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How do firms choose payment method in M&As?

A study on how credit ratings affect the choice of payment method in cross-border and domestic mergers and acquisitions

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Abstract

Title:	How do firms choose payment method in M&As? - A study on how credit ratings affect the choice of payment method in cross-border and domestic mergers and acquisitions
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Keywords:	M&A, Cross-border, credit rating, payment method
Purpose:	The purpose of this project is to examine if the existence of a credit rating and if the level of credit rating for the acquirer and target influences which financing source is used in cross-border and domestic M&As.
Methodology:	The empirical methods used are the probit and GLM logit models. The dependent variables are the binary, payment method, and the fraction of cash. The main explanatory variables are the existence of credit rating, credit rating level, and cross-border.
Theoretical perspectives:	The theories applied in this thesis are related to credit ratings, capital structure and information asymmetry. These theories include, for example, the trade-off theory and the pecking order theory.
Empirical foundation:	The study is made on domestic and cross-border M&As on the European market. The time frame used is the years between 2000 and 2018.
Conclusions:	The results from this study imply that the existence of a credit rating does not have a significant effect on the choice of payment method, but the level of the credit rating has a positive effect on using cash as payment. The conclusion from this is that credit ratings seem to have less impact in Europe than in the US.

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Madeleine Dahlgren

Vilhelm Borelius

List of Concepts

Merger and acquisition

The consolidation of firms or assets through financial transactions. Often referred to as M&A, whereas this will be used throughout this thesis.

Cross-border merger and acquisition

A cross-border M&A is an M&A where the acquiring company and target company are located in different countries.

Credit rating

A credit rating is an assessment of a firm's credit risk, evaluating the ability of the firm to repay debt. The rating also predicts the probability of the firm to default. The assessments are made by credit rating agencies, which gathers information about the industry, competitive environment and country in which the firm operates, along with the financial condition of the firm.

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1 Introduction

This chapter presents a background to the topic and a problem discussion. This will lead to the purpose of this paper along with the research questions, followed by the structure of the paper.

1.1 Background

M&A is always an important topic in research as well as how and why firms undertake such endeavours. There are several reasons for doing an M&A, including creating synergies, eliminating competition and growth. Based on this, the main reason for doing an M&A seem to be that firms want to increase their income and profitability. However, around 80% of all M&A deals fail (Bradt, 2015), which depend on several factors. These include high costs of integration, cultural differences and limited involvement from management and owners. M&As are made all over the world, but most M&As are made in the US, followed by Europe. The number of cross-border transactions has increased in the world, and especially in Europe, during the last decades. In 1985 the number of M&As in Europe was around 400, and since 2015 each year there have been around 17,000 transactions in Europe (IMAA, 2019).

In an M&A, there are three possible payment methods; equity, cash, or a mix of both. Previous research has confirmed that cash is the most common method of payment, followed by equity and mixed deals (Travlos, 1987; Martin, 1996). When using cash as payment method, it is originally funded by debt in many cases according to research. The decision about which payment method to use depends on several factors, including the capital structure of the acquiring firm, characteristics of the target firm, the implied value of the merger or acquisition and the risks involved in the deal.

Credit rating agencies assess the creditworthiness of firms, using public and non-disclosed information, and assign them with a credit rating representing their assessment. This process provides the market with information on the rated firms, contributing to reducing the information asymmetry and thereby lowering firms' cost of capital (Healy & Palepu, 2001). By this, credit ratings seem to affect the capital structure of firms.

A cross-border M&A is a transaction where the acquirer and target are located in different countries, in contrast to a domestic deal where the acquirer and target are located in the same country. Cross-border transactions involve more risks than domestic transactions, including risks in the country of the target, which are related to information asymmetry.

An example of a cross-border M&A deal is the largest M&A deal ever completed, which was the acquisition of the German industrial conglomerate Mannesmann made by the British telecommunications conglomerate Vodafone Group. The acquisition was made in 2000, and the final purchase price was set to €204.8 billion (Zephyr, published by Bureau Van Dijk, 2019). This deal was paid with a fraction of 11% cash, and the relative size of the deal was 1.4 times the market value of Vodafone (Zephyr, published by Bureau Van Dijk, 2019). At the time of the acquisition of Mannesmann, Vodafone was assigned a rating of A by Standard & Poor's, which implies a strong capacity of the firm to meet its financial commitments. Mannesmann, on the other hand, was not assigned a rating by either Standard & Poor's or Moody's. The characteristics of the deal and the characteristics of Vodafone may help describing how the payment method in this deal was chosen.

