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To what extent are stock-financed takeovers opportunistic in the European market?

Master's thesis Spring 19

by

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Abstract Opportunistic bidding is a phenomena where the bidder uses overvalued stock to acquire a target, which could threaten the efficiency in the market of corporate control. By using two hypotheses predicting the opposite outcomes, this thesis investigates whether or not opportunistic bidding behaviour exists in the European market of corporate control. A sample of 773 European bids was used and estimated with Tobit regressions. The size of the bidder was found to decrease the probability to use stock, while the deal size relative to the bidders total assets was found to increase the probability of using stock. No conclusion regarding opportunistic behaviour could be made based on the generated result.

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1

Introduction

This chapter will begin with a problem discussion where the importance of studying the payment method choice in Mergers & Acquisitions (M&A) is broadly discussed. Then, the aim and scope of this paper are presented, where the objectives of this thesis is discussed along with a research question. Lastly, the outline of the remainder of this thesis is presented.

1.1 Problem discussion

When financing a take-over, a buyer faces three options when it comes to payment: cash, stock or a combination of them both. In the 90s, around half of all the take-over deals were financed in full with stocks, but over time this proportion has declined, and after 2001 this number had decreased to roughly 10 % (Bodt et al. (2017)). The choice of payment method is indeed something which has changed over time. What motives are behind this decision of financing has been a widely discussed topic within the field of M&A, where the phenomena called opportunistic bidding has received a lot of attention.

Opportunistic bidding is defined as a scenario where a bidder uses overvalued stocks to pay for the acquisition. One of the more extreme cases where the phenomena of bidder opportunism occurred was in 2000 when AOL and Time Warner merged. At the time, AOLs stocks was highly valued and used as payment in the deal, but within a few years, the total value of AOLs stocks plummeted from 226 billion to only 20 billion (Mcgrath (2015)).

Today, there is no universal explanation why companies choose to pay fully in cash, stock or with a mixed offer. For instance, many explanations have been offered as to why investors may view a full stock-offer as a negative sign. Myers and Majluf (1984) discussed this in depth, where they used signaling theory to explain why issuing stock could be perceived as a bad sign from investors. They also discussed why firms may avoid an investment opportunity based on stock valuation and payment method. Given that the payment method sends signals to the investors regarding future prospects of the company (Yang et al. (2009)), the choice of financing method may be determined partly as a strategic decision made by the management of the acquirer. The concept and logic of opportunistic bidding is easy to understand, but it has been contested. Eckbo et al. (2018) offered an alternative explanation as to what determines the payment method. They developed an hypothesis that predicted opposite outcome compared to opportunistic bidding, where they argue that there

is a concern of adverse selection problem on the target side. In their setup, the stock proportion is only scaled up by undervaluation and not overvaluation. This concept called rational payment design will be discussed more in-dept later on in this thesis.

The empirical relevance of opportunistic bidding is that it could threaten the efficiency in the market of corporate control. Practically, this means that the bidder with the most overvalued shares will win, rather than the most efficient bidder, which would imply that the efficiency of the market is disrupted (Eckbo et al. (2018)). Existing literature on opportunistic bidding has been centered on the U.S. market, and few studies have been conducted on how opportunistic bidding could affect the European market. This gap leaves opportunities to extend this field of research and contribute to the overall understanding of opportunistic bidding. This study will investigate whether stock financed take-overs in the European market can be considered to be opportunistic, and if this could threaten the efficiency in the market of corporate control? This thesis will be a comparative study to the work of Eckbo et al. (2018) were the European market will be investigated using a similar structure and methodology.

1.2 Aim and scope

The aim of this thesis is to investigate if bidder opportunism exists in the European M&A market. Two hypothesis that predict opposite outcomes are used where the targets ability to value the bidders shares are used to discriminate between them.

The research question for this study is:
To what extent are stock-financed take-overs opportunistic in the European market?

1.3 Outline of the thesis

The outline of this thesis is as follows: first, a section on previous empirical research regarding payment methods in M&A is presented along with a theoretical background. Then, two hypotheses are developed and explained followed by a methodological discussion. A discussion of limitations and chosen delimitations is also provided. The findings of this thesis include chosen models for testing the two hypotheses as well as the result of each model. Lastly, a discussion of the findings along with a conclusion and suggestions for future research are presented.

2

Theory & Previous Empirical Findings

This chapter starts with a presentation of the previous research and theoretical framework that is relevant to this thesis. Then the two hypotheses used in this thesis are presented and explained. The first hypothesis based on opportunistic bidding is briefly explained, where a more detailed explanation is given on rational payment design.

2.1 Previous research

There has been considerable research done regarding the motives behind the choice of payment method in take-over deals. Much of this research has been focused on the market reaction to the announcement given the payment method. The conclusion has often been that financing with cash is favored over stock with respect to returns (Brown and Ryngaert (2005); Servaes (1991); Travlos (1987)). Over time, payment for these kinds of deals has shifted between cash and stocks without any complete explanation as to why one financial instrument was chosen at that specific time. What is lacking is a holistic view of the decision-making process behind method of payment.

Bodt et al. (2017) showed that the amount of deals paid fully by stocks in the U.S. market declined rapidly after 2001. Their findings indicated that the decline was a result from the abolishing of pooling and goodwill amortization that was introduced in the US in 2001. Even though much of the previous literature has been centered around returns, there has been several suggestions of the determinants effecting the payment decisions. Some of these suggestions are: taxes (Brown and Ryngaert (2005)), information asymmetry (Eckbo et al. (1990)), capital structure (Eckbo et al. (2018); Faccio and Masulis (2005)) and corporate control (Faccio and Masulis (2005)).

Another subject that has been discussed, is the relationship between valuation and M&A activity. Fu et al. (2013) contested previous literature which suggested that overvalued firms can use their shares as payment to increase shareholder value. In their study, they argued that overvalued firms are paying an additional price premium when using their stocks as payment rather than increasing the value of the shareholders. Also, Rhodes-Kropf and Viswanathan (2004) investigated the relationship between misvaluation and mergers activity. Their conclusion was that misvaluation plays a significant role when it comes to increased activity. They also

argued that misvaluation is the main force that decides who buys whom and affects the choice of payment method. This is the same conclusion as Song (2005) reached, who investigated whether overvaluation could explain merger activities.

Chang and Suk (1988) investigated the return of the bidding firm based on whether it was offering common stock as payment or not. Their findings implied that bidders who offered common stocks as payment experienced an abnormal positive return, while firms that offered cash experienced a negative abnormal return. According to the authors, the positive performance was primarily driven by bidders initiating the takeover termination. As one can see, there are plenty of papers trying to answer the motives behind M&A activity and the reasons behind the optimal choice between cash and stock to increase shareholder value. The majority of these studies are based on the U.S. market, but some studies have been investigating other markets as well.

Faccio and Masulis (2005) investigated the determinants of financing decision in take-overs on the European market. Their main focus was on the trade-off between buyer financing constraint and bidder corporate control threats, where the first one encourages stock financing and the latter cash payment. They found that this trade-off has a strong effect on the payment decision, and mainly that corporate control has a clear effect on European M&A financing choices. The buyer prefers to pay in cash when the voting control of the core shareholders is threatened. They also found that corporate control incentives to choose cash are extra strong when the majority shareholders has a level of voting power between 20 and 60 %. Their result suggests a pattern where European bidders choose stock financing with greater frequency as measures of their financial condition weaken.

