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M&A on Scandinavian Market: Evidence of Factors for Shareholder Value Creation from Acquirer's Perspective

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Abstract

The purpose of this study is comprehensive analysis of drivers of M&A performance by bidders executing acquisitions in Nordic region. Considering mixed results on acquiring companies' value creation for shareholders in such transactions, it was assumed that mergers may create value for certain types of deals. Despite having insignificant mean abnormal returns for all groups of M&A transactions, some results appeared to show contrary to previous empirical studies' findings. With this respect particular attention was paid to bidders-growth firms which showed positive net gains comparing to value firms with negative net gains. Further regression results for all data sample showed: (a) that corporate governance as well as free cash flow issues are not drivers of post-acquisition performance of combined entity in deals on Scandinavian market what can be evidence of strong corporate control in local companies; (b) future growth opportunities is crucial determinant for value creation in M&A for a bidder. It motivated us to analyze growth and value acquiring firms separately. Results showed that both types of firms have the same drivers of abnormal returns but with inverse effect on value creation. Investors in Nordic acquirers appreciate stocks of growth firm which has many growth opportunities and acquires target in the same industry while react in opposite way for value firm with the same characteristics and in the same type of M&A. Limitations of data motivated us to give recommendations on further research on the topic.

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1. Introduction

The main purpose of firm's existence is to create value for, according to one concept, its shareholders, and, according to another, for all related parties, namely stakeholders. For that reason, managers should carefully consider all options available to them in order to fulfil their duties. We will stick to narrower perception of value creation, to one that considers interests of stockholders.

Corporate finance literature gives nice overview of the main drivers of value creation for shareholders (Koller et al., 2015) where one of the key variables is company's growth prospects. Such growth may be either "organic" (research and development expenses (R&D)) or via mergers and acquisitions (M&A), that is by "purchasing growth". And latter has also become part of normal process of value creation, as viewed by all market participants, already decades ago. However, many questions have constantly been risen as to whether M&A is beneficial to firms' growth that, in the final end, will increase owners' value. Why not to solely invest in firm's R&D? Quite provocatively another question may be posed as to whether organic growth is always value creating or destroying.

Most studies show that on average M&A is beneficial for society since total value to targets' and bidders' shareholders increase (Mulherin and Boone, 2000; Houston et al., 2001). In addition, such process makes economies more efficient since firms share their best practices via merger and just winners, most proactive market players, survive and continue drive society forward. On the other hand, critics say there is no point for acquirers to bid for targets because most research papers show that this will destroy value for bidders' own shareholders (Becker et al., 2008; Kyriazis, 2010). Extreme views go to the point requiring from managers instead of pursuing acquisitions, better distributing this residual portion of value to investors who will find proper use of such funds. Here it should be made clear that M&A is to find apt growth for a company on par with R&D, just by tackling the issue from another side. So, in lieu of claiming that "inorganic growth" is definitely bad for acquirer, it is better to investigate its best practices and understand the cause of the worst failures.

Referring to one of the most notorious and biggest leveraged buyout (LBO) at the time by KKR & Co of RJR Nabisco which purportedly created little value, if any, for limited partners in that fund and obviously destroyed value for bidder represented by LBO specialists, to the biggest failure in M&A area of AOL Time Warner transaction, many would argue that M&A world is full of value destruction examples, specifically destruction for

bidders' owners. However, it is worth to mention there are also many successful deals analyzing which gives understanding on how acquiring company must proceed in the process of acquisition in order to maximize chances of increasing firm's value. In our view, examining best and worst practices to determine which firms at which stage and under which circumstances should undertake M&A may answer questions related to which transactions are to be perceived by managers as contributing to well-being of their investors.

Many researchers have published papers over decades with the aim to disentangle fairly complex world of M&A (Jensen 1986; Gregory, 1997). Studies vary from simple analysis of deals' dynamics over time to fairly complicated calculation of odds of certain transaction to happen based on some underlying variables in order to have an opportunity to make profitable bets (Barraclough et al., 2013). One of the aspects we are interested in is key factors that help acquirers to complete successful, value increasing, acquisition deal. In the next section we will closer discuss literature that contributed to our issue. But it is worth to emphasize that results broadly differ from study to study depending on time frame taken, market(-s) analyzed, approaches applied (like, for expected returns, event horizon, etc.), variables considered important according to underlying theories and so on. With this respect we will rely upon approaches from previous studies, corporate finance theories developed by academia up to date and points of views recommended by practitioners while testing viability of one or another explanatory variable.

We haven't heard of huge failures in corporate finance area on Scandinavian market, comparing to US and European markets, caused exclusively by bad M&A transaction. However, big number of deals and highly developed financial market with its unique characteristics makes it attractive to look closer at regional bidders' behavior who aim to increase value of their company via M&A. Since no previous study posed question from the side of how to create value for acquiring firms' shareholders in Scandinavia and specifically while bidding for Nordic companies (i.e., for the purpose to create value internally within a region with its capacity and uniqueness both in terms of opportunities and limitations), we expect to come up with valuable results on road map of M&A for local top-managers.

Our research is based upon main theoretical and empirical concepts of looking at factors that cause M&A deal performance. With this respect relevant drivers specific for Nordic region are discovered. Since domestic markets and countries' economies are constantly changing with increase of globalization and drastic changes on financial markets

after each recession and current enormous influence of IT on all industries, we also consider M&A specifics over time, for seasonal (i.e., experienced) M&A players familiar with most of the process' nuances and one-off acquirers, for aggressive growth firms and traditional value companies. The logic behind it is that some of the factors have become more relevant nowadays while old drivers don't influence value creation any more in this new unusual time.

Contribution

The study's primary aim is to comprehensively analyze value creation for bidders' shareholders as a result of M&A on Scandinavian market. To our knowledge, it has been first such attempt to research mergers taken place solely within Nordic region in recent history. Our look was at drivers of acquiring firm's ability to create value by measuring short-term performance via market reaction on deal's announcement. Hypothesis about supreme value creation by growth comparing to value bidders as well as drivers on each group's performance have been tested.

It was found that mergers conducted internally on Scandinavian market have their peculiarities. First of all, corporate governance issues proved to be of no concern for stakeholders in acquiring companies. We concluded that it is a consequence of overall better corporate control in both Nordic bidders and targets. More developed corporate governance may have its effect even on issues related to potential free cash flow problem which also did not find its support for regional acquirers. Second, although insignificant results on cumulative abnormal returns because of very wide distribution for the whole sample, on average M&A by growth firms appeared to be value-enhancing comparing to value companies. Finally, acquirers on this market, which are growth and value firms, have the same drivers of value-creation but with opposite effect. Former, glamour companies, get appreciation by market if they have plenty of growth opportunities, in contradiction to theory, or conduct merger in the same industry while latter, value firms, destroy value if they either have future growth options or, opposite to the theory of probable synergies' realization, acquire firm from the same sector of economy.

High-quality data constraints motivated us to offer recommendations on further exploration of the Scandinavian M&A market. We identified such five main areas of data to be considered in forthcoming studies in the future: (1) time of a deal; (2) different aspects of value of transaction; (3) expected improvements to top- and bottom-lines via synergies; (4) expected credit statistics of combined entity; (5) financial information on target.

2. Review of Literature on M&A Post-Acquisition Performance of Bidders and Hypotheses Postulation

It has been devoted much attention by academicians and practitioners to the topic of M&A value realization. Results vary enormously, however, with most theoretical and empirical studies concluding that these types of transactions do not benefit acquiring firm's shareholders. Practitioners, on the other hand, continue to pursue more-and-more deals and defend their thesis by pointing at successful stories and increase demand for M&A on the market as evidence of investors' awareness and belief in bidders' actions (Koller et al., 2015; Rosenberg and Pearl, 2013). According to paper by Cartwright and Schoenberg (2006) mergers destroy value in 50 percent of cases. Overall it is worth to note that measurements in empirical studies are not comprehensive enough for tackling such intricate transactions as M&A (Zollo and Meier, 2008). It motivated us to look open-mindedly at acquirers' performance on Scandinavian market and be innovative in applying different measures to find what could cause abnormal returns for analyzed bidders.

In this section we broadly discuss overview of studies that focused on M&A performance issue, with close regard to theoretical concepts considered. We also postulate hypotheses we are going to test in our research paper motivated by current state of study on the topic. In first subsection we discuss theories related to M&A value creation. Second subsection provides views on why these deals may be value destroying. We conclude section by stating our hypotheses.

2.1. Value creation theories

2.1.1. Efficiency theory

Most practitioners and many in academia believe that value realization followed after synergies is primary factor of M&A deals (Hitt et al., 2001; Wang, 2007). Chatterjee (1986) posits that it is, however, necessary to distinguish between cost cutting synergies thanks to economies of scale and scope, and revenue synergies. It is basically related to belief that targets' and bidders' shareholders will agree on deal just if extra net gains are generated and divided among two groups of investors in certain proportion that satisfy each party. For that reason, if merger deal occurs, it should be obvious that both parties agreed on value creation notion for themselves (Klein, 2001).

Maquieira, Megginson and Nail (1998) study 260 M&A deals on US market for the period from 1963 to 1996 and find statistically significant net gains from synergies in non-conglomerate deals (i.e. with focus on improvement of core business activities) and non-significant also positive gains in conglomerate transactions. They showed that cost synergies in production process help drive expenses down by streamlining operations and sharing common expenses for certain product lines and markets. DeLong (2001) reached the same conclusion regarding bank mergers which create on average 2.5% more value comparing to acquisition of unrelated businesses. Berger and Ofek (1995) calculated loss from diversification to be from 13% to 15%. Brealey et al. (2017) also argue that it all has positive effect on decrease in cost of production and ensuing synergies. However, it is worth to note that large acquirers find it usually difficult to realize cost synergies (Devos et al., 2009).

Houston et al. (2001) studied market reaction on information regarding benefits realized from synergy, and found positive relationship between announced planned cost savings and revenue enhancement and share price change for bank mergers.

Another source of synergies is from combination of intangible assets such as patents, customer lists, R&D in the process (Seth, et al., 2000). But highly leveraged bidders find it easier to realize synergies with more noticeable results for tangible assets than for working capital (Huyghebaert and Luypaert, 2013). All in all, operating synergies are regarded the most significant value creation factor (Devos et al., 2008; Houston et al., 2001).

2.1.2. Market power theory

Revenue synergies get very mixed, mostly skeptical, reviews by all interested parties, including practitioners (Koeller et al., 2015). However, empirical studies still present interesting findings which contribute to theory's viability. For instance, Feinberg (1985) claims that higher revenue stream limits competition, helps nurture better relationships with customers and suppliers, effectively allowing for charging higher price and making less capital expenditures. Theory is further substantiated by finding in many studies that bidders which embraced greater market power were characterized by improved profit margin while having experienced no respective increase in top line, namely sales (Cefis et al., 2009).

In general revenue enhancement is conventionally related to increase in top line numbers. It may be done either by sharing complementary revenue streams – product lines or customers' access – or go even further and leverage upon intangible assets, like brand name. Capron (1999) argues that combined R&D may be source of extra sales as well. So,

traditionally revenue synergy has not included greater market power. But probable increased pressure upon suppliers, less flexible price formation for customers and better opportunities to cut R&D projects and capital expenditures in periods ensuing merger, perfectly reflect benefits for bidder's shareholders by such increased optionality following greater market power (Kim and Singal, 1993; Prager, 1992).

Paper by Eckbo (1992), however, demonstrates that bigger market share for the sample under study did not produce any increase in value, and in certain instances even decreased it. So, establishment of anticompetitive environment doesn't obviously lead to increase in value for acquirers in such market.

2.1.3. Corporate governance theory

On the market not all participants are equally successful in competing with each other and keeping up with changing conditions. Followers of theory believe that sharing best practices of corporate management will create extraordinary net positive gains in target company. Even back in 1965 Manne (1965) discovered that low stock price of generally healthy firm may be exploited by changing of corporate control. Cause of underperformance of some firms lies in management that cannot deliver and therefore bringing on top positions in the organization professionals who will build corporate structure according to the demands of investors and needs of particular firm, will add value (Weston et al., 2004). With this respect most skillful managers always realize extra gains for shareholders in either of the above stated ways, that is, either by cost-cutting initiatives or thoughtful revenue increasing programs. It has been proved on the example of "overhaul" of US corporate world in 1980s in empirical studies by many researchers (Palepu, 1986; Hasbrouck, 1985).

Validity of corporate governance issues has been tested over time from first genuine interest in 1980s to today's well-understood importance of the matter by all market participants, from coinage of terms like "corporate raider" back then to "activist investor" nowadays. With this respect Bhagat and Jeffereis (2002) concluded already at the beginning of millennium that antitakeover measures which restrict firm's corporate governance improvement are not effective for both preventing takeovers and enhancing manager's performance. Mergers do provide stimulus for potential target's management to work productively and for acquiring firms an opportunity to maximize value by governance improvements.

2.1.4. Other theories

Paper by Masse, Kushner and Hanrahan (1990) is built around idea of shareholder value maximization via M&A by reduction of bankruptcy costs of the target and because of financial reasoning (consideration of target's tax shield while using leverage to complete transaction).

Another view at the matter is offered by Slywotzky and Wise (2002) who see one of the most crucial factors that entices managers to undertake M&A is necessity for growth. Since investors, particularly of listed companies, usually require double-digit growth, for many firms an acquisition is the only option to meet such demands. In this way managers obtain higher growth as one of the drivers of value creation in presence of lack of internal projects.

Van Wegberg (1994), Schenk (1996) and Fauli-Oller (2000) posit that many businesses engage in inorganic growth to survive, especially in consolidating industries (so called "bandwagon effect"). However, such motives and ensuing value-enhancement results are still arguable in academic community.

Rau and Vermaelen (1998) found abnormal returns to value buyers (from +8% in mergers and +16% in tender offers) while significant value destruction by firms primarily looking for extraordinary growth opportunities (on average -17% in mergers, and insignificant results from tenders).

Most studies report that cash deals or these, primarily financed with cash, outperformed stock method of payment, and cash involvement increases chances to expect transaction will have positive abnormal returns for bidder shareholders (Travlos, 1987; Yook, 2000). Stock exchange with this respect is believed to send signal to the market that acquirer's shares are overpriced. However, buyer's excess cash to be used in a deal will destroy value (Jensen, 1986; Lang, Stulz, and Walking, 1991) except when cash-hoarding acquirers engage in M&A what effectively increases firm's leverage, and so its shareholders get increase in value from higher tax shield according to Bruner (1988).

Many research papers reveal value creation for bidders in tender process (Gregory, 1997; Rau and Vermaelen, 1998) as measured by market reaction. Such results are foreseeable since hostile takeovers (which are most frequently realized via tender offers) are conducted by bidders who found particular value-creating opportunities in the target, and by

appealing directly to shareholders, acquirers do not want to discuss one's views with target's management who may "steal" part of added value from potential them.

According to Gregory (1997) after companies announce M&A programs with the aim to reach laid out strategies over time, market rewards them with significant stock price increase. Such result may suggest that market participants view M&A as generally value-enhancement mechanism if it is clearly elucidated and afterwards realized correctly.

2.2. Value destruction theories

2.2.1. Free cash flow theory

Jensen and Meckling (1976) were first to propose theory according to which management may be reluctant to distribute excess firm's liquid funds to its shareholders. Instead such cash flow is directed to oftentimes negative NPV projects which obviously destroy value. In the following paper Jensen (1986) demonstrated how number of oil companies extended its cash reserves to expansion projects which ultimately were viewed by market as bad investments. Share prices of acquirers dropped precipitously.

Cash-rich companies are usually fast in making strategic decisions without proper due diligence of the firm under consideration. According to Martynova and Renneboog (2008) such behavior increases odds that managers will choose poor acquisition targets. Many empirical papers show exactly these results where share price drops when acquirers with excess cash engage in M&A (Harford, 1999; Zhang, 2003). Owen and Yawson (2010) based their research upon life-cycle of company and its ability to generate positive net gains in mergers. Researchers concluded that mature firms, which are rich on cash, are less likely to create extra value in M&A transaction. Lacking own profitable projects and generating sufficient free cash flow (FCF) from core business, encourages managers to look for growth opportunities to be bought on the market. But weak internal governance, lack of proper due diligence of target and unwillingness to return excess funds to shareholders all drives bad acquisitions.

Degree of managerial discretion also plays important role in this theory. Following Jensen (2005) we may find out that higher FCF or market valuations of the company entices managers to pursue own interests more than these of shareholders. Many studies have shown that managerial self-interest does play crucial role in M&A. It is empirically shown that acquiring company's returns are higher if management is large shareholder (Harford, 1999), and vice versa (Lewellen et al., 1985). Therefore, we may infer that if managers' interests

are not properly aligned with those of owners, they tend to look for self-serving acquisitions which will destroy value for shareholders.

Rau and Vermaelen (1998) recognize FCF problem but look at the matter from another side. They claim that stakeholders with exception of shareholders may share beliefs in acquisition plans thanks to excellent previous and current performance as demonstrated by cash abundance of underlying business model. Management team well-intentionally craves to create added value, too, but because of less supervision and high expectations they make bad decisions.

2.2.2. Hubris theory

Roll (1986) also assumed that managers have good intentions while engaging in mergers. However, overconfident managers while believing they act in the best owner's interests, in fact, make irrational decisions what affect their ability to accomplish desired results. Thus their overconfidence leads to undertaking deals with low probability of success as seen by market participants, following share price decrease after transaction announcement. Hubris leads to higher premiums paid (Eckbo and Thorburn, 2009) and oftentimes winner's curse problem when leading bidder cannot realize enough value-enhancement opportunities for combined entity (Dong et al., 2006). Most probably such deals will fail to deliver added net gains.

Malmendier and Tate (2008) tested theory by considering deep-in-the-money employee stock options granted to CEOs to separate overconfident managers from others, and also to confine hubris theory from FCF theory and possible effect of asymmetric information. Negative abnormal returns for cash-rich firms and, respectively, much better for their counterparts substantiated the evidence of shareholder value destruction by overconfident managers. Market participants reacted respectively by forcing share price down following merger announcement.

It had been empirically proved on the examples of US (Berkovich and Narayanan, 1993) and European (Goergen and Renneboog, 2004) markets that managerial overconfidence increases odds of M&A transaction to be value destructive. Ismail (2011) tested theory with respect to overconfidence of synergies realization. According to researcher only 50% of deals showed cost savings and operating synergies realization. Hence synergy overestimation leads to way too high premium paid what results in shareholder value destruction.

Valuable insight at the problem was offered by Akdogu (2011) who assumed that some mergers could be made as a response to increased competition. For that reason, lower share price post-announcement does not mean that managers actually destroyed value since we have to control for the fact what would happen to the company if this transaction were not consummated, especially in today's rapidly changing markets and business models in every industry. It is also arguable that if top-managers add extra value for shareholders, their bid is not optimal from company's perspective because they could give up too much value to target firm's shareholders. For example, Moeller et al. (2004) as well as Boone and Mulherin (2008) could not substantiate winner's curse predictions in their papers.

2.2.3. Managerial entrenchment theory

Shleifer and Vishny (1989) offered another way of looking at factor of merger's value destruction. They claimed that unsuccessful mergers happen since managers actually do not pursue projects which increase shareholders' value but investments that will help managers stay with a firm for as long as possible. With this respect, transactions make CEOs invaluable part of a firm, so that they cannot leave their position without taking part of company's value with themselves (for example, uncompleted complex projects combined with "golden parachutes" as lucrative compensation package). Such manager-specific investments will only continue managers behave more boldly and stimulate to follow deals which increase their own value to the firm. Empirical evidence to this hypothesis had been found earlier by Amihud and Lev (1981). They discovered that CEOs tend to look for diversifying mergers which help decrease volatility of firm's cash flow. It increases chances of company's survival and ultimately ensures manager's employment.

You et al. (1986) found that acquirer's returns are lower as management stake in the business is miniscule. Similar conclusions about small share of managers in the business are reached by Agrawal and Mandelker (1987). Healey et al. (1997) support the view by arguing that M&A outcome was enormously influenced by management interest in the deal (i.e. when managers were aligned with shareholder's value creation goal). One of the examples where managers have high stake in the business is LBO and managerial buyouts (MBO), which produce spectacularly higher returns to shareholders comparing to benchmark (Jensen, and Ruback, 1983; Andrade & Kaplan 1998).

Antitakeover provisions which are usually associated with managerial entrenchment obviously destroy value by preventing synergistic mergers caused by deregulation, economic

and currently observable technological shocks (John and Kadyrzhanova, 2015). Authors present in their paper evidence regarding lack of entrenching managers' involvement in transformation processes of their firms comparing to industry peers in each M&A wave on the example of US companies.

2.3. Hypotheses statement

Growth, or glamour, firms as acquirers are proved to underperform value companies in M&A deals on the US market, according to Rau and Vermaelen (1998). If we consider overall performance of these types of companies, Fama and French (1992) showed that high book-to-market companies is better investment, too. But Sudarsanam and Mahate (2003) argue that positive expectation of future growth allows glamour bidders to make value-decreasing acquisitions for which the market may not penalise them. According to Andriosopoulos et al. (2015), higher domestic institutional ownership of growth acquirers also solves a problem with their poor performance. And we are aware of high percentage of ownership in Nordic companies by governmental institutions (like The Government Pension Fund of Norway). Besides that our belief is that Scandinavian market has its peculiarities. It has plenty of "know-how" companies which are generally referred to as glamour ones. In addition, our focus is on the deals done internally in Nordic region where both acquirers and targets share whole set of similar characteristics.

Considering all above mentioned, we want to test two hypotheses:

1) Growth firms have superior ability to create value comparing to value companies. For this purpose, we will conduct event study, calculate cumulative abnormal returns for event window and test statistical significance of results for growth and value firms.

2) Growth company firm type has an effect on value-creation in M&A deal. Here we will use proxy for growth firm in our regression model and test its significance. If results appear to be statistically significant, we would like to look closer at drivers of abnormal returns for glamour firms and compare them to value firms. We expect for them to have dissimilar set of drivers.

3. Data and sample description

3.1. Data collection

SDC Platinum™ database by Thomson Reuters served as the main source of data for our research. It is regarded the richest depository of information on M&A transactions. All major financial information on bidders and respective targets has been obtained from it. Data were required to meet the following criteria:

Nation of acquirer: Denmark, Finland, Norway, Sweden

Nation of target: Denmark, Finland, Norway, Sweden

Status of the bidder: acquirer is a public company

Status of the deal: completed, unconditional

Value of the deal: above \$ 0.5 million

Time frame: 01.01.1997 – 31.12.2016

Initial sample consisted of 7082 deals. We added extra constraint to these M&A transactions – pre-deal stake of acquiring firm in the target should not exceed 30 percent. Minimum ownership post-transaction should be 51%. Sample decreased to 4431 deals. Since not all financial parameters can be found in SDC Platinum™, and quality of data, especially for older transactions, is arguable, we exploited other sources, too. Share price for companies involved in transactions as well as additional information required in the process of studying the topic (like, return on market indices, risk-free return for respective countries, etc.) have been extracted from Thomson Reuters Datastream and Bloomberg databases. All financial information from SDC Platinum™ have also been proof-checked with above-mentioned sources and improved if big inconsistencies exist.

After cleaning data based on availability of relevant information for companies involved in mergers, sample of 650 transactions with 532 non-serial acquisitions for the event window for each firm had been extracted. These 532 M&A deals have been used for CAR computation and hypotheses testing.

3.2. Dependent variable

We decided to analyze deal's performance based on market reaction around announcement of M&A, that is, short-term value creation. We conducted event study for each transaction to obtain results. Long-term analysis would not produce statistically

significant and reliable findings for our sample because it would enormously shrink the data points after controlling for many corporate events which occur during longer periods of firm's existence.

We based our approach on one proposed by Trevlos (1987) where cumulative abnormal return (CAR) is used to analyze short-term performance. In order to obtain expected return for each acquirer, capital asset pricing model (CAPM) was employed since more expansive factor models, like 3-factor Fama-French model (Fama and French, 1992) for our dataset wouldn't produce any significantly more precise results but definitely will require further truncation of sample. Afterwards difference between actual returns and ones predicted by CAPM model are found. CAR was calculated as sum of abnormal returns over 10 trading days around announcement date. Results were checked for significance employing special methodology for event-type studies (see Appendix A for details on CAR calculation and significance testing).

3.3. Independent variables

We could see in literature review section that there are many theories which explain performance of acquirer in merger transaction. In our research we study various proxies for those theories in order to come up with statistically significant results for the data sample, test them on Scandinavian market and discuss our empirical results in comparison to another studies conducted on the topic. Certain controlling variables will also be considered in order to distinguish their effect from one caused by major drivers. Regressors, that we believe are the most important, will be included in our main model, and some of them in its extensions. Because of lack of data or their quality not all desirable variables have been tested in the model. We will leave that discussion in further recommendations on the research of topic for future studies when more high-quality data become available. We continue this subsection by describing all the independent variables with underlying theory and expected influence on CAR. For further details on the regressors see Appendix B, Table 3.3.

Free cash flow theory

Cash holdings (CASH) of a firm may have two-sided effect. Large free cash on balance and spending of these funds on mergers according to the theory leads to value-destruction. But if leverage and debt service post-transaction are moderate and credit statistics did not worsen, then managers get extra layer of control on the side of debtholders. It will lead to improved corporate governance, and ensuing higher expectation of value

creation by stakeholders. Because we were not able to get data on expected leverage of combined enterprise at the time transaction was announced (what obviously could give us opportunity to test us this theory), we will stick to free cash flow approach. Hence higher cash holdings of acquirer should lead to lower CAR.

Hubris theory

According to the theory excellent previous performance of acquiring company, high operational efficiency as visible from ratios of bottom lines (like EBITDA, EBIT or net income) to top line (revenue) may force managers to believe in their ability to create extra value for the target as well. **EBIT margin** (EBIT_MARGIN) may serve as good proxy here. Hence higher EBIT margin may infer lower CAR.

Corporate governance theory

PP&E of acquirer as percent of all of its assets (COLLATERAL) gives us certain proxy for debt capacity of the firm. Debtholders willing to extend debt will improve corporate governance of the enterprise. Therefore, as discussed above, it will increase probability of value creation for investors post-transaction thanks to additional control of managers.

Financial bidders (FIN_BIDDER) are believed to perform better in many types of deals because they come primarily with an aim to change management either for more aggressive (increase top line, that is revenue) or for more optimization-of-processes-oriented (streamline operations and realize synergies required), and fix governance issues (proper reporting and compensation, modern IT systems, etc.). Market compensates such acquirers with higher CAR.

Cross-border dummy variable (CROSS_BORDER) in our regression is included because managers are assumed to bring their culture, processes and values to the target. Effect may be lower for just Nordic acquirers and targets as their corporate governance is quite similar but it is useful to include it for purposes of control in our model. Theory assumes that cross-border transactions signal positive net gains.

Efficiency Theory and Market Power Theory

Regressor which we believe may capture expected synergies is related to **horizontal mergers** (HORIZONTAL). For that reason, dummy variable should have positive correlation with CAR. Unfortunately, because of data scarcity no other information can be used for testing this important factor which moves CAR and drives value realization in M&A.

Management entrenchment theory

Big firms are usually huge bureaucratic organizations where top-managers tend to occupy their positions for very long periods of time. And expanding their business just increases their power. It is also referred to as empire-building. Therefore, larger **size of acquirer** (LN_SIZE) should signal to market that transaction is more value-destroying.

Other theories

Firm's **covariance with market** (BETA) serves as proxy for riskiness of the business enterprise. It should get negative reaction by market participants as probability of successful integration of new company into existing business model just increases uncertainty of acquirer. Hence higher beta of bidder gives lower CAR for merger transaction.

Ratio of **CAPEX to sales growth for 5 years** (CAPEX_SALES_5Y_GR) would serve as good proxy of future growth options for a bidder. If, however, perception of growth for acquirer is high and it conducts M&A, investors may treat this as unnecessary loss of focus from main activities which may bring fast increase in revenue. So, higher value for variable should suggest lower CAR, that is, inverse correlation.

Recession dummy variable (RECESS) should capture performance of M&A deals conducted in recession when assets are underpriced. We used OECD recession indicator by months in order to identify where in the business cycle economy stood for OECD countries under analysis at time of transaction. Market price of a bidder in recession is expected to appreciate and lead to positive CAR.

3.4. Descriptive statistics

We divided our sample into various dimensions in order to look at performance of mergers from different sides as shown in the table below. Before doing that we also checked data sample on outliers and winsorized data at 5% level because of availability of many extreme values at tails.

Division by company type was made according to methodology similar to one used by Rau and Vermaelen (1998). We sorted transactions according to their market-to-book value (MTBV) by percentiles into 3 groups. Bottom 33.3% of firms went to value firms with the highest MTBV at 1.24. We decided that for a company to be regarded neutral, its MTBV should not be higher than 2. All other acquirers with ratio of 2 or higher were named growth firms.

Table 3.4. Descriptive statistics of CAR

M&A type	Observations	Mean	Median	Min	Max	St.Dev.
<i>General</i>	493	-0.2%	-1.4%	-27.8%	30.9%	13.0%
<i>Company Type</i>						
Growth	226	0.4%	-0.4%	-27.8%	30.9%	13.4%
Value Firms	158	-1.4%	-1.6%	-26.9%	28.0%	11.9%
Neutral	109	0.0%	-3.0%	-24.8%	30.1%	13.7%
<i>Time of Transaction</i>						
Recession	129	0.5%	-1.6%	-26.9%	30.8%	12.9%
Expansion	364	-0.5%	-1.0%	-27.8%	30.9%	13.0%
Post-recession	132	0.4%	0.0%	-25.8%	28.2%	12.5%
Post-expansion	57	-0.8%	-2.1%	-23.6%	30.8%	12.9%
<i>Deal Type</i>						
Tender	46	-1.8%	-2.7%	-26.9%	26.3%	12.9%
Merger	447	-0.1%	-1.4%	-27.8%	30.9%	13.0%
<i>Country specifics</i>						
Denmark	38	-7.2%	-8.6%	-26.9%	25.4%	12.7%
Finland	104	2.7%	1.4%	-25.3%	28.6%	12.8%
Norway	85	-1.4%	-1.7%	-25.8%	30.0%	12.8%
Sweden	266	0.0%	-1.6%	-27.8%	30.9%	12.8%
<i>Type of acquiror</i>						
Fin bidder	71	-0.6%	-2.9%	-25.8%	30.9%	12.9%
Corp bidder	422	-0.2%	-1.2%	-27.8%	30.8%	13.0%
<i>Synergies/diversification</i>						
Horizontal	249	-1.3%	-1.9%	-26.9%	30.8%	12.1%
Vertical and conglomerate	244	0.9%	-0.4%	-27.8%	30.9%	13.8%

CAR distribution as characterized by standard deviation is quite wide for deals analyzed. Overall average abnormal returns are slightly below zero at -0.2% with values varying from -27.8% to 30.9%. Standard deviation stands at 13% what suggests very fat tails for distribution of results with ensuing big deviation from normal distribution assumptions.

If we look at sample on types of companies conducting M&A, growth firms have the best performance with 0.4% positive net gains for their shareholders. Furthermore, we have got the worst CAR for value companies in Nordic countries. It all gives completely opposite results to findings of Rau and Vermaelen (1998) who analyzed deals by bidders traded on the main US exchanges.

We also decided to consider time of transaction from perspective of business cycle economy was in. Regarding post-recession and post-expansion dimensions, division was done by studying whether transaction occurred in the year following recession (if more than half of the year was in expansion; note, data provided by OECD are by months) for post-

recession and, respectively, following expansion for post-expansion characteristic. Results from the table suggest that Nordic market rewards with positive abnormal returns those bidders which conducted transaction either in recession or post-recession periods. Logic underlying it is that acquisition of target at lower price in the bottom of the cycle will create value for shareholders when economy again enters expansion with ensuing appreciation of all asset classes.

As shown in the table 3.4 above tender and merger deals destroyed value for Scandinavian acquirers even with larger losses for tender offers (-1.8% vs -0.1%). It may be related to specifics of the market where one may find many restrictions related to tenders. On the examples of US and UK markets, on the other hand, number of studies showed significantly positive and always higher net gains in tenders comparing to primarily negative CAR in simple merger deals (Gregory, 1997, Rau and Vermaelen, 1998).

The best performing country for M&A with positive returns to shareholders at 2.7% was Finland. Denmark showed the poorest results at -7.2%. Transaction by Swedish acquirers on average neither created, nor destroyed value, while Norwegian bidders showed negative CAR at -1.4%.

While looking at type of acquirer both financial and corporate bidders could not add value for shareholders via M&A deals.

With an expectation to see synergies realization in horizontal acquisitions we discovered that such deals actually had negative CAR. On the other hand, vertical and conglomerate deals were appreciated by market participants with stock price increase over what was expected. It means that investors in Scandinavia believed in value creation by realization of top-down synergies for vertical mergers and diversification of business activities with decrease of cash flows' volatility for conglomerate-type deals.

We should note, though, that very wide distribution of CAR in all of above-mentioned dimensions did not produce statistically significant mean CAR in any of the groups.

4. Empirical analysis of the acquiring firm's post-announcement market performance

4.1. Methodology and regression results on all transactions

In this subsection we discuss our findings on short-term performance of the bidder after M& deal was made public and specifically what drives market participants' reaction. We used multiple factor regression model for studying the relationships. Cumulative abnormal return is dependent variable while set of independent variables serve as regressors:

$$CAR = \alpha + \sum_{i=1}^n \beta_i \times Factor_i$$

Alpha is intercept of the regression, i denotes number of factor under consideration and n is overall quantity of factors used in the model. We use ordinary least squares estimation method. Note that in output tables we denote intercept with letter C (i.e., constant term) instead of Alpha.

Before running regression, we encountered question as to which variable may serve as the best proxy of expected growth for combined entity post-transaction. It also will be helpful in understanding whether glamour bidders are any different from their value counterparts in abnormal return generation as we will see further. Among candidates we had CAPEX_SALES_5Y_GR, market-to-book value of acquirer (MTBV) at time of transaction and growth firm (GROWTH_FIRM) as acquirer. We decided to use first factor from the list since it gave the best fit of model's parameters and the highest explanatory power (i.e., the highest R-squared and Adjusted R-squared as well as the best Durbin-Watson statistics - the closest to 2). Main regression equation is following:

$$\begin{aligned} CAR = & \alpha + \beta_1 \times Beta + \beta_2 \times CAPEX_SALES_5Y_GR + \beta_3 \times CASH \\ & + \beta_4 \times COLLATERAL + \beta_5 \times CROSS_BORDER + \beta_6 \times EBIT_MARGIN \\ & + \beta_7 \times FIN_BIDDER + \beta_8 \times HORIZONTAL + \beta_9 \times LN_SIZE \\ & + \beta_{10} \times RECESSION \end{aligned}$$

Results of regression for all sample may be found in the table 4.1.1 below. Regression outputs for variables considered as proxy for growth other than CAPEX_SALES_5Y_GR may be found in appendices C and D.

Not all coefficients in the regression are significant as a result of fairly wide distribution of data for some of the independent variables. Another explanation may be that certain factors did not have significant relationship with underlying performance of acquiring firm in the process of M&A as measured by CAR. Sample also underwent heteroscedasticity and autocorrelation correction to overcome possible statistical issues which arise while conducting cross-sectional analysis. Use of many independent variables for which not all the data were available further truncated sample to 419 observations.

Table 4.1.1. Regression output on all transactions

Included observations: 419 after adjustments
HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 6.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BETA	-0.092404**	0.043306	-2.133769	0.0335
CASH	-3.21E-10	7.82E-10	-0.410469	0.6817
COLLATERAL	-0.002583	0.039168	-0.065944	0.9475
CROSS_BORDER	-0.019343	0.036776	-0.525969	0.5992
EBIT_MARGIN	-0.000559***	9.12E-05	-6.129956	0.0000
FIN_BIDDER	-0.031453	0.031704	-0.992060	0.3218
HORIZONTAL	0.008094	0.028859	0.280464	0.7793
LN_SIZE_	-0.016545**	0.008394	-1.971123	0.0494
RECESSION	-0.020158	0.035149	-0.573494	0.5666
CAPEX_SALES_5Y_GR	-0.004028***	0.001133	-3.555758	0.0004
C	0.270275	0.120619	2.240739	0.0256
R-squared	0.074333	Mean dependent var		0.006087
Adjusted R-squared	0.051646	S.D. dependent var		0.280932
S.E. of regression	0.273582	Akaike info criterion		0.271470
Sum squared resid	30.53758	Schwarz criterion		0.377476
Log likelihood	-45.87301	Hannan-Quinn criter.		0.313373
F-statistic	3.276345	Durbin-Watson stat		1.591726
Prob(F-statistic)	0.000429			

*Statistically significant estimates at the 1, 5 and 10% levels are marked with ***, ** and * respectively*

As for all multinomial regression models, we obtained fairly small R-squared since there is quite low ability of making forecast on M&A deal performance based on historical data of many diverse business enterprises. Durbin-Watson statistics at 1.59 show that statistical evidence of presence of either model's misspecification or positive autocorrelation in error terms is fairly small.

From the results in table 4.1.1 it is obvious that several factors are highly significant at having effect on CAR. Among them there is BETA reflecting riskiness of bidder's business, EBIT_MARGIN referring to profitability of firm's operations, size of acquirer

(LN_SIZE) and future growth opportunities based on historical ratio of growth proxy (CAPEX_SALES_5Y_GR). All of them have negative signs reflecting negative correlation with abnormal net gains to shareholders as respective theories for each variable predict.

BETA of the acquirer has important meaning for stakeholders who view their required return on investments through covariance with market performance. If riskiness of business increased, investors would require higher return. So, if high-beta business entity acquires another enterprise with uncertainty around realization of value as planned via merger, it just adds another layer of uncertainty. As it can be seen from the regression output shareholders on Scandinavian market punish risky acquirers for M&A deals by increasing expected return for combined entity, what decreases abnormal net gains. Behavior of this variable is in accordance with theory predictions as discussed in literature review section.

EBIT_MARGIN variable has also negative sign in our regression results as hubris theory predicts. Higher past performance of bidder firm makes top-managers overly confident about their ability to create value not only for their business enterprise but also by applying own ability to another organization. Hence we get that higher ratio of EBIT to revenue of acquirer leads Nordic market conventionally to believe that transaction is pursued based on manager's confidence, with low probability of real material realization of value. For that reason, CAR is lower if margin is higher, although according to regression output increase in margin by 1% decreases CAR just by tiny 0.06% what may be disregarded as huge negative impact on abnormal gains.

Size of acquirer (reflected in **LN_SIZE** variable) plays key role in managerial entrenchment / empire building theories. Larger firm creates opportunity for deeper entrenchment and therefore more negative reaction by shareholders on acquisitions made for the purpose to further increase size of business entity. As theory predicts we obtained statistically significant negative reaction by investors on Scandinavian market on acquisitions made by larger bidder.

CAPEX_SALES_5Y_GR is chosen as proxy for growth opportunities for acquirer in the future. As predicted by theory, enterprise with large growth prospects engaging in M&A, instead of focusing on main business activities for the sake of increasing revenue and so market presence, is perceived by market as destroying value. Shareholders require firm to spend resources on growing (preferably internal as M&A is perceived negatively, judging

from regression results), instead of refocusing on how to properly integrate target into one's own activities.

If coefficient is highly insignificant, then we may conclude it has no effect on CAR. However, the robustness may be tested by running extra regression with regressors which were constraining initial sample or consumed extra degrees of freedom without any significant expected contribution to the model. We will check it in extension to the current model in subsection 4.4.

Cash on balance sheet has to signal to market that firms with extra liquid financial resources may be prone to make M&A exceptionally in order to not distribute free funds to shareholders. However, this theory was unsubstantiated for our sample since CASH variable is not statistically significant. The cause of it may be that better corporate governance in Nordic companies allows investors easier to influence and control decisions made by top-managers, including decisions on which types of M&A deals to choose and whether to conduct acquisitions at all.

Long-term tangible assets in place which may be used as collateral for borrowing funds (COLLATERAL) appeared to be also insignificant. According to corporate governance theory, ability to borrow, while engaging in M&A, would give shareholders more confidence thanks to another layer of control over management team. But, as discussed above, corporate governance issues may not be of such a big concern for stakeholders in Scandinavian bidding companies since level of development of corporate control on Nordic market has been among the highest for developed markets already for years.

Cross-border (CROSS_BORDER variable) acquisitions by Scandinavian bidders of Scandinavian targets have no significant effect on CAR for the same reason, namely corporate governance issues. It is expected that bidder will bring its values and standards of conducting business while engaging in activities abroad. But since Nordic market is fairly unified and highly developed, there is rarely need to fix any inconsistencies in corporate control by bringing own experience to foreign target from this region.

Financial bidders (FIN_BIDDER variable) usually conduct mergers in order to utilize extra value by changing management with poor track record comparing to average industry performance, fixing corporate control and changing compensation system within a firm. But again, corporate governance is rarely an issue for such a developed market as Scandinavian

and, therefore, there is no significant effect, and, for that reason, ability of financial bidders to change performance of target as perceived by market participants. Hence we see this variable to be insignificant for our sample.

Factor that captures synergies, as used in our regression, appeared to be insignificant (HORIZONTAL). Most probably it is the case that this proxy does not reflect synergies realized post-transaction for the data sample. Synergies definitely do have effect on value creation combined for targets' and acquirers' shareholders what was proved in many empirical papers. But whether they create value solely for bidding firm still has to be tested. Since our proxy for synergies is not good, we cannot draw conclusions on this issue.

Time variable which captures business cycle when transaction was announced is also insignificant (RECESSION). It may be assumed that investors on Nordic market do not distinguish between what price has been paid for a target because during recession prices are obviously much lower. If we had data on price of debt for each bidder at the time of transaction together with expected leverage of combined business entity, though, we could check what could worsen expected performance of acquirer post-announcement. However, in the extension of the model we will try to distill another effect of time variable, namely whether beginning of expansion or recession drove short-term performance of a deal.

4.2. Regression results on type of firm as acquirer

According to famous Fama-French 3-factor asset pricing model (Fama and French, 1992), growth, or glamour, firms tend to perform worse over time comparing to value firms. The same applies to M&A deals as it had been proved by Rau and Vermaelen (1998). After running regression with GROWTH_FIRM variable as proxy (see Appendix, table 4.1.3), we discovered that firm type does not have significantly different from zero influence on CAR. However, wide distribution of abnormal returns around mean for all data sample and the biggest average CAR for growth companies (look at Table 3.1) motivated us to determine which drivers make growth firms create value for their shareholders in comparison to value firms. We also looked at high significance (at 1% level) of growth prospects of acquirer as measured by proxy CAPEX_SALES_5Y_GR for creation of CAR what is crucial characteristic of growth firm.

Regression results for growth bidders are presented in the table below. Value firms are presented and analyzed afterwards.

Table 4.2.1. Regression output on growth firms as acquirers

Included observations: 217 after adjustments

HAC standard errors & covariance (Bartlett kernel, Newey-West fixed
bandwidth = 5.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BETA	-0.097707*	0.063294	-1.623694	0.0942
CAPEX_SALES_5Y_GR	0.028875*	0.015373	1.878236	0.0618
CASH	-2.55E-10	9.19E-10	-0.277841	0.7814
COLLATERAL	-0.047067	0.075298	-0.625067	0.5326
CROSS_BORDER	-0.014644	0.050337	-0.290919	0.7714
EBIT_MARGIN	0.019567	0.086785	0.225466	0.8218
FIN_BIDDER	-0.031851	0.049665	-0.641319	0.5220
HORIZONTAL	0.079417*	0.041046	1.934833	0.0544
LN_SIZE_	-0.014456	0.011669	-1.238836	0.2168
RECESS	-0.046780	0.054762	-0.854229	0.3940
C	0.220060	0.169564	1.297795	0.1958
R-squared	0.098032	Mean dependent var		0.015251
Adjusted R-squared	0.054247	S.D. dependent var		0.309329
S.E. of regression	0.300822	Akaike info criterion		0.484766
Sum squared resid	18.64175	Schwarz criterion		0.656097
Log likelihood	-41.59707	Hannan-Quinn criter.		0.553976
F-statistic	2.238939	Durbin-Watson stat		1.120470
Prob(F-statistic)	0.016925			

*Statistically significant estimates at the 1, 5 and 10% levels are marked with ***, ** and * respectively*

We may see that 3 regressors have statistically significant coefficients all at 10% level. Beta has the same sign as underlying theory suggests while growth proxy changed sign to positive, and HORIZONTAL variable became significant. Further we will discuss possible explanations according to financial theories of above results for two last factors.

CAPEX_SALES_5Y_GR variable captures growth opportunities what is the main driving force of glamour firms. Theory predicts that correlation between CAR and growth proxy should be negative. But, as the matter of fact, fast growing firms quite frequently get plenty of R&D and intangible assets via acquisition. Also, as a rule, most of them are representatives of fast-changing industries where innovation is the main driving force. If we had enough information on targets' assets, we could check whether it was the case with M&A deals for this type of companies on Nordic market. It would be advisable to look what kind of assets they purchased. It would also be useful to check at what prices such assets were bought since quite frequently above-mentioned growth-driving assets could be overvalued and abnormal return and growth proxy would correlate in usual way, that is, shareholders would not like growth firm to conduct acquisition.

HORIZONTAL dummy variable is also significant with positive sign. The same logic may be applied here. Both revenue and cost synergies may be realized (according to efficiency theory and market power theory) but with particular focus on growth firms which could purchase assets tangential to their core business by strengthening R&D and intangible assets activities.

We further ran regression on value firms in order to see what drove their abnormal returns creation for shareholders.

Table 4.2.2. Regression output on value firms as acquirers

Included observations: 120 after adjustments
HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 5.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BETA	-0.153633***	0.052724	-2.913895	0.0043
CAPEX_SALES_5Y_GR	-0.004260***	0.000994	-4.284987	0.0000
CASH	6.65E-08	4.71E-08	1.411288	0.1610
COLLATERAL	-0.026731	0.077142	-0.346514	0.7296
CROSS_BORDER	-0.029776	0.080940	-0.367883	0.7137
EBIT_MARGIN	-0.000493***	0.000125	-3.941643	0.0001
FIN_BIDDER	-0.033725	0.059288	-0.568834	0.5706
HORIZONTAL	-0.077208*	0.047076	-1.640099	0.1001
LN_SIZE_	-0.011891	0.018562	-0.640598	0.5231
RECESSION	0.023174	0.049457	0.468561	0.6403
C	0.240763	0.243952	0.986927	0.3259
R-squared	0.174359	Mean dependent var		0.005153
Adjusted R-squared	0.098612	S.D. dependent var		0.240491
S.E. of regression	0.228325	Akaike info criterion		-0.028901
Sum squared resid	5.682437	Schwarz criterion		0.226619
Log likelihood	12.73407	Hannan-Quinn criter.		0.074867
F-statistic	2.301859	Durbin-Watson stat		2.083979
Prob(F-statistic)	0.017098			

*Statistically significant estimates at the 1, 5 and 10% levels are marked with ***, ** and * respectively*

From regression results four regressors have statistically significant coefficients with all signs according to theories' prediction, except for HORIZONTAL variable. BETA as proxy for riskiness naturally sends signal that M&A will just increase uncertainty of firms' activities. EBIT_MARGIN again reminds hubris theory's prediction about value destruction by overconfident managers, especially for value firms with generally low growth prospects (but effect is again really miniscule as depicted in small value of coefficient). We will broadly discuss synergies and growth prospects dummy variables further.

CAPEX_SALES_5Y_GR has negative correlation with CAR as value firms with high growth opportunities should focus on getting higher revenues but, market believes, not externally. M&A may distract attention from the main goal of continuing to work on increasing revenue. On the other hand, low profitability margins, poor internal processes of cost/revenue/cash flow management, potential availability of many non-core poorly managed businesses and improper capital structure may be the cause of low valuation by market of value firms with many growth options, too. Hence we have perception of value destruction by stakeholders. So, investors may believe that value firm is better to streamline operations, increase its own efficiency and improve corporate governance instead of continuing to grow, especially via M&A which can be value-decreasing if not special attention is paid to this transaction.

HORIZONTAL dummy variable with negative sign shows that investors generally see value companies destroying value by mergers in the same industry in contrary to what efficiency theory predicts. Possible reason may be that poor performance of these type of firms, what actually caused their low valuations on market-to-book value basis, cannot assure shareholders that acquirers could successfully complete and get extra value from transaction of acquiring a target with similar business model.

It may be seen that both growth and value firms have similar drivers of value creation in M&A as measured by CAR but with opposite effects as should be the case for different types of companies with generally contrary philosophies. So, many growth options and possible realization of synergies increases expected net gains to Nordic investors in glamour companies engaged in M&A, while value firms destroy value if they pursue inorganic growth in the same industry or have high growth prospects.

4.3. Robustness check: OLS assumptions

We have to make sure that estimates obtained from above regressions are BLUE, that is, best linear unbiased estimates. Classical ordinary least squares assumptions which must be checked for validity are following:

- 1) Homoscedasticity (finite variance of residuals).
- 2) Absence of autocorrelation in error terms.
- 3) No multicollinearity.

In order to get rid of possible effects of heteroscedasticity and serial correlation we applied method developed by Newey and West through statistical package EViews. Their procedure allows to correct standard errors (SE) so to make SE heteroscedasticity and autocorrelation consistent (HAC). Therefore, by relying on HAC standard errors we assume to get them as well as t-statistics and p-values large enough to overcome statistical issues of heteroscedasticity and autocorrelation.

Regarding serial correlation, though, we do not expect to have any problem related to it since our sample consists of cross-sectional data where presence of autocorrelation is unavailable by definition. Looking at Durbin-Watson statistics in each of the tables above and comparing to critical values gives additional evidence that serial correlation is not present.

There is no formal test of presence of multicollinearity, therefore we may check it by looking at correlation matrix for all independent variables included in our model (see Appendix E, Table 4.3). It can be seen that variables have some degree of correlation but not high enough to exclude any of them. However, correlation among variables makes standard errors artificially slightly higher what leads to think that estimates may not be regarded as best anymore. Despite this fact estimates are still unbiased. For that reason, instead of solely looking at statistical attributes of each variable, it is also advisable to find proper economic reasoning for using each factor.

4.4. Model Extension

By including more independent variables in the main model we try to capture possible effects of other factors on CAR which were discussed in different papers on the topic of acquirer's performance in M&A.

Table 4.4. Regression output on extended model

Included observations: 419 after adjustments
HAC standard errors & covariance (Bartlett kernel, Newey-West fixed
bandwidth = 6.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BETA	-0.094728**	0.042808	-2.212835	0.0275
CAPEX_SALES_5Y_GR	-0.003670***	0.001244	-2.950863	0.0034
CASH	-7.85E-10	8.61E-10	-0.911524	0.3626
COLLATERAL	0.005205	0.042015	0.123878	0.9015
CROSS_BORDER	-0.022483	0.037515	-0.599296	0.5493
EBIT_MARGIN	-0.000554***	0.000103	-5.352899	0.0000
EXPERIENCE	-0.017281*	0.008989	-1.922354	0.0553

FIN_BIDDER	-0.034809	0.032348	-1.076073	0.2825
HORIZONTAL	0.003003	0.031039	0.096761	0.9230
LN_SIZE_	-0.015689*	0.008930	-1.757002	0.0797
NUMB_BIDD	0.035383	0.050766	0.696979	0.4862
POSTEXPANSION	0.024453	0.060112	0.406783	0.6844
POSTRECESSION	0.045665	0.044001	1.037813	0.3000
RECESSION	-0.016148	0.041232	-0.391646	0.6955
SUBSIDIARY	0.020520	0.028503	0.719931	0.4720
TARGET_PRIVATE	-0.021110	0.049435	-0.427022	0.6696
TENDER	-0.036595	0.046951	-0.779435	0.4362
C	0.261368*	0.143324	1.823609	0.0690
R-squared	0.086993	Mean dependent var		0.006087
Adjusted R-squared	0.048287	S.D. dependent var		0.280932
S.E. of regression	0.274066	Akaike info criterion		0.291112
Sum squared resid	30.11993	Schwarz criterion		0.464577
Log likelihood	-42.98799	Hannan-Quinn criter.		0.359680
F-statistic	2.247541	Durbin-Watson stat		1.616897
Prob(F-statistic)	0.003190			

*Statistically significant estimates at the 1, 5 and 10% levels are marked with ***, ** and * respectively*

Additional factors considered were mainly control variables: (1) Number of bidders (NUMB_BIDD) to measure competition for the target; (2) POSTEXPANSION and POSTRECESSION to test whether deal at the very beginning of new business cycle mattered; (3) SUBSIDIARY to identify whether purchase of frequently undervalued non-core assets of seller add value for a bidder; (4) TARGET_PRIVATE assuming that private firms without obvious market price could be acquired at discount and therefore create value; (5) TENDER dummy variable to test evidence of tender offers to create value for Nordic transactions as was widely proved to bring positive net gains in other markets.