1.2 Problem Discussion

The research on payment method in M&As is quite extensive, discussing primarily if and how capital structure affects the choice of payment. Faccio and Masulis (2005) study this and find that debt financing constraints affect the choice of payment method, meaning that firms with more significant constraints will more likely finance an acquisition with equity. Boone, Lie and Liu (2014) also study determinants of the payment method in M&As and find that the fraction of equity as payment peaked in the 1990s, but has since decreased again. The research on how credit ratings, specifically, affect the choice of payment method is however somewhat more limited. Karampatsas, Petmezas and Travlos (2014) study how credit ratings affect the choice of payment method in M&As on the US market and find that acquirers holding a credit rating, and specifically acquirers holding a higher credit rating level, are more likely to finance a merger or acquisition with cash.

Cross-border M&As have in recent years become a more researched topic. Research on this is therefore starting to grow, and several authors examine wealth effects in cross-border M&As, as well as how cultural aspects may influence whether to make a cross-border M&A (Lowinski, Schiereck & Thomas, 2004; Ahern, Daminelli & Fracassi, 2015). Huang, Officer and Powell (2016) studies how the payment method is determined in cross-border M&As and find that greater use of equity is used in cross-border M&As than in domestic M&As, to reduce the risk of overpayment.

The two different aspects discussed above are both interesting as they are up to date, and their importance for the market is growing as the number of M&A deals each year increases. However, the two different perspectives have not been combined before. As cross-border deals involve greater information asymmetry than domestic deals, credit ratings will, intuitively, have a positive impact on the choice of payment method as credit ratings contribute to reducing the information asymmetry. The aim of this paper is therefore to combine these two aspects and examine what

impact credit ratings may have on the choice of payment method in cross-border and domestic M&As.

The previous research on payment method in M&As has mainly been performed on the US market (Martin, 1996; Uysal, 2011; Harford, Klasa & Walcott, 2009; Karampatsas, Petmezas & Travlos, 2014), whereas this thesis will study the European market instead. By this, the study of this thesis will fill two gaps. First, it will fill the gap of research on the choice of payment method in M&As in Europe. Secondly, it will fill the gap of research on the effect of credit ratings on the choice of payment method in cross-border M&As.

1.3 Purpose and Research Question

The purpose of this paper is to investigate whether the existence of a credit rating for the acquirer and target has an impact on which payment method is used in cross-border and domestic M&As. Also, it is examined if the level of the credit rating of the acquirer and target influences the choice of financing source.

The research questions in this paper are based on the discussion and purpose, and is as follows:

- *Is the choice of payment method in cross-border and domestic M&As influenced by the existence of a credit rating of the acquirer and target?*
- *Is the choice of payment method in cross-border and domestic M&As influenced by the level of the credit rating of the acquirer and target?*

The remainder of this paper will be structured as follows. It begins with a literature review, chapter 2, where previous research on the topic and closely related topics are discussed. This is followed by chapter 3, a theoretical background, which will lead to the hypotheses of the paper. Chapter 4 follows with a description of the research and the econometric methodologies used in the paper. Chapter 5 contains a description of the data and variables used in the study as well as its descriptive statistics. Finally, chapter 6, the empirical analysis and chapter 7, a conclusion is presented, along with suggestions for further research.

2 Literature Review

This chapter presents relevant literature on the topic and topics that are closely related. The literature is divided into three categories depending on the topic: payment method, credit ratings and cross-border, and this chapter is therefore divided into these parts. A summary of all previous research can be found in Appendix 1 with a comparison of sample, study, empirical method and findings.

2.1 Payment Method

In previous research regarding payment method in M&As, there are mainly studies on how capital structure affects the choice of payment method, but also studies on what other determinants might exist when choosing the method of payment.

Travlos (1987) studies how the choice of payment method differs between different types of takeovers on the US market, using a sample of firms from CRSP (The Center for Research in Security Prices) during the years between 1972 and 1981. His main finding is that tender offers are usually financed with cash, and mergers are generally financed with common-stock, as the acquirer in tender offers might want to execute the deal quickly.

