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The impact of the method of payment on the excess return in M&As

Bachelor Thesis in Industrial and Financial Management

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Abstract

There is extensive literature regarding M&A and how it is a crucial part in companies growth strategy. Furthermore, several authors have found in their research that there exists a relationship between the method of payment and the performance of the M&A and how it will affect the market reaction around the announcement, where most literature claims that cash as a payment method yields a more positive return than if stock is used. A recurring argument for this aspect is the presence of information asymmetry. In this thesis, the method of payments impact on the excess return is tested on the OMX Large Cap Stockholm to see if the prior findings still hold for the Swedish market, as it is to the authors' knowledge not yet solely tested. Furthermore, as industry related M&As tend to decrease the information asymmetry between the parties in an M&A, this thesis also investigates if the cash payments impact on the excess return is amplified in such M&As. To test both hypotheses in this thesis 357 M&A observations on the Swedish stock exchange OMX Large Cap Stockholm between 2015-2020 are used to statistically examine the impact of method of payment on the excess return. To establish this effect 24 OLS regression models together with 3 T-tests were analysed. The result obtained showed no statistical result between the method of payment and excess return that supported most of the prior research. The same results were obtained when industry related and unrelated M&As were analysed separately.

Keywords:

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1. Introduction

Mergers and acquisitions (M&As) are among one of the most significant events in the economy, which is a well-studied field within finance (Fuller et al., 2002). In today's highly competitive market, companies strive to keep up with their competitors. To achieve dominance in the market, the companies need to have a greater growth rate than its competitors and the most popular way to grow is by M&As (Jacob, 2006).

When a public company acquires another company through an M&A it is contingent upon a market reaction. Furthermore, how the market will react is dependent on several factors where the method of payment is one crucial factor and is well documented in the literature (see e.g. Faccio & Masulis, 2005; Zhang J & Zhang Y, 2011) where evidence suggests that stocks as a method of payment is mostly contingent upon a negative market return while cash often refers to a more positive market return (see e.g. Travlos, 1987; Moeller et al., 2007; Caneghem & Luypaert, 2014). The method of payment will be affected by the level of information asymmetry regarding the acquirer, target, or both. Moreover, relatedness is also an aspect that could affect the choice of payment as related M&As could be argued to reduce the information asymmetry.

To measure the short-term reaction of the market for an M&A announcement the excess return is broadly used in the literature (see e.g. John, 2015; Teti et al., 2017). The excess return is used to observe the M&A performance relative to the market performance to observe how the shareholders/investors react to an announcement for an M&A. If a positive excess return is observed, it means that the shareholder's value has increased more than the stock market index in the same period which implies a positive reaction to the M&A by the market and vice versa. The excess return enables the use of the market reaction to M&A announcements to quantify the effect of method of payment in M&As in general and more specifically the method of payment in related and unrelated M&As

This thesis will investigate how the excess return is affected by the method of payment and if it differs for related and unrelated M&As. The scope is to research the Large Cap Stockholm to contribute to the research with additional geographical data where there is limited information regarding the topic.

1.1. Background

The business market today is both a dynamic and competitive landscape where companies experience growth as not just an option, it is a crucial necessity. Jacob (2006) argues that companies could grow either by developing current assets and abilities within the firm, so-called organic growth or by acquiring such assets and abilities to the company through M&As. The latter could also be done by integrating the acquired assets and abilities into a new operation. Furthermore, M&As could be seen as a way for companies to acquire synergies from other companies as customers, research and development, and new geographical markets to increase revenue. The complex concept has been around for many years but according to Gaughan (2017), the failure rate of implementing the revenue synergies is around 70%.

The reasons behind why companies choose to use M&As to grow varies between both companies and industries. This fact also includes the motive and the strategic reason for M&As, though in general, it follows the same pattern (Goedhart et al., 2017). Furthermore, Goedhart et al. (2017) argue that the following motives could be seen; improvement of the company's performance, merger companies to remove overflow of capacity on the market, quickly increase the company's market share, acquire competence, technology and other important performance factors both cheaper and quicker than what would be possible to develop in house, acquire companies with a great new idea or achieve possible economies of scale.

In Sweden, the amount of M&As, both domestic and cross-borders, has since 2017 decreased every year where it hit bottom in 2020 (Statista, 2020a). Even though the experienced decrease in M&As, Sweden is still among the top ten of the countries in the world that are the most attractive countries for M&As according to Statista (2020b), and in their survey, they are expecting an increase in total numbers of M&As in Sweden year 2021 and 2022, from 448 the year 2020 to 527 and 560 respectively.

There are several ways to try to evaluate if an M&A is successful or not. According to Rehm and West (2016), the market response is one of the main ways, by both practitioners and academics, to determine an M&As success. Rehm and West (2016) argue that the market reaction could depend on several factors, where most of them are contingent only on what

information is given upon them, i.e. the market reaction could be seen as an indication of their understanding of the deal. Hence, there could be some information asymmetry and it is therefore interesting to examine the information given in M&A situations and which factors that will affect how the market reacts.

As mentioned, the amount of M&As in Sweden both have and are predicted to continue to increase in the future. Despite this increase, there is still, according to Faccio and Masulis (2005), much left to investigate, where one is the choice of payment method. During M&A the principals of the acquiring companies must decide whether to offer cash, stock, or a combination of both and as Zhang J and Zhang Y (2011) argues that the choice is crucial for the M&As success it is an interesting factor to investigate how the market reacts due to the choice of payment method.

There have been several studies conducted on this subject. For instance, both Myers and Majluf (1984) and Hansen (1987) finds in their studies that the choice of payment method is affected by information asymmetry, as they both argue that the acquirer will try to utilize the fact that they have the best information about their true value and hence if they believe they are overvalued stock will be offered while cash is offered if they believe that they are undervalued. If target information asymmetry is high it is more likely that the method of payment will be stock (Caneghem and Luypaert, 2014; Raman et al., 2013). There are some different scenarios for the market reaction dependent on the choice of payment method. For instance, both Travlos (1987) and Moeller et al. (2007) find in their research that cash payment will yield a more positive return than a stock payment. The reason behind this is because the market knows what Myers and Majluf (1984) and Hansen (1987) claimed to be true and will hence react upon the information that the method of payment signals to the market. However, Mateev (2017) find evidence that stock payment is preferable and will yield a more positive return, but comments that it may be due to the sample consisting of a lot of unlisted companies.

In industry related M&As there are also a lot of different opinions in the literature regarding the market reaction. For instance, Martynova and Renneboog (2006) find that related M&As will affect positively. It is suggested that a reason for this is that companies in the same industry often have a better understanding of other companies' values than they have for companies in different industries, which implies that the information asymmetry decreases in

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related mergers. As the information asymmetry decreases, Myers and Majluf (1984) and Hansen (1987) findings suggest that cash will be offered and hence the market will react positively. However, Fuller et al. (2002) and Mateev (2017) do not find any evidence supporting this.

Results in previous studies differ in their findings in market reaction to the method of payment and how the reaction may or may not be amplified in industry related M&As. A reason for this could be that most of these studies are based on data from different parts of the world, such as the US, UK, or Europe. However, to the authors' knowledge, none have been conducted with the samples of M&As on Large Cap Stockholm. As the market reaction is subject to geographical, cultural, and industry differences in addition to differences in local investors estimations and corporate governance in the country where the acquirers operate, there could be some differences in the result from what is known by the literature.

As for the cultural differences, Sweden has a low acceptance of power distributed unequally within organisations. Sweden has a relatively high individualism and scores high in caring for others and quality in life and low in being competition-oriented. The country scores average in how long-term oriented the population is, and the culture can be described as restraint (Hofstede Insights, 2022). Nguyen and Belaounia (2020) found that cultural distances have an impact on the method of payment, while geographical distance and differences in languages do not have the same impact. Furthermore, Nguyen and Belaounia (2020) argue that the legal aspect of controlling the company is one of the factors since the acquirer does not want to give influence in the acquiring company to the target which they do not share the same vision, due to the cultural differences. Moreover, Ahn and Cho (2017) find that geographical and cultural differences will affect the method of payment and argue that stock is preferred when these differences are high as it reduces the risk. Nguyen and Belaounia. (2020) findings relate to cross-border M&As. However, both Ahn and Cho (2017) and Nguyen and Belaounia's (2020) findings suggest that these differences may impact how different markets will react to different payment methods in M&As.