As can be seen in Table 4.4 among all the extra regressors considered only EXPERIENCE appeared to have statistically significant coefficient. This variable captures frequency of acquirer conducting mergers during period from 1997 to 2016, outside of event window of 198 days for its previous M&A deal.

EXPERIENCE has negative correlation with abnormal returns of bidder that generally works in opposite way what would be expected. Our belief was that dedicated M&A team in place or experience of previous transaction would create opportunity to overcome many issues with each next transaction and so get positive reaction from investors. But results of regression make us assume that acquirers involved in M&A activities do not execute plans on value-enhancement via combining with target, as promised. Considering that fact market participants react negatively to mergers conducted by “seasonal” acquirers.

In conclusion, it has been shown that including extra independent variables did not significantly improve model but added interesting aspect to our results, namely that Nordic market may not reward experienced acquirers with stock price appreciation. However, this aspect, we believe, is useful to cross-check with performance of “seasonal” acquirers who conduct many M&A deals, including those within event window, as their strategy is to realize plans on bolt-on acquisitions. Then results may differ and suggest value creation for shareholders as it was proved by Gregory (1997) in his research regarding reaction of the market on merger and acquisition programs.

4.5. Recommendations on further research of the topic

Lack of enough high-quality data points frequently becomes an issue while conducting empirical studies. We started with 7082 transactions and ended with 419 M&A deals analyzed in our final model. For that reason, we could not test all our ideas without facing problems related to poor-quality unreliable scarce information which would not allow us to draw any statistically significant conclusions. Some information was not available at all. We would like to present road-map on how the topic is suggested to be further explored in order to comprehensively and better understand Nordic M&A deals.

In our research we tangentially covered business cycle matters regarding general state of economy at time when transaction occurred. But because of few sparse data points we could not draw any meaningful conclusions on that.

Two ingredients of value of transaction should be considered: premium and price. Premium paid is very important deal constituent showing whether acquirer will be able to create value for its shareholders (because all this premium goes to target’s stakeholders). Price paid for the target comparing to average industry prices for similar firms at time of a deal may give understanding if undervalued or overvalued assets had been bought and how easily extra value may be realized. We want to note that price may be correlated with business cycle what should be checked before running regressions to get rid of potential multicollinearity. Unfortunately, our dataset had too few data points for price and premiums to include them in the analysis.

It is worth to analyze expected synergies to be realized as announced to investors. This aspect can be measured most precisely just by managers and market gets this information on it around date of M&A announcement. One caution is that premiums and synergies may be positively correlated, therefore, it is better to check that before deciding

which variable to include in the model. If problem of multicollinearity is not too big, though, it is worth to consider both variables – synergies and premiums – in the same model to see the effects of two crucial aspects to M&A performance by bidder. Alternatively, regressors may be included in two separate models interchangeably to see the impact of each. We could not find any data on this aspect of a deal.

Post-transaction credit statistics (leverage and coverage ratios) as provided to investors around time of announcement gives understanding whether value will be realized since combined entity may become riskier. It is also possible to test variables together with time (business cycle dummy) when in the business cycle transaction occurred. For instance, if a deal was announced late in a cycle there are following issues: prices on all assets are high; there exists expectation that expansion will end soon; low duration of debt and matters around debt service may badly affect prospects of firm's existence, that is, increase risk of bankruptcy if recession will follow soon. On the other hand, if M&A was announced at the beginning of new cycle, it is quite expensive to get financing but fairly substantiated growth forecast for economy as a whole and for a firm in particular in the nearest future may overcome negative view that the deal is value-destroying. No information was available on expected post-transaction capital structure for our sample.

Also we would like to add that it is important to look at target's financial information in order to understand quality of assets acquired by bidding company. For instance, Hazelkorn et al. (2004) showed evidence that return to acquirer was higher when the target had low projected earnings-growth rates. Since most of the targets in our sample were either private firms or subsidiaries of larger enterprises, we did not have enough data to use in the model.

Conclusions

In this research paper performance of acquiring firms in M&A deals has been analyzed. Sample for the study included Nordic bidders and targets for the period from 1997 to 2016 in order to test time frame after majority of studies proved mergers destroying value for acquirer's shareholders. The cornerstone idea was that managers will try to acquire assets of another firm just if they strongly believe in deal's value creation. Lack of high quality time-series data for combined entities post-transaction, however, constrained our research method to looking at initial market reaction to the deal around time of its announcement. Cumulative abnormal returns have been used to measure net gains to shareholders. Results showed that on average M&A conducted internally within Scandinavian market neither creates, nor destroys value for its shareholders (-0.2% CAR). The main hypothesis that we tested tried to prove that acquirers-growth firms actually perform better than value companies in M&A deal in contrast to findings of Rau and Vermaelen (1998). While looking at CAR, we discovered that it is the case: growth firms produced average CAR slightly positive at 0.4% while value firms destroyed value for their shareholders (-1.4% CAR). Further analysis showed that by geographical attribution the best acquirers of Nordic targets appeared to be from Finland (2.7% CAR) while Danish companies destroyed value in these deals (-7.2% CAR). After exploring time of transaction it was found that M&A in recession and post-recession created value while in expansion and post-expansion destroyed. However, because of very broadly distributed abnormal returns of acquirers in the sample, mean CAR was insignificant neither for the whole dataset nor for any dimension (see Table 3.1.).

Cumulative abnormal return for bidders has many drivers depending on sample used and time frame analyzed. Since focus of the paper was made on M&A conducted internally on Scandinavian market, idea was that interesting patterns different from other developed markets, like US or European, may be found. Expectations materialized by suggesting that many theories cannot be substantiated mainly because of more developed firm's corporate governance for both regional acquirers and targets. With this respect none of the variables trying to capture corporate control issues had been significant. It had effect even on free cash flow theory's proxy, again for the reasons of lack of necessity for shareholders to be concerned about managers investing freely excess cash, without beforehand feedback from either owners or board of directors representing stakeholders. Therefore, overall better corporate governance in Nordic firms helps managers of bidding companies primarily focus

on certain main drivers of value creation in M&A deal comparing to less developed in this respect markets with many more issues arising post-transaction.

Separation of acquirers into different types, namely growth and value firms, as it was done in previous research papers on the topic, was explored to identify what drives their performance on Scandinavian market. After running regression on growth company dummy variable as proxy for growth in general model we could not find significant result for its coefficient estimate. But because company was assigned to growth category based on its high market-to-book value (MTBV) where MTBV itself appeared not to capture growth prospects of acquirer (see Appendix C, Table 4.1.2), it was decided that bidders should be tested based on their reference to each group following logic of previous studies. Furthermore, future growth options of acquirer proved to be highly significant in the main model (see Table 4.1.1), and it is crucial characteristic of what makes distinction between growth and value firms as perceived by market participants. It was discovered that both types of bidders have similar drivers of CAR but with opposite effect on value creation, that is, growth opportunities and horizontal acquisitions having positive correlation with CAR for growth firms and opposite for their counterparts. So, we may conclude that investors have different perception of value realization by growth and value acquirers in Nordic region.

In order to further study the topic in presence of more high-quality data on both Scandinavian acquirers and targets, we would suggest:

- comprehensively explore stage of the business cycle around which transaction occurred;
- pay special attention to premiums and prices paid in comparison to prevailing on the market at the moment of a deal and historically;
- consider expected synergies as announced to investor's community and, for analysis of long-term performance, their realization post-transaction;
- analyze post-transaction credit statistics of combined entity as provided to investors at time of transaction announcement;
- include all relevant financial information on targets in the research.

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Appendices

Appendix A. Calculation of cumulative abnormal returns

First, stock price returns are calculated for each company. Announcements of M&A transaction are identified as the event and the date of announcement is set to be equal to 0. In order not to omit possible insider trading 10 days before and after the announcement date covers the event window of [-10;10]. The estimation window of normal returns for each firm includes 198 days before the event window.

Rolling window regression for 198 days is employed for each firm in order to calculate normal returns using the CAPM. The model regression is as follows:

$$R_i = R_f + \beta_1 * (R_m - R_f) + \varepsilon$$

where R_i is normal return for each company i in the sample, $R_m - R_f$ is market risk premium. Actual returns are first regressed over 198-day period, then obtained coefficients are used in the regression over the estimation window to calculate normal returns for the period of the event. Abnormal returns for each firm in the selected period are estimated applying the following formula:

$$AR_i = Actual\ Returns_{i,t} - Normal\ Returns_{i,t}$$

where i stands for each firm in the sample, t for an event date. Since normal returns can be expressed as $E(R_{i,t})$, we calculate abnormal returns for the 20 days event window without excluding the day of the announcement.

To test whether announcement of M&A deal is reflected in the returns, we estimate cumulative abnormal returns (CAR) for the event window together with their t-statistics, mean, median and standard deviation. We employ the test statistics AR and CAR based on average standardized abnormal return (ASAR) and average standardized cumulative abnormal return (ASCAR) as they are the most widely recognized tests for event studies of this type. Respective formulas follow:

$$ASAR_t = \frac{1}{N} \sum_{i=1}^N \frac{(R_{it} - \hat{a}_i - \hat{b}_i R_{mt})}{S_{it}}$$

$$ASCAR_{T1,T2} = \sum_{i=T1}^{T2} ASAR_t$$

where S_{it} represents square root of firm i 's estimated predicted variance obtained from expression:

$$S_{it} = \left[S_i^2 \left(1 + \frac{1}{L} + \frac{(R_{mt} - \bar{R}_m)^2}{\sum_{k=1}^L (R_{mk} - \bar{R}_m)^2} \right) \right]^{1/2}$$

where S_i^2 stands for residual variance for security i from the CAPM regression; L – number of observations during the estimation period; R_{mk} – return on the market portfolio for k -th day of the estimation period; R_{mt} – return on market portfolio for day t , \bar{R}_m – average return on market portfolio for the estimation period.

As simplification of assumptions, we treat distributions of individual abnormal returns as independent and normal for various stocks and over time. According to Travlos (1987), it is necessary to use Z_t statistics and $Z_{T1,T2}$ statistics which follow a unit-normal distribution for the sake of testing hypothesis that the average standardized abnormal returns and the average cumulative standardized abnormal returns equal zero. Formulas follow:

$$Z_t = \sqrt{N} * ASAR_t \quad \text{and} \quad Z_{T1,T2} = \frac{\sqrt{N}}{T2-T1+1} \sum_{t=T1}^{T2} ASAR_t$$

After obtaining CAR, regression analysis is employed in order to identify which parameters of deal characteristics and bidder/target features were essential for generating abnormal returns.