Martin (1996), on the other hand, studies what determines the choice of payment method in M&As on the US market and find that if the acquiring firm has greater growth opportunities, it is more likely to use equity as payment method. If the acquiring firm holds a high cash balance, on the other hand, it is more likely to use cash as payment. He uses a sample of firms listed on the New York Stock Exchange (NYSE) and the American Stock Exchange (AMEX) during the years 1978-1988.

Faccio and Masulis (2005) also study what determines the choice of payment method in M&As. However, their study is made on the European market in 1997-2000, using a sample from the SDC (Securities Data Company) M&A database. They find that corporate governance and debt financing constraints impact the choice of payment method. This is based on that payment method is highly dependent on the capital structure of a firm.

Harford, Klasa and Walcott (2009) study if the existence of a target leverage level impacts the choice of payment method in M&As. They find that if a firm has leverage over its target level, it is less likely to finance an M&A with debt (cash). Uysal (2011) has performed a similar study with the same results. However, he also finds that firms that have leverage above their target level are less likely to make acquisitions at all. Harford, Klasa and Walcott's (2009) study was made in 1981-

2000, and Uysal's (2011) study was made in 1990-2007, which suggests that results are consistent over time.

Boone, Lie and Liu (2014) study what determinants there are in the choice of payment method in M&As over time, using a sample collected in 1985-2013 from the SDC M&A database. Their findings say that the fraction of equity as payment peaked during the 1990s, but has decreased since. These differences over time can, according to the authors, be explained by agency theory, taxation and contracting costs.

2.2 Credit Ratings

There are also studies on how credit ratings, specifically, affect the choice of payment method in M&As. Furthermore, studies on how credit ratings might affect a firm's choice of capital structure have been found, which is of interest for this study as well.

Faulkender and Petersen (2006) study how the existence of a credit rating affects a firm's capital structure. They study if the source of capital affects the capital structure, using credit rating as a proxy for access to bond markets. They conclude that firms who have access to the public bond market have 35% higher leverage, based on that credit ratings provide access to bond markets.

Kisgen (2006) and (2009) study specifically how the existence of a credit rating and a downgrade in credit rating affect a firm's capital structure. In Kisgen's study from 2006, he finds that firms near a credit rating upgrade or downgrade issue less debt than firms not close to a change in rating, relative to equity. In his study from 2009, he finds that firms that were recently downgraded in credit rating, on average reduce their leverage.

Poon, Chan and Firth (2013) study whether the existence of a credit rating for a firm has any effect in mitigating underpricing in a seasoned equity offering (SEO) in China. They find that if a firm posits a credit rating, underpricing is reduced by 11-14% on average. This result is based on theories related to information asymmetry, suggesting that a credit rating reduces information asymmetry, leading to less underpricing. In this study, they also find that there is no significant difference in underpricing between firms with speculative and investment grade rating.

Harford and Uysal (2014) study if having access to debt markets affect firms' investment decisions, using rating as a proxy for access to bond markets. They study the period 1990-2011 using a sample from Compustat and CRSP. Their main finding is that rated firms are more likely to make acquisitions than non-rated firms. Another finding is that rated firms pay higher premiums in acquisitions than non-rated firms. Harford and Uysal (2014) argue that their findings imply that

not having access to debt markets really affects the ability to make investments, along with the quality of the investments, by creating underinvestment.

Karampatsas, Petmezas and Travlos (2014) study how credit ratings affect the choice of payment method in M&As on the US market, using a sample from the SDC M&A database in 1998-2009. They find that bidders that have a credit rating and firms that have a higher level of credit rating are more likely to use cash as payment in M&As. This result is based on that rated firms, and firms with a higher rating, have better access to bond markets and can therefore more easily issue debt, as the existence of a rating removes information asymmetry between the firm and its stakeholders. Furthermore, a firm that has a higher rating faces more favourable terms and conditions, which implies a lower cost of debt, suggesting that high-rated firms will issue debt, and thereby use cash as payment in M&As.

2.3 Cross-Border

Regarding cross-border M&As, the studies mainly focus on cultural aspects in these deals, along with some studies on determinants when choosing payment method.

