal; financing trigger if the bidder is unable to secure financing for the deal; representation and warranty trigger due to breach of representations and warranties by the bidder; and the "pure option" or the "option to close" trigger which provides the bidder with full discretion over the termination decision. The option to close trigger represents the most extreme form of buyer optionality, because it provides the bidder with an unconditional option to terminate the deal by paying the RTF as the sole remedy for the target, and preventing access to a specific performance remedy. For example, in *United Rentals, Inc. v. RAM Holdings, Inc. (2007)*, the Delaware Court of Chancery denied the target company's

(United Rental) request for specific performance to force a merger, and limited its remedy to the $100 million RTF specified in the merger agreement. Such "option style" RTF provisions have also been used extensively by private equity buyers.

Examining a large sample of merger agreements announced between 1997 and 2013, Chen et al. (2022) note that the use of RTF provision has grown over time. Toward the end of their sample period, close to 30% of deals included an RTF provision. There is wide variation in the RTF as a fraction of transaction value: while the average is 3.5%, it can be as high as 20% in some deals. They find that RTF provisions are more likely to be included when the bidder's and target's asset volatility is high, and when the covariance between their asset values is low. They further find that RTF provisions are associated with larger combined bidder and target announcement returns only when bidder and target termination fees are not mechanically set equal to each other.

2.4 Interactions of the Provisions

In the preceding subsections, we discussed the implications of the specific performance provision, MAE clause, and RTF provision in isolation. However, in practice, merger dynamics are shaped by the interactions of these provisions. For instance, although the vast majority of merger agreements include a specific performance provision, the target's ability to invoke specific performance against the bidder may be limited by a strong RTF provision. This is evident from the Delaware Court of Chancery's decision in *United Rentals, Inc. v. RAM Holdings, Inc. (2007)*, where the court limited the target's remedy to the $100 million RTF specified in the merger agreement. The Mars-Wrigley merger agreement which we mentioned in the introduction also featured an "option-style" RTF provision which granted the bidder an option to walk away by simply paying the RTF fee that would be the "sole and exclusive remedy for the target without an option to seek specific performance."

Conversely, the bidder's ability to terminate a deal by invoking the MAE clause or the RTF provision may be limited by a strong specific performance provision, as is evident from the

Delaware Court of Chancery's decision in *IBP v. Tyson (2001)* and the Tennessee Chancery Court's decision in *Genesco v. Finish Line (2007)*. The agreement between Dow Chemicals and Rohm and Haas, which we mentioned in the introduction, highlights the limitations of the RTF provision when paired with a strong specific performance provision (Afsharipour, 2010). In this case, Dow Chemicals tried to back out of the merger agreement because of the global financial crisis (which affected its ability to raise debt financing) and the sharp drop in the share price of Rohm. However, the Dow-Rohm agreement did not include a "financing out" trigger, and featured a strong specific performance provision. Therefore, although the agreement contained an RTF provision, Dow could not exercise it to terminate the deal even after the meltdown in credit markets; and was ultimately forced to close the transaction with Rohm at the originally agreed price.

Overall, these examples highlight the importance of taking a holistic view of merger agreements and understanding the interactions of key contractual provisions.

3 Data and Key Variables

3.1 Data Sources and Sample Selection

We collect information on M&A deals including their key event dates and deal characteristics from the SDC Platinum database. We start with all the deals covered by the SDC that were announced between 1994 and 2022, and impose the following conditions that are standard in the literature (e.g., see Guo et al., 2023, for a similar approach): both the bidder and the target are publicly traded firms (i.e, their status is listed as "public"); the deal value is at least $1 million; the deal's status is either completed or withdrawn; and the bidder sought to acquire at least 50% of the target's equity stake. We exclude deals that SDC flags as recapitalization, repurchase, restructuring, or self-tender transactions; and deals which list the same name for the bidder and target. Similar to Denis and Macias (2013), we exclude the deals that SDC identifies as hostile, tender, or unsolicited transactions, because they are unlikely to have a merger agreement. We

obtain firm financial information from Compustat and share price information from the CRSP database. We merge SDC with Compustat and CRSP using the dealnumber-to-gvkey mapping provided by Ewens et al. (2025). After applying these conditions, we are left with a sample of 4,623 deals that have basic stock price and accounting information available in the CRSP and COMPUSTAT databases for both the bidder and the target.

As we explain below, we use the Securities and Exchange Commission's (SEC) EDGAR database to obtain merger agreements.

3.2 Obtaining Merger Agreements

The SEC requires bidders and targets to file the merger agreement via Form 8-K ("Current Report") within four business days from the deal announcement date, with some exceptions for tender offers (Afsharipour, 2010). Accordingly, we attempt to retrieve merger agreements from the bidders' 8-K filings on the SEC EGDAR database.

However, extracting the merger agreement from SEC EDGAR is not a simple task, and faces many complications. First, companies make a lot of 8-K filings to report other material changes unrelated to mergers (e.g., debt covenant violations, amendments to loan agreements, etc.). Second, it is not possible to identify merger agreements using simple keyword searches alone, because these may also pick up other agreements such as employment or stock option agreements. Third, there may be duplicate filings pertaining to the same merger, and some of these may only present shorter summaries of the merger agreement.

We overcome these complications using the following procedure: First, we focus on 8-K filings filed between deal announcement date and five business days after the announcement date because merger agreements are generally required to be filed within four business days after announcement (we allow for one day slack to account for possible delays or errors in SDC announcement dates). Within these filings, we search for common HTML tags and titles and *regex* patterns which we typically find at the beginning of merger agreements, and extract the associated sections. Second, we discard sections that have less than 10,000 words, because these

are unlikely to be merger agreements. We also drop sections with HTML titles that contain words unlikely to indicate a merger agreement, such as "option," "warrant," or "indemnification." Third, if there are multiple sections that survive after these steps, we use the earliest filing after the deal announcement date.

Using this procedure, we are able to identify the merger agreements for 3,066 merger deals in our sample from SDC that have basic stock price and accounting information available in the CRSP and COMPUSTAT databases.[6] We note that, for the vast majority of deals in our sample, the 8-K filing containing the merger agreement was made either on the announcement date or the next business day.

It is worth noting that Adelson et al. (2025) provide a new corpus of definitive merger agreements collected using a similar approach to ours described above. While their corpus may achieve greater accuracy in matching merger agreements to the corresponding deals due to their extensive manual review, their sample design constrains the application of some widely used selection criteria in the finance M&A literature. For instance, their sample period is limited to 2000–2020, and it only includes deals with a transaction value of at least $100 million. By contrast, our approach is more easily extendable, as we minimized false matches by refining the filters described above. Ultimately, as they note, a data collection and cleaning effort of this kind is "never truly complete."

3.3 Measuring Deal Tightness

As we noted in Section 2, the bidder's ability to maintain flexibility in the event of unexpected changes mainly depends on the structure of three important contractual provisions: specific performance, MAE clause, and the RTF provision. Specifically, the bidder is more tightly bound to complete the merger if the agreement contains a strong specific performance provision, and weak MAE and RTF provisions. Accordingly, we construct a deal tightness index (DTI)

[6]Not all announced merger deals are accompanied by an EDGAR filing containing the merger agreement. For example, Adelson et al. (2025)—although relied on different merger dataset (from Factset)—note that about 70% of their sample deals do not have associated merger agreements available on EDGAR. They suggest possible reasons for this, such as the merger not being deemed material or firms simply not complying.

which aggregates measures relating to the strength of the specific performance provision, and the weaknesses of the MAE clause and RTF provision.

Measuring deal tightness across a large sample of merger agreements is challenging due to the inherent complexity and interconnected nature of various contractual provisions. As is evident from the many examples cited above, when legal disputes arise, courts must interpret these agreements by examining the interplay between various clauses; and courts in different jurisdictions may adjudicate disputes differently. Given these complexities and our large sample size, it is practically infeasible for us to arrive at a "correct" legal interpretation of how tightly a given merger agreement will bind the bidder to the deal. As discussed above, we thus take the approach of relying on keyword and regex searches to minimize potential errors from interpreting and hand-collecting these complex information from lengthy legal agreements, and to develop a relatively simple quantifiable measure of deal tightness that can be applied to a large sample of merger agreements.

The DTI is made up of indicator (or dummy) variables that identify the presence of specific clauses which contribute to the strength of the specific performance provision, and the weaknesses of the MAE clause and RTF provisions. We now describe these indicator variables, separately for each of these three provisions. Detailed definitions of these variables are provided in Appendix B.2.

Indicator Variables Pertaining to Specific Performance

In Section 2.1, we noted that, to reconcile their preference for specific performance with the law's preference for money damages, parties to a merger agreement include various recitals in their specific performance clauses, essentially agreeing in advance that the elements of specific performance have been met and waiving the argument that monetary damages are the most appropriate (Arnold et al., 2021). Lawyers also emphasize the importance of reciting the correct formula to ensure that the courts give their parties the preferred remedy. In light of these observations from legal scholars and practicing lawyers, we presume that a greater number of common recitals included in a specific performance clause may indicate the parties' stronger

desire to obtain an equitable remedy in the event of a breach.

We use the following procedure to identify commonly used recitals in specific performance clauses. First, we use the specific performance clauses of 962 merger agreements in our sample that are well-structured (in terms of section numbering and spacing) to extract "N-grams" for $N \in 3, 4, 5$ using the *spaCy* package in Python—a natural language processing library that tokenizes text and combines sequences of N consecutive word tokens—which we use to identify frequently occurring multi-word expressions. We exclude stopwords (e.g., and, the, not) and non-alphabetical tokens (e.g., numbers and punctuation) prior to constructing N-grams. For example, trigrams (3-grams) included commonly in specific performance clauses are: "agreement performed accordance", "performed accordance specific" (from the common recital "in the event that any of the provisions of this Agreement were not performed in accordance with their specific terms"); "agree irreparable damage", "irreparable damage occur" (from the common recital "parties hereto agree that irreparable damage would occur in the event that[...]"); "breaches agreement enforce", "agreement enforce specifically", "injunction injunctions prevent" (from the common recital "parties shall be entitled to an injunction or injunctions to prevent breaches of this Agreement and to enforce specifically the terms and provisions hereof[...]").

Second, we identify noun chunks which appear in at least 50 of the specific performance clauses (from among the 962 merger agreements which we analyzed). Based on this subset of noun chunks, we identify "commonly used" specific performance recitals which we define as meaningful noun chunks that appear in at least 5% of our sample merger agreements. Figure 3 plots the time trends of the usage of these recitals over our sample period. We then define regex conditions that can be used to reasonably identify whether these recitals are used in a merger agreement's specific performance clause, which we capture using indicator variables (see Appendix B.1 for details).

We define specific performance and enforcement score ($SPE\ Score$) to count the number of these common specific performance recitals in a merger agreement, and to serve as a simple

measure of the strength of the specific performance clause.[7] However, it is possible that not all these recitals are equally important, and some of these recitals may be combined into larger and possibly more meaningful categories. Therefore, we define the following five indicator variables to serve as components of DTI reflecting the strength of the specific performance provision:

- SPE_Enf: An indicator variables identifying the presence of a recital stating that both parties *agree to enforce specifically* the terms and provisions of the merger agreement.
- SPE_NoObj: An indicator variable identifying the presence of a recital stating that both parties agree *not to object* the remedy of specific performance.
- SPE_NoBond: An indicator variable identifying the presence of a recital stating that seeking an injunction to prevent a breach of the contract *should not require posting a bond* or similar security.
- SPE_IrrDmg: An indicator variable identifying the presence of an "irreparable damages" recital.
- $SPE\_HighScore$: An indicator variable to identify merger agreements whose $SPE\ Score$ exceeds the median value across all deals in our sample. The idea behind this variable is that including more common recitals in a specific performance provision increase the likelihood that judges will grant the specific performance remedy over monetary damages (see Arnold et al., 2021, and law practitioners surveyed therein).

We aggregate the five indicator variables listed above to compute $SPE\ SI$, which denotes the specific performance sub-index of DTI.

Indicator Variables Pertaining to the MAE Clause

Following an approach similar to that used by Denis and Macias (2013), we define indicator variables to identify a broad range of MAE exclusions, and aggregate these to compute an

[7] This is similar in spirit to the $MAE\ Score$ (i.e., number of MAE exclusions) used by Denis and Macias (2013) to count the number of MAE exclusions.

MAE Score which counts the number of these exclusions. We attempt to follow the exclusions tracked by Denis and Macias (2013) as closely as possible to the extent that they are collectible by keyword or regex searches. We plot the time series trends of these 15 MAE exclusions in Figure A.1. Notably, a substantial increase in the "pandemic, epidemic, and other health crisis" exclusion can be seen after the onset of the COVID-19 pandemic in around 2020.

As with specific performance recitals, it is possible that not all MAE exclusions are equally important in practice. Indeed, it is evident from Figure A.1 that there is significant variation in the extent to which these exclusions are used in practice. Moreover, some of these exclusions may be combined into larger and more meaningful categories. Therefore, we define the following five indicator variables to serve as components of DTI reflecting the weakness of the MAE clause from the bidder's perspective:

- MAE_WT is an indicator variable identifying whether the agreement contains an MAE exclusion relating to *war, terrorism, and other hostile activities*.

- MAE_NP is an indicator variable identifying whether the MAE clause in the merger agreement includes an exclusion relating to natural disasters, pandemic, epidemic, and other health crises.

- MAE_PV is an indicator variable identifying whether the MAE clause in the merger agreement includes an exclusion regarding changes in stock price, volume, and performance.

- MAE_Parent is an indicator variable identifying whether the MAE clause in the merger agreement includes an exclusion for exogenous material events concerning the bidder's (or its parent's) financing or valuation.

- $MAE\_HighScore$ is an indicator variable to identify merger agreements whose $MAE\ Score$ exceeds the sample median of 5. The idea behind this variable is that including more MAE exclusions in an agreement makes it harder for the bidder to successfully invoke the MAE clause.

We aggregate the five indicator variables listed above to compute $MAE\ SI$, which denotes the MAE sub-index of DTI.

Indicator Variables Pertaining to the RTF Provision

As we noted in Section 2.3, in the absence of an RTF provision, the bidder is effectively liable for completing the deal. Therefore, the absence of an RTF provision clearly makes the agreement tighter from the bidder's perspective, all else equal. If an RTF provision is present, then it is easier for the bidder to terminate the deal using this provision if the agreement specifies the RTF as the sole or exclusive remedy for the target, thus preventing it from invoking specific performance. Also, all else equal, it is easier for the bidder to terminate the deal if the RTF is low.

Therefore, we define the following indicator variables to serve as components of DTI reflecting the weakness of the RTF provision from the bidder's perspective:

- RTF_None is an indicator variable to identify merger agreements which *do not contain* the RTF provision. Although SDC contains a flag to identify whether the merger deal contains a bidder termination provision, Chen et al. (2022) found that this flag contains many errors.[8] Therefore, we code RTF_None using keyword and regex searches instead of relying on SDC.

- $RTF\_NoExRem$ is an indicator variable to identify that the merger agreement *does not* specify RTF as the sole/exclusive remedy for the target.