This thesis will focus on the phenomena of opportunistic bidding in the European market. Eckbo et al. (2018) conducted a study in the U.S. market investigating whether or not stock-financed takeovers can be considered to be opportunistic. By using two closely related hypotheses, the authors concluded that opportunistic bidding is not significantly used during the test period.

2.2 Theoretical background

The problem of adverse selection was first explored by Akerlof (1970). He used the so called market for lemons example to show how information asymmetry between two parties can create an adverse selection problem and market failure. The good firms cannot diversify themselves from the lemons (bad firms), which can create a scenario where only the bad firms are active in the market. When it comes to the payment method in M&As the adverse selection problem is central, but the idea of how it affects the decision varies.

In an all-stock offer there is an adverse selection problem on the target side and the bidder will only offer stocks when the target overvalues the bidder's shares (Hansen (1987)). When the offer is all-cash however, there is an adverse selection problem on the bidder side instead. The target has superior information of the asset/firm being acquired, and will only accept an offer that is above the intrinsic value of the item (Hansen (1987)). This is not the case for all-stock offers, since the value of the payment will be dependent on the outcome of the acquisition. Thus, cash is used only when the target undervalues the bidders shares. There are alternative explanations to this problem, where Fishman (1989) argued that cash

should be considered as an signal of high valuation of the target firm where the aim is to scare other potential bidders and avoid a potentially costly bidding war.

The theory of adverse selection gave rise to signaling theory developed by Allen and Faulhaber (1989). Allen and Faulhaber (1989) explained how good firms can diversify themselves from lemons by using a signal that the bad ones cannot follow. A simple example is education in the labor market. A high education sends a signal to the employer that one differs from those without education. This is a signal that cannot be duplicated (because then you need to get the education). Applying this theory to the M&A market it can be shown how issuing stock is interpreted as a bad signal by investors Myers and Majluf (1984). There is information asymmetry between the firm and the investors where the firm has superior information regarding the value of the company. Issuing stocks implies overvaluation since the management of the firm would not issue stock if they knew that the stock was undervalued. The bad view of issuing stocks can also lead to that firms choose to pass on investment opportunities Myers and Majluf (1984).

When it comes to capital structure and financing choice there are mainly two central theories. One of them is the trade-off theory by Kraus and Litzenberger (1973) and Modigliani and Miller (1963) where the optimal level of capital structure is chosen from a trade-off between the tax benefits from debt financing and financial distress cost. The other theory is the Pecking order theory which is a ranking list for financing developed by Myers and Majluf (1984) saying that the financing choice should follow the following order: (1) Internal sources, (2) borrowing and (3) Equity financing. This indicates that firms with large cash-surpluses should prefer to use cash over equity as financing.

The above discussion of theoretical underpinning concerns the behavior of the different actors involved in M&A. As the thesis is meant to investigate whether opportunistic bidding exists in the European market, judging and evaluating potentially opportunistic behavior and an understanding of drivers are necessary.

2.3 Hypothesis development

Much of the previous work done in the field of mergers and acquisition activities has investigated whether overvaluation in the stock-market is a trigger for merger waves. Gu and Lev (2011) found that overpriced shares was strongly associated with high corporate acquisition activities and Akbulut (2013) also found that overvalued equity is a trigger for managers to engage in acquisition. Akbulut (2013) also found that these activities are not beneficial for the acquirers' shareholders, which earned a negative abnormal return in the short-run. In this study, two hypotheses are presented which predict opposite outcomes but are based on the same information structure.

Hypothesis 1; Opportunistic bidding

The hypothesis of *Opportunistic Bidding* is defined in this paper as a phenomena where overvalued shares create an incentive for the bidder to pay with stock over cash. From Faccio and Masulis (2005), bidders should on average make stock financed deals during higher stock return variance, since it increases the opportunity to issue overvalued stock. To be able to use these overvalued stocks it must be

information asymmetry between the bidder and the target where the target does not know the true value of the bidders' shares. As the targets ability to value the bidder increases the target will not accept the overvalued shares as payment and the stock proportion should decrease. This is in line with the assumption from Faccio and Masulis (2005), that higher stock price volatility is likely to make bidders stock less attractive to target's shareholders.

Hypothesis 2; Rational payment design

Under the hypothesis of *rational payment design* the bidder chose to pay with stocks, not because of opportunistic behavior, but because of adverse selection problem on the target side (Eckbo et al. (2018)). To understand this hypothesis more clearly the explanation and notations of Eckbo et al. (2018) and Eckbo et al. (1990) are borrowed, where they use a rational equilibrium model.

They start with two risk-neutral firms and assume that the merger negotiations are finished, but without a decision regarding the payment method. Synergy effects are assumed to be created by the merger and for notational purpose they will be bidder specific. The with-synergy value of the bidder are denoted as b and the reservation value for the target as t. Then Eckbo et al. (2018) assumes that the bidder and the target know their own true value, but not each others. What they do know, is the probability distribution of their counter-party's value, which is called two sided information asymmetry. When negotiation starts between the two parties, the target will reveal their valuation of the bidder $\hat{b}$, and the bidder will come up with an offer and a specific payment method. This offer will be accepted by the target with a reservation price t^* or less: $c+z(\hat{b}+t^*-c) = t^*$, where c is the amount of cash and z is the fraction of equity in the merged firm. Given the reservation price, Eckbo et al. (2018) explain that an offer is always accepted by the target as long as $t \leq t^*$ (adverse selection on the target side). The bidder has then an expected over-payment that is equal to $E[t|a]$ where they call a the target acceptance. The over-payment can be seen to be financed by the bidder-specific synergy effect that was assumed earlier in the example. The conditional expected value of bidder's residual claim on the merged firm is

$$E[v|a] = (1-z)(b + E[t|a] - c) = \frac{\hat{b}}{b + t^* - c}(b + E[t|a) - c) \tag{2.1}$$

Partial derivative of $E[v|a]$ with respect to c is

$$\frac{\partial E[v|a]}{\partial c} = \frac{\hat{b}}{(b + t^* - c)^2}[(b - \hat{b}) - (t^* - E[t|a]) \tag{2.2}$$

From equation 2.2, the derivative with respect to c is negative if $t^* - E[t|a] > b - \hat{b}$. This indicates that cash is a relatively costly method to use as payment when expected over-payment cost exceeds the target's undervaluation of the bidder (Eckbo et al. (2018)). As long as the partial derivative is negative, bidders will always prefer to pay fully in stock. This is explained in words by Eckbo et al. (2018) who argue that *"cash precommits the bidder to a payment worth t^* for all target types ex ante, payment in bidder shares conditions the value of the deal payment on the realized value of the target type ex post."* If $\frac{\partial E[v|a]}{\partial c} < 0$, equation 2.1 will indicate that bidders should pay with an all stock offer. The other way around,

when $\frac{\partial E[v|a]}{\partial c} > 0$, bidders would offer an all cash payment. Cash can be considered to be a relatively costly form of payment, and once included in the deal it may reveal to the target that it undervalues the bidder shares. According to Eckbo et al. (2018), how the target reacts to this information must be taken into account when analyzing the equilibrium price of (z, c).