This thesis has two hypotheses, where the first hypothesis is that if the offer for the target company is in cash the market reaction will be more positive in the short-term than if the offer would have been in stock or a combination of cash and stock. The other hypothesis is that this association is amplified in industry related M&As.

1.2. Problem discussion

Many factors will contribute to the choice of method, hence there are a lot of different responses from the market depending on what choice and what underlying reasons there are for that payment method. Studies have been made broadly but to the authors' knowledge never isolated to the Swedish market (see e.g. Luypaert & Caneghem, 2014; Heron & Lie, 2002; Sudarsanam & Mahate, 2003). There seems to be a gap in previous research where this thesis could bring new knowledge to the topic.

When an acquirer has chosen a possible target for an M&A a problem occurs regarding how to construct the offer, i.e. the acquirer must evaluate the target's value and then choose which payment method should be used. The valuation must be determined based on the information available for the acquirer, hence information asymmetry must be taken into consideration. The method of payment is likely to be cash if the information asymmetry is low since the information for an accurate valuation is available, hence the risk of overpaying decreases (Myers & Majluf, 1984; Hansen, 1987). To be able to determine the performance based on the choice of method of payment, measurement must be introduced. Commonly used in existing research is the excess return, which gives the M&A return adjusted by the stock market index the company is trading on. The shareholder who owns equity in the company before the announcement would get a greater value by the M&A than invested in the stock index given that the excess return is positive and vice versa (John et al., 2015; Teti et al., 2017).

Industry related companies have lower information asymmetry since they are better understood by the acquirer since the acquirer is well known with the industry sector that they are operating in. Therefore, the choice of the target company should affect the method of payment which should affect the performance of the M&A. To quantify which method of payment the Swedish stock market reacts more positively, the market return at the announcement for the acquirer is taken in relation to the Swedish stock index must be determined. The excess return represents the performance of the M&A. With a great excess return the company valuation will increase.

Andriosopoulos et al. (2016) suggest that there could be some exploitations of information asymmetry, which will affect the choice of method of payment. Moreover, according to Faccio and Masulis (2005), there could be financial distress costs that will impact the choice

of payment method if a company chooses to offer cash for an M&A it often needs to issue more debt. Myers and Majluf (1984) and Hansen (1987) further argue that the share price of the acquirer also affects the choice since if the acquirer's stock is overvalued, they will try to use this fact to get a discount. Therefore, they will be more willing to offer stock rather than cash, and vice versa. Hence, there are a lot of different factors that will affect the choice, and as Rehm and West (2016) mention, the market will react upon what information is given to them, i.e. the underlying reasons behind the choice of method will impact the value growth of the stock, positively or negatively, despite what potential synergies, goodwill, and other factors there may be. This reaction, which only comes from the choice of payment method, is the one this thesis is meant to examine further.

1.3. Purpose

The purpose of this thesis is to provide a quantitative study of the market reactions for M&A on companies listed on OMX Large Cap Stockholm and investigate if the effect is enhanced by companies operating in the same industry i.e. related/unrelated by analysing the announcement return and the impact by the method of payment.

1.4. Research question

Does cash payment generate a greater excess return than stock payment in M&As on OMX Large Cap Stockholm? Does industry related M&A amplify this association?

1.5. Limitations

Problems regarding the connection between market value growth and the method of payment are mostly how to capture the effect from the payment method without the data being biased. Therefore, it is important to avoid bias which will be done by controlling for several factors/variables to only see the result from the method of payment. Another problem is the fact that there could be countless reasons why a market reacts as it does and only a few factors are controlled in this thesis, which could affect the results obtained.

The period that is taken into consideration is between 2015-2020. Furthermore, the study will isolate the Swedish stock market OMX Large Cap Stockholm, according to the purpose of this thesis. The most significant variables that need to be controlled in the regression model have been limited to Leverage, Deal Value, Return on Assets, Market Capitalization, and

industry related M&As. The parameters market-to-book ratio and ownership structure has been used in prior research (see e.g. John et al., 2015; Teti et al., 2017) since the data for these parameters were not available for the sample in the Bloomberg database, they are excluded. The thesis will only treat the short-term effect two days before and after the announcement of the M&A until two days after the announcement ([-2,2]). This is to reduce the noise from other events which are difficult to measure. The sample size is 357, the deal value will be treated separately since there were only 275 observations available in the Bloomberg database.

2. Theoretical framework and literature review

In this part, different topics will be presented and described which will provide a deeper understanding for the reader and enable a more extensive analysis of the results obtained. Furthermore, a literature review of related research will also be presented in this part to enable the reader to get more background information about the scope of this thesis.

2.1. Information asymmetry

Information asymmetry occurs in several events in economics where one party has substantially more information than another party. Such events could be for instance an economic transaction. Where information asymmetry will play a crucial part, is when the party with less information would have acted differently when given all the information (Mohn, 2020). Mohn (2020) is not alone to acknowledge the effect and implications of information asymmetry. Bentzen et al. (2019) also argue about the importance of information and define information asymmetry as the knowledge gap between the insiders and outsiders of a firm, where the insiders have more knowledge about aspects such as actual performance and opportunities than what an outsider has.

Mohn (2020) argues that the concept of information asymmetry has been an important subject in economic analysis for several years. According to Mohn (2020), the theories regarding information asymmetry first developed around 1970 where one key economist, George Akerlof was one of the most influential in this process and was later rewarded with the Nobel prize for his findings. Löfgren et al. (2002) argue that Akerlof's findings are one of the most important contributions to the problem regarding information. In his research Akerlof (1970)

argues about the importance of information and how asymmetric information between two parties, in his case a buyer and a seller of used cars, will affect demand and supply of such. This phenomenon Akerlof (1970) named the Lemon Problem and will be further discussed below.

Akerlof (1970) describes that information asymmetry leads to malfunctioning markets and claims that the problem of information asymmetry is a consequence of the cost of dishonesty. Furthermore, Ackelof (1970) discusses how the problem with distinguishing good quality from bad is a crucial part of many aspects of the business world. What Akerlof (1970) establishes is that there are cases with information asymmetry, intentional or not, a cost to pay which will affect the buyer, seller, or both.

Even though the consequences of information asymmetry are often referred to as negative, there are sometimes some positive effects. According to Mohn (2020), one such case is in the job market where the person applying for the job is the only one who truly knows their expertise, while the one who hires only knows what is written down on the resume. Mohn (2020) argues that a positive effect of the information asymmetry between those two parties could be the surprise when the employee's performance exceeds the expectations of the employer.

2.2.1. Lemon problem

A related topic to information asymmetry is the lemon problem that Akerlof (1970) first acknowledged. Akerlof (1970) describes how a problem of quality occurs due to asymmetric information between two parties, which he refers to as the lemon problem. This problem could occur when there are two parties and two types of quality, good or bad, and where the seller only knows the quality of the good. Then the buyer tends to be willing to pay less since they do not know anything about the quality of the purchased goods beforehand (Akerlof, 1970). Akerlof (1970) argues that this fact will lead to a decrease in price and that the quality goods will disappear from the market, which will increase the number of bad quality goods and hence will lower the price further. According to Akerlof (1970), this downward spiral will continue until the market only exists with bad quality goods, i.e. only lemons.

2.2.2. Adverse selection

Adverse selection is according to Dziak (2021) a topic that is related to information asymmetry. Dziak (2021) explains how adverse selection is an effect of the asymmetric information between two parties in a transaction, where one party has more knowledge and uses this fact to gain a more favorable position, i.e. maximize the own benefits from the transaction at the expense of the other.

Dziak (2021) argues that adverse selection occurs in many different industries and may have many different effects. Furthermore, Dziak (2021) explains how these effects could favour different parties depending on the situation, but the seller is often the most favourable and due to that it is often referred to as harmful or immoral. Moreover, similarities could be seen between adverse selection and the lemon problem described above.

Hayes (2021) argues how adverse selection plays a crucial part in financial aspects. One example that Hayes (2021) presents is that a company would be positive to issue new shares given that they know their shares are overvalued and due to this the buyer of the shares could risk losing money if they buy them and hence fall victim to the effect of adverse selection.

2.3. Payment method

When planning for an M&A two important choices must be taken into consideration according to Zhang J and Zhang Y (2011), namely which firm to acquire or merge with and which method of payment should be used. Furthermore, Zhang J and Zhang Y (2011) define the method of payment as the resources and financial tools that will be used by the purchasing company to acquire control over the target company. Moreover, Zhang J and Zhang Y (2011) argue that the choice of payment method is crucial for the M&As success as it will have effects on the performance of the M&A.

Zhang J and Zhang Y (2011) mention that cash payment is a simple payment method where the purchasing company uses cash or cash equivalents to purchase stock or assets from the target firm, while stock payments are when the purchasing firm offers its stocks to buy out the target firm. Furthermore, Palmer (2021) argues that cash is used as the method of payment when the acquirer has strong beliefs that the market reaction will be positive due to for instance possible synergies and vice versa.

One important factor that will affect the choice of payment method according to Caneghem and Luypaert (2017) is information asymmetry. Caneghem and Luypaert (2017) argue that in an M&A negotiation both the acquirer and target will be unsure about the other party's real value because of the asymmetric information, which will affect the preferred offer.

If the information asymmetry is high in the target level both Caneghem and Luypaert (2014) and Raman et al. (2013) argue that the acquirer will have a hard time determining the target's value as the target has the best information about its value. As Hansen (1987) argues that the target only will accept an offer if the value is equal to or exceeds its real value a lemon problem arises. Raman et al. (2013) and Caneghem and Luypaert (2014) argue that the acquirer is well informed about this fact as they claim that they could protect themselves from this adverse selection by offering stock. Moreover, both Fuller et. al (2002) and Caneghem and Luypaert (2014) agrees with this as they argue that if the acquirer is uncertain of the value of the targets firm, they would probably offer stock since, as Hansen (1987) also mentioned, the target firm would only accept a cash offer bigger or equal to their understanding of its value. That stock is most preferred when the target is opaque is also consistent with more recent studies such as Kim and Thompson (2020) and Bugeja et al. (2021), where the latter claims that stock is used to share the risk associated with the risk regarding information. Moreover, Kim and Thompson (2020) further argue that their findings are restricted to the US market and urge that their findings should be tested on other markets to see if it is consistent.

If the information asymmetry is high at the acquiring level both Myers and Majluf (1984) and Hansen (1987) finds that the acquirer will finance the M&A with cash when they consider their stock to be undervalued and with stock if it is overvalued, and as the uncertainty of the acquirer's value increases, the adverse selection effect tends to increase as well. Furthermore, as already stated, Hansen (1987) argues a lemon problem arises if the information asymmetry is high at the target level, and if the information asymmetry also is high at the acquirer level a double lemon problem arises, as the acquirer only has the information of its value. Hence, the acquirer will offer cash if the target undervalues its stock and vice versa. This aspect is in accordance with Fuller et. al (2002) beliefs, who argue that when information asymmetry is present each firm will have its understanding of the value of their firm, i.e. if it is undervalued or overvalued, and depending on their understanding, they will be more or less willing to use cash as a method of payment. In other words, Fuller et. al (2002) mean that if the acquirer's

stock is undervalued, the bid will most certainly be consistent with cash as they would have to offer more stock than the actual value of the firm, while the target, who is unsure about the value due to the asymmetric information, would be more pleased to close the deal with stock instead.

Another aspect related to the information asymmetry, which will affect the choice of method of payment according to Officer et al. (2009) is the risk aspect of the deal. Officer et al. (2009) argue that with an increase in uncertainty the more the probability of the choice of payment being stock will increase. Officer et al. (2009) mention that in a deal with the presence of information asymmetry there will also be uncertainty if the acquirer will overpay for the target if they offer cash. Officer et al. (2009) claim that if the deal instead consists of stocks both parties then share the risk of overpayment. Officer et al. (2009) claim agrees with Hansen (1987) as he claims that if the information asymmetry about the targeted company is high the payment method will likely be stock, as the risk will be divided between the principles of the acquiring company and the acquired company.

The method of payment is according to Zhang (2001) a well-documented subject, though according to Faccio and Masulis (2005) there is still much left to investigate. Despite the different opinions of what decides the method of payment, several authors agree that it is a critical factor in how the market will respond to an M&A.

Travlos (1987) finds in his research that using stock as the payment method in an M&A will yield a negative return while cash as the method of payment leads to a more positive return. Furthermore, Travlos (1987) argues that when a firm acquires a target with stock as the payment method it will lead to the market acknowledging that as information from the acquirer believing their stock is overvalued, which is consistent with what Myers and Majlufs (1984) documented. Travlos (1987) concludes that this could be a result of the adverse selection, which also Faccio and Masuis (2005) claims as they argue that it is one reason why stock as payment type is expected to lead to a negative reaction. What Travlos (1987) finds is in accordance with Myers and Majluf (1984), Hansen (1987) and Fuller et al. (2002) findings regarding overvalued stock, i.e. stock payment implies overvalued stock for the acquirer and hence, the market will react negatively. Myers and Majluf (1984) argue further that the negative return of stock payments increases as the information asymmetry increases. However, in Fuller et. al (2002) research they found no significant results for cash or a

mixture of both, only significantly negative results for stock, which is inconsistent with e.g. Travlos (1987).

Consistent with Travlos (1987) findings is Moeller et al. (2007) as they found that the announcement returns for M&As when payment consists of stocks tend to decrease as the information asymmetry increases for the acquirer. This fact could be seen because of the adverse selection as Myers and Majluf (2984) reported. Moreover, Moeller et al. (2007) explain the prediction of announcement returns in M&As as positive when the method of payment is cash and negative if it is stock. The reason behind this according to Moeller et al. (2007) is that when a cash offer is made, the market believes that the target is undervalued and will react positively upon that. Eckbo and Langohr (1989) find evidence in accordance with both Moeller et al. (2007) and Travlos (1987) as they claim that the acquirer's choice of payment method depends on the level of asymmetrical information between the two companies and the choice will signal information to the market.

Several other studies report similar results in how the method of payment will impact the market return in M&As. Heron and Lie (2002) studied 859 acquisitions between 1985 to 1997 and found evidence that stock yields a negative return while cash yields a more positive return, which is in accordance with Travlos (1987). Loughran and Vijh (1997) uses excess return as the measurement for the market reaction and find that cash offers earn significantly higher excess returns than stock offers. However, Loughran and Vijh (1997) study are on the long-term market reaction. Linn and Switzer (2001) find that when cash is offered in M&As it tends to outperform others that use stock as a method of payment. Even though the aim of Linn and Switzer (2001) study was not to establish why cash offers outperform stock offers in M&As they conclude that it can be explained by information asymmetry between the two parties, as mentioned by Myers and Majluf (1984) and Hansen (1987). More recent studies, for instance, Bugeja et al. (2021) find that cash offers in the presence of information asymmetry for the acquirer lead to a more positive return, which is consistent with Moeller et al. (2007) in the aspect of cash offers yield a more positive reaction. However, Bugeja et al. (2021) use a different approach to measure information asymmetry in contrast to earlier studies. Furthermore, they did not find any significant results for market reactions regarding stock offers.

The empirical studies above clearly show that cash is expected to generate a more positive return on the market than a stock payment. However, some authors, for instance, Healy et al. (1992) and Mateev (2017) find evidence that does not support these findings, where the prior study however only included very few observations (around 50). Even though such studies exist, there is still a majority (see e.g. Travlos, 1987; Wansley et al., 1987; Amihud et al., 1990; Bugeja et al., 2021) that finds that cash payment implies a higher return than a stock payment.