- $RTF\_HighFee1$ is an indicator variable to identify merger agreements in which the RTF is greater than the standard termination fee (STF) payable by the target. Chen et al. (2022) note that most merger agreements mechanically set RTF equal to the STF as a percentage of deal value.

[8] Chen et al. (2022) note that 7.4% of their sample deals that SDC identified as including a bidder termination provision in fact do not have one. Also, they randomly checked 200 deals that the SDC identified as not including a bidder termination provision and found that 15 deals (7.5%) in fact have one.

- $RTF\_HighFee2$ is an indicator variable to identify merger agreements in which the RTF as a percentage of deal value exceeds the sample median of 3%.

We aggregate the four indicator variables listed above to compute the *RTF SI*, which denotes the RTF sub-index of DTI.

Overall, we have five indicator variables constituting the SPE sub-index, five indicator variables constituting the MAE sub-index, and four indicator variables constituting the RTF sub-index. We compute DTI as the sum of all these 14 indicator variables. Therefore, DTI is a categorical variable that could take any value between 0 and 14.

As an alternative to DTI, which is an equally-weighted index of the 14 tightness indicators, we compute an alternative measure, denoted $DTPC$, which represents the first principal component of these tightness measures. In unreported tests, we show that our qualitative results are unchanged if we use $DTPC$ instead of DTI as the deal tightness measure.

3.4 Descriptive Statistics

We provide summary statistics for all the deal tightness measures, as well as bidder, target, and deal characteristics in Panel A of Table 1. As can be seen, there is substantial cross-sectional variation in DTI and its constituent sub-indices across the merger agreements in our sample. The inter-quartile range of DTI is 4, which means that the agreement at the top-quartile cutoff has 4 more deal tightness indicators than the agreement at the bottom-quartile cutoff.

The summary statistics on the SPE indicator variables indicate that 66% of deals in our sample include a recital stating that both parties agree to enforce specifically the terms and provisions of the merger agreement. However, as we showed in Figure 3, the incidence of many of these recitals has grown significantly over time, and almost all deals in the post-2010 period feature this recital. The "irreparable damage" is the most common specific performance recital, which is consistent with the evidence in Arnold et al. (2021), but there is substantial cross-sectional variation in the usage of other recitals.

We note that close to 62% of merger agreements do not feature a RTF provision. Another

13% include the RTF provision but do not specify RTF as the sole or exclusive remedy (which explains the mean value of 75% for $I(RTF\_NoExRem)$). The RTF exceeds the STF in 6.5% of deals, and exceeds 3% of deal value in 15% of deals.

Examining the summary statistics on deal characteristics, we note that cash is the only method of payment in 34% of deals. The average offer premium is 31.3%. Only 4.3% of deals fail to be completed, and 9.5% of deals are renegotiated after the initial announcement, with 5.2% of deals seeing an offer price reduction and 4.3% of deals seeing an offer price increase. The average time to conclusion is 134 days; i.e., about 4.5 months.

We report the pairwise correlations between DTI and its sub-indices in Panel B of Table 1; and the pairwise correlations between the individual components of DTI in Panel C. We note that DTI has a high positive correlation with the SPE and MAE sub-indices (and with $SPE\ Score$ and $MAE\ Score$), and a smaller positive correlation with the RTF sub-index. Interestingly, the RTF sub-index has a negative correlation with the SPE and MAE sub-indices, which suggests that, on average, a strong RTF provision from the bidder's perspective (i.e., a low RTF sub-index) is paired with a strong specific performance provision and a weak MAE clause.

In Table 2, we provide a univariate comparison of deal characteristics, bidder and target characteristics for deals sorted into four quartiles by DTI. The four quartiles are denoted Q1 through Q4, where Q1 denotes the lowest quartile and Q4 the highest quartile of DTI. We also report the difference between Q1 and Q4 values and the corresponding t-statistic.

We note that high-DTI deals involve larger targets, on average, compared to low-DTI deals. However, there is no difference in the relative size of the bidder with respect to the target across the four quartiles. Bidders in high-DTI deals exhibit significantly higher free cash flow (as a fraction of assets) and higher *E-index* values than bidders in low-DTI deals, suggesting that agency problems at the bidding firm may cause them to agree to tighter merger agreements. In addition, bidders in high-DTI deals have significantly higher $Number\ of\ Similar\ Firms$—which we use as a proxy for potential competition for the target—indicating that bidding firms facing greater competitive pressure are more likely to accept tighter merger agreements. Although

bidder and target volatility do not vary monotonically across the four quartiles, we note that bidder and target volatility are higher in low-DTI deals compared to high-DTI deals. Moreover, return correlation between the bidder and target is significantly higher in high-DTI deals compared to low-DTI deals. These patterns around return volatility and correlation are more consistent with the efficient contracting hypothesis, which suggests that bidders are more likely to agree to tighter deals when they are more confident about the value creation from the merger.

In terms of deal characteristics, we find that, on average, high-DTI deals are more likely to be cash-only transactions and feature lower offer premium compared to low-DTI deals. However, there is no significant difference in the target's termination fee (as percentage of deal value) across the four DTI quartiles. We also note that *Log Word Count* increases monotonically across the four DTI quartiles. Therefore, as we explain below in Section 4, we control for *Log Word Count* in all our regressions because it may be capturing the effect of omitted characteristics, such as deal complexity.

We must caution that the patterns in Table 2 are only univariate differences, which do not control for important differences in other deal, bidder, and target characteristics. We now proceed to multivariate analysis where we are able to control for these differences.

4 Empirical Results

4.1 Deal Tightness and Merger Outcome

We first examine the effect of deal tightness on merger outcomes, that is, the likelihood of deal failure, time to conclusion, and the likelihood of deal renegotiation. To do this, we estimate either logit or OLS regressions that are variants of the following form:

$$y_{d,t} = F(\alpha + \beta * DTI + \psi * X_{d,i,j,t-1} + \mu_t + \mu_{ind} + \epsilon_{d,t}) \tag{1}$$

We define the dependent variables, y, below. We control for the following deal, bidder and target characteristics ($X_{d,i,j,t-1}$) which are likely to affect the outcome of the merger: $Size^T$,

which is the natural logarithm of total assets of the target; *Log Relative Size*, which is the natural logarithm of the ratio of bidder's total assets to target's total assets; *Cash Only*, which is an indicator variable to identify deals where the method of payment is entirely in the form of cash; and the offer premium. We also control for the overall size of the merger agreement using the natural logarithm of the word count (*Log Word count*) because it is likely to capture omitted characteristics such as deal complexity.[9] Following Denis and Macias (2013), we include target industry fixed effects based on the Fama-French 12 industry classifications level (μ_{ind}) to control for unobserved heterogeneity across industries, and year fixed effects (μ_t) to control for macroeconomic factors which may affect merger outcomes. Standard errors are robust to heteroskedasticity and clustered at the level of the bidding firm.

Table 3 presents the results of regressions examining the relation between deal tightness and deal completion. The dependent variable in Panel A is *Failed*, which is an indicator variable to identify deals that fail to be completed; i.e., $Failed = 0$ for deals that are completed. Therefore, we estimate regression (1) using a logit specification. For easier interpretation, we report the marginal effects instead of the logit coefficients.

The negative and significant coefficient on DTI in column (1) of Panel A indicates that deals with tighter merger agreements are less likely to be completed, all else equal.[10] In terms of economic significance, an inter-quartile increase in DTI is associated with a 3.2% decrease in the likelihood of failure, which is large compared to the average rate of failure of 4.3%.[11] The coefficients on control variables indicate that the likelihood of deal completion is higher when the bidder is very large in comparison to the target and when the acquisition is paid for entirely in cash.

[9]Some earlier studies employing word count measures normalize them by document length (e.g., see Loughran and McDonald, 2016; Hanley and Hoberg, 2010), although Hanley and Hoberg (2010) note that it remains an open question whether disclosure should be measured using raw or scaled word counts. Our DTI measure is not based on word counts, and there is no straightforward method of scaling it by document length. Therefore, we instead control for the length of the merger agreement. However, we note that we obtain qualitatively similar results even if we do not control for the length of the merger agreement.

[10]Because success rates among our sample deals are higher in the later sample period—particularly after 2017—including year fixed effects results in the loss of several hundred observations relative to the other specifications. Our results are not sensitive to the exclusion of year fixed effects in these regressions.

[11]We obtain this by multiplying the marginal effect of DTI with the inter-quartile range of 4 for DTI.

In column (2), we repeat the regression in column (1) after replacing DTI with the three sub-indices corresponding to the specific performance provision (*SPE SI*), MAE clause (*MAE SI*), and the acquirer termination provisions (*ATP SI*). We find that the negative relation between the likelihood of deal failure and DTI (from column (1)) is mainly driven by the strength of the specific performance provision and the weakness of the MAE clause (i.e., larger set of exclusions). On the other hand, there is no significant relation between the acquirer termination provisions and the likelihood of deal failure.

In column (3), we examine how the likelihood of deal failure is related to the interaction of specific performance provisions and the MAE clause. To do this, we define the indicator variable, *High SPE SI*, to identify deals whose *SPE SI* exceeds the sample median. We then repeat the regression in column (2) after replacing *SPE SI* with *High SPE SI* and its interaction with *MAE SI*. Therefore, the coefficient on *MAE SI* captures the effect of *MAE SI* in the subset of deals with low *SPE SI* (i.e., the omitted category), whereas the coefficient on *MAE SI*×*High SPE SI* captures the incremental effect of high *SPE SI*. Moreover, the sum of coefficients on *MAE SI* and *MAE SI*×*High SPE SI* captures the total effect of *MAE SI* in the subset of deals with high *SPE SI*. As can be seen, the coefficient on *MAE SI* is negative and significant, whereas the coefficient on *MAE SI*×*High SPE SI* is positive and significant with a similar magnitude so that the sum of these coefficients is close to zero and statistically insignificant. That is, the negative relation between likelihood of failure and *MAE SI* is present only in the subset of deals with low *SPE SI*, but is absent in the subset of deals with high *SPE SI*. In other words, a strong specific performance provision subsumes the effect of the MAE clause on the likelihood of deal failure.

In column (4), we repeat the regression in column (3) with *MAE Score* and *SPE Score* instead of the respective sub-indices. The results are broadly similar to those in column (3): the coefficient on *MAE Score* is negative and significant, whereas the coefficient on *MAE Score*×*High SPE Score* is positive and significant with a larger magnitude; and the sum of these coefficients is statistically insignificant.

The dependent variable in Panel B is *Days to Conclude*, which is the number of days from

deal announcement to the final conclusion, which is either completion or failure. Because this is a continuous variable, we estimate these regressions using the OLS specification. The negative coefficient on *DTI* in column (1) indicates that deals with tighter merger agreements take fewer days to conclude. The coefficient estimate indicates that an inter-quartile increase in *DTI* shortens the time to conclusion by about 13 days, which is significant in comparison to the mean (median) value of *Days to Conclude* of 134 days (114 days).

The results in column (2) indicate that the negative relation between *Days to Conclude* and *DTI* (from column (1)) is mainly driven by the strength of the specific performance provision and the weakness of the MAE clause, whereas the acquirer termination provisions do not have a significant effect. The insignificant coefficient on *MAE SI*×*High SPE SI* indicates that a strong specific performance provision does not have any incremental effect on the relation between *MAE SI* and the days till conclusion. That is, the negative relation between *MAE SI* and *Days to Conclude* is present regardless of the level of *SPE SI*. We obtain qualitatively similar results in column (4) with *MAE Score* and *SPE Score*, except that the negative relation between *MAE Score* and *Days to Conclude* is slightly weaker in the subset of deals with a high *SPE Score*.

Table 4 presents the results of regressions examining the relation between deal tightness and the likelihood of deal renegotiation. The dependent variable y is one of the following: *Renegotiated*, which is an indicator variable to identify deals that are renegotiated after the original announcement; *Offer Down* (*Offer Up*), which is an indicator variable to identify deals in which the offer price is decreased (increased) after renegotiation. The dependent variable is *Renegotiated* in columns (1) and (2), *Offer Down* in columns (3) and (4), and *Offer Up* in columns (5) and (6).

The results in columns (1) and (2) indicate that there is no significant relation between the likelihood of renegotiation and *DTI* or any of its constituent sub-indices. In an unreported test, we find similar results when we replace the SPE and MAE sub-indices with *SPE Score* and *MAE Score*, respectively. This contrasts with the negative relation between likelihood of renegotiation and *MAE Score* found by Denis and Macias (2013). A likely explanation for these

contrasting results is that the sample period in Denis and Macias (2013) ends in 2005, whereas we consider a longer sample period till 2022. As we noted in the introduction, the contracting landscape has changed significantly after 2005, partly because a couple of landmark judgments delivered by Delaware courts in the early 2000s have weakened bidders' ability to back out of deals by invoking the MAE clause regardless of the contract language.

In column (3), we fail to find any significant relation between the likelihood of offer price reduction and DTI; although the coefficient on DTI is negative in sign, it is statistically insignificant. However, the results in column (4) show that there is a strong negative relation between the likelihood of offer price reduction and the strength of the specific performance provision. Anecdotally, this is consistent with the outcome of the Dow-Rohm and Haas merger, where the management of Rohm and Haas were able to successfully withstand pressure from Dow to renegotiate the offer price down (following the sharp drop in Rohm and Haas's share price after the onset of the financial crisis) because they were protected by a strong specific performance provision. On the other hand, the MAE clause and acquirer termination provisions do not have a significant effect on the likelihood of offer price reduction.

In columns (5) and (6), we fail to find any significant relation between the likelihood of offer price increase and DTI or any of its constituent sub-indices. This is logical because offer price increases are likely to be demanded by the target, and hence, these shouldn't be affected by contractual provisions which limit the bidder's flexibility.

4.2 Deal Tightness and Merger Arbitrage Spread

In this section, we use variants of regression (1) to examine the relation between merger arbitrage spread and DTI. Merger arbitrage spread is defined as the natural logarithm of the ratio of the offer price to the target's stock price as of the closing of the fifth trading day after the announcement (and expressed as a percentage). The arbitrage spread reflects the market's assessment of the risk that the deal is either renegotiated or fails to be completed (Brown and Raymond, 1986; Mitchell and Pulvino, 2001). Specifically, the greater the risk of renegotiation

or deal failure, the wider the arbitrage spread.

The results of these regressions are presented in Table 5. The negative and significant coefficient on DTI in column (1) indicates that the arbitrage spread is significantly lower for deals with tight merger agreements. In other words, the market seems to believe that deals with tight merger agreements are more likely to be completed in accordance with the originally announced terms. In terms of economic significance, an inter-quartile increase in DTI is associated with a 1.3% reduction in the arbitrage spread, which is large in comparison to the mean arbitrage spread of 5.14%. The coefficients on the control variables indicate that arbitrage spread is lower for cash-only deals, larger targets, and when the bidder is large in relation to the target.