*Appendix B***Table 3.3. Characteristic of factors of bidder's post-acquisition performance**

Theory	Regressor	Possible impact	Assumed consequence
Agency theory	Buyer's market-to-book ratio	High MTB may suggest overvaluation	Low performance for deals with stock as mean of payment
	Portion of cash and cash equivalents	Managers may pursue empire building	Low performance for deals with cash as mean of payment
Competition for target	Number of bidders for the same target	Higher premium paid	More bidders, more negative reaction
Cost of capital	Tangible assets	Leverage capacity	More collateral leads to less negative reaction
M&A expertise	Number of previous deals	More gives better perception on value creation	Every next deal is met better
Hubris theory	Avg EBIT/Sales for 3 Y	High ratio may indicate management overconfidence	Negative reaction for top performers
	Premium paid	Higher premium => lower possibility to add value	Negative for high premium
Growth potential	Avg growth in CAPEX for 3Y	Higher growth => more growth opportunities	Mitigates negative reaction if paid with stock
Leverage deficit theory	Excess leverage ratio	Managers show confidence in value created via M&A	Positive reaction if correctly leveraged (cheap debt w/ long duration)
	Change in leverage	More leverage allows to use higher tax shields	Positive reaction if increase in indebtedness
Particular deal characteristics	Cross-border	Enhancement of performance of the target	Generally positive reaction
	Stand-alone/subsidiary	Subsidiaries are usually undervalued	Positive reaction for subsidiaries, mixed for stand-alone
	Tender offer/merger	Tender involves management change, when mergers are usually friendly	Positive reaction for tender, mixed-to-negative for merger
	Vertical/horizontal	Horizontal are assumed to have savings by synergies	Positive for horizontal

(continuation of Table 3.3)

Size effect	 Book value of bidder	Smaller firms perform better	More positive if acquirer is smaller firm
Synergy theory	Similarity of industry	Opportunity to realize operating synergies	Within same industry is welcomed
	Corporate/financial	Mixed	No clear reaction
Undervaluation	Target's market-to-book ratio	Low ratio signs probable undervaluation	Positive reaction if market believes acquirer can change target's performance

*Appendix C***Table 4.1.2. Regression output with MTBV as proxy for growth opportunities**

Included observations: 373 after adjustments
HAC standard errors & covariance (Bartlett kernel, Newey-West fixed
bandwidth = 6.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BETA	-0.079260*	0.044391	-1.785494	0.0750
CASH	-3.65E-10	6.98E-10	-0.522537	0.6016
COLLATERAL	-0.031627	0.041558	-0.761029	0.4471
CROSS_BORDER	-0.029410	0.038629	-0.761330	0.4470
EBIT_MARGIN	-0.000609***	9.20E-05	-6.619500	0.0000
FIN_BIDDER	-0.038875	0.033422	-1.163160	0.2455
HORIZONTAL	0.013798	0.031109	0.443532	0.6576
LN_SIZE_	-0.014087*	0.008445	-1.668085	0.0962
RECESSION	-0.011828	0.040553	-0.291659	0.7707
MTBV	-0.000175	0.001458	-0.120260	0.9043
C	0.223896*	0.122388	1.829394	0.0682
R-squared	0.060246	Mean dependent var		-0.007024
Adjusted R-squared	0.034286	S.D. dependent var		0.284172
S.E. of regression	0.279258	Akaike info criterion		0.315685
Sum squared resid	28.23056	Schwarz criterion		0.431335
Log likelihood	-47.87522	Hannan-Quinn criter.		0.361608
F-statistic	2.320725	Durbin-Watson stat		1.570148
Prob(F-statistic)	0.011747			

Statistically significant estimates at the 1, 5 and 10% levels are marked with ***, ** and * respectively

*Appendix D***Table 4.1.3. Regression output with Growth Firm as proxy for growth opportunities**

Included observations: 427 after adjustments

HAC standard errors & covariance (Bartlett kernel, Newey-West fixed

bandwidth = 6.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BETA	-0.090355**	0.042651	-2.118475	0.0347
CASH	-4.11E-10	8.19E-10	-0.501590	0.6162
COLLATERAL	-0.013332	0.039375	-0.338596	0.7351
CROSS_BORDER	-0.021870	0.037611	-0.581477	0.5612
EBIT_MARGIN	-0.000583***	9.14E-05	-6.384843	0.0000
FIN_BIDDER	-0.025658	0.031260	-0.820787	0.4122
HORIZONTAL	0.008133	0.028855	0.281845	0.7782
LN_SIZE_	-0.015605*	0.008140	-1.916978	0.0559
RECESSION	-0.024086	0.036331	-0.662973	0.5077
GROWTH_FIRM	0.010415	0.027699	0.375997	0.7071
C	0.250585**	0.114270	2.192930	0.0289
R-squared	0.068012	Mean dependent var		0.004550
Adjusted R-squared	0.045608	S.D. dependent var		0.282532
S.E. of regression	0.276014	Akaike info criterion		0.288695
Sum squared resid	31.69247	Schwarz criterion		0.393202
Log likelihood	-50.63628	Hannan-Quinn criter.		0.329973
F-statistic	3.035768	Durbin-Watson stat		1.570950
Prob(F-statistic)	0.001003			

Statistically significant estimates at the 1, 5 and 10% levels are marked with ***, ** and * respectively

Appendix E

Table 4.3. Correlation matrix of dependent variables

Variable	CAR	CAPEX/ Sales 5Y Gr	EBIT_ Margin	MTBV	Collateral	Cross- border	Beta	LN (Size)	Horizontal	Numb_ bidd	Experience	Fin_bid der	Tender	Subsidiary	Cash	Recession
CAR	100,0 %	5,3 %	-9,3 %	4,7 %	0,8 %	1,5 %	-1,7 %	-9,2 %	-8,8 %	-8,3 %	-9,2 %	-0,9 %	-4,0 %	-1,5 %	-10,2 %	4,2 %
CAPEX/S ales 5Y Gr	5,3 %	100,0 %	1,7 %	-8,7 %	25,3 %	-10,6 %	-3,6 %	16,1 %	4,4 %	-2,1 %	21,8 %	17,1 %	6,3 %	11,9 %	-1,9 %	3,5 %
EBIT_Mar gin	-9,3 %	1,7 %	100,0 %	1,9 %	2,9 %	-2,9 %	1,0 %	5,9 %	6,5 %	1,1 %	6,3 %	2,9 %	2,3 %	5,4 %	1,1 %	3,8 %
MTBV	4,7 %	-8,7 %	1,9 %	100,0 %	-16,3 %	-1,0 %	-2,9 %	-20,0 %	4,3 %	-1,2 %	-2,4 %	-8,5 %	-3,8 %	-8,3 %	-1,3 %	-1,3 %
Collateral	0,8 %	25,3 %	2,9 %	-16,3 %	100,0 %	-12,7 %	0,1 %	27,4 %	18,9 %	1,6 %	26,5 %	8,5 %	0,6 %	16,5 %	2,8 %	9,1 %
Cross- border	1,5 %	-10,6 %	-2,9 %	-1,0 %	-12,7 %	100,0 %	0,5 %	13,7 %	-0,1 %	13,6 %	5,7 %	-3,4 %	0,5 %	5,8 %	7,6 %	-4,7 %
Beta	-1,7 %	-3,6 %	1,0 %	-2,9 %	0,1 %	0,5 %	100,0 %	22,4 %	-2,5 %	4,5 %	7,8 %	2,0 %	2,1 %	7,3 %	20,7 %	1,2 %
LN (Size)	-9,2 %	16,1 %	5,9 %	-20,0 %	27,4 %	13,7 %	22,4 %	100,0 %	3,0 %	23,1 %	22,3 %	3,5 %	21,4 %	24,4 %	31,0 %	-3,2 %
Horizontal	-8,8 %	4,4 %	6,5 %	4,3 %	18,9 %	-0,1 %	-2,5 %	3,0 %	100,0 %	1,0 %	0,7 %	-22,7 %	1,0 %	-0,7 %	-5,2 %	-4,5 %
Numb_bid d	-8,3 %	-2,1 %	1,1 %	-1,2 %	1,6 %	13,6 %	4,5 %	23,1 %	1,0 %	100,0 %	8,7 %	-6,3 %	19,3 %	-14,4 %	14,7 %	-3,6 %
Experience	-9,2 %	21,8 %	6,3 %	-2,4 %	26,5 %	5,7 %	7,8 %	22,3 %	0,7 %	8,7 %	100,0 %	3,6 %	4,1 %	17,8 %	4,5 %	-0,2 %
Fin_bidder	-0,9 %	17,1 %	2,9 %	-8,5 %	8,5 %	-3,4 %	2,0 %	3,5 %	-22,7 %	-6,3 %	3,6 %	100,0 %	-11,1 %	5,0 %	-0,8 %	0,0 %
Tender	-4,0 %	6,3 %	2,3 %	-3,8 %	0,6 %	0,5 %	2,1 %	21,4 %	1,0 %	19,3 %	4,1 %	-11,1 %	100,0 %	-11,9 %	-3,6 %	0,3 %
Subsidiary	-1,5 %	11,9 %	5,4 %	-8,3 %	16,5 %	5,8 %	7,3 %	24,4 %	-0,7 %	-14,4 %	17,8 %	5,0 %	-11,9 %	100,0 %	7,7 %	6,7 %
Cash	-10,2 %	-1,9 %	1,1 %	-1,3 %	2,8 %	7,6 %	20,7 %	31,0 %	-5,2 %	14,7 %	4,5 %	-0,8 %	-3,6 %	7,7 %	100,0 %	-2,5 %
Recession	4,2 %	3,5 %	3,8 %	-1,3 %	9,1 %	-4,7 %	1,2 %	-3,2 %	-4,5 %	-3,6 %	-0,2 %	0,0 %	0,3 %	6,7 %	-2,5 %	100,0 %

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Attachment: Preliminary Thesis Report

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BI Norwegian Business School

M&A on Scandinavian Market:
Evidence of Factors for Shareholder
Value Creation from Acquirer's
Perspective

Submission Date:

01.03.2017

Under supervision of:

Professor Leon Bogdan Stacescu

Programme:

Master of Science in Financial Economics

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1. Introduction

Firms are constantly on the lookout for value creation. It may be reached by focusing on the main parameters of key value driver formula (Koller et al. (2015)). Hence managers may increase company's value either by increasing return on invested capital (ROIC), accelerating growth, or finding cheaper ways of financing and so decreasing cost of capital required by investors. In this paper our attention will be concentrated on growth as a mean of effecting value.

Managers pursuing higher growth for the company have two main options: either to create it internally (organic growth) or by acquiring venture that has more growth opportunities. Former is longer to achieve and usually demands less capital injections, while latter represents itself as immediate therapy from sluggish growth, however, requires big upfront price to be paid for in-place and future unobservable but possible assets created. Both alternatives have downside protection: R&D projects may be easily stopped at any stage if results, including first tests of product or service, are unfavorable; Mergers and Acquisitions (M&A), on the other hand, limit value destruction by having obtained tangible and intangible assets, including human capital, as well as certain streams of cash flows in place that altogether guarantee value preservation of acquired assets for long time. Therefore logical questions arise: Why do firms become more-and-more involved in M&As? Should firms pursue merging process path: is it beneficial to bidders, targets, society? Perhaps assets created internally is the only solution for "healthy" growth, and does this variant really preserve value (definitely topic for another research)?

In order to get understanding of increasing interest in M&As by academicians as well as practitioners, we looked at the dynamics of M&As over the years with respective main features of the periods from study by Schleifer and Vishny (2002). Paper makes distinction between three time frames over the last half century. The first takes place in 1960s and is characterized by formation of conglomerates as primary engines of best risk/return/growth opportunities mix as such entities strived to be very well diversified, therefore they acquired companies from every possible industry. The second period in 1980s was golden era of leveraged buyouts (LBO) thanks to introduction of "junk bonds" to market as source of necessary funding (and higher income stream for those who looked for it but, of course, with higher risk), and urgent need for revamping of Corporate America, i.e. financial professionals saw a lot of opportunities for them to increase firms' performance by changing balance sheet

composition on both right- and left-hand sides; it all led to huge number of companies going private or become target of takeover by top-performers. Third M&A wave was observable in 1990s with information technology revolution and emergence of dot-com bubble when market valuations were so high that technology firms became both targets for every firm that wanted supreme growth and acquirers of any firm they saw necessity to get control of thanks to high ever increasing market value of their stocks. Recently we may also notice two other periods with increasing M&A activity, namely: (a) time frame from 2003 till the beginning of first signs of financial crisis in 2007 thanks to availability of cheap money in the economy and opportunities to make overleveraged acquisitions in order to both “play around” balance sheet and streamline/synchronize operations of the target; (b) after-crisis time when from 2014 cash-hoarding corporations started to deploy parts of their money cushion, and began either “purchase” growth and/or get higher market share with mega-deals taking place. Institute for Mergers, Acquisitions & Alliances reports that in 2015 firms announced 44 000 transactions with a total value of more than 4.5 trillion USD (in 2016 number of deals was slightly lower because of fears of “overheated” market with way too high valuations but value of transactions rose to 4.7 trillion USD). These numbers are quite impressive if we compare them with one of the first waves of M&As in 1980s when in 1985, in the midst of M&A boom, number of deals was barely 5 000 annually with total value of tiny 347 billion USD. (see: Apendix)

Considering data on historical spikes in number of M&As and their constantly increasing transaction volumes in each next period, we are interested in whether there’s added value in M&As for acquiring firms since they are the party that will continue to operate joint venture, and if yes, then for which market participants, under which circumstances. As Dutta and Jog (2009) pointed out, academic community will always experience curiosity in the above matter because of disputable results on long-term and short-term performance of acquirer, and continuous changes of market conditions under which M&As occur as well as more creative deal specifics of each transaction.

2. Objective and Motivation

The aim of the paper as the topic says is to comprehensively analyze value creation for acquirers as a result of M&As on Scandinavian market. There are many issues that can be touched but our main focus will be on grouping acquirers into buckets by: (a) the

frequency of M&As (which may hint to M&As as part of normal business activity to get needed growth), (b) specific industry bidder operates in, and (c) various time periods each of which had another market conditions. So, our intention is not to say that all companies are “apples” but try to make clear distinction between “apples” and “oranges” by above mentioned dimensions, and conduct analysis from this perspective. Even though such grouping will give us less data points for regressions’ many independent variables which will consume a lot of degrees of freedom, similarity of firms should help us get less variance in a bucket (so, better t-statistics), plus we may/shall adjust our regressions as to include only most reasonable regressors.