The findings presented here are from samples different from what will be analysed in this thesis. However, some studies have included a few observations from Sweden, e.g. Faccio and Masulis (2005) included a sample of 197 Swedish acquirers in their study. Since there are geographical, cultural, and industry differences in Sweden compared to the rest of the world (Hofstede Insights, 2021) it is interesting to see if the results hold in the context of the Swedish market. The hypothesis is that cash payment will generate a greater excess return than a stock payment. This thesis will contribute with data analysed on the Swedish stock market exchange OMX30 which will complement the existing research.

2.4. Synergies: Industry related transactions

Barone (2021) defines synergies as when the performance of two companies together creates more value than what they separately can create. Ficery et al. (2007) definition is in accordance with Barone (2021) as they define synergies as the present value of the net additional cash flow generated by the two companies together, which could not have been generated if they worked separately. Both Barone (2021) and Holmberg et al. (2009) claims that the synergy effects are one of the main reasons companies decide to go through with M&A's. Holmberg et al. (2009) further describe those synergies can come from different sources, such as financial, economies of scale and scope, efficiency gains or as a gateway for new markets.

Even though synergy effects are described as a crucial factor behind why companies do M&As, there is still a lot of literature arguing about its importance (Holmberg et al., 2009). Kürsten (2008) mentions how synergistic mergers do not imply more value for its shareholders, and hence, shareholders are best advised to doubt promises of synergies made by executives when acquiring other firms. Moreover, Kürsten (2008) argues that the acquirer

should focus on explaining where some synergies might come from and how these will come to value for them to ensure a positive reaction.

Holmberg et al. (2009) describe another important synergistic effect, namely effects from relatedness and argue that relatedness could be categorized into business, cultural, technological, and size relatedness. Others, such as Flanagan (1996), define related M&As as when the acquiring and the acquired firm before the M&A operate in the same business. Gupta et al. (2021) explains that the most used definition in literature is that there are several similarities between the acquiring and the acquired firm. Moreover, Gupta et al. (2021) explain that SIC-code is often used as evidence of whether the firms in an M&A are related or not. Another definition of relatedness is according to Shelton (1988) that for an M&A to be classified as related, the acquiring and the acquired firm should have similar customers and similar offerings (e.g. products). Even though these definitions are somewhat coherent with each other there are some differences that can explain possible differences in the literature.

According to Flangan (1996), there is a lot of empirical research that argues that related mergers tend to increase more value for its shareholders than unrelated, i.e. the expected market reaction is expected to be higher for related M&As. Flanagan (1996) used a different definition than earlier research. However, he also found results that support the earlier empirical research. Moreover, both Porter (1985) and Lubatkin (1983) argue that M&As, where target and acquirer are related, outperform those where target and acquirer are unrelated. Cefis and Rigamonti (2013) also acknowledge this fact and claim that a crucial factor for success is the degree of relatedness. According to Cefis and Rigamonti (2013) related M&As are more unlikely to be affected by information asymmetry and hence the problem regarding the method of payment and valuation decreases. Furthermore, Cefis and Rigamonti (2013) argue that high relatedness leads to a smoother integration of the acquired company, which together with the already mentioned, leads to related acquisitions being more valued by for instance investors than unrelated ones.

Several other authors found results in accordance with Flanagan (1996), Porter (1985) and Cefis and Rigamonti (2013) findings, (see e.g. Singh & Montgomery, 1987; Chatterjee et al., 1992; Martynova & Renneboog, 2006). Furthermore, both Shelton (1988) and Datta et al. (1992) observe that related M&As is superior to unrelated M&As in the aspect of creating value for the stockholders. Flanagan (1996) agrees with these findings and claims that the

market return should be expected to be more positive for the acquirer in related M&As. Both Morck et al. (1990) and Martynova and Renneboog (2006) strengthen these arguments as Morck et al. (1990) finds in their research that a principal agent problem could arise for unrelated mergers, as they claim that managers acquire unrelated companies for their benefit at the expense of the shareholders while Martynova and Renneboog (2006) claims that acquirer tend to overpay for unrelated M&As and the motives behind those are not driven by maximization of shareholder wealth.

However, the empirical research is not unanimous in the aspect of related M&As creating value for the market return. There are for instance several reasons for why unrelated M&As could be seen as more favorable and is described by Higgins and Schall (1975) and Seth (1990) as they argue that unrelated M&As could for instance lead to a more stable income and a decrease in the risk of bankruptcy. Furthermore, Seth (1990) presents several factors which generate value and could help to understand why related or unrelated M&As, these are; Market power, Economies of Scope, Economies of Scale, Coinsurance and Financial Diversification. Market power, economies of scale and scope are value drivers for related M&As while value drivers for unrelated M&As are coinsurance and financial diversification, where coinsurance is the fact that earnings from several uncorrelated sources of income generate lower bankruptcy risk and financial diversification implies reduced variance of return (Seth, 1990).

Moreover, Elgers and Clark (1980), Fuller et al. (2002) and Mateev (2017) claim that related M&As do not generate a more positive market return than unrelated M&As. This is in accordance with Matsusaka (1993) and Blackburn et al. (1990), where the latter argued that related or unrelated does not alone predict the market reaction of M&As. Furthermore, Blackburn et al. (1990) claim that unrelated M&As do not imply either good or bad performance and it is up to the manager and their choice of strategy if the M&A will succeed or not.

As for the information asymmetry aspect of related M&As, Raman et al. (2013) argue that M&As, where companies are industry related, more often exchange information through different R&D forums, conferences and management meetings. Therefore, the asymmetric information is lower in industry related M&As and argues that the acquirer will therefore use cash as the method of payment. This is consistent with Cefis and Rigamonti (2013) who also

argues that related companies have lower information asymmetry. In turn, this would likely lead to cash payment. This implies that the companies have more common knowledge about the companies' respective values and according to Hansen (1987), the acquirer would then not be able to take advantage of superior information and offer overvalued stock which would lead to that cash will be preferred. This is consistent with Klitzka et al. (2021) who argues that targets would not accept overvalued stock if this can be determined by the better-known information about the acquirer. As several studies (see e.g. Travlos, 1987; Wansley et al., 1987; Amihud et al., 1990; Bugeja et al., 2021) finds that cash payment will provide a higher return than the stock payment, it is suggested that industry related M&As would give a higher excess return. Moreover, Linn and Switzer (2001) find in their studies that cash offers would outperform stock offers in general and concluded after that it improves for industry related M&As and argued that it is since the more information acquirers have the better understanding of potential synergy gains and hence, they will be more opt to offer cash in related M&As. However, Linn and Switzer (2001) did not find the same improvements between stock offers and industry relatedness.

The majority of available research (see e.g. Ramen et. al, 2013) points to the fact that the industry related M&As have less information asymmetry and higher synergies between the acquirer and the target firm. These articles have not investigated the Swedish stock market where this thesis can contribute. Since there are cultural, geographical and economical differences (Hofstede Insights, 2021) it is interesting to investigate if evidence supporting the existing research could be concluded from Large Cap Stockholm.

As information asymmetry tends to decrease in industry related M&As, the hypothesis is that the positive effect on the excess return from cash payments will be amplified in industry related M&As

3. Data and research design

In this section, the method used in this thesis will be described and definitions for all the variables will be made together with an explanation about why they are chosen. Moreover, the data collection process will be described, and the distribution of the sample will be presented.

3.1. Data collection

This thesis considers all occurred M&As between the years 2015 to 2020 on the Large Cap Stockholm, hence, the acquiring firms are publicly listed Swedish companies. As the dataset contains a lot of observations from a defined period, cross-sectional data is used. Moreover, the dataset containing the dependent variable, the independent variables and the control variables were collected for all M&As available in the Bloomberg database. For the data to be valid for this thesis it had to fulfil certain criteria: (1) the deal was announced within the given years, (2) the deal was completed within the given years, (3) the acquirer was and still is listed on the Large Cap Stockholm, (4) information of the payment method where given, i.e. payment type was either cash, stock or a combination of both, (5) the information regarding the deal enabled data for the control variables (except for deal value which was accounted for by separate regression models).