The results in column (2) indicate that the negative relation between arbitrage spread and DTI is mainly driven by the MAE sub-index. While the coefficient on the SPE sub-index is negative in sign and large in magnitude, it is not statistically significant; and the ATP sub-index has no effect on the arbitrage spread. The results in columns (3) and (4) indicate that the negative relation between the MAE sub-index and arbitrage spread does not vary with the strength of the specific performance provisions.

4.3 Deal Tightness and Offer Premium

Do bidders bargain for a lower offer premium in exchange for providing greater closing certainty to the target? To answer this question, we examine the relation between offer premium and DTI using variants of regression (1). We define offer premium as the natural logarithm of the ratio of the offer price to the target's stock price as of the closing of the 42nd trading day prior to the announcement date (and express it as a percentage). Consistent with the approach used by Schwert (1996) and Fu et al. (2013), we use the stock price from 42 trading days prior to announcement in order to correct for any possible run-ups in the target's stock price in anticipation of the announcement.

We present the results of these regressions in Panel A of Table 6. The results in column (1)

indicate a robust negative relation between offer premium and DTI, which suggests that, at the margin, bidders decrease the offer price in exchange for providing greater closing certainty to the target. The coefficient on DTI indicates that an inter-quartile increase in DTI is associated with a 3.71% reduction in the offer premium, which is significant in comparison to the mean (median) offer premium of 31% (29%).

The results in column (2) indicate that offer premium is negatively related to all three constituent sub-indices of DTI. That is, offer premium is lower when the specific performance provision is strong, MAE clause is weak, or the acquirer has weak termination rights. These results suggest that a bidder that is committed to the deal could strategically use these deal tightness provisions to negotiate favorable financial terms.

In column (3), we examine how the offer premium is shaped by the interaction of the specific performance provision and the MAE clause. As can be seen, the coefficient on *MAE SI* is negative and significant, but the coefficient on *MAE SI*$\times$*High SPE SI* is positive and significant and comparable in magnitude, so that the sum of these coefficients is statistically indistinguishable from zero. That is, a strong specific performance clause subsumes the effect of *MAE SI* on the offer premium. In column (4), we repeat this test with *SPE Score* and *MAE Score* instead of the respective sub-indices, and find very similar results.

One empirical concern in examining the relation between DTI and *Offer Premium* is that these variables are likely to be jointly determined and therefore subject to endogeneity. To mitigate this concern, we use the bidder law firm's median DTI from its past deals (denoted *Law Firm DTI*) as an instrument and estimate two-stage least squares (2SLS) regressions.[12] We report the results in Panel B of Table 6. The second-stage results are consistent with those reported in Panel A, alleviating endogeneity concerns regarding our findings on *Offer Premium*.

[12]It is unlikely that a law firm's characteristics related to the tightness of merger agreements directly affect the financial terms of a merger, suggesting that the instrument satisfies the exclusion restriction. At the same time, a law firm's characteristics are likely to be relevant for the tightness of the agreements it structures. The first-stage regression of DTI on *Law Firm DTI* yields an F-statistic of excluded instruments of 385.97, indicating that the instrument is not weak.

4.4 Deal Tightness and Announcement Returns

Next, we use regression (1) to examine the relation between deal tightness and announcement returns. We do this separately for short-term announcement returns and the bidder's long-term announcement return.

Short-term Announcement Returns

We measure short-term announcement returns for the bidding and target firms using their cumulative abnormal return (CAR) over the $[-1, +5]$ trading day window, where day 0 denotes the deal announcement date. We use this particular trading day window to compute CARs because the merger agreement is usually filed within four business days after the announcement date. The results of the regressions with $CAR[-1, +5]$ as dependent variable are presented in Table 7. We include all the control variables from Table 6, and also include offer premium as an additional control.

The dependent variable in columns (1) and (2) is the bidder's CAR, denoted $CAR[-1, +5]^B$. The positive and significant coefficient on DTI indicates that bidders experience higher short-term announcement returns in deals with tighter merger agreements. That is, the market seems to believe that bidders strategically use deal tightness to negotiate favorable financial terms. We note that we obtain this result even after controlling for the offer premium, which itself is decreasing in deal tightness. The coefficient estimate indicates that an inter-quartile increase in DTI is associated with a 0.54% increase in bidder CAR, which is significant in comparison to the average (median) bidder CAR of -1.5% (-1.2%). The results in column (2) indicate that the positive relation between bidder CAR and deal tightness is mainly driven by the weakness of acquirer termination provisions.

The dependent variable in columns (3) and (4) is the target's CAR, denoted $CAR[-1, +5]^T$. The results in these columns are a mirror image of those in columns (1) and (2). The results in column (3) indicate a robust negative relationship between target CAR and deal tightness, which is consistent with the market's belief that bidders strategically use deal tightness to

negotiate favorable financial terms. The coefficient estimate indicates that an inter-quartile increase in DTI is associated with 1.56% reduction in target CAR, which is significant in comparison to the average (median) target CAR of 24.7% (19.4%). The results in column (4) indicate that the negative relation between target CAR and deal tightness is mainly driven by the weakness of acquirer termination provisions.

The dependent variable in columns (5) and (6) is the *Combined* $CAR[-1,+5]$, which is defined as the value-weighted average of $CAR[-1,+5]^B$ and $CAR[-1,+5]^T$ where the weights are based on market values of the two firms on the 42nd trading day prior to the deal announcement date. *Combined* $CAR[-1,+5]$ serves as a measure of the market's estimate of the overall value gain from the merger. The positive relation between *Combined* $CAR[-1,+5]$ and DTI in column (5) is consistent with the efficient contracting hypothesis, which posits that transacting parties negotiate tighter agreements when the bidder is confident about value creation from the merger. The coefficient estimate indicates that an inter-quartile increase in DTI is associated with a 0.56% increase in the combined CAR, which is significant in comparison to the average (median) combined CAR of 2% (1.2%).

Long-term Acquirer Returns

Next, we examine the relation between long-term acquirer returns and deal tightness. Accordingly, we compute the buy-and-hold abnormal return (BHAR) for the acquirer over three different trading day windows—$[-1,+252]$, $[-1,+504]$, and $[-1,+756]$—which correspond to a year, 2 years, and 3 years, respectively, after the announcement date. We define BHAR as the difference between the acquirer's return and the return on a closely-matched portfolio of ten firms which are similar to the acquirer in terms of market value of equity and book-to-market ratio. We then estimate regression (1) with BHAR as dependent variable. The results of these regressions are presented in Table 8.

The dependent variable is $BHAR[-1,+252]$ in columns (1) and (2), $BHAR[-1,+504]$ in columns (3) and (4), and $BHAR[-1,+756]$ in columns (5) and (6). The positive and significant coefficients on DTI in columns (1), (3), and (5) indicate that long-term acquirer returns for all

three horizons are higher in deals with tighter merger agreements. These effects are economically significant. For instance, the coefficient on DTI in column (1) indicates that an inter-quartile increase in DTI is associated with a 3.2% increase in $BHAR[-1,+252]$, which is significant in comparison to the mean (median) $BHAR[-1,+252]$ of -4.7% (-2.9%). These results are consistent with the patterns we found with short-term acquirer announcement return.

When we examine the effects of the component sub-indices of DTI in columns (2), (4) and (6), we find that the positive relation between long-term acquirer return and DTI is mainly driven by the specific performance sub-index. The coefficients on the other sub-indices are statistically insignificant, except in column (6), where we find that the 3-year acquirer announcement return is also positively related to the MAE sub-index.

5 Conclusion

In this paper, we take a holistic view of merger agreements, and combine several important contractual provisions to construct a deal tightness index (DTI) which measures how tightly the agreement binds the bidder to complete the transaction. We do this by examining three key contractual provisions—specific performance clause, MAE exclusions, and bidder termination provisions—identified by legal scholars as crucial in limiting the bidder's flexibility. A high DTI means that the merger agreement is crafted in a manner that limits the bidder's flexibility in the event of unexpected changes, thus providing the target with greater certainty that the bidder will close the transaction.

We find that deals with higher DTI are more likely to be completed, have a shorter time to completion, and are less likely to see a downward renegotiation in the offer price, all of which are consistent with the idea that deal tightness provides more closing certainty for the target. The market also seems to share this belief as evidenced by the negative relation between DTI and the merger arbitrage spread, which past literature has shown to capture the risk that the deal is not completed at the announced terms. DTI is also negatively related to offer premium, which suggests that, at the margin, bidders decrease the offer price in exchange for providing

greater closing certainty to the target. Consistent with this interpretation, we find a negative relation between target announcement return and DTI, and a positive relation between both short- and long-run bidder announcement return and DTI. Consistent with the interpretation that a high DTI signals to the market that the bidder is more confident about value creation from the merger, we find that the (synthetic) combined announcement return is also positively related to DTI.

Overall, our study highlights how key contractual provisions interact to shape offer terms and merger dynamics.

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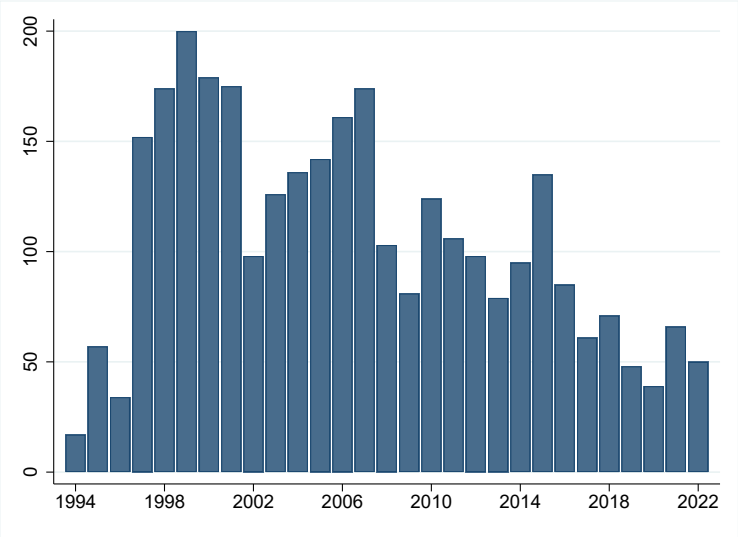
Figure 1: Yearly Distribution of Sample Deals

This figure presents the yearly distribution of our sample deals. The sample includes U.S. merger and acquisition deals announced between 1994 and 2022 that meet the sample selection criteria. Panel A presents the number of our sample deals announced within the given year. Panel B depicts the yearly mean values of DTI and the mean and median values of merger agreement word counts for our sample deals.

Panel A. Yearly Distribution of Sample Deals



Panel B. Yearly Distribution of DTIs and Merger Agreement Word Counts

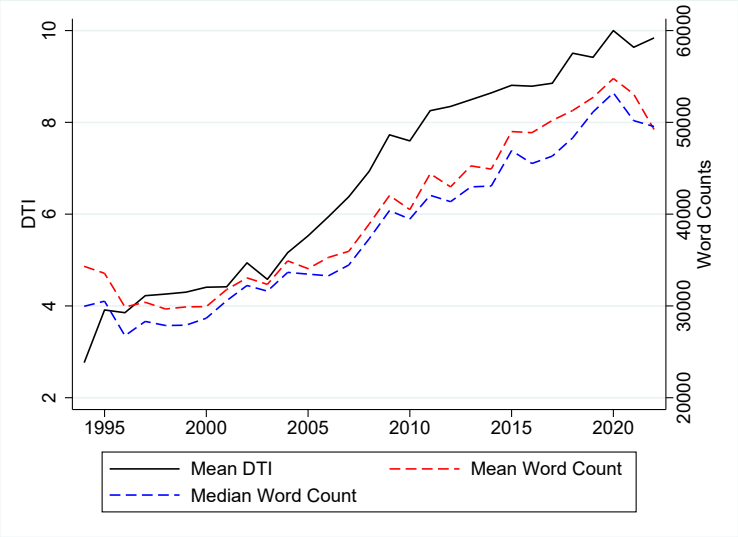
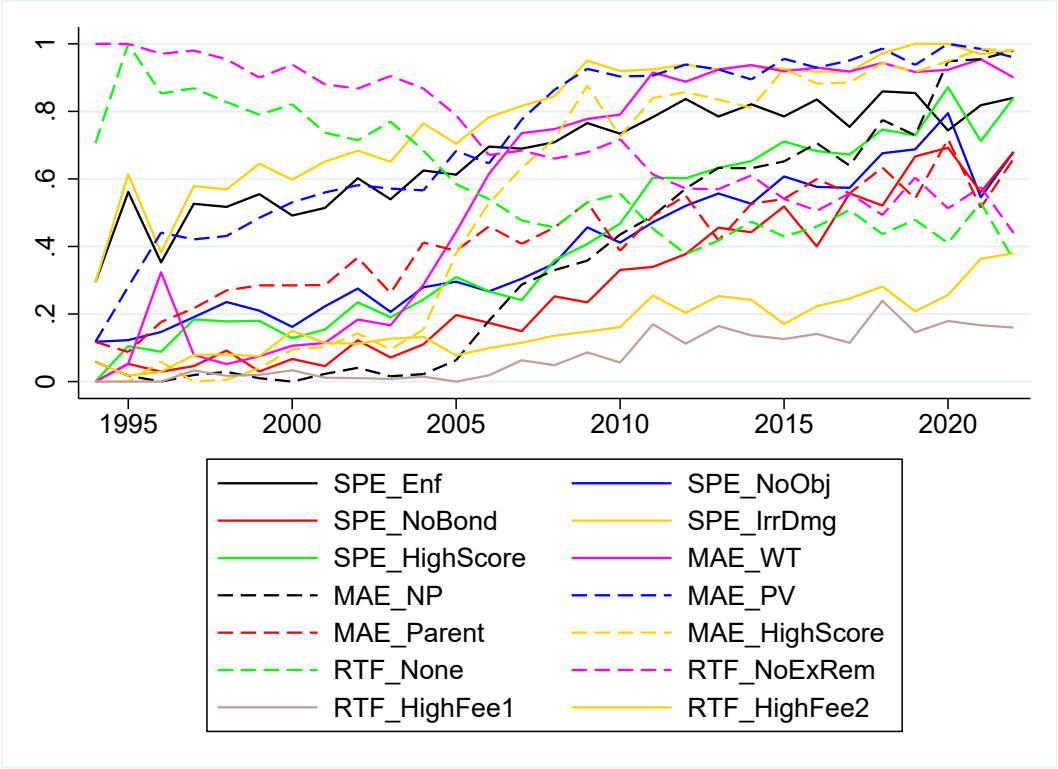


Figure 2: Plots of Yearly Averages of Deal Tightness Index Components

This figure plots the yearly average values of the specified deal tightness component dummy variables (Panel A) and deal tightness sub-indices (Panel B), from 1994 to 2022. All variables are defined in Appendix C.

Panel A. Yearly Averages of Deal Tightness Index Components



Panel B. Yearly Averages of Deal Tightness Sub-indices

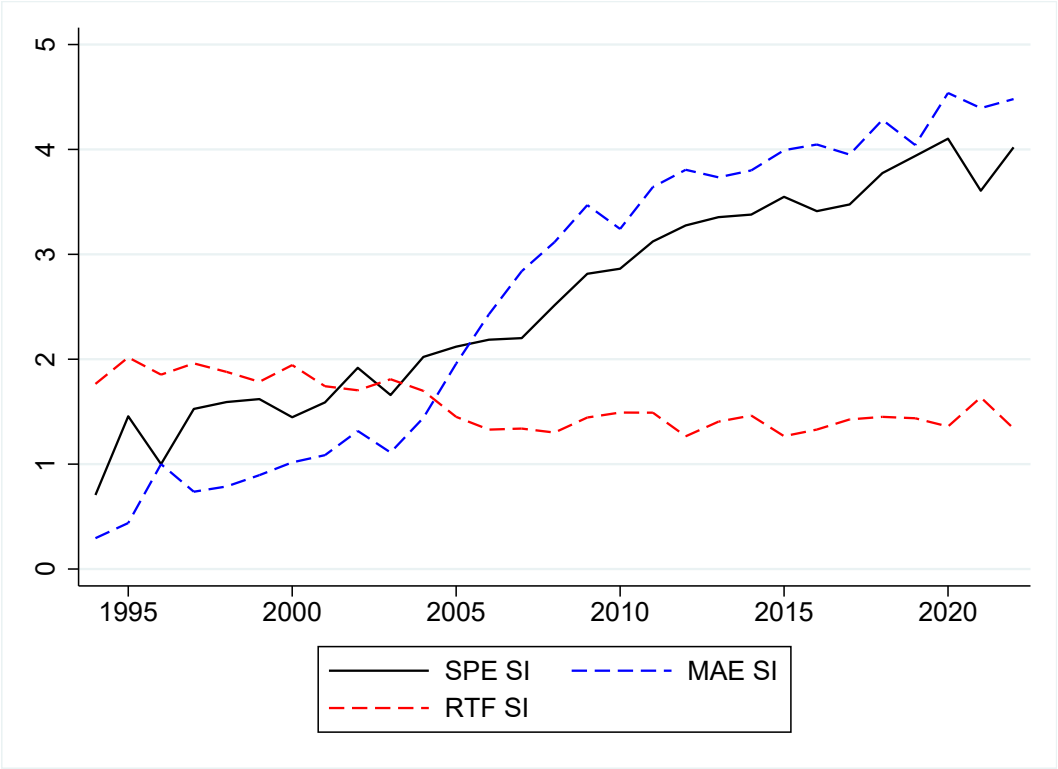


Figure 3: Plots of Yearly Averages of Specific Performance Recital Variables

This figure plots the yearly average values of the specified specific performance recital dummy variable, from 1994 to 2022. See Appendix B.3 for definitions.

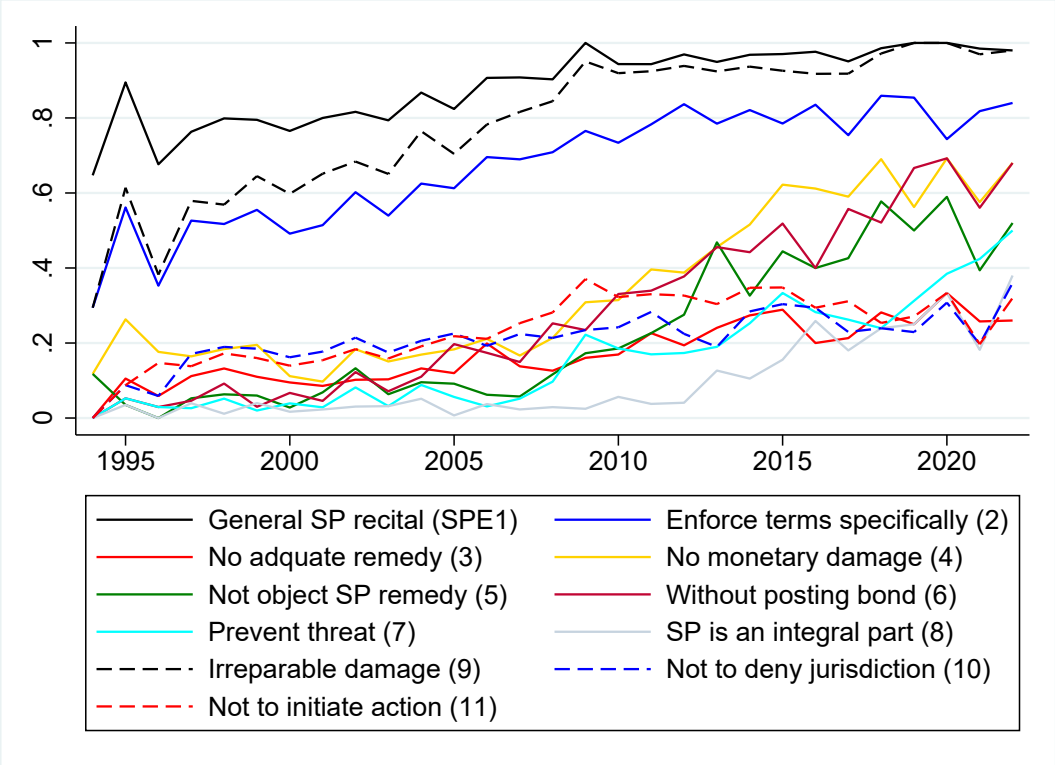


Table 1: Descriptive Statistics

Panel A of this table provides summary statistics for all the deal tightness measures, as well as bidder, target, and deal characteristics for our sample of merger deals. Panel B provides the pairwise correlations between DTI and its sub-indices, whereas Panel C provides the pairwise correlations between all the components of DTI. All variables are defined in Appendix C. Asterisks in Panels B and C denote significance at the 10% level.

Panel A. Descriptive Statistics

	N	Mean	Stdev	P25	Median	P75
Deal Tightness Measures:						
DTI	3,066	6.330	2.764	4.000	6.000	8.000
SPE SI	3,066	2.389	1.619	1.000	2.000	4.000
MAE SI	3,066	2.356	1.728	1.000	2.000	4.000
RTF SI	3,066	1.585	0.915	1.000	2.000	2.000
SPE Score	3,066	3.816	2.276	3.000	4.000	5.000
MAE Score	3,066	5.487	3.361	3.000	5.000	8.000
SPE_Enf	3,066	0.659	0.474	0.000	1.000	1.000
SPE_NoObj	3,066	0.356	0.479	0.000	0.000	1.000
SPE_NoBond	3,066	0.233	0.423	0.000	0.000	0.000
SPE_IrrDmg	3,066	0.773	0.419	1.000	1.000	1.000
SPE_HighScore	3,066	0.369	0.483	0.000	0.000	1.000
MAE_WT	3,066	0.507	0.500	0.000	1.000	1.000
MAE_NP	3,066	0.285	0.452	0.000	0.000	1.000
MAE_PV	3,066	0.704	0.456	0.000	1.000	1.000
MAE_Parent	3,066	0.400	0.490	0.000	0.000	1.000
MAE_HighScore	3,066	0.460	0.498	0.000	0.000	1.000
RTF_None	3,066	0.618	0.486	0.000	1.000	1.000
RTF_NoExRem	3,066	0.753	0.431	1.000	1.000	1.000
RTF_HighFee1	3,066	0.065	0.246	0.000	0.000	0.000
RTF_HighFee2	3,066	0.150	0.357	0.000	0.000	0.000

(Continued on next page...)

Table 1 (continued)

	N	Mean	Stdev	P25	Median	P75
Other Deal Variables:						
Log Word Count	3,066	10.492	0.315	10.275	10.477	10.698
Cash Only	3,066	0.341	0.474	0.000	0.000	1.000
Failed	3,066	0.043	0.204	0.000	0.000	0.000
Log Relative Size	3,066	2.148	1.904	0.791	1.787	3.169
Size^T	3,066	6.180	1.831	4.852	6.133	7.356
Renegotiated	3,066	0.095	0.293	0.000	0.000	0.000
Offer Down	3,066	0.052	0.222	0.000	0.000	0.000
Offer Up	3,066	0.043	0.203	0.000	0.000	0.000
Days to Conclude	3,066	134.251	86.759	76.000	114.000	167.000
Offer Premium	2,812	31.331	28.184	16.857	29.365	44.462
Arbitrage Spread	2,803	5.135	11.546	0.730	2.782	7.971
Same Industry	3,066	0.801	0.399	1.000	1.000	1.000
DE Target	3,066	0.508	0.500	0.000	1.000	1.000
DE Acquirer	3,066	0.500	0.500	0.000	0.000	1.000
Same State	3,066	0.377	0.485	0.000	0.000	1.000
TermFee^T	2,455	0.033	0.013	0.027	0.032	0.039
CAR$[-1,+5]^B$	3,036	-0.015	0.084	-0.057	-0.012	0.026
CAR$[-1,+5]^T$	3,043	0.247	0.271	0.074	0.194	0.353
Combined CAR$[-1,+5]$	3,001	0.020	0.084	-0.025	0.012	0.056
BHAR$[-1,+252]$	2,783	-0.012	0.360	-0.208	-0.037	0.140
BHAR$[-1,+504]$	2,783	0.002	0.518	-0.288	-0.041	0.226
BHAR$[-1,+756]$	2,783	0.038	0.659	-0.311	-0.042	0.315
RetVol^B	3,036	0.026	0.015	0.015	0.021	0.031
RetVol^T	3,059	0.034	0.020	0.020	0.029	0.042
RetCorr	3,030	0.245	0.220	0.075	0.191	0.384
FCF^B	2,974	0.056	0.125	0.022	0.061	0.121
E-index	874	3.454	1.258	3.000	4.000	4.000

Panel B. Correlations: DTI Sub-indices

	DTI	SPE SI	MAE SI	RTF SI	SPE Score	MAE Score
DTI	1.000					
SPE SI	0.826*	1.000				
MAE SI	0.803*	0.474*	1.000			
RTF SI	0.043*	-0.169*	-0.303*	1.000		
SPE Score	0.772*	0.915*	0.467*	-0.169*	1.000	
MAE Score	0.736*	0.465*	0.878*	-0.258*	0.467*	1.000

Panel C. Correlations: DTI Components

	SPE_Enf	SPE_NoObj	SPE_NoBond	SPE_IrrDmg	SPE_HighScore	MAE_WT	MAE_NP	MAE_PV	MAE_Parent	MAE_HighScore	RTF_None	RTF_NoExRem	RTF_HighFee1	RTF_HighFee2
SPE_Enf	1.000													
SPE_NoObj	0.270*	1.000												
SPE_NoBond	0.124*	0.312*	1.000											
SPE_IrrDmg	0.637*	0.296*	0.195*	1.000										
SPE_HighScore	0.365*	0.721*	0.451*	0.388*	1.000									
MAE_WT	0.189*	0.205*	0.286*	0.265*	0.281*	1.000								
MAE_NP	0.174*	0.293*	0.354*	0.249*	0.382*	0.523*	1.000							
MAE_PV	0.176*	0.199*	0.218*	0.226*	0.232*	0.422*	0.332*	1.000						
MAE_Parent	0.136*	0.221*	0.170*	0.189*	0.208*	0.173*	0.233*	0.228*	1.000					
MAE_HighScore	0.208*	0.257*	0.320*	0.308*	0.347*	0.679*	0.621*	0.507*	0.270*	1.000				
RTF_None	-0.113*	-0.223*	-0.217*	-0.194*	-0.249*	-0.260*	-0.262*	-0.261*	-0.390*	-0.337*	1.000			
RTF_NoExRem	-0.086*	-0.198*	-0.242*	-0.191*	-0.260*	-0.290*	-0.318*	-0.251*	-0.317*	-0.387*	0.727*	1.000		
RTF_HighFee1	0.083*	0.140*	0.163*	0.105*	0.189*	0.166*	0.219*	0.124*	0.129*	0.202*	-0.184*	-0.222*	1.000	
RTF_HighFee2	0.082*	0.099*	0.122*	0.086*	0.137*	0.121*	0.164*	0.096*	0.062*	0.136*	-0.116*	-0.157*	0.582*	1.000

Table 2: Univariate Tests

This table presents a univariate comparison of average deal characteristics, bidder characteristics, and target characteristics for deals sorted into four quartiles by DTI. The four quartiles are denoted Q1 through Q4, where Q1 denotes the lowest quartile and Q4 the highest quartile of DTI. We also report the difference between Q1 and Q4 values and the corresponding t-statistic. All variables are defined in Appendix C. Asterisks denote significance at the 1% (***), 5% (**), and 10% (*) level.

	Mean by DTI Quartiles				Mean Difference	
	Q1	Q2	Q3	Q4	Q1 − Q4	t-stat
Deal Tightness Variables:						
DTI	3.140	5.489	7.452	10.177	-7.038	-142.86***
SPE SI	0.753	2.113	2.972	4.193	-3.440	-79.39***
MAE SI	0.748	1.819	3.001	4.338	-3.591	-86.33***
RTF SI	1.639	1.557	1.478	1.646	-0.007	-0.16
SPE Score	1.696	3.442	4.533	6.208	-4.512	-61.55***
MAE Score	2.685	4.397	6.519	9.184	-6.499	-68.11***
Log Word Count	10.300	10.422	10.552	10.749	-0.449	-34.21***
Bidder and Target Characteristic Variables:						
Size^B	7.978	8.017	8.668	8.762	-0.784	-7.59***
LEV^B	0.159	0.162	0.162	0.249	-0.090	-10.43***
Q^B	2.443	2.562	2.484	2.459	-0.016	-0.16
FCF^B	0.048	0.046	0.064	0.070	-0.022	-3.54***
Size^T	5.980	5.870	6.194	6.740	-0.760	-8.49***
LEV^T	0.155	0.157	0.154	0.228	-0.072	-6.89***
Q^T	2.086	2.345	2.465	2.439	-0.353	-3.24***
Log Relative Size	1.998	2.163	2.469	2.024	-0.027	-0.29
Same Industry	0.820	0.795	0.805	0.780	0.040	2.01**
DE Target	0.422	0.501	0.533	0.601	-0.179	-7.33***
DE Acquirer	0.442	0.526	0.493	0.552	-0.110	-4.46***
Same State	0.330	0.381	0.373	0.436	-0.106	-4.43***
Number of Similar Firms^B	2.893	2.810	2.619	2.109	0.784	3.89***
E-index^B	2.701	3.019	3.325	3.895	-1.194	-10.14***
Deal and Return Variables:						
Cash Only	0.210	0.326	0.440	0.431	-0.221	-9.90***
Offer Premium	34.098	31.110	29.049	30.553	3.545	2.47**
Arbitrage Spread	7.674	6.210	3.743	2.546	5.128	8.55***
Toehold	0.019	0.020	0.012	0.019	-0.001	-0.10
TermFee^T	0.033	0.034	0.034	0.033	0.000	0.24
RetVol^B	0.027	0.028	0.023	0.023	0.003	4.24***
RetVol^T	0.035	0.037	0.033	0.032	0.003	3.22***
RetCorr	0.154	0.210	0.280	0.362	-0.209	-20.69***

Table 3: Deal Tightness and Deal Completion Outcomes

This table presents the results of regressions examining the relation between deal completion outcome and *DTI*. The dependent variable in Panel A is *Failed*, which is an indicator variable to identify deals that fail to be completed. The dependent variable in Panel B is *Days to Conclude*, which is the number of days from deal announcement to the final conclusion, which is either completion or failure. We employ logit regressions in Panel A and OLS regressions in Panel B. All variables are defined in Appendix C. All regressions include target industry-fixed effects and year effect dummies. Standard errors, reported in parentheses, are clustered at the bidding firm level. Asterisks denote significance at the 1% (***), 5% (**), and 10% (*) level.

