

# Lund University

School of Economics and Management

Department of Business Administration



## Payment choices in Mergers & Acquisitions

*A study of the Nordic market between 2003 and 2007*

Sebastian Karlsson | William Sandefeldt

*[BUSN79]*

*Degree Project in Accounting and Finance*

*Master Level*

*Spring 2017*

## Abstract

---

- Title:** Payment choices in Mergers & Acquisitions
- Seminar date:** 29<sup>th</sup> June 2017
- Course:** BUSN79, Degree Project in Accounting & Finance, Master
- Authors:** Karlsson, Sebastian & Sandefeldt, William
- Supervisor:** Gårdängen, Maria
- Key words:** Mergers & Acquisitions, payment choices, sixth merger wave, family ownership and Nordic region.
- Purpose:** The purpose of this study is to investigate factors that affect the payment choices in Nordic M&As between 2003 and 2007. Further, we also examine if family firms and large owners are more likely to use stock or cash as payment medium.
- Methodology:** Using a sample of 344 Nordic M&A transactions between 2003 and 2007 we have constructed a series of variables based on prior literature. These variables were chosen to investigate the determinants of payment choices in M&A deals. Further, an OLS regression has been performed in order to examine the explanatory power of the chosen variables.
- Literature review:** This study is based on four main theories; *information asymmetry theory*, *free cash flow theory*, *debt capacity theory* and *control motivation theory*. Each of these theories contain sub-theories that are more concentrated towards the trade-off in payment choices. The literature review brings forward both benefits and constrains of each financing medium (cash or stock) and illustrates the trade-off that the bidders face.
- Conclusion:** Based on our descriptive results and literature review we can support that cash payment (80.9 %) is the most dominant financing medium in Nordic M&As between 2003 and 2007. Regarding deal-specific variables we found that firms pay a larger proportion of cash in *cross-border deals* and if the bidder is *cross-listed*. We also found that *relative size* have a negative relationship with cash payment. Regarding firm-specific variables we found that a firm's *leverage* is positively related to cash payment. Interestingly, we found support for the *control-motivation hypothesis* stating that *family firms* pay more in cash than non-family firms. However, this is only true at certain levels of ownership.

## **Acknowledgement**

---

The authors of the thesis would like to thank Maria Gårdängen for helpful comments along the way. We would also like to point a special thanks to the teachers at Department of Economics that helped out even though they were not our supervisors.

Lund 23th May 2017

Sebastian Karlsson & William Sandefeldt

# Table of Content

---

<b>1. Introduction</b> .....	9
1.1 Background .....	9
1.2 Problem discussion .....	10
1.3 Research question .....	12
1.4 Delimitations .....	12
1.5 Structure of the thesis .....	13
<b>2. Literature review</b> .....	14
2.1 The sixth merger wave 2003 - 2007 .....	14
2.2. Asymmetric information theories .....	14
2.3 Free cash flow theories .....	16
2.4 Debt capacity theories .....	17
2.5 Control threat theories .....	17
2.6 Family ownership in The Nordics .....	18
<b>3. Methodology and research approach</b> .....	19
3.1 Construction of variables .....	19
3.1.1 Dependent variable .....	19
3.1.2 Independent variables .....	20
3.2 Regression analysis .....	24
3.3 Data sample .....	26
3.4 Failure analysis .....	27
3.5 Limitations of OLS regressions .....	29
3.6 Validity and Reliability .....	29
<b>4. Descriptive results</b> .....	32
4.1 Number and value of transactions .....	32
4.2 Country distribution of transactions .....	33
4.3 Method of payment and average control rights .....	34
4.4 Family ownership in the Nordic Region .....	35
4.5 Deal specific characteristics .....	35
4.6 Statistical results .....	36
<b>5. Analysis</b> .....	40
5.1 General discussion about the results .....	40

5.2 Family ownership and payment structure .....	40
5.3 Statistical analysis.....	41
5.3.1 Deal specific variables .....	41
5.3.2 Firm specific variables.....	43
<b>6. Concluding discussion</b> .....	<b>45</b>
6.1 Conclusion.....	45
6.2 Contribution and future research .....	46
<b>List of references</b> .....	<b>47</b>
Appendix I: Definition of variables .....	50
Appendix II : Jarque Bera test.....	51
Appendix III : Variance Inflation Factor .....	52
Appendix IV: Correlation Matrix.....	53

## Figures

---

Figure 1: Net Merger and Acquisitions Announcements 1970-2013.....	9
--	---

## Tables

---

Table 1: Expected signs.....	24
Table 2: Failures per geographical location .....	28
Table 3: Failures in terms of payment method.....	28
Table 4: Reason for failures .....	28
Table 5: Number and Value of Transactions.....	32
Table 6: Country distribution of M&A transactions .....	33
Table 7: Method of payment and average control rights between the geographical locations.....	34
Table 8: Unique acquirer and family ownership % .....	35
Table 9: Deal specific characteristics .....	36
Table 10: OLS describing percent cash in M&A transactions .....	37
Table 11: Signs of independent variables.....	38

## Equations

---

Equation 1: PERCENT CASH .....	19
Equation 5: CASH_AVAILABILITY .....	20
Equation 6: COLLATERAL .....	20
Equation 2: CONTEXCESS.....	22
Equation 4: LEVERAGE .....	22
Equation 3: MTOB RATIO.....	23
Equation 7: RELATIVE SIZE .....	23
Equation 8: ORDINARY LEAST SQUARES.....	24
Equation 9: OLS MODEL.....	25

# 1. Introduction

## 1.1 Background

Mergers, acquisitions, divestitures and other restructurings origins from the dawn of commerce and the phenomenon *M&A* began in “The Great Merger Movement”. During this period, many large corporations seized growth opportunities by consolidating smaller corporations (Pignataro, 2015). According to Gaughan (2015) *M&A* activities tend to repeat themselves in a pattern, termed *M&A waves*. At first, *M&A* was mainly a US phenomenon, but during the fifth merger wave (1992 – 2000) *M&A* caught international dissemination and reached Europe and Asia. In 1999, the total value of the European deals almost equaled the accumulated deal value in the US market (Gaughan, 2015).

Even though *M&A* has existed for a long time, deal values in recent years have increased dramatically, the structure and financing of the deals have also gone through a significant change (Faccio and Masulis, 2005). Increased numbers of transactions together with higher values of the transactions have a substantial impact on the choice of payment method in recent *M&A* deals (Faccio and Masulis, 2005; André and Ben-Mar, 2009).

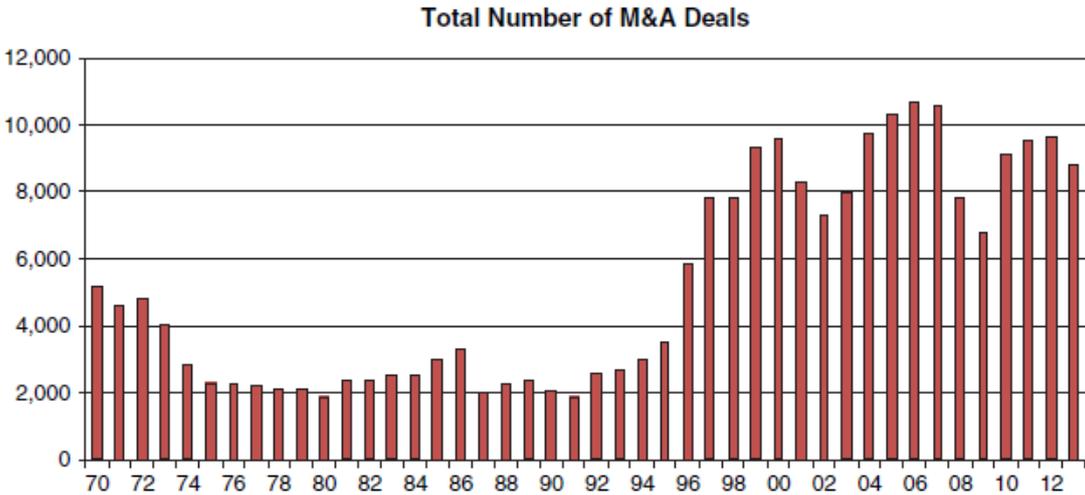


Figure 1: Net Merger and Acquisitions Announcements 1970-2013 (Source: Merger-stat Review 2014)

Prior studies of the payment choice in *M&A* are undeniably intriguing, but there is still little known about financing decisions made by corporations owned by individuals or families (André and Ben-Mar, 2009). Earlier studies have mainly focused on the US market which has disadvantages such as holding many institutional factors fixed, consequently, ownership and capital structure is better applicable on the European market (Faccio and Masulis, 2005). Faccio

and Lang (2002) performed a corporate ownership study with a sample of 13 European countries, the results showed that 63 % of their sample had a shareholder that directly or indirectly holds more than 20 % of the voting power; the result could be compared to 28 % in US. Regarding family ownership La Porta et al. (1999) shows that US only have 20 % family owned firms. In contrast to this, Faccio and Lang (2002) found in their study that 44 % of their European sample is family controlled<sup>1</sup>. The same study shows that almost half of the companies in the Nordics are controlled by families.

## 1.2 Problem discussion

A bidder can finance a transaction with (1) *cash*, (2) *cash & stock (mixed payments)* or (3) *stock*. When financing an acquisition with pure cash, it often involves raising additional debt because companies tend to have limited access to cash (Gaughan, 2015; Faccio and Masulis, 2005). Myers (1984) developed a pecking order theory in financing hierarchy, first, managers tend to use internal funds, then borrowed funds and lastly external equity. However, this order does not seem to be that obvious when it comes to payment choices in M&A deals (Faccio and Masulis, 2005). Even though there are only two payment choices the trade-off between cash or stock payment in prior literature seems surprisingly complex. Payment choices can have significant impact on the acquirers' capital structure and ownership structure (Faccio and Masulis, 2005).

However, paying with stocks also has the drawback of determining the true value of the stock, making cash payments a way to mitigate information asymmetries (Martin, 1996). Myers (1984) developed a *cash availability hypothesis* saying that firms with excess internal funds will be more prone to using cash as financing medium. But the hypothesis does not seem to be consistent, Chaney, Lovata and Philipich (1991) found contrary evidence of the likelihood of cash payment when firms have excess cash funds. Even though cash payments have its advantages, a firm generally has limited access to liquid assets and therefore a need to raise additional debt. Raising debt has constrains such as increasing a firm's financial leverage and the agency cost of debt making make firms more prone to stock financing in some situations.

On the other hand, stock financing has limitations such as that the cost of equity generally exceeds the cost of debt (Martin, 1996), another limitation is that stock financing may threaten the owner's control influence. Stulz (1988), Amihud, Lev and Travlos (1990) argue that lower ownership by the largest shareholder is negatively related to stock payments in M&A due to

---

<sup>1</sup> Defined as when an individual, family or unlisted company is the largest shareholder and owns more than 10 % of the voting power (Faccio and Lang, 2002).

the dilution of ownership. But the evidence is not clear; Martin (1996) found no relationship between ownership control and stock financing and Faccio and Masulis (2005) found that this only holds at certain levels of control ownership. However, it seems clear that bidders face a trade-off between cash and stock financing in their payment structures.