The dataset obtained consists of 357 observations after the data which did not fulfil all the criteria mentioned were filtered out. Furthermore, the data for stock return were also obtained through Bloomberg and were isolated within an interval of 2 days before until 2 days after the announcement of the M&A. This is done because this thesis only investigates short-term effects and does not consider any long-term effect, since long-term effects are hard to obtain because of noise and are not in the scope of this thesis.

In table 1 both the distribution between M&As in different industries as well as different years are shown. Besides the frequency of every M&A in the different categories, the percentages are also shown to provide a clear overview of the distributions of the M&As in the sample.

Table 1, M&A Distribution by industry and year.

Distribution by Industry	Frequency	%
Industrial	65	18
Consumer, Non-cyclical	71	20
Technology	29	08
Energy	3	1
Communications	63	18
Basic Materials	8	2
Consumer, Cyclical	40	11
Financial	75	21
Utilities	2	1
Observations	357	100
Distribution by Year		
2015	60	17
2016	64	18
2017	61	17
2018	68	19
2019	53	15
2020	47	13
Observations	357	100

The distribution of the industry shows that most of the M&A were from the financial, consumer (non-cyclic), industrial and communications. Followed by the consumer, cyclic, and technology that were 11% and 8% respectively. Base material, energy, and utilities occurred in a few M&As. The yearly distribution shows that M&As between 2015-2020 was arguably normally distributed. The min was 47 observations or 13% which occurred in 2020 and the max was 68 observations or 19% which occurred in 2018. A possible reason for the lower number of M&As was the market insecurity due to the COVID-19 pandemic.

3.2. Methodology

To investigate the scope of this thesis, a quantitative study will be conducted. The study will be conducted in a short-term window event (Zollo and Meier, 2008). In the long-term event, the excess return of an M&A has more noise compared to the shorter interval and the result

would therefore be less accurate (Teti et al., 2017). The dataset starts two days before the announcement until two days after the announcement. Data is collected from Bloomberg, which will be used for the T-test, correlation matrix and OLS-regression analysis that will be the base of the result and analysis. The relatedness of the acquiring and acquirer will be investigated since the prediction that the market value will increase if there are synergies that can be utilized for economies of scale, accessibility to new geographical markets and research and development can be utilised to improve the products/services etc.

The method of payment and M&As are areas well examined. Therefore, a wide range of academic reports and articles from professionals in this area of study are taken into consideration. This will provide a high level of information and will be a guide to support which variables are needed to control for, measure, and strengthen the findings.

To compare the means between the different methods of payment T-tests will be utilized, these T-tests will be calculated using IBMs statistical software, SPSS. The means, T-values, and P-values will be analysed to find the significance and variation the method of payment has on the excess return.

A total of 24 regression models, three T-tests, and two correlation matrices are analysed to find the impact of the method of payment on the excess return, and if this impact is any different in industry related or industry unrelated M&As.

Dependent Variable

Excess Return

To measure the performance of the M&A the variable excess return is used. The excess return of the company is how the acquirer performed compared to the index in the short-term window event. To calculate an excess return the daily return is cumulative for the acquiring company, the daily summarized return of the alternative investment should be subtracted from the investment the excess return is calculated for (John et al., 2015). In this case, OMX is used as a benchmark to provide what the investor's return would be invested in the acquirer compared to the Stockholm OMX index.

$$R_{Excess} = \sum_{i=t-2}^{t+2} (R_{Acquirer_i} - R_{OMX_i})$$

This parameter shows the return for the companies from 2 days before the announcement of M&A to 2 days past the announcement which is subtracted by OMX return during the same period.

Independent variable

Method of payment: cash/stock/mixed

These parameters represent what method of payment the acquiring company uses to acquire the targeted company, cash, stock, or a mix of both. The methods of payment are divided into three separate parameters with binary values to represent:

1. cash, non-cash
2. stock, non-stock
3. mixed, non-mixed

Control variables

There are a lot of conflicting results regarding the impact of acquirer's attributes and deal attributes, but the research suggests that this attribute has an impact on the M&A performance, therefore the variables will be controlled for in our regression models to isolate the impact from the method of payment (Teti et al., 2017).

Market Capitalization

The size of the acquiring and targeted company has an impact on the market value reaction therefore this parameter will be controlled to be able to account for the impact the parameter has on the result. Values for market capitalization will be log-transformed since data is not normally distributed. Companies with higher market capitalization have a higher possibility of taking on debt, therefore they tend to use cash as a method of payment (Myers 1977).

Deal Value

The Deal Value is the amount paid by the acquirer excluding broker fees etc. Arguably the return is not impacted by deal value according to Moeller et al. (2007). This parameter represents the total value of the M&A which will be controlled for in the regression analysis since the value of the deal could result in a different method of payment. It is more likely to use stock as payment if the deal value is greater since it would require greater loans or liquidity (Hansen, 1987).

Return On Asset (ROA)

ROA is used to find out the acquirer's net income divided by the total assets. This parameter will be used as a control variable in the regression models. If the acquiring firm has high ROA it signals that the company is high performing which suggests that the market reaction to a company announcing an M&A would be more positive than if the ROA was low hence the excess return will be greater. Acquiring a company with debt would be more likely with a high return on assets since the credit institution will see a lower risk of default.

Leverage

The Leverage percentage is calculated by the debt divided by the total value of equity. The leverage ratio of the acquiring company affects the possibility of debt financing the M&A since the risk for the credit institution increases if the leverage is high (Faccio and Masulis, 2005). The leverage will be taken into consideration in the regression model to be able to control for the effect the leverage has on the dependent variable. Faccio and Masulis (2005) argue stock is preferable if other investment opportunities exist to reduce the financial distress.

Industry related

This parameter is to find out if the companies with synergies have more successful M&As than the companies merging or acquiring a company without any industry relatedness. The parameter is represented by binary values, '1' for relatedness and '0' non-relatedness. Global Industry Classification Standard (GICS) is used to group the companies by sector which is compared to determine the relatedness. If the information asymmetry is high in the target company the acquirers are more likely to pay with stock to minimize the risk. If the target

company is operating in a related sector the information asymmetry is arguably lower, hence the method of payment would be more likely to be cash (Faccio and Masulis, 2005).

3.3. Descriptive statistics

In Table 2 the descriptive statistics from the sample are presented. The values for Min, Max, Mean and Median are chosen to provide an overview of the spread of the different variables.

Table 2, Descriptive statistics

Descriptive stats				
	Min	Max	Mean	Median
Dependent Variable				
Excess Return (%)	-14,97	22,01	1,44	0,89
Control Variables				
Acquirer Financial Leverage	0,01	0,12	0,03	0,03
Acquirer Return on Assets	-0,84	0,46	0,05	0,06
Log(Acquirer Market Capitalization)	19,11	28,42	23,00	22,89
Log(Deal Value)	12,09	0,47	5,56	5,46
Industry Related	0,00	1,00	0,62	1,00
Independent Variables				
Payment type Cash	0,00	1,00	0,82	1,00
Payment type Stock	0,00	1,00	0,06	0,00
Payment type Mix	0,00	1,00	0,12	0,00

As seen in descriptive statistics, the excess return varies between -14.97% to 22.01% and from the positive mean and median the observation can be made that the market, in general, reacted positively to M&As on the Swedish Large Cap Stockholm between the years 2015 to 2020. As for the payment type, there exists a clear tendency to use cash in the M&As in the dataset, as it is the most used with 82% followed by mixed and stock with 12% and 6% respectively. Moreover, in 62% of the cases, the acquirer and target were industry related which might suggest that the acquirers prefer to acquire targets that could lead to synergy effects or acquire possible competitors. Another reason is as described in earlier literature (see e.g. Cefis and Rigamonti, 2013; Ramen et al., 2013) that the degree of relatedness negatively correlates with asymmetric information and hence, it might also suggest that acquirers prefer to acquire targets where they have the most information.