In Eckbo et al. (1990), they prove the existence of a Bayesian separating equilibrium, in which the signaling game following the same setup as in the example above. Denote $c^* = \frac{c}{t^*} \in [0, 1]$, where c^* is the fraction of payment in cash. Given that cash is considered as a costly payment method over stock, bidders will offer the lowest c^* required and reveal as little information as possible of its own true value. From this, Eckbo et al. (2018) develop the Rational payment design hypothesis by extending the result of the example above to bids, where the target differ in how good they can value the bidder. If the targets ability to value the bidder increases then the distribution as well as the absolute valuation error $(b - \hat{b})$ of the bidders possible values decreases, and that lowers the minimum needed to signal b. In other words, as the target ability increases, the stock proportion as payment should increase as well.

To summarize both hypotheses, the first one is based on the phenomena of opportunistic bidding, where stock payment is considered to be an result of overvaluation (target have overvalued bidder's shares). Second hypothesis, stock payments stem from an adverse selection problem on the target side, where use of stock as payment increases with more informed targets. In other words, the two hypotheses predict opposite outcomes, where the targets ability to valuing the bidders shares can be used to distinguish between the two.

3

Method

This chapter will focus on the data sample used in this thesis. First, the full sample and it's limitations are discussed, including aspects such as sample selection criterion, sample size and geographical boundaries. Second, a sample overview is presented, where the time trends in the sample are shown. Lastly, sample characteristics are summarized and presented in a table.

3.1 Data & limitations

The sample in this study consisted of 773, both successful and unsuccessful bids from public companies in the European market. The idea was that the countries should be as similar as possible with respect to economic health, government trust and developed welfare system. The reason behind this was to limit intra-sample variation and unintended effects due to differences in economic and welfare development. Also, since the aim was to compare it to the study of Eckbo et al. (2018) and the US market, countries had to be as similar as possible to the US. Countries from southern and eastern Europe were therefore excluded. Those that were included in the sample were: Ireland, United Kingdom, Belgium, France, Germany, Netherlands, Switzerland, Sweden, Denmark, Finland and Norway.

Payment consideration was limited to cash, stock or a combination of them, which was in accordance with the scope of this thesis. The aim was to use the same time frame as Eckbo et al. (2018), namely, 1984-2014 for comparative purposes. However, availability of data on European M&A deals before 2000 was limited. The time frame was therefore restricted to 1998-2014. All of the data was provided from the data base Capital IQ, which is a global provider of data in M&As and other financial areas. We tried to re-evaluate the selection criteria to increase the number of observations before the year 2000, but available data was still scarce. This might be a possible limitation, as the payment method changed drastically towards an all-cash preference after the dot-com bubble in 2001 (Bodt et al. (2017)).

The minimal deal size value was restricted to 25 million Euro, and financial firms were excluded due to differences in capital structure. Information on capital structure variables of the bidder were included as well. Most of the control variables were obtained from the respective company's latest annual report before the announcement of the bids. This meant that the time between the data obtained and the announcement differ. Control variables in the data set were divided into: bidder capital structure, deal characteristics, external pressure to pay in cash and indus-

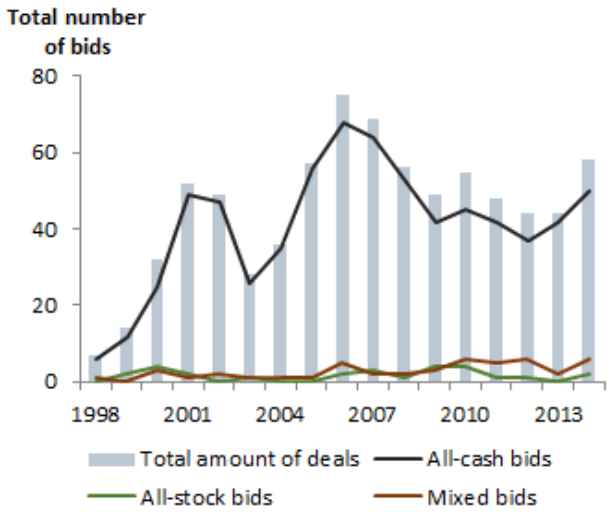
try & time characteristics. Control variables were thus the same as those used by Eckbo et al. (2018) to allow for a comparison between the European and American market. Due to time constraint and data availability some variables were excluded or simplified. All criterion used in Capital IQ is presented in Appendix C.

3.2 Sample overview

3.2.1 Sample time trends

According to previous research there is a relationship between market to book (M/B) and M&A activity (Rhodes–Kropf et al. (2005)). High M/B, which can be seen as an indicator of high valuation, seems to trigger M&A waves (Gu and Lev (2011);Akbulut (2013)). In figure 1, the total number of bids along with the total number of bids by payment method for the years between 1998 to 2014 is presented. One can see that the majority of bids can be found from 2005 and forward. From Table 8 in Appendix B, the average M/B ratio for each year is presented, and what can be observed is that the average M/B is lower for the second half of the sample time period. Given that high M/B positively correlates with high M&A activity, this seems to contradict the true number of deals. This is strengthen by Rhodes–Kropf et al. (2005) who found a high growth of intra-european acquisitions in the 90s that culminated around 2001. Therefore, the total number of bids in the sample should most likely have been higher prior to 2001. Given that this is true, the spike in 2001 shouldn't be interpreted as a spike, instead, it might be considered to be the beginning of a downswing after several years of high M&A activity. The reason why our data set is missing this data, as discussed above in the section Data & Limitations, is the lack of observations provided by Capital IQ.

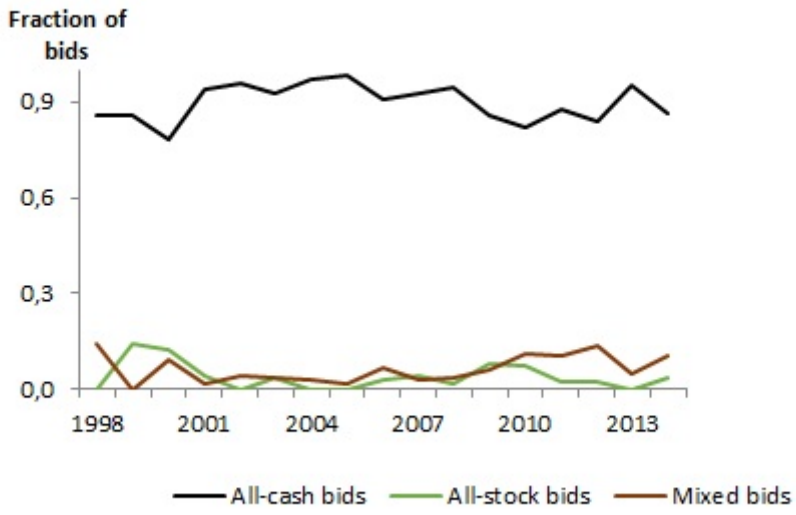
Figure 1: Total number of bids divided into payment method



In Figure 2, the fraction of bids divided by payment method is presented. The largest fraction of bids financed by stock can be found in the years prior to 2001. This is in line with previous findings (Rhodes–Kropf et al. (2005); Bodt et al. (2017)) stating that stock-financed deals were more common before 2001.

One of the reasons for this was the bull market in the 90s, where Martynova and Renneboog (2006) found a trend towards equity financing.