The trade-off is especially critical in family firms and firms with one ultimate owner (André & Ben-Mar, 2009). Ellul (2008) bring forward the *risk-reduction hypothesis* stating that family and firms with large individual owners make significant investments in their firms which often make their portfolios un-diversified. This makes these types of owners reluctant to use debt as financing medium. Contrary to this, Ellul (2008) also brings forward the *control-motivation hypothesis* which makes family owners reluctant to use equity as financing medium due to the dilution of voting power. Family owners are extra vulnerable to this, since they are more concerned about their control than other type of owners (Ellul, 2008). Interestingly, earlier studies regarding *risk-reduction* and *control-motivation* are somewhat inconsistent. King and Santor (2008), Ellul (2008) and Anderson, Mansi and Reeb (2003) have obtained mixed results regarding family ownership and payment structure. Nevertheless, this implies that the bidder inevitably faces a trade-off between equity financing (dilution of voting power) and debt financing (experiencing financial distress). Even though much of the prior literature shows that debt financing often overrules equity financing for family firms, debt financing is constrained because higher leverage increases stock risk and higher cost of equity (Faccio and Masulis, 2005). A majority of the prior literature mainly covers trade-offs concerned with capital structure but there is little known how this trade-off affects the financing structure in M&A deals (André and Ben-Mar, 2009). The financing structure become even more interesting considering the rapidly increasing frequency of transactions and higher deal values (Faccio and Masulis, 2005).

Furthermore, the trade-off becomes relevant for family firms because they value control influence more (Ellul, 2008). According to Ghosh (1998), family firms are concerned with keeping their control after the completion of the transaction. A study by Faccio and Lang (2002) showed that the European market has unique characteristics in terms of family ownership. Approximately one fifth of the US companies are family owned, while in the European market, nearly half of the firms are family owned (La Porta et al. 1999). Since the fifth merger wave got international dissemination in the 19<sup>th</sup> century and hit the European market, there have been few studies regarding the payment choices during this period and especially in the European M&A market. This leaves the European market with enquiring characteristics to study the

financing decisions made by family firms. Furthermore, a majority of the prior literature covering M&A waves have mainly looked at the fifth wave and backward, leaving a gap in the research about the sixth merger wave and forward. As of today, the sixth merger wave is the most recent wave that is completed, since the seventh merger wave is currently active (Gaughan, 2015). The sixth merger wave also holds the advantage of more accessible data compared with the earlier waves. We find that both the Nordic market and the sixth merger wave contain interesting characteristics when looking at payment choices and also give us the possibility to investigate family controlled companies. Because no prior studies have covered ownership and payment structures in the Nordics.

### **1.3 Research question**

The purpose of this study is to investigate factors that affect the payment choices in Nordic M&As between 2003 and 2007. Further, we also examine if family firms and large owners are more likely to use stock or cash as payment medium.

### **1.4 Delimitations**

To answer our purpose, we made the following delimitations. In the thesis, we only investigated the sixth merger wave (i.e. between 2003 and 2007). We chose the sixth merger wave because it is the latest completed M&A wave which gave us the most up to date observations. Furthermore, our available databases could only provide data from 1997 onwards, leaving earlier waves more complex to examine. In chapter 3 we give a more detailed description of the chosen time period and also ensure that the time period is not biased. However, since each merger wave is unique the results of the study may not necessarily be applicable elsewhere. Furthermore, the data sample contains 344 transactions where we have chosen to include bidders from *Denmark, Finland, Iceland, Norway and Sweden* (i.e. The Nordics).

In line with the chosen time period, we have also, in chapter 3, provided an overview of how the geographical location could limit the generalization of our research and how we have examined that the geographical location is a suitable area in question. Payment choices could be affected by both bidders and sellers, but since it is hard to obtain data of the seller we have chosen to only examine the payment choices of the bidder. The argument is in the spirit with Faccio and Masulis (2005) and André and Ben-Mar (2009) who performed similar studies. Regarding the bidders, we have only included listed companies to facilitate the data collection, the same approach is taken by Faccio and Masulis (2005). To support this Martin (1996) shows that there is no difference between private or public bidders. Our data is to a large extent

manually collected and considering the size of the data sample, there is inevitably some degree of subjectivity in the sample. Chapter 3 gives a more detailed view how we cross-checked and double-checked parts of the data sample.

### **1.5 Structure of the thesis**

The remainder of the thesis is organized as follow. In chapter 2 we present a literature review of prior research regarding the payment choices in M&A activities. Based on our literature review in chapter 2 we constructed suitable variables in order to capture the research purpose of the thesis. Chapter 3 also contains a detailed description of our chosen model, the assumptions in the model and what types of limitations the model has. In chapter 3 we also bring forward motivations for the chosen research period and the criteria we used in the data sample. Lastly, chapter 3 describes general limitations with the study. Furthermore, chapter 4 describes the collected empirical data. Chapter 5 analyses the findings with the prior literature review presented in chapter 2. In chapter 6 we bring forward our conclusion of the study and answer the study's research purpose. The study ends with some discussion of the result and future possible research areas.

## **2. Literature review**

---

### **2.1 The sixth merger wave 2003 - 2007**

The research period of the thesis is the sixth merger wave; therefore, it seems suitable to first give an overview of the general characteristics of the sixth merger wave. During the sixth merger wave, many companies were consolidated at low P/E-ratios, with the purpose to divest at higher prices (Gaughan, 2015). According to Alexandridis et al. (2012) drivers behind the wave could be explained by neoclassic economics theories. Increased availability of liquidity increased the frequency of acquisitions during the time-period. In order to stimulate the growth opportunities, the demand for M&A increased which resulted in larger offers (Alexandridis et al. 2012). In comparison to previous waves, assets had lower values and the valuation gap between the acquirer and the target shrunk, meaning that the acquirer was not overvalued in the same extent relative to the targets (Alexandridis et al. 2012). To conclude, the sixth merger wave had characteristics such as high cash balances and less overvalued acquirers.

### **2.2. Asymmetric information theories**

Within M&A transactions there is often an information asymmetry between the acquirer and the target. This information asymmetry can, according to Hansen (1987), explain some of the payment choices in M&As. French and Poterba (1991) and Coval and Moskowitz (1999) investigated the likelihood of stock payments in cross-border and cross-sector in global M&A deals. Both of the studies found a positive relationship between cross-border and cash payments in M&A deals, the same relationship was also found between cross-sector and cash payments. According to French and Poterba (1991) both the acquirer and the target experience information asymmetries when the deal is cross-border or cross-sector. Due to the information gap the target has difficulties determining the true value of the stocks and therefore making targets more reluctant to accept stock offers (Hansen, 1987). However, Martin (1996) concluded that the target could prefer stock payments to have a proportion of the company's future earnings which protects the target from being bought at a heavy discount.

On the contrary, the acquirer has difficulties to evaluate the foreign market or the target's industry, if the target and acquirer are active in different industries. Additionally, stock payment tends to bring forward limitations such as increased trading costs, exposure to currency fluctuations and limited liquidity. Faccio and Masulis (2005) also investigated how information asymmetries in cross-border deals and cross-sector industries affect the payment type. They

found that acquirers feel more up-to-date in national trends for their own industry, making cash payments more common in national deals and deals within the same industry. However, there are also studies concluding that cross-border and cross-sector occur when the stock market is overvalued and hence increase the likelihood of cash payments (Martin, 1996). Martin (1996) explains that cash payments tend to ignore the problems associated with information asymmetries in M&A deals. Coval and Moskowitz (1999) further brings forward the *home-bias hypothesis* stating that firms are more prone to domestic ownership.

Prior literature (Hansen, 1987; Martin, 1996; Ghosh and Ruland, 1998; Grullon et al. 1997) have investigated whether the deal size have any effect on the choice of payment in M&A. Regarding deal size, prior literature seems to oppose each other. Hansen (1987) found that due to the information asymmetry hypothesis, acquirers tend to use stock payment instead of cash payments when the information asymmetry is higher. Grullon et al. (1997) used a multinomial logistic model in order to investigate 146 US bank mergers between 1981 and 1990. The results from their study showed that there is a positive relationship between deal size and stock payment, which could be explained by Hansen's (1987) model. His model predicts that when the target's assets increase and the deal size is higher, firms tend to use stocks as financing medium in order to split the potential risk with buying an overvalued target, named the *risk-reduction hypothesis*. Faccio and Masulis (2005) studied payment choices on the European market and found a positive relationship between deal size and cash payments. However, Swieringa and Schauten (2008) argue that the smaller a deal size is, the greater the information asymmetry will be and hence in line with the risk reduction hypothesis, firms will be more prone to stock payment.

Earlier studies have also covered the information asymmetry experienced if the target is listed or non-listed. Martin (1996) covered 856 M&A transactions of both public and private targets and found no difference in the choice of payment if the target is publicly listed or privately listed. On the contrary, Fuller et al. (2002) performed a similar study and investigated 3,135 M&A transactions on the US market and found that cash payment is preferred when acquiring non-listed targets. Faccio and Masulis (2005) performed a similar study on the European market and also found a positive relationship between cash payment and non-listed targets. Both articles argue that this is primarily due to the increased information asymmetry that is experienced when acquiring non-listed target, where the information is limited and the disclosure requirements are not equally strict. Doidge et al. (2004) brings forward the *legal-bonding hypothesis* stating that if European firms are cross-listed in the US the likelihood of

stock payment will increase because listing in the US signals that the company follow tougher legislations, hence increasing the disclosures. To conclude, the information asymmetry brings forward several hypotheses that are prone to either cash payment or stock payment. A similar hypothesis is developed by Burns et al. (2007), the *reputational bonding hypothesis* saying that firms that are cross-listed signal a better reputation to shareholder, hence making stock payment more common in capital structures. To conclude, the information asymmetry brings forward several hypotheses that are prone to either cash payment or stock payment.

However, firms do not have un-limited access to cash and liquid assets forcing many companies to raise additional debt when paying with cash (Gaughan, 2015; Faccio and Masulis, 2005). Therefore, in the following two sections we will cover the opportunity cost associated with cash financing (Harford, 2005). In the next section will cover *the free cash flow theory*.

### **2.3 Free cash flow theories**

Myers (1984) developed a pecking order theory that managers use as financing hierarchies. First, managers tend to use internal fund. Secondly, managers borrow cash. Thirdly, managers raise external equity. This, in combination with a study by Jensen (1986), argues that, via the *cash availability hypothesis*, firms tend to use cash more as financing medium if they have a higher degree of cash available. Several prior studies have investigated the cash availability of firms and their financing choices but found mixed results. Martin (1996) measured the liquidity as the proportion of cash in relation to the firm's total assets prior to the deal announcement on the US market. Faccio and Masulis (2005) used the same ratio and both the studies found that increased cash availability is positively related to cash payments. Hayn (1989) and Fishman (1989) computed cash availability as the proportion of free cash flow in relation to equity, adjusted for industry mean. Hayn (1989) and Fishman (1989) found a positive relationship when calculating cash availability with free cash flow.

The free cash flow theory further states that when a firm has excess cash (liquidity) the likelihood of investments will increase, entitled a firm's *investment opportunities*. Myers (1998) links a firm's *growth opportunities* with the borrowing activity. Jung, Kim and Stulz (1996) combine the *information asymmetry hypothesis* with the agency cost of debt and concludes that firms with higher growth opportunities are more likely to raise equity than cash. Reasons behind this is that managers get more discretion over equity financing than debt financing. Debt financing will make managers pay cash in order to restrict managers from investing in projects with worse returns. In line with this, Martin (1996) argues that debt financing will maximize

firm value for those firms that do not have good growth opportunities. However, firms will be more prone to equity financing because this makes managers fully take advantage of the growth opportunities that the company faces (Martin, 1996). In line with the growth opportunities, Jung, Kim and Stulz (1996) found a positive relationship between a firm's Tobin Q and the likelihood of stock payment. A firm's likelihood of cash payment is also dependent on the financial structure and debt level, therefore in the next section we will cover the *debt capacity theory* which brings forward constraints with cash payments.

## **2.4 Debt capacity theories**

Faccio and Masulis (2005) measures a firm's debt capacity as the relation between tangible assets and total assets prior to the deal announcement. The ratio is defined as a firm's collateral and the hypothesis states that a higher proportion of fixed assets will lower the risk on defaulting on interest payment and reduce a firm's cost of debt. Therefore, a firm with higher collateral tends to use a larger proportion of cash in their financing structure (Martin, 1996). Myers (1997) developed a similar theory arguing that a firm's ability to pay in cash will have a positive relationship to the collateral level. Armen et al. (2001) made a similar study and found that a lower ratio of fixed assets will result in moral hazard. A firm's debt capacity could further be measured in terms of financial leverage. Martin (1996) and Faccio and Masulis (2005) measure a firm's financial leverage as long-term debt in relation to total assets. The methodology is to capture a firm's availability to raise external financing mediums. Prior results find that a firm is more likely to use stock financing if they are experiencing higher leverage ratio. Lastly, in terms of capital structure, Modigliani and Miller (1958), argue that debt financing has the advantage of interest tax shield. In the next section, we will cover limitations with stock payment and the means of control threat.

## **2.5 Control threat theories**

Even though stock payments have advantages discussed above, they will be constrained by the control threat theories. Ellul (2008) brings forward the *control-motivation hypothesis*, stating that family owners and large owners are reluctant to use stock financing in order to avoid the dilution of control ownership. Stulz (1988) and Jung and Kim and Stulz (1995) brought forward that managers are reluctant to use stock financing because this would lead to outside intervention. Faccio and Masulis (2005) investigated ownership and payment choices on the European market and found a positive relationship between cash payment and family ownership. Consistent results were found by Martin (1996) and Ghosh and Ruland (1998) who found that there is a negative relationship between the use of stock financing and family

ownership. Furthermore, Ellul (2008) states that this hypothesis is only true if the owners value the control of the firm, which is often the case for family firms and large owners.

However, families and the largest owner is most vulnerable to control threats at certain levels of ownership. Martin (1996) found that managerial ownership is not related to the likelihood of stock financing when the ownership is small (defined as < 20 %) or when the ownership is considerable high (defined as > 60 %). Both Martin (1996) and Faccio and Masulis (2005) found that families controlling between 20 % and 60 % are reluctant to use stock financing. Outside of this interval, the *control threat hypothesis* does not hold up and the proportion of cash financing increases. Amihud et al. (1990) investigates Fortune 500 companies between the time period of 1981 and 1983, the study shows that there is a positive relationship between the control ownership of the acquirer and the likelihood of cash financing in M&A transactions.

## **2.6 Family ownership in The Nordics**

There are several prior studies that have examined the ownership structure around the globe. Faccio and Lang (2002) performed a study of Western European companies in the late 1990<sup>th</sup> and found that family ownership is more common in the Western Europe than in the US. Their study only covered part of the Nordic region and they found that family ownership in Sweden amounted to 47.0 %, Finland 48.8 % and Norway 38.5 %. Family firms in these countries were more common than *widely held firms*<sup>2</sup> and *state firms* (Faccio and Lang, 2002). La Porta et al. (1999), performed a similar study but had a global perspective. The study showed mixed results compared to Faccio and Lang (2002). La Porta et al. (1999), found that Swedish firms were family owned to an extent of 55.0 % and that family ownership in Finland only amounted to 10.0 %. Denmark had a family ownership of 35 %.

---

<sup>2</sup> Defined as when no ultimate shareholder holds more than 5 % (Faccio and Lang, 2002).

### 3. Methodology and research approach

---

To investigate what factors that influence companies to pay with either (1) *cash*, (2) *cash & stock* or (3) *stock*, we have performed a regression analysis. To explain the payment choices in M&As, we have constructed a series of variables (section 3.1). These variables are based on the literature review in chapter 2. After the construction of the variables, we built our model (section 3.2) to determine the explanatory power of the independent variables. Next, we set up criterion for our data sample (section 3.3) and conducted a failure analysis (section 3.4). Lastly, we bring forward some limitations with our model and the study as a whole (section 3.5).

#### 3.1 Construction of variables

Following is a description of our dependent and independent variables. The choice of these variables is based on previous research, which enhance the foundation of the variables and allows us to compare the results with other studies. Compared to similar studies we have chosen to include *deal specific* and *firm specific* variables, meaning that we excluded *macro variables* due to the scope of the thesis. Further explanation of the variables can be found in Appendix I.

##### 3.1.1 Dependent variable

###### **Proportion of cash (PERCENT CASH)**

A company can finance a transaction with (1) *cash*, (2) *cash & stock* or (3) *stock*. By using *PERCENT CASH* as a dependent variable, we measured the proportion of cash paid in the transactions. With this choice of dependent variable, we also capture the proportion of stocks since the variable only can take a value between 0 and 1. The same variable is used by Faccio and Masulis (2005) and André and Ben-Mar (2009) and is computed as:

$$PERCENT\_CASH = \frac{(Cash + liabilities)}{(Cash + liabilities + stock)} \quad \text{Equation 1: PERCENT CASH}$$

Data regarding the percent cash used in the transactions was obtained manually from Bloomberg. In the cases when Bloomberg could not provide the necessary data we gathered information regarding the payment structure of the transactions from memorandums and annual reports.

### 3.1.2 Independent variables

#### **Free cash flow (CASH\_AVAILABILITY)**

Data have been collected for the period  $t-1$  of the deal announcement to capture the financial constraints of the bidder, *CASH\_AVAILABILITY* capture the firms excess cash (cash available) and is calculated as:

$$CASH\_AVAILABILITY = \frac{(Cash + marketable securities)}{Deal\ value} \quad \text{Equation 2: } CASH\_AVAILABILITY$$

The same calculation was used by Martin (1996), Faccio and Masulis (2005) and André and Ben-Mar (2009) and the data was exclusively obtained from Bloomberg.

#### **Fixed assets (COLLATERAL)**

Martin (1996) used the variable *COLLATERAL* to capture a firm's possibility to raise external capital. We have used the same variable as Martin (1996) and the data needed for the variable is exclusively collected from Bloomberg:

$$COLLATERAL = \frac{Fixed\ assets}{Total\ assets} \quad \text{Equation 3: } COLLATERAL$$

The time period used was  $t-1$  of the deal announcement and we defined fixed assets as *net fixed assets*.

#### **International deals (CROSS\_BORDER)**

We compared the origin of the acquirer and the target to see if the deal was cross-border or domestic. The dummy variable takes a value of 1 if the deal was cross-border and a value of 0 if it was domestic (Faccio and Masulis, 2005).

### **Cross-sector (CROSS\_SECTOR)**

We also compared the industry of the acquirer and target to see if the deal was within the same industry or cross-industry. The dummy variable takes a value of 1 if the deal is cross-sector and a value of 0 if it was within the same sector (Faccio & Masulis, 2005).

### **Cross-listing (CROSS\_LISTED)**

We investigated if the bidder was cross-listed or not, meaning if the bidder was listed on multiple stock exchanges. The dummy variable takes a value of 1 if the bidder was cross-listed and a value of 0 if it was not cross-listed (Burns et al. 2007).

### **Family ownership (FAMILY)**

We define a firm as family owned if the largest controlling shareholder holds at least 10 % of the voting rights and is an individual, family or unlisted company. The definition of family ownership is consistent with Maury (2006), Faccio and Lang (2002) and Barontino and Caprio (2006).

Data regarding family ownership could not consistently be supplied by Bloomberg. Earlier studies used Worldscope in order to collect data of the ultimate ownership (La Porta et al. 1999). But according to Faccio and Lang (2002) there are several inconsistencies in the data obtained from Worldscope. Due to this, we have manually collected data from each of the company's annual reports, published in conjunction with the announced date of the transaction. According to previous ownership studies (La Porta et al. 1999), the ownership of the largest owner is fairly consistent, therefore when we could not find data that was in conjunction with the deal announcement we collected data from the closest period of time.

In the case when an un-listed firm was the largest shareholder we found it difficult to obtain data because many un-listed firms are not subject to the same legislation regarding disclosure of ownership. Therefore, we had problems determining if un-listed firms were family owned or not. La Porta et al, (1999) also found it hard to obtain ownership regarding family ownership when the largest shareholder was an un-listed company. In accordance with Faccio and Lang (2002) and Claessens et al. (2000), when we could not find data of the un-listed firms, we classified them as families. The variable takes a value of 1 if the firms is directly or indirectly family owned, and a value 0 if it is not family owned.

### **Voting rights (CONTROL)**

We also collected ownership data in terms of voting rights (%) of the largest ownership. The purpose of the variable is to capture if the degree of voting controls affect the payment choices. Faccio and Masulis (2005) and Martin (1996) uses the same variable to capture degree of voting powers affect.

### **Control wedge (CONTEXCESS)**

The largest owner's excess control is labelled *CONTEXCESS* and is the difference between the control (voting rights) and ownership (cash-flow rights). If the control wedge is high, it suggests that the owner maintain control over voting rights with a small fraction of equity. The data collection process builds on the data obtained from *CONTROL* and is consistent with André and Ben-Mar (2009):

$$CONTEXCESS = \text{Voting rights \%} - \text{Cash flow rights \%}$$

*Equation 4:*  
*CONTEXCESS*

### **Financial leverage (LEVERAGE)**

In line with Faccio and Masulis (2005) we have obtained data regarding the bidders' financial leverage to capture the firms borrowing capacity:

$$LEVERAGE = \frac{\text{Non current liabilities}}{\text{Total assets}}$$

*Equation 5: LEVERAGE*

Data regarding financial leverage have been collected from Bloomberg and the period of *t-1* of the deal announcement. When Bloomberg could not provide the data, we used Thomson Reuters Eikon and annual reports as complements.

### **Growth opportunities (MTOB\_RATIO)**

In order to measure the firm's investment opportunities, we have computed the following variable:

$$MTOB\_RATIO = \frac{(Market\ capitalization + book\ value\ of\ debt)}{Total\ assets} \quad \text{Equation 6: MTOB RATIO}$$

The financial data have been collected manually from Bloomberg and the period of  $t-1$  of the deal announcement. When Bloomberg could not provide the data, we used Thomson Reuters Eikon and annual reports. Book value of debt is further defined as *non-current liabilities* in Bloomberg. The calculation is consistent with the article by Martin (1996) and André and Ben-Mar (2009).

### **Bidders size relative to target (RELATIVE\_SIZE)**

We use the ratio of the deal value to the deal plus the acquirer's market capitalization prior to the transaction as a measure of information asymmetry and risk-sharing between the acquiring firm and the target (André and Ben-Mar, 2009):

$$RELATIVE\ SIZE = \frac{Deal\ value}{(Market\ capitalization + deal\ value)} \quad \text{Equation 7: RELATIVE SIZE}$$

Market capitalization was acquired from Bloomberg and collected for the period of  $t-1$  of the deal announcement.

### **Target listing (TARGET\_LISTED)**

We gathered data from Bloomberg to see if the target was listed or not listed. The dummy variable takes a value of 1 if the target was listed and a value of 0 if the target was not listed (Faccio and Masulis, 2005).

We have summarized the variables in table 1, together with the sign we expect the coefficient of each variable to have. Our expectations regarding the expected signs are based on the literature review in chapter 2.

<b>Variable</b>	<b>Expected sign</b>
CASH_AVAILABILITY	+
COLLATERAL	+
CROSS-BORDER	+
CROSS-SECTOR	+
CROSS-LISTED	-
FAMILY	+
CONTROL	-
CONTROL2	+
CONTROL*DUMMY	+
FAMEXCESS	-
LEVERAGE	-
MTOB RATIO	-
RELATIVE SIZE	-
TARGET LISTED	+

Table 1: Expected signs

### 3.2 Regression analysis

The type of regression that is most suitable to use depends on the distribution of the data sample. Therefore, we performed a Jarque Bera test which showed that the data was not normally distributed (Appendix II). However, since the central limit theorem allows big samples ( $N > 30$ ) to be viewed as approximately normally distributed we used the OLS (Ordinary Least Square) regression. An OLS regression is formed as follows (Brooks, 2008):

$$Y_t = C + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \epsilon_t \quad \text{Equation 8: ORDINARY LEAST SQUARES}$$

$Y_t$  = Dependent variable

$C$  = Intercept where the estimated function intercepts the Y-axis

$\beta_n$  = One of the coefficients that measures the effect of the independent variable on the dependent variable

$X_n$  = One of the independent variables

$\epsilon_t$  = The variation in  $Y$  that cannot be explained by any of the independent variables

In an OLS regression it is assumed that (Brooks, 2008):

1. The independent variables and the residuals cannot be correlated
2. The residuals have to be homoscedastic
3. The residuals cannot be correlated with each other
4. Independent variables cannot be perfectly collinear (multicollinearity)

In order to determine the consistency of the OLS estimator we have used the Breusch-Pagan-Godfrey test. The result showed that our data is heteroscedastic. To adjust for this, we performed the regression again with *Whites estimator*. This is a formula that works for big samples and will find the best estimator when an original OLS is heteroscedastic (Brooks, 2008). Since our variables are independent of the time dimension, our data is classified as cross-sectional. Autocorrelation is mostly present in time series data, and since our data is without a time component it leaves it without the major negative effects that autocorrelation could incur (Brooks, 2008).

We also tested for possible multicollinearity by checking the correlation between the independent variables. None of our variables showed *perfect* correlation but two of our variables showed *nearly* perfect correlation (*CONTROL* and *CONTROL2*). However, this was to be expected since *CONTROL2* is the squared variable of *CONTROL* (Appendix III & IV).

In our data, every transaction is one data point in the model. The independent variables are based on the characteristics of the transactions to see if they have any explanatory effect on the dependent variable (*PERCENT\_CASH*). The model was constructed as follows and a further explanation of the variables can be found in Appendix I:

$$\begin{aligned}
 \text{PERCENT CASH} = & C + \beta_2\text{FAMILY} + \beta_3\text{FAMCONT} + \beta_4\text{FAMEXCESS} && \text{Equation 9: OLS MODEL} \\
 & + \beta_5\text{CASH\_AVAILABLE} + \beta_6\text{LEVERAGE} \\
 & + \beta_7\text{COLLATERAL} + \beta_8\text{MTOB\_RATIO} + \beta_9\text{CROSS} \\
 & - \text{LISTED} + \beta_{10}\text{RELATIVE\_SIZE} \\
 & + \beta_{11}\text{NONLISTED\_TARGET} + \beta_{12}\text{CROSS} - \text{BOARDER} \\
 & + \beta_{13}\text{FAMCONT2} + \beta_{14}\text{FAMCONT} \\
 & * \text{DUMMY\_FAMCONT}
 \end{aligned}$$

After the regression was executed we performed a hypothesis test to make sure that the estimated coefficients were statistically significant and not dependent on chance. Here we formulated a null hypothesis and an alternative hypothesis:

Null hypothesis:  $B_1 = 0$

Alternative hypothesis:  $B_1 \neq 0$

We tested these hypotheses in Eviews. The program performs a t-test which can be used to determine the significance of the variables, and if the null hypothesis should be rejected or not.

### 3.3 Data sample

Previous studies in the field of M&A have used Thomson Reuters Platinum SDC but due to limited access to the database we have obtained our data from Bloomberg (Martin, 1996; Faccio and Masulis, 2005). The initial sample screening was based on the following criteria:

- (1). Acquirer should be from either: *Denmark, Finland, Iceland, Norway or Sweden*. This resulted in 19,930 observations.
- (2). The transactions should be in the time span of 1/1/2003 to 1/1/2008. This reduced the sample size to 5,342 observations.
- (3). We have also chosen to only include pure *M&A transactions*, excluding *share buybacks* and *investments*. Further reducing the sample to 4,207 observations.
- (4). Banks and insurance companies among acquirers have been removed. Reducing the sample to 3,987 observations.
- (5). The only allowed payment types were *cash, cash & stock* or *stock*. Reducing the sample size to 2,403 observations.
- (6). The acquirer should be publicly listed at the time of the transaction. Reducing the sample size to 1,493 observations.
- (7). Lastly, we only include deals larger than 50 million USD. Giving us a final sample of 411 observations.

Our screening criteria need some further explanation. We have chosen the European region because it entails better characteristics to examine family ownership and payment structure, compared to US (Faccio and Masulis, 2005). Furthermore, the European market was narrowed down to the Nordic region due to its unexplored market. Previous studies covering the European market had 65.3 % of their sample about UK and did not include all the Nordic countries (Faccio

and Masulis, 2005). The time period 1/1/2003 – 1/1/2008 is labeled as the *sixth merger wave* and there has been limited research about M&As in this time period. Additionally, the most recent wave has easier accessible data compared to earlier waves, which will provide us with up-to-date information. The sixth merger wave is the most recent completed wave, since the seventh merger wave has not been completed yet (Gaughan, 2015).

Further, it is reasonable to exclude *share buybacks* and *investments* due to their distinctive nature and the scope of this thesis. Banks and insurance companies are excluded because of their unique capital structure (André and Ben-Mar, 2009). In line with Faccio & Masulis (2005) and André and Ben-Mar (2009) we have only included the payment type; (1) *cash*, (2) *cash & stocks* and (3) *stock*, excluding earn-outs.

To increase the reliability of the data collection, we require that the acquirer should be publicly listed, this is in line with the majority of the previous literature. Martin (1996) is the only previous study that includes both private and publicly listed acquirers, he found no differences between private and public acquirers. The theory strengthens our choice of only including publicly listed companies which gave us more accessible data. Transactions below 50 million USD has been excluded because the smallest deals tend to differ from larger deals. Leaving us with a final sample of 411 observations, which could be compared to André & Ben-Mar (2009) who had 358 observations. Faccio and Masulis (2005) had a sample of 3,667 observations, which is more comprehensive than André and Ben-Mar (2009) but on the other hand Faccio and Masulis (2005) is the most prominent study in the area of payment choices in M&A and they had a sample of 13 European countries.

### **3.4 Failure analysis**

During the data collection process, we experienced 67 failures (16.3 %) of our 411 observations. This was primarily due to (1) inconsistencies in the data obtained from Bloomberg and (2) limited access to financial data and ownership structure. Reasons for the additional failures could be the financial crisis which resulted in bankruptcy and de-listing of public companies, which furthermore hampered our access to historical data (this is further explained in section 3.6). Lastly, inconsistencies in the data obtained from Bloomberg are irrespective of our sample criterions. The tables below show an overview of our failures during the data collection process.

<i>Country</i>	<i>N</i>	<i>%</i>	<i>% of total N</i>
<i>Denmark</i>	4	5.9 %	10.8 %
<i>Finland</i>	9	13.4 %	17.3 %
<i>Iceland</i>	5	7.4 %	20.0 %
<i>Norway</i>	17	25.3 %	18.7 %
<i>Sweden</i>	21	31.3 %	15.1 %
<i>Multiple acquirer</i>	11	16.4 %	18.0 %
<b>Total</b>	<b>67</b>	<b>100 %</b>	

Table 2: Failures per geographical location

Table 2. Illustrates that the amount of failures (%) is approximately the same in each country. The failures, in terms of total amount of observations, ranges from 10.8 % in Denmark to 20.0 % for Iceland.

<i>Country</i>	<b>Cash</b>		<b>Stock</b>		<b>Cash &amp; Stock</b>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<i>Denmark</i>	2	5.1 %	1	11.1 %	1	7.1 %
<i>Finland</i>	4	10.3 %	0	0.0 %	4	28.6 %
<i>Iceland</i>	3	7.7 %	0	0.0 %	1	7.1 %
<i>Norway</i>	7	17.9 %	5	55.6 %	4	28.6 %
<i>Sweden</i>	13	33.3 %	3	33.3 %	4	28.6 %
<i>Multiple acquirer's</i>	10	25.6 %	0	0.0 %	0	0.0 %
<b>Total</b>	<b>39</b>	<b>100.0 %</b>	<b>9</b>	<b>100.0 %</b>	<b>14</b>	<b>100.0 %</b>
<i>Total</i>	67					

Table 3: Failures in terms of payment method

Table 3, shows the failure distribution in terms of payment method. It is important to illustrate the failures in terms of the different payment choices since this is an important variable for our research. A concentrated failure sample in one of the payment choices would indicate a risk of systematic error in our data sample. Systematic bias is further discussed in section 3.6.

<i>Reason</i>	<i>N</i>	<i>%</i>
<i>Terminated</i>	22	32.8 %
<i>Multiple acquirer</i>	10	14.9 %
<i>Not listed acquirer</i>	5	7.5 %
<i>No available data</i>	30	44.8 %
<b>Total</b>	<b>67</b>	<b>100 %</b>

Table 4: Reason for failures

Table 4, shows the distribution of the failures in our sample. Terminated failures (32.3 %) is due to inconsistencies in the data obtained in Bloomberg, even though we filtered on only

*completed* deals Bloomberg included 22 (32.8 %) deals that were terminated and therefore caused additional failures. The reason for removing *multiple acquirers* is because we could not determine which one of the companies we should obtain data from, this created a failure of 10 (14.9 %) observations. *No listed acquirer* is also inconsistencies from Bloomberg. One of our conditions in the initial screening was that the acquirer should be publicly listed on stock exchange in Denmark, Finland, Iceland, Norway or Sweden. Four of our observations were found to never have been listed on any of these stock exchanges and therefore created a failure. The largest amount (44.8 %) of failures were due to *no available data*. *No available data* will be covered in section 3.6.

### **3.5 Limitations of OLS regressions**

A limitation when applying the OLS regression is that our function can estimate values for the dependent variable outside the interval of [0,100]. Since the dependent variable *PERCENT\_CASH* is a fraction of a total, it cannot, in practice, be outside the stated interval. This issue can be solved if using a *Tobit* regression, which would estimate a function that could only take values within the interval (Amemiya, 1984). However, considering the complexity of a Tobit regression compared to an OLS regression and the fact that an OLS regression serves as a sufficient technique to help explain the independent variables effect on the independent variable, we decided to use the OLS model.

### **3.6 Validity and Reliability**

To determine the quality of our methodological approach we have examined the validity and reliability of the study. In our initial pursuit for research periods we could choose between seven merger waves, however, we found that it was hard to obtain data for the first five merger waves and that they would have provided us with fragmented data. Therefore, we were left with the sixth and seventh merger wave. The seventh merger wave is currently active, choosing that wave would have provided us with incomplete data that would not have been fully comparable with other waves in the same extent as the sixth merger wave. Furthermore, after investigating the variances of the sixth and seventh merger wave we concluded that the sixth merger wave would provide a better foundation for our analysis due to a higher variance in the payment structures. This is because our dependent variable *PERCENT\_CASH* can take values between [0,100]; a degree of 100 % of cash payment would not have explained the variance between [0,100] in the same extent. When investigating the variances in the payment structure we examined the amount of transaction with 100 % cash payments. The sixth merger wave counted for 81.3 % pure cash payments while the period 01/01/2008 – 01/01/2017 counted for 86.4 %

pure cash deals. As for the pure stock deals, it accounted for 5.9 % of the transactions in the sixth merger wave and 6.2 % in the seventh merger wave. For the remaining parts of the sample that conclude of a mix between cash & stock, we assume it to be randomly or close to randomly distributed between [0,100]. Considering these mentioned proportions of the sixth and seventh merger wave, we deemed the sixth merger wave to have the most appropriate characteristics to answer our research question.

To further ensure the validity we looked at the percentage cash payments in prior literature in the field. Faccio and Masulis (2005) examined European payment methods between 1997 and 2000 for 13 European countries and found that 80.2 % of their 3,367 observations were pure cash deals. The same methodology was applied on the geographical location, Faccio and Masulis (2005) found that European countries in the middle of Europe (e.g. Austria had 100 % cash payments and Belgium had 87.5 % cash payments) and countries in the southern Europe (Portugal had 90 % cash payments and Italy had 86.1 % cash payments) had a relatively high degree of cash payments. Therefore, based on the study by Faccio and Masulis (2005), studying countries in the southern Europe or/and middle Europe would not have provided us with better data regarding the variance in the payment method.

Regarding the reliability of the study we have first ensured the replicability of the study by collecting data from accessible databases such as Bloomberg and Thomson Reuters Eikon. Furthermore, the data is publicly available from annual reports. In the methodology, we have also described the research process, screening criteria and what assumptions and definitions we have used as a framework for the research. However, since we have manually collected data for 344 transactions the data could contain human errors. We have tried to minimize this risk with control functions in excel to check for extraordinary numbers.

Furthermore, regarding the subjectivity in the data sample the financial data collected for each acquirer or acquisition could only take one correct value. However, when it comes to the determination of the family ownership we used annual reports as our main source; this was because we could not obtain the data from Bloomberg. The process of collecting and determining the ownership was harder to standardize and therefore required more subjectivity. In order to limit the risk of subjectivity and human errors we performed a test to confirm the quality our data sample. We randomly selected 18 (5 % of our sample size) transactions with the *RANDBETWEEN* function in Microsoft Excel. Then we collected the data for those

transactions an additional time and compared with the initial data of the transactions. We found that the double-checked data were consistent with the initial data collection.

As brought forward in the failure analysis (section 3.4), we encountered transactions where we could not access the data (*no available data*) needed to include the transaction in our regression. This could be for a number of reasons, mainly the following; firstly, companies that have been delisted or taken private proved to be harder to obtain data for. It can be argued that private companies provide the public with less information (less informative websites, less media coverage) than public companies. Secondly, companies which had faced bankruptcy after the acquisition were harder to find. This is a form of survivor bias where the accessible data belongs to the companies that have survived. The survivor bias was especially noticeable in the geographical area of Iceland, which was affected by the financial crisis of 2007 to a greater extent than the other Nordic countries. The mentioned reasons could have led to systematical biases in our regression.

## 4. Descriptive results

---

In this chapter, we will present the descriptive results of our data sample presented in chapter 3. Section 4.1 gives an overview of the number of transactions and total deal value. In section 4.2 the country distribution of bidders and targets and presented. Section 4.3 illustrates the payment choices in our sample and section 4.5 presents our results regarding ownership. Lastly, we will present our statistical data from the model in section 3.2

### 4.1 Number and value of transactions

First, table 5 gives an overview of the distribution of the number of transactions in each year, the average value of transactions (MSEK) and the total value of transactions (MSEK). The most frequent number of transactions occurred in the last two years, 2006 (31.9 %) followed by 2007 (26.2 %). The first two years in our research period were the years with the less frequent number of deals, 2003 (10.4 %) and 2004 (8.4 %). Even though 2003 were one of the years with the lowest frequency the year had the highest average value of transaction (6,173 MSEK). Furthermore, 2004 was the country with the lowest amount of total value (94,588 MSEK). Overall, our sample included 344 transactions with an average value of 3,460 MSEK and a total value of 1,190,322 MSEK.

**Number and Value of transactions**

---

<b>Year</b>	<b>Number of Transactions</b>	<b>Average Value (MSEK)</b>	<b>Total Value (MSEK)</b>
2003	36	6 173	222 231
2004	29	3 262	94 588
2005	79	3 377	266 768
2006	110	3 523	387 581
2007	90	2 436	219 154
<b>Total</b>	<b>344</b>	<b>3 460</b>	<b>1 190 322</b>

---

*Table 5: Number and Value of Transactions*

## 4.2 Country distribution of transactions

Country Distribution transactions				
Country	Bidders		Targets	
	N	%	N*	%
Sweden	139	40.4 %	94	27.3 %
Norway	91	26.5 %	50	14.5 %
Finland	52	15.1 %	25	7.3 %
Denmark	37	10.8 %	21	6.1 %
Iceland	25	7.3 %	2	0.6 %
U.S.			30	8.7 %
U.K.			26	7.6 %
Germany			19	5.5 %
Canada			8	2.3 %
Netherlands			8	2.3 %
France			6	1.7 %
Italy			4	1.2 %
Russia			4	1.2 %
Singapore			4	1.2 %
Australia			3	0.9 %
Japan			3	0.9 %
Mexico			3	0.9 %
Spain			3	0.9 %
Turkey			3	0.9 %
Austria			2	0.6 %
Belgium			2	0.6 %
Brazil			2	0.6 %
India			2	0.6 %
Malasia			2	0.6 %
Serbia			2	0.6 %
Taiwan			2	0.6 %
Algeria			1	0.3 %
British Virgin Island			1	0.3 %
China			1	0.3 %
Czech Republic			1	0.3 %
Hong Kong			1	0.3 %
Jamaica			1	0.3 %
Luxembourg			1	0.3 %
New Zealand			1	0.3 %
Peru			1	0.3 %
Romania			1	0.3 %
Switzerland			1	0.3 %
Thailand			1	0.3 %
Tunisia			1	0.3 %
Venezuela			1	0.3 %
<b>Total</b>	<b>344</b>	<b>100.0 %</b>	<b>344</b>	<b>10.0 %</b>

Table 6: Country distribution of M&A transactions

Table 6, shows the country distribution of the transactions between 2003 and 2007. The table illustrates an overview the nationality of both bidders and targets. We only allowed bidders from the Nordic countries. However, the targets were allowed to be from outside of the Nordics. Table 7 shows that, Sweden represented the most bidders (40.4 %) and targets in our sample (27.3 %). Norway also had a relatively large proportion of bidders (26.5 %) and targets (14.5 %). Icelandic targets were relatively uncommon in our sample (0.6 %). Approximately 58 % of the transactions in our sample had targets from the Nordic region. Our sample included 35 targets from outside The Nordic region and that US (8.7 %) and UK (7.6 %) targets were dominant. Overall, we can see that the most present target nationalities are large economics and countries within the European region.

#### 4.3 Method of payment and average control rights

The method of payment and average voting control rights in each country is illustrated in table 7. We can see that Sweden (84 %) and Denmark (84 %) had the largest proportions of cash deals. Finland had the lowest amount of cash deals (78 %). Overall, we can see that pure cash deals are very dominant in the Nordic region (80.9 %). Norway (10.9 %) and Denmark (10.8 %) were the countries with the highest proportion of mixed payments (combination of cash and stock). Sweden (5.7 %) and Iceland (4.0 %) were the countries with the lowest fraction of mixed payments. On total, our sample included 28 (8.1 %) mixed payments.

Pure stock payment was most frequent in Iceland (16 %) and Finland (12 %) while it was relatively uncommon in Denmark (5.0 %). Sweden (10.5 %) and Norway (10.9 %) were in the middle of the span. Lastly, average control rights are defined as the average control right owned by the largest shareholder of the bidder. Denmark had the highest average control rights (40.8 %) and Finland had the lowest (22.7 %).

<b>Method of Payment choice and Average control right</b>					
	<b>No.</b>	<b>Cash only</b>	<b>Mixed PYMT</b>	<b>Stock Only</b>	<b>Average control rights</b>
<b>Number</b>	<b>344</b>	<b>282</b>	<b>28</b>	<b>34</b>	
Sweden	139	117	8	14	28.20 %
Norway	91	73	10	8	34.80 %
Finland	52	41	5	6	22.70 %
Denmark	37	31	4	2	40.80 %
Iceland	25	20	1	4	33.40 %

Table 7: Method of payment and average control rights between the geographical locations.

#### 4.4 Family ownership in the Nordic Region

Table 8 presents our findings regarding family ownership. When only including unique acquirers, we were left with 174 acquirers out of 344 transactions (50.5 %). Sweden were the country with the highest proportion of family ownership, in the sample we found that 64.5 % of the Swedish firms were owned family owned<sup>3</sup>. In the sample, we found family owners such as; Carl Bennet, Erik Paulson, Erik Selin, Family Söderberg, Wallenberg, Jan Stenbeck. In Denmark, a majority of the firms were family owned (60.4 %) and we found family owners such as; Nils Petter Louise Hansen, Family Lundbeck, family Maersk/Uggla.

In Norway family ownership was not the majority (40.0 %) and we found owners such as; Lars Nielsen, Stein Erik Hagen, Johan H Anderson, Family Smedvig. Approximately half (48.4 %) of Finland's firms were family owned. In Finland, we found large family owners such as; Aaro Cantell, family Ahlstrom, Antti Herlin and Aatos Erkko. Family ownership were near the majority (46.2 %) in Iceland and we found families such as; Björgólfur Thor Björgólfsson.

<b>Unique acquirer and family ownership %</b>			
	<i>N = Unique acquirer</i>	<i>N = Family owned</i>	<i>% = Family owned</i>
<b>Number</b>	<b>174</b>	<b>98</b>	<b>100.0%</b>
Sweden	62	40	64.5%
Denmark	48	29	60.4%
Finland	31	15	48.4%
Norway	20	8	40.0%
Iceland	13	6	46.2%

Table 8: Unique acquirer and family ownership %

#### 4.5 Deal specific characteristics

Table 9 illustrates an overview of the deal specific characteristics. We can see that there were 119 cross-border deals (34.6 %) and that 56 of these 119 were cross-border deals that occurred within the Nordics. In other words, 47% of the cross-border deals in our sample took place within the Nordics. Our table also show *domestic deals* which are all the deals in the country that occurred domestically. Furthermore, *cross-sector deals* show the amount of deals within a country when the acquirer and target are in different sectors. Lastly, table 9 show how many firms in our sample that are cross-listed, per country.

<sup>3</sup> Defined as when an individual, family or un-listed company owns more than 10 % of the company (Faccio and Lang, 2002).

---

### Deal specific results

---

Country	Cross- border deals in total	Cross-Border in The Nordics	Domestic deals	Cross-sector deals	Cross-listed firms
Sweden	74	33	65	104	4
Norway	4	2	33	71	19
Finland	24	17	67	35	27
Denmark	9	3	43	179	19
Iceland	8	1	16	12	1
<b>Totalt</b>	<b>119</b>	<b>56</b>	<b>224</b>	<b>401</b>	<b>70</b>

---

*Table 9: Deal specific characteristics*

#### 4.6 Statistical results

Table 10, shows the results of our statistical results. First, we can see that the fraction of the variance of the dependent variable could be explained by 21.6 % of our independent variables. Furthermore, the adjusted  $R^2$  shows an explanatory power of 18.2 %. In table 11, we have summarized the coefficients and significance level of our variables presented in section 3.1.

Dependent Variable: PERCENT\_CASH  
Method: Least Squares  
Date: 05/18/17 Time: 19:52  
Sample: 1 344  
Included observations: 344  
White heteroskedasticity-consistent  
standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.701388	0.109580	6.400717	0.0000
CASH_AVAILABILITY	0.112956	0.115273	0.979895	0.3279
COLLATERAL	-0.007640	0.052352	-0.145939	0.8841
CROSSBORDER	0.108199	0.051765	2.090204	0.0374
CROSSECTOR	0.026585	0.039075	0.680358	0.4968
CROSSLISTED	0.151851	0.050579	3.002286	0.0029
FAMILY	0.137421	0.042768	3.213145	0.0014
CONTROL	-0.863935	0.448303	-1.927124	0.0548
CONTROL2	1.032668	0.488363	2.114549	0.0352
CONTROL_INTERVAL*CONTROL	0.112658	0.139003	0.810467	0.4183
CONTEXCESS	0.139027	0.156155	0.890313	0.3739
LEVERAGE	0.350335	0.089568	3.911384	0.0001
MTOB_RATIO	0.015429	0.013953	1.105829	0.2696
RELATIVE_SIZE	-0.295484	0.128003	-2.308411	0.0216
TARGET_LISTED	0.021009	0.030883	0.680288	0.4968
R-squared	0.216193	Mean dependent var		0.869640
Adjusted R-squared	0.182839	S.D. dependent var		0.313067
S.E. of regression	0.283003	Akaike info criterion		0.355904
Sum squared resid	26.34977	Schwarz criterion		0.523374
Log likelihood	-46.21551	Hannan-Quinn criter.		0.422605
F-statistic	6.481862	Durbin-Watson stat		0.636941
Prob(F-statistic)	0.000000	Wald F-statistic		4.303842
Prob(Wald F-statistic)	0.000001			

Table 10: OLS describing percent cash in M&A transactions

Seven of our 14 variables showed significance on the 1 %, 5 % or 10 % level. 11 out of 14 variables showed a positive relationship with proportion of cash payment. However, five of these 11 showed a *significant* positive relationship with the proportion of cash payment. Three out of 14 variables showed a negative relationship with the proportion of cash payment. Out of these three, two variables showed a *significant* relationship. Table 9 illustrates a summary of the variables and their expected sign.

Variable	Significance	Expected sign	Result	Deviation
CASH_AVAILABILITY	-	+	+	No
COLLATERAL	-	+	-	Yes
CROSS_BORDER	**	+	+	No
CROSS_SECTOR	-	+	+	No
CROSS_LISTED	***	-	+	Yes
FAMILY	***	+	+	No
CONTROL	*	-	-	No
CONTROL2	**	+	+	No
CONTROL_INTERVAL	-	+	+	No
FAMEXCESS	-	-	+	Yes
LEVERAGE	***	-	+	Yes
MTOB_RATIO	-	-	+	Yes
RELATIVE_SIZE	**	-	-	No
TARGET_LISTED	-	+	+	No

Table 11: Signs of independent variables

*CROSS\_BORDER*\*\* showed significance on the 5 % level and had a positive relationship with cash payments. In cross-border deals, the proportion of cash payments increase with 0.108.

*CROSS\_LISTED*\*\*\* is significant on the 1 % level and the variable had a positive relationship with cash payment. Cross-listed firms pay 0.151 more in cash than non-cross listed firms do.

In our sample, we can see that family firms<sup>4</sup> are positively related to *PERCENT\_CASH* in M&A transactions. *FAMILY*\*\*\* is significant on the 1 % level and shows that family firms in our sample paid 0.137 more in cash than non-family firms. A firm's financial leverage shows a positive relationship with *PERCENT\_CASH*. *LEVERAGE*\*\*\* is significant on the 1 % level and the coefficient indicates that a firm with a higher leverage will on average pay 0.32 more in cash. *RELATIVE\_SIZE* is also significant on the 1 % level; the coefficient tells us that *LEVERAGE* is positively related to *PERCENT\_CASH*. *CONTROL*\* is significant on the 10 % level and shows a negative relationship with *PERCENT\_CASH*. *CONTROL2* is a variable used

<sup>4</sup> Defined as when an individual, family or un-listed company owns more than 10 % of the voting rights (Faccio and Masulis, 2005)

in order to explain the marginal effect of CONTROL, the variable is simply the variable CONTROL squared.

Furthermore, we found no significance for the variables *CASH\_AVAILABILITY*, *COLLATERAL*, *CROSS\_SECTOR*, *CONTROLEXCESS*, *MTOB\_RATIO* and *TARGET\_LISTED*.

## 5. Analysis

---

In this chapter, we intertwine the descriptive results presented in chapter 4 with the literature review in chapter 2. In section 5.1 we will discuss the general results of the study and in section 5.2 we will compare our descriptive data with prior studies. Lastly, section 5.3 will compare our statistical results and find potential explanations for similarities and deviations in section 5.2.

### 5.1 General discussion about the results

First, our variables presented in section 3.1 could explain 21.6 % of the proportion cash paid in Nordic M&As between 2003 and 2007. This is in line with prior studies investigating payment choices in M&As using similar variables as in this study (André and Ben-Mar, 2009). Consistent with prior M&A research, several coefficients were significant. we found that seven out of 14 variables showed significance. Dividing the variables between *deal-specific* and *firm-specific* variables we found that these are evenly distributed between those two groups. The next sections will cover similarities and deviations compared to prior studies.

### 5.2 Family ownership and payment structure

Comparing our findings regarding family ownership we found both deviations and consistencies. Faccio and Lang (2002) found that 47 % of the Swedish firms were family owned between 1996 and 1999 and La Porta et al. (1999) found that 55 % of the Swedish firms were family owned at 1995. This is somewhat different from our findings, we found that 64.5 % of the Swedish firms in our sample were family owned. Explanations for this could be the time difference and subjectivity in determining family ownership which was brought up by both Faccio and Lang (2002) and La Porta et al. (1999). However, both La Porta et al. (1999) and Faccio and Lang (2002) studied ownership in general and had no M&A perspective as this study. However, when examining family ownership in Finland we found consistencies with Faccio and Lang (2002) who found that 48.8 % of the Finnish firms were family owned, we found that 48.4 % were family owned. However, interestingly is that La Porta et al, (1999) only found that 10 % of the Finnish firms were family owned. Regarding Norwegian firms our results are consistent with the findings of Faccio and Lang (2002) but not with La Porta et al. (1999). Ownership in Iceland and Denmark has not been studied before and therefore cannot be compared, however, we found a relatively high degree of family ownership in Iceland (46 %) and Denmark (60.4 %). To conclude, in line with prior studies we found that family ownership

is common in the Nordic market, compared with studies covering other regions. However, comparing the results indicates that determining ownership is a somewhat complex area showing mixed results, supporting La Port et al. (1999).

Our sample showed that 80.9 % of the transactions in the Nordic region between 2003 and 2007 were pure cash deals concluding that cash payment is the most dominant financing medium, supporting Faccio and Masulis (2005) results, which they based on a study on the European countries. Faccio and Masulis (2005) found that 80.1 % of their sample were pure cash deals. Stock payment were relatively rare (8.1 %) comparing the results with literature regarding the US market, where 29 % of the deals were pure stock deals. Regarding country specific cash payments, we obtained mixed results compared to prior studies. Cash payments in Sweden are consistent with prior research, however, as with the ownership, we experienced deviations in the cash payments for Finland and Norway. Earlier studies found that Finland and Norway had respectively 65 % and 69 % cash payments, while we found higher degrees of cash payments, 78 % and 80.1 %.

Interestingly, looking at table 6 we can observe that both Denmark and Sweden who had the most pure cash deals also had distinctly higher family ownership. In the next section, we will show that family ownership is positively related to higher proportion of cash payment. Furthermore, we will examine these deviations and consistencies with the statistical analysis.

## **5.3 Statistical analysis**

### **5.3.1 Deal specific variables**

Looking at table 9 we found that 119 (35.1 %) were cross-border deals in our sample. Significant on the 5 % level we found that cash payment is 0.108 higher in cross-border deals than in non-cross-border deals. The positive relationship with cash payment is consistent with prior studies. The result supports the *home country bias hypothesis* stating that firms are more biased towards domestic ownership than international ownership. However, the result is also consistent with the *information asymmetry hypothesis* saying that firms are more reluctant to use stock payment in cross-border deals due to the gap in knowledge of foreign markets. Besides, consistent with prior studies, motives for increased cash payment can be that cash payment mitigate the risk associated with information gaps. Since the Nordic region could be seen as one zone, we looked at the cross-border deals inside the Nordic region and saw if the theories still hold within the area. Approximately 47 % of the cross-border deals were transactions with bidder and target both inside the Nordic region. However, examining the

results of cross-border deals inside the Nordic region and cross-border deals outside the Nordic region we found no differences, meaning that the hypothesis holds up inside the Nordic area as well.

In line with the *information asymmetry hypothesis* firms tend to be reluctant to use stock payments in cross-sector deals due to the fact that the bidder may have limited knowledge about the targets sector and that the target has limited knowledge about how to determine the true value of the stock. However, in our study we saw, in line with prior studies a positive relationship between cash payment and cross-sector deals but the variable showed no significance and therefore we cannot determine if this theory holds up. Additionally, we could also see indications that when the target is *non-listed* the proportion of cash increases marginally. This result is also in line with the *information asymmetry hypothesis* and prior studies, however we analyze the variable with prudence since the variable showed no significance.

There were 70 out of 139 (8.6 %) transactions where the acquirer was cross-listed and a large majority of these were cross-listed on US exchange. Contrary, to prior literature we found a positive relationship between cross-listing and cash payment that was significant on the 1 % level. Prior studies found a negative relationship between cash payment and cross-listing. Our study does not support the *legal-bonding hypothesis* brought forward in prior literature. Potential reasons for this is that the Nordic countries already have developed legislation systems and therefore cross-listing do not increase the quality of the stock, which is the case in countries with poorer legislation systems. The results furthermore do not support the *reputational bonding hypothesis*, which could be explained by that the Nordic countries have a relatively high reputation. However, many US target requires cross-listing in order to accept stock payments. US targets are concerned about the liquidity of their shares. However, we found that only 7 % of the targets were from US and only one out of 30 US transactions were paid with stocks.