One question that may be raised with relation to the approach we will use in our research is: Why not identify which factors cause value creation for acquirer based on all data available out there (after passing all statistical tests). And here comes answer: every deal has many unique characteristics, so we have to distinguish between primary motivation of it – either buy growth opportunities, or realize synergies, or chiefly to obtain better competitive position, so as to get market share and thanks to that needed growth in top-line (i.e. revenue). Besides that we definitely should factor-in macro -economic and -financial conditions, including regulations.

Another question may be: What if we look at target’s and/or acquirer’s financial data before/at the time of acquisition for the best instances of successful value creation, and make some inferences? It would be really fundamental comprehensive work but possibly fruitless and without any universal practical and significant result that is applicable to most situations – probably just generic recommendations could be given. Why? First, because of above mentioned points about uniqueness of each deal. Second, complexity of coping properly with panel data of such diverse transactions from different periods (where both transactions and periods have very many particular characteristics) plus, for statistical purposes (because of lack of information available or statistical tools invented up-to-date), the necessity to cut much data will all lead in the best-case scenario to very biased results that cannot serve as a reliable genuine measure whether acquirer should consider certain enterprise as target in order to create value.

But it would be interesting to put those matters forward into the future as recommendation for further studies when market incorporates more high-quality data, where further development of derivatives market for both equity- and credit-products is of utmost

importance as it provides better perception of market expectations and can give many not easily observable inputs into calculations (including variance, and development of various key parameters as Barraclough, Robinson, Smith and Whaley (2013) tried to get use of that). Also we need to wait till statistical tools become more advanced, when one can effectively deal with separation of effects of successive synchronous and/or overlapping events for the same object (in our case enterprise entity).

Finally, we need to emphasize the point that many studies on M&As have been conducted worldwide, with major part from and with primary focus on the US market. Quite big part has been devoted to European M&A deal flow. However, the topic on Nordic market is quite under-researched for the following reasons: (a) Scandinavia is generally regarded as being representative of EU broad market; (b) almost non-existence of mega-deals that could attract much of public attention (huge firms are regarded as part of national assets, and so interesting cross-border deals are difficult to complete; plus antitrust regulation would prevent such M&As because of comparatively fairly small domestic market's size). Review of literature will follow in the next section. For now, we may see the importance to investigate Scandinavian market, especially by looking at it as being unique, that has overcome its own development over time with different groups of firms which succeeded in inorganic growth via M&As by applying various strategies. The question we want to answer is which firms, that grew by M&As, and how managed to create value for their shareholders.

3. Review of Previous Studies on M&A Performance for Acquiring Firms

In this section we present an overview of research papers related to the topics of M&A's post-acquisition performance as well as factors that contribute to deal's outcome for bidder. First part discusses main discoveries on primary motivations for firms to pursue inorganic growth. Then, in the second part, we examine studies which looked at value creation by M&A for acquirers. We will finish section with analysis on what primary key factors distinguish successful transactions of this type from bidder's perspective.

3.1. Reasons for firms to get involved in M&A

There are many motives for firms to pursue M&A activities all of which may be divided into two blocks: "rational" (like capture growth opportunities, realize synergies, etc.)

and “irrational” (hubris theory and “empire building”) explanations according to Steger (1999) and Bower (2001). Let us look at main rationales for merger transactions further.

Raj and Forsyth (2004) found ground for acquisitions that is chiefly dictated by disciplinary aspirations, hubris shown by acquiring firm managers, potential synergies realization or undervaluation of target. Disciplinary takeover takes place when target performs poorly comparing to what bidder perceives how it should potentially operate. Hubris acquisition allows overconfident managers try to overhaul firm and so change its performance for the better. M&As with the aim of synergy is related to streamlining target’s operational activities, basically by cost-cutting and increasing CAPEX efficiency, and synchronizing operations into parent company, hence decrease overhead costs. Undervaluation acquisition is completed with the aim of revamping business purchased therefore get difference between price paid and exit value.

Paper by Masse, Kushner and Hanrahan (1990) is focused on shareholder value maximization via M&A and so provides extra argument to Raj and Forsyth (2004) reasons for the M&A, namely reduction of bankruptcy costs for the target and financial reasoning (consideration of target’s tax shield while using leverage to complete transaction).

Another view at the question is offered by Slywotzky & Wise (2002) who see one of the most crucial factors that force managers to M&As to be necessity for growth. Since investors, particularly of listed companies, usually require double-digit growth, for many firms acquisitions is the only option to meet such demands.

Van Wegberg (1994), Schenk (1996) and Fauli-Oller (2000) posit that many businesses engage in inorganic growth to survive, especially in consolidating industries (so called “bandwagon effect”). However, such motives are still arguable in academic community.

Some researches look as deep as to behavioral finance to determine driving force for M&As. For instance, Stanovich (1998) tries to look at success stories and their impact on managers to be willing to acquire other firms.

3.2. Empirical results of M&A performance for acquirers

There are four main approaches used by researchers on how to measure profitability of M&A: (1) Market-based returns to shareholders (also called “Event Study”), (2) Returns reported from Financial Statements; (3) Surveys of managers and (4) Case studies. Since the

last two methods are very difficult to assess from point of view of unbiasedness, and they are quite dependent on sample used, we won't pay special attention to them here.

Event studies technique, according to Caves (1989), is regarded as supreme to all other methods already since 1970s when marketplace started to show quite reasonable level of sophistication. Cumulative abnormal returns by using event studies have mixed results for bidders what actually is a cause of so much attention from academic community which tries to discover some certain unique pattern. There are two main approaches related to time frame on how to measure returns to acquiring firm: either as short-term gain, or longer term return. Former is perfectly visible as immediate market reaction with respective share price change what shows how market participants see future of the deal. Latter is quite difficult to confine from confounding events following the transaction but several solutions were proposed by researchers. Returns to acquiring firms shareholders vary in dispersion: short-term returns take from -4.64% for deals between 1985 and 1990 for exclusively US banks involved (Houston et al. (2001)) to +6.14% for non-conglomerate deals from 1963 till 1996 (Maquieira et al. (1998)); long-term returns vary from -12% for period 1984-92 for 2 years post-merger performance of UK bidders (Gregory (1997)) to +61.3% for 5 years post-acquisition returns after tender M&As for US firms in a period between 1970-89 (Loughran & Vijh (1997)).

If one looks at studies for different periods, it is noteworthy to point out that announcement returns to acquiring firms are trending to decrease, in particular returns to acquirers fell on average from +4.1% in 1963-68 period to -2.9% for 1981-84 time frame (Bradley, Dessai and Kim (1988)).

Accounting approach to analysis of M&A performance gives mix view, too. Having said it, bidders either experience lower ROA than non-acquirers control group (by -2% for the first 5 years – Dickerson, Gibson, and Tsakalotos (1997)), ROA no different from a control sample following acquisitions (Ghosh (2001)), or significant operating cash flow return after merger (by +2.1% – Parrino & Harris (2001)).

From the above we may conclude that no prevalent pattern of change in profitability may be deduced. On average any economic efficiencies to be gained from M&As appear to be miniscule, comparable to those obtained by increase in market share/power.

However, if we look carefully at conducted studies it is hard task to find any research that tries deliberately tackle various industries in different periods, so as to identify specifics

of time and industry appurtenance that defined value creation by M&A for bidders. One should just satisfy oneself with solitary instances, like of high-tech firms' post-merger performance in pre-dot-com bubble era (Kohers & Kohers (2000), mergers among high-tech firms in 1987-96), or after 2008-09 financial crisis M&A performance in EU banking sector (Beltratti & Paladino (2013)). In our opinion, there is hidden much in particularities of each group and subgroup when data is divided and tested on basis of certain similarities of peer firms. In this regard just Rehm, Uhlener and West (2012) postulate that lots of things around acquirers are relative, so they suggest to look at bidders by sectors of economy and their internal characteristics considering particular time/stage in development of such sectors.

3.3. Drivers of success/failure by acquiring company

There are quite a few crucial results from studies that allow to conceive what the outcome of M&A is expected to be. Those are diversification vs core business focus, realization of synergies, value vs growth acquisitions, market power increase, use of cash or stock as a mean of payment, merger vs tender offer, managerial ownership, M&A Programs vs one-off deals.

Maquieira et al. (1998) found positive returns to bidders in non-conglomerate deals (i.e. with focus on improvement of core business activities) and DeLong (2001) reached the same conclusion regarding bank mergers which create on average 2.5% more value comparing to acquisition of unrelated businesses. On the other hand, Berger and Ofek (1995) calculated loss from diversification to be from 13% to 15%.

Houston et al. (2001) studied market reaction on information regarding benefits realized from synergy, and found positive relationship between announced planned cost savings and revenue enhancement and share price change for bank mergers.

Rau and Vermaelen (1998) found abnormal returns to value buyers (from +8% in mergers and +16% in tender offers) while significant value destruction by firms primarily looking for extraordinary growth opportunities (on average -17% in mergers, and insignificant results from tenders).

Paper by Eckbo (1992) discovers that bigger market share for the sample under study did not produce any increase in value, and in certain instances even decreased it. So, establishment of anticompetitive environment doesn't obviously lead to increase in value for acquirers in such market.

Most studies report that cash deals or these, primarily financed with cash, outperformed stock method of payment, and cash involvement increases chances to expect transaction will have positive abnormal returns for bidder shareholders (Travlos (1987), Yook (2000)). Stock exchange with this respect is believed to send signal to the market that acquirer's shares are overpriced. However, buyer's excess cash to be used in a deal will destroy value (Jensen (1986), Lang, Stulz, and Walking (1991)) except when cash-hoarding acquirers engage in M&A what effectively increases firm's leverage, and so its shareholders get increase in value from higher tax shield according to Bruner (1988).

Many research papers reveal value creation for bidders in tender process (Gregory (1997), Rau and Vermaelen (1998)) as measured by market reaction. Such results are foreseeable since hostile takeovers (which are most frequently realized via tender offers) are conducted by bidders who found particular value-creating opportunities in the target and by appealing directly to shareholders do not want to discuss one's views with target's management who may "steal" part of added value from potential acquirer.

You et al. (1986) found that acquirer's returns are lower as management stake in the business is miniscule. Similar conclusions about small share of managers in the business are reached by Agrawal and Mandelker (1987). Healey et al. (1997) support the view by arguing that M&A outcome was enormously influenced by management interest in the deal (i.e. when managers were aligned with shareholder's value creation desire). One of the examples where managers have high stake in the business is LBOs and managerial buyouts (MBO), which produce spectacularly higher returns to shareholders comparing to benchmark (Jensen, and Ruback (1983), Andrade & Kaplan (1998)).

According to Gregory (1997) after companies announce M&A programs with the aim to reach laid out strategies over time, market rewards them with significant stock price increase. Such result may suggest that market participants view M&A as generally value creation mechanism if it is clearly elucidated and afterwards realized correctly.

4. Data Description

Our research has the aim to conduct comprehensive analysis on Nordic M&A market. For that reason we use completed M&A deals where both the acquirer and target belong to one of the following countries: Denmark, Finland, Norway or Sweden. Necessity to use

market data limits our sample only to public bidders for all countries, except Norway where data on privately-held firms are also available. Data are taken for the period from 1994 till 2016 what will give us, first, opportunity to analyze deals over time (with couple of waves in M&As), and, secondly, have in possession enough data points to start truncate them according to our needs. Having two crisis, and after-crisis rebound of M&A transactions is of particular interest for us as we could observe interesting patterns in various industries.

The database SDC Platinum by Thomson Reuters has been exploited in order to form initial data depository. Based on above mentioned primary criteria we've got around 20 000 observation. The next step is to downsize the sample. We use the following further deal characteristics to filter data:

- 1) Deals with information in Euros only (to get rid of ex-rate effect);
- 2) Deal's value to be over 1 million Euro (because of relatively small market size);
- 3) The initial stake of acquirer in the target less than 30% (otherwise potential synergies could already be realized);
- 4) Transaction where acquiring firm gets 100% of the target firm;
- 5) Time frame between two consecutive bids by the same bidder is more than 252 trading days and acquirer has no other significant events occurring during that period before the deal (relevant just for one time deals, since we will also consider in separate groups firms which conduct M&As on constant basis – have so-called M&A programs);
- 6) The ownership and control structures of both parties involved can be identified well one year well before transaction;

Since sample there-and-here lacks some accounting and market data, we will obtain necessary information for the firms outside of Norway from DataStream and Compustat databases. For Norway we will use CCGR, BI Norwegian Business School's internal database. It contains accounting and governance data on Norwegian companies from 1994 till now, and is allows to find information both for public and privately-held firms. Besides that we would safely assume that when a target company is private, the control concentration in it is 100% unless something else specified.

Last studies also reported possible misspecification of the announcement day. Hence, after database is formed, we will additionally cross-check announcement day parameter with

Oslo Stock Exchange to confirm correctness of information. This extra check is crucial for us if we want to overcome bias in evaluating short-term gains to bidders.

5. Methodology

This section describes the estimation techniques that will be applied to reach the objectives of the study. In order to be able to proceed towards model building, we first have to assess the tools that will help us measure key parameters, verify the problem, test hypothesis and based on this already build workable model which will answer questions posed.