Figure 2: Fraction of bids divided into payment method



To sum up, the data sample used in this thesis seems to lack a large amount of observations for the early years investigated. The proportion of stock financed bids is at the highest levels prior to 2001, which is in line with previous findings, but the amount of observations are few. This was taken into account when analyzing the result.

3.2.2 Sample characteristics

In Table 1 the mean and median of the included variables are presented split by payment method. In the sample, size was defined as the natural log of total assets and control for how the payment decisions may be affected by the size of the bidding firm. The capital structure variables were: leverage (total book value of debt), cash-holding (total cash & short-term investment), market to book ratio, capital expenditure, asset tangibility (property, plant & equipment/total asset) and operating efficiency (cost of goods sold+selling, general & administrative expense / property, plant & equipment + current assets - cash - current liabilities). All variables were scaled by total assets. A dividend dummy was included as well, and 83% of the bidding firms in the sample paid dividends during the period of the last annual report before the date the bid was announced.

In the sample, approximately 40 % of the targets were public companies, while around 60 % were private. The variable *Relative Large deal size* was a relative measurement, and was calculated as the deal-size/total assets. The result was a dummy

variable that took the value 1 if the firm was in the top quartile and 0 otherwise. External pressure to pay in cash was measured by the variable competition from private buyers and was calculated as the fraction of all mergers bids in the targets Fama and French 12 industry and year in which the bidder is private.

The main variables that were used as information proxies were geographical and industrial. For the geographical proxy, *Local deal* was used, which was a dummy that took the value of 1 if both parties of the transaction were within the same country and 0 otherwise. In the full sample, 47 % of the transactions were within the same country, while only 18 % of the all-stock deals were within the same country. The industrial proxies were based on both the companies sic-codes and Fama-French 12 industry classification. Both variables were dummies and took the value of 1 if the sic-codes or FF12 industry matched between the buyer and target. One could observe that the percentage of FF-12 matches was higher than the matching SIC-codes, which was expected since the FF-12 classification contained more loose criterion.

The last two information proxies included in the paper were "Recent Acquirer" and "Recent SEO". Recent acquirer was a dummy variable that took the value 1 if the buyer had acquired another company during the period since the last annual report and 0 if not. Recent SEO was also a dummy variable that took the value 1 if the acquirer had issued stocks during the period since the last annual report. A correlation matrix is presented in Appendix C.

Table 1: Sample Characteristics

Variable	**Full Sample**	**(N=773)**	**All-cash**	**(N=696)**	**All-stock**	**(N=23)**		
Bidder Capital Structure	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**	**Diff in mean**	**P-value**
Total assets	18455.5	3325.21	19235.3	3647.12	15933.0	682.37	3302.25	0.71
Leverage	0.262	0.243	0.262	0.242	0.22	0.22	0.042	0.236
Cash holding	0.102	0.076	0.1	0.075	0.16	0.13	0.06	0.002
M/b	2.778	1.684	2.85	1.68	2.32	1.46	0.53	0.782
Dividend dummy	0.826	1	0.83	1	0.87	1	0.04	0.610
CAPEX	0.08	0.02	0.06	0.02	0.22	0.05	0.16	0.881
Asset tangibility	0.313	0.295	0.312	0.24	0.18	0.08	0.132	0.123
Operating Efficiency	3.444	1.717	3.45	1.7	8.87	1.94	5.42	0.861
External pressure to pay in cash								
Competition from private buyers	0.505	0.5	0.56	0.5	0.46	0.45	0.1	0.115
Deal characteristics								
Public Target	0.401	0	0.4	0	0.35	0	0.05	0.619
Relative deal size	0.249	0	0	0	0	0	0	0.489
High-tech dummy	0.313	0	0.31	0	0	0	0.31	0.168
Information asymmetry								
Local deal	0.473	0	0.49	0	0.18	0	0.31	0.193
Matching SIC	0.173	0	0.18	0	0.13	0	0.05	0.544
FF-12 match	0.452	0	0.45	0	0.48	0	0.03	0.787
Recent Acquirer	0.168	0	0.17	0	0.044	0	0.126	0.101
Recent SEO	0.637	1	0.64	1	0.74	1	-0.1	0.313

4

Models & Result

In this chapter, all models along with the result from running them will be presented. As the models used build upon one another, they are presented in this chapter along with the result. Variable definitions are presented in appendix.

4.1 Baseline Tobit model

When testing for bidder opportunism, both all-stock and mixed bids are of interest since bidder opportunism can exist in both types of payment methods. With a Tobit model for the fraction of Stock (*Stock* ϵ [0,1]) for the payment structure, the model will correct for potential concerns to validate bidder opportunism. With a Tobit model, *Stock* is a bounded representation of the underlying function driving the true payment method (Eckbo et al. (2018)), which is why it was the best fit for investigating bidder opportunism. The choice of estimation model is in line with the theory of limited dependent variables (Maddala (1983)).

The baseline model was estimated using four groups of independent control variables: bidder capital structure, external pressure to pay in cash, deal characteristics, and industry & time period characteristics.

Bidder capital structure was defined by eight capital structure variables that controls for bidders ability to pay in cash. According to the pecking order theory, the choice of financing follows a strict hierarchy. In this hierarchy, managers' prefer to use internal sources rather than borrowing, and equity financing is a managers last choice (Myers (1983)). Therefore, bidders with a large surplus of cash (*Cash Holding*) or sufficient debt capacity (*Leverage*) should prefer to use cash over stock when financing an acquisition. From this theoretical standpoint, the main reason for using stock as payment is cash constraints (Myers (1983)). This is also supported by Hansen (1987), who argued that firms with a high level of leverage (low debt capacity), may be unable to raise new debt and therefore be forced to use stock as payment.

On the other hand, firms with a low leverage ratio do not necessarily have a high debt capacity either. For example, firms with low levels of tangible assets that can be used as collateral, can be cash constrained due to lack of security for payment. The variable *Asset Tangibility* was used as a proxy for a firm's tangible assets. Myers (1977) argued that bidders with less tangible assets are subject to moral hazard problems to a larger extent than bidders with higher levels of tangible assets. Less tangible assets therefore increases the cost of debt for the firm due to moral hazard

and can be an incentive for managers to choose stock over cash as payment.

M/B was used as a proxy for growth opportunities. A large value of market to book is according to Myers (1977) an indicator of high growth opportunity, which increases the probability that a firm will suffer from under-investment problems and be cash constrained. Large sized firms are often more diversified than smaller ones which often result in decreasing bankruptcy-and flotation costs Myers (1977). This provides larger firms with better access to the debt market and should increase the likelihood of choosing cash as payment method. In Eckbo et al. (2018), research and development (R&D) was included in their model where an increase of this variable was expected to yield a higher probability to use stock since the R&D expense lowers the cash available. This is contradictory to Caves (1982) and Morck and Yeung (1991), who argue that over time, R&D expenses can help expand and evolve companies, which also can increase the debt capacity. As mentioned above, Capital IQ reported R&D expenses for a limited numbers of firms. Therefore, capital expenditure (*CapEx*) was used as a proxy for R&D to control for similar capital structure effects.

