

Preliminary master thesis

What characterizes targets acquired by financial versus strategic buyers, and how do this affect takeover premiums?
Evidence from Norwegian transactions.

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1.0 Introduction

In 2017, the global volume of all Mergers and Acquisitions (hereafter M&A) amounted to USD 3,150bn, exceeding USD 3 trillion for the fourth year in a row (Bjerknes, 2018). Berk and Demarzo (2017, p. 994) argues that due to the money at stake and the complexity of the deals, decisions concerning M&A are some of the most important decisions that financial managers make.

Although some acquisitions unfold as a negotiation between the target and a single potential buyer, many takeovers include several competing bidders. The bidders can belong to one of two groups, strategic or financial buyers (Gorbenko & Malenko, 2014). Strategic buyers usually operate in a related business, such as competitors, suppliers or customers. They are long-term owners that acquire targets which can be integrated into their own business to realize operational synergies. Financial buyers, primarily private equity firms (hereafter PE), treat the target as part of a financial portfolio and exits the investment once the opportunity to do so is sufficiently attractive.

Historically, the percentage of annual deal value acquired by financial buyers have varied substantially (Martos-Vila et. al., 2014). Since the beginning of the 2000s, PE firms have been a major driver of M&A globally. Even larger listed companies have come within their reach (Cumming et al., 2007). In Norway this was illustrated by the 2014 PE acquisition of listed IT company, EVRY. The bid valued the company's equity at NOK 4.27 billion (Apax.com, 2014).

Despite the importance of M&A in global finance, and the recognized importance of strategic and financial bidders (Gorbenko & Malenko, 2014), there has been limited research on the difference between the two types of acquirers in the Norwegian market, or in Europe for that matter. Existing research has mainly focused on the US. Fidrmuc et. al. (2012) studied the types of targets strategic and financial buyers bid for, while other papers have focused on bidding behaviour and the different takeover premiums paid by strategic and financial buyers (Bargeron et. al., 2008; Dittmar et. al., 2012).

In this thesis we want to uncover which factors separates targets acquired by private equity firms versus strategic buyers in Norwegian acquisitions. We will

also look at whether there are differences in the takeover premiums paid by the two types of acquirers, and whether these differences can be explained by target characteristics.

2.0 Motivation

The overall objective of this thesis is to develop a deeper understanding of the difference between strategic and financial acquirers. We want to uncover which factors separate targets typically acquired by PE firms compared to strategic buyers, whether the two types of acquirers pay different takeover premiums and how target characteristics affect premiums. There is a widespread view that strategic acquirers on average have a higher willingness to pay than PE firms. However, some recent studies have challenged this view and instead points to target characteristics as being at least, just as important determinants of takeover premiums (Gorbenko & Malenko, 2014; Fidrmuc et. al., 2012).

Our study will focus on the Norwegian market, because no one has investigated these issues in Norway before. We also think that the high level of M&A activity in Norway, and its effect on shareholder returns, makes it important to understand the market dynamics and the players involved. According to Norges Bank Investment Management (hereafter NBIM), the Ministry of Finance in Norway and NBIM has discussed whether the pension fund global should consider investments in unlisted equity (NBIM, 2018). This exemplifies why it is also important for Norwegian policy makers get a deeper understanding of the nature of acquisitions, highlighting the importance of further research within the field.

We argue that our thesis is highly relevant and could provide meaningful insights for the participants of the Norwegian M&A market. Our motivation is to obtain usable insights that will enable financial managers, investors and policy makers to make more informed decisions.

We aim to answer the following research questions:

- 1) *What characterizes targets acquired by PE firms compared to strategic acquirers?*
- 2) *Does the type of acquirer affect the take-over premium?*

3.0 Literature review

In this section, we will start by reviewing the literature regarding the rationale behind why M&A activities occur. Thereafter we will discuss literature regarding the difference between the types of targets financial and strategic buyers bid for. Lastly, we discuss whether strategic acquirers have a higher willingness-to-pay than private equity firms.

3.1 Why do firms engage in M&A activities?

Acquisitions are often considered an alternative investment form. One of the most general reasons that corporations engage in M&A activity is that the buying firm considers the acquisition to be an attractive investment (Pautler, 2001). They will undertake acquisitions when it is the most efficient way of entering new geographical markets, expanding capacity or acquiring new knowledge or skills.