Rossi and Volpin (2004), Kang and Kim (2010) and Ahern, Daminelli and Fracassi (2015) study how cultural aspects may influence cross-border M&As. Rossi and Volpin (2004) find that in countries with better accounting standards and stronger shareholder protection, M&A activity is higher. This result is caused by better accounting standards, and stronger shareholder protection, which lowers information asymmetry, making it easier for an acquirer to value its target. Kang and Kim (2010) find that countries who share a common language or culture are more likely to engage in post-merger governance activities than countries who do not share a common language or culture. This result can also be related to information asymmetry. Ahern, Daminelli and Fracassi (2015) discover that trust, hierarchy and individualism affect merger volume and synergy gains with significance. Another finding is that when the cultures between the two countries are different, the merger volume is smaller.

Makaew (2011) and Erel, Liao and Weisbach (2012) study what determinants exist in M&As, including for example distance and business cycles. Makaew (2011) studies waves of cross-border M&As, using a sample from the SDC M&A database in 1988-2008, and finds that the waves are highly correlated with business cycles and most mergers occur when both the acquirer and target are booming. Another interesting finding in his study is that most cross-border M&As seem to be between high-income countries. Erel, Liao and Weisbach (2012) study, in general, what determinants exist in cross-border M&As. They find that geography, quality of accounting

disclosure and bilateral trade affect whether to make a cross-border M&A or not. They study the period 1990-2007, using transactions from the SDC M&A database where the acquirers are seated in the US.

Huang, Officer and Powell (2016) study whether the choice of payment method in cross-border M&As can alleviate country-level governance risk for the acquirer. Using a sample of 47,000 transactions from the SDC Platinum M&A database in 1990-2010, they find that there is greater use of equity as payment in cross-border M&As than in domestic M&As. This is to reduce the risk of overpaying, which also can be related to the greater information asymmetry involved in cross-border deals. They also find that the amount of equity as payment in cross-border M&As has increased recently, compared to earlier years.

The most recent published research on cross-border M&As is done by Xu (2017), who studies the valuation effects of cross-border M&A waves. She studies the years 1990-2010, using a sample of 54,000 transactions from the SDC M&A database. The main finding in this study is that cross-border M&As, as similar to domestic deals, cluster by industry and time. She also finds that M&As performed within a wave typically performs better than M&As performed outside a wave.

2.4 Summary

In the papers discussed above, there are some common themes. First, credit ratings seem to affect the capital structure of firms, and in turn, capital structure affects the choice of payment method in M&As. This is confirmed by the study made by Karampatsas, Petmezas and Travlos' (2014) study on credit ratings and payment method. Furthermore, the existence of a credit rating seems to reduce information asymmetry. Secondly, it seems to be various determinants in whether to make a cross-border M&A and what payment method to choose, as there is great information asymmetry involved in these deals. However, as stated earlier, there is no previous research on how credit ratings, specifically, affect the choice of payment method in cross-border M&As. Based on the findings in previous research, it is possible that there is a relationship between credit ratings and the choice of payment method also in cross-border M&As, which mostly can be related to information asymmetry, but capital structure as well.

3 Theoretical Background and Hypothesis Development

The purpose of this chapter is to present theories regarding credit ratings, capital structure and information asymmetry, and discuss how these relate to and affect each other. Each part of this chapter will begin by introducing theories on the topic, followed by discussing how they relate to the subject of this thesis. Lastly, this will be concluded in the hypotheses of the paper.

3.1 Credit Ratings

A credit rating is an assessment of the future creditworthiness of a firm, meaning that it provides information about the firm's ability to pay its obligations and interest on time. The rating is based on risk related to the country where it is situated, risk related to the industry the firm acts in, the firm's competitive position and the financial risk of the firm. The rating of a firm is also maintained and updated over time, and if the creditworthiness has increased (decreased), the rating can be upgraded (downgraded) (Caprio et al., 2012). The rating of a firm is performed by a credit rating agency, and the primary agencies are Standard & Poor's, Moody's and Fitch, which together have 93% of the market in Europe (ESMA, 2017).

The existence of a credit rating reduces information asymmetry around a firm (Caprio et al., 2012). Credit rating agencies therefore act as informational intermediaries to reduce information asymmetry and improve the efficiency of the market. When a firm has a credit rating, the transparency of the firm is increased, making it easier for investors to understand the real value of the firm (Schwarcz, 2004).

However, there is some critique against credit rating agