Eagerness to Sell: A Double-Edged Sword?

An Analysis of the Interplay between Targets' Eagerness to Sell and Bidder Availability on Bid Premiums in Corporate Takeovers

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ABSTRACT

The surge in M&A literature on the private phase of corporate takeovers has provided many new insights into the competition inherent in the market for corporate control. This thesis adds to the existing literature by creating a comprehensive database on the private takeover phase of U.S. takeovers in 2002-2014. The novelty in this database regards the collection of data on the 'stagedness' of corporate takeovers. This subject has been described in theoretical models, but empirical research on the topic is largely unexplored territory. We have researched the relationship between takeover premiums and a target's eagerness to sell, bidder availability and their interaction within one-staged and two-staged sales. We find ample evidence for our expectation that a target's eagerness to sell negatively affects takeover premiums due to adverse selection. Also, we find evidence for a positive effect of bidder availability in the market for the target on takeover premiums, which is even more pronounced within target-initiated deals. This interaction effect is mainly driven by two-staged sales. A target's eagerness and determination to sell in the presence of a high degree of bidder availability galvanizes bidders in the bidding process for the target to offer higher premiums in order to win the sale for the target. Lastly, we find an interesting insight for future research: there is a substantial discount for target sold in a second-stage process after a failed first-stage negotiation.

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1. Introduction

Since the seminal article of Boone & Mulherin (2007), a great deal has been learned on the competitive nature of the market for corporate control. Before their article, the conventional measure for competition in corporate takeovers was the number of public bidders for a target firm. However, as many studies found, this would lead one to believe that there was little to no competition on the market for corporate control, as in nearly all deals there was only a sole public bidder (e.g. Andrade, Mitchell, & Stafford (2001); Moeller, Schlingemann, & Stulz (2007)). Since the discovery and utilization of the wealth of information on the private phase of U.S. corporate takeovers available in the U.S. Securities and Exchange Commission (SEC) merger filings by Boone & Mulherin (2007), the M&A literature has seen a surge in a new strand of articles focusing on the competition in the private takeover phase. Building upon the methodology of Boone & Mulherin (2007), more authors have started utilizing the SEC merger filings to obtain in-depth details on private takeover processes incorporate takeovers. Many observations and insights have since been garnered regarding the competition on the market for corporate control.

A noticeable observation derived from analyzing the private takeover phase is that nearly half of all deals are completed through one-on-one negotiations (Boone & Mulherin, 2007). Conventional theory would suggest that a competitive sales process – i.e. an auction – would elicit higher bids by the participating bidders due to the inherent competitive nature of such a process and therefore leads to higher expected returns to the selling firm (Bulow & Klemperer, 1996). Hence, the observation that half of all takeovers are completed after a one-on-one negotiation seems quite puzzling. Aktas, de Bodt, & Roll (2010) seek to explain this apparent lack of competition in nearly half of all corporate takeovers. They use the implications of the two-stage takeover model developed by Betton, Eckbo & Thorburn (2009), allowing for a first-stage one-on-one negotiation, which – if unsuccessful – leads to a second-stage auction. Aktas et al. (2010) find evidence for an explanation for the high number of negotiated deals by looking at the effect of latent competition – i.e. potential but unobserved competition– on the behavior of first-stage bidders. They find that latent competition has a positive effect on the takeover premium offered to target firms in one-on-one negotiations by acquirers, as the threat of other entrants into the process induces the first bidder to increase its bid to avoid ending up in a competitive bidding process.

The starting point of this thesis is the article of Aktas et al. (2010) by exploring in more detail the effect of latent competition on target shareholder returns. Additionally, we will explore the effect of a target's eagerness to sell on target shareholder returns. Moreover, we will consider a novel classification to sales processes to ameliorate the traditional classification of 'auction' and 'negotiation' by incorporating the possibility of *staged sales* as posited in the theoretical two-stage model to corporate takeovers of Betton, Eckbo, & Thorburn (2009). Firstly, we explore whether bidder availability in the target's market – signifying both latent and explicit competition – has a similar positive effect on the return to target shareholders. The same reasoning of Aktas et al. (2010) holds: the mere threat

of additional bidders entering the process if the initial bidder makes no acceptable offer can produce a competitive pressure which induces this bidder to provide an adequate offer to avoid additional bidders entering in the process. Hence, we expect bidder availability to have a positive effect on the returns to target shareholders in corporate takeovers. Subsequently, we explore our hypothesis that the role of targets' eagerness to sell – reflected in targets initiating the takeover process – negatively impacts the bargaining position of these targets in the ensuing process. Namely, we expect an adverse selection problem to manifest itself in the market for corporate control due to information asymmetries, analogous to the well-established lemon's problem (Akerlof, 1970). The display of eagerness to sell – demonstrated by a target's initiation of the process – is seen by (potential) bidders as a sign that there is information proprietary to the target (e.g. overvalued stock price) that induced the target to actively pursue a sale. These bidders consequently adjust their valuations of these eager targets. Firms without such proprietary information understand this and therefore do not opt to initiate a sales process. Therefore, if targets do decide to initiate a process, they realize that this will entail lower bids being made for the target, yet regardless of this, they decide to sell. Consequently, the return to shareholders of eager targets in the eventual merger agreements are expected to be negatively impacted.

Moreover, we posit that an interaction effect should exists between a target's eagerness to sell and bidder availability. More specifically, we expect that for takeover processes in which a target has shown it is eager to sell through process initiation, the aforementioned positive effect of bidder availability should be more pronounced. Our reasoning is two-pronged. Firstly, we posit that – if a target has shown its eagerness to sell through initiating the sales process – this also sends a signal to (potential) bidders about the target's tenacity to complete a sale. Seen in the light of bidder availability, we posit that bidders will take into account that a target is determined on completing a deal and will not hesitate to contact more bidders if the bidder(s) in the process do not show sufficient interest and seriousness. Therefore, players intending to make a bid in a target-initiated process will more heavily account for the availability of bidders in the market. Also, from the perspective of a bidder already in the process initiated by the target, the fact this bidder has been contacted by the target makes it plausible for this bidder to believe that the target has also contacted more parties, causing this bidder to more substantially account for the bidder availability in the market in its bidding behavior. Therefore, bidders feel the pressure of the looming bidder availability (as described above) more strongly in takeovers initiated by targets as compared to takeovers initiated by third parties.

Secondly, we may expect such an additional positive effect of bidder availability on target shareholders returns in target-initiated takeovers due to the signal a target-initiated process sends to the market: this company will probably be sold soon, and the question remains to whom. It makes players in the market aware of the opportunity. This can activate latent suitable bidders into contacting the target and entering the process (i.e. latent bidders to become active bidders). Hence, both mechanisms – target tenacity and market signaling – make the

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availability of bidders more likely to ultimately result in bid competition. Notwithstanding which effect is predominant, we expect the positive effect of bidder availability on target shareholders returns in corporate takeovers to be larger for target-initiated takeovers than for takeovers initiated by third parties.

Additionally, we provide a novel classification of the sales process different from classifications used in conventional M&A literature. After closely analyzing the SEC merger filings on the background of the relevant deals, we find that processes generally can be stratified into two stages, as is also – to a degree – the case in the two-stage model by Betton et al. (2009). A first stage process that can either be a negotiation or an auction. Afterwards, a second stage can occur *if* the first-stage negotiation fails. Moreover, we deviate from the definition of an auction as being dependent on whether multiple bidders were involved, which is the conventional definition based on the work of Fama & Laffer (1972). This leaves us with four possible classifications of the sales process in corporate takeovers: (i) one-staged negotiations, (ii) one-staged auctions, (iii) two-staged negotiations, and (iv) two-staged auctions. We will use this classification to assess how our hypotheses on eagerness to sell, bidder availability and target shareholder returns in corporate takeovers hold under these various takeover scenarios. In particular, we expect that targets continuing to pursue a sale in a second-stage process after a failed first-stage negotiation to reveal to the market their eagerness and commitment to complete a sale of themselves. Therefore, the expectations on target initiation, bidder availability and their interaction effect on returns to targets' shareholders should be more pronounced in two-staged takeovers. We cover our expectations on this in more detail in Section 2 of this thesis.

In short, the aim of this thesis is to assess how a target's eagerness to sell and the availability of potential bidders for the target influence the returns to target shareholders in (staged) corporate takeovers. The research question that reflects this aim is as follows:

How do targets' eagerness to sell and the availability of bidders affect the return to target shareholders in corporate takeover processes?

To answer this research question, we constructed a comprehensive database through integrating information on corporate takeovers from a variety of sources. Therein lies the major contribution of this thesis: this database allows for extensive analyses of the sales processes of corporate takeovers. The database comprises a sample of 1,791 completed corporate takeovers in the United States of America in the period 2002-2014 retrievable from the Thomson One Mergers & Acquisitions database, with data available on the Compustat/CRSP Merged database and availability of SEC mergers filings from which the sales mechanism can be deduced. Through meticulous analysis of the SEC merger filings, we have extracted a plethora of hand-collected variables on the private takeover process. At the time of writing, the author is not aware of any other article which has obtained data on the 'stagedness' of the private takeover process, as well as the adjustment of the 'auction' definition to more correctly identify the

competition in private corporate takeoverprocesses. Through regression analysis, we test our hypotheses and are able to find conclusions with respect to our research question.

We find that a target's eagerness to sell indeed has a negative effect on takeover premiums. Also, we find that bidder availability has a positive effect on takeover premiums, and that this effect is more pronounced in target-initiated deals. This confirms our expectations that bidders in the process observe a target's eagerness and tenacity to complete a deal and that if a bidder wants to buy the target, it needs to make a sufficiently serious bid as the target will not hesitate to contact additional bidders. On the 'stagedness' of corporate takeovers, we find a substantial discount placed on takeover premiums for targets sold in a two-staged sale. We conjecture on potential reasons for this substantial discount, but future research will need to be carried out on whether these conjectures can be regarded as the cause of this discount.

This thesis is organized as follows: Section 2 contains our conceptual framework by addressing the current relevant literature on the topic and building the hypotheses on the basis thereof. Subsequently, Section 3 contains an in-depth account of the data gathering process and provides descriptive statistics on the private takeover process. Moreover, all relevant variables of interest and control variables will be defined and discussed. In Section 4, the methods and tests used to answer our hypotheses will be discussed, and the drafted hypotheses of Section 2 will be operationalized. Section 5 presents the results and findings and will answer our hypotheses. After the answering of each hypothesis, some implications of the findings will be discussed. Section 6 will offer the conclusion to the thesis and will provide a discussion on the implications of the findings and address avenues for further research.

2. Literature Review and Conceptual Framework

This section focuses on the current literature available on the competition in corporate takeovers. The purpose of this section is twofold: i) to embed our research and all relevant concepts within the existing body of literature on corporate takeovers, and ii) to formulate testable hypotheses which allow for adequately answering the research question of this thesis. These hypotheses will be based in part on existing literature, but also – given the novel nature of the research – through hypothesizing and conjecture on the part of the author.

2.1   Background on Corporate Takeover Processes

Traditional M&A literature on corporate takeover competition analyzed the competition in the market by looking at the number of public bidders for the target firm (Fama & Laffer, 1972). The ensuing analysis then suggested that there was little to no competition on the market for corporate control, as in nearly all takeovers there was only a sole public bidder (e.g. Andrade, Mitchell, & Stafford (2001); Moeller, Schlingemann, & Stulz (2007)). This analysis of the competition in the public phase of takeover processes neglects the presence of competition during the private phase of takeovers. Boone & Mulherin (2007) were pivotal in this respect as they were the first to describe in detail the characteristics of the private sales process prior to the occurrence of publicly announcing the takeover bids by using the merger background sections in the SEC merger filings.

In later work, Boone & Mulherin (2009) describe the general steps in the private takeover process. Broadly, the private takeover process is initiated by either target management or by an unsolicited inquiry by a third party on the willingness of the target to consider a sale. The target then engages a financial and legal advisor to help facilitate the process. Subsequently, the target decides on the number of potential bidders to contact. After contact has been made with potential bidders, a confidentiality agreement[1] - and often a standstill agreement to prevent unsolicited offers from being made - are signed before any non-public information is distributed. Now, the process of due diligence commences, after which a number of potential bidders provide non-binding indications of interest. These potential bidders often receive access to data rooms or on-site tours to continue conducting due diligence. Finally, the potential bidders are now requested to make final offers, after which the target chooses the best offer. This results in final negotiations on the precise terms of the merger agreement, after which the takeover agreement is signed, executed and publicly announced. This concludes the private phase of the takeover process. Clear from the above exposition is that the private takeover process is subject to substantial competitive pressures. However, it must be noted that the description above is a very general one and mainly considers the case in which a formal private auction takes place. In reality, as we find in our process of classifying the takeover processes, the private

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[1] Alternative definition often used: 'non-disclosure agreement' or abbreviated 'NDA'.

takeover phase can be quite unstructured and informal, and precisely categorizing takeovers therefore requires careful analysis of the description of the merger background in the SEC merger filings.

Using the private takeover phase, Boone & Mulherin (2007) find that half of all takeovers complete after a one-on-one negotiation.This entails that only half of all deals are completed in an auction with multiple bidders for the target. We find that this focus on negotiations versus auctions in the literature by looking at the number of bidders in the process is too one-sided. After closely analyzing the SEC merger filings utilized by Boone & Mulherin (2007; 2009), we find that private takeover processes consist of two stages in a substantial number of takeovers. Therefore, we develop a new classification for the sales processes of corporate takeovers to incorporate this empirical observation.

The starting point of this novel classification is the two-stage takeover model of Betton et al. (2008). In our first stage, the target chooses to start with either a first-stage negotiation or a competitive first-stage auction process with multiple players bidding for the target simultaneously. If a merger agreement is completed in this first-stage negotiation or auction, we then classify the relevant takeover as such. This is similar to conventional M&A literature. In the case of first-stage negotiations, failure to come to a mutually acceptable deal can occur. After this failed first-stage negotiation, a second-stage process can occur. This second stage can – again – be either a one-on-one negotiation or a competitive auction process. This is an important observation, as the traditional definition of 'auction' depends on whether more than one bidder was involved in the process. A first-stage negotiation followed by a second-stage negotiation would adhere to this definition of auction (i.e. more than one bidder was involved in the process), which would lead to incorrectly categorizing takeovers as competitive auctions, whilst in reality the takeover was completed in a one-on-one negotiation. We argue that the competitive nature in one-on-one negotiations is inherently different than in auctions and therefore adjust the definition to be hinged upon the nature *or* perception of competition for the involved players in the process. This leaves us with four possible classifications of the sales process in corporate takeovers: (i) one-staged negotiations, (ii) one-staged auctions, (iii) two-staged negotiations, and (iv) two-staged auctions. The procedure followed to categorize the takeovers in our sample into the four classifications will be elaborated on in Section 3.2.1.

The importance of classifying the observed stages in corporate takeovers in the light of this thesis is that it functions as a measure for 'revealed' eagerness and commitment to sell. Namely, the observation that a target continues to pursue a sale after a failed first-stage negotiation is a sign of the persistence of the target's eagerness and commitment to sell itself to other potential bidders in the market. To ensure that a failed first-stage is observed by the market, we require that the failed first-stage negotiation was sufficiently serious. This ensures the conveyance of a credible signal to the market that the target has attempted to negotiate a deal with the first bidder – and despite this failure with a bidder who has conducted serious due diligence – continues to pursue a sale. If the negotiation

was not sufficiently serious between the target and a first player, this may not credibly convey the target's eagerness and commitment to the market as it may just have been preliminary talks on a variety of potential topics. The precise criteria used to constitute 'seriousness' are elaborated on in Section 3.2.1. In Section 2.2, after having conceptualized the other relevant concepts inherent to our research, we will hypothesize how the stages in corporate takeovers in our classification subsamples fit into our general expectations on target eagerness to sell, bidder availability and the effects on returns to target shareholders.

2.2   Conceptual Framework and Hypotheses

In this subsection, the relevant concepts of our research question will be further defined and clarified. This focuses on the following concepts: (i) return to target shareholders, (ii) eagerness to sell, and (iii) availability of bidders. We will now cover the relevant literature on these concepts in light of the aim of this thesis and will formulate expectations and testable hypotheses on the basis thereof.

2.2.1   Return to Target Shareholders

In this thesis, we want to measure the effects of eagerness to sell and availability of bidders on target shareholders returns to corporate takeover deals. To measure the return to target shareholders in takeovers, we use the 4-week premium. This entails taking the percentage difference between the offer price per share and the share price 4 weeks prior to the announcement of the deal. We use this measure rather than an abnormal return as it has two key advantages (Eckbo, 2009, as cited in Aktas et al. (2010)): (i) it is the direct consequence of the bidding behavior of the acquiring party, and (ii) the short-term run-up is included in the premium, thereby making the bid premiums less prone to be affected by rumors than another frequently used measure for returns to target shareholders: the abnormal returns measure. For this thesis, the first advantage is particularly important, as we want to analyze the effects of target eagerness to sell and the availability of bidders on the bidding behavior of acquirers and other bidding parties (see Sections 2.2.2-2.2.4). We defer the particularities of our 4-week takeover premium measure to Section 3.3.1.

2.2.2   Eagerness to Sell

At the basis of our concept of target eagerness to sell is the notion that through a target's displayed behavior, a signal is given to the players in the process and in the market on the eagerness of a target to actively sell itself. Using this notion of displayed behavior, we measure a target's eagerness to sell. We expect – just as in Aktas et al. (2010) – a target's eagerness to sell to be closely related to the party initiating the takeover process. If a target initiates the initial sales process, this indicates a clear signal of its willingness, eagerness and commitment to sell to the potential acquiring parties in the process and the market. This deteriorates the target's bargaining position as

bidders in the process will take into account that a target is actively looking to sell. Hence, our measure of a target's eagerness to sell is whether a target was the initiating party of the takeover process.

We expect that if a target initiates the initial sales process, this indicates a clear willingness, eagerness and commitment to sell to the potential acquiring parties in the market and process. This gives rise to a potential adverse selection problem. In general, markets are prone to an adverse selection problem if the following conditions apply: (i) sellers have superior information relative to buyers, and (ii) buyers cannot fully protect themselves from these information asymmetries through contracts (Genesove, 1993). It is plausible to assume these conditions are fulfilled in the market for corporate control (e.g. Masulis & Simsir (2015)). Namely, target CEOs have near-complete information on their company, which even the most rigorous due diligence is unable to uncover. Additionally, even though guarantees, warranties, termination clauses and other legal provisions can mitigate risk in information asymmetries in takeovers, it is nearly impossible to hedge all contingencies inherent to information asymmetries in the merger agreement. Therefore, the existence of an adverse selection problem can be assumed to play a role in the market for corporate control.

The existence of an adverse selection problem has implications for the behavior of the actors on this market: the well-established lemon's problem (Akerlof, 1970). In the context of the market for corporate control, this entails that target management displaying an eagerness to sell is likely to have proprietary information (e.g. the current stock price is overvalued), which has led them to actively pursue a sale. Bidders understand this and discount their valuations – and consequently their bids – when a target has shown its eagerness to sell. Good quality sellers will not display an eagerness to sell as they understand the discount placed on firms that do. Thus, bidders negatively update their beliefs on the quality of the targets that initiate a takeover process. The manifestation of this phenomenon is highlighted by the finding that targets which publicly announces the pursuit of a sale (so called 'take-me-over' firms) face negative stock returns the year following this announcement if no takeover transaction is completed (Oler & Smith, 2008). This negative effect of failing to complete a transaction could worsen a target's bargaining position in the process and consequently lead to lower bids being accepted. Hence, we posit that eagerness to sell – as demonstrated by a target's process initiation – negatively impacts the returns garnered to targets' shareholders in the eventual merger agreement.

Conversely, if a target does not initiate the initial sales process, but rather a third party, this eagerness to sell is not expressed to the contacting third party and the rest of the market. As the target does not initiate, this shows that the target is content with the status quo and does not feel like a sale is necessary as it is aware of the discount placed on firms that actively pursue a sale. This strengthens the target's negotiation position in any sales process that follows. Bidders for the target will likely have to make higher bids to induce the target to consider a

sale. We posit that third-party initiation therefore is expected to garner higher returns to targets' shareholders than target-initiated deals.

This leads us to our first hypothesis:

Hypothesis 1:   Takeover premiums in target-initiated corporate takeovers are – on average – lower than takeover premiums in non-target initiated corporate takeovers.

2.2.3   Availability of Bidders

At the basis for our concept of bidder availability are the findings of Aktas et al. (2010) on the effect of latent competition on bidder behavior. Aktas et al. (2010) find – for the subsample of one-on-one negotiations – that latent (i.e. unobserved) competition has a positive effect on takeover premiums as a bidder in the negotiation process takes the possibility of the target initiating an auction if no acceptable offer is made into account. This would result in the initial bidder having to participate in a competitive auction, in which premiums are likely to increase due to competitive bidding and in which there is uncertainty on whether the initial bidder would win. Therefore, the initial bidder feels the pressure of the latent competition in the market for the target and accounts for this in its offer.

We posit that – regardless of whether a sale is a negotiation or an auction – the degree of potential competition in the market is a determinant in the bidding behavior of bidders in the process. Bidders are never fully aware of the number of players in a competitive takeover process. If an auction is a formal auction with a formal procedure and set deadlines, bidders know that more bidders are involved, but they are never certain on the number of players. In informal auctions, a bidder may not even realize that multiple players are involved, as the target can have simultaneous discussions with bidders without initiating a full-fledged formal auction. Therefore, we argue that bidders – in both auctions and negotiations – will take the potential competition in the market for the target into account in their bidding behavior. Thus, we would expect a target in a market with high potential competition to garner higher returns, relative to the degree of potential competition.