Many earlier studies argued that the *relative size* between the bidder and the target is a dominant explanation for either cash or stock payment. However, our results supported the *information asymmetry hypothesis*, finding a negative relationship between cash payment and the relative size between the acquirer and target. Prior studies showed discrepancies in their findings. However, our findings support the *risk reduction hypothesis* stating that when the relative size increases firms use stock in a larger extent to split the risk of buying an overvalued target. On

the contrary, our study does not support that cash financing is more present when the *relative size* is higher and thus the information asymmetry is higher.

### 5.3.2 Firm specific variables

In accordance with the *cash availability hypothesis* we saw, in line with prior research, a positive relationship between cash payment and the degree of accessible liquidity. However, the variable showed no significance and therefore we cannot draw any general conclusions that there is a positive relationship between cash payment and cash availability in the Nordic market. Regarding a firm's debt capacity, we found a positive relationship between financial *leverage* and cash payment in Nordic M&As. The variable was significant on the 1 % level and is not consistent with the *debt capacity theory* saying that more leveraged firms tend to pay more in equity due to the limitations of raising additional debt for cash payments. Prior studies examining M&A payment found a negative relationship between financial leverage and cash payment. The results seem somewhat contradictive, but potential explanations could be that stocks generally were overvalued making firms reluctant to issue stocks and hence increased their leverage and also the fact that cash balances was high during the sixth merger wave. Going back to the *cash availability theory*, we saw indications that internal funds was positively related to cash financing. A firm's *collateral* level showed a negative relationship with cash payment, meaning that our result indicates the opposite of the *debt capacity theory*, however the variable showed no significance so we cannot conclude that the hypothesis does not hold up. Prior research found that when a firm is experiencing higher growth opportunities the likelihood of stock payment will increase. On the contrary, we can see indications that when a firm is experiencing higher growth opportunities the likelihood of cash payment will increase; however, the variable is not significant and only shows a marginal increase of cash payment. Therefore, we cannot draw any general conclusions.

In line with the *control hypothesis* we found that *family* firms are positively related to cash payments in Nordic M&As. The variable showed a significance on the 1 % level and support the theories suggesting that family firms are more prone towards cash financing than equity financing due to the control threat of dilution of the ownership. Family firms pay 13.7 % more in cash than non-family firms do which could be explanations why Sweden and Denmark had higher proportions of pure cash deals than the other Nordic countries. Earlier studies about the European market and found a positive relationship between family and cash payment.

However, this can also illustratively be shown in table 7 and 8. In the tables, Sweden and Denmark are the countries with the highest family ownership in the Nordic region and also the countries with the highest proportions of cash payment in our sample. Generally, ownership control for both family and non-family owners shows mixed signs. According to our results, the more control an owner has in terms of voting power, the more likely it is to increase the proportion of stock payments in their financing mediums. The linear variable family control (*CONTROL*) showed a significant negative relationship between ownership control and cash payment. According to our results, the more control an owner has over a company, the more likely it is to increase the proportion of stocks in their payment structure of an M&A. This goes against the *control-motivation hypothesis*, which indicates that firms would be reluctant to dilute their voting power by paying with stock, and thus instead would prefer cash as a payment option.

One possible explanation for this relationship, which is in line with the risk-reduction hypothesis, is that the owners want to diversify their portfolio and reduce their own personal risk. In contrast, leveraging the company to finance the acquisition with cash would increase the risk.

Another researcher, Martin (1996), claims that the above-mentioned relationship is only true about certain levels of ownership. In his research, he concludes that companies with control between 20 % and 60 % tend to be more vulnerable to control threats, and thus prefer to pay with cash. When looking at our *CONTROL\_INTERVAL\*CONTROL* variable, which tests for company control between 20 % and 60 %, we can see that this variable shows a positive result. In other words, the variable supports the theory laid out by Martin (1996), that companies with a control percent between 20 % and 60 % are more willing to fund their acquisitions with cash. However, it should be noted that *CONTROL\_INTERVAL\*CONTROL* does not show significance, therefore the analysis from the variable should be viewed with prudence.

Furthermore, the *CONTROL2* variable shows that the effect of *CONTROL* is not linear. This enforces the indications from our *CONTROL\_INTERVAL\*CONTROL*, that the tendency to finance a transaction with cash increases after a certain level of ownership control. Although, we are not able to confirm that our results are completely in line with Martin (1996). This is because the values of *CONTROL2* are not able to say that the probability of cash payment reduces again when ownership control goes over 60 %.

## 6. Concluding discussion

---

### 6.1 Conclusion

During the last decade, the number of transactions and deal values has increased dramatically. However, the payment choices are still an area with limited research, especially when it comes to the sixth merger wave and the Nordic region. Therefore, the purpose of this study was to investigate determinants of the payment choices in Nordic M&A deals between 2003 and 2007. Due to the unique characteristics of ownership in the Nordic region this thesis also aimed at investigating how family firms faces the trade-off between cash or stock payment.

The result of our study showed that, using variables based on prior literature, the variables could explain 20.8 % of the percent cash used in M&A deals. Seven out of the 14 variables showed a significant relationship with cash payment. First, in line with the *information asymmetry hypothesis* we found a positive significant relationship between cross-border deals and cash payment. On the contrary to prior studies we did not find support for the *legal-bonding hypothesis* and *reputational-bonding hypothesis* in the Nordic region, we found a significant positive relationship between cross-listed firms and cash payment. Regarding the relative size between the bidder and the target we support the information asymmetry hypothesis and found a negative relationship between relative size and the likelihood of cash payment. Interestingly, we found inconsistencies with the *debt capacity theory* and showed that there is a significant positive relationship between a firm's leverage and cash payment.

Regarding family ownership in the Nordic region we found that family Swedish firms are 65.5 % family owned, Danish firms 60.4 %, Finland 48.8 %, Norway 40.0 % and Iceland 46.2 %. Compared to prior literature we found both consistencies and mix results, indicating that family ownership is a complex field. However, in line with the *control-motivation hypothesis* we find that *family* firms pay a larger proportion in cash than non-family firms do.

Our results showed a significant and positive relationship between family firms and cash payment. However, we also found indications that family firms are more vulnerable to control threats and dilution at certain levels of ownership. We documented a negative relationship between control rights and cash payments which could be explained by the fact that the relationship is not linear. But we could with the dummy variable, even though it is not significant, see that family firms are more vulnerable to stock payment between 20 % and 60 % ownership. Furthermore, we found no significant relationship with cash payment and

*cash\_availability, collateral, cross\_sector, control\_interval, contexcess, mtob\_ratio and target\_listed.*

## **6.2 Contribution and future research**

This thesis has contributed with an overview of payment structures in M&A deals in an unexplored time-period and geographical location. With our results, we have supported earlier studies and showed that the hypotheses regarding payment choices are applicable on the sixth merger wave and in the Nordic region. However, by finding deviations we have also contributed with opening for discussion regarding payment choices which allows future researchers to examine these fields. The findings regarding family firms and ownership could be further examined. For example, it would have been interesting to see how the variables examined in this paper differs when looking at family firms and non-family firms. However, this was not the scope of the thesis, since we only aimed at examining payment choices in general and investigate which payment method family firms and large owners are more likely to use.

It would have been interesting for future researcher to add macro-economic factors and see how this would impact the payment structure in the Nordics. For example, how GDP growth and interest rates could affect financing structures. In this thesis, we did not cover variables capturing stock price and valuation of stocks. Suggestions for future research would be to include stock-run up one year before the announcement date to capture potential over/under valuation of the acquirers' stocks. Additionally, M&As can have many characteristics such as hostile or friendly take overs, examining different types of M&As would benefit the area of payment structures. Lastly, a majority of the studies covering payment choices in M&A deals have mainly looked at the US and UK but since the fifth merger wave got international dissemination in the 1990 we find the Asian market as an interesting geographic location.

## List of references

---

- Alexandridis, C., Mavrovitis, C. F., & Nickolaos, G. T. (2012). How have M&As changed? Evidence from the sixth merger wave. *The European Journal of Finance*, vol. 18, pp.663-688.
- Amemiya, T. (1984). Tobit Models: A survey, *Journal of Econometrics*, vol. 24, no.1, pp.3-61.
- Amihud, T., Baruch, L., and Travlos, G. (1999). Corporate control and the choice of investment financing: The case of corporate acquisitions, *Journal of Finance*, vol. 45, no.2, pp.603-616.
- Anders, R. C. and D. M. Reeb (2003) Founding Family Ownership and Firm performance: Evidence from the S&P 500, *Journal of Finance*, vol. 58, no.3, pp. 1301-1329.
- André, P. and Ben-Mar, W. (2009) Control Threat and Means of Payment: Evidence from Canadian Mergers and Acquisitions; France.
- Armen, H., Opler, T., and Titman, S. (2001). The debt-equity choice, *Journal of Financial and Quantitative Analysis*, vol. 36, no. 1, pp.1-25.
- Barontino, R. and L. Caprio. (2006). The Effect Of Family Control on Firm Value and Performance: Evidence from Contintenal Europe, *European Financial Mangement*, vol. 12, no.5, p.689-723.
- Brailsford, T.J., B.R. Oliver and S.L. Pua. (2002). On the relationship between ownership structure and capital structure, *Accounting and Finance*, vol. 42, pp.1-26.
- Brooks, C. (2014). *Introductory econometrics for finance*. 3rd ed. Cambridge, UK: Cambridge University Press.
- Burns, N., B. B. Francis and I. Hasan. (2007). Cross-Listing and Legal Bonding: Evidence from Mergers and Acquisitions, *Journal of Banking and Finance*, vol.31, pp.1003-1031.
- Chaney, Paul K., Linda M. Lovata, and Kirk L. Philipich. (1991). Acquiring firm characteristics and the medium of exchange, *Quarterly Journal of Business and Economics*, vol. 30, pp.55-69.<sup>[1]</sup><sub>[SEP]</sub>
- Claessens, S., S. Djankov, J. Fan and L.H.P. Lang .(2000). The Separation of Ownership and Control in East Asian Corporations, *Journal of Financial Economics*, vol. 58, pp.81-112.
- Coval, J., and Moskowitz, T. (1999). Home bias at home: Local equity preference portfolios, *Journal of Finance*, vol. 4, no. 6, pp.2045-2073.
- De Jong, A., Kabir, R., & Nguyen, T. T. (2008). Capital structure around the world: The roles of firm-and country-specific determinants. *Journal of Banking & Finance*, vol. 32, no.2, pp.1954 -1969.