The variable *Operating Efficiency*, primarily measures the efficiency of profit earned, as a function of operational costs. Higher efficiency is expected to lower a firm's bankruptcy costs and financial distress, which increases the debt capacity of the firm (Margaritis and Psillaki (2010)). *Operating Efficiency* was therefore expected to lower the likelihood of using stock. *Dividend Dummy* was also included as a control variable, where Eckbo et al. (2018) argued that it could have an impact on the payment decision.

External pressure to pay in cash was measured by the variable *Competition from private buyers*. Private bidders' stocks are more ill-liquid than public ones, which could force private buyers to use cash as payment. Eckbo et al. (2018) argued that this competition from private bidders puts pressure on all bidders to pay in cash.

Deal characteristics was represented by two variables: *Large Relative Deal Size* and *Public Target*. The dummy variable *Large Relative Deal Size* controls for those deals size relative to bidders total asset value in the top quartile (see Appendix A). Hansen (1987) predicted that bidders had greater incentives to choose stock due to the information asymmetry that occurs when the target's asset value increases relative the bidder's size.

According to Eckbo et al. (2018) and Faccio and Masulis (2005) the listing status of a company can be used as a proxy for its' ownership structure. They suggest that bidders prefer to use cash in an acquisition when they face a risk of losing corporate control, which is more likely to occur if the target's listing status is private. By using cash as payment, bidders minimize dilution and corporate control threats.

Industry and time period characteristics was the last group of independent control variables. After the Dot-Com bubble in 2001, the percentage of all-stock deals have decreased (Eckbo et al. (2018); Martynova and Renneboog (2006); Boone et al. (2014)). This is why the variable *Post-Bubble* was included. Also, a dummy variable controlling for whether or not the bidder is in the high-tech industry was included as well (Eckbo et al. (2018)).

Table 2: Baseline model

This table shows the coefficient estimates from the Tobit regressions for the fraction of stock (versus cash) in the deal payment. The sample is split into High-Tech and Non-tech bidders in column 6 and 7, respectively. The explanatory variables controls for bidder capital structure, external pressure to pay in cash, deal characteristics, and industry & time period characteristics. See Appendix A for variable definition. Industry dummies indicate the bidder's Fama & French 12 industry classification. Year dummies are included in estimations (5) and controls for time effects. The sample contains 773 merger bids for European targets by European non-financial public acquirers, between the years 1998-2014. t-statistics are in parentheses, using robust standard errors. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

	All Firms					**High-Tech**	**Non-tech**
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bidder capital structure							
Size	-0.334	-0.341	-0.328	-0.339	-0.320	-0.574	-0.255
	(0.065)***	(0.064)***	(0.066)***	(0.067)***	(0.066)***	(0.141)***	(0.078)***
Leverage	0.593	0.623	1.053	1.076	0.989	4.201	0.540
	(0.689)	(0.690)	(0.757)	(0.752)	(0.745)	(1.609)**	(0.967)
Cash Holding	1.023	1.071	0.620	0.635	0.859	3.587	-0.025
	(1.066)	(1.069)	(1.061)	(1.051)	(1.053)	(2.021)*	(1.238)
M/B	-0.037	-0.044	-0.042	-0.032	-0.0219	-0.015	-0.049
	(0.044)	(0.047)	(0.046)	(0.043)	(0.0423)	(0.054)	(0.072)
Dividend Dummy	-0.130	-0.124	-0.101	-0.136	-0.140	0.342	-0.293
	(0.273)	(0.273)	(0.270)	(0.268)	(0.265)	(0.500)	(0.330)
CapEx	-0.389	-0.423	-2.234	-2.647	-2.401	-10.419	-0.101
	(2.370)	(2.372)	(2.532)	(2.566)	(2.607)	(5.194)**	(1.221)
Asset Tangibility	-0.025	-0.043	0.111	0.132	0.146	0.214	-0.162
	(0.225)	(0.227)	(0.214)	(0.211)	(0.227)	(0.208)	(0.440)
Operating Efficiency	5.21e-05	1.08e-05	-1.41e-04	-3.26e-05	-4.47e-04	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)	(0.002)
Extrenal pressure to pay in cash							
Competition from Private Buyers	-1.208	-1.184	-0.492	-0.383	-0.071	-4.176	0.395
	(0.853)	(0.853)	(1.247)	(1.238)	(1.298)	(2.264)*	(1.587)
Deal characteristics							
Large Relative Deal Size	0.429	0.437	0.511	0.456	0.417	0.532	0.568
	(0.237)*	(0.238)*	(0.239)**	(0.237)*	(0.247)*	(0.407)	(0.299)*
Public Target	0.097	0.092	0.086	0.102	0.136	0.392	0.120
	(0.218)	(0.218)	(0.218)	(0.218)	(0.217)	(0.362)	(0.274)
Industry and time period characteristics							
High-Tech Dummy		0.173	0.162		0.251		
		(0.232)	(0.229)		(0.226)		
Post-Bubble				-0.851		0.446	-1.198
				(0.352)**		(0.807)	(0.418)***
Year dummies	No	No	No	No	Yes	No	No
Industry dummies	No	No	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.074	0.075	0.074	0.1113	0.1186	0.2316	0.1292
N	773	773	773	773	773	242	531

In table 2, the result from the baseline model is presented. *Size* was negative and statistically significant for all estimations (1-7). This can be interpreted as the probability of using stock as payment decreases when larger sized firms act as the bidder. Bidders in the top quartile of *Large Relative Deal Size* was found to be positive and statistically significant for all estimations, except for column (6). This indicates that when the deal size is large (in the top quartile) relative to the bidder's total assets stock is more likely to be used as payment. Controlling for industry and time characteristics, deals that were announced after 2001 (*Post-Bubble*) showed lower probability of using stock as payment in estimations (4) and (7). In estimation (6) and (7), the sample was divided into high-tech and non-tech bidders, respectively. For non-tech bidders, no differences compared to the full sample estimations (1-5) was observed. In the estimation with only high-tech bidders, *Competition from Private Buyers* and *CapEx* were found to be negative and statistically significant. Thus, in the tech-industry, increasing competition from private buyers decreases the likelihood of using stock as payment. The same was found for *CapEx*,

where increasing levels of capital expenditure lowered the probability of using stock. *Leverage* and *Cash Holding* were positive and statistically significant, but only for the high-tech firms. The rest of the variables were not found to be significant at a 1,5 or 10 % level.

4.2 Tobit model, Target/Deviation

From the results presented in table 2, one could observe that *Cash Holding* and *Leverage* were only statistically significant for tech-firms. To examine this further, both *Cash Holding* and *Leverage* were decomposed into target and deviation levels for the bidders. According to Harford et al. (2009), large investments (e.g. acquisitions) can trigger post-merger leverage adjustments since bidders need to refinance the targets' outstanding debt. Therefore, the payment method should be directly associated with the combined firms' capital structure.

According to trade-off theory (Modigliani and Miller (1963); Kraus and Litzenberger (1973)), firms are expected to have a specific target level of debt. This level is reached once the firm has maximized its' tax benefits against their bankruptcy cost (financial distress). Hence, if the target level of leverage is high, the probability of using stock payment should decreases. However, for bidders that are considered to be over-leveraged (large deviation from target leverage), the likelihood of using stock is expected to increase. This is consistent with the findings of both Harford et al. (2009) and Eckbo et al. (2018).