Panel A. *DTI* and Likelihood of Deal Failure

Dependent Variable:	Failed			
	(1)	(2)	(3)	(4)
DTI	-0.008***			
	(0.002)			
SPE SI		-0.008**		
		(0.003)		
MAE SI		-0.010**	-0.016***	
		(0.004)	(0.005)	
RTF SI		-0.003		
		(0.005)		
High SPE SI			-0.044**	
			(0.019)	
MAE SI × High SPE SI			0.014**	
			(0.006)	
High SPE Score				-0.064***
				(0.022)
MAE Score				-0.009***
				(0.003)
MAE Score × High SPE Score				0.012***
				(0.003)
Log Relative Size	-0.010**	-0.010**	-0.009**	-0.009**
	(0.004)	(0.004)	(0.004)	(0.004)
Size^T	0.002	0.003	0.002	0.002
	(0.003)	(0.003)	(0.003)	(0.003)
Log Word Count	0.038*	0.039*	0.034	0.028
	(0.021)	(0.021)	(0.022)	(0.022)
Cash Only	-0.036**	-0.035**	-0.035**	-0.034**
	(0.014)	(0.015)	(0.014)	(0.014)
Offer Premium	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Sum of coefficients			-0.002	0.003
(MAE + Interaction)			(0.005)	(0.003)
Industry FE	✓	✓	✓	✓
Year Effects	✓	✓	✓	✓
Specification	Logit	Logit	Logit	Logit
Pseudo R^2	0.098	0.099	0.100	0.102
N	2,419	2,419	2,419	2,419

Panel B. *DTI* and Days to Conclude

Dependent Variable:	Days to Conclude			
	(1)	(2)	(3)	(4)
DTI	-3.289***			
	(0.757)			
SPE SI		-3.340***		
		(0.976)		
MAE SI		-6.712***	-8.388***	
		(1.335)	(1.530)	
RTF SI		2.597		
		(1.673)		
High SPE SI			-13.994**	
			(5.497)	
MAE SI × High SPE SI			2.571	
			(1.804)	
High SPE Score				-15.935**
				(6.742)
MAE Score				-4.339***
				(0.814)
MAE Score × High SPE Score				1.988**
				(0.978)
Log Relative Size	-3.440***	-3.042***	-3.163***	-2.997***
	(0.762)	(0.785)	(0.769)	(0.770)
Size^T	12.747***	12.934***	12.855***	13.270***
	(1.274)	(1.273)	(1.270)	(1.296)
Log Word Count	8.166	10.471	9.777	9.559
	(6.920)	(6.864)	(6.878)	(7.032)
Cash Only	-21.602***	-19.932***	-20.285***	-19.606***
	(3.611)	(3.640)	(3.628)	(3.697)
Offer Premium	0.079	0.081*	0.079	0.075
	(0.049)	(0.049)	(0.049)	(0.049)
Constant	97.927	63.322	76.046	76.224
	(83.791)	(83.034)	(82.874)	(84.745)
Industry FE	✓	✓	✓	✓
Year Effects	✓	✓	✓	✓
Specification	OLS	OLS	OLS	OLS
R^2	0.326	0.332	0.331	0.328
N	2,812	2,812	2,812	2,812

Table 4: Deal Tightness and Deal Renegotiation

This table presents the results of logit regressions examining the relation between the likelihood of deal renegotiation and DTI. The dependent variable is one of the following: *Renegotiated* in columns (1) and (2), which is an indicator variable to identify deals that are renegotiated after the original announcement; *Offer Down* in columns (3) and (4), which is an indicator variable to identify deals in which the offer price is decreased after renegotiation; and *Offer Up* in columns (5) and (6), which is an indicator variable to identify deals in which the offer price is increased after renegotiation. All variables are defined in Appendix C. All regressions include target industry-fixed effects and year effect dummies. Standard errors, reported in parentheses, are clustered at the bidding firm level. Asterisks denote significance at the 1% (***), 5% (**), and 10% (*) level.

Dependent Variable:	Renegotiated		Offer Down		Offer Up	
	(1)	(2)	(3)	(4)	(5)	(6)
DTI	0.001		-0.001		0.003	
	(0.003)		(0.002)		(0.002)	
SPE SI		-0.004		-0.006*		0.002
		(0.004)		(0.003)		(0.003)
MAE SI		0.006		0.003		0.004
		(0.005)		(0.004)		(0.004)
RTF SI		0.008		0.007		0.002
		(0.007)		(0.006)		(0.005)
Log Relative Size	-0.004	-0.004	-0.006**	-0.005*	0.001	0.001
	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)
Size^T	-0.002	-0.002	-0.004	-0.004	0.003	0.003
	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)
Log Word Count	-0.003	0.000	-0.008	-0.004	0.005	0.005
	(0.025)	(0.025)	(0.018)	(0.018)	(0.018)	(0.018)
Cash Only	-0.103***	-0.103***	-0.103***	-0.102***	-0.017	-0.017
	(0.018)	(0.019)	(0.018)	(0.018)	(0.012)	(0.012)
Offer Premium	-0.000	-0.000	0.000	0.000	-0.000**	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Industry FE	✓	✓	✓	✓	✓	✓
Year Effects	✓	✓	✓	✓	✓	✓
Specification	Logit	Logit	Logit	Logit	Logit	Logit
Pseudo R^2	0.085	0.086	0.105	0.109	0.073	0.073
N	2,704	2,704	2,641	2,641	2,666	2,666

Table 5: Deal Tightness and Arbitrage Spread

This table presents the results of OLS regressions examining the relation between merger arbitrage spread and *DTI*. The dependent variable, *Arbitrage Spread*, is defined as the natural logarithm of the ratio of the offer price to the target's stock price as of the closing of the fifth trading day after the announcement (and expressed as a percentage). All variables are defined in Appendix C. All regressions include target industry-fixed effects and year effect dummies. Standard errors, reported in parentheses, are clustered at the bidding firm level. Asterisks denote significance at the 1% (***), 5% (**), and 10% (*) level.

Dependent Variable:	Arbitrage Spread			
	(1)	(2)	(3)	(4)
DTI	-0.326***			
	(0.112)			
SPE SI		-0.147		
		(0.148)		
MAE SI		-0.852***	-0.891***	
		(0.191)	(0.229)	
RTF SI		0.001		
		(0.246)		
High SPE SI			-0.167	
			(0.949)	
MAE SI × High SPE SI			0.065	
			(0.268)	
High SPE Score				-1.579
				(1.092)
MAE Score				-0.482***
				(0.131)
MAE Score × High SPE Score				0.127
				(0.147)
Log Relative Size	-0.767***	-0.737***	-0.738***	-0.720***
	(0.132)	(0.133)	(0.133)	(0.132)
Size^T	-0.597***	-0.571***	-0.576***	-0.522***
	(0.181)	(0.181)	(0.180)	(0.180)
Log Word Count	3.996***	4.117***	3.955***	4.428***
	(1.142)	(1.145)	(1.155)	(1.152)
Cash Only	-3.282***	-3.144***	-3.168***	-2.997***
	(0.439)	(0.438)	(0.437)	(0.435)
Constant	-29.183**	-30.965**	-29.335**	-34.383***
	(12.853)	(12.951)	(13.009)	(12.969)
Industry FE	✓	✓	✓	✓
Year Effects	✓	✓	✓	✓
Specification	OLS	OLS	OLS	OLS
R^2	0.155	0.158	0.158	0.158
N	2,803	2,803	2,803	2,803

Table 6: Deal Tightness and Offer Premium

This table presents the results of OLS regressions examining the relation between the offer premium and *DTI*. The dependent variable, *Offer Premium*, is defined as the natural logarithm of the ratio of the offer price to the target's stock price as of the closing of the 42nd trading day prior to the announcement date (and express it as a percentage). In Panel B, we use the median *DTI* of the bidder's law firm computed using information up to the deal's year of announcement as the instrument ("*Law Firm DTI*"). The *F*-statistic of excluded instruments is 385.97 (with *p*-value less than 1%), indicating that the instrument is not weak. All variables are defined in Appendix C. All regressions include target industry-fixed effects and year effect dummies. Standard errors, reported in parentheses, are clustered at the bidding firm level. Asterisks denote significance at the 1% (***), 5% (**), and 10% (*) level.

Panel A. Regressions of Offer Premium

Dependent Variable:	Offer Premium			
	(1)	(2)	(3)	(4)
DTI	-0.927***			
	(0.296)			
SPE SI		-0.815**		
		(0.396)		
MAE SI		-0.971*	-1.456**	
		(0.533)	(0.629)	
RTF SI		-1.205**		
		(0.586)		
High SPE SI			-4.790**	
			(2.338)	
MAE SI × High SPE SI			1.350**	
			(0.679)	
High SPE Score				-9.438***
				(2.738)
MAE Score				-1.134***
				(0.353)
MAE Score × High SPE Score				1.227***
				(0.371)
Log Relative Size	1.808***	1.794***	1.853***	1.932***
	(0.405)	(0.407)	(0.405)	(0.408)
Size^T	-1.555***	-1.555***	-1.604***	-1.480***
	(0.416)	(0.417)	(0.417)	(0.422)
Log Word Count	2.525	2.418	1.983	2.641
	(2.735)	(2.743)	(2.728)	(2.764)
Cash Only	3.295**	3.245**	3.345**	3.691***
	(1.317)	(1.324)	(1.322)	(1.329)
Constant	-9.325	-7.670	-5.661	-12.302
	(39.505)	(39.643)	(39.546)	(39.818)
Sun of coefficients			-0.106	0.092
(MAE + Interaction)			(0.626)	(0.334)
Industry FE	✓	✓	✓	✓
Year Effects	✓	✓	✓	✓
Specification	OLS	OLS	OLS	OLS
R^2	0.119	0.120	0.119	0.122
N	2,812	2,812	2,812	2,812

Panel B. Instrumental Variable Regressions

2SLS Regression:	First-stage	Second-stage
Dependent Variable:	DTI	Offer Premium
	(1)	(2)
Law Firm DTI	0.680***	
	(0.034)	
DTI (Instrumented)		-1.967***
		(0.728)
Log Relative Size	-0.014	1.673***
	(0.024)	(0.410)
Size^T	0.084***	-1.412***
	(0.027)	(0.423)
Cash Only	0.172*	3.589***
	(0.090)	(1.376)
Log Word Count	1.531***	4.249
	(0.166)	(2.972)
Constant	-12.114***	13.307
	(1.834)	(30.076)
Industry FE	✓	✓
Year Effects	✓	✓
N	2,611	2,611

Table 7: Deal Tightness and Short-term Announcement Returns

This table presents the results of OLS regressions examining the relation between short-term announcement returns and DTI. We compute cumulative abnormal returns over the $[-1,+5]$ trading day announcement window. The dependent variable is bidder's $CAR[-1,+5]$ in columns (1) and (2), target's $CAR[-1,+5]$ in columns (3) and (4), and the combined $CAR[-1,+5]$ in columns (5) and (6). All variables are defined in Appendix C. All regressions include bidder or target industry-fixed effects and year effect dummies. Standard errors, reported in parentheses, are clustered at the bidding firm level. Asterisks denote significance at the 1% (***), 5% (**), and 10% (*) level.

Dependent Variable:	CAR$[-1,+5]^B$		CAR$[-1,+5]^T$		Combined CAR$[-1,+5]$	
	(1)	(2)	(3)	(4)	(5)	(6)
DTI	0.134*		-0.389*		0.141*	
	(0.081)		(0.232)		(0.085)	
SPE SI		0.090		-0.479		0.137
		(0.112)		(0.330)		(0.116)
MAE SI		0.055		0.031		0.177
		(0.143)		(0.426)		(0.143)
RTF SI		0.403**		-0.813*		0.094
		(0.184)		(0.482)		(0.184)
Log Relative Size	0.418***	0.436***	1.097***	1.064***	-0.718***	-0.722***
	(0.099)	(0.099)	(0.310)	(0.310)	(0.107)	(0.107)
Size^T	0.001	0.005	-1.130***	-1.151***	0.012	0.010
	(0.114)	(0.114)	(0.311)	(0.310)	(0.124)	(0.124)
Log Word Count	-2.113***	-2.007***	-5.002**	-5.163***	-1.900***	-1.918***
	(0.718)	(0.729)	(1.973)	(1.985)	(0.716)	(0.726)
Cash Only	2.381***	2.449***	6.500***	6.356***	2.847***	2.833***
	(0.383)	(0.385)	(1.181)	(1.184)	(0.423)	(0.422)
Offer Premium	-0.029***	-0.029***	0.416***	0.416***	0.011	0.011
	(0.007)	(0.007)	(0.026)	(0.026)	(0.008)	(0.008)
Constant	17.616**	16.070*	76.210***	78.614***	24.665***	24.930***
	(8.385)	(8.544)	(21.420)	(21.563)	(8.046)	(8.185)
Bidder Industry FE	✓	✓				
Target Industry FE			✓	✓	✓	✓
Year Effects	✓	✓	✓	✓	✓	✓
Specification	OLS	OLS	OLS	OLS	OLS	OLS
R^2	0.088	0.089	0.349	0.350	0.085	0.085
N	2,786	2,786	2,804	2,804	2,767	2,767

Table 8: Deal Tightness and Long-term Bidder Returns

This table presents the results of OLS regressions examining the relation between the bidder's long-term returns and DTI. $BHAR[a,b]$ denotes the bidder's buy-and-hold abnormal return over the specified period $[a,b]$ relative to the announcement date computed using the return of a portfolio of ten closely-matched firms over the same period as the benchmark. The dependent variable is the 1-year return in columns (1) and (2), the 2-year return in columns (3) and (4), and the 3-year return in columns (5) and (6). All variables are defined in Appendix C. All regressions include bidder industry-fixed effects and year effect dummies. Standard errors, reported in parentheses, are clustered at the bidding firm level. Asterisks denote significance at the 1% (***), 5% (**), and 10% (*) level.