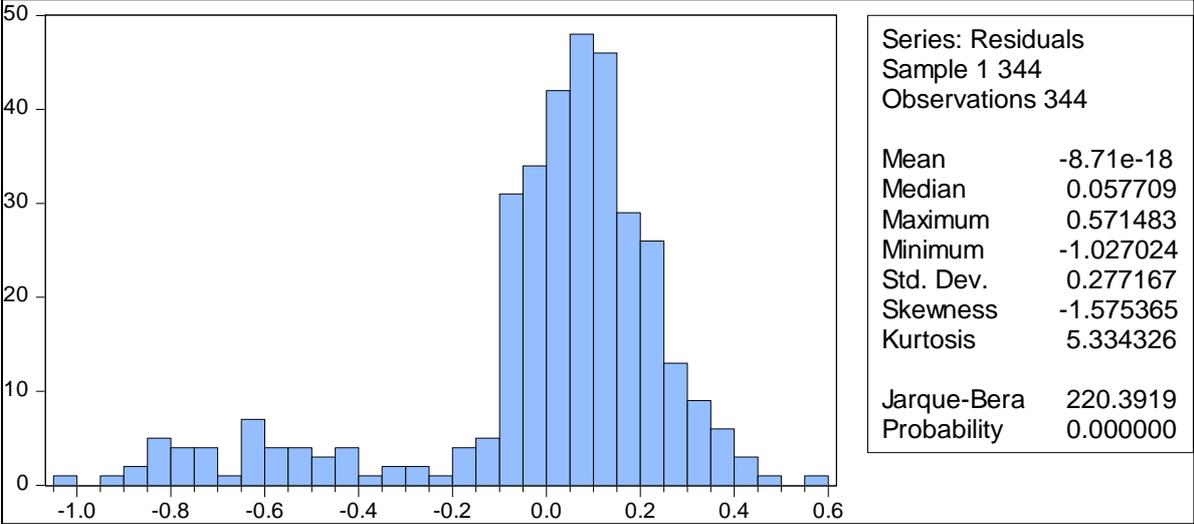
- Ellul, A. (2008), Control Motivations and Capital Structure Decisions, Working paper, SSRN, 61 pages; Indiana.
- Faccio, M. and L.H.P. Lang (2002). The Ultimate Ownership of Western European Corporations, *Journal of Financial Economics*, vol. 65, no.2, pp.365-395.
- Faccio, M. and R. W. Masulis. (2005). The Choice of Payment Method in European Mergers and Acquisitions, *Journal of Finance*, vol. 3, no.3, pp.1345-1388.
- Fishman, M. J. (1989). Preemptive bidding and the role of the medium of exchange in acquisitions. *Journal of Finance*, vol. 44, no.1, pp.41-57.
- French, K. and Poterba, J. (1991). Investor diversification and international equity markets, *American Economic Review*, vol. 81, no, 2, pp.222-226.
- French, Kenneth, and James Poterba, 1991, Investor diversification and international equity markets, *American Economic Review* 81, 222-226.
- Friend, I. and L. Lang (1988), An Empirical test of the impact of managerial self-interest on corporate capital structure, *Journal of Finance*, vol. 43, no.2, pp.271-281.
- Fuller, K., Netter, J., & Stegemoller, M. (2002). What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions. *Journal of Finance*, vol. 57, no. 4, pp. 1763-1793.
- Gaughan, Patrick A. (2015). *Mergers, Acquisitions, and Corporate Restructurings, 5<sup>th</sup> ed.* Hoboken, N.J.; Wiley.
- Ghosh, A. and W. Ruland (1998). Managerial Ownership, the method of Payment for acquisitions, and Executive Job retention, *Journal of Finance*, vol. 53, no. 2, pp. 785-798.
- Grullon, G., Michaely, R., & Swary, I. (1997). Capital adequacy, bank mergers, and the medium of payment. *Journal of Business Finance & Accounting*, vol. 24, no 1, pp. 97-124.
- Hansen, R. G. (1987). A theory for the choice of exchange medium in mergers and acquisitions. *Journal of Business*, vol. 60, no 1, pp. 75-95.
- Harford, J. (2005). What drives merger waves? *Journal of Financial Economics*, vol. 77, no. 3, pp. 529–60.
- Hayn, C. (1989). Tax attributes as determinants of shareholder gains in corporate acquisitions. *Journal of Financial Economics*, vol. 23, no 1, pp.121-153.
- Holderness, C. (2007). The Myth of Diffuse Ownership in the United States, Forthcoming review of Financial Studies. *The Review of Financial Studies*, vol. 22, no 24, pp. 1377-1408.
- Jensen, G., D. Solberg and T. Zorn (1992), Simultaneous Determination of insider ownership, debt, and dividend policies, *Journal of Financial and Quantitative Analysis*, vol. 27, no 2, pp. 247-263.

- Jung, K., Kim, Y. C., & Stulz, R. (1996). Timing, investment opportunities, managerial discretion, and the security issue decision. *Journal of Financial Economics*, vol. 42, no 2, pp. 159-186.
- Kim, W. and E. Sorensen (1986), Evidence on the impact of agency costs of debt on corporate debt policy, *Journal of Financial and Quantitative Analysis*, vol. 21, no 2, pp. 131-144.
- King, M. and E. Santor. (2008). Family Values: Ownership structure, Performance and Capital Structure of Canadian firms, *Journal of Banking and Finance*, vol. 32, no 11, pp. 2423-2432.
- Korajczyk, R. A., Lucas, D. J., & McDonald, R. L. (1991). The effect of information releases on the pricing and timing of equity issues. *Review of Financial Studies*, vol. 4, no 4, pp. 685-708.
- La Porta, R., F. Lopez-De-Silanes and A. Shleifer (1999). Corporate Ownership around the World, *Journal of Finance*, vol.54, no.2, pp. 471-517.
- Martin, Kenneth J., 1996, The method of payment in corporate acquisitions, investment opportunities, and management ownership, *Journal of Finance*, vol. 51, no. 4, pp.1227-1246.
- Maury, B. (2006). Family Ownership and Firm Performance: Empirical Evidence from Western European Corporations, *Journal of Corporate Finance*, vol.12, no. 2, pp.311-341.
- Modigliani, F. and Miller, H. M. (1958). The Cost of Capital, Corporate Finance and the Theory of Investment. *The American Economic Review*, vol. 48, no. 3, pp.261-297.
- Myers, Stewart C. 1984, The capital structure puzzle, *Journal of Finance*, vol. 39, no.2, pp. 575-592.
- Myers, Stewart. C. (1977), Determinants of corporate borrowing, *Journal of Financial Economics*, vol. 5, no 2. 147-175.
- Pignataro, P. (2015). Mergers, Acquisitions, Divestitures and Other Restructurings - A practical guide to Investment Banking and Private Equity. US: Wiley Finance Series.
- Swieringa, J., & Schauten, M. (2008). The payment method choice in Dutch mergers and acquisitions. *Journal of Mergers & Acquisitions*, vol. 5, no 2, pp. 26-59

## Appendix I: Definition of variables

<b>Variable name</b>	<b>Description</b>
<b>CASH_AVAILABILITY</b>	Ratio of cash plus marketable securities to total assets
<b>COLLATERAL</b>	Ratio of fixed assets to total assets
<b>CROSS_SECTOR</b>	Dummy variable that equals one if the acquirer is active in the same industry as the target.
<b>CROSS_BORDER</b>	Dummy variable that equals one if the target and acquirer are based in the same country, and zero otherwise.
<b>CROSSLISTED</b>	Dummy variable that equals one if the bidder is listed on more than one stock exchange and zero otherwise.
<b>CONTROL</b>	The ultimate voting rights held by the largest shareholder.
<b>CONTROL-INTERVAL</b>	Dummy variable that equals one if the voting rights of the largest owner is between 20 % and 60 %.
<b>CONTEXCESS</b>	Excess control; the wedge between control and cash flow rights.
<b>FAMILY</b>	Dummy variable that equals one if the acquirer's largest shareholder is a family and have at least 10 % control stake in the company, and zero otherwise.
<b>LEVERAGE</b>	Ratio of non-current liabilities to total assets
<b>MTOB_RATIO</b>	Ratio of the market value of equity plus the book value of debt over total assets (book-value).
<b>PERCENT_CASH</b>	The percentage of the total deal value that is paid with cash.
<b>RELATIVE_SIZE</b>	Ratio of the deal value to the deal value plus the bidder's market capitalization
<b>TARGET_LISTED</b>	Dummy variable that equals one if the target is a stand-alone firm not listed on any stock exchange or an unlisted subsidiary of another firm, zero otherwise.

# Appendix II : Jarque Bera test



## Appendix III : Variance Inflation Factor

Variance Inflation Factors			
Date: 05/18/17 Time: 19:56			
Sample: 1 344			
Included observations: 344			
	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
<b>C</b>	0.012008	127.8274	NA
<b>CASH_AVAILABILITY</b>	0.013288	3.776060	1.807978
<b>COLLATERAL</b>	0.002741	4.755260	1.565320
<b>CROSS_BORDER</b>	0.002680	10.69240	4.552226
<b>CROSS_SECTOR</b>	0.001527	11.96112	1.277257
<b>CROSS_LISTED</b>	0.002558	5.447399	3.892857
<b>FAMILY</b>	0.001829	12.35947	2.349001
<b>CONTROL</b>	0.200975	305.4353	58.39295
<b>CONTROL2</b>	0.238499	121.9270	49.59236
<b>CONTROL_INTERVAL*CONTROL</b>	0.019322	12.10498	5.172916
<b>CONTEXCESS</b>	0.024384	5.739968	3.318614
<b>LEVERAGE</b>	0.008022	14.88762	2.566359
<b>MTOB_RATIO</b>	0.000195	5.468105	1.536333
<b>RELATIVE_SIZE</b>	0.016385	6.860579	3.005474
<b>TARGET_LISTED</b>	0.000954	4.057503	1.195098

# Appendix IV: Correlation Matrix

	FAMILY	FAM/CONT	CONTROL	CONTROL2	FAM/EXCESS	CASH AVAILABILITY	LEVERAGE	COLLATERAL	MTOB RATIO	CROSSLISTED	RELATIVE SIZE	TARGET LISTED	CROSSBOARDER	DUMMY*CONTROL	CROSSSECTOR
FAMILY	1.00														
FAM/CONT	0.02	1.00													
VOTING SQUARED	-0.04	0.96	1.00												
FAM/EXCESS	0.32	0.40	0.37	1.00											
CASH AVAILABILITY	0.08	-0.15	-0.14	-0.14	1.00										
LEVERAGE	-0.02	0.15	0.18	-0.10	-0.06	1.00									
COLLATERAL	0.02	-0.01	-0.01	-0.05	-0.47	0.41	1.00								
MTOB RATIO	0.07	-0.16	-0.15	-0.14	-0.36	0.46	0.46	1.00							
CROSSLISTED	-0.18	0.00	0.03	-0.05	-0.10	0.20	-0.18	1.00							
RELATIVE SIZE	-0.03	-0.05	0.00	-0.19	0.07	0.04	0.20	-0.03	1.00						
TARGET LISTED	-0.11	0.11	0.12	-0.05	-0.01	0.02	-0.11	-0.07	-0.15	1.00					
CROSSBOARDER	0.08	-0.02	-0.06	0.19	-0.04	-0.14	-0.10	-0.09	0.07	0.06	1.00				
DUMMY*FAM/CONT	0.18	0.26	0.04	0.20	-0.05	-0.13	-0.15	0.03	-0.37	-0.56	-0.13	1.00			
CROSSSECTOR	-0.08	0.00	0.04	-0.09	-0.04	0.11	0.09	0.05	-0.16	-0.11	0.03	0.17	1.00		
														1.00	1.00