When the variables *Cash Holding* and *Leverage* were decomposed, ordinary least square (OLS) regressions were estimated for each industry of the Fama & French 12 industry classification (see Appendix A). The fitted values from each regression were the *Target Cash Holding* and *Target Leverage* and the residuals from each regression were the *Deviation from Target Leverage* and *Deviation from Target Cash holding*. This is line with de Jong et al. (2008), who argued that industry specific factors are consistent with predictions of conventional capital structure theories.

Cash-rich firms were defined by Eckbo et al. (2018) as companies whose target cash balance relative to total equity is large. In the model used in this thesis, this is captured by the variable *Target Cash Holding*.

Table 3: Baseline Tobit Target/Deviation

This table reports the coefficient estimates from the Tobit regressions for the fraction of stock (versus cash) in the deal payment. Market and book leverage are decomposed into Target Leverage and Deviation from Target Leverage, based on Harford et al. (2009). Cash Holding is decomposed into Target Cash Holding and Deviation from Target Cash Holding. See appendix A for variables definitions. The remaining variables controls for bidder capital structure, external pressure to pay in cash, deal characteristics, and industry & time period characteristics. Industry dummies indicate the bidder's Fama & French 12 industry classification. The sample contains of 773 merger bids for European targets by European non-financial public acquirers, 1998-2014. T-statistics are in parentheses, using robust standard errors. *, ** and *** indicates statistical significance at the 10%, 5% and 1% level, respectively.

		Market	**leverage**		**Book**	**leverage**
Variable	(1)	(2)	(3)	(4)	(5)	(6)
Bidder capital structure						
Deviation from Target Leverage	0.159	0.206	0.248	1.151	1.174	1.247
	(0.460)	(0.463)	(0.462)	(0.798)	(0.792)	(0.794)
Deviation from Target Cash Holding	0.099	0.223	0.169	0.511	0.644	0.594
	(1.081)	(1.058)	(1.075)	(1.116)	(1.093)	(1.109)
Target Leverage	-1.118	-0.792	-1.223	-0.613	-0.826	-0.452
	(1.629)	(2.115)	(1.629)	(1.645)	(2.961)	(1.650)
Target Cash Holding	5.074	0.303	5.319	5.136	0.019	5.534
	(2.802)*	(4.059)	(2.798)	(3.042)*	(4.197)	(3.039)*
Size	-0.177	-0.248	-0.181	-0.295	-0.332	-0.298
	(0.178)	(0.228)	(0.178)	(0.0667)***	(0.076)***	(0.066)***
M/B	-0.048	-0.049	-0.052	-0.0394	-0.043	-0.042
	(0.048)	(0.049)	(0.049)	(0.043)	(0.045)	(0.045)
Dividend Dummy	-0.135	-0.081	-0.145	-0.147	-0.098	-0.172
	(0.276)	(0.275)	(0.274)	(0.271)	(0.270)	(0.269)
CapEx	-0.862	-1.693	-1.402	-1.449	-2.283	-1.972
	(2.410)	(2.479)	(2.443)	(2.477)	(2.528)	(2.509)
Asset Tangibility	0.095	0.153	0.098	0.071	0.128	0.068
	(0.207)	(0.209)	(0.206)	(0.218)	(0.213)	(0.218)
Operating Efficiency	1.59e-04	-7.21e-05	2.47e-04	6.41e-05	-1.49e-04	1.52e-04
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
Extrenal pressure to pay in cash						
Competition from Private Buyers	-0.383	-0.649	-0.118	-0.204	-0.451	0.026
	(0.924)	(1.257)	(0.927)	(1.007)	(1.255)	(1.012)
Deal characteristics						
Large Relative Deal Size	0.466	0.498	0.412	0.453	0.500	0.407
	(0.250)*	(0.252)**	(0.249)*	(0.237)*	(0.239)**	(0.236)*
Public Target	0.105	0.106	0.118	0.092	0.0868	0.103
	(0.218)	(0.221)	(0.217)	(0.217)	(0.219)	(0.216)
Industry and time period characteristics						
High-Tech Dummy			0.189			0.183
			(0.232)			(0.229)
Post-Bubble			-0.925			-0.933
			(0.354)**			(0.353)***
Industry dummies	No	Yes	No	No	Yes	No
Pseudo R-squared	0.0795	1.007	0.1109	0.0815	0.1032	0.1135
N	773	773	773	773	773	773

In Table 3 the result from the baseline model, with cash holdings and leverage decomposed, is presented. The model was estimated with both Market value of leverage (1-3) and book value of leverage (4-6). Independent of using either Marker- or book leverage, the coefficients of the variables *Target Cash Holding*, *Post-Bubble* and *Large Relative Deal Size* were found to be statistically significant. *Target Cash Holding* was found to be positive and statistically significant in estimations (1,4,6), which was when industry dummies and the dummy variable *Post-Bubble* were excluded. *Post-bubble* was statistically significant and negative in estimations (3,6). The coefficient for *Large Relative Deal Size* was positive and statistically significant

for all estimations (1-6). The main difference from the result in the Baseline model was that when using market leverage (1-3), the variable *Size* was not found to be statistically significant.

4.3 Tobit model, Information Asymmetry

Table 4: Information Asymmetry

This table contains the coefficient estimates from the Tobit regressions for the fraction of stock (versus cash) in the deal payment. The explanatory variables are measures for information asymmetry about bidder valuation based on bidder and target realness (Same Primary SIC Dummy and Same Industry Classification (FF12)), geography (Local Deal, and recent transactions (Recent SEO and Recent Acquirer), as well as measures for external pressure to pay with cash. All variables are defined in appendix A. The regression also include controls for bidder capital structure, deal characteristics, and industry & time period characteristics from Table 2. The sample contains 773 merger bids for European targets by European nonfinacial public acquirers, 1998-2014. t-statistics are in parentheses, using robust standard errors. *, ** and *** indicates statistical significance at the 10%, 5% and 1% level, respectively.

	Tobit	**regression**
Variable	(1)	(2)
Information asymmetry		
Same Primary SIC Dummy	-0.495	
	(0.325)	
Same Industry Classification (FF12)		0.105
		(0.216)
Local Deal	-0.317	-0.305
	(0.218)	(0.218)
Recent SEO	0.172	0.181
	(0.223)	(0.224)
Recent Acquirer	-0.166	-0.168
	(0.301)	(0.301)
Extrenal pressure to pay in cash		
Competition from Private Buyers	-1.093	-1.004
	(0.853)	(0.846)
Other controls		
Bidder capital structure	Yes	Yes
Deal characteristics	Yes	Yes
Industry and time period	Yes	Yes
Pseudo R-squared	0.0938	0.0902
N	773	773

In table 4, the result from the last model is presented. The informative proxies that was used to discriminate between the two hypotheses Rational Payment Design and Bidder opportunism were included. Almazan et al. (2010) found evidence that corporate finance decisions are affected by geographical location, which is consistent with the findings of Eckbo et al. (2018). Based on this, geographic location was used as an informative proxy in this thesis. Logically, if the bidder and target operates

within the same country, the information asymmetry between them should decrease. The same argument is behind the industrial proxies that are included. None of the variables in the model showed any statistically significance.

5

Discussion

This chapter will provide an empirical discussion of the result. Possible implications of the results will be analyzed and the result will be compared to previous research within the field. This section also provides a critical analysis of the outcome from the multiple Tobit regressions.