Dependent Variable:	$BHAR[-1,+252]$		$BHAR[-1,+504]$		$BHAR[-1,+756]$	
	(1)	(2)	(3)	(4)	(5)	(6)
DTI	0.799**		1.894***		2.158***	
	(0.394)		(0.592)		(0.749)	
SPE SI		1.252**		2.364***		2.794***
		(0.561)		(0.827)		(1.032)
MAE SI		0.346		1.443		2.144*
		(0.683)		(0.969)		(1.192)
RTF SI		0.164		1.202		0.263
		(0.818)		(1.175)		(1.524)
Log Relative Size	-1.050**	-1.073**	-2.192***	-2.218***	-3.082***	-3.181***
	(0.535)	(0.539)	(0.742)	(0.745)	(0.909)	(0.907)
Size^T	-1.550***	-1.534***	-2.416***	-2.400***	-2.848***	-2.855***
	(0.515)	(0.515)	(0.769)	(0.770)	(0.997)	(0.998)
Log Word Count	-1.476	-1.732	2.193	1.916	-1.195	-1.907
	(3.381)	(3.422)	(4.784)	(4.861)	(6.186)	(6.238)
Cash Only	3.943**	3.848**	6.568**	6.457**	9.233***	8.757**
	(1.878)	(1.881)	(2.652)	(2.664)	(3.392)	(3.416)
Offer Premium	0.027	0.027	-0.040	-0.040	-0.046	-0.046
	(0.034)	(0.034)	(0.045)	(0.045)	(0.054)	(0.054)
Constant	10.976	14.466	-46.984	-43.186	-18.012	-7.683
	(37.270)	(37.934)	(53.364)	(54.527)	(69.071)	(69.920)
Industry FE	✓	✓	✓	✓	✓	✓
Year Effects	✓	✓	✓	✓	✓	✓
Specification	OLS	OLS	OLS	OLS	OLS	OLS
R^2	0.025	0.026	0.032	0.033	0.032	0.033
N	2,560	2,560	2,560	2,560	2,560	2,560

Appendix A Dow Chemical and Rohm & Haas Merger Agreement: An Example of a Tight Deal

A famous example of how tight a merger deal can be for the bidder to walk away is the one between Dow Chemical Company and Rohm and Haas Company ("Rohm & Haas") announced on July 10, 2008 and consummated on April 1, 2009. Afsharipour (2010) describes this deal as an "apt" example where the target can use the hybrid reverse termination fee (i.e., reverse termination fee combined with specific performance) to their benefit.

Dow won the bidding war out of a heated auction and it turned out that high offer price was not the only cost that it had to pay.

> "Last summer, the Dow Chemical Company won a heated auction for a well-run, highly valued specialty chemical company called Rohm & Haas. In agreeing to acquire this Philadelphia-based company, Dow beat out its chief rival in the chemical industry, BASF of Germany. The price it agreed to pay was high: $78 a share in cash, a 74 percent premium, for a total of about $15.3 billion. [...] Dale Oesterle, a law professor at Ohio State University who writes a business law blog, has described the deal struck by Rohm & Haas and Dow Chemical as a "very seller-biased contract." And why wouldn't it be? When a long-admired company puts itself up for auction, it is going to hold most of the cards. To land Rohm & Haas, Dow Chemical agreed to terms that made it nearly impossible to back out if anything went wrong.
>
> The deal was not contingent on financing, for instance—not that Dow Chemical was worried about financing because it had the Kuwaitis in its back pocket. It couldn't back out if the deal threatened its investment-grade credit rating. It was not dependent on the stock price. Indeed, it included something called a "specific performance" clause. That meant that if Dow Chemical tried to back out, Rohm & Haas could go to court and insist that the deal be completed, at $78 a share, as specified in the contract. Monetary damages was not an adequate remedy. "
>
> *"Dow Imperiled by Its Deal for Rohm & Hass*, New York Times, on February 6, 2009[13]

Afsharipour (2010) also recognizes that Dow had little "wiggle room" because "a financing out was notably absent from the agreements" because Dow represented in the agreement that it would have the necessary funds for the merger consideration.

The deal's Form 8-K Current Report, filed by Dow on the announcement date (July 10, 2008), includes their "Agreement and plan of merger" in the filing's Exhibit 2.1. The agreement included specific performance:

> "SECTION 8.5 Jurisdiction; Enforcement.
>
> (a) The parties agree that irreparable damage would occur in the event that any of the provisions of this Agreement were not performed in accordance with their specific terms or were otherwise breached and that the parties would not have any adequate remedy at law. It is accordingly agreed that the parties shall be entitled to an injunction or injunctions to prevent breaches or threatened breaches of this Agreement and to enforce specifically the terms and provisions of this Agreement exclusively in the Delaware Court of Chancery, or in the event (but only in the event) that such court does not have subject matter jurisdiction over such action or proceeding, in the United States District Court for the District of Delaware or another court sitting in the state of Delaware."
>
> *Form 8-K, filed on July 10, 2008 by Dow Chemical Company, Exhibit 2.1, p. 49.*

[13] URL: https://www.nytimes.com/2009/02/07/business/07nocera.html

It is also stated that, under the agreement, the followings are excluded from constituting a MAE (in the agreement, the "Company" denotes Rohm and Hass and the "Parent" denotes Dow):

> "As used in this Agreement, any reference to any state of facts, circumstances, event or change having a "Company Material Adverse Effect" means such state of facts, circumstances, event or change that has had a material adverse effect on the business, operations or financial condition of the Company and its Subsidiaries, taken as a whole, but shall not include
>
> (a) facts, circumstances, events or changes (i) generally affecting the specialty chemical industry or the segments thereof in which the Company and its Subsidiaries operate (including changes to commodity prices) in the United States or elsewhere, (ii) generally affecting the economy or the financial, debt, credit or securities markets, in the United States or elsewhere, (iii) resulting from any political conditions or developments in general, (iv) resulting from any outbreak or escalation of hostilities, declared or undeclared acts of war or terrorism (other than any of the foregoing to the extent that it causes any direct damage or destruction to or renders physically unusable or inaccessible any facility or property of the Company or any of its Subsidiaries), (v) reflecting or resulting from changes or proposed changes in Law (including rules and regulations) or interpretation thereof or GAAP (as defined in Section 3.4(b)) (or interpretations thereof), or (vi) resulting from actions of the Company or any of its Subsidiaries which Parent has expressly requested in writing or to which Parent has expressly consented in writing;
>
> or (b) any decline in the stock price of the Company Common Stock on the New York Stock Exchange or any failure to meet internal or published projections, forecasts or revenue or earning predictions for any period (provided that the underlying causes of such decline or failure may, to the extent applicable, be considered in determining whether there is a Company Material Adverse Effect),
>
> or (c) any facts, circumstances, events or changes resulting from the announcement or the existence of, or compliance (other than the obligation of the Company to comply with its obligations to operate in the ordinary course of business) with, this Agreement and the transactions contemplated hereby[...]"
>
> *Form 8-K, filed on July 10, 2008 by Dow Chemical Company, Exhibit 2.1, p. 8.*

The agreement did not allow Dow to walk away from the transaction by simply paying a reverse termination fee if Rohm does not agree to terminate the deal.

> "Section 7.1 Termination or Abandonment. This Agreement may be terminated and the Merger may be abandoned at any time prior to the Effective Time[...]
>
> (b) by either the Company or Parent if (i) the Effective Time shall not have occurred on or before October 10, 2009 (the "End Date") and (ii) the party seeking to terminate this Agreement pursuant to this clause 7.1(b) shall not have breached in any material respect its obligations under this Agreement in any manner that has been a principal cause of or resulted in the failure to consummate the Merger on or before such date;
>
> (c) by either the Company or Parent if an injunction shall have been entered permanently restraining, enjoining or otherwise prohibiting the consummation of the Merger and such injunction shall have become final and non-appealable, provided that the party seeking to terminate this Agreement pursuant to this clause 7.1(c) shall have complied with its obligations under Section 5.6 of this Agreement[...]

> Section 7.2 Termination Fee. Notwithstanding any provision in this Agreement to the contrary, if[...] (d) this Agreement is terminated by Parent or the Company pursuant to either Section 7.1(b) or Section 7.1(c) (in the case of Section 7.1(c) to the extent arising in connection with any Regulatory Law) and, at the time of either such termination, all of the conditions to closing set forth in Sections 6.1 and 6.3 have been satisfied or waived in writing (or, if the Closing were to have taken place on the date of termination, such conditions would have been satisfied), other than the conditions set forth in Section 6.1(b)(if the injunction, restraint or prohibition relates to any Regulatory Law) or Section 6.1(c), then Parent shall pay to the Company an amount in cash equal to $750,000,000 (the "Reverse Termination Fee") within two (2) Business Days of such termination."
>
> *Form 8-K, filed on July 10, 2008 by Dow Chemical Company, Exhibit 2.1, pp. 45-48.*

As a result of this "tight" agreement, Dow was forced to consummate the deal at agreed upon price, as a result of a settlement between the two parties.[14]

> "And what of the Rohm & Haas acquisition? A few weeks ago, with the deadline just days away, Dow Chemical informed Rohm & Haas that it needed to delay the deal, at least until June. Although Mr. Liveris insisted in a news release that the Rohm & Haas acquisition was still "consistent" with the company's strategy, he conceded that Dow Chemical's ability to finance the deal had been hurt by the pullout of the Kuwaitis.
>
> Dow Chemical feared that if it went ahead with the $15.3 billion deal—using a bridge loan that had to be paid off in a year—the combined entity could be badly damaged, saddled with high-priced debt in a horrible business environment, and a junk bond credit rating.
>
> [...]
>
> How did Rohm & Haas react to this bad news? It sued for "specific performance," demanding that Dow Chemical complete the deal it had agreed to. After all, Rohm & Haas noted in a statement, it had a duty "to protect its shareholders' interests."
>
> [...] Even so, Dow Chemical's chances of stopping this deal are not terribly high. The trial, which is scheduled for next month, is taking place in Delaware, and "Delaware law has been built on the idea that the only thing that counts is the shareholders," said Lawrence A. Hamermesh, a professor at Widener's Institute of Delaware Corporate Law. The judge would clearly like the two parties to settle, but Rohm & Haas has very little incentive to do so. Any settlement that leads to a deal will be for a lot less than $78 a share. Any settlement that voids the deal is also likely to depress Rohm & Haas's share price, which closed on Friday at $56.50, well below the agreed-upon acquisition price. Either way, Rohm & Haas shareholders will be fuming."
>
> *"Dow Imperiled by Its Deal for Rohm & Hass*, New York Times, on February 6, 2009[15]

> "In response to Dow's failure to close, Rohm immediately filed suit in the Delaware Court of Chancery alleging Dow intentionally breached the acquisition agreement. Further, Rohm sought specific performance as provided for under the agreement. Rohm premised its suit on Dow's refusal to close despite all conditions to closing having been satisfied. Rohm also observed that Dow's reliance on deteriorating market conditions was weak because the deal was negotiated at a time

[14] URL: https://www.reedsmith.com/en/perspectives/2010/01/recent-delaware-chancery-court-decision-holdin
[15] URL: https://www.nytimes.com/2009/02/07/business/07nocera.html

> when the credit markets were already in distress and it had "stressed to Dow that . . . there be certainty that the deal would close because it had other interested acquirers." Most compellingly, Rohm pointed to express provisions in the merger agreement that reflected the measures negotiated to provide Rohm with the certainty of closure that it demanded." (Afsharipour (2010))

Reverse termination fee provisions did not help Dow much, because, given the situation, Rohm would have been better off by choosing to purse specific performance rather than $750 million reverse termination fee. Afsharipour (2010) explains that all the relevant provisions forced Dow to settle and consummate the deal on amended terms.

> "The hybrid-style acquisition agreement explicitly provided for both an RTF and the seller's entitlement to specific performance to enforce the agreement. Section 7.2(d) of the agreement stipulated a $750 million RTF in the event of Dow's failure to consummate the merger by drop dead date or if there existed a final non-appealable injunction arising in connection with any regulatory law. This provision further indicated that the RTF would be payable upon the termination of the agreement "if all of the conditions to closing. . . [had] been satisfied... other than the [antitrust] conditions set forth in Section 6.1." As such, Dow would have been liable for payment of the RTF because of its failure to consummate the merger and the satisfaction of all the conditions to closing. Dow thereupon attempted to sidestep payment of the RTF via a defensive claim that not all the conditions to closing had been satisfied because the Federal Trade Commission clearance was not finalized. However, this attempt would have been a long shot even if its antitrust defense had any traction. Furthermore, it soon became evident that Dow's failure to contract for a financing condition, even when "the potential problem of financing was a known quantity," jeopardized its existing covenants in its short-term debt financing. At the risk of "triggering cross-defaults in its other funded debt," Dow was cornered into choosing between endangering its investment-grade status and wrangling its way around the merger. The cumulative effect of the above provisions, including the lack of a financing out, forced Dow into acceding to the acquisition. On the eve of the trial in the Delaware Chancery Court, Dow and Rohm reached a settlement under which Dow was to complete the deal on amended terms. After months of mounting costs, the transaction finally closed on April 1, 2009." (Afsharipour (2010))

Another interesting derivative claim regarding this transaction is *In Re Dow Chem. Co. Derivative Litig., Cons. No. 4339, 2010 WL 66769*, in which the Delaware court "appeared unwilling not only to question the decision to enter into the transaction, but also to question substantive buy-side decisions, including how to structure the transaction and what terms to include in an acquisition agreement" (Afsharipour (2010)). Afsharipour (2010) further notes that "[i]n general, the Delaware courts are extremely reluctant to question the substantive decisions of boards, particularly buyer boards, to enter into acquisition transaction." These indicate that the bidder's board is granted with substantial flexibility concerning merger agreement formulation in terms of its fiduciary duties.

Appendix B Construction of Deal Tightness Variables

B.1 Collecting Information on Specific Performance and Enforcement Recitals

We collect information on whether the agreement includes the following common recitals in specific performance and enforcement (SPE) clauses to construct measures of the potential strength of a deal's specific performance provision, using keyword and *regex* search terms identified through a manual review of merger agreements. Each item below constitutes our *SPE Score*. We number each constituent to facilitate easier reference throughout the text. Examples of keywords or phrases concerning each specific performance provision that we search for are highlighted in bold.

- $SPE1$: General specific performance recitals

  Example: "**Specific Performance**. The parties hereto agree that irreparable damage would occur in the event that any of the provisions of this Agreement were **not performed in accordance with their specific terms** or were otherwise breached. It is accordingly agreed that the parties shall be **entitled to an injunction or injunctions to prevent breaches** of this Agreement and to enforce specifically the terms and provisions hereof in any court of the United States or any state having jurisdiction, this being in addition to any other remedy to which they are entitled at law or in equity."

- $SPE2$: Enforce specifically the terms and provisions

  Example: "It is accordingly agreed that the parties shall be entitled to an injunction or injunctions to prevent breaches of this Agreement and to **enforce specifically the terms and provisions** hereof in any court of the United States or any state having jurisdiction, this being in addition to any other remedy to which they are entitled at law or in equity."

- $SPE3$: No adequate remedy at law would exist

  Example: "The parties agree that irreparable damage would occur and that the parties would **not have any adequate remedy at law** in the event that any of the provisions of this Agreement were not performed in accordance with their specific terms or were otherwise breached."

  "The parties hereby expressly acknowledge and agree that immediate, extensive and irreparable damage would result, **no adequate remedy at law would exist** and damages would be difficult to determine in the event that any provision of this Agreement is not performed in accordance with its specific terms or otherwise breached."

- $SPE4$: Monetary damages are not adequate

  Example: "The parties agree that irreparable damage would occur for which **monetary damages would not be an adequate remedy** in the event that any of the provisions of this Agreement were not performed in accordance with their specific terms or were otherwise breached."

  "Each party acknowledges and agrees that the parties would be damaged irreparably if any of the provisions of this Agreement are not performed in accordance with the specific terms and that any

breach of this Agreement by the other parties could **not be adequately compensated in all cases by monetary damages** alone."

• $SPE5$: Agree not to object the remedy of specific performance

Example: "Each party hereto **agrees that it will not assert that a remedy of specific performance** is **unenforceable** or invalid or otherwise oppose the granting of an injunction, specific performance and other equitable relief on the basis that (a) the other party has an adequate remedy at law or (b) an award of specific performance is not an appropriate remedy for any reason at law or equity."

"Each of the parties hereto **agrees not to raise any objections to the availability of the remedy of specific performance** to prevent breaches of this Agreement or to enforce specifically the performance of the terms and provisions hereof."

• $SPE6$: No bonds or other securities required to seek an injunction

Example: "Accordingly, the parties agree that any non-breaching party shall be entitled (without prejudice to any other right or remedy to which it may be entitled) to an appropriate decree of specific performance, or an injunction restraining any violation of this Agreement or other equitable remedies to enforce this Agreement (**without** establishing the likelihood of irreparable injury or **posting bond or other security**), and the breaching party waives in any action or proceeding brought to enforce this Agreement the defense that there exists an adequate remedy at law."

"Any party seeking an injunction or injunctions to prevent breaches of this Agreement and to enforce specifically the terms and provisions of this Agreement **shall not be required to provide any bond or other security** in connection with any such order or injunction."

• $SPE7$: Prevent "threatened" breach

Example: "The parties hereto agree that irreparable damage would occur if any provision of this Agreement were not performed in accordance with the terms hereof and that the parties shall be entitled to an injunction or injunctions to **prevent** breaches or **threatened breaches** of this Agreement or to enforce specifically the performance of the terms and provisions hereof in any federal court located in the State of Indiana or any Indiana state court, in addition to any other remedy to which they are entitled at Law or in equity."

"It is accordingly agreed that the parties shall be entitled to an injunction or injunctions, specific performance and other equitable relief to **prevent** or restrain breaches or **threatened breaches** of this Agreement and to enforce specifically the terms and provisions hereof in any court of competent jurisdiction, this being in addition to any other remedy to which they are entitled at Law or in equity."

• $SPE8$: Specific performance is an integral part of the agreement

Example: "It is accordingly agreed that (a) the parties shall be entitled to an injunction or injunctions, specific performance, or other equitable relief, to prevent breaches or threatened or

anticipated breaches of this Agreement and to enforce specifically the terms and provisions of this Agreement in the courts described in Section 9.07, without proof of damages or otherwise, and (b) the **right of specific performance is an integral part of the Transactions and without that right, neither the Company nor Parent would have** entered into this Agreement."

"The parties hereto agree that **the right of specific enforcement is an integral part of the transactions contemplated by this Agreement and without that right, neither the Company nor Parent would have** entered into this Agreement."

- $SPE9$: Irreparable damages

  Example: "Availability of Injunctive Relief. The parties hereto acknowledge and recognize that **irreparable damage** could result to the Company and its Subsidiaries, businesses and properties if Harris fails or refuses to perform its obligations under this Agreement and that no adequate remedy at law will exist for any breach by Harris of this Agreement. In addition to any other rights or remedies and damages available, the Company shall be entitled to appropriate injunctive relief, including preliminary and mandatory injunctive relief, enjoining or restraining Harris or any of its Subsidiaries from any violation or threatened violation of this Agreement."

- $SPE10$: Agree not to deny jurisdiction

  Example: "It is accordingly agreed that the parties shall be entitled to seek an injunction or injunctions to prevent breaches of this Agreement and to enforce specifically the terms and provisions of this Agreement in any court of the United States located in the State of Delaware or in Delaware state court, this being in addition to any other remedy to which they are entitled at law or in equity. In addition, each of the parties hereto (a) consents to submit itself to the personal jurisdiction of any Federal court located in the State of Delaware or any Delaware state court in the event any dispute arises out of this Agreement or any of the transactions contemplated by this Agreement, (b) **agrees that it will not attempt to deny or defeat such personal jurisdiction by motion or other request for leave from any such court** and (c) **agrees that it will not initiate any action relating to this Agreement or any of the transactions contemplated by this Agreement** in any court other than a Federal court sitting in the State of Delaware or a Delaware state court."

  "It is accordingly agreed that the parties shall be entitled to an injunction or injunctions to prevent breaches of this Agreement and to enforce specifically the terms and provisions of this Agreement in any Federal court located in the Commonwealth of Pennsylvania or in any state court in the Commonwealth of Pennsylvania, this being in addition to any other remedy to which they are entitled at law or in equity. In addition, each of the parties hereto (a) consents to submit itself to the personal jurisdiction of any Federal court located in the Commonwealth of Pennsylvania or of any state court located in the Commonwealth of Pennsylvania in the event any dispute arises out of this Agreement or the transactions contemplated by this Agreement, (b) **agrees that it will not attempt to deny or defeat such personal jurisdiction by motion or other request for leave from any such court** and (c) agrees that **it will not bring any action relating to this Agreement or the transactions contemplated by this Agreement** in any court other than a Federal court located in the Commonwealth of Pennsylvania or a state court located in the Commonwealth of Pennsylvania."

• $SPE11$: Agree not to initiate any action relating to the agreement

See above examples from "agree not to deny jurisdictions" recitals.

B.2 Components of Deal Tightness Index

We focus on the following merger agreement characteristics that are likely to be associated with the tightness of the agreement. Examples of keywords or phrases related to each component that we search for are highlighted in bold, where applicable.

Specific Performance and Enforcement (SPE) Components:

• Specific enforcement of terms and provisions (SPE_Enf) : We identify a merger agreement as the one including a term regarding enforcing specifically the terms and provisions of the contract, if includes the "$SPE2$" provision described above in Section B.1.

• Agree not to object the remedy of specific performance (SPE_NoObj) : We identify a merger agreement as the one including a "promise not to challenge" specific performance clause, if it includes least one of the "$SPE5$" or "$SPE11$" provision described above in Section B.1.

• Seeking an injunction does not require posting a bond or similar security (SPE_NoBond) : We identify a merger agreement as the one including a "promise not to challenge" specific performance clause, if includes the "$SPE6$" provision described above in Section B.1.

• Irreparable damage recital (SPE_IrrDmg) : We identify a merger agreement as the one including an irreparable damage recital, if it includes the "$SPE9$" provision described above in Section B.1.

• High specific performance score ($SPE\_HighScore$) : We count how many of the specific performance provisions listed above in Section B.1 appear in a merger agreement. This count, denoted as *SPE Score*, is then used to classify deals whose *SPE Score* exceeds 3 (the sample median) as $SPE\_HighScore$ deals.

Reverse Termination Fee (RTF) Components:

• Has no reverse termination fee provision (RTF_None) : We identify a merger agreement as lacking an acquirer termination fee clause if it does not specify a parent or acquirer termination fee, as determined using relevant *regex* search terms.[16]

> Example: "[...]this Agreement is terminated by Parent pursuant to Section 9.1(c)(iii); then, in any such event, Parent shall pay to Company the **Parent Termination Fee**, less any amount of Company Expense Base Amount previously paid by Parent[...]

• Has no exclusive remedy clause ($RTF\_NoExRem$) : We identify a merger agreement as the one lacking an exclusive remedy clause, if it does not satisfy relevant *regex* search terms for sole and exclusive remedy provisions.

[16] Although the SDC also provides information on acquirer termination fees (which identifies 24.35% of our sample deals having acquirer termination fees included), our regex-based approach to classify agreements with acquirer termination fee clauses yield a larger number of agreements classified as having the clauses (yielding 35.59% of our sample deals having acquirer termination fees included).

Example: "**Sole and Exclusive Remedy.** (i) Notwithstanding anything herein to the contrary, but without limitation to the Company's right in respect of specific performance [...], the Company agrees that, upon any termination of this Agreement under circumstances where the Parent Termination Fee is payable by Parent [...] and such Parent Termination Fee and, any applicable Enforcement Costs and any applicable indemnification and reimbursement obligations specifically set forth in this Agreement [...] are paid in full, the receipt by the Company of the Parent Termination Fee, any applicable Enforcement Costs and any applicable indemnification and reimbursement obligations specifically set forth in this Agreement [...] shall be deemed to be liquidated damages and **the sole and exclusive remedy of the Company** in connection with this Agreement or the transactions contemplated hereby and the Company shall not seek to obtain any recovery, judgment, or damages of any kind, including consequential, indirect, or punitive damages, against Parent Related Parties or their respective Representatives in connection with the Transactional Matters, including any breach of this Agreement (including any willful breach)."

• Acquirer termination fee is higher than target termination fee ($RTF\_HighFee1$) : We identify a merger agreement as the one having "high" acquirer termination fee if the merger agreement is identified to have an acquirer termination fee clause and the SDC-provided acquirer termination fee is higher than the SDC-provided target termination fee.

• Acquirer termination fee relative to deal value is high ($RTF\_HighFee2$) : We also identify a merger agreement as the one having "high" acquirer termination fee if the merger agreement is identified to have an acquirer termination fee clause and the ratio of SDC-provided acquirer termination fee to deal value is higher than the sample median (which is three percent; see, also, Chen, Mahmudi, Virani, and Zhao (2022) for similar statistics).

Material Adverse Effect (MAE) Components:

• MAE exclusions regarding war, terrorism, and hostile activities (MAE_WT) : We identify a merger agreement as the one including hostilities-related MAE exclusions, if it satisfies relevant keyword or *regex* search terms for war, armed hostility, terrorism, sabotage, or military actions.

Example: "the commencement or escalation of a war or **armed hostilities** or the occurrence of acts of **terrorism** or **sabotage**"

"changes in global or national political conditions (including the outbreak or escalation of **war** (whether or not declared), **military action**, **sabotage** or acts of **terrorism**)"

• MAE exclusions regarding natural events, including natural disasters, pandemic, and epidemic (MAE_NP): We identify a merger agreement as the one including exogenous natural event (such as natural disasters and pandemic) related MAE exclusions, if it satisfies relevant keyword and *regex* search terms for earthquake, hurricane, natural disaster, epidemic, pandemic, or (other) health crisis.

Example: "Company Material Adverse Effect" means any change, event or circumstance that, individually or in the aggregate with all other changes, events and circumstances, has a material adverse effect on the business, results of operations, condition (financial or otherwise), assets or liabilities of the Company and its Subsidiaries, taken as a whole, other than any change, event or circumstance arising out of: [...] (vii) **earthquakes, hurricanes or other natural disasters,**

except to the extent that the Company or its Subsidiaries are disproportionately affected thereby; [...]"

"Company Material Adverse Effect" means any fact, event, occurrence, circumstance, change or effect (any such item, an "Effect") that, individually or when taken together with all other Effects that exist at the date of determination of the occurrence of the Company Material Adverse Effect, has had or would reasonably be expected to have a material adverse effect on the business, financial condition or results of operations of the Company and its Subsidiaries taken as a whole; provided, however, that in no event shall any Effect resulting from or arising out of any of the following, either alone or in combination, be taken into account (including the impact thereof) when determining whether a Company Material Adverse Effect has occurred or may, would or could occur[...] (e) **earthquakes, hurricanes, tsunamis, tornadoes, floods, mudslides, wild fires, natural disasters, weather conditions, epidemics, pandemics** (including COVID-19 and any variants/mutations thereof or any COVID-19 Measures) and other similar events or acts of God in the United States or any other country or region in the world[...]"

• MAE exclusions regarding stock price, volume, and firm performance (MAE_PV) : We identify a merger agreement as the one including MAE exclusions regarding stock price, volume, and firm performance changes, if it satisfies the relevant keyword and *regex* search terms for those changes.

""Company Material Adverse Effect" means any change, event, occurrence or development (an "Effect") that has, or would reasonably be expected to have, individually or in the aggregate, a material adverse effect on the business, financial condition, assets or results of operations of the Company and its Subsidiaries, taken as a whole; provided, however, none of the following shall constitute or be deemed to contribute to a Company Material Adverse Effect, or shall otherwise be taken into account in determining whether a Company Material Adverse Effect has occurred or would reasonably be expected to occur[...]: any adverse Effect arising out of, resulting from or attributable to [...] **changes in the trading price or trading volume of Shares or any suspension of trading**"

"any **failure** by the Company or any of its Subsidiaries to **meet** any revenue, earnings or other financial **projections** or forecasts"

• Parent material adverse effect (MAE_Parent) defined: We identify a merger agreement as the one defining bidder (parent) MAEs and possibly their exclusions, if it satisfies relevant *regex* search terms for a parent or acquirer material adverse effect.

Example: "**Parent Material Adverse Effect** means any Effect that has a material adverse effect on the assets, properties, liabilities, financial condition, business or results of operations of Parent and its Subsidiaries, taken as a whole; provided, however, that a Parent Material Adverse Effect shall not include any Effect arising out of or resulting from: (a) any changes in general United States or global economic conditions; (b) changes generally affecting the industry or industries in which Parent operates; (c) any change in Law or the interpretation thereof or GAAP or the interpretation thereof; (d) acts of war, armed hostility or terrorism or any worsening thereof; (e) earthquakes, hurricanes, tornados or other natural disasters or calamities; [...] (g) any failure by Parent to meet any internal or published projections (whether published by Parent or any

analysts) or forecasts or estimates of revenues or earnings or results of operations for any period (it being understood and agreed that the facts and circumstances giving rise to any such failure that are not otherwise excluded from the definition of a Parent Material Adverse Effect may be taken into account in determining whether there has been a Parent Material Adverse Effect); (h) any change in the price or trading volume of shares of Parent Common Stock or any other publicly traded securities of Parent (it being understood and agreed that the facts and circumstances giving rise to such change that are not otherwise excluded from the definition of a Parent Material Adverse Effect may be taken into account in determining whether there has been a Parent Material Adverse Effect); (i) any reduction in the credit rating of Parent or its Subsidiaries (it being understood and agreed that the facts and circumstances giving rise to such reduction that are not otherwise excluded from the definition of a Parent Material Adverse Effect may be taken into account in determining whether there has been a Parent Material Adverse Effect) [...]"

• High MAE exclusion score ($MAE\_HighScore$) : Similar to Denis and Macias (2013), we count how many of the MAE exclusion "categories" listed below in Appendix B.3 appear in a merger agreement ("MAE score"), and identify deals whose MAE score is above 5 (the sample median) as $MAE\_HighScore$ deals.

B.3 Collecting Information on MAE Exclusions

We construct a MAE exclusion score ($MAE\ Score$), similar to that of Denis and Macias (2013), by counting the following MAE exclusion category dummies (which equals one if the specified condition or conditions are satisfied). We attempt to follow the classifications of Denis and Macias (2013) (which are narrower in some cases than our MAE classifications above) as closely as possible to the extent that they are collectible by keyword or regex search of merger agreements.[17] Below are the specific MAE exclusion categories we identify using keyword and *regex* search terms derived from our manual review of merger contracts. See Appendix Section B.2 above for examples.

- Stock price and volume
- War and terrorism
- Natural disaster
- Pandemic, epidemic, and health crisis
- Failure to meet projections
- Economic condition
- Political condition
- Capital market condition
- (General) Industry condition
- Law and regulation

[17] Although Denis and Macias (2013) employ 14 categories for MAE exclusions, some of their classifications are not feasible to collect using text search without manual reading (which still cannot guarantee a better or more accurate measure as it requires the reader's judgement in many cases, given the difficulties arising from quantifying and categorizing complex legal terms and clauses). For example, "changes due to agreement or transaction" is not straightforward to identify using a regex search approach. We thus modify their MAE exclusion classifications to be more suitable for a text-search-based approach. Nevertheless, as we show in our empirical results, the results using our $MAE\ Score$ are similar to the corresponding results reported by Denis and Macias (2013).

- Accounting standards
- "Disproportionate" industry condition
- "Disproportionate" economic condition
- Miscellaneous: As in Denis and Macias (2013)—although they are not clear about what exclusions are included in this category—we also include an MAE exclusion category for "miscellaneous" exclusions, which includes any suspension of trading and any changes in interpretation.

> Example: "compliance with the requirements of **changes** in Law or GAAP or **any interpretation** thereof"

B.4 An example of Form 8-K Filing including Merger Agreement

Typically, within four business days from the date of entry into a merger agreement, Form 8-K *Current Report* is filed by the bidder and/or target that describes and summarizes the key terms and conditions of the agreement, with actual agreement attached as an exhibit or appendix.

Below is an example from the Expedia-Orbitz merger, a Form 8-K filed by Expedia on February 12, 2015 (which was also identified as the announcement date of this deal by the SDC). In the last paragraph, it explains that the "Merger Agreement has been attached to provide investors with information regarding its terms" and that "certain representations and warranties in the Merger Agreement were used for the purposes of allocating risk between Orbitz and Expedia rather than establishing matters of fact."

> Item 1.01 Entry into a Material Definitive Agreement
>
> On February 12, 2015, Expedia, Inc., a Delaware corporation ("Expedia"), Orbitz Worldwide, Inc., a Delaware corporation ("Orbitz"), and Xeta, Inc., a Delaware corporation and an indirect wholly owned subsidiary of Expedia ("Merger Sub") entered into an Agreement and Plan of Merger (the "Merger Agreement").
>
> The Merger Agreement provides, among other things and subject to the terms and conditions set forth therein, that Merger Sub will be merged with and into Orbitz (the "Merger"), with Orbitz surviving the Merger as an indirect wholly owned subsidiary of Expedia. At the effective time of the Merger (the "Effective Time"), each share of common stock of Orbitz outstanding immediately prior to the Effective Time (other than any shares owned by Orbitz, Expedia, Merger Sub or Merger Sub's direct parent or any dissenting shares) will be automatically converted into the right to receive $12.00 in cash, without interest (the "Merger Consideration").
>
> The closing of the Merger is subject to the adoption of the Merger Agreement by the affirmative vote of holders of a majority of the outstanding shares of common stock of Orbitz (the "Orbitz Stockholder Approval"). The closing of the Merger is also subject to various customary conditions, including the expiration or termination of the applicable waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and other regulatory clearances, the absence of any governmental order prohibiting the consummation of the transactions contemplated by the Merger Agreement, the accuracy of the representations and warranties contained in the Merger Agreement (subject to certain materiality qualifications) and compliance with the covenants and agreements in the Merger Agreement in all material respects.
>
> Each of Expedia, Merger Sub and Orbitz has made customary representations, warranties and covenants in the Merger Agreement. Orbitz has agreed, among other covenants (1) to conduct its business in the ordinary course consistent with past practice during the period between the execution of the Merger Agreement and the closing of the Merger, (2) not to engage in specified types of

transactions during this period unless consented to in writing by Expedia, (3) to convene and hold a meeting of its stockholders for the purpose of obtaining the Orbitz Stockholder Approval, and (4) subject to certain exceptions, not to withdraw, qualify or modify in a manner adverse to Parent or Merger Sub the recommendation of the Orbitz Board of Directors that Orbitz's stockholders adopt the Merger Agreement.

Subject to certain limited exceptions, the Merger Agreement provides that Orbitz, its subsidiaries, and its and their respective representatives are prohibited from, among other things, initiating, soliciting, or knowingly encouraging or facilitating the making or submission of any alternative acquisition proposals from third parties or providing information to or participating in any discussions or negotiations regarding an alternative acquisition proposal with any person that has made an alternate acquisition proposal.

The Merger Agreement contains certain termination rights, including the right of Orbitz to terminate the Merger Agreement to accept a superior proposal (subject to compliance with certain notice and other requirements). The Merger Agreement provides that, in connection with termination of the Merger Agreement by Orbitz or Expedia upon specified conditions, Orbitz will be required to pay to Expedia a termination fee of $57.5 million. If the Merger Agreement is terminated as a result of the failure to obtain competition law approvals or a legal prohibition related to competition law matters, a termination fee of $115 million will be payable by Expedia to Orbitz, subject to certain limitations. In addition, subject to certain exceptions and limitations, Orbitz or Parent may terminate the Merger Agreement if the Merger is not consummated by August 12, 2015 (or as such date may be extended pursuant to the terms of the Merger Agreement).

The foregoing description of the Merger Agreement does not purport to be complete and is qualified in its entirety by the full text of the Merger Agreement, a copy of which is attached hereto as Exhibit 2.1 and is incorporated into this report by reference in its entirety. The Merger Agreement has been attached to provide investors with information regarding its terms. It is not intended to provide any other factual information about Orbitz or Expedia. In particular, the assertions embodied in the representations and warranties contained in the Merger Agreement are qualified by information in confidential Disclosure Letters provided by each of Orbitz and Expedia to each other in connection with the signing of the Merger Agreement. These confidential Disclosure Letters contain information that modifies, qualifies and creates exceptions to the representations and warranties and certain covenants set forth in the Merger Agreement. Moreover, certain representations and warranties in the Merger Agreement were used for the purposes of allocating risk between Orbitz and Expedia rather than establishing matters of fact. Accordingly, the representations and warranties in the Merger Agreement should not be relied on as characterization of the actual state of facts about Orbitz or Expedia.

After the short descriptions and summary above, the 8-K filing includes the actual *Agreement and Plan of Merger* by and among Expedia Inc. (the bidder), Xeta, Inc. (the "merger sub"), and Orbitz Worldwide Inc. (the target), dated as of February 12, 2015, as "Exhibit 2.1," which is the only exhibit appended to this filing.

Appendix C Definitions of Variables

Accounting variables are computed as of the end of the fiscal quarter immediately preceding the announcement date, unless otherwise specified. "I(.)" indicates a dummy variable. Superscripts "B" and "T" indicate the bidder and target, respectively.

C.1 Deal Tightness and Merger Agreement Variables

- Deal tightness index (DTI): An index that counts the instances described in Appendix Section B.2 above that are likely to be associated with the deal's tightness from the bidder's perspective.
- Specific performance and enforcement sub-index ($SPE\ SI$): A sub-index that counts the instances of the five "SPE components" described in Appendix Section B.2 above, which measures the strength of the merger agreement's specific performance and enforcement provisions.
- Material adverse effect exclusion sub-index ($MAE\ SI$): A sub-index that counts the instances of the five "MAE components" described in Appendix Section B.2 above, which measures the weakness of the agreement's MAE provisions.
- Reverse termination fee provision sub-index ($RTF\ SI$): A sub-index that counts the instances of the four "RTF components" described in Appendix Section B.2 above, which measures the weakness of the agreement's RTF provisions.
- $SPE\ Score$: A variable that counts how many of the specific performance and enforcement recitals categorized in Appendix B.1 above are included the merger agreement.
- $MAE\ Score$: A variable that counts how many of the MAE exclusions categorized in Appendix B.3 are included in the merger agreement.
- $High\ SPE\ SI$ ($High\ SPE\ Score$): A dummy variable that equals one if the deal's $SPE\ SI$ ($SPE\ Score$) is above the sample median, and equals zero otherwise.
- $Log\ Word\ Count$: The natural logarithm of the number of words included in the merger agreement.

C.2 Deal Characteristic and Outcome Variables

- $Failed$: A dummy variable that equals one if the merger failed to consummate, and equals zero otherwise.
- $Renegotiated$: A dummy variable that equals one if the initial offer price is different from the final offer price, and equals zero otherwise.
- $Offer\ Down$ ($Offer\ Up$): A dummy variable that equals one if the initial offer price is higher (lower) the final offer price, and equals zero otherwise.
- $Days\ to\ Conclude$: Calendar day distance from the deal's initial public announcement date to the deal's consummation or withdrawal ("conclusion") date.
- $Cash\ Only$: A dummy variable that equals one if the merger consideration is fully comprised of cash payments, and equals zero otherwise.
- $Toehold$: A dummy variable that equals one if the SDC-reported bidder's ownership holdings in the target at announcement is at least 5%, and equals zero otherwise.

- *Same Industry*: A dummy variable that equals one if the bidder and target are headquartered in the same industry, based on the two-digit SIC codes, and equals zero otherwise.
- $CAR[a, b]$: The cumulative abnormal returns from trading date a to b, relative to the deal's initial public announcement date as reported by the SDC.
- *Combined* $CAR[a, b]$: The value-weighted average of cumulative abnormal returns of the bidding and target firms, from trading date a to b, relative to the deal's initial public announcement date as reported by the SDC. Bidder and target values as of 42 trading days prior to the announcement are used to compute the weights.
- $BHAR[a, b]$: The difference between the bidder's return and the return of a matched portfolio over the specified holding period relative to the deal's initial public announcement date. The matched portfolio consists of ten firms with the closest book-to-market ratios to that of the bidder, selected from firms in the bidder's industry whose market value of equity is between 70% and 130% of the bidder's market value.
- $Offer\ Premium$: The log ratio of the initial offer price to the target's stock price as of the closing of the the 42nd trading day prior to the announcement, expressed as a percentage.
- *Arbitrage Spread*: The log ratio of the initial offer price to the target's stock price as of the closing of the fifth trading day after the announcement, expressed as a percentage.
- $DE\ Target$: A dummy variable that equals one if the SDC-provided state of incorporation of the target is Delaware, and equals zero otherwise.
- $DE\ Acquirer$: A dummy variable that equals one if the SDC-provided state of incorporation of the acquirer is Delaware, and equals zero otherwise.
- *Same State*: A dummy variable that equals one if the SDC-provided state of incorporation (replaced with state, if missing) of the acquirer and that of the target are the same, and equals zero otherwise.
- $TermFee$: The ratio of the termination fee payable by the bidder or target to the deal value.

C.3 Firm Characteristic Variables

- Q: The ratio of the sum of a bidder or target firm's market capitalization and its book value of debt to the sum of book values of equity and debt.
- LEV: The ratio of long-term debt to total assets.
- $Size$: The natural logarithm of total assets.
- *Log Relative Size*: The ratio of the bidder's total assets to the target's total assets.
- FCF: The ratio of operating income before depreciation minus capital expenditures to total assets.
- $RetVol$: The firm's stock return volatility, measured as the standard deviation of daily stock returns over the period from 294 to 42 trading days prior to the announcement date.
- $RetCorr$: The correlation between the bidder's and target's daily returns over the period from the period 294 to 42 trading days prior to the announcement date.
- *E-index*: Entrenchment index, computed following the methodology of Bebchuk, Cohen, and Ferrell (2009), which ranges from 0 to 6 with higher values indicating greater managerial entrenchment.

- *Number of Similar Firms*: Number of firms in the same industry whose *Size* and Q are within 10% of the firm's values.
- *Law Firm DTI*: The bidder law firm's median DTI from its past deals, computed using information up to the deal's year of announcement. If multiple law firms are involved in a deal, we use the median value of the law firms' median DTI values.

Appendix D Auxiliary Figures and Tables

Figure A.1: Plots of Yearly Averages of MAE Exclusion Categories

This figure plots the yearly average values of the specified merger agreement MAE exclusion variables, from 1994 to 2022. See Appendix B.3 for definitions. *MAE included* is a dummy variable that equals one if the merger agreement includes the term "material adverse change" or "material adverse effect".

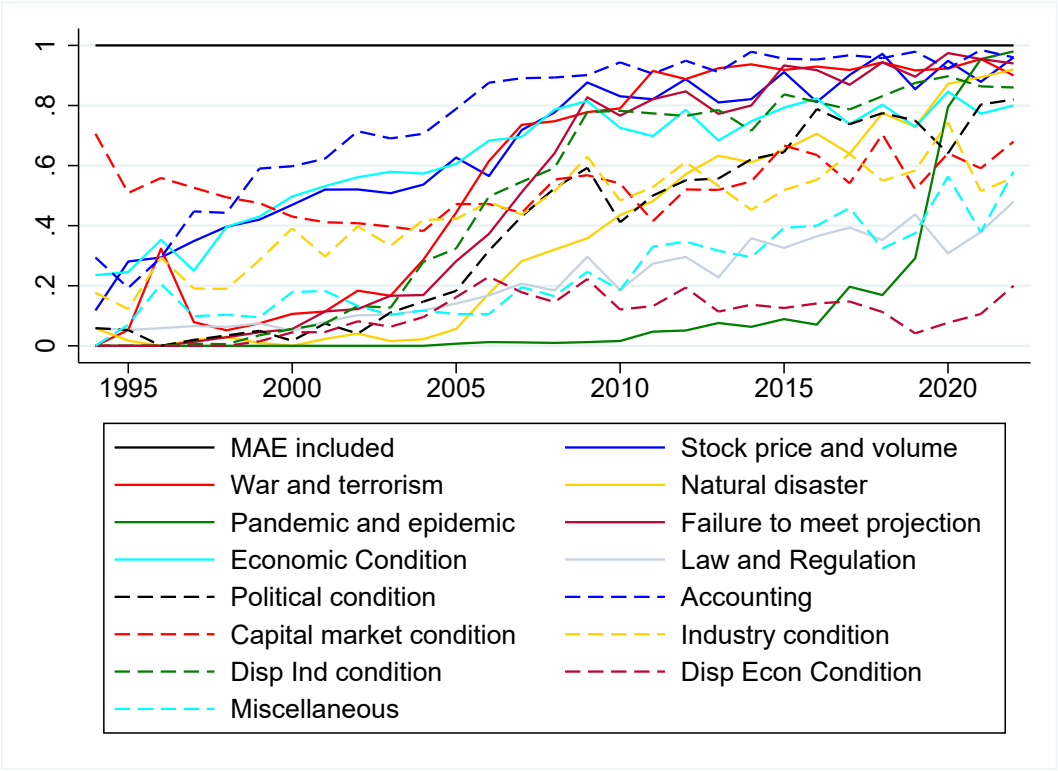


Figure A.2: Plots of Yearly Averages of Less Popular Merger Agreement Features

This figure plots the yearly average values of the specified merger agreement characteristic dummy variables, from 1994 to 2022, which are less popular among our sample merger deals, compared to those described in Figure 2 that we use to construct our DTI measure.