Put differently, we expect that in case there are many potential bidders in the market for the target, this will enhance the target's position in the takeover process for two reasons. Firstly, due to high availability of potential bidders, searching costs for finding (additional) bidders to participate in the process are low. So if the initial bidder(s) do not make sufficiently serious offers, the target can easily and cheaply find more bidders to participate. Therefore, bidders in processes with high bidder availability will need to make higher bids to remain in competition for the target. Secondly, due to high availability of potential bidders, competition (observed or unobserved/latent) for the target is high (Aktas et al., 2010). Bidders who do not feel like a (more) competitive process with a multitude of players will make high bids (as posited by Fishman (1988; 1989), who defines this as 'jump-bidding') to avoid

the target contacting more players. So, even if unobserved, bidders feel the pressure to make serious bids to not get dragged into a (more) competitive process.

Conversely, if bidder availability is low, this deteriorates the target's position in the takeover process for the same reasons. Firstly, due to low availability of potential bidders, searching costs for finding (additional) bidders to participate in the process are high. The participating bidder(s) know this and can get away (more) safely with making lower bids for the target. Secondly, due to low availability, competition (observed or unobserved/latent) for the target is low. Bidders have to fear less from getting into a full-fledged formal auction with competitive bidding pressures.

We choose to measure bidder availability for the target with the Industry count variable as used by Boone & Mulherin (2008). As Industry count is calculated as the number of firms in the target's Fama-French 49 industry with a total market value greater than the target in the year prior to the year of the takeover of the target, this should serve as an adequate proxy of bidder availability. Moreover, we expect that bidders who participate in the bidding process for the target are well-informed on the number of potential bidders in the market, as they operate in the same market.

This leads us to our second hypothesis:

Hypothesis 2: Bidder availability in corporate takeovers is positively related to takeover premiums.

In other words, takeovers in markets with a high industry count obtain – on average – a higher premium than takeovers in markets with a low industry count, relative to the size of the industry count.

2.2.4   Interaction between Eagerness to Sell and Bidder Availability

The two expected countervailing effects of eagerness to sell and bidder availability on target shareholder returns could potentially also have a combined effect. More specifically, we expect that for takeover processes in which a target has shown it is eager to sell through process initiation, the posited positive effect of bidder availability on target shareholder returns should be more pronounced. We arrive at this expectation through two potential effects. Firstly, we expect that – if a target has shown its eagerness to sell through initiating the sales process – this sends a signal to (potential) bidders about the target's tenacity to complete a sale. Seen in the light of bidder availability, we posit that bidders observe that a target is determined on completing a deal and will not hesitate to contact more bidders if the bidder(s) in the process do not provide serious and sufficient bids. Thus, players intending to make a bid in a target-initiated process will more heavily account for the availability of bidders in the market. Also – from the perspective of a bidder already in a target-initiated process initiated – the fact this bidder has been contacted by the target makes it plausible for this bidder to believe that the target has also contacted more parties, causing this

bidder to more substantially account for the bidder availability in the market in its bidding behavior. Therefore, bidders feel the pressure of the looming bidder availability (as described above) more strongly in takeovers initiated by targets as compared to takeovers initiated by third parties.

Secondly, we may expect such an additional positive effect of bidder availability on target shareholders returns in target-initiated takeovers due to the signal a target-initiated process sends to the market. It signals the market that this company is up for sale and therefore makes potential acquirers aware of the opportunity. This can activate latent suitable bidders into contacting the target and entering the process (i.e. latent bidders to become active bidders). Hence, both mechanisms – target tenacity and market signaling – make the availability of bidders more likely to ultimately result in bid competition.

In short, regardless of effect is most predominant, we expect the positive effect of bidder availability on target shareholders returns in corporate takeovers to be more pronounced in target-initiated takeovers.

This leads us to our third hypothesis:

Hypothesis 3:   The positive relationship between bidder availability and takeover premiums is stronger in target-initiated corporate takeovers than in non-target-initiated takeovers.

2.2.5   Staged Corporate Takeover Processes

As touched upon in Section 2.1, we utilize our newly developed classification of corporate sales processes to analyze how a failed first-stage negotiation may influence our expectations. There is an argument to be made for an informational signaling effect that a failed first-stage negotiation has on the pool of potential bidders. Namely, the first bidder in a one-on-one negotiation has had the time to conduct due diligence and make a proper valuation of the target but ended up not making an offer acceptable to the target. This failure to come to an agreement sends a signal to the market that a well-informed bidder did not value the target adequately enough to make an acceptable offer. Therefore, the rest of the potential bidders in the market account for this and adjust their valuation downwards. For this to be a plausible explanation, it is of paramount importance that the first bidder indeed had sufficient information to make an adequate valuation (or *at least,* the market must perceive this to be the case). Therefore, in classifying a failed first-stage negotiation, criteria are set on the 'seriousness' of the negotiations, to be able to adequately verify whether such an informational signal exists. We defer the discussion on these criteria to Section 3.2.

This leads us to our fourth hypothesis:

Hypothesis 4:   Two-staged takeovers obtain lower premiums than one-staged takeovers.

Furthermore, we argue that the observation that a failed first-stage negotiation moves on to a second-stage sale,[2] is a testament to a target's eagerness to sell. Namely, we argue that if a target continues to pursue a sale after a failed first-stage negotiation, this truly signals to the market the determination and commitment of the target to sell itself, as well as signaling to the market that the due diligence of the initial bidder did not warrant making an acceptable offer. In this respect, we expect the same arguments and reasoning as mentioned above should hold, namely: the information asymmetry will cause potential bidders to discount the valuation of the target. If a target remains eager to sell, this deteriorates the target's negotiation position as bidders in the process will take into account that the target is therefore likely accept a lower bid.

In relation to the posited interaction effect between target-initiated takeovers and bidder availability on takeover premiums, we would expect this effect to be more pronounced for takeovers completed through second-stage sales as compared to first-stage sales. The rationale for this is that in second-stage sales the bidder(s) involved know/s with certainty that the target has been in contact with at least one other player, as the first-stage negotiation has failed. The observation by the market of the target's pursuit of a sale in a second stage despite the first-stage failure signals the target's commitment and tenacity to complete a sale of itself and that it will not hesitate to contact more bidders into the process. In this scenario, the target has revealed its eagerness and determination to sell and bidders in the process can be reasonably confident that the target is actively looking to complete a sale of itself. Therefore, the bidders in the process will put more weight on bidder availability in this scenario. Hence, the posited interaction effect should be more pronounced.

This leads us to our fifth and final hypothesis:

Hypothesis 5: The interaction effect between bidder availability and target-initiated takeovers on premiums is more pronounced for second-stage takeovers than for first-stage takeovers.

We will now move on to the discussion on our sample, data and variables used in our analysis.

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[2] Due to the nature of our data and – consequently – the way our sample constructed, a takeover cannot fail and is always completed for our observations.

3. Data

In this section, we cover the sample selection and sources of the data gathered for this thesis. Subsequently, we extensively cover the procedure followed in classifying the takeovers into sales process categories using the SEC merger filings. As this is a hand-collected process, careful description of the procedure is of paramount importance for any follow-up studies. Furthermore, we will cover the (construction of the) main variables of interest. Finally, this section will provide descriptive statistics on our sample of deals and on the main variables of interest.

3.1 Sample Description

Our sample of deals is obtained from the Thomson ONE Merger & Acquisitions (M&A) database. We collect all completed deals from the period 2002-2014 between U.S. public targets and U.S. acquirers[3] in which acquirers purchase 100% of shares in the transaction. The minimum deal value is $50 million. Furthermore, we exclude transactions labeled minority stake purchases, acquisitions of remaining interest, privatizations, spin-offs, recapitalizations, self-tenders, exchange offers and repurchases.[4] Furthermore, we obtain various variables from the Thomson ONE M&A database in order to get more information on the specific deals, such as deal value, the 4-week takeover premium and the names of the parties involved. In addition, we retrieved as many identifiers as possible to categorize companies and their industry, as these are used to retrieve data from the CRSP/Compustat Merged database and for further variable construction. This gives us a total of 2,216 observations. Subsequently, we require that deals can be matched on the CRSP/Compustat Merged database with a CUSIP or PERMCO identifier to obtain variables of interest and control variables. This results in elimination of 215 deals.

Lastly, we require that a merger filing is available in the SEC EDGAR database. For mergers, we look for the SEC Form DEFM14A and/or Form S-4; for tender offers, we look for Schedule 14D-9 filings.[5] If the target company does not have a relevant filing in the SEC EDGAR database, we search for a relevant filing from the acquiring company. If this yields no result, the deal is discarded from our sample. After close inspection of all deals for which filings are available, deals for which the filing is ambiguous on the selling mechanism or if the relevant deal turns out not be a relevant M&A deal (e.g. a bankruptcy sale or a restructuring), 210 deals are eliminated from our sample. After this final elimination, our sample consists of 1,791 deals. In the following subsection, a detailed account is provided on the exact procedure followed in obtaining variables from the SEC merger filings.

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[3] Both public and private.

[4] See Appendix A.1 for a dropdown of the selection criteria in the Thomson ONE M&A database.

[5] These codes can have some small variations, depending on whether the filing is preliminary or whether it is a filing with an amendment added to it (e.g. PREM14C, S-4/A, SC 14D9C, SC 14D9/A).

3.2 Procedure for Extracting Data from SEC Merger Filings

In this subsection, we cover the process undertaken for extracting variables from the rich texts of the SEC merger filings. Firstly, we cover the intricate process of categorizing deals into one of our four sales process classifications. Secondly, we briefly cover the extraction of other variables of interest and control variables from the filings.

3.2.1 Classification of Takeover Processes

The SEC merger filings contain a *Background of the Merger*[6] section which describes the process undertaken to come to the resulting deal. As Boone & Mulherin (2007) have meticulously described in their seminal article, the rich texts of the filings enable identification of *inter alia* the initiating player, the number of players contacted, the number of confidentiality agreements signed, the number of private and public bidders and the agreement and announcement date. Despite this wealth of information now at our disposal, the extraction of the sales process classification still requires a very careful and extensive reading of the filings, as not all filings are phrased in an identical fashion and often important information is omitted. Also, in addition to Boone & Mulherin's (2007) 'auction vs. negotiation' classification, we identify the 'stagedness' of the deals.[7] As established in Section 2.1, the seriousness of the first-stage negotiations is paramount to the classification of two-staged takeovers. This requires tracking closely in the text of filings the moment additional players are involved in the process and the degree of seriousness of their involvement. This has led us to a list of indicative characteristics or keywords to look for to assess seriousness, which are described in Appendix A.3.

In Appendix A.2, we provide a flowchart on the classification procedure followed in each of the takeovers in our sample. We categorize all takeovers into one of four possible sales process classifications: (i) one-staged negotiations (NEG1), (ii) one-staged auctions (AUC1), (iii) two-staged negotiations (NEG2), and (iv) two-staged auctions (AUC2). Even though the merger filings are rich in information, it still sometimes leaves room for interpretation. This was most evident when identifying the seriousness of first-stage negotiations.

One-staged negotiations (NEG1) follow the conventional 'negotiation' definition in which the determining characteristic is that only one bidder is involved in the complete sales process. When multiple bidders are involved, we examine the early stages of sales process. In general, the remaining three classifications are determined on the following criteria:

- If more than one potential bidder is solicited at the initiation of the sales process, then the takeover is classified as a one-staged auction (AUC1).

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[6] Or terminology of a similar nature (e.g. *Background of the Transaction*).
[7] As aforementioned, the 'stagedness' has also led us to slightly alter the conventional definition of 'auction' and 'negotiation' as used by Boone & Mulherin (2007) to better reflect the competition in staged deals. See also Section 2.1 on this topic.

- If the process starts with a serious one-on-one negotiation that is terminated after which another one-on-one negotiation is commenced, then the takeover is classified as a two-staged negotiation (NEG2);

- If the process starts with a serious one-on-one negotiation that is terminated after which multiple bidders are involved, then the takeover classified as a two-staged auction (AUC2);

Besides the 'seriousness' criterion – covered in detail in Appendix A.3 – we require the time gap between a failed first-stage negotiation and a second-stage sales not to exceed one year. If the time gap exceeds one year, we regard the failed first-stage negotiation to be independent from the subsequent sales process. Important to note is that not all first-stage negotiations before a second-stage process are explicitly terminated. In 191 out of the 408 two-staged takeovers, the target implicitly terminates the first-stage negotiations by engaging in discussions with other bidders. Therefore, the time gap between the two stages is equal to zero in these cases. In these cases in particular, it is of paramount importance to assess the degree of seriousness of the first-stage negotiation. Namely, targets often entertain preliminary talks with an initial bidder (often the talks are initiated by this initial bidder), whilst working with a financial advisor to start a full-fledged formal auction. These preliminary talks can be serious, but more often than not, we find these preliminary talks to be insufficiently serious to warrant being classified as a failed first-stage negotiation.

The wealth of information available in the SEC filings has also been used to extract other variables on the takeover process. We include a table with all variables extracted from the SEC filings and their respective definitions in Appendix A.4. We will cover the descriptive statistics and relevance of certain variables in our research in Section5.1. Even though not all the variables included in Appendix A.4 will be used in our analyses, given the novel classification of the sales processes developed in this thesis, we have chosen to include the hand-collected variables nonetheless as it may provide readers with interesting new avenues for future research.

3.2.2 Summary Statistics on Takeover Process Classification

In Table 1, we provide the distribution of our sample in year and sales process classification. In our sampling period – 2002-2014 – the sales process was identified for 1,791 corporate takeovers in the U.S. The peak in corporate takeover activity in our sampling period was in the consecutive years 2006 and 2007 (respectively 215 and 211). Over the course of our sample period, we see NEG1 slowly losing popularity, with AUC1 slowly gaining in popularity, consistent with findings in recent literature (Xie, 2010; Aktas et al., 2010). For two-staged takeovers, we see quite some variance in occurrence over the sampling period, but no real trend can be observed. Most takeovers (77%) are completed in a one-staged process (1,383 takeovers). Nearly a quarter of takeovers – 408 in total – has been completed through a two-staged process after a failed first-stage negotiation (23%). This shows the relevance of our novel classification compared to the conventional classification used in – for example – Aktas et al. (2010). In one-staged takeovers, negotiations (NEG1) are most common: 59% of all one-staged takeovers, and

46% of total takeovers; auctions (AUC1) occur in 41% of all one-staged takeovers, and 32% of total takeovers. In two-staged takeovers, auctions (AUC2) are more common: 62% of all two-staged takeovers, and 15% of total takeovers; negotiations (NEG2) occur in 38% of all two-staged takeovers; 9% of total takeovers. This last observation shows the relevance of also stratifying the two-staged takeovers into 'auction' and 'negotiation' as more than one-third of all two-staged takeovers are completed in a second one-on-one negotiation. In the conventional definition of 'auction' and 'negotiation', these second-stage negotiations would have been classified as auctions, which is not veracious to the real competitive nature of these takeover processes. Even though we will not cover this distinction in detail in this thesis, it is important to note that the conventional definition does not do justice to reality.

Table 1 Sample distribution by announcement year

N and *%* denote, respectively, the numbers of corporate takeovers and the percentage within the sample of the relevant sales process category in each year. The *Full Sample* contains a total of 1,791 takeovers for the period 2002-2014 that fulfill the selection criteria described in Section 3.1 and had sales processes identifiable from the SEC merger filings as described in this section (3.2). The *One-Staged* subsample contains corporate takeovers which came to fruition in a one-staged sales process (NEG1 or AUC1). The *Two-Staged* subsample contains corporate takeovers which came to fruition in a two-staged sales process after a failed first-stage negotiation (NEG2 or AUC2). For further definitions, see Appendices A.2-4.

| Year | Full Sample | One-Staged | | | | Two-Staged | | | |
| | | Negotiation (NEG1) | | Auction (AUC1) | | Negotiation (NEG2) | | Auction (AUC2) | |
	N	N	%	N	%	N	%	N	%
2002	109	55	50.46	28	25.69	11	10.09	15	13.76
2003	152	85	55.92	39	25.66	15	9.87	13	8.55
2004	155	86	55.48	44	28.39	12	7.74	13	8.39
2005	174	89	51.15	55	31.61	17	9.77	13	7.47
2006	215	101	46.98	71	33.02	18	8.37	25	11.63
2007	211	79	37.44	77	36.49	22	10.43	33	15.64
2008	100	42	42.00	35	35.00	9	9.00	14	14.00
2009	68	29	42.65	15	22.06	7	10.29	17	25.00
2010	142	59	41.55	53	37.32	7	4.93	23	16.20
2011	117	51	43.59	34	29.06	7	5.98	25	21.37
2012	116	52	44.83	35	30.17	8	6.90	21	18.10
2013	118	43	36.44	39	33.05	8	6.78	28	23.73
2014	114	44	38.60	43	37.72	13	11.40	14	12.28
Total	1,791	815	45.51	568	31.71	154	8.60	254	15.18

The length of the process from initiation of the (first-stage) process until the public announcement of the final merger agreement is on average 155 days for the takeovers in our sample. Unsurprisingly, two-staged processes are on average substantially longer than their one-staged counterpart (272 days versus 120 days). The length of the

first-stage negotiation in two-staged takeovers is 104 days, versus 120 days of one-staged takeovers. This difference of 16 days could be due to the final negotiations on the precise deal terms in the merger agreement. The observation that the failed first-stage negotiations last on average 104 days indicate a substantial period of serious negotiations. The gap between the first and second stage is zero in 191 cases, as the target implicitly terminates the first-stage negotiation by either contacting additional bidders or entertaining substantive discussions with other unsolicited bidders. In the remaining 217 cases, the gap is on average 112 days, which is on average 30% of the entire process (from initiation of first-stage negotiation to public announcement of the merger agreement in the second stage). The second-stage processes on average take 104 days (which is – on average – equal to the average length of the failed first-stage).

For two-staged takeovers, we see that in 69% of these takeovers, an indication of an offer price was mentioned in the failed first-stage negotiation. Furthermore, in 42% of these two-staged takeovers, the first-stage negotiation was terminated due to a price inadequacy of the offer by the initial bidder. However, the failure of a first-stage negotiation does not prohibit the initial bidder from joining the second-stage process. We see an initial bidder partaking in the second-stage auction after a failed first-stage negotiation in 77% of all two-staged auctions. In 36% of these instances, this initial bidder ends up winning the second-stage auction. An interesting avenue for future research would be to analyze whether the first-stage bid was higher or lower than the eventual winning bid. This could provide new insights on the phenomena covered in this thesis. However, exploring this research angle is beyond the scope of this thesis.

3.3 Variables of interest

In this section we will cover the choice and construction of the measures for our main variables of interest: a target's eagerness to sell, bidder availability and returns obtained by targets' shareholders in corporate takeovers.

3.3.1   Return to Target Shareholders

The measure used for measuring the return to target shareholders is the 4-week takeover premium. We calculate this variable as the ratio between the offer price for targets' shares and the share price four weeks prior to the announcement of the merger. We use this measure as it has two key properties (Eckbo, 2009, as cited in Aktas et al. (2010)): (i) it is the direct consequence of the bidding behavior of the acquiring party, and (ii) the short-term run-up is included in the premium, thereby making the bid premiums less prone to be affected by rumors than another frequently used measure for returns to target shareholders: the abnormal returns measure. For this thesis, the first advantage is particularly important, as we want to analyze the effects of target eagerness to sell and the availability of bidders on the bidding behavior of acquirers and other bidding parties (see Section 2.2.2). This 4-week takeover premium is retrievable from the Thomson ONE M&A database. However, for 41 deals the Thomson

ONE M&A database did not provide a takeover premium, as no 'offer price per target share' was available. Through meticulous analysis of the relevant merger filings, we were able to find the 'offer price per target share' for all 41 deals and we manually calculated the 4-week takeover premium – analogous to the calculation adopted in the Thomson ONE M&A database. We opted for the 4-week mark as reported in the Thomson ONE M&A database – similar to Aktas et al. (2010), as stock prices tend to react to future mergers approximately a month prior to the M&A announcement (Keown & Pinkerton, 1981)Put formally:

$$Takeover\ Premium_i = \left(\frac{Offer\ Price\ per\ Target\ Share_i}{Target\ Share\ Price\ 4\ Weeks\ prior\ to\ Announcement_i} - 1\right) * 100\%, \qquad (1)$$

where i denotes completed takeover i.

We adjust the date of announcement from the one reported in Thomson ONE to the date of announcement mentioned in the SEC merger filings in those cases where these two dates differ by more than 10 days. The definition of the Thomson ONE announcement date is such that any public mentioning of negotiations or a sales process is taken as the announcement date of the relevant deal. Whilst this is preferable in cases where a deal is nearing completion, in many cases the date reported in Thomson ONE greatly differs from the true announcement date (in the extreme, it differs 570 days). As the use of this Thomson ONE announcement date would not adequately reflect the true takeover premium paid to target shareholders, we have analyzed the dates and chosen to adjust the announcement date in Thomson ONE in those cases in which the difference was larger than 10 days. To assess the impact of this decision, we will perform robustness checks by re-estimating our regression equations with the premiums at both the announcement date reported in the Thomson ONE M&A database and at the date of announcement reported by in the SEC filings (using CRSP data for finding the relevant stock prices 4 weeks prior to the SEC announcement date).The takeover premium – like all financial ratios in this thesis – is winsorized at 0.5% and 99.5% (see Appendix B for all variable definitions and construction thereof).

The average takeover premium for our sample is 36.14%. This is lower than the premiums found in Aktas et al. (2010), who find an average 4-week premium of 40.67% for the period 1994-2007. For one-on-one negotiations, the average premium is 36.67%, which is slightly higher than for auctions (35.51%). Consistent with existing literature, we find that there is no significant difference between takeover premiums for deals completed through an auction or through a negotiation (difference of 1.17%, p-value of 0.240) (see Table 2). For one-staged takeovers, the average takeover premium is 37.76%, which is significantly higher than the average premium in two-staged takeovers (30.63%); the difference of 7.14% is significant at the 1% level (p-value of 0.000). This difference also holds when we compare NEG1 and NEG2 (difference of 7.42%; p-value of 0.008) and AUC1 and AUC2 (difference of 6.89%; p-value of 0.001). This finding is a preliminary indication in favor of Hypothesis 4, which posits that two-staged takeovers garner lower premiums than their one-staged counterparts due to the informational

signal sent to the market by the failure of the first-stage negotiation. In our OLS regressions, we will see if this preliminary finding holds after controlling for various target and deal characteristics.

Table 2 Takeover Premium per Classification

This table presents the mean premium of our main dependent variable (*Takeover Premium*) per classification category in Panel A. *Negotiation* concerns the deals sold after a one-on-one negotiation. *Auction* concerns the deals sold after a multiple bidder auction. *One-Staged* concerns the deals sold in a first-stage process. *Two-Staged* concerns the deals sold in a second-stage process, after a failed first-stage negotiation. *NEG1* concerns deals sold after a single stage one-on-one negotiation. *AUC1* concerns deals sold after a first-stage auction. *NEG2* concerns deals sold after a second-stage one-on-one negotiation, after a failed first-stage negotiation. *AUC2* concerns deals sold after a second-stage auction, after a failed first-stage negotiation. See Appendix A.2 for the procedure followed to classify deals. N denotes the number of observations in the relevant subsample. Panel B reports the mean differences for the reported classifications in the first row. In the second row, we report p-values of one-tailed t-tests for mean differences in brackets below the mean differences.

Panel A: Premiums per Classification	Full Sample N = 1,791	Mechanism		Staged Sale		Sales Process Classification			
		Negotiation N = 969	Auction N = 822	One-Staged N = 1,383	Two-Staged N = 408	NEG1 N = 815	AUC1 N = 568	NEG2 N = 154	AUC2 N = 254
Takeover Premium	36.14%	36.67%	35.51%	37.76%	30.63%	37.85%	37.64%	30.43%	30.75%

Panel B: Mean Differences per Classification	Mechanism	Staged Sale	Sales Process Classification					
	Negotiation - Auction	One-Staged - Two-Staged	NEG1 - AUC1	NEG1 - NEG2	NEG1 - AUC2	AUC1 - NEG2	AUC1 - AUC2	NEG2 - AUC2
Takeover Premium	1.17% [0.240]	7.14% [0.000]	0.22% [0.457]	7.42% [0.008]	7.11% [0.001]	7.21% [0.004]	6.89% [0.001]	-0.32% [0.453]

3.3.2 Eagerness to Sell

The main measure for targets' eagerness to sell is a dummy variable equal to one if the party initiating the initial takeover process is the target (i.e. *Target Initiated*), and zero otherwise. We retrieve this information from the SEC merger filings. Similar to the sales process classification, it is important to verify which party makes the actual first move to initiate a deal. The filings often mention preliminary talks on a variety of strategic alternatives. We classify target-initiation when the target management has obtained authorization from the target's board to initiate contact(s), and then carries on to do so, as only then we observe a target's eagerness to sell. If this is not the case, then a third party is the initiating party. If the filings do not specifically mention the initiating party, we assume that the target did not initiate the deal (like Aktas et al. (2010), we find this to occur in less than 1% of cases). We also utilize a second measure for targets' eagerness to sell, which is the 'revealed' eagerness to sell as observed in staged sales processes as covered in Section 2.2.5 (i.e. the variable *Staged Sale*). We have covered how we find this variable in Section 3.2.1.

Important to note is that we do not have the outcome of all target-initiated negotiations, but only those which ended up being a deal, as we do not have information on stand-alone failed negotiations. This can entail that the target-initiated deals in our sample are overly populated by firms very eager to make a deal, whilst the firms which were not as eager to make a deal have opted to terminate the selling process and continue their business as usual. This however bodes well for our *Target Initiated* variable's ability to proxy 'eagerness to sell'.

In 40% of all takeovers, the takeover – through first-stage initiation – is initiated by the target. This finding is slightly higher than the observations in Masulis & Simsir (2015), who find 35.4% of target-initiated takeovers. However, this may be explained by differing sample selection criteria. Also, the definition used by Boone & Mulherin (2007; 2008) for their *Unsolicited* variable seems to mirror the one used for our *Target Initiated* variable. Hence, one would expect similar findings. However, in their sample, the mean for *Unsolicited* is 15%. After closer inspection and consultation of an appendix in Xie (2010) specifically addressing this perceived inconsistency, we notice that their definition entails that the process must start with an unsolicited bid or offer for the target and whether the deal was hostile. This explains the large difference in the two variables. As we wish to measure a target's eagerness to sell, we conclude our *Target Initiated* variable is a better proxy than the *Unsolicited* variable.

Lastly, we see that first-stage initiation by targets is higher in one-staged takeovers (41.2%) than first-stage initiation in two-staged takeovers (36%), significant at the 5% level (p-value of 0.03).[8] This is preliminary indication of our hypothesis that in one-staged takeovers – due to the potential competition in the market – the eagerness functions as an increasing pressure on the initial bidder to make a sufficient offer and thus a one-staged sale occurs.

3.3.3   Bidder availability

The measure used for bidder availability for the target in the takeover process is the *Industry Count* as firstly constructed by Boone & Mulherin (2008). The *Industry Count* measure is calculated as the number of firms in the target's Fama-French 49 industry with a total market value of equity greater than the target in the year prior to the year of the deal. With other words, it measures the number of firms in the target's industry which are realistically eligible to complete a deal with the target as an acquiring firm. We have chosen this measure as it should proxy well for the actual – and importantly, also the *perceived* – number of potential competitors for the target firm, observable with relative ease for all participants in a takeover process. It must be noted that this measure somewhat understates the number of available bidders, as it does not include any potential financial buyers for the target. Notwithstanding this, we still expect the measure to proxy well for the (perceived) potential competition for the target firm.

Another potential proxy for bidder availability is the liquidity index as introduced by Schlingemann, Stulz, & Walkling (2002), which measures the magnitude of corporate takeovers (as the ratio of total transaction value to total book value of assets) within an industry the year prior to the deal announcement for the relevant observation. We have run our (unreported) estimations with this measure but could not find any significant results. Hence, we opted to exclude this from our research all together for reasons of brevity. Moreover, we thought this measure was not the best proxy for bidder availability, as it could very well be the case that a few major corporate transactions in a year could drastically skew the proxy. Another proxy for bidder availability is the private buyout fund activity

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[8] See Table 3 in Section 5.1.

as introduced by Boone & Mulherin (2009): the ratio of aggregate buyout fund investments in the U.S. to aggregate NYSE, Amex and Nasdaq market value during the year of the transaction announcement date (definition copied from Aktas et al. (2010)). Although this is likely to be positively related to the number of potential acquirers for the target, we feel it does not sufficiently reflect the effect we want to measure as it only includes the activity of buyout funds (e.g. private equity funds). Hence, we opted to discard this proxy. Perhaps, in future research, a combination of these measures could be established to improve the measurement of bidder availability. For now, we prefer measuring the number of actual players in the market with a market value greater than the target as we feel this most adequately reflects the perceived competition for the target within the pool of bidders for the target.

Within our full sample, the average industry count is 171, indicating that – on average – there are 171 firms in the same (Fama-French 49) industry as the target in the year prior to the deal. For one-staged deals, the mean *Industry Count* is 175, which is slightly higher than for its two-staged counterpart – 156. The difference is significant at the 5% level (p-value of 0.026). The median for the full sample is 114, indicating that there are outliers at the higher end of the *Industry Count* variable. In our regressions, we use the natural logarithm of the *Industry Count* variable to adjust for this skewedness. At the 5% and 95% percentile, the values are 13 and 535, respectively. Intuitively, the former indicates the largest target firms with a large market share in our sample, with only a handful of realistic bidders for their firm. The latter indicates the smaller target firm with a negligible market share, with a vast number of potential acquirers. Hence, by construction, the *Industry Count* variable is correlated with a firm's size (the variable *Firm size*). We will analyze the impact of this in our regressions by assessing the multicollinearity between these two variables.

4. Methodology

In this section, we will operationalize our hypotheses by describing the methodology used to assess whether our data gives indication that our expectations – as enshrined in our hypotheses – are rejected, and if not therefore provide indication that our hypotheses seem to be valid for our data.

4.1 General Approach to the Analyses

Here, we will briefly cover the general approach and methods conducted to obtain results which allows for answering our hypotheses – and by extension – our research question. For each hypothesis, we will be conducting OLS regression analysis to ascertain whether the posited effect holds for our data. In order to minimize the influence of omitted variable bias, we will include the following conventional and newly developed control variables to each of our regression models: *Auction, Firm size, Cash, Financial Buyer, Regulated, Return on Assets, R&D, Tender, Tobin's Q, Process Length, Relation, Leverage, Horizontal, Institutional ownership, Institutional shareholding concentration* and *NBER Recession.*[9]

To ensure the quality of our regression models, we will check the residuals for normality and homoskedasticity, and whether a high degree of multicollinearity exists among our independent explanatory variables. For the first assumption – normality of residuals – we will plot histograms and use a Shapiro-Wilk test to verify whether the normality assumption holds. For the second assumption – homoskedasticity of residuals – we will plot the fitted values of our model on the residuals of our model and see whether these residuals seem to appear homoscedastic. To bolster our graphical observation, we will perform both White and Breusch-Pagan tests to see whether our models adhere to the homoskedasticity assumption. If the post-regression analyses lead us to believe that the residuals do not adhere to normality and homoskedasticity, we will conduct bootstrapped regressions to control for these violations to ensure the reliability of our inferences based on our estimated coefficients. The technique of bootstrapping utilizes the available dataset to estimate the sampling distribution by repeatedly taking small samples (with replacement) from the dataset and calculating sampling statistics from this sample (e.g. the mean and *b* coefficient). After a chosen number of replications, the bootstrap sampling statistics can be used to calculate the standard errors for the sample distribution, which in turn can be used for significance tests (Field, 2009). Thus, if the sample does not appear to adhere to the parametric distribution assumptions, through this resampling method, we can estimate the properties of the sampling distribution from the sample data. This improves the robustness of our inferences regarding the estimated coefficients. According to Rochowicz Jr (2010), the drawbacks to bootstrapping are the necessity of relying on a representative sample and potential variability in the estimated parameters after the bootstrapping approach. The former, we do not regard as a problem, as we have sought to include all mergers and acquisitions for the period of 2002-2014, provided that the takeovers adhered to

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[9]See Appendix B for the definitions and construction of these variables.

our sample criteria. The latter we address by using 1,000 replications (i.e. re-estimations), at which rate our coefficients, significance and confidence intervals appear stable.

Lastly, we will calculate the variance inflation factors (VIFs) for the independent variables in our model to verify whether substantial multicollinearity exists. We will adhere to the usual rule of thumb: VIFs between 1 and 5 are permissible, but any VIF above 5 merit action. For sake of thoroughness, we will inspect any variables in our model with a VIF > 2.5 to see whether there could be any reason to discard it.

4.2   Statistical Specification of Hypotheses

Our methodology for all hypotheses is straightforward. Through Ordinary Least Squares (OLS) regressions, we test the validity of our hypotheses. The dependent variable in each regression equation is *Takeover Premium.* Additionally, each regression equation contains the control variables described in Section 4.1. We first test the hypothesized effects by including our variables of interest in separate regression equations, after which we include all variables of interests into one regression equation to see whether the effects still hold and are similar in one regression equation. Subsequently, we will include industry and year dummies to control for potential constant effects that industry and time may have on the takeover premium.

We will now formulate the regression equations used to test our hypotheses and we will mention the direction our hypotheses expect the coefficients of our variables of interests to be. We will judge the validity of our hypotheses on the basis of the sign and significance of the coefficients in our regression models.

Hypothesis 1: Premiums in target-initiated corporate takeovers are – on average – lower than premiums in non-target initiated corporate takeovers.

$$\textbf{H1:} \qquad Takeover\ Premium_i = \beta_0 + \beta_1 Target\ Initiated_i + \beta[Control\ Variables_i] + \varepsilon_i \qquad (2)$$

We find evidence in support of Hypothesis 1 if we find that $\beta_1 < 0$ and is statistically significant.

Hypothesis 2: Bidder availability in corporate takeovers is positively related to premiums.

$$\textbf{H2:} \qquad Takeover\ Premium_i = \beta_0 + \beta_1 Industry\ Count_i + \beta[Control\ Variables_i] + \varepsilon_i \qquad (3)$$

We find evidence in support of Hypothesis 2 if we find that $\beta_1 > 0$ and is statistically significant.

For sake of completeness, we also jointly test for the first two hypotheses by including both *Target Initiated* and *Industry Count* in the same regression model before including an interaction term of these two variables.

$$\textbf{H1\&2}: \qquad Takeover\ Premium_i = \beta_0 + \beta_1 Target\ Initiated_i + \beta_2 Industry\ Count_i \qquad (4)$$
$$+ \beta[Control\ Variables_i] + \varepsilon_i$$

We find additional evidence in support of Hypothesis 1 if we find that $\beta_1 < 0$ and in support of Hypothesis 2 if we find that $\beta_2 > 0$, and are statistically significant.

Hypothesis 3: The positive relationship between bidder availability and premiums is stronger in target-initiated corporate takeovers than in non-target-initiated takeovers.

$$\text{H1-3:} \quad Takeover\ Premium_i = \beta_0 + \beta_1 Target\ Initiation_i + \beta_2 Industry\ Count_i \quad (5)$$
$$+ \beta_3(Target\ Initiation_i * Industry\ Count_i) + \beta[Control\ Variables_i] + \varepsilon_i$$

We find evidence in support of Hypothesis 3 if we find that $\beta_3 > 0$, and is statistically significant. We find additional evidence in support of Hypothesis 1 if we find that $\beta_1 < 0$ and evidence in support of Hypothesis 2 if we find that $\beta_2 > 0$, and are statistically significant.

Hypothesis 4: Two-staged takeovers obtain lower premiums than one-staged takeover.

$$\text{H4:} \quad Takeover\ Premium_i = \beta_0 + \beta_1 Staged\ Sale_i + \beta[Control\ Variables_i] + \varepsilon_i \quad (6)$$

We find evidence in support of Hypothesis 4 if we find that $\beta_1 < 0$ and is statistically significant. Finally, we will include all variables of interest in one regression equation and assess the direction and significance (and will look at the magnitude) of all the relevant coefficients. This 'full' equation is as follows:

$$\text{H1-4:} \quad Takeover\ Premium_i = \beta_0 + \beta_1 Target\ Initiation_i + \beta_2 Industry\ Count_i \quad (7)$$
$$+ \beta_3(TargetInitiation_i * IndustryCount_i) + \beta_4 StagedSale_i$$
$$+ \beta[Control\ Variables_i] + \varepsilon_i$$

In this full regression equation, we find additional evidence in support of Hypothesis 1 if we find that $\beta_1 < 0$ and evidence in support of Hypothesis 2 if we find that $\beta_2 > 0$, and are statistically significant. We find additional evidence in support of Hypothesis 3 if we find that $\beta_3 > 0$, and is statistically significant. We find additional evidence in support of Hypothesis 4 if we find that $\beta_4 < 0$, and is statistically significant. Subsequently, robustness of our results is assessed in by re-estimating our 'full' equation with fixed year effects, fixed industry effects, and both simultaneously to control for potential constant effects that industry and time may have on the takeover premium in our sample. We will then be able to assess whether these fixed industry and year effects may have an impact on our preliminary results. As we want to verify the validity of our hypotheses in presence of all the effects we have posited to exist in our Conceptual Framework in Section 2.2, the 'full' regression models with fixed effects will constitute the definitive test of our hypotheses, unless we find no reason to keep the fixed effects within our equations.

Hypothesis 5: The interaction effect between bidder availability and target-initiated takeovers on premiums is more pronounced for second-stage takeovers than for first-stage takeovers.

The regression equation used to test Hypothesis 5 is similar to Equation 5, estimated for the two different subsamples in our data – *One-staged* and *Two-staged sales* (defined by our *Staged Sale* variable). Hence, the *Staged Sale* variable drops out of these equations. We will judge the validity of Hypothesis 5 in presence of fixed industry and year effects (unless we have found no reason to keep these fixed effects in the equation). As we estimate the regression model twice on different subsamples, the exact interpretation and comparison of the coefficients is ambiguous. Hence, we will primarily judge the validity of Hypothesis 5 on the persistence of the interaction effect. We expect the interaction effect to be more pronounced in the *Two-staged sales* subsamples, due to the 'revealed' eagerness to sell. We may even expect the interaction effect to become insignificant in our *One-staged sales* subsamples, indicating that the interaction effect is primarily driven by two-staged sales wherein eagerness to sell is clearly revealed by the continued pursuit of a sale after a failed first-stage negotiation.

4.3 Robustness Check – Differing Announcement Date for Premium Determination

As mentioned in Section 3.3.1, our *Takeover Premium* measure is composited of the 4-week takeover premium, reported in the Thomson ONE database, unless the announcement date differs more than 10 days with the announcement date extracted from the SEC merger filings. As we have covered, this can impact the value of the premium substantially. Hence, in order to verify whether our results are robust, we also re-estimate the 'full' regressions with fixed effects (Equation 7 for Hypotheses 1-4, and Equation 5 for Hypothesis 5) with both the takeover premium based solely on the announcement date reported in the Thomson ONE database (*Thomson ONE Premium*), as well as solely based on the announcement date reported in the SEC merger filings (*SEC Premium (CRSP)*). For the former, there is no loss in observations. For the latter, due to the requirement of finding the relevant stock price in the CRSP/Compustat Merged database 4 weeks prior to the announcement date mentioned in the SEC filings, there is a loss of 80 observations for this measure (1,696 observations, rather than 1,776). If the results of our robustness checks lead us to believe that this loss in observations might be contributing to conflicting findings, we will inspect the missing observations for potential reasons of the conflicting findings.

5. Results & Interpretation

In this section, we report the results of our analyses and the interpretation thereof. We start by providing descriptive statistics on our sample to get a better understanding of any particularities in our sample of observations. Subsequently, we cover the results and interpretation of our regression model estimations. We will commence by covering the observed coefficients of our control variables. Subsequently, we cover the coefficients of our variables of interest. Ultimately, this leads to the rejection or provisional acceptance of our hypotheses. Finally, we cover the robustness checks on the takeover premiums' dependence on the announcement date.

5.1   Descriptive Statistics

In Table 3, we report descriptive statistics on our dependent variables (i.e. the takeover premiums), our variables of interest and various target and deal characteristics. For definitions and details on the calculations and transformation and for information on the sources of the underlying data, please consult Appendix B. For all financial ratios, we have winsorized the variables at 0.5% and 99.5% to curb the impact of outliers. For industry-related variables, the Fama-French 49 industry classification system is used, unless reported otherwise. The basis for the Fama-French 49 is the SIC code system, which for all takeovers, we obtained from the Thomson ONE M&A database. We used STATA and the website of Kenneth French to perform transformations necessary to classify each takeover into a Fama-French 49 industry classification.[10] Here, we cover some of most noticeable descriptive statistics.

In Table 3, Panel A and B reiterate the data and statistics covered in Section 3.3 on our takeover premium measures and variables of interest. We report all statistics here for sake of completeness. Panel C of Table 3 reports on deal characteristics. The average deal value is $2.11 billion, with one-staged deals significantly larger than two-staged deals ($2.34 billion vs. $1.34 billion). Our sample consists of auctions for nearly 46% – and consequently for 54% out of negotiations. Auctions are most predominant in two-staged deals – negotiations in one-staged deals, which makes sense, as two-staged deals are the consequence of a failed one-on-one negotiation. Many targets do not want another failed negotiation and therefore opt for an auction. Furthermore, we find that 60.2% of takeovers are completed in an all-cash transaction. We see that two-staged takeovers are significantly more frequently completed through an all-cash transaction than one-staged takeovers (69.4% vs. 57.5%). As auctions are predominant in our two-staged sample, and as Boone & Mulherin (2007) find that auctions are more frequently completed through cash transactions, this observation is in line with existing literature.

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[10]Website of Kenneth French: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/Data_Library/det_49_ind_port.html, accessed on 31st of October, 2018.

Table 3 – Descriptive Statistics on Variables of Interest and Characteristics

This table provides descriptive statistics on our full sample as well as our subsamples of *One-staged* and *Two-staged sales*. Panel A covers the three premiums measures used in our analyses and robustness checks, winsorized at the 0.5-99.5% level. Panel B covers the variables of interest which are used to test the validity of our hypotheses. Panel C covers deal characteristics. Panel D covers target characteristics. The first column per (sub)sample provides the mean of the relevant variable. For dummy variables, the mean reports the proportion of deals for which the dummy variable equals one. The second column provides the number of observations. The last column of the table provides the p-value for a one-tailed t-test on mean difference of the *One-staged* and *Two-staged sales* subsamples. An unreported Levene's test on equal variances per variable determined whether the t-test assumed equal variances. For all variable definitions and calculations, see Appendix B.

| | Full Sample | | Staged Sale One-Staged | | Two-Staged | | |
	Mean	N	Mean	N	Mean	N	p-value
Panel A: dependent variables							
Takeover Premium	36.14%	1,791	37.76%	1,384	30.63%	407	0.000
Thomson ONE Premium	37.17%	1,791	38.41%	1,384	32.96%	407	0.000
SEC Premium (CRSP)	34.68%	1,708	36.23%	1,322	29.36%	386	0.000
Panel B: variables of interest							
Target Initiated	40.03%	1,791	41.21%	1,384	36.03%	407	0.030
Industry Count	171	1,791	175	1,384	156	407	0.026
Staged Sale	22.78%	1,791					
Panel C: deal characteristics							
Deal value ($, billions)	2.11	1,791	2.34	1,384	1.34	407	0.000
Auction	45.90%	1,791	41.07%	1,384	62.25%	407	0.000
Cash	60.19%	1,791	57.44%	1,384	69.53%	407	0.000
Go-Shop	6.42%	1,791	6.50%	1,384	6.14%	407	0.390
Financial Buyer	17.76%	1,791	16.04%	1,384	23.59%	407	0.000
Relation	30.76%	1,791	32.66%	1,384	24.32%	407	0.001
Tender	14.24%	1,791	13.01%	1,384	18.43%	407	0.006
Related deal	57.57%	1,791	59.08%	1,384	52.45%	407	0.009
Horizontal	34.28%	1,791	34.68%	1,384	32.92%	407	0.281
Committee	35.46%	1,791	33.62%	1,384	41.67%	407	0.004
Process Length [in days]	155	1,791	120	1,384	272	407	0.000
NBER Recession	7.82%	1,791	7.74%	1,384	8.09%	407	0.592
Panel D: target characteristics							
Firm size ($, billions)	3.70	1,789	4.37	1,382	1.44	407	0.002
R&D	14.84%	1,791	14.43%	1,384	16.23%	407	0.678
Intangibles	15.64%	1,775	15.00%	1,369	17.80%	406	0.013
Leverage	20.49%	1,775	21.11%	1,369	18.40%	406	0.029
Regulated	35.06%	1,791	37.50%	1,384	26.78%	407	0.000
Return on Assets	6.23%	1,791	6.15%	1,384	6.52%	407	0.615
Tobin's Q	1.69	1,788	1.70	1,381	1.67	407	0.353
Market-to-Book	2.41	1,785	2.47	1,379	2.23	406	0.121
#Owning Institutions	92	1,791	96	1,384	77	407	0.002
Institutional ownership	51.98%	1,791	52.09%	1,384	51.61%	407	0.790
Institution shareholding concentration	11.68%	1,791	11.91%	1,384	10.87%	407	0.198
Sales-based growth rate	13.33%	1,368	14.48%	1,030	9.83%	338	0.030

We find that in 6.4% of our takeovers, the merger agreement contains a go-shop provision, allowing the target a period to actively 'shop' the offer of the merger agreement to potential other bidders. Usually, this is preceded by a period of exclusive discussions between the target and the acquiring party. Furthermore, we find that 17.8% of takeovers are completed with a financial buyer (e.g. a private equity fund). Two-staged takeovers are more frequently sold to financial buyers than one-staged takeovers (23.5% versus 16.1%). This difference is to be expected, as targets are likely to first attempt negotiations with a strategic buyer that can realize more synergies and will therefore potentially make a higher offer. If this first-stage attempt fails, the target is likely to also include financial buyers in the process. In line with this finding is the observations that in 30.8% of takeovers, there is a certain relationship between the target and the acquirer (see Appendix A.4 for more specifics). As parties are more familiar with one another, it is likely that these parties will seek to come to a merger agreement before contacting more bidders. This idea is confirmed as one-staged takeovers are more frequently completed between an acquirer and target with a prior relationship than two-staged takeovers (32.7% versus 24.3%; p-value of 0.001).

Finally, to alleviate the burden a takeover process can have on the time of the top management team ("TMT"), and to avoid potential conflicts of interests in the merger negotiations, targets can decide to establish an independent committee to facilitate in the takeover process on behalf of the target. We find that in 35.5% of takeovers such a committee is established. Noticeably, in two-staged takeovers these committees are more frequently established (41.7%) than in one-staged takeovers (33.6%), significant at the 1% level (p-value of 0.002). Intuitively, as we showed in Section 3.2.2, the length of two-staged takeovers is significantly greater than one-staged takeovers, which entails a higher burden on the TMT. Hence, it is not surprising that we see more committees formed in these two-staged deals.

Panel D of Table 3 reports on target characteristics. Firm size – measured as book value of assets – is significantly larger for one-staged deals than for two-staged deals ($4.37 billion vs. $1.44 billion). R&D expenses are slightly higher for targets in our two-staged subsample, but this difference is insignificant (respectively, 14.43% vs 16.23%). Targets in our one-staged subsample are slightly more levered than their two-staged counterparts (21.11% vs 18.40%; p-value of 0.029). This is some preliminary univariate indication that two-staged deals are not just garnering lower premiums due to financial distress of the involved targets. Furthermore, we observe that Tobin's Q of assets and the market-to-book ratio of equity – proxying growth opportunities in the target – are 1.69 and 2.41 respectively, but do not differ significantly for one-staged and two-staged deals.

Return on assets is similar for both targets sold in one-staged and two-staged deals, averaging a 6.23%. The sales-based growth rate is significantly larger for targets sold in one-staged deals than in two-staged deals, indicating that on average targets sold in one-staged deals have been performing better in the years prior to the takeover. This may be a reason why these targets are sold in a one-staged process rather than after a failed first-stage negotiation.

However, due to the substantial loss in observations, we cannot put too much emphasis on this observation. Also, we observe a significantly larger proportion of targets in regulated industries (nearly 11% more) to be sold in a single stage. This could be due to targets realizing that there is a relatively limited number of realistic competitors, and as a consequence opt for either immediately initiating an auction or to negotiate with the best strategically fitting player. Finally, although we observe a significantly larger number of institutions with shares in the target in one-staged deals, this does not translate into an on average higher degree of institutional ownership in the target's shares (52.09% vs. 51.61%). Also, the concentration of shareholding institutions is not significantly different. Hence, on average – it does not seem that the manifestation of control exerted by institutions on targets is a determining factor for targets being sold in one stage or two stages. However, any inference made based on univariate analysis is inherently fraught with potential for spurious conclusions. We will now report on our multivariate regression analyses to assess the validity of our hypotheses and to minimize the effects o any confounding variables on our inferences and conclusions.

5.2   Interpretation of Regression Model Estimations

Here, we present the results of our regression model estimations. As described in Section 4, we first estimate our OLS regression models, separately including our variables of interest per hypothesis. After analysis of the results, we move onto assessing how these preliminary findings hold up in a regression model including all variables of interest. Moreover, we will then estimate this 'full' regression model with the inclusion of fixed industry and/or fixed year effects to see whether correcting for potential variability in the takeover premium as a result of constant industry- or time-based effects alters our results.

After estimating our regression equations using Ordinary Least Squares (for table of results, see Appendix C.1), post-regression diagnostic analysis(reported in Appendix C)led us to the conclusion that the OLS assumptions of normality and homoskedasticity of residuals (respectively Appendix C.2 and C.3) are violated. Multicollinearity between our regressors does not seem to be an issue (Appendix C.4). Hence, in order to correct for the violations in the OLS assumptions and to be able to make correct inferences regarding the statistical significance of the estimated coefficients, we adopt the nonparametric bootstrapping resampling approach with replacement to calculate the standard errors of our coefficients (as discussed in Section 4.2).The results of the bootstrapped regressions are summarized in Table 4. Firstly, we assess the coefficients of our control variables. Despite some minor changes in statistical significance across the models, the direction of the coefficients remains the same. Hence, we take Model VI as the leading model in our interpretation of coefficients and cover changing signs or significance in other models if relevant. Afterwards, we assess the results on our variables of interest and interpret the results in light of our hypotheses.

5.2.1 Interpretation of Results on Control Variables

In Table 4, we see that the *Auction* variable is insignificant, which means there is no effect of whether a target is sold in a multiple bidder auction or in a one-on-one negotiation on the takeover premium. This entails the competition in these two different mechanisms on average is comparable. Despite traditional auction theory suggesting that auctions should elicit higher premiums (due to the winner's curse), this finding is in line with findings in other literature (Aktas, de Bodt, & Roll, 2010). Furthermore, we find that *Firm size* is negative in all model specifications, but only significant in the models without *Industry Count* (Model I & Model V). The negative relationship between target size and takeover premium is in line with existing literature (e.g. Officer (2003); Alexandridis, Fuller, Terhaar, & Travlos (2013)). The observation that *Firm size* becomes insignificant in regression specifications including *Industry Count* is not surprising (as covered in Section 3.3.3): the variable *Industry Count* is constructed as all firms in the same industry the year prior to the deal with a market value of equity larger than target's market value of equity. As market value of equity is highly correlated to our *Firm size* measure (based on targets' book value of assets), it is understandable that *Firm size* becomes insignificant. We see in Appendix C.4 that there is some multicollinearity between regressors in the regressions containing both *Firm size* and *Industry Count*. However, the levels are still within acceptable boundaries. For sake of thoroughness, we remove *Firm size* (and two other variables which show a moderate degree of multicollinearity in later regressions) in Model X. Removing *Firm size* does not substantially alter our coefficients and therefore our inferences. Hence, we opt to leave *Firm size* in our regression specifications, as it is still a relevant determinant of premiums. Due to the logarithmic transformation made in *Firm size*, the coefficient of *Firm size* is interpreted as follows (using Model V): if *Firm size* doubles, this on average leads to a 1.64% reduction in the takeover premium.

We find a positive relationship between takeover premiums and deals completed in an all-cash transaction (*Cash*) and for tender offers (*Tender*). The coefficients are significant at the 1% and 5% level, respectively. For all-cash transactions, this indicates that for deals paid fully in cash, the takeover premium is on average 5.7% higher than for deal paid for in stocks (or a combination of cash and stock). This is in line with previous literature, indicating that cash deals are associated with higher premiums (Betton, Eckbo, & Thorburn, 2009; Travlos, 1987). For tender offers, this observed positive relationship is in line with existing literature (e.g. Schwert (2000)), suggesting that if acquirers choose for a tender offer (possibly due to tenders being significantly faster than mergers), this signals to the target that it is in high demand and therefore raises the target's reservation price (Offenberg & Pirinsky, 2015). For our sample of deals, we see that acquirers pay on average 6.9% higher premiums if chosen for a tender offer rather than for a merger. Furthermore, we observe a negative and highly

Table 4 – Bootstrapped Regression Estimation Results

This table presents bootstrapped regression estimation results. The bootstrapped regression models are based on a hand-collected sample of 1,791 completed takeovers in the United States in the 2002-2014 period with 1,000 replications in the resampling with replacement procedure. The dependent variable is the SEC announcement date-adjusted 4-week takeover premium (*Takeover Premium*) – winsorized at 0.5%-99.5% – in all model specifications, denominated in %. *Target Initiated* is a dummy equal to one if the target initiated the sales process, indicating its eagerness to sell. *Industry Count* is the logarithm of the number of companies in the target's Fama-French 49 industry with a market value larger than the target in the year prior to the announcement of the takeover, proxying the bidder availability for the target. *Target Initiated * Industry Count* is an interaction term between these variables. *Staged Sale* is a dummy variable equal to one if the takeover is completed in a two-staged sales process. The other variables in the models represent control variables. All variable definitions and constructions are in Appendix B. The first row for each variable represents the estimated coefficient. Standard errors are in brackets below the presented coefficient values. ***, ** and * denotes statistical significance of the relevant coefficient at the 1%, 5% and 10% level.

Bootstrap replications: 1,000

Variable	I	II	III	IV	V	VI
Constant	75.896	60.575	63.171	68.208	67.662	61.963
	[8.185]***	[10.53]***	[10.64]***	[10.77]***	[8.287]***	[11.40]***
Target Initiated	-5.106		-5.124	-18.13		-18.67
	[1.642]***		[1.613]***	[6.498]***		[6.113]***
Industry Count		1.705	1.717	0.706		0.726
		[0.961]*	[0.958]*	[1.063]		[1.139]
Target Initiated *Industry Count				2.771		2.783
				[1.377]**		[1.321]**
Staged Sale					-5.978	-6.720
					[1.852]***	[1.824]***
Auction	-0.922	-2.001	-1.079	-1.050	-1.182	-0.238
	[1.629]	[1.536]	[1.585]	[1.671]	[1.547]	[1.652]
Firm size	-1.822	-1.001	-1.125	-1.238	-1.637	-1.156
	[0.656]***	[0.733]	[0.771]	[0.755]	[0.645]**	[0.769]
Cash	5.442	6.140	5.667	5.699	5.988	5.733
	[1.914]***	[1.903]***	[1.981]***	[1.907]***	[2.007]***	[2.003]***
Financial Buyer	-8.667	-9.179	-8.616	-8.253	-9.221	-8.158
	[1.938]***	[1.999]***	[2.035]***	[2.102]***	[2.059]***	[2.053]***
Regulated	-9.291	-12.07	-11.66	-11.57	-9.730	-11.62
	[1.934]***	[2.113]***	[2.126]***	[2.224]***	[1.907]***	[2.272]***
Return on Assets	-34.702	-32.108	-32.047	-31.962	-34.945	-32.102
	[10.07]***	[10.34]***	[10.15]***	[9.835]***	[10.16]***	[10.01]***
R&D	4.698	4.832	4.788	4.821	4.725	4.802
	[2.430]*	[2.560]*	[2.458]*	[2.404]**	[2.388]**	[2.459]*
Tender	6.879	6.953	6.841	6.754	7.149	6.916
	[2.903]**	[2.807]**	[2.767]**	[2.770]**	[2.816]**	[2.828]**
Tobin's Q	-1.912	-1.525	-1.676	-1.711	-1.763	-1.712
	[1.167]	[1.111]	[1.141]	[1.174]	[1.097]	[1.168]
Process Length	-4.170	-4.119	-4.105	-4.085	-2.809	-2.538
	[0.915]***	[0.883]***	[0.918]***	[0.943]***	[1.066]***	[1.030]**
Relation	0.788	1.182	0.825	0.779	0.956	0.521
	[1.721]	[1.788]	[1.675]	[1.711]	[1.735]	[1.730]
Leverage	5.587	5.963	6.253	6.407	4.954	6.077
	[4.717]	[4.585]	[4.614]	[4.576]	[4.725]	[4.377]
Horizontal	-1.589	-1.674	-1.705	-1.678	-1.427	-1.548
	[1.674]	[1.710]	[1.655]	[1.629]	[1.676]	[1.623]
Institutional ownership	-8.468	-7.896	-8.034	-7.780	-8.469	-7.990
	[2.639]***	[2.545]***	[2.682]***	[2.566]***	[2.720]***	[2.581]***
Institutional shareholding concentration	15.28	13.85	14.92	14.24	13.25	13.27
	[7.617]**	[7.424]*	[7.530]**	[7.264]**	[7.127]*	[7.435]*
NBER Recession	14.12	14.02	14.09	14.22	13.91	14.06
	[4.418]***	[4.561]***	[4.675]***	[4.398]***	[4.587]***	[4.355]***
Adjusted R^2	14.7%	14.2%	14.7%	14.8%	14.6%	15.3%
Wald $\chi^2-statistic$	209.18	185.70	214.53	225.11	190.73	210.18
Model p-value	0.000	0.000	0.000	0.000	0.000	0.000
Number of observations	1,782	1,776	1,776	1,776	1,782	1,776

significant (at the 1% level) relationship between takeover premiums for deals sold to financial buyers (e.g. private equity funds) as compared to deals sold to strategic buyers (*Financial Buyer*). On average, deals sold to financial buyers rather than strategic buyers lead to 8.2% lower premiums. Intuitively, this makes sense as strategic buyers should be able to gain synergy benefits of an acquisition, whilst this is not necessarily the case for financial buyers (however, in case of buy-and-build acquisitions by private equity funds, this could be the case). This finding is consistent with previous literature on this topic (e.g. Bargeron, Schlingemann, Stulz, & Zutter (2008); Officer, Ozbas, & Sensoy (2010)).

We observe a highly significant (at the 1% level) negative relationship between takeover premiums and takeovers of targets in regulated industries. This is in line with existing literature, which suggest that sales of targets in regulated industries attracts informed bidders, and this presence of informed bidders drives down the premium in corporate takeovers (Dionne, La Haye, & Bergerès, 2015). Also, due to restrictions on potential acquirers, the competition for the target is generally lower in sales processes in regulated industries. Hence, the negative relationship is in line with expectations. For our data, we observe on average an 11.6% lower premium for deals in regulated industries. Also, we find a negative relationship between return on assets (*Return on Assets*) and takeover premiums, significant at the 1% level. For our sample, on average, a point percentage increase of return on assets leads to a 0.32% lower premium. This finding is slightly puzzling as previous literature predominantly found a positive relationship between return on assets (proxying a target's profitability) and takeover premiums (e.g. (Madura, Ngo, & Viale, 2012). However, one could also make the case that return on assets should be negatively correlated with takeover premiums due to the potential for improvement of asset deployment post-takeover, thereby allowing the acquirer to extract more synergies from the takeover. This latter effect seems to be dominant in our sample. However, future research could investigate how different measures proxying profitability perform in similar analyses.

We find a positive relationship between the ratio of research and development expenses as a fraction of total assets (*R&D*) and takeover premiums, significant at the 10% level. In absolute values, a 10% percentage increase (i.e. from 10% to 20%) of R&D expenses – on average – results in a 0.48% higher takeover premium. This is not particularly significant in an economical sense. The finding of a positive relationship is in line with existing literature: R&D expenses are valued positively in M&A processes as they provide potential future revenues unobtainable had these R&D investments not been carried out(Laamanen, 2007). The relative weakness of our observed relationship between R&D and takeover premiums is likely due to our use of a 1-year R&D ratio. Accumulating the R&D expenses over multiple years prior to the takeover are would likely be a better measure for the role of R&D on takeover premiums (e.g. Laamanen (2007)). However, this would result in considerable loss of observations, which has led us to opt for the 1-year R&D ratio.

On the impact of the length of the takeover process, we use the variable *Process Length* (defined as the natural logarithm of the number of days between deal initiation and deal announcement). The expectation on the effect of this variable on the takeover premium is ambiguous. On the one hand, it could proxy for the wealth of information gathered by bidders, and thereby could either lead to a higher or lower bid – depending on the quality of the target up for sale (i.e. the sign of the coefficient could go either way if this expectation holds true). On the other hand, as the length of the process increases, it is increasingly likely that information regarding the impending sale of the target is leaked. This in turn may lead to stock price run-up in the period between leakage of information and the deal announcement, which negatively impacts the premium (as stock price is the denominator in premium calculations). Hence, we expect process length to show a negative relationship with takeover premium. This negative relationship is confirmed in Table 4, significant at the 5% level. We find that as process length doubles, the takeover premium is on average 2.5% lower (logarithmic interpretation). With respect to the impact of recessions, we find a positive relationship between takeover premiums and deals announced within a period of crisis (*NBER Recession*; in our sample: the 2007-2009 crisis): on average, targets sold during a recession obtain a 14.1% higher premium than companies sold in non-recession times. At first, this finding seems quite puzzling, but if we regard the way the takeover premium is calculated – with stock price as denominator – we find an explanation for this finding. In times of crises, stock prices are generally largely depressed, which does not do justice to the true value of the underlying firms. Hence, due to this depressed denominator, potential acquirers willing to buy a target firm will need to make a bid which is closer to the true value of the target, and not merely take the current stock price of the target and add a premium. This leads to a relatively high premium. Hence, the observed positive relationship can be explained.

Lastly, on the impact of institutional ownership within the equity of the target (*Institutional ownership*), existing literature shows that target firms with high institutional ownership on average garner lower takeover premiums, as these institutional owners – often short-term in nature – are fragmented and inclined to offer up their shares when an offer is made, as well as not taking their monitoring of the management of the target as seriously due to limited impact (Stulz, Walkling, & Song, 1990; Gaspar, Massa, & Matos, 2005). By extension, whenever institutional shareholding concentration is higher (*Institutional shareholding concentration*), indicating that the share of institutional ownership in the target's equity is limited to a relatively small group of institutions, we see an increase in takeover premiums. This is in line with the findings on *Institutional ownership*: for a given level of institutional ownership, as concentration increases, the control of institutions on the target's management becomes more tight – leaving little room for management to pursue their own agenda in a merger – and hence, the takeover premium increases. We see this in our results, as the coefficients for *Institutional ownership* and *Institutional shareholding concentration* are respectively negative and significant at the 1% level, and positive and significant at the 10% level. For *Institutional ownership*, on average – a 10% increase in the value of institutional onwership in

the target (e.g. from 20% to 30%), leads to a 0.8% lower takeover premium. For *Institutional shareholding concentration*, on average – a 10% increase in target shareholding concentration, leads to a 1.3% higher takeover premium. Finally, we find no significant relationships between takeover premiums and Tobin's Q, whether a takeover had a horizontal nature, and whether target and acquirer had an existing (commercial relationship).Having covered the observed coefficients of our control variables, we now turn to the interpretation of the results on our variables of interest in relationship to the hypotheses formed in Section 2.2.

5.2.2 Interpretation of Results on Hypotheses

The first assessment of our hypotheses is on a standalone basis: we analyze the coefficients of our variables of interest in separate regression models. Afterwards, we analyze the coefficients in unison in a single 'full' regression model. Looking at Table 4, Model I covers the effect of target eagerness to sell (proxied by *Target Initiated*) on takeover premiums. We see that on average in our sample, if a target initiates the sales process, this leads to a 5.1% reduction in the takeover premium offered (significant at the 1% level). This is in line with Hypothesis 1 which posits that an adverse selection problem exists if a target opts to pursue a sale of itself. Our first results support this hypothesis: bidders in the process for a target-initiated takeover discount the valuation – and consequently their bid – for the target and therefore offer a lower takeover premium in the deal.

Model II assesses the effect of bidder availability (proxied by *Industry Count*) on takeover premiums. We observe on average in our sample, a doubling in the value of *Industry Count* (N.B. variable is in logarithmic terms) leads to a 1.7% higher takeover premium offered for the target (significant at the 10% level). This is in support of Hypothesis 2 which posits that bidders for the target account for the potential (i.e. latent) bidding competition for the target. The pressure of other bidders in the process or entering the process leads to a higher bid premium for the target. Also, when both *Target Initiated* and *Industry Count* are in the regression together (Model III), the results are similar. *Target Initiated* has a negative coefficient, significant at the 1% level. *Industry Count* has a positive coefficient, significant at the 10% level.

When we incorporate *Target Initiated*, *Industry Count* and an interaction between these two variables, we see that the coefficients for both *Target Initiated* and *Industry Count* retain the expected direction. However, *Industry Count* is no longer statistically significant. This is preliminary counterevidence for Hypothesis 2. The interaction term is positive and significant at the 5% level. The latter is in line with Hypothesis 3, which posits that a positive relationship between bidder availability and takeover premiums is stronger in target-initiated corporate takeovers than in non-target-initiated takeovers. Model III confirms this hypothesis, as it provides preliminary evidence that only in target-initiated deals (i.e. target has shown its eagerness to sell) the bidder availability has a substantial positive effect on takeover premiums. However, it seems there is no significant effect of bidder availability now in non-target-initiated deals.

Model V is the first test for Hypothesis 4 on the effect of the 'stagedness' of sales processes (*Staged Sale*) – as a proxy for 'revealed' eagerness to sell – on takeover premiums. The coefficient is negative and significant at the 1% level. There is a discount attributed by bidders to targets selling themselves in a two-staged sale after a failed first-stage negotiation. This is a substantial discount: on average, two-staged sales garner a 6% lower premium compared to their one-staged counterparts. This is in line with the expectation enshrined in Hypothesis 4.However, unreported analysis shows that the 'stagedness' of sales processes is not correlated with target-initiation. This might indicate a separate effect from the eagerness the sell argument. If so, this could entail our informational signaling argument covered in Section 2.2.5 might prove true. This is an interesting new insight and future research should delve more in-depth in this topic to verify whether the informational signaling argument can indeed be a viable explanation for the premium discount in two-staged sales.

Finally, when we add the separately tested variables of interest into one regression model (Model VI), the previous results and interpretations remain valid. Based on these results, we have found preliminary evidence on Hypothesis 1, 3 and 4. We have found mixed results for Hypothesis 2 on the positive effect of bidder availability on takeover premiums. In isolation, there seems to be – on average – a positive effect of bidder availability on premiums. However, it seems as though this positive and significant coefficient was driven by the effect of bidder availability on takeover premiums in target-initiated deals. In other words, the positive effect of bidder availability seems to be only truly substantial for takeovers in which eagerness to sell is demonstrated through target-initiation.

We have now covered the preliminary findings on our first four hypotheses. However, as discussed in Section 4.2, our results might be influenced by fixed industry and year effects. Hence, we now re-estimate our 'full' regression model (Model VI) with the gradual inclusion of fixed industry and year effects. We have summarized the findings on the coefficients for our variables of interest in Table 5. For tables on the full regression results, we refer to Appendix D.1.

As we covered above, in Model VI each variable of interest has the expected coefficient sign. However, *Industry Count* is not statistically significant. With the gradual inclusion of fixed industry and year effects, we see in Model VII – in which fixed industry effects are included – that the coefficient of *Industry Count* becomes statistically significant (at the 10% level) with the expected positive sign. Intuitively, as a consequence of the construction of the *Industry Count* measure, which is in part dependent on the target's industry, the *Industry Count* variable is correlated with certain fixed industry effects. Therefore, controlling for any fixed industry effects in our regression models results in better isolation of the factor we want to measure – the availability of bidders in the sales process – in our *Industry Count* measure. Hence, controlling for fixed industry effects makes intuitive sense. After the inclusion of the industry effects, we now observe a coefficient for *Industry Count* which is in line with Hypothesis 2. The preliminary findings in our results above – without the inclusion of fixed industry effects – seems

to have been obscured by fixed effects unique to industry in which targets are active. Finally, the interaction term remains significant with a positive sign. Hence, it is still the case that the effect of bidder availability is more heavily accounted for in target-initiated deals.

Table 5 – Hypotheses 1 -4 Tests Summary

This table summarizes the results of bootstrapped regression models with 1,000 replications. We sequentially include fixed industry and fixed year effects (separately and together). The dependent variable is the SEC announcement date-adjusted 4-week takeover premium (*Takeover Premium*) – winsorized at 0.5%-99.5% – in all model specifications, denominated in %. The regressions serve to answer Hypothesis 1-4. The table contains the values of the coefficients of our variables of interest. The second column indicates the expected sign of the relevant coefficients according to Hypothesis 1-4. Model VI is identical to Model VI in Table 4 in Section 5.2, for sake of comparison. The consecutive models gradually include fixed effects. Model X removes three moderately collinear variables to verify their impact. For all variable definitions, see Appendix B. For the complete results of the models, see Table D1 in Appendix D.1. ***, ** and * denotes statistical significance of the relevant coefficient at the 1%, 5% and 10% level.

Bootstrapped regressions Hypothesis & Variable	**Expected sign**	**VI**	**VII**	**VIII**	**IX**	**X**
H1: Target Initiated	(−)	-18.67***	-19.07***	-16.74***	-17.03***	-15.99**
H2: Industry Count	(+)	0.726	2.248*	1.224	2.792**	2.468**
H3: Target Initiated * Industry Count	(+)	2.783**	2.907**	2.429*	2.525**	2.316*
H4: Staged Sale	(−)	-6.720***	-7.036***	-6.479***	-6.880***	-7.120***
Fixed industry effects		No	Yes	No	Yes	Yes
Fixed year effects		No	No	Yes	Yes	Yes
Adjusted R^2		15.3%	15.7%	18.5%	18.9%	18.3%
Model p-value		0.000	0.000	0.000	0.000	0.000
Number of observations		1,776	1,776	1,776	1,776	1,776

In Model VIII, we include fixed year effects into our model. We see that this helps explain some of the variance in the bid premium as the adjusted R^2 of our regression model increases by 3.2% (from 15.3% to 18.5%). Including the fixed year effects does not alter the direction or significance of the regression coefficients of our variables of interest as compared to Model VI. We choose to include the fixed year effects in our model as (unreported) analysis shows that the mean takeover premium differs significantly over time in our sample. Subsequently, in Model IX, we include both fixed industry and year effects into the regression model. We see now that all variables of interests have coefficients which adhere to the expectations of Hypotheses 1-4. Hence, the results of our regression analyses provide evidence in support of our first four hypotheses. The combined effects of eagerness to sell and bidder availability (reflected in *Target Initiated* and *Industry Count* and the interaction term) should be interpreted as follows. Eagerness to sell has a negative impact on takeover premiums – reflected in the negative (-17.03) and significant (at the 1% level) coefficient for *Target Initiated*. We attribute this to the adverse selection problem inherent in offering yourself up for sale by targets. Moreover, the number of available bidders in the market for the target has a positive effect on takeover premiums. We attribute this to bidders in the process observing the potential (latent) competition for the target and accounting for this competition either already being in the process or entering into the process in case the bidder does not make a sufficiently serious bid (and therefore make a higher bid). Simultaneously, we observe that in processes initiated by the target, there is an *additional* positive effect of bidder

availability on takeover premiums. As discussed in Section 2.2.4, we attribute this to the target's eagerness to sell either/both making the market and any latent competitors aware of the opportunity, as well as the target showing its tenacity to complete a deal, thereby not hesitating to contact more bidders if current bidders are not sufficiently serious. The current bidder(s) feel the pressure to make a serious bid more heavily in case of high levels of bidder availability. In Table 5, we see this confirmed in the sense that the slope coefficient for *Industry Count* in target-initiated deals (i.e. *Target Initiated* takes the value of one) approximately doubles ($2.792 + 2.525 \approx 5.317$, expressed in % premium per unit of *Industry Count*). This entails that for deals in which the target has shown its eagerness through deal initiation, bidders account for the bidder availability twice as heavily as in non-target-initiated deals. In total, for relatively low levels of bidder availability (i.e. *Industry Count*), the premium discount due to the adverse selection problem dominates the bid in target-initiated deals (coefficient of *Target Initiated* of -17.03). For relatively high levels of bidder availability, the target's eagerness to sell and perceived tenacity to complete a sale by bidders in the process dominates the bids in target-initiated deals.

For sake of completeness, we have re-estimated Model IX excluding three control variables which showed relatively high degrees of multicollinearity (see Model X): *Firm size, Regulated* and *NBER Recession*. Intuitively, the latter two have a high degree of multicollinearity with the included fixed industry and year effects, respectively. The inherent multicollinearity of our *Firm size* variable has been discussed in Section 5.2.1. The exclusion of these three variables change our coefficients marginally, but no significant changes in coefficients occurs (Model X). Hence, for the remainder of our analyses we have opted to use Model IX (with both fixed industry and year effects) as the best and therefore decisive model on which we base our conclusions and further re-estimations.

Having assessed the validity of our first four hypotheses, we turn to our fifth and final hypothesis. This hypothesis posits that the interaction effect between *Target Initiated* and *Industry Count* ought to be more pronounced in our subsample of two-staged deals compared to our subsample of one-staged deals because of the 'revealed' eagerness to sell of the target as it is – even after a failed negotiation – pursuing a sale of itself. To test this, we re-estimated Model IX on the one-staged and two-staged subsample separately. A summary of our results is presented in Table 6 (for full results, we refer to Table D2 in Appendix D.2).

In Table 6, the first two columns provide the results of our regression estimations on the full sample. The results for Model IX are identical to Table 5. Model XI is identical to Model IX with the exclusion of the *Staged Sale* variable as this is our grouping variable for the one-staged and two-staged subsamples. This allows us the comparison of the results for our subsamples with our full sample. We find that the results within our full sample – *Target Initiated*, *Industry Count* and *Target Initiated * Industry Count* all statistically significant with the expected sign – are driven by our subsamples. We see that for one-staged deals *Industry Count* is significant at the 5% level (Model XII), whilst for two-staged deals the coefficient is insignificant (Model XIII). Inversely, we see that the

interaction term is significant at the 5% level within our two-staged deals subsample, whilst it is insignificant for one-staged deals. Also, it must be noted that the size of the coefficients is substantially different for the two different subsamples. However, straightforward interpretation of the differing coefficients would lead to strong inferences which we cannot reliably justify on the basis of the conducted analyses and available data. Hence, we restrict our interpretations here to the changing significance. From this, we can infer that there is evidence in favor of Hypothesis 5. Namely, the interaction effect is only present within our two-staged subsample. Hence, our expectation that the interaction term should be more pronounced within this subsample seems correct. In other words, the findings within our full sample are driven in part by the difference between one-staged and two-staged deals. For one-staged deals, the expectation of Hypothesis 2 – higher bidder availability leads to higher premiums – seems valid as the coefficient is both positive and significant. For two-staged deals, the expectation of Hypothesis 3 – and by extension Hypothesis 5 – seems valid. Namely, only in cases in which it is evident that the target is eager to sell – reflected in the combination of both target-initiation *and* continued pursuit of a sale after a failed first-stage negotiation – do bidders truly account for bidder availability in their bids, resulting in higher premiums. This finding is interesting as it confirms that our data-gathering effort on the 'stagedness' of corporate takeovers has been fruitful: there are indeed differences to be found within one-staged and two-staged corporate takeovers. Future research exploring this subcategorization of takeovers needs to be carried out to expose other potential consequences. One of the potential avenues to analyze we have already highlighted: the informational signaling effect that a failed first-stage negotiation has on the ensuing second stage in the takeover process.

Table 6 – Hypothesis 5 Tests Summary

Hypothesis 5 regards the comparison of the interaction effect between a target's eagerness to sell (*Target Initiated*) and bidder availability (*Industry Count*) in the one-staged and two-staged sales process subsets of our sample. The coefficients of our variables of interest resulted from our bootstrapped regression estimations (1,000 replications) are represented in this table with ***, ** and * denoting statistical significance of the respective coefficient at the 1%, 5% and 10% level. Model XI is similar to Model IX with exclusion of the *Staged Sale* variable, as this is the variable defining our one-staged and two-staged subsamples. All regressions contain our control variables and both fixed industry and year effects. The full regression results can be found in Table D2 in Appendix D.2.

Bootstrapped regressions	Full Sample (N = 1,776)		One-staged (N = 1,369)	Two-staged (N = 407)
Variable	IX	XI	XII	XIII
Target Initiated	-17.03***	-16.45***	-14.03**	-36.96***
Industry Count	2.792**	2.738**	3.207**	1.553
Target Initiated * Industry Count	2.525**	2.507**	1.903	7.171**
Staged Sale	-6.880***			
Fixed industry effects	Yes	Yes	Yes	Yes
Fixed year effects	Yes	Yes	Yes	Yes
Adjusted R²	18.9%	18.5%	21.1%	10.4%
Model p-value	0.000	0.000	0.000	0.000

5.3 Robustness Checks on Announcement Date of Takeover Premiums

Having covered the results on our hypotheses, we now briefly report on the robustness tests carried out to verify whether utilizing different announcement dates – as discussed in Sections 3.3.1 and 4.3– could impact our findings. Table 7 reports a summary of our regression estimations with all three premium measures. It must be noted that for the *SEC Premium (CRSP)* in the last column, there is a slight loss of observations. Despite some slight magnitude and inconsequential changes in statistical significance, we see that the coefficients remain consistent with the expectations of our first four hypotheses (see second column of Table 7 for expected signs). Hence, the findings for our first four hypotheses are robust to either using the announcement date reported in Thomson ONE (with substantial deviations from the real announcement date) and the one reported in the SEC merger filings.

Table 7 – Robustness - Hypotheses 1 -4 Tests Summary

This table summarizes the results of bootstrapped regression models with 1,000 replications for our robustness checks on different premium measures – all winsorized at 0.5%-99.5% – in all model specifications, denominated in %.Model IX is the full regression model with *Takeover Premium* as its dependent variable. Model IX.B is the full regression model with *Thomson ONE Premium* as its dependent variable. Model IX.C is the full regression model with *SEC Premium (CRSP)* as its dependent variable. The regressions serve to answer Hypothesis 1-4. All regressions contain our control variables and both fixed industry and year effects. The table contains the values of the coefficients of our variables of interest. The second column indicates the expected sign of the relevant coefficients according to Hypothesis 1-4. For all variable definitions, see Appendix B. For the complete results of the models, see Table E1.A (for *Thomson ONE Premium*) and E1.B (for *SEC Premium (CRSP)*) in Appendix E.1. ***, ** and * denote statistical significance of the relevant coefficients at the 1%, 5% and 10% level.

Bootstrapped regressions		Takeover Premium	Thomson ONE	SEC (CRSP)
Hypothesis & Variable	Expected sign	IX	IX.B	IX.C
H1: Target Initiated	(−)	-17.03***	-21.13***	-20.50***
H2: Industry Count	(+)	2.792**	2.858**	2.231*
H3: Target Initiated * Industry Count	(+)	2.525**	3.174**	3.228**
H4: Staged Sale	(−)	-6.880***	-5.146**	-6.164***
Fixed industry effects		Yes	Yes	Yes
Fixed year effects		Yes	Yes	Yes
Adjusted R²		18.9%	18.7%	20.4%
Model p-value		0.000	0.000	0.000
Number of observations		1,776	1,776	1,696

For the robustness check on Hypothesis 5, we have re-estimated our Model XI, XII and XIII with the other two premium measures. In Table 8 we report a summary of our results (see Appendix E.2 for full results). The models denoted with 'B' represent the *Thomson ONE Premium* and models denoted with 'C' represent the *SEC Premium (CRSP)*. We observe only two peculiarities: for the *SEC Premium (CRSP)* the interaction term in the subsample of one-staged deals becomes significant (at the 5% level), and even though the *Industry Count* coefficient remains insignificant, it does change in direction in the two-staged deals sample. This leads us to the conclusion that our results on Hypothesis 5 are not entirely robust to the premium measure we adopted. Hence, more replicatory studies need to be done on this topic in order to determine whether our initial finding holds or whether there are other dynamics at play. These studies could adopt a stock price with a longer period than four weeks prior to the

announcement date. Another possible way to robustly test for the validity and persistence of our findings in this thesis would be to adopt a matching methodology for takeovers similar to Fidrmuc, Roosenboom, Paap, & Teunissen (2012). Performing such a matching methodology in the light of our topic would entail identifying takeovers with targets as identical as possible on various characteristics (e.g. industry, firm size, year of sale, profitability) with the difference between the two targets being whether the sale was a staged sale (i.e. one for each category). Performing this on a large scale would provide important confirmation or rejection of our findings. However, this is a cumbersome procedure, which will likely entail a substantial loss in observations, reducing the reliability of any findings.

Table 8 – Robustness –Hypothesis 5 Tests Summary

This table summarizes the results of bootstrapped regression models with 1,000 replications for our robustness checks on different premium measures – all winsorized at 0.5%-99.5% – in all model specifications, denominated in %. Model XI, XII and XIII are the regression models with *Takeover Premium* as its dependent variable. Model XI.B, XII.B and XIII. Bare the regression model with *Thomson ONE Premium* as its dependent variable. Model XI.C, XII.C and XIII.C are the regression model with *SEC Premium (CRSP)* as its dependent variable. Model XI, XI.B and XI.C are similar to Model IX, IX.B and IX.C respectively, with exclusion of the *Staged Sale* variable, as this is the variable defining our one-staged and two-staged subsamples. The regressions serve to answer Hypothesis 5 regarding the comparison of the interaction effect between a target's eagerness to sell (*Target Initiated*) and bidder availability (*Industry Count*) in the one-staged and two-staged sales process subsets of our sample. The coefficients of our variables of interest are represented in this table. All regressions contain our control variables and both fixed industry and year effects. The full regression results can be found in Table E2.A (for *Thomson ONE Premium*) and E2.B(for *SEC Premium (CRSP)*)in Appendix E.2. ***, ** and * denote statistical significance of the respective coefficients at the 1%, 5% and 10% level.

Bootstrapped regressions	Full Sample			One-staged			Two-staged		
Variable	XI	XI.B	XI.C	XII	XII.B	XII.C	XIII	XIII.B	XIII.C
Target Initiated	-16.45***	-20.69***	-19.92***	-14.03**	-17.40***	-21.49***	-36.96***	-44.35***	-33.22**
Industry Count	2.738**	2.818**	2.153*	3.207**	3.232**	2.461*	1.553	1.560	-0.384
Target Initiated * Industry Count	2.507**	3.161**	3.196**	1.903	2.293	3.407**	7.171**	8.846***	6.306**
Fixed industry effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	18.9%	18.4%	20.1%	21.1%	21.5%	22.7%	10.4%	10.3%	9.46%
Model p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Number of observations	1,776	1,776	1,696	1,369	1,369	1,311	407	407	385

6. Conclusion & Discussion

In recent years, many insights have been garnered on the private takeover phase of corporate takeovers and the competition therein. Aktas et al. (2010) found notable insights on the role of latent competition on the takeover premiums in one-on-one negotiations. The pressure of looming competition incurs the bidder in a one-on-one negotiation to make a sufficiently serious bid in order to close the deal, thereby increasing the takeover premium. The potential pressure of looming and latent competition on takeover outcomes has been the starting point of this thesis. The key contribution of this thesis is the composition of a comprehensive database of U.S. corporate takeovers in 2002-2014, wherein – through meticulous analysis of the SEC merger filings – we have identified whether takeovers are completed after a one-staged negotiation or auction, or after a two-staged negotiation or auction following a failed first-stage one-on-one negotiation. Whilst Aktas et al. (2010) merely mention the theoretical two-staged takeover model introduced by Betton, Eckbo, & Thorburn (2009), we observe and obtain data on the actual 'stagedness' of corporate takeovers in our sample.

This thesis emphasizes the role of potential competition through a different measure: the number of available bidders in the market for the target and its interrelationship with a target's eagerness to sell on takeover premiums. We find that eagerness to sell – as confirmed in previous literature – by itself has a negative effect on takeover premiums due to an inherent adverse selection problem. Simultaneously, regardless of whether a takeover process is an auction or a one-on-one negotiation, the bidders already in the process consider the potential competition for the target in their bidding behavior. Our results confirm our expectation that the potential competition for the target – measured through bidder availability – positively impacts the takeover premium offered for the target's shares. Furthermore, we posited and found that this effect on takeover premiums is more pronounced for processes in which targets have demonstrated an eagerness to sell – through target-initiation. This *additional* positive effect of bidder availability appears to be driven by two-staged takeovers. We see this as indication that bidders in processes in which a target has clearly demonstrated its determination of completing a sale of itself are influenced in their bidding behavior by the pressures of potential (latent) competition. Robustness checks on our premium measure largely confirm our initial findings, but the takeover premium is a sensitive measure as determining the period prior to the announcement of deal for calculating the premium is somewhat arbitrary. Future research should use different time periods to determine whether this affects our findings. Concluding, we have found interesting new insights into the role that a target's eagerness to sell and bidder availability – and combination thereof – have on the bidding behavior in corporate takeovers.

There are some relevant drawbacks of our research we need to identify. Firstly, there is a potential endogeneity problem inherent to our eagerness to sell measure. Namely, targets ultimately decide to initiate a process. If targets are aware of the signal process initiation sends to the market regarding the value of the target,

our findings using target-initiation as a proxy for target's eagerness to sell could be subject to self-selection bias. Future research may adopt a Heckman two-step regression procedure to verify whether the findings still hold. If so, then there is a real galvanizing effect a target's eagerness to sell has on the bidders in the sales process for the target. It is particularly interesting to see whether the interaction between eagerness to sell and bidder availability would still be significant. This was outside the scope of this thesis as we sought to assess the effect of eagerness to sell on bidding behavior. Whether this effect was a deliberate choice of the target is less relevant in this regard.

Also, in this thesis, we adopted two measures for a target's eagerness to sell: target-initiation of the sales process and the 'stagedness' of the process. Perhaps there are better measures for a target's eagerness to sell. If such a measure can be found, then replicating the analyses of this thesis with this measure for eagerness to sell would greatly add to our understanding of the effect of the interplay between eagerness to sell and bidder availability on bidding behavior. Lastly, our sample – by restrictions on the available data – consists of those processes which ended up in a completed takeover. In other words, we know nothing about those processes which terminated and the 'target' continued its business. This is an interesting aspect in the light of our thesis. Knowing more about those processes wherein the target opted to terminate the selling process and continue its business could reveal many interesting insights on the role of eagerness to sell and bidder availability. Perhaps qualitative research could be carried out to find out what proportion of processes fail Fama-French 49 and how often targets initiate in those cases. If it turns out that a disproportionate number of these uncompleted processes is initiated by the target, this greatly deteriorates the reliability of our measure used for targets' eagerness to sell.

In short, this thesis has tapped into a new avenue of research on the competition in corporate takeovers. We found that the effect of a target's eagerness to sell is a double-edged sword on the takeover premium offered for the target. Future research will need to verify our *prima facie* findings and build upon our research and methodology to further hone our understanding of the nature of competition in corporate takeovers.

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8. Appendices

Appendix A Sample Selection& Hand-collection of Data

Appendix A.1 Search Criteria in Thomson ONE M&A Database

In Thomson ONE Merger & Acquisitions, the next selection criteria are selected in order to obtain the initial sample of this thesis:

Table A1: Dropdown of search criteria used in Thomson One M&A Database

Thomson ONE Variable	Operator	Selection Criteria	Observations
Database	Include	All Mergers & Acquisitions	n/a
Deal Status (Code)	Include	Completed	855,008
Date Announced	Between	01/01/2002 to 12/31/2014	431,219
Target Public Status (Code)	Include	Public	53,322
Target Nation (Code)	Include	United States of America	7,802
Acquiror Nation (Code)	Include	United States of America	6,861
Percent of Shares Acquired in Transaction	Between	100 to 100	3,425
Deal Value ($ Mil)	Between	50 to HI	2,232
Deal Type (Code)	Exclude	Minority Stake Purchases	2,216
		Acquisitions of Remaining Interest	
		Privitizations	
		Spinoffs	
		Recapitalizations	
		Self-Tenders	
		Exchange Offers	
		Repurchases	

Appendix A.2 Flowchart Classification Sales Process from SEC merger filings

The flowchart depicted below shows a graphical representation of the steps undertaken in the process of classifying the deals into one of the four sales process categories on the basis of the *Background of the Merger* section of the SEC filings. This illustration serves as a further clarification of the sales process classification procedure as described in Section 3.2.1 of this thesis.
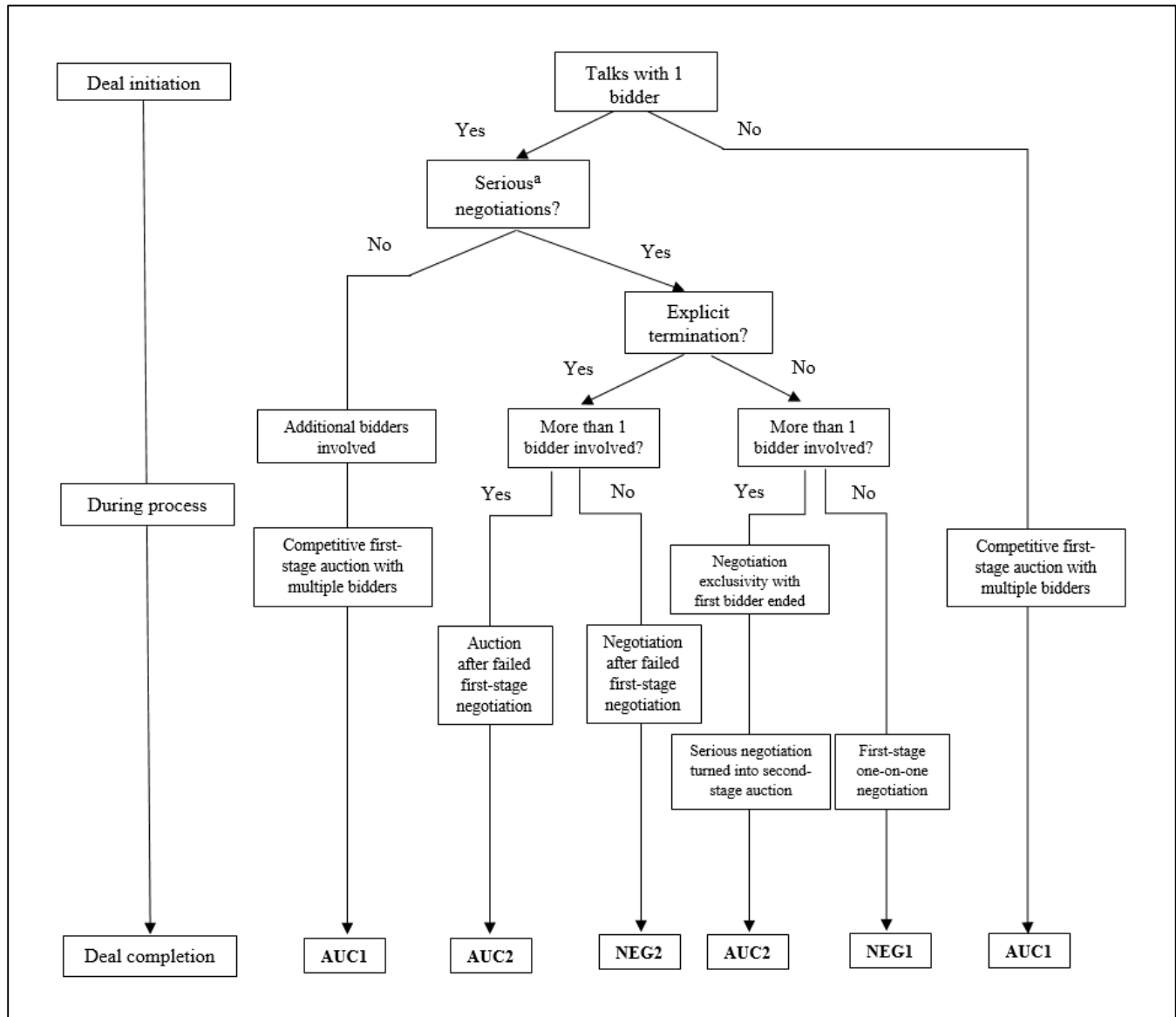
a: The clarification of the 'seriousness' criteria is detailed further inSection 3.2.1 and Appendix A.3.

Appendix A.3 Seriousness criteria - List of indicatory key terms in SEC merger filings

Table A2 Indicative list of terms indicating 'seriousness' of first-stage negotiations

In this table, we cover the key terms and events we have looked for in the *Background of the Merger* sections of the SEC filings to assess the seriousness of a possible first-stage negotiation. The table below provides a non-exhaustive list of events and phrasings we have found to be indicative of a 'serious' first-stage negotiations. It should be noted that in any case a slight degree of judgment on the part of the author was required to assess the 'seriousness' as the description of the merger background at times left room for interpretation. In all cases, the (perception and) possibility of information being exchanged between parties was leading to determine whether the relevant takeover included a 'serious' first-stage negotiation.

Indicative events and phrasings of 'seriousness' of first-stage negotiation
The signing of a confidentiality agreement (optional: additional standstill agreement
The mentioning of 'non-public information' being exchanged
The mentioning of 'due diligence' being conducted
The mentioning of 'negotiations'
The occurrence of 'management meetings' (after signing of confidentiality agreement)
The mentioning of 'extensive discussions', taking into account:
• The frequency of the discussion meetings
• The subject of the discussions:
- Synergies
- Complementarity of businesses
• The signing of a confidentiality agreement to facilitate the 'extensive discussions'
The explicit mentioning of 'termination or a variation thereof
The mentioning of 'exclusivity' of the (first) bidders
The indication of an offer price
The hiring of an investment bank and/or legal advisor
The mentioning of 'preliminary'. If:
+ 'discussions' = not serious
+ 'due diligence' = serious

Appendix A.4 Definitions of variables from SEC Merger Filings in the SEC EDGAR Database

Table A3 Definitions of Hand-collected Variables from SEC Merger Filings

In this table, we cover the definitions of our hand-collected variables from the SEC merger filings. Panel A contains the variables collected for every observation in our sample. Panel B contains the variables solely gathered for takeover completed in the second stage (*Two-staged sales*) only. For elaboration on the *Mechanism* variable, we refer to Section 3.2.1, Appendix A.2 and A.3.

Variable	Definition
Panel A: All deals	
Mechanism	NEG1 if target is sold in a first-stage one-on-one negotiation
	AUC1 if target is sold in a first-stage auction process
	NEG2 if target is sold in a second-stage one-on-one negotiation after a failed serious first-stage negotiation
	AUC2 if target is sold in a second-stage auction after a failed serious first-stage negotiation
Date of Announcement (SEC)	The date of public announcement of the execution of the merger agreement according to the SEC merger filings
Date of Initiation	The date when the first-stage process is initiated
Target Initiated	Equal to one if the (first-stage) sales process is initiated by target management, and zero otherwise
Cash	Equal to one if deal entirely paid in cash, and zero otherwise
Committee	Equal to one if target creates a special committee to facilitate selling process, and zero otherwise
Go-Shop	Equal to one if a go-shop period is granted to the target after a deal is made with the winning bidder, and zero otherwise
Financial Buyer	Equal to one if the winning bidder is financial buyer, and zero otherwise
Relation	Equal to one if the target and winning bidder have a certain relationship, and zero otherwise
Market Check	Equal to one if target explorer the market to verify interest for a sale, but this did not lead to an auction at that time, and zero otherwise.
Informal Auction	Equal to one if the auction (AUC1 or AUC2) has an informal setting, and zero otherwise
Panel B: Second-stage deals only	
Date End of Negotiation	The date on which the first-stage negotiation is terminated or negotiation exclusivity with first bidder has ended
Date Additional Bidders	The date additional bidders are involved in the sales process
Price Mentioned	Equal to one if during the failed first-stage negotiation and offer price or indication of interest thereof was mentioned in the filing, and zero otherwise
Price Inadequacy	Equal to one if the filings mention explicitly the reason for the first-stage failure to be price inadequacy
Initial Bidder in Auction	Equal to one if the first-stage bidder partakes in the second-stage auction, and zero otherwise
Initial Bidder Winner	Equal to one if the first-stage bidder is the winning bidder in the second-stage auction

Appendix B Variable definitions, calculations and sources of underlying data

The table in this Appendix provides the variable definitions, calculations, constructions and the sources of underlying data of all variables used or referred to in this thesis. If variables are used which are obtained through literature, reference is made to the relevant authors. Other variables are constructed by the author of this thesis or are commonly used variables.

Variable	Definition & Calculation	Source(s) underlying data
Panel A: dependent variables		
Takeover Premium	4-Week premium: the share price offered by the acquirer to target shareholders, deflated by the price of the target 4 weeks prior to the announcement date. The announcement date extracted from the SEC filings is used if it differs more than 10 days from the announcement date provided by Thomson ONE. Values are winsorized at 0.5% and 99.5%.	Thomson ONE; SEC filings; CRSP/Compustat Merged
Thomson ONE Premium	4-Week premium: the share price offered by the acquirer to target shareholders, deflated by the price of the target 4 weeks prior to the announcement date, reported in the Thomson ONE database. Values are winsorized at 0.5% and 99.5%.	Thomson ONE;
SEC Premium (CRSP)	4-Week premium: the share price offered by the acquirer to target shareholders, deflated by the price of the target 4 weeks prior to the announcement date, extracted from the SEC filings. The share prices are retrieved from the CRSP/Compustat Merged database. Values are winsorized at 0.5% and 99.5%.	SEC filings; CRSP/Compustat Merged; Thomson ONE
Panel B: variables of interest		
Target Initiated	Equal to one if the (first-stage) sales process is initiated by target management, and zero otherwise.	SEC filings
Industry Count	Calculated as the number of firms in the target's Fama-French 49 industry with a total market value greater than the target in the year prior to the year of the deal. See also Boone & Mulherin [2008].	CRSP/Compustat Merged; Thomson ONE
Staged Sale	Equal to one if target is sold in a two-staged process (AUC2 or NEG2), and zero if sold in a one-staged process (AUC1 or NEG1).	SEC filings
Panel C: deal characteristics		
Deal value	Total value of consideration paid by the acquirer, excluding fees and expenses according to Thomson ONE. Values are in $ billions.	Thomson One
Auction	Equal to one if target is sold in an auction (AUC1 or AUC2), and zero if sold in a negotiation (NEG1 or NEG2).	SEC filings
Go-Shop	Equal to one if a go-shop period is granted to the target after a deal is made with the winning bidder, and zero otherwise.	SEC filings
Financial Buyer	Equal to one if the winning bidder is financial buyer, and zero otherwise.	SEC filings
Relation	Equal to one if the target and winning bidder have a certain relationship, and zero otherwise.	SEC filings
Cash	Equal to one if deal entirely paid in cash, and zero otherwise.	SEC filings
Committee	Equal to one if target creates a special committee to facilitate selling process, and zero otherwise.	SEC filings
Tender	Equal to one if a tender offer is launched for the target according to Thomson ONE, and zero otherwise.	Thomson ONE
Horizontal	Equal to one if target and acquirer share the same 4-digit SIC industry, and zero otherwise.	Thomson ONE
Related deal	Equal to one if both the target and acquirer are in the same Fama-French 49 industry, and zero otherwise.	Thomson ONE
Process Length [in days]	The length of the entire takeover process in days. Calculated as the difference between Date of Initiation (SEC) and Date of Announcement from Thomson ONE. If Date of Announcement as mentioned in the SEC filings differs more than 10 days, the Date of Announcement (SEC) is used for calculation.	SEC filings; Thomson ONE
NBER Recession	Equal to one if deal occurred during a recession period according to the National Bureau of Economic Research (Deccember 2007 throughout June 2009), and zero otherwise. See also Atkas et al. [2010].	Thomson ONE; NBER
Panel D: target characteristics		
Firm size	Equal to the book value of total assets the year prior to the announcement of the deal. Values are in $ billions.	CRSP/Compustat Merged
Market capitalization	Calculated as the price per share multiplied by the number of common shares outstanding at the end of the calendar year. Values are in $ billions.	CRSP/Compustat Merged
Intangibles	Calculated as the value of the intangible assets over the book value of total assets the year prior to the announcement of the deal. See also Fidrmuc et al. [2012].	CRSP/Compustat Merged
Leverage	Calculated as the long-term debt plus current liabilities divided by the book value of total assets. Values are winsorized at 0.5% and 99.5%. See also Aktas et al. [2010].	CRSP/Compustat Merged
R&D	Calculated as the R&D expenses over the book value of total assets. Value are winsorized at 0.5% and 99.5%.	CRSP/Compustat Merged
Regulated	Equal to one if target falls into one of the following Fama-French 49 industries: Defense, Communication, Petroleum and Natural Gas, Utilities, Banking, Insurance, or Trading, and zero otherwise.	Thomson ONE; Website K.R. French
Return on Assets	Calculated as the operating income before depreciation over the book value of total assets. Value are winsorized at 0.5% and 99.5%. See also Aktas et al. [2010].	CRSP/Compustat Merged
Sales-based growth rate	Calculated as net sales at the end of year [t - 1] minus net sales at the end of year [t - 2], divided by the net sales at the end of year [t - 2]. Values are winsorized at 0.5% and 99.5%. see also Aktas et al. [2010].	CRSP/Compustat Merged
Tobin's Q	Equal to the market value of assets divided by the book value of assets. Calculated by subtracting the book value of ordinary equity from the book value of assets, and adding the market value of equity (see 'Market capitalization'), dividing by the book value of assets. Values are winsorized at 0.5% and 99.5%. See also Aktas et al. [2010].	CRSP/Compustat Merged
Market-to-Book	Calculated as the ratio of the market value of equity (see 'Market capitalization') to the book value of the ordinary equity. Values are winsorized at 0.5% and 99.5%. See also Aktas et al. [2010].	CRSP/Compustat Merged
Institutional ownership	Calculated as the percentage of equity owned by institutional investors. Based on the Institutional Holdings (13f) filings. See also Gaspar, Massa and Matos [2005]; Aktas et al. [2010].	Thomson Reuters
Institutional ownership concentration	Calculated the Herfindahl index of institutional shareholding in the target. Based on the Institutional Holdings (13f) filings. See also Gaspar et al. [2005]; Aktas et al. [2010].	Thomson Reuters

Appendix C   Analysis of OLS Regression Assumptions of Table X

In this Appendix, we show the results of a series of tests we have conducted to verify the adherence of our regression models to the OLS assumptions. We have tested for the following OLS assumptions:

- Normality of residuals
- Homoskedasticity of residuals (i.e. constant variance of residuals)
- No high degree of multicollinearity amongst our independent variables

In Appendix C.1 – C.3, we present the results of these diagnostics. The tests reveal that first two assumptions mentioned above are violated for our regression models (normality and homoskedasticity of residuals). As these violations can lead to biased standard errors, this can lead our hypothesis testing to become unreliable. Therefore, we adopt bootstrapping as a resampling method to correct for the violations in the assumptions. This method is covered more extensively in our Methodology section (Section 4.1).

Table C1 – OLS Regression Estimation Results

This table presents OLS estimation results. The OLS regression models are based on a hand-collected sample of 1,791 completed takeovers in the United States in the 2002-2014 period. The dependent variable is the SEC announcement date-adjusted 4-week takeover premium (*Takeover Premium*) – winsorized at 0.5%-99.5% – in all model specifications, denominated in %. *Target Initiated* is a dummy equal to one if the target initiated the sales process, indicating its eagerness to sell. *Industry Count* is the logarithm of the number of companies in the target's Fama-French 49 industry with a market value larger than the target in the year prior to the announcement of the takeover, proxying the bidder availability for the target. *Target Initiated * Industry Count* is an interaction term between these variables. *Staged Sale* is a dummy variable equal to one if the takeover is completed in a two-staged sales process. The other variables in the models represent control variables. All variable definitions and constructions are in Appendix B. The first row for each variable represents the estimated coefficient. Standard errors are in brackets below the presented coefficient values. ***, ** and * denotes statistical significance of the relevant coefficient at the 1%, 5% and 10% level.

Variable	I*	II*	III*	IV*	V*	VI*
Constant	75.896	60.575	63.171	68.208	67.662	61.963
	[7.340]***	[10.57]***	[10.57]***	[10.87]***	[7.550]***	[11.01]***
Target Initiated	-5.106		-5.124	-18.13		-18.67
	[1.610]***		[1.616]***	[6.784]***		[6.768]***
Industry Count		1.705	1.717	0.706		0.726
		[1.024]*	[1.021]*	[1.142]		[1.139]
Target Initiated * Industry Count				2.771		2.783
				[1.403]**		[1.400]**
Staged Sale					-5.978	-6.720
					[2.057]***	[2.060]***
Auction	-0.922	-2.001	-1.079	-1.050	-1.182	-0.238
	[1.636]	[1.622]	[1.644]	[1.643]	[1.627]	[1.657]
Firm size	-1.822	-1.001	-1.125	-1.238	-1.637	-1.156
	[0.671]***	[0.792]	[0.791]	[0.792]	[0.671]**	[0.790]
Cash	5.442	6.140	5.667	5.699	5.988	5.733
	[1.921]***	[1.930]***	[1.931]***	[1.929]***	[1.916]***	[1.924]***
Financial Buyer	-8.667	-9.179	-8.616	-8.253	-9.221	-8.158
	[2.296]***	[2.302]***	[2.303]***	[2.308]***	[2.290]***	[2.302]***
Regulated	-9.291	-12.07	-11.66	-11.57	-9.730	-11.62
	[2.089]***	[2.512]***	[2.509]***	[2.507]***	[2.086]***	[2.501]***
Return on Assets	-34.702	-32.108	-32.047	-31.962	-34.945	-32.102
	[6.657]***	[6.894]***	[6.876]***	[6.870]***	[6.660]***	[6.852]***
R&D	4.698	4.832	4.788	4.821	4.725	4.802
	[1.169]***	[1.174]***	[1.171]***	[1.170]***	[1.169]***	[1.167]***
Tender	6.879	6.953	6.841	6.754	7.149	6.916
	[2.359]***	[2.367]***	[2.361]***	[2.360]***	[2.361]***	[2.354]***
Tobin's Q	-1.912	-1.525	-1.676	-1.711	-1.763	-1.712
	[0.822]**	[0.841]*	[0.840]**	[0.840]**	[0.821]**	[0.837]**
Process Length	-4.170	-4.119	-4.105	-4.085	-2.809	-2.538
	[0.964]***	[0.969]***	[0.966]***	[0.966]***	[1.074]***	[1.073]**
Relation	0.788	1.182	0.825	0.779	0.956	0.521
	[1.727]	[1.733]	[1.733]	[1.731]	[1.725]	[1.728]
Leverage	5.587	5.963	6.253	6.407	4.954	6.077
	[3.627]	[3.662]	[3.654]*	[3.652]*	[3.629]	[3.643]*
Horizontal	-1.589	-1.674	-1.705	-1.678	-1.427	-1.548
	[1.658]	[1.666]	[1.662]	[1.660]	[1.659]	[1.656]
Institutional ownership	-8.468	-7.896	-8.034	-7.780	-8.469	-7.990
	[2.860]***	[2.884]***	[2.877]***	[2.878]***	[2.862]***	[2.871]***
Institutional shareholding concentration	15.276	13.850	14.924	14.244	13.247	13.273
	[5.975]**	[5.993]**	[5.987]**	[5.992]**	[5.977]**	[5.983]**
NBER Recession	14.12	14.02	14.09	14.22	13.91	14.06
	[2.846]***	[2.857]***	[2.849]***	[2.848]***	[2.848]***	[2.840]***
Adjusted R²	14.7%	14.2%	14.7%	14.8%	14.6%	15.3%
F-statistic	19.013	18.349	17.977	17.264	18.901	17.023
Model p-value	0.000	0.000	0.000	0.000	0.000	0.000
Number of observations	1,782	1,776	1,776	1,776	1,782	1,776

Appendix C.2 Normality of Residuals

In this Appendix, we investigate the OLS assumption of normality of residuals for our OLS regression models. For each of the OLS regressions in Table C1 in Appendix C.1, we plot the observed histogram and for sake of clarity include a normal distribution density curve. We can see that the residuals of our OLS regressions do not seem to adhere to the normality assumption. This is confirmed in our Shapiro-Wilk tests for normality of data. The null hypothesis of normality is rejected for all model specifications. Hence, we need to remedy this observed violation of our OLS estimation.
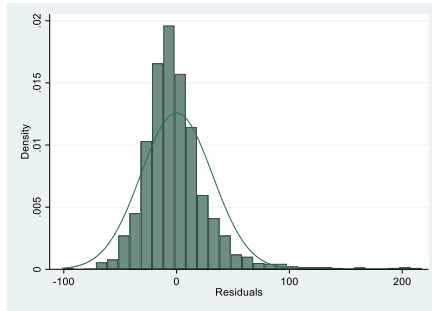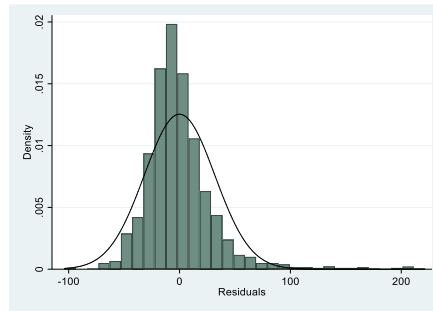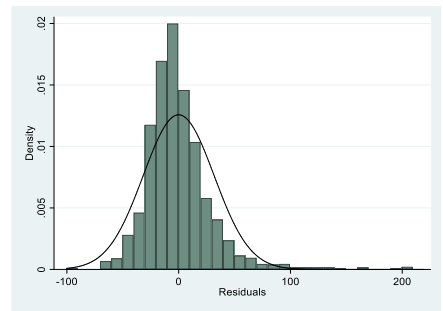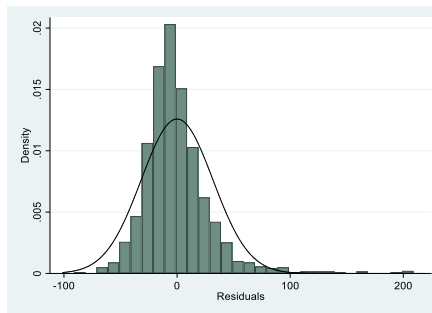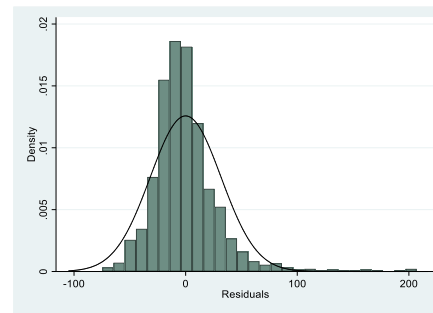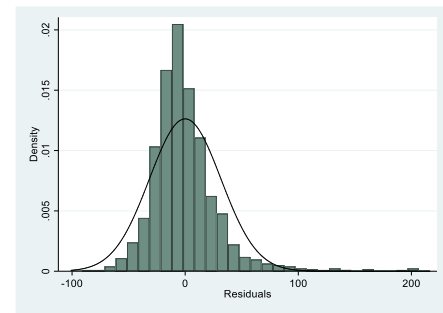
Model I*		Model II*		Model III*	
Model IV*		Model V*		Model VI*	

	Shapiro-Wilk W test for normality of data				
Model	N	W	V	z-statistic	Probability>z
I*	1,782	0.84968	160.503	12.863	0.000
II*	1,776	0.85180	157.753	12.818	0.000
III*	1,776	0.84950	160.204	12.857	0.000
IV*	1,776	0.84921	160.517	12.862	0.000
V*	1,782	0.85408	155.806	12.788	0.000
VI*	1,776	0.85151	158.063	12.823	0.000

Appendix C.3 Homoskedasticity of residuals

In this Appendix, we investigate the OLS assumption of homoskedasticity of residuals for our OLS regression models. For each of the OLS regressions in Table C1 in Appendix C.1, we plot the residuals against the fitted value of each model specification. We can see that the residuals of our OLS regressions do not seem to adhere to the homoskedasticity assumption. This is confirmed in our statistical tests for heteroskedasticity of residuals: both the White and Breusch-Pagan test provide evidence for rejection of the null hypothesis of homoskedasticity of residuals. Hence, we need to remedy this observed violation of our OLS estimation.
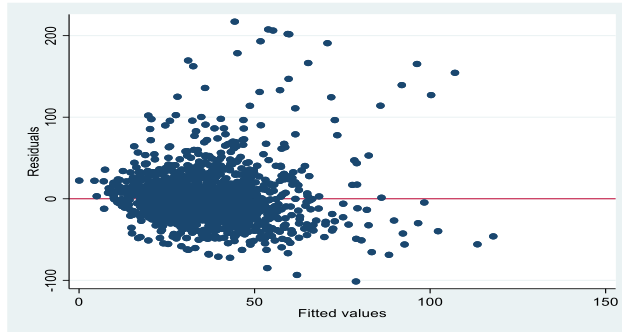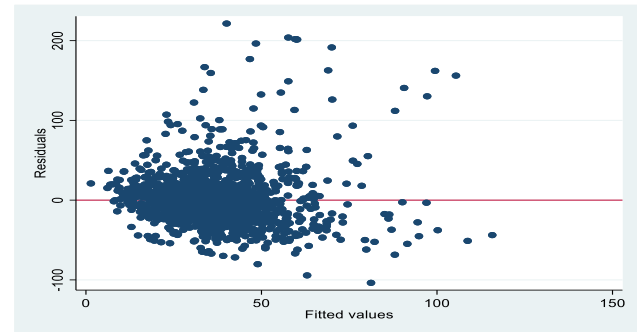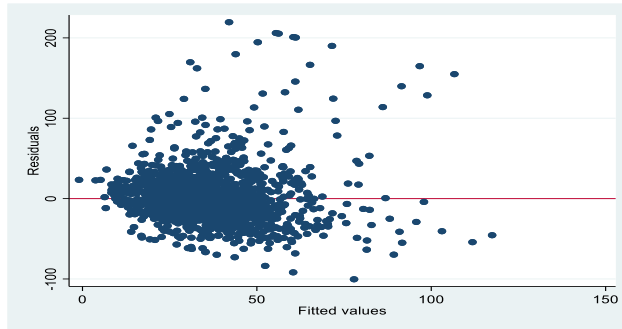
Model I*
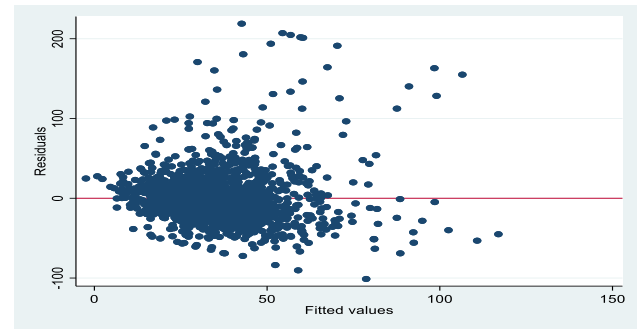
Model II*

Model III*

Model IV*
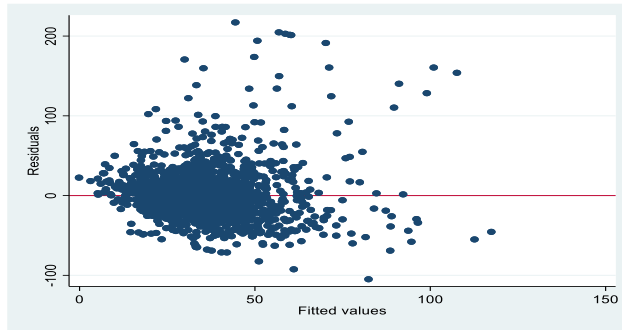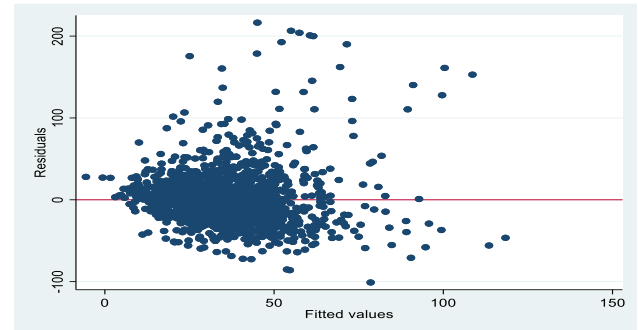
Model V*

Model VI*

	Tests for Heteroskedasticity of Residuals				
	White's test for Heteroskedasticity			Breusch-Pagan test for Heteroskedasticity	
Model	$\chi^2(df)$	df	p-value	$\chi^2(1)$	p-value
I*	425.07	161	0.000	606.43	0.000
II*	422.72	162	0.000	615.75	0.000
III*	443.79	180	0.000	591.64	0.000
IV*	453.26	197	0.000	589.01	0.000
V*	423.59	161	0.000	639.92	0.000
VI*	476.96	217	0.000	600.22	0.000

Appendix C.4 *Multicollinearity in independent variables*

In this Appendix, we investigate the OLS assumption entailing the absence of high degree of multicollinearity between the independent variables in our OLS regression models. For each of the OLS regressions in Table C1 in Appendix C.1, we calculate the variance inflation factors (VIFs) of each independent variable. Following conventional procedures, we closely inspect the independent variables with a VIF > 10 (Hair, Black, Babin, & Anderson, 2014). We see that our interaction term is highly multicollinear with *Target Initiated*, which is inherent to interaction terms and their underlying variables. Furthermore, we see that *Industry Count, Firm size* and *Regulated* are variables with moderate levels of multicollinearity. For sake of clarity, we will estimate Model VI without *Regulated* and *Firm size* and verify whether our results change. In general, multicollinearity does not appear to form a major issue within our OLS model specifications.

Variable	Variance Inflation Factors (VIFs)					
	I*	II*	III*	IV*	V*	VI*
Target Initiated	1.09		1.09	19.32		19.33
Industry Count		2.36	2.36	2.95		2.95
Target Initiated *Industry Count				20.54		19.33
Staged Sale					1.31	1.32
Firm size	2.15	2.94	2.95	2.97	2.15	2.97
Regulated	1.75	2.50	2.51	2.51	1.74	2.51
Cash	1.55	1.55	1.56	1.56	1.54	1.56
Return on Assets	1.46	1.55	1.55	1.55	1.46	1.55
Institutional ownership	1.50	1.51	1.51	1.51	1.50	1.51
R&D	1.42	1.42	1.42	1.42	1.41	1.42
Process Length	1.12	1.12	1.12	1.12	1.39	1.39
Tobin's Q	1.32	1.36	1.37	1.37	1.31	1.37
Financial Buyer	1.35	1.34	1.34	1.35	1.34	1.35
Institutional shareholding concentration	1.29	1.28	1.29	1.29	1.29	1.29
Auction	1.17	1.14	1.17	1.17	1.15	1.20
Tender	1.19	1.19	1.19	1.19	1.19	1.19
Leverage	1.15	1.17	1.17	1.17	1.15	1.17
Relation	1.11	1.11	1.11	1.11	1.11	1.12
Horizontal	1.09	1.09	1.09	1.09	1.09	1.09
NBER Recession	1.02	1.02	1.02	1.02	1.02	1.02
Mean VIF	1.34	1.51	1.49	3.49	1.36	3.39

Appendix D Tables with Full Regression Estimation Results

In the following pages of this Appendix, we present the tables with our full regression estimation results.

Table D1 – Bootstrapped Regression Models with Fixed Effects

This table presents bootstrapped regression estimation results including fixed industry and year effects. The bootstrapped regression models are based on a hand-collected sample of 1,791 completed takeovers in the United States in the 2002-2014 period with 1,000 replications in the resampling with replacement procedure. The dependent variable is the SEC announcement date-adjusted 4-week takeover premium (*Takeover Premium*) – winsorized at 0.5%-99.5% – in all model specifications, denominated in %. Model VI is identical to Model VI in Table 4 in Section 5.2, for sake of comparison. The consecutive models gradually include fixed effects. Model X removes three moderately collinear variables to verify their impact. *Target Initiated* is a dummy equal to one if the target initiated the sales process, indicating its eagerness to sell. *Industry Count* is the logarithm of the number of companies in the target's Fama-French 49 industry with a market value larger than the target in the year prior to the announcement of the takeover, proxying the bidder availability for the target. *Target Initiated * Industry Count* is an interaction term between these variables. *Staged Sale* is a dummy variable equal to one if the takeover is completed in a two-staged sales process. The other variables in the models represent control variables. All variable definitions and constructions are in Appendix B. The first row for each variable represents the estimated coefficient. Standard errors are in brackets below the presented coefficients. ***, ** and * denotes statistical significance of the relevant coefficient at the 1%, 5% and 10% level.

Bootstrap replications: 1,000					
Variable	VI	VII	VIII	IX	X
Constant	61.96	50.84	64.94	54.25	52.14
	[11.17]***	[11.83]***	[11.59]***	[12.23]***	[8.153]***
Target Initiated	-18.67	-19.07	-16.74	-17.03	-15.99
	[6.294]***	[6.196]***	[6.090]***	[6.019]***	[6.378]**
Industry Count	0.726	2.248	1.224	2.792	2.468
	[1.107]	[1.284]*	[1.038]	[1.297]**	[1.097]**
Target Initiated *Industry Count	2.783	2.907	2.429	2.525	2.316
	[1.341]**	[1.321]**	[1.287]*	[1.284]**	[1.348]*
Staged Sale	-6.720	-7.036	-6.479	-6.880	-7.120
	[1.815]***	[1.889]***	[1.887]***	[1.902]***	[1.961]***
Auction	-0.238	-0.524	-1.301	-1.539	-1.520
	[1.690]	[1.661]	[1.593]	[1.706]	[1.672]
Firm size	-1.156	-0.260	-1.197	-0.327	
	[0.761]	[0.831]	[0.774]	[0.868]	
Cash	5.733	6.207	5.456	6.066	6.118
	[1.967]***	[1.920]***	[2.037]***	[2.041]***	[1.817]***
Financial Buyer	-8.158	-7.587	-8.012	-7.522	-7.797
	[2.107]***	[2.059]***	[1.984]***	[2.050]***	[2.081]***
Regulated	-11.62	-19.60	-11.06	-18.15	
	[2.199]***	[9.478]**	[2.100]***	[9.870]*	
Return on Assets	-32.10	-33.72	-32.08	-33.78	-34.44
	[9.773]***	[10.20]***	[9.725]***	[10.51]***	[10.75]***
R&D	4.802	3.962	4.695	3.889	3.924
	[2.288]**	[2.420]	[2.326]**	[2.508]	[2.325]*
Tender	6.916	6.402	3.998	3.489	3.681
	[2.726]**	[2.785]**	[2.919]	[2.779]	[2.814]
Tobin's Q	-1.712	-1.779	-0.942	-0.889	-0.663
	[1.137]	[1.177]	[1.080]	[1.142]	[1.094]
Process Length	-2.538	-2.615	-3.604	-3.560	-3.324
	[0.996]**	[1.035]**	[1.049]***	[1.015]***	[1.014]***
Relation	0.521	0.535	-0.806	-0.690	-0.563
	[1.714]	[1.735]	[1.681]	[1.755]	[1.750]
Leverage	6.077	2.730	6.490	3.116	2.888
	[4.602]	[4.656]	[4.407]	[4.550]	[4.351]
Horizontal	-1.548	-1.778	-1.577	-1.667	-1.740
	[1.672]	[1.666]	[1.584]	[1.605]	[1.667]
Institutional ownership	-7.990	-8.582	-8.149	-8.493	-9.412
	[2.451]***	[2.618]***	[2.594]***	[2.430]***	[2.564]***
Institutional shareholding concentration	13.27	14.13	16.72	16.81	18.10
	[7.282]*	[7.658]*	[7.215]**	[7.263]**	[7.426]**
NBER Recession	14.06	14.01	17.78	17.52	
	[4.539]***	[4.431]***	[8.267]**	[8.165]**	
Fixed industry effects	No	Yes	No	Yes	Yes
Fixed year effects	No	No	Yes	Yes	Yes
Adjusted R²	15.3%	15.7%	18.5%	18.9%	18.3%
Model p-value	0.000	0.000	0.000	0.000	0.000
Number of observations	1,776	1,776	1,776	1,776	1,776

Table D2 – Bootstrapped Regression Models with Fixed Effects

This table presents bootstrapped regression estimation results including fixed industry and year effects for the testing of Hypothesis 5. The bootstrapped regression models are based on a hand-collected sample of 1,791 completed takeovers in the United States in the 2002-2014 period with 1,000 replications in the resampling with replacement procedure. The dependent variable is the SEC announcement date-adjusted 4-week takeover premium (*Takeover Premium*) – winsorized at 0.5%-99.5% – in all model specifications, denominated in %. Model IX is identical to Table D1 in Appendix D.1, for sake of comparison. Model IX removes *Staged Sale*, as this is the grouping variable for the subsamples in the consecutive models. Model XII represents the full bootstrapped regression equation for the *One-staged* subsample. Model XIII represents the full bootstrapped regression equation for the *Two-staged* subsample. *Target Initiated* is a dummy equal to one if the target initiated the sales process, indicating its eagerness to sell. *Industry Count* is the logarithm of the number of companies in the target's Fama-French 49 industry with a market value larger than the target in the year prior to the announcement of the takeover, proxying the bidder availability for the target. *Target Initiated * Industry Count* is an interaction term between these variables. The other variables in the models represent control variables. All variable definitions and constructions are in Appendix B. The first row for each variable represents the estimated coefficient. Standard errors are in brackets below the presented coefficients. ***, ** and * denotes statistical significance of the relevant coefficient at the 1%, 5% and 10% level.