According to Walker (2000), early studies of corporate takeovers identified five broad motivations for how corporate acquisitions could create value: 1.) Increase efficiency by exploiting economies of scale or disciplining inefficient managers (Bradley et. al., 1983; Martin & McConnell, 1991). 2.) Reduce agency problems associated with managers' access to the firm's free cash flow (Jensen, 1986; Lang et. al., 1991). 3.) Exploit asymmetric information between the managers of the acquiring firm and the shareholders of the target (Myers & Majluf, 1984). 4.) Enable the acquiring firm to utilize the target firm's tax credits. 5.) Increase the combined firm's market power.

Several of these views have since been challenged. Amongst others, Eckbo (1992) used data on merger-induced abnormal stock returns of non-merging industry rivals to study whether horizontal mergers can lead to increased market power. His research reveals evidence against the hypothesis that horizontal mergers usually has anticompetitive effects.

Kaplan (1989) studied post-buyout operating improvements in 48 large management buyouts (MBO's) carried out in the period from 1980 to 1986. He found that the firms on average experienced an improved operating performance and cash flow after the takeover. The most interesting contribution however, is that the study provides clues to the reasons behind the increased operating

performance. The evidence presented by the author confirms that reduced agency cost seems to be the reason behind the operational improvements, and not asymmetric information between the management and the shareholders.

Bradley et. al. (1983) made another interesting contribution to the discussion in their study of 697 tender offers made in the US between October 1958 and December 1980. The purpose of the paper was to provide evidence in favour of either the information or the synergy hypothesis. According to the information hypothesis the rationale behind an acquisition is the discovery of undervalued assets owned by the target firm, while the synergy hypothesis assumes that the rationale is to exploit specific assets to achieve synergy gains, which is only possible if control of the target firm's assets is transferred to the bidding firm. The authors found that the abnormal returns to target shareholders of unsuccessful tender offers dissipate within two years of the initial unsuccessful bid, indicating that the synergy hypothesis better describes the nature of acquisitions than the information hypothesis.

3.2 What types of firms strategic and financial buyers bid for

Strategic buyers operate within the same industry as the target and are looking to purchase assets that they can redeploy to its best use in their own operations. Since most assets are quite specialized, strategic buyers can often redeploy the assets in a better way than outside industry buyers and exploit operational synergies that other buyers cannot obtain (Shleifer & Vishny, 1992; Gorbenko & Malenko, 2014).

Targets pursued by private equity firms are typically undervalued companies with the potential to generate strong cash flows, often after the business has undergone a reorganisation (Gorbenko & Malenko, 2014).

Fidrmuc et. al. (2012) conducted an extensive study on a sample of 205 private equity transactions which they matched with an equal number of comparable acquisitions by strategic acquirers in the US between 1997 and 2006. The authors found that the two types of buyers typically buy targets with different characteristics, even when they control for the target industry, deal size and timing of the transaction. Targets acquired by private equity firms more often tend to be

characterized by strong cash flow and low market-to-book ratios. The deals are often target initiated. While targets with high R&D expenses, more intangible assets and higher market-to-book ratios more often end up being acquired by strategic buyers.

Bargeron, Schlingemann, Stulz and Zutter (2008) studied takeovers in the US between 1980 and 2005. The authors found that targets which get acquired by public firms (strategic buyers) tend to have stronger sales and employment growth compared to targets acquired by private firms (both strategic and financial). In addition, they also found that targets acquired by public firms tend to have higher R&D expenditures. Targets acquired by private firms tend to have a higher operating cash flow to total assets ratio. This finding is in line with the theory that private equity firms can create value by distributing excess cash flow as dividends to shareholders. When the authors looked at the difference between private equity and private operating firms they found that the targets acquired by private equity firms have more business segments than targets acquired by private operating firms. This is consistent with the view that having more segments reduces potential synergy gains.

3.3 Do strategic acquirers have a higher willingness-to-pay than financial acquirers? And how does this affect takeover premiums

It has become an established view that strategic acquirers have a higher willingness to pay than private equity firms (Gorbenko & Malenko, 2014). Since strategic buyers operate within the same industry as the target firm they can utilize the asset better than other owners and thereby realize synergy gains between their own operations and that of the target firm (Shleifer & Vishny, 1992; Gorbenko & Malenko, 2009).