5.1. Short-term abnormal returns measurement.

In this subsection we will explore on event-type methodology to be used in the paper, alike the one depicted by Travlos (1987). To proceed with an empirical event study, stock price returns are calculated for each company. Announcements of M&A transaction are identified as the event and the date of announcement is set to be equal to 0. In order not to omit possible insider trading 10 days before and after the announcement date covers the event window of [-10;10]. The estimation window of normal returns for each firm includes 198 days before the event window and it is considered as the largest estimation period for the company with the earliest announcement date of the event, according to Li and Lie (2006).

Thus, rolling window regression for 198 days is employed for each firm in order to calculate the normal returns using the Fama-French three factor model which is considered as a better approach to follow than the CAPM. The model regression is as follows:

$$R_i = R_f + \beta_1 * (R_m - R_f) + \beta_2 * SMB + \beta_3 * HML + \varepsilon$$

where R_i is the normal return for each company i in the sample, $R_m - R_f$ represents the market risk premium, SMB is a factor accounting for firm size and the factor HML accounts for value premium (the difference in returns between ‘value’ and ‘growth’ stocks regarding to the high/low market-to-book ratios). Employing the described model actual returns are first regressed over the 198 days period, the obtained coefficients are used then in the regression over the estimation window to calculate the normal returns for the period of the event. The abnormal returns for each firm in the selected period are estimated applying the following formula:

$$AR_i = Actual\ Returns_{i,t} - Normal\ Returns_{i,t}$$

where i stands for each firm in the sample, t for an event date. Since normal returns can be expressed as $E(R_{i,t})$ we calculate the abnormal returns for the 20 days event window without excluding the day of the announcement.

To test whether the announcement of M&A deal is reflected in the returns, we will estimate the cumulative abnormal returns (CAR) for the event window together with their t-statistics, mean, median and standard deviation. We will employ the test statistics AR and CAR based on average standardized abnormal return (ASAR) and average standardized cumulative abnormal return (ASCAR) as they are the most widely recognized test for event studies of this type. Respective formulas follow:

$$ASAR_t = \frac{1}{N} \sum_{i=1}^N \frac{(R_{it} - \hat{a}_i - \hat{b}_i R_{mt})}{S_{it}}$$

$$ASCAR_{T1,T2} = \sum_{t=T1}^{T2} ASAR_t$$

where S_{it} represents square root of firm i 's estimated predicted variance obtained from expression:

$$S_{it} = \left[S_i^2 \left(1 + \frac{1}{L} + \frac{(R_{mt} - \bar{R}_m)^2}{\sum_{k=1}^L (R_{mk} - \bar{R}_m)^2} \right) \right]^{1/2}$$

where S_i^2 stands for residual variance for security i from the market 3 factor Fama-French model regression; L – number of observations during the estimation period; R_{mk} – return on the market portfolio for k -th day of the estimation period; R_{mt} – return on market portfolio for day t , \bar{R}_m – average return on market portfolio for the estimation period.

As simplification of assumptions, we treat distributions of individual abnormal returns as independent and normal for various stocks and over time. According to Travlos (1987), it is necessary to use Z_t statistics and $Z_{T1,T2}$ statistics which follow a unit-normal distribution for the sake of testing hypothesis that the average standardized abnormal returns and the average cumulative standardized abnormal returns equal zero. Formulas follow:

$$Z_t = \sqrt{N} * ASAR_t \quad \text{and} \quad Z_{T1,T2} = \frac{\sqrt{N}}{T2-T1+1} \sum_{t=T1}^{T2} ASAR_t$$

After obtaining CARs, regression analysis is employed in order to identify which parameters of deal characteristics and bidder/target features were essential for generating

abnormal returns. Independent variables to be used in regressions will be elaborated on in the next section of the paper.

5.2. Long-term abnormal returns measurement.

It is usually believed that long-term performance is beneficial just to stakeholders entrenched in the company, meaning management team, regular employees and blockholders. For that reason, methods used to measure short-term gains are of little help since it is assumed that investors generally keep certain shares as part of their portfolios, and rebalance such portfolios when needed. Because of problems related to finding proper benchmark or choosing right time and ways to rebalance, what will significantly influence the outcome, it is understandable why the issue of long-term performance is so complicated and rarely looked at by academicians.

We will apply one of the techniques suggested by Loughran and Anand (1997). In short-term effect estimation Fama-French factors were used although they may not be so relevant for that short time window and could even create negligible bias according to some researchers. But because size and book-to-market ratios may change over time, and thus attribute to return required on certain risky investments by shareholders, Fama and French factors definitely cannot be ignored in this sample over long run. Therefore we use matching procedure pairs with return on equity as parameter.

For the purpose of getting suitable matching portfolios for the next year, regression of returns is run on the natural logarithm of book-to-market ratio and size as regressors (in other words strategy of one year buy-and-hold is applied):

$$F = a + b * \ln (size) + c * \ln (book-to-market)$$

Following Loughran, obtained coefficients are used to create a function which ranks all companies according to their annual required returns on equity (ROA). Further bidders are paired with control firms considering required ROA. Being constrained on enough data for longer periods of time, we will test long-term performance of acquirers for a period of three years onwards after the deal. Moreover, we have encountered with another matter that some acquiring companies were delisted from stock exchange before year 3. Therefore, when analyzing bidders only the time frame during which the firm was traded on Exchange will be involved to prevent biases. If the same problem happens with matching firm, the other one

will be selected. Also the analysis will be intentionally confined to mean comparing in order to discover any patterns of long-term market inefficiency.

6. Model Building

Throughout this section we will touch on our insight into the model development as logical continuance from previous part of the paper. From what has been explored above, the main models will be built around measuring CAR against certain benchmark, and then identifying which factors caused abnormal returns for each group of firms. We will look at whole set of firms in three dimensions: over time periods, by frequency of M&A deals, and by industries. Separate analysis of each group of companies will be analyzed on stand-alone basis, and appropriate conclusions will be drawn.

We have to clearly understand that there are many variables which proxy for one or another effect. By using F-test and mean-comparing procedure, we will exclude certain regressors. Moreover, the empirical part of the study requires a structural approach what leads to necessity to further differentiate variables. Although we may easily select appropriate variables by using p-value as cut-off point, to choose the right p-value is frequently up to researcher. On one side, relatively high p-value may be consequence of too many variables included in the model. As a result of losses on degrees of freedom the probability to obtain some insignificant coefficients for relevant regressors, however, is still existent. Since some part of the noise could be explained, forecasting for the out-of-sample time frame would be infringed. On the other side, setting a low p-value may cause in omitted variables bias. As a result, both the sign and the size of the coefficient may be false, and not reflect actual relationship in the right manner. In statistics there is a perception of stronger fallibility of results in the last instance. Hence, according to Hosmer and Lemeshow (1989), the p-value cutoff in quite conservative recommendation would be 0.25. Additionally leave-one-out test will be conducted.

6.1. Determinants of joint firm performance

After announcement of the deal, market participants evaluate the probability of deal success/failure by looking at the whole set of factors. We apply the main of them in our analysis of the performance of acquirer's stock after the acquisition.

Theory	Regressor	Possible impact	Assumed consequence
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Agency theory	Acquirer's managerial ownership	Aligns interests of managers and stockholders	Higher portion leads to positive reaction
	Buyer's market-to-book ratio	High MTB may suggest overvaluation	Low performance for deals with stock as mean of payment
	Corporate control of bidder	Aligns interests of managers and stockholders	Higher level leads to positive reaction
	Share of institutional investors	Better monitoring of managers	Higher portion leads to positive reaction
	Portion of cash and cash equivalents	Managers may pursue empire building	Low performance for deals with cash as mean of payment
Competition for target	Number of bidders for the same target	Higher premium paid	More bidders, more negative reaction
Cost of capital	Bond rating	Lower indicates possible financial constraints	Higher rating leads to less negative reaction
	Tangible assets	Leverage capacity	More collateral leads to less negative reaction
	Dividend payout ratio	Reveals confidence of managers in firm's future	Mitigates negative reaction
M&A expertise	Number of previous deals	More gives better perception on value creation	Every next deal is met better
Hubris theory	Avg EBIT/Sales for 3 Y	High ratio may indicate management overconfidence	Negative reaction for top performers
	Premium paid	Higher premium => lower possibility to add value	Negative for high premium
Growth potential	Avg growth in Revenue for 3Y	Higher growth => more growth opportunities	Mitigates negative reaction if paid with stock
	Avg growth in CAPEX for 3Y		
Leverage deficit theory	Excess leverage ratio	Managers show confidence in value created via M&A	Positive reaction if correctly leveraged (cheap debt w/ long duration)
	Change in leverage	More leverage allows to use higher tax shields	Positive reaction if increase in indebtedness
Life cycle theory	Retained earnings/Total Equity	Low/negative value of ratio may sign firm with many growth opportunities	More positive if acquirer is growth company
	Cross-border	Enhancement of performance of the target	Generally positive reaction

Particular deal characteristics	Friendly/hostile	Hostile bidders usually see hidden value in target	Positive for hostile, mixed-to-negative for friendly
	Stand-alone/subsidiary	Subsidiaries are usually undervalued	Positive reaction for subsidiaries, mixed for stand-alone
	Tender offer/merger	Tender involves management change, when mergers are usually friendly	Positive reaction for tender, mixed-to-negative for merger
	Vertical/horizontal	Horizontal are assumed to have savings by synergies	Positive for horizontal
Size effect	Relative size of target	Higher usually leads to less opportunities to use synergies	Moderates negative reaction if stock used as mean of payment
	Book value of bidder	Smaller firms perform better	More positive if acquirer is smaller firm
Synergy theory	Similarity of industry	Opportunity to realize operating synergies	Within same industry is welcomed
	Corporate/financial	Mixed	No clear reaction
Undervaluation	Target's market-to-book ratio	Low ratio signs probable undervaluation	Positive reaction if market believes acquirer can change target's performance

Table 1: Determinants of bidder's post-acquisition performance and their assumed impact (own illustration)

6.2. Model limitations

If taken closer look at the model under consideration, we may find certain limitations on the inferences drawn by it. For example, both research papers by Martynova and Renneboog (2009) and Chang (1998) revealed that acquisition of either listed or unlisted targets results in abnormal returns (notwithstanding they may be both higher or lower than predicted by the investment of the same risk). However, by definition, for privately held firms one cannot observe any market quotations what naturally leads to the inclusion of market proxies that have to be used otherwise (hence introduce bias and noise in the data). On the other hand, considering just publicly-traded companies would be biased toward firms that frequently “play another game”, meaning most managers may falsely believe that meeting short-term expectations of market participants is their only aim (what, in fact, was widespread belief for long time in previous decades), while private companies managers usually build their strategy exclusively around long-term perspectives. Therefore, researcher should frequently compromise between these two effects.

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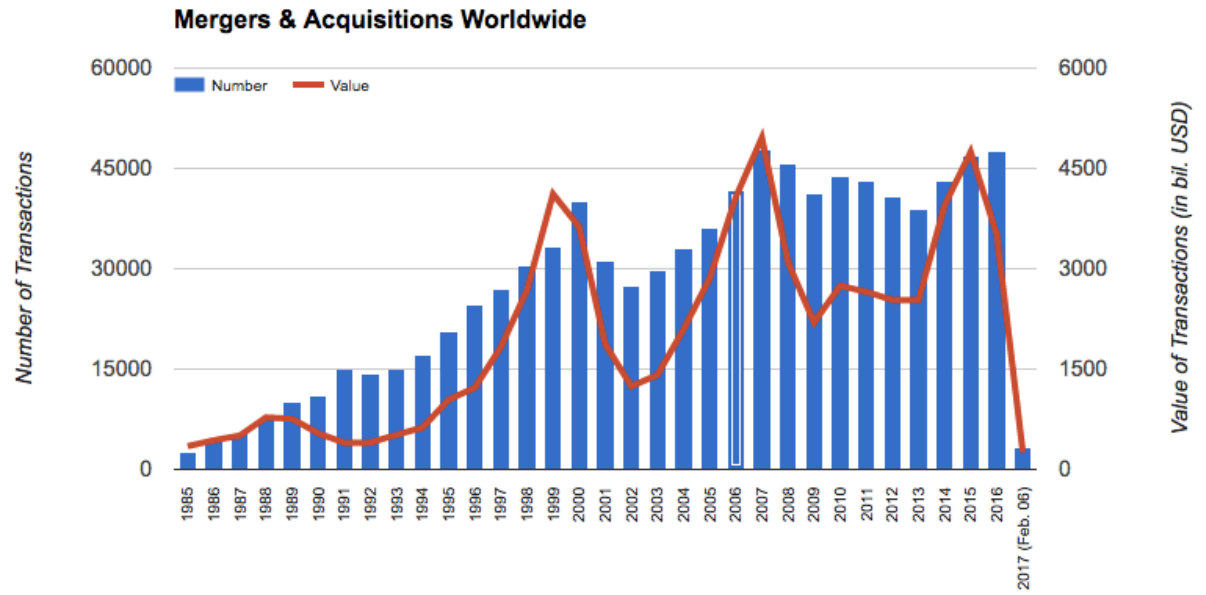
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Appendix



**source: Institute for Mergers, Acquisitions & Alliances*