To investigate whether or not opportunistic behaviour exists among managers of bidding firms in the market of corporate control, informative proxies were used. The result showed that none of the proxies were found to be statistically significant (see Table 4). This means that a certain payment structure accepted by the target's managers is not affected neither by geographic nor industry relatedness. Thus, these variables were not found to decrease information asymmetry as was hypothesized. Eckbo et al. (2018) found that both geographic and industry relatedness did in fact affect the payment structure, while no such evidence was found in this thesis. Eckbo et al. (2018) concluded that rational payment design was more likely to explain the payment structure rather than opportunistic behaviour. Their conclusion was drawn from the sign of the informative proxies and motivated primarily by three factors. First, increased knowledge of the target's managers regarding the intrinsic value of the bidder's physical plants. Second, experience from interrelated local labor markets. Third, direct experience from the bidder's action in the local market.

As mentioned, based on the sample included in this thesis, similar conclusions could not be made. What was found however, was that the payment method chosen for an acquisition, seems to follow the hierarchy of the pecking order theory (Myers and Majluf (1984)). The size of the bidder's firm was found to be statistically significant and negative for all estimations except for when market value rather than book value of leverage was used. This implies that when the size of the company increases, the probability of using cash as payment increases as well. This is in line with the arguments of Myers (1977), where larger firms tend to be more diversified, which decreases their bankruptcy-and flotation costs, thus improving their debt capacity.

The coefficient of the variable *Large Relative Deal Size* was found to be statistically significant and positive for all estimations in the models used. This implies that the probability of using stock as payment is higher for the firms when the ratio deal size and bidder's total assets is high. When the target has proprietary information on its' own asset value, a "lemons" problem arises as explained by Hansen (1987),

in his model of asymmetric information. When the target has superior information and the bidder wants to pay with cash, the target will only accept a cash bid that is above the intrinsic value. Therefore, the bidder may choose to use its' own equity, since stock can serve as a contingent price mechanism. The value of the deal will thus be decided by the synergy effect of the merger. Hansen (1987) argued that this problem is more likely to occur when the relative deal size is larger, which is in line with the findings in this thesis. Another possible explanation could be that when the deal size (target value) is high relative to the bidders total assets, it would required large amount of cash relative to the bidders size to be able to finance with cash.

As discussed previously, all-stock deals had its peak in the 90s before the burst of the dot-com bubble (Boone et al. (2014)). This same trend was observed in the sample, which was highlighted in figure 2. Therefore, it was expected to find the coefficient of *Post-bubble* to be negative and statistically significant, i.e. the likelihood of using stock decreased for deals announced after 2001. By looking at the average relative deal size per year (appendix B), one could observe that the average level was higher prior to 2001, which is to be expected given that *Post-bubble* was found to decrease the probability of using stock.

Table 2 showed that *Leverage* and *Cash Holding* were found to be positive and statistically significant, but only for high-tech firms. For leverage, this was in line with expectations. An increased level of leverage may limit the firm to raise new debt which makes the firm more cash-constrained. A rather surprising finding was that, for tech-firms, an increase in cash holdings rendered a higher probability for the bidder to use stock as method of payment. This would imply that high-tech firms are hoarding cash and are more likely to use stock, regardless their level of cash-holdings. A possible explanation could be found in the work of Pinkowitz et al. (2013), who found that some of the most cash-rich firms tend to refrain from the pecking order hierarchy and choose stock over cash without any explanation as to why. Also, *CapEx* was found to be negative and statistically significant for tech-firms, which implies that increased levels of capital expenditures lowers the probability to pay with stock.

In the sample used in this thesis, there were also some observed differences between estimating the model using market versus book value of leverage (table 3). When market value of leverage was used, the variable *Size* was not found to be significant, as it was using book value of leverage. However, according to Eckbo et al. (2018), there should not be any differences between using market or book value, and thus, no conclusion was drawn regarding this finding.

There are several reasons to believe that the sample used in this thesis was skewed towards the later years investigated. Also, the number of stock bids in the sample is very low, which probably not reflect the true number of stock bids. With the exception of size, relative deal size and post-bubble, the other variables found to be statistically significant are inconsistent between the models and therefore, no general conclusions can be drawn. For example, target cash-holding is only statistically significant for some estimations, without any sufficient explanation as to why. The reason for this inconsistency is, to the best of the authors knowledge, due to the small variation of payment method in the sample. Using other data sources might therefore have provided different results. While there is no possibility for generalization, we recognize that while this thesis did not support any of the two

hypotheses, opportunistic bidding may still exist on the European market.

6

Conclusion

The aim of this thesis was to investigate whether or not stock-financed take-overs could be considered to be opportunistic in the European M&A market. By using informative proxies of target's ability to value the bidder, the aim was to discriminate between two hypotheses with opposite outcomes. After 2001, payment methods shifted towards cash, thus, the limited number of observations prior to 2001 caused a low variation regarding the payment method in the sample. After running the models, none of the informative proxies used were found to be statistically significant, and therefore, no general conclusion could be made.

The authors found variables that seemed to affect the payment structure in M&A deals. When the size of the bidder firm increases, the probability of using stock as payment decreases. Also, when the size of the deal is large relative to the bidder's total assets, the probability of using stock as payment increases. As stated and previously discussed, performing this study with a supplemented data set could yield different results and thus be an interesting area for future research.

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Appendix A

(Variable definitions)

Table 5: Variable Defenition

Variable name	Variable definition and source
Bidder Capital Structure	
Size	Natural log of total assets. Capital IQ
Leverage	Total debt/totalt assets. Capital IQ
Cash holding	Cash & Short term investments/Total assets. Capital IQ
M/B	Market cap 1 day prior to annoncement/Total asset-Total liabilites. Capital IQ
Dividend dummy	Dummy = 1. if dividends large than 0. Capital IQ
CAPEX	Capital Expenditure/Total assets. Capital IQ
Asset tangibility	Property. Plant & Equipment / Total assets. Capital IQ
Operating Efficiency	(Cost of goods sold+ selling. general and administrative expense)/(property. plant & equipment + total current assets - cash - total current liabilities). Capital IQ
Target Leverage	Predicted value from the cross-sectional(industry by industry) regression: leverage $=\beta_0+\beta_1$Size$+\beta_2$Operating efficenciy$+\beta_3$M/B$+\beta_4$Capex+e
Deviation from Target leverage	Fitted residual from regression in Target leverage
Target Cash holdings	Predicted value from the cross-sectional(industry by industry) regression: cash $=\beta_0+\beta_1$Size$+\beta_2$Operating efficenciy$+\beta_3$M/B$+\beta_4$Capex$+\beta_5$Leverage+e
Deviation from target Cash holdings	Fitted residual from regression in Target cash holdings
External pressure to pay in cash	
Competition from private buyers	Fraction of all mergers bids in the targets Fama and French 12 industry and year in which the bidder is private. Capital IQ
Deal characteristics	
Public Target	Dummy = 1. if the target is public. Capital IQ
Relative deal size	Dummy = 1. if the ratio of deal value to bidder total assets is in the top quartile. Capital IQ
High-tech dummy	Dummy = 1 if the bidder is defined as high-tech. Hall
Information asymmetry	
Local deal	Dummy = 1 if target and bidder is located within the same country. Capital IQ
Matching SIC	Dummy = 1 if the four digit SIC-code matches between bidder and target. Capital IQ
FF-12 match	Dummy = 1 If target and bidder are within the same industry classification according to Fama French industry classification
Recent Acuirer	Dummy = 1. if the bidder annonced another merger bid during the period of the latest annual report before the annoncement date. Capital IQ
Recent SEO	Dummy = 1. if the bidder issued stocks during the periods of the latest annual report before the annoncement date. Capital IQ

Appendix B

(Average time trends)

Table 6: Average time trends

This table contains of yearly averages for bidder's Mark to Book and relative deal size.