Several studies have presented evidence for this view. Bargeron et. al. (2008) studied a sample of 1,214 takeovers by public bidders and 453 takeovers by private bidders between 1980 and 2005. They found that takeovers by private equity firms on average resulted in a 28.5% takeover premium. This was significantly below acquisitions by strategic firms, where the premium was 46.5% for public acquirers and 40.9% for acquisitions by private operating firms.

Since private equity firms would not be able to exploit potential synergy gains in acquired targets, we would expect targets with potential operational synergies to be acquired by operating firms and therefore have higher takeover premiums. Companies without potential synergies would likewise be of less interest for strategic buyers and instead be acquired by private equity at a lower premium. To check if synergies could help explain the difference in takeover premiums, Barger et al. (2008) studied the premiums for targets acquired by firms with the same two-digit SIC code (industry code), and targets acquired by firms that do not have the same two digit SIC code. They found that takeover premiums for acquisitions within the same industry are not significantly different from acquisitions made by companies outside the target's industry.

Shleifer and Vishny (1992) present another argument for the difference in willingness to pay. They argue that industry outsiders such as private equity firms do not know how to properly manage industry specific assets such as oil rigs, pharmaceutical patents, or steel plants. As a result, they face agency costs because they must hire specialists to run the asset for them. Additionally, they fear overpaying for the asset since they lack the necessary knowledge to value the asset properly. This could result in assets being sold for prices below their value in their best use, i.e. when the assets are valued and bought by industry specialists.

Another interesting contribution was made by Gorbenko & Malenko (2014) when they discovered that while strategic bidders, have higher target valuations than financial bidders on average, there are other important differences between the two types of bidders. Firstly, financial acquirers systematically value targets with poor performance and a lack of investment opportunities, higher. Secondly, the spread between the valuations of different strategic bidders is significantly larger than the spread between the valuation of financial bidders. Lastly, valuations of financial bidders show higher correlation with economic factors such as cost of debt and stock market performance, than that of the strategic bidders. The results indicate that different targets are attractive to different bidders and therefore support the market segmentation view.

4.0 Theory

4.1 Agency theory and the reduction of agency costs through PE ownership

A corporate manager is the agent of a shareholder, and if the managers view differs from the shareholders view, it could give rise to an agency problem (Jensen, 1986). Scholars as early as Smith (1776) have raised this concern, arguing that one cannot expect managers of other people's assets, to watch over it as anxiously as they do with their own. Berle and Means (1932) stated that "self-interest has long been regarded as the best guarantee of economic efficiency". However, after the separation of ownership and control, this assumption no longer holds, as the agent controls the wealth of investors and have the possibility to make sub-optimal decisions.

The base case in original agency cost theory is that managers own 100% of the firm's equity (Jensen & Meckling, 1976). However, with ownership of less than 100% combined with diverging interest between managers and shareholders, it gives managers incentives not to act purely in the best interest of the shareholders. Hence, with diverging interest, it simultaneously gives rise to additional agency costs (increased monitoring and reporting) because of managements shirking and perquisites consumption (Ang, Cole & Lin, 2000). Grossmann and Hart (1983), and the incentive compatibility literature, have expressed their concern about asymmetric information, moral hazards and conflict of interest that arisen between dispersed ownership. Jensen and Meckling (1976) suggests that asymmetric information and conflict of interest arise because of managements unwillingness to take unpopular choices as wage reductions, shutting down negative NPV projects, firing employees, negotiation with suppliers or contractors etc. Managers that makes suboptimal choices, ultimately affects shareholder returns negatively.

4.1.1 Free cash flow problem

According to Lehn and Poulsen (1989), acquisitions by financial buyers offer a solution to the agency cost problem. PE firms tend to pay out excess cash not needed to fund NPV positive projects or day-to-day operations. This leaves less cash for management to waste the money on non-profitable projects and inefficient organization. Targets with high cash flow reserves are therefore seen as attractive investment objects for PE firms, which could lead to higher willingness

to pay (Lehn & Poulsen, 1989; Jensen, 1986). Another study conducted by Lang et. al. (1991) supports the free cash flow hypothesis, that managers make suboptimal decisions when they are endowed with free cash flow.