3.4. Correlation matrix

In this part, the sample is checked for correlation. This is done to accentuate possible relationships among all the different variables in the dataset. The correlation check is done using Pearson's R, where the correlation coefficient varies between -1 and 1. A correlation coefficient equal to 1 indicates a perfectly positive correlation and -1 a perfectly negative correlation. All the correlations obtained are presented in a correlation matrix in Table 3, which is without deal value, and Table 4 where deal value is included.

Table 3, Correlation matrix without deal value

	Correlations							
	Market Cap. Logarithmic	Return On Assets	Financial Leverage	Excess Return	Industry Related	Payment type Cash	Payment type Stock	Payment type Mix
Log(Market Cap)	1,000	0,092	0,186**	-0,231**	0,187**	0,179**	-0,090	-0,146**
Return On Assets		1,000	-0,110*	0,006	-0,145**	0,135*	-0,144**	-0,055
Financial Leverage			1,000	-0,066	0,160**	0,063	-0,021	-0,059
Excess Return				1,000	-0,061	-0,056	0,016	0,055
Industry Related					1,000	0,043	0,026	-0,069
Payment type Cash						1,000	-0,540**	-0,789**
Payment type Stock							1,000	-0,091
Payment type Mix								1,000

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

As seen in Table 3, for the dependent variable excess return there is only one significant correlation, which is the Market capitalization parameter. The other control variables and the independent variables have no significant correlation to the dependent variable excess return.

The market capitalization has a significant correlation with payment type cash and mix, since the correlation with cash has a positive correlation, the conclusion can be drawn that the higher the market cap the greater the probability is to use cash. A similar conclusion could be drawn for ROA and the payment type, as ROA has a positive correlation with cash and a negative correlation with stock, the assumption is that the higher ROA the higher the probability of using cash as the payment method.

Table 4, correlation matrix with deal value

	Market Cap. Logarithmic	Return On Assets	Financial Leverage	Deal Value (Log)	Excess Return	Industry Related	Payment type Cash	Payment type Stock	Payment type Mix
	Correlations								
Log(Market Cap)	1,000	0,135*	0,175**	0,521**	-0,235**	0,175**	0,158**	-0,086	-0,126*
Return On Assets		1,000	-0,070	0,115	0,007	-0,112	0,138*	-0,106	-0,085
Financial Leverage			1,000	0,075	-0,043	0,136*	0,124*	-0,062	-0,103
Log(Deal Value)				1,000	-0,012	0,191**	-0,001	-0,003	0,003
Excess Return					1,000	-0,072	-0,002	0,023	-0,015
Industry Related						1,000	0,026	0,020	-0,048
Payment type Cash							1,000	-0,586**	-0,761**
Payment type Stock								1,000	-0,080
Payment type Mix									1,000

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).

In Table 4 the control variable deal value is included in the correlation matrix. As seen in Table 4 the deal value only has one significant correlation which is a positive correlation with the industry related variable. Furthermore, the results obtained differ in some aspects, such as financial leverage now has a significant positive correlation with cash as the payment method and that stock now has not any significant correlations with any variable. However, for the rest of the variables in Table 4, the result does not deviate much from Table 3 regarding significant results. For instance, the excess return has still only one significant correlation, i.e. the Market capitalization parameter.

The correlation Table 3 and Table 4 showed no significant correlation between the excess return and any of the payment methods. Furthermore, as seen in both Table 3 and Table 4 there is a risk for multicollinearity for the independent variables, meaning that there could exist some intercorrelations between the three independent variables (Hayes, 2022). However, this problem is taken into consideration by using four different models in the regression analysis. Three models with both every independent variables treated separately, and a fourth model where all independent variables are treated together.

3.5. Regressions

To investigate how the method of payment will affect the excess return, ordinary least-square (linear) regression models are used to determine the statistical evidence of impact by the independent variables (cash, stock, or a mixture of both) on the dependent variable (excess return).

$$Excess\ return_i = \alpha + \beta_i X_i + \gamma_i Z_i + industry\ fixed\ effect\ +\ Year\ fixed\ effect + \varepsilon_i$$

Where α is constant, β_i is the coefficients for the independent variables, γ_i is the coefficient for the control variables, and i represent each company. X_i and Z_i are two vectors that include the independent variables and control variables respectively. The independent variables consist of the payment type cash, payment type stock, and payment type mixed, which represents the different methods of payment. The control variables consist of acquirer financial leverage, acquirer return on assets, deal value, and industry related and market capitalization. Furthermore, as seen in the regression model, the year fixed effect is controlled for as differences in market reactions could be affected by the overall economic climate from one year to another. To be able to investigate the effect of the method of payment in related and unrelated M&As the industry fixed effect is controlled for.

3.6. Validity and reliability

Bryman and Bell (2011) argue that to confirm that the validity of the study is dependent on the correct measures that to confirm the validity of the study is dependent on whether the correct measures are used to meet the purpose of the study. In this thesis measurements from Bloomberg are retrieved for the independent and control variables. To find the relationship between the dependent and independent variables regression models are used which accurately measure the relationship between the method of payment and excess return. To further validate the thesis the methods chosen are of a general character, previous publications and studies have been based on a similar methodology to reach results for the relationship in other time periods and geographical areas.

Moreover, to ensure validity and reliability throughout the thesis both internal and external audit were used. To ensure interna validity both authors audited each other, and every aspect of the work is accepted by the counterparty before moving forward. If different opinion

appeared a discussion was held on how the next step should be, which according to Lincoln and Guba (1985) is the main way to go to ensure reliability to a thesis like this.

To ensure the study's validity external audit were used. Lincoln and Guba (1985) describe thick-description as one way to ensure external validity. This is done in this thesis be describing in depth the method, both for the regression and literature review as well as the analysis and conclusion. Furthermore, to ensure external validity, the thesis was continuously audited by the supervisor Mussa Hussaini.

According to Bryman and Bell (2011) the study should be able to be reproduced by other researchers, what steps have been taken, and why the steps are taken needs to be described in detail. To ensure the reliability of the study, the method is described in detail to be able for others to replicate the results of this thesis.

4. Results

In this section, different T-tests will be presented which compares all the means from the different payment types. Moreover, all the regression models, as well as the results obtained from them, will be presented, and discussed before any conclusions will be drawn from the analysis.

4.1. T-tests

The T-test compares two means independently to find out if there are any statistically significant differences between the two groups. In these independent T-Tests, the test variable is set to excess return to test the hypothesis that the method of payment will affect the excess return. As seen in table 4 all payment types seem to have a positive impact on the excess return. However, as the P-value is higher than 10% there are no statistically significant conclusions that could be drawn from this.

Table 4, T-tests for excess return grouped by the method of payment

Independent T-Test (n)	Method of payment	Frequency	Mean	T	P
Test 1	Cash	294	1,30	1,07	0,29
	Non-Cash	63	2,10	1,07	0,29
Test 2	Stock	21	1,79	-0,31	0,76
	Non-Stock	336	1,42	-0,31	0,76
Test 3	Mixed	42	2,25	-1,04	0,30
	Non-Mixed	315	1,34	-1,04	0,30

The results obtained here do not support most findings in earlier studies. For instance, Travlos (1987) all found a significantly negative market return for stock payment and a more positive market return for cash payment. It does not support the hypothesis that cash will yield a more positive excess return than stock, which according to the T-test is not the case. The reason for this could be for instance as seen in Table 2, that all M&As relate to positive excess return in general.

Moreover, since no significant result is obtained, the assumption that the method of payment will impact the excess return could be questioned from our data. However, in the T-test, no other variables are controlled for which could affect this result. If so, it will be seen in the regression models.

4.2. Regression analysis

In the regression models, the parameter excess return will be set to be the dependent variable as the goal is to investigate the impact on the excess return from the independent variables. Further, different variables are controlled for. The regression models show the unstandardized Beta coefficient and the significance level (p-value) of each independent/control variable in relation to the dependent variable excess return. The deal value and market capitalization are analysed on a logarithmic scale to get a normal distribution.