Year	Average Market to Book	Average relative deal size
1998	4.106	0.337
1999	2.075	0.558
2000	1.840	0.254
2001	2.953	0.142
2002	4.138	0.096
2003	4.736	0.169
2004	2.207	0.066
2005	3.356	0.141
2006	2.705	0.194
2007	2.431	0.281
2008	1.580	0.089
2009	1.892	0.079
2010	1.556	0.145
2011	1.616	0.250
2012	2.101	0.153
2013	2.268	0.315
2014	2.521	0.527

Appendix C

(Correlation matrix & Criterion Capital IQ)

Table 7: Criterion Capital IQ

This table shows all criterion used in Capital IQ to obtain the sample used in this thesis. Even if time limit starts at 1984, M&A deals could only be obtained before 1998. As described in section (3.1), we tried to re-evaluate the selection criteria to increase the number of observation before the year 2000, but available data was still scarce.

1	M&A Announcment	1/1/1984-12/31/2014	619267
2	Geographic Location (Buyers/Investors)	Irealand. United Kingdom. Belgium. France. Germany. Netherlands. Switzerland. Sweden. Denmark. Finland. Norway	134235
3	Geographic Location (Target/Issuer)	Irealand. United Kingdom. Belgium. France. Germany. Netherlands. Switzerland. Sweden. Denmark. Finland. Norway	106127
4	Industry Classifications (Buyers/Investors)	Not (Financial)	72172
5	Industry classifications (Target/Issuer)	Not (Financial)	70481
6	Total Transaction Value (EURmm. Historical rate)	is greater than 25mm	7198
7	Acquirer LTM Financials	Total Asset (at announcment) (EURmm. Historical rate) - greater than 0	3615
8	Acquirer LTM Financials	Total Debt (at announcment) (EURmm. Historical rate) - greater than 0	3296
9	Acquirer LTM Financials	Total Cash & ST Investments (at announcment) (EURmm. Historical rate) - greater than 0	3234
10	Company Type (Buyers/Investors)	Public Company	1432
11	Company Type (Target/Issuer)	Public Company or Private Company	1005
12	Acquirer Market Cap 1-Day Prior	(EURmm. Historical rate): is greater than 0	842
13	Missed observation	No report on payment structure	809
14	Missed observation	No SIC-code	783
15	Missed observation	No Financial statements number reported	773

Table 8: Correlation Matrix

This table shows all criterion used in Capital IQ to obtain the sample used in this thesis. Even if time limit starts at 1984, M&A deals could only be obtained before 1998.

	Size	Leverage	Cash Holding	M/B	Dividend Dummy	CapEx	Asset Tangibility	Operating Efficenciy	Competition from Private Buyers	Large Relative Deal Size	Public Target	High-Tech dummy	Post-Bubble	Local deal	Matching SIC	FF-12 match	Recent Acquirer	Recent SEO
Size	1	-0.054	-0.101	0.031	0.002	-0.055	-0.046	0.001	-0.106	-0.010	0.005	-0.004	-0.033	0.008	0.106	0.007	0.001	0.100
Leverage	-0.054	1	-0.338	-0.081	0.004	0.048	0.283	0.015	0.276	0.016	0.025	-0.072	0.017	0.004	0.003	0.105	0.059	-0.005
Cash Holding	-0.101	-0.338	1	0.127	-0.042	0.005	-0.189	-0.035	-0.172	-0.034	0.005	-0.042	0.008	-0.044	0.033	-0.065	-0.063	0.041
M/B	0.031	-0.081	0.127	1	0.005	0.003	-0.015	0.007	-0.062	0.061	0.038	0.031	0.018	-0.072	0.074	0.037	-0.028	0.050
Dividend Dummy	0.002	0.004	-0.042	0.005	1	0.017	-0.032	-0.013	0.007	-0.162	0.033	-0.015	-0.003	0.010	-0.025	-0.085	-0.004	-0.062
CapEx	-0.055	0.048	0.005	0.003	0.017	1	-0.013	0.001	0.020	-0.021	0.043	-0.023	0.006	-0.036	-0.016	-0.033	-0.018	-0.046
Asset Tangibility	-0.046	0.283	-0.189	-0.015	-0.032	-0.013	1	-0.009	0.163	0.025	0.033	0.063	-0.001	0.049	-0.025	0.120	0.033	-0.056
Operating Efficiency	0.001	0.015	-0.035	0.007	-0.013	0.001	-0.009	1	-0.002	-0.001	0.035	-0.064	0.004	0.026	-0.061	-0.052	-0.002	0.001
Competition from Private Buyers	-0.106	0.276	-0.172	-0.062	0.007	0.020	0.163	-0.002	1	-0.030	-0.002	-0.012	0.107	0.030	-0.083	0.008	0.051	-0.026
Large Relative Deal Size	-0.010	0.016	-0.034	0.061	-0.162	-0.021	0.025	-0.001	-0.030	1	-0.057	-0.041	-0.056	0.052	0.083	0.028	-0.108	-0.061
Public Target	0.005	0.025	0.005	0.038	0.033	0.043	0.033	0.035	-0.002	-0.057	1	0.062	0.044	-0.126	0.030	-0.007	0.020	-0.035
High-Tech dummy	-0.004	-0.072	-0.042	0.031	-0.015	-0.023	0.063	-0.064	-0.012	-0.041	0.062	1	0.029	-0.165	0.059	0.025	-0.013	0.017
Post-Bubble	-0.033	0.017	0.008	0.018	-0.003	0.006	-0.001	0.004	0.107	-0.056	0.044	0.029	1	0.042	0.030	0.010	0.026	-0.013
Local deal	0.008	0.004	-0.044	-0.072	0.010	-0.036	0.049	0.026	0.030	0.052	-0.126	-0.165	0.042	1	-0.051	-0.019	0.045	-0.016
Matching SIC	0.106	0.003	0.033	0.074	-0.025	-0.016	-0.025	-0.061	-0.083	0.083	0.030	0.059	0.030	-0.051	1	0.442	0.004	0.012
FF-12 match	0.007	0.105	-0.065	0.037	-0.085	-0.033	0.120	-0.052	0.008	0.028	-0.007	0.025	0.010	-0.019	0.442	1	0.050	-0.015
Recent Acquirer	0.001	0.059	-0.063	-0.028	-0.004	-0.018	0.033	-0.002	0.051	-0.108	0.020	-0.013	0.026	0.045	0.004	0.050	1	-0.013
Recent SEO	0.100	-0.005	0.041	0.050	-0.062	-0.046	-0.056	0.001	-0.026	-0.061	-0.035	0.017	-0.013	-0.016	0.012	-0.015	-0.013	1