4.1.2 Management incentives

Shleifer and Vishny (1997) argue that management should be given long term performance-based pay, to align their incentives with shareholder interests. With compensation contingent on the managers long-term decisions and firm performance, the shareholder would be more certain to receive his expected return. However, it might be costly to get the management to act in the shareholders best interests. This is because shareholders need a verifiable way to measure the quality of the managements decisions related to firm performance (Shleifer & Vishny, 1997). Another way to align management decisions with shareholders expectations, is to give the management ownership, stock options, bonuses, or anything that is contingent to the shareholders expectations (Jensen & Meckling, 1976). Fama (1980) however, argues that the shareholders need to balance the cost and benefit of monitoring the managers. If managers' outside options are larger than the benefits of staying, they managers will leave either way. Hence, the purpose of giving management large incentives, when monitoring is not easily verifiable, is unlikely to be beneficial to shareholders.

4.2 Winners curse

Winner's curse is a situation when the highest bidder ends up with the asset, but is likely to have overestimated the value of the asset (Capen, Clapp & Campbell, 1971). The economic rationale behind corporate takeovers is that the bidders expect the assets to generate positive cash flows in the future. Hence, the "winner's curse" hypothesis suggests that the winning bidder, is the one that overestimates the value of the target the most (Varaiya & Ferris, 1987). In that case, the following returns may no longer be justified by the price paid for the target. All corporate bidders have access to publicly available information at the time of the bidding competition. Hence, with no asymmetric information, the rational bidders should all have the same valuations of the targets future cash flows, and the winners curse is no longer a problem (Cox & Isaac, 1984). However, with imperfect information, the bidder's valuation will deviate from the true value of the target. If the highest bid is lower than the true valuation, there is

no deal, but if the bid is higher, the winner will incur a winner's curse. The winner is therefore said to be "cursed" because the actual value they received is less than what they paid for it, or what they expected it to generate (Thaler, 1988).

5.0 Data collection

In order to conduct our analysis, we need to include acquisitions carried out by both strategic and financial buyers in our dataset. As the basis for constructing our dataset we extracted a list of 8157 M&A transactions carried out between 01.01.1996 and 31.07.2017 on Norwegian companies from the Securities Data Corporation (SDC) Platinum database. We start by searching for acquisitions by Private Equity firms. First, we sort out all transactions carried out by "Investment & Commodity Firms, Dealers, Exchanges", where the acquirer acquired 50% or more of the target company. We also require that the equity value resulting from the transaction were known. This resulted in a list of 141 transactions. Thereafter we investigated each transaction and its sponsor to verify if the transactions were indeed carried out by private equity investors. This process resulted in a list of 46 transactions carried out by private equity firms. To find matching transactions carried out by strategic buyers we follow a rigid matching procedure further described under the methodology section. The result is a sample consisting of 92 takeovers of listed Norwegian firms between 1996 and 2017.

In order to perform our study, we will need to supplement the acquisition data from SDC with company and accounting data in addition to price data in the months prior to the deal announcement. The company and accounting data we will extract from BI's proprietary Center for Corporate Governance Research (CCGR) database. Price data will be extracted from Bloomberg.

6.0 Methodology

6.1 Target matching procedure

To construct our sample, we need to identify pairs of acquisitions made by private equity and strategic buyers that are similar enough to be comparable. To identify these pairs, we employ a rigid matching procedure, first employed by Fidrmuc et al. (2012). In our view, the matching procedure is one of the key features of our research design. The matching procedure takes three different variables into

account: 1.) which year the deal was announced, 2.) target industry and 3.) deal size. We start with our list of 46 private equity deals and try to find a strategic deal that matches it. Every acquisition made by a strategic buyer can only be matched to a private equity transaction once.

Matching on industry is important to reduce bias as different industries are often characterized by different factors, and financial or strategic bidders may be more prone to acquire companies in certain industries. Bernstein et. al. (2010) reports that the distribution of PE investments across industries are uneven, with PE investments being overrepresented in mature and traditional industries like the textiles, pulp & paper, machinery & equipment, electrical and chemical industries.