4.2.1. Regression base models

Table 5, Regression summary, deal value excluded.

	Model (1)	Model (2)	Model (3)	Model (4)
Dependent Variable: Excess Return	Cash	Stocks	Mix	All payment
Cash Payment	-0,253			-0,362
	(0,735)			(0,681)
Stock Payment		-0,024		-0,330
		(0,984)		(0,851)
Mixed Payment			0,359	
			(0,873)	
Acquirer Financial Leverage	-7,456	-7,800	-7,483	-7,466
	(0,736)	(0,724)	(0,735)	(0,736)
Log(Market Capitalization)	-0,701	-0,710	-0,702	-0,701
	(0,000)	(0,000)	(0,000)	(0,000)
Acquirer Return on Assets	1,411	1,273	1,346	1,357
	(0,636)	(0,670)	(0,649)	(0,650)
Industry Related	-0,129	-0,134	-0,123	-0,123
	(0,828)	(0,822)	(0,836)	(0,836)
Constant	17,990	18,008	17,744	18,093
	(0,000)	(0,000)	(0,000)	(0,000)
Year fixed effect	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes
Number of observations	357	357	357	357
R^2	0,055	0,055	0,055	0,055

The first regression table, Table 5, shows the 4 different models and the impact on the excess return. From observations in model (1) the coefficient for cash payment is negative, but since the P-Value is 0,735 (>10%) this is not statistically significant. Neither is the control variable leverage, return on assets or industry related. The only significant impact observed in the first regression model is the market capitalization, which negatively impacts the excess return. Similar results are observed in model (2) as the coefficients for stock payment are also negative but do not have any significance. For mixed payment from model (3), there is a positive coefficient, but as for cash and stock, it has no significance. From model (4) concludes the same result, the cash payment, stock payment and mixed payment have no

significance in the model. Hence, there is no statistically significant impact from the method of payment or industry related to the excess return. Furthermore, the R-squared value is rather low, indicating that the variation of the dependent variable is not much explained by the independent variables (Faccio and Masulis, 2005).

Table 6, Regression summary, Deal Value included.

Dependent Variable: Excess Return	Model (1) Cash	Model (2) Stocks	Model (3) Mix	Model (4) All payment
Cash Payment	0,719			1,083
	(0,441)			(0,343)
Stock Payment		0,019		0,955
		(0,989)		(0,579)
Mixed Payment			-1,072	
			(0,344)	
Log(Deal Value)	0,445	0,429	0,445	0,446
	(0,020)	(0,025)	(0,020)	(0,020)
Acquirer Financial Leverage	2,172	5,206	2,310	2,088
	(0,952)	(0,884)	(0,948)	(0,954)
Log(Market Capitalization)	-1,028	-1,001	-1,028	-1,030
	(0,000)	(0,000)	(0,000)	(0,000)
Acquirer Return on Assets	1,127	1,488	1,207	1,174
	(0,738)	(0,657)	(0,718)	(0,728)
Industry Related	-0,539	-0,529	-0,556	-0,555
	(0,446)	(0,455)	(0,432)	(0,434)
Constant	22,459	22,427	23,156	22,127
	(0,000)	(0,000)	(0,000)	(0,000)
Year fixed effect	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes
Number of observation	275	275	275	275
R^2	0,077	0,075	0,078	0,078

From Table 5 above the Deal Value is added and Table 6 was obtained. This is done to observe how the size of the deal will affect the result. However, by adding deal value the sample is reduced to 275 which can affect the result.

From model (1) to (4) in Table 6 observations are made where the deal value has a significant impact on the excess return. However, the results were almost the same as in Table 5 where market capitalization is significant and the coefficient for the industry related control variable are still negative, but now the coefficients for the method of payment variables together with

the control variable leverage shifted sign in all models, e.g. the coefficients for the independent variables cash and stock are now positive while for the independent variable mix it is now negative in all models. Even though this shift appeared there is no significant result.

The hypothesis for these regression models presented in Table 5 and Table 6 was that cash should have impacted the excess return positively, which would have been in accordance with the earlier literature (see e.g. Travlos, 1987; Wansley et al., 1987; Amihud et al., 1990; Bugeja et al., 2021). However, the result did not support the hypothesis as the results obtained, presented in Table 5 and Table 6, are not significant. However, even though the hypothesis was not supported, both the result in model (1) and model (3) in Table 5 and Table 6 is in accordance with Fuller et al. (2002) as they also did not find any significant results for the impact of cash and mix payments on the excess return in M&As. As they did their research on the US market between 1990 and 2000 and the US and Swedish market scored similarly in cultural aspects, individualism, long-term orientation and institutional and company power distribution acceptance, there is a possibility that the observations could have similarities in the aspect of cash and mixed payments impact on the excess return in M&As.

Like Fuller et al. (2002) the results in this thesis also support Bugeja et al. (2021) findings as they also found insignificant results for the impact of stock payments on the market reaction (see Table 5 and Table 6 model (2)). As they similarly with Fuller et al. (2002) did use samples from the US similar arguments could be drawn as above.

4.2.2. Industry grouped regression

In Table 7 the industry related aspect is measured by reducing the sample to only observe the data for the M&As that were related.

Table 7, Regression summary, Industry related '1', Deal Value excluded.

	Model (1)	Model (2)	Model (3)	Model (4)
Dependent Variable: Excess Return	Cash	Stocks	Mix	All payment
Cash Payment	0,004			-0,411
	(0,996)			(0,707)
Stock Payment		-0,741		-1,092
		(0,582)		(0,506)
Mixed Payment			0,475	
			(0,661)	
Acquirer Financial Leverage	-4,948	-5,673	-4,951	-5,621
	(0,822)	(0,796)	(0,821)	(0,799)
Market Capitalization	-0,667	-0,680	-0,657	-0,671
	(0,001)	(0,000)	(0,001)	(0,001)
Acquirer Return on Assets	1,516	1,329	1,592	1,408
	(0,631)	(0,673)	(0,612)	(0,656)
Constant	16,781	17,163	16,502	17,302
	(0,000)	(0,000)	(0,000)	(0,000)
Year fixed effect	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes
Number of observations	219	219	219	219
R^2	0,060	0,062	0,061	0,062

As seen in Table 7, both cash and mix have a positive coefficient while payment stock has a negative coefficient. However, there is no significant impact on the excess return from none of the different methods of payments in related transactions. The only significant variable is the control variable market capitalisation which seems to have an almost equal negative impact on excess return regardless of payment type.

When deal value is added to the regression model from Table 7 the models presented in Table 8 below were obtained.

Table 8, Regression summary, Industry related '1', Deal Value included.

Dependent Variable: Excess Return	Model (1) Cash	Model (2) Stocks	Model (3) Mix	Model (4) All payment
Cash Payment	1,317			0,920
	(0,230)			(0,505)
Stock Payment		-1,721		-0,925
		(0,269)		(0,637)
Mixed Payment			-0,727	
			(0,597)	
Log(Deal Value)	0,139	0,103	0,113	0,131
	(0,541)	(0,624)	(0,589)	(0,542)
Acquirer Financial Leverage	-21,730	-20,284	-18,900	-21,888
	(0,563)	(0,589)	(0,615)	(0,561)
Log(Market Capitalization)	-8,06	-0,776	-0,761	-0,806
	(0,002)	(0,002)	(0,003)	(0,002)
Acquirer Return on Assets	2,217	2,559	2,571	2,265
	(0,526)	(0,461)	(0,462)	(0,518)
Constant	18,611	19,283	18,799	19,042
	(0,000)	(0,000)	(0,000)	(0,000)
Year fixed effect	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes
Number of observations	178	178	178	178
R^2	0,044	0,070	0,065	0,072

As seen in Table 8 the deal value does not change the outcome from the regression model much in the aspect of significant results. However, the coefficient for the payment type mixed in model (3) and cash in model (4) shifted signs. Otherwise, the result is almost identical to Table 7 with the only significant impact on excess return from market capitalization.

In Table 9 and Table 10 the same regression models as Table 7 and Table 8 are presented, with the difference that the sample now consists of only unrelated M&As.