Bootstrap replications: 1,000 Variable	IX	XI	XII	XIII
Constant	54.25	60.42	59.92	36.51
	[12.50]***	[12.52]***	[13.19]***	[24.22]
Target Initiated	-17.03	-16.45	-14.03	-36.96
	[6.276]***	[6.076]***	[6.768]**	[13.33]***
Industry Count	2.792	2.738	3.207	1.553
	[1.308]**	[1.315]**	[1.455]**	[2.530]
Target Initiated * Industry Count	2.525	2.507	1.903	7.171
	[1.326]**	[1.298]**	[1.409]	[2.900]**
Staged Sale	-6.880			
	[1.807]***			
Auction	-1.539	-2.354	-1.210	-2.083
	[1.680]	[1.613]	[1.997]	[2.722]
Firm size	-0.327	-0.453	-0.274	0.398
	[0.854]	[0.847]	[0.982]	[1.628]
Cash	6.066	5.949	7.245	3.879
	[1.951]***	[1.938]***	[2.248]***	[4.450]
Financial Buyer	-7.522	-7.695	-7.641	-7.898
	[2.089]***	[2.051]***	[2.555]***	[3.274]**
Regulated	-18.15	-17.90	-11.87	-38.38
	[9.204]**	[9.436]**	[8.578]	[35.08]
Return on Assets	-33.78	-33.60	-45.36	-1.595
	[10.34]***	[10.09]***	[13.64]***	[10.19]
R&D	3.889	3.900	4.115	3.497
	[2.246]**	[2.357]**	[3.088]	[2.232]
Tender	3.489	3.356	5.211	-1.005
	[2.750]	[2.809]	[3.697]	[2.868]
Tobin's Q	-0.889	-0.913	-0.190	-2.452
	[1.154]	[1.151]	[1.307]	[1.700]
Process Length	-3.560	-5.181	-3.476	-4.073
	[0.996]***	[0.952]***	[1.188]***	[1.859]**
Relation	-0.690	-0.451	-0.437	2.573
	[1.744]	[1.722]	[2.040]	[3.039]
Leverage	3.116	3.520	2.259	-1.520
	[4.493]	[4.555]	[4.858]	[9.008]
Horizontal	-1.667	-1.830	-1.737	0.427
	[1.657]	[1.649]	[1.951]	[3.027]
Institutional ownership	-8.493	-8.276	-10.72	-6.576
	[2.423]***	[2.645]***	[3.273]***	[4.349]
Institutional shareholding concentration	16.81	17.90	13.16	25.91
	[7.319]**	[7.510]**	[8.715]	[12.76]**
NBER Recession	17.52	18.12	19.13	11.82
	[7.702]**	[8.024]**	[10.41]**	[7.830]
Fixed industry effect	Yes	Yes	Yes	Yes
Fixed year effects	Yes	Yes	Yes	Yes
Adjusted R²	18.9%	18.5%	21.1%	10.4%
Model p-value	0.000	0.000	0.000	0.000
Number of observations	1,776	1,776	1,369	407

Appendix E   Robustness – Differing Announcement Dates for Premium Determination

Appendix E.1 Hypotheses 1 - 4 – Bootstrapped Regression Results including Fixed Effects

Table E1.A – Bootstrapped Regression Models with Fixed Effects

This table presents bootstrapped regression estimation results including fixed industry and year effects. The bootstrapped regression models are based on a hand-collected sample of 1,791 completed takeovers in the United States in the 2002-2014 period with 1,000 replications in the resampling with replacement procedure. The dependent variable is the 4-week takeover premium, based on the reported announcement date in the Thomson ONE database (*Thomson ONE Premium*) – winsorized at 0.5%-99.5% – in all model specifications, denominated in %. All models are identical to the models in Table D1 in Appendix D.1, except for the different premium measure. *Target Initiated* is a dummy equal to one if the target initiated the sales process, indicating its eagerness to sell. *Industry Count* is the logarithm of the number of companies in the target's Fama-French 49 industry with a market value larger than the target in the year prior to the announcement of the takeover, proxying the bidder availability for the target. *Target Initiated * Industry Count* is an interaction term between these variables. *Staged Sale* is a dummy variable equal to one if the takeover is completed in a two-staged sales process. The other variables in the models represent control variables. All variable definitions and constructions are in Appendix B. The first row for each variable represents the estimated coefficient. Standard errors are in brackets below the presented coefficients. ***, ** and * denotes statistical significance of the relevant coefficient at the 1%, 5% and 10% level.

Bootstrap replications: 1,000	Dependent: Thomson ONE Premium				
Variable	VI.B	VII.B	VIII.B	IX.B	X.B
Constant	63.03	53.45	65.57	56.21	56.93
	[11.32]***	[11.90]***	[11.35]***	[12.24]***	[8.589]***
Target Initiated	-22.21	-22.87	-20.58	-21.13	-20.15
	[6.371]***	[6.175]***	[6.111]***	[6.444]***	[6.305]***
Industry Count	0.717	2.351	1.174	2.858	2.305
	[1.131]	[1.288]*	[1.067]	[1.323]**	[1.072]**
Target Initiated *Industry Count	3.310	3.492	3.020	3.174	2.976
	[1.352]**	[1.314]***	[1.308]**	[1.361]**	[1.341]**
Staged Sale	-5.117	-5.332	-4.851	-5.146	-5.376
	[2.008]**	[2.102]**	[2.075]**	[2.081]**	[2.050]***
Auction	1.347	1.024	0.329	0.0560	0.104
	[1.735]	[1.684]	[1.681]	[1.681]	[1.673]
Firm size	-0.904	0.00662	-0.932	-0.0330	
	[0.773]	[0.859]	[0.776]	[0.866]	
Cash	5.329	5.745	5.217	5.768	5.618
	[2.007]***	[1.979]***	[2.106]**	[2.028]***	[1.911]***
Financial Buyer	-8.716	-8.396	-8.601	-8.340	-8.607
	[2.116]***	[2.094]***	[2.048]***	[2.120]***	[2.032]***
Regulated	-13.31	-19.61	-12.80	-17.71	
	[2.248]***	[9.528]**	[2.275]***	[9.335]*	
Return on Assets	-32.86	-34.78	-32.81	-34.88	-35.50
	[9.786]***	[10.22]***	[9.849]***	[10.70]***	[10.31]***
R&D	4.589	3.711	4.468	3.609	3.660
	[2.281]**	[2.416]	[2.477]*	[2.340]	[2.294]
Tender	9.732	9.178	6.868	6.308	6.472
	[2.926]***	[3.013]***	[2.975]**	[3.017]**	[3.036]**
Tobin's Q	-2.001	-2.060	-1.218	-1.161	-1.043
	[1.150]*	[1.211]*	[1.140]	[1.188]	[1.099]
Process Length	-2.945	-3.056	-3.995	-3.994	-3.832
	[1.041]***	[1.064]***	[1.035]***	[1.044]***	[1.019]***
Relation	0.351	0.359	-0.909	-0.800	-0.696
	[1.745]	[1.761]	[1.713]	[1.755]	[1.880]
Leverage	8.391	5.022	8.735	5.309	5.380
	[4.669]*	[4.748]	[4.678]*	[4.475]	[4.387]
Horizontal	-1.763	-2.094	-1.839	-2.042	-2.095
	[1.738]	[1.702]	[1.629]	[1.716]	[1.638]
Institutional ownership	-7.384	-7.956	-7.544	-7.894	-8.534
	[2.579]***	[2.637]***	[2.422]***	[2.716]***	[2.608]***
Institutional shareholding concentration	14.42	15.32	17.40	17.57	18.49
	[7.486]*	[7.955]*	[7.251]**	[7.739]**	[7.563]**
NBER Recession	13.69	13.71	19.91	19.71	
	[4.556]***	[4.524]***	[8.185]**	[7.792]**	
Fixed industry effects	No	Yes	No	Yes	Yes
Fixed year effects	No	No	Yes	Yes	Yes
Adjusted R²	15.5%	15.9%	18.3%	18.7%	18.0%
Model p-value	0.000	0.000	0.000	0.000	0.000
Number of observations	1,776	1,776	1,776	1,776	1,776

Table E1.B – Bootstrapped Regression Models with Fixed Effects

This table presents bootstrapped regression estimation results including fixed industry and year effects. The bootstrapped regression models are based on a hand-collected sample of 1,791 completed takeovers in the United States in the 2002-2014 period with 1,000 replications in the resampling with replacement procedure. The dependent variable is the SEC announcement date 4-week takeover premium [*SEC Premium (CRSP)*] – winsorized at 0.5%-99.5% – in all model specifications, denominated in %. All models are identical to the models in Table D1 in Appendix D.1, except for the different premium measure. *Target Initiated* is a dummy equal to one if the target initiated the sales process, indicating its eagerness to sell. *Industry Count* is the logarithm of the number of companies in the target's Fama-French 49 industry with a market value larger than the target in the year prior to the announcement of the takeover, proxying the bidder availability for the target. *Target Initiated * Industry Count* is an interaction term between these variables. *Staged Sale* is a dummy variable equal to one if the takeover is completed in a two-staged sales process. The other variables in the models represent control variables. All variable definitions and constructions are in Appendix B. The first row for each variable represents the estimated coefficient. Standard errors are in brackets below the presented coefficients. ***, ** and * denotes statistical significance of the relevant coefficient at the 1%, 5% and 10% level.

Bootstrap replications: 1,000	Dependent: SEC Premium (CRSP)				
Variable	VI.C	VII.C	VIII.C	IX.C	X.C
Constant	67.49	58.22	68.13	58.94	53.27
	$[10.31]^{***}$	$[11.77]^{***}$	$[10.52]^{***}$	$[11.74]^{***}$	$[8.342]^{***}$
Target Initiated	-21.42	-22.57	-19.43	-20.50	-19.32
	$[6.201]^{***}$	$[6.158]^{***}$	$[6.165]^{***}$	$[5.907]^{***}$	$[6.221]^{***}$
Industry Count	0.293	1.538	0.805	2.231	2.289
	$[1.042]$	$[1.294]$	$[1.060]$	$[1.255]^{*}$	$[0.994]^{**}$
Target Initiated *Industry Count	3.370	3.630	2.990	3.228	2.997
	$[1.328]^{**}$	$[1.326]^{***}$	$[1.306]^{**}$	$[1.280]^{**}$	$[1.324]^{**}$
Staged Sale	-5.920	-6.336	-5.646	-6.164	-6.435
	$[1.823]^{***}$	$[1.925]^{***}$	$[1.864]^{***}$	$[1.978]^{***}$	$[1.933]^{***}$
Auction	-2.051	-2.677	-3.096	-3.670	-3.651
	$[1.687]$	$[1.662]$	$[1.561]^{**}$	$[1.591]^{**}$	$[1.627]^{**}$
Firm size	-1.428	-0.730	-1.395	-0.662	
	$[0.718]^{**}$	$[0.828]$	$[0.713]^{*}$	$[0.785]$	
Cash	4.182	4.560	3.992	4.554	4.866
	$[1.928]^{**}$	$[1.879]^{**}$	$[1.871]^{**}$	$[1.928]^{**}$	$[1.873]^{***}$
Financial Buyer	-7.572	-6.776	-7.255	-6.502	-6.801
	$[2.113]^{***}$	$[2.244]^{***}$	$[2.253]^{***}$	$[2.257]^{***}$	$[2.282]^{***}$
Regulated	-11.89	-14.87	-11.62	-13.90	
	$[2.227]^{***}$	$[6.858]^{**}$	$[2.211]^{***}$	$[7.149]^{*}$	
Return on Assets	-32.73	-34.24	-33.25	-35.05	-35.77
	$[10.95]^{***}$	$[11.86]^{***}$	$[11.06]^{***}$	$[11.84]^{***}$	$[12.01]^{***}$
R&D	5.219	4.539	5.058	4.401	4.422
	$[2.439]^{**}$	$[2.542]^{*}$	$[2.460]^{**}$	$[2.410]^{*}$	$[2.526]^{*}$
Tender	7.013	6.537	4.342	3.836	4.001
	$[2.650]^{***}$	$[2.749]^{**}$	$[2.754]$	$[2.713]$	$[2.703]$
Tobin's Q	-2.034	-2.178	-1.311	-1.303	-0.977
	$[0.995]^{**}$	$[1.054]^{**}$	$[1.017]$	$[1.023]$	$[0.998]$
Process Length	-2.889	-3.032	-3.918	-3.944	-3.621
	$[0.973]^{***}$	$[1.030]^{***}$	$[1.004]^{***}$	$[1.020]^{***}$	$[0.974]^{***}$
Relation	-0.711	-0.809	-1.817	-1.794	-1.681
	$[1.586]$	$[1.705]$	$[1.600]$	$[1.610]$	$[1.712]$
Leverage	3.675	0.386	4.392	0.935	0.493
	$[4.680]$	$[4.606]$	$[4.504]$	$[4.468]$	$[4.429]$
Horizontal	-1.925	-1.932	-1.916	-1.773	-1.782
	$[1.657]$	$[1.613]$	$[1.625]$	$[1.686]$	$[1.602]$
Institutional ownership	-6.783	-7.187	-7.427	-7.625	-8.891
	$[2.818]^{**}$	$[2.785]^{***}$	$[2.832]^{***}$	$[2.748]^{***}$	$[2.775]^{***}$
Institutional shareholding concentration	22.33	22.45	25.45	24.59	26.18
	$[8.018]^{***}$	$[8.281]^{***}$	$[8.457]^{***}$	$[8.219]^{***}$	$[8.945]^{***}$
NBER Recession	12.91	13.07	16.19	16.20	
	$[4.360]^{***}$	$[4.295]^{***}$	$[8.852]^{*}$	$[9.155]^{*}$	
Fixed industry effects	No	Yes	No	Yes	Yes
Fixed year effects	No	No	Yes	Yes	Yes
Adjusted R^2	17.2%	17.8%	19.8%	20.4%	20.0%
Model p-values	0.000	0.000	0.000	0.000	0.000
Number of observations	1,696	1,696	1,696	1,696	1,696

Appendix E.2 Hypothesis 5 – Bootstrapped Regression Results including Fixed Effects

Table E2.A – Bootstrapped Regression Models with Fixed Effects

This table presents bootstrapped regression estimation results including fixed industry and year effects for the testing of Hypothesis 5. The bootstrapped regression models are based on a hand-collected sample of 1,791 completed takeovers in the United States in the 2002-2014 period with 1,000 replications in the resampling with replacement procedure. The dependent variable is the 4-week takeover premium, based on the reported announcement date in the Thomson ONE database (*Thomson ONE Premium*) – winsorized at 0.5%-99.5% – in all model specifications, denominated in %. All models are identical to the models in Table D2 in Appendix D.2, except for the different premium measure. Model XI.B removes *Staged Sale*, as this is the grouping variable for the subsamples in the consecutive models. Model XII.B represents the full bootstrapped regression equation for the *One-staged* subsample. Model XIII.B represents the full bootstrapped regression equation for the *Two-staged* subsample. *Target Initiated* is a dummy equal to one if the target initiated the sales process, indicating its eagerness to sell. *Industry Count* is the logarithm of the number of companies in the target's Fama-French 49 industry with a market value larger than the target in the year prior to the announcement of the takeover, proxying the bidder availability for the target. *Target Initiated * Industry Count* is an interaction term between these variables. The other variables in the models represent control variables. All variable definitions and constructions are in Appendix B. The first row for each variable represents the estimated coefficient. Standard errors are in brackets below the presented coefficients. ***, ** and * denotes statistical significance of the relevant coefficient at the 1%, 5% and 10% level.

| Bootstrapped regressions | Dependent: Thomson ONE Premium | | | |
Variable	IX.B	XI.B	XII.B	XIII.B
Constant	56.21	60.82	62.26	41.07
	[12.68]***	[12.71]***	[13.20]***	[26.16]
Target Initiated	-21.13	-20.69	-17.40	-44.35
	[6.386]***	[6.063]***	[6.722]***	[14.95]***
Industry Count	2.858	2.818	3.232	1.560
	[1.333]**	[1.321]**	[1.479]**	[2.862]
Target Initiated * Industry Count	3.174	3.161	2.293	8.846
	[1.347]**	[1.295]**	[1.399]	[3.309]***
Staged Sale	-5.146			
	[2.020]**			
Auction	0.0560	-0.554	0.206	0.244
	[1.735]	[1.662]	[2.023]	[3.114]
Firm size	-0.0330	-0.127	-0.228	1.698
	[0.870]	[0.877]	[0.978]	[1.879]
Cash	5.768	5.680	6.349	5.335
	[2.014]***	[2.001]***	[2.354]***	[4.690]
Financial Buyer	-8.340	-8.469	-8.293	-8.338
	[2.104]***	[2.082]***	[2.553]***	[3.384]**
Regulated	-17.71	-17.52	-11.42	-39.10
	[9.179]**	[9.454]**	[8.806]	[34.44]
Return on Assets	-34.88	-34.74	-45.22	-6.704
	[10.35]***	[10.10]***	[13.50]***	[12.44]
R&D	3.609	3.618	4.008	2.191
	[2.245]	[2.356]	[3.069]	[2.744]
Tender	6.308	6.208	6.612	5.249
	[2.951]**	[3.036]**	[3.745]**	[4.886]
Tobin's Q	-1.161	-1.179	-0.652	-1.598
	[1.160]	[1.181]	[1.319]	[2.123]
Process Length	-3.994	-5.206	-3.336	-6.829
	[1.037]***	[0.958]***	[1.186]***	[2.154]***
Relation	-0.800	-0.621	-0.355	1.611
	[1.775]	[1.753]	[2.056]	[3.311]
Leverage	5.309	5.611	5.079	-2.725
	[4.604]	[4.634]	[5.134]	[9.316]
Horizontal	-2.042	-2.164	-2.645	2.182
	[1.726]	[1.687]	[1.986]	[3.440]
Institutional ownership	-7.894	-7.732	-10.69	-4.203
	[2.557]***	[2.668]***	[3.307]***	[4.741]
Institutional shareholding concentration	17.57	18.38	11.98	32.20
	[7.511]**	[7.771]**	[8.764]	[15.14]**
NBER Recession	19.71	20.16	20.81	15.12
	[7.713]**	[8.015]**	[10.23]**	[8.439]**
Fixed industry effects	Yes	Yes	Yes	Yes
Fixed year effects	Yes	Yes	Yes	Yes
Adjusted R²	18.7%	18.4%	21.5%	10.3%
Model p-value	0.000	0.000	0.000	0.000
Number of observations	1,776	1,776	1,369	407

Table E2.B – Bootstrapped Regression Models with Fixed Effects

This table presents bootstrapped regression estimation results including fixed industry and year effects for the testing of Hypothesis 5. The bootstrapped regression models are based on a hand-collected sample of 1,696 completed takeovers in the United States in the 2002-2014 period with 1,000 replications in the resampling with replacement procedure. The dependent variable is the SEC announcement date 4-week takeover premium [*SEC Premium (CRSP)*] – winsorized at 0.5%-99.5% – in all model specifications, denominated in %. All models are identical to the models in Table D2 in Appendix D.2, except for the different premium measure. Model XI.C removes *Staged Sale*, as this is the grouping variable for the subsamples in the consecutive models. Model XII.C represents the full bootstrapped regression equation for the *One-staged* subsample. Model XIII.C represents the full bootstrapped regression equation for the *Two-staged* subsample. *Target Initiated* is a dummy equal to one if the target initiated the sales process, indicating its eagerness to sell. *Industry Count* is the logarithm of the number of companies in the target's Fama-French 49 industry with a market value larger than the target in the year prior to the announcement of the takeover, proxying the bidder availability for the target. *Target Initiated * Industry Count* is an interaction term between these variables. The other variables in the models represent control variables. All variable definitions and constructions are in Appendix B. The first row for each variable represents the estimated coefficient. Standard errors are in brackets below the presented coefficients. ***, ** and * denotes statistical significance of the relevant coefficient at the 1%, 5% and 10% level.

| Bootstrapped regressions | Dependent: SEC Premium (CRSP) | | | |
Variable	IX.C	XI.C	XII.C	XIII.C
Constant	58.94	64.58	63.04	48.46
	[11.55]***	[12.05]***	[12.76]***	[24.79]*
Target Initiated	-20.50	-19.92	-21.49	-33.22
	[6.169]***	[6.053]***	[6.564]***	[13.71]**
Industry Count	2.231	2.153	2.461	-0.384
	[1.222]*	[1.282]*	[1.456]*	[2.475]
Target Initiated * Industry Count	3.228	3.196	3.407	6.306
	[1.319]**	[1.303]**	[1.400]**	[2.992]**
Staged Sale	-6.164			
	[1.845]***			
Auction	-3.670	-4.377	-3.924	-2.656
	[1.679]**	[1.616]***	[2.080]*	[2.845]
Firm size	-0.662	-0.780	-0.563	-0.259
	[0.806]	[0.832]	[0.912]	[1.725]
Cash	4.554	4.414	4.726	4.952
	[1.990]**	[1.904]**	[2.206]**	[4.474]
Financial Buyer	-6.502	-6.685	-5.162	-10.57
	[2.175]***	[2.236]***	[2.941]*	[3.093]***
Regulated	-13.90	-13.57	-14.05	-2.551
	[7.068]**	[6.964]*	[8.588]	[13.60]
Return on Assets	-35.05	-34.77	-48.95	1.586
	[11.55]***	[11.87]***	[15.10]***	[10.34]
R&D	4.401	4.409	4.758	3.950
	[2.431]*	[2.487]*	[3.433]	[2.062]*
Tender	3.836	3.789	5.045	0.168
	[2.615]	[2.764]	[3.505]	[3.211]
Tobin's Q	-1.303	-1.339	-0.671	-2.181
	[1.014]	[1.026]	[1.231]	[1.693]
Process Length	-3.944	-5.389	-4.004	-3.568
	[0.982]***	[0.957]***	[1.128]***	[1.755]**
Relation	-1.794	-1.578	-1.578	0.597
	[1.624]	[1.725]	[1.919]	[2.988]
Leverage	0.935	1.380	-0.764	2.748
	[4.647]	[4.610]	[5.174]	[10.18]
Horizontal	-1.773	-1.921	-1.777	-0.974
	[1.668]	[1.603]	[1.926]	[3.057]
Institutional ownership	-7.625	-7.543	-8.854	-6.982
	[2.883]***	[2.815]***	[3.557]**	[5.022]
Institutional shareholding concentration	24.59	25.43	23.25	30.28
	[8.447]***	[8.547]***	[9.968]**	[16.70]*
NBER Recession	16.20	16.86	16.38	14.46
	[9.105]*	[9.415]*	[11.06]	[10.38]
Fixed industry effects	Yes	Yes	Yes	Yes
Fixed year effects	Yes	Yes	Yes	Yes
Adjusted R²	20.4%	20.1%	22.7%	9.46%
Model p-value	0.000	0.000	0.000	0.000
Number of observations	1,696	1,696	1,311	385