Matching transactions based on deal size is also paramount in order not to introduce bias into our data. Public companies, which belong to the category of strategic buyers, generally acquire significantly larger companies than private companies (Bargeron et al., 2008).

Private equity deals tend to occur in waves (Martos-Vila, et. al., 2011). In addition, there have been observations of variations in competitive pressure between bidding acquirers in different periods. For example (Officer et al., 2010) discovered that deal competition was substantially higher in the period from 2006-2007 compared to the years prior. Findings like this highlights the importance of matching targets based on the timing of the transactions.

The matching procedure follows a series of steps: 1.) For each private equity transaction in our sample we identify a set of acquisitions by a strategic buyer where the target company is in the same industry as the private equity firm, identified by having the same first three SIC code digits. Among this list we search for a takeover with the same announcement year and that lies within +/- 25% error range in terms of deal value. 2.) If no similar transaction could be found within the same announcement year and/or with a transaction value within the +/- 25% error range, we widen the search horizon to include the year after and the year before the announcement date. 3.) If no match is found in step (2) either, we apply the same search criteria to two years before and after the announcement date. 4.) If this still yields no results, we will repeat step (1) but search for

acquisitions where the target is within the first two SIC code digits as the target of the private equity transaction. 5) If this process still leaves us without a matching pair, we will repeat step (1), but search for acquisitions within a +/- 50% deal range. (6) The last resort is to repeat step (1), but look for a transaction where only the first SIC code digit matches. The resulting dataset will consist of 46 private equity takeovers that have been exclusively matched with 46 strategic acquisitions. As a result, the two groups of acquisitions are comparable in terms of timing, industry and transaction size.

6.2 Empirical method

Our aim is to find target characteristics that separates financial acquisitions from strategic acquisitions, and whether there are any differences in the takeover premiums paid by the two types of acquirers. Because of that, we have split the empirical method for the two research questions. First, we present the empirical methodology concerning the target characteristics, and then the method addressing the takeover premiums.

6.2.1 Target characteristics

When screening for different target characteristics, we will primarily use two methods: standard linear regression and quantile regressions. After collecting the necessary data, consisting of parameters and financial ratios from the acquisitions, we will use the two regression methods to obtain the most significant characteristics. The advantage of the latter method is that it minimizes the residual sum of squares on the median of each quantile, instead of the various data points. This results in a more robust regression, as the results are less sensitive to outliers (Koenker & Bassett, 1978; Stock & Watson, 2014 p. 161-162, 233). Testing parameters and financial ratios for significance will be done with t-tests, F-tests and Wald-test, and will be excluded from further research if they are not significant at a pre-set significance level. The reason for employing a t-test is due to the small and non-normal sample distribution (smaller peak around the mean, and fatter tails). Whenever the sample size increases or by itself is normally distributed, the difference between the p-value from a standard normal distribution compared to a student t-distribution is insignificant (Stock & Watson, 2014, p. 133).

According to Brooks (2015), the single hypothesis framework is not sufficient when it comes to testing multiple coefficients simultaneously. A more general framework, as the F-test, is more capable to deal with this problem. The F-test assumes only positive values, a non-symmetrical distribution of the values, and corrects for the loss of degrees of freedom. Because of this, it would fit our data better than a single hypothesis test which uses a t-distribution. Although, it imposes a linearity restriction on some β s when testing for multiple coefficients, it can be addressed with a Wald test. However, the Wald test assumes that the coefficients follows an asymptotic distribution and could be more sensitive to small sample size (Brooks, 2015). Hence, both tests will be used in combination. After screening for parameters and financial ratios to be included, we will test the difference in the estimates to check whether these are significantly different from each other.

6.2.2 Take-over premium

In our analysis of the takeover premium, we will run linear regressions with and without control variables, and cross-sectional differences using dummy variables. In both the linear regression case and cross-sectional differences case, we will employ quantile regression to check whether this changes the results. As mentioned earlier, a quantile regression can be an advantage when the data sample is small, which smooths out the outliers by grouping the data (Koenker & Bassett, 1978).