Table 9, Regression summary, Industry related '0', Deal Value excluded.

Dependent Variable: Excess Return	Model (1) Cash	Model (2) Stocks	Model (3) Mix	Model (4) All payment
Cash Payment	-0,580			-0,192
	(0,659)			(0,898)
Stock Payment		1,648		1,483
		(0,490)		(0,586)
Mixed Payment			0,102	
			(0,945)	
Acquirer Financial Leverage	-33,046	-40,782	-34,409	-39,525
	(0,626)	(0,549)	(0,615)	(0,566)
Log(Market Capitalization)	-0,804	-0,830	-0,817	-0,824
	(0,020)	(0,016)	(0,019)	(0,018)
Acquirer Return on Assets	-0,028	0,120	-0,473	0,219
	(0,997)	(0,986)	(0,946)	(0,975)
Constant	21,306	21,521	21,178	21,502
	(0,008)	(0,007)	(0,010)	(0,008)
Year fixed effect observations	Yes	Yes	Yes	Yes
Industry related fixed effect	Yes	Yes	Yes	Yes
Number of observations	136	136	136	136
R^2	0,046	0,048	0,044	0,048

As seen in Table 9 there is a difference in the coefficients for the method of payment. Now cash has a negative coefficient while stock and mixed have a positive coefficient. However, as before, the result is not significant as the market capitalization is the only variable with a P-value less than 0.1.

In Table 10 the deal value was added to the control variables to see if the result for the unrelated industry M&A containing the deal value variable would differ from the regression models in Table 9. By including deal value, the sample was reduced even further to 96 which could impact the result.

Table 10, Regression summary, Industry related '0', Deal Value included.

Dependent Variable: Excess Return	Model (1) Cash	Model (2) Stock	Model (3) Mix	Model (4) All payment
Cash Payment	-0,933			0,361
	(0,587)			(0,857)
Stock Payment		3,813		4,128
		(0,182)		(0,220)
Mixed Payment			-0,598	
			(0,766)	
Log(Deal Value)	1,141	1,109	1,124	1,104
	(0,002)	(0,004)	(0,004)	(0,005)
Acquirer Financial Leverage	62,397	60,445	51,309	58,073
	(0,467)	(0,473)	(0,550)	(0,498)
Log(Market Capitalization)	-1,545	-1,570	-1,564	-1,575
	(0,001)	(0,001)	(0,001)	(0,001)
Acquirer_Return_on_Assets	-0,792	0,432	-1,705	0,306
	(0,925)	(0,959)	(0,837)	(0,971)
Constant	30,737	30,443	30,871	30,333
	(0,002)	(0,002)	(0,002)	(0,002)
Year fixed effect observations	Yes	Yes	Yes	Yes
Number of observations	96	96	96	96
Industry related fixed effect	Yes	Yes	Yes	Yes
R^2	0,139	0,153	0,137	0,154

As seen in Table 10 cash still has a negative coefficient while stock has a positive coefficient. However, since it is not significant, no conclusions could be drawn. Moreover, the mixed method of payment, as well as cash payment in model (4), switches to a negative coefficient when the deal value is included, but it is not significant and can therefore not be scientifically proven. The only significant result is the impact of market capitalization and deal value on the excess return.

As related M&As compared to unrelated M&As is subjected to a decrease in information asymmetry according to Cefis and Rigamonti (2013) the acquirer has a better understanding of the target's value and is hence, according to both Myers and Majluf (1984) and Hansen (1987), more positive to use cash as payment method. As a lot of literature already have shown, cash as the payment method tends to increase the market return (see e.g. Travlos, 1987; Wansley et al., 1987; Amihud et al., 1990; Linn and Switzer, 2001; Bugeja et al., 2021)

the hypothesis was that cash should have a significant positive impact on excess return which cannot be validated since the results in Table 7 and Table 8 were insignificant.

For unrelated M&As, the information asymmetry tends to increase as the relatedness decreases. As Officer et al. (2009) and Martynova and Renneboog (2006) stated, increased information asymmetry leads to a higher risk of overpaying, and hence the acquirer will choose stock as the method of payment to share the risk with the target shareholders. By earlier studies (see e.g. Travlos, 1987; Wansley et al., 1987; Amihud et al., 1990; Bugeja et al., 2021) the expected return should then be negative. However, by the result from the regression models for unrelated M&As, this suggested result could not be validated, as there were no significant results.

The results obtained in Table 7 to Table 10 could be argued to support Fuller et al. (2002) in model (1) and model (3) and Bugeja et al. (2021) in model (2) in the same way as for the same models in Table 5 and Table 6, as they did not find any significant results in their studies. However, differences between the result obtained in Table 7 to Table 10 and Fuller et al. (2002) and Bugeja et al. (2021) findings are that they did not check for the method of payments impact on the market reaction only for related and unrelated M&As respectively and hence comparison between their findings and the industry related and unrelated regression models can not be concluded.

Why no significant results were obtained could be because of several reasons. For instance, the data obtained could have consisted of too few observations, and maybe a longer period should have been considered (e.g. 2010-2020). However, as several studies have had similar amounts of observations, (see e.g. Wansley et al., 1987; Healy et al., 1992; Linn and Switzer, 2001) the authors' argue that this should not question the analysis credibility and validity. Another reason could be the control variables and that maybe more should be controlled for, e.g. ownership structure and market-to-book ratio (see e.g. John et al., 2015; Teti et al., 2017). However, to the authors knowledge, such variables are not able to be obtained through Bloomberg which was the database used. Moreover, the results from the regression models show that no significant impact on excess return by the method of payment can be concluded on the Large Cap Stockholm and this fact is still true for only related or unrelated M&As. However, there is a lot of literature — as presented in the theoretical framework, that argues about the impact of the method of payment on the excess return in M&As, where some of

which has included at least a few observations from Swedish companies and got significant results. For that reason, there is a rather bold assumption to claim that there is no impact at all.

5. Conclusion

Even though there are a lot of different studies about the market reaction dependent on the method of payment, there is to the authors' knowledge not yet tested solely on the Swedish Large Cap which this thesis studied. The data consisted of 357 observations which were obtained from the Bloomberg database from Stockholm Large cap market between 2015-2020. Observations from the descriptive statistics showed that the market reacted positively to M&As in general, as the mean and median excess return was positive, i.e. the reactions from the M&As more often outperformed the OMX index. As for the three independent T-tests and 24 regression models that have been analysed in this thesis, no significant results for the impact of method of payment on the excess return in M&As as well as the impact of method of payment on the excess return in related or unrelated M&As. This result does not support previous international studies, which found a more positive market reaction for cash payments in contrast to stock payments. However, the results obtained were similar to Fuller et. al (2002) as they also did not find any significant evidence on the market reaction for cash and mixed payments. Moreover, similar supporting evidence could be seen with Bugeja et al. (2021) as they also did not find any significant results for stock payments impact on the market reaction in M&As.

From the obtained result the impact on excess return by method payment could not be concluded since the analysed regression models and correlation matrix showed no significance. One might argue that this is not a result. However, as "No result is a result itself" it is possible that no significant results can be drawn in the aspect of the method of payments impact on the excess return in M&As on Large Cap Stockholm. However, the authors encourage further studies to be performed in the same setting as this thesis to test both hypotheses, but maybe with a slight change of limitation parameters e.g. increase the period to obtain larger quantities of observations, which could lead to a significant result.

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8. Appendices

Variable	Definition	Source
Excess Return	The difference of return between the M&A company and OMX Index	Bloomberg
Cash payment	Method of payment equals to cash	Bloomberg
Stock payment	Method of payment equals to stock	Bloomberg
Mixed payment	Method of payment equals to mixed	Bloomberg
Industry Related	Acquiring a company within the same SIC	Bloomberg
Return on Assets	ratio between earning and assets.	Bloomberg
Market Cap	Value of the company	Bloomberg
Deal Value	Value of the M&A transaction	Bloomberg
Acquirer financial leverage	Ratio between debt and equity.	Bloomberg