6.2.3 Endogeneity problem

We believe that the take-over premiums between the two different buyers cannot be correctly addressed by the naive simple linear regression model due to possible endogeneity problems. The endogeneity problem is when the error term is correlated with the explanatory variable (Brooks, 2015 p. 91). Endogeneity can bias the estimates/result we get from a basic regression, leading to wrong and imprecise results. In our case, biased results could lead to a wrong conclusion that strategic buyers pay a higher take-over premium than financial buyers or vice versa. To wrongly conclude that there exists a difference between the strategic and financial takeover premiums, when there's not, would constitute serious a type 1 error, if our hypothesis was that there should not be any differences (Stock & Watson, 2014, p. 124).

Below, we will discuss the following potential endogeneity problems: 1.) omitted variables, 2.) simultaneity and 3.) measurement error.

Omitted variables bias

Omitted variable bias is when one or more variables are not included in the estimated regression compared to the true model (Stock & Watson, 2014 p. 229)

If the true model is

$$y = \alpha + \beta_1 x_1 + \dots + \beta_n x_n + \theta z + \varepsilon,$$

while the estimated model is

$$y = \alpha + \beta_1 x_1 + \dots + \beta_n x_n + \varepsilon$$

that is, we have excluded a relevant variable in our regression. If the excluded variable is a determinant of y and is correlated to any of the x_i , we have an endogeneity problem, because the x_i would not be correct, leading to biased results.

Simultaneity bias

Simultaneity could possibly be a concern when trying to compare to variables, but is influenced by the same third variable (Brooks, 2015 p. 307). In our case, this could be when the takeover premiums from the acquisitions are regressed over a longer period without correcting for the underlying market trend. For example, if strategic buyers perform most of their acquisition during a recession or a down trend, while financial buyers prefer acquisitions during an up-trend, then the naive simple linear regression would not pick up the trend difference. Hence, correcting for the underlying trend, would enable us to solve/minimize this simultaneity issue.

Measurement error

Measurement error occurs when the data under assessment has been revised, changed or altered without taking the right precautions to deal with it (Brooks, 2015, p. 3 and p. 235-236). In our case, measurement error can be a problem if the take-over premiums between the strategic and the financial buyers is not measured in the same way, i.e., the methods differ. The deviations could incur both from different measurement methods, but also not correcting for different

circumstances at the acquisition period or correcting for differing target characteristics.

6.2.4 Possible solutions to the endogeneity problems

Firstly, our extensive pairing of each financial acquisition to a separate strategic acquisition will correct the differences in timing and the underlying market trend. Our endogeneity concerns will further be address using two methods: regressions with control variables and cross-sectional differences.

Regressions with control variables

Moving forward, we introduce linear regression with control variables, correcting for the cases when the acquisitions are made with different target characteristics. By adding control variables, we aim to get rid of the endogeneity problem so that each acquisition is made under equal circumstances, which would increase the robustness of our results. The control variables included are book-to-market, Enterprise Value/ Sales and Enterprise Value/EBITDA.

Cross-sectional difference

A takeover premium can be thought of the difference between the value of the target before and after the announcement of a tender offer. The reasoning behind the method is to think about the acquisitions as something drastic, and because of that, we should be able to measure these changes relative to each other. We will try to measure the impact on the premium when the target is bought by a strategic of a financial buyer with the following model:

$$y = \alpha + \beta_1 f + \varepsilon,$$

Where f is a dummy variable that takes value 0 if the acquirer is strategic, and 1 if the acquirer is financial.

7.0 The way forward

Going forward, our main priority will be to construct our dataset. Since we need to combine data from several sources it is paramount that we are able to start matching financial acquisitions with strategic acquisitions as soon as possible to identify which transactions will make up our dataset. Thereafter, testing of our initial hypothesis and screening for additional interesting findings will occupy

most of our time. The results from these initial tests will dictate the further development of our study. We expect that the work we have outlined will be feasible and that we will be able to complete our thesis in accordance with the displayed timeline.

Period	Task
January	- Compile a list of transactions by matching financial and strategic acquisitions
February	- Combine acquisition data from SDC with company data from CCGR database and market data from Bloomberg to create our dataset - Testing of main hypothesis - Initial screening to uncover other interesting relationships
March	- First draft of the analysis will be finished
April	- First draft of the thesis is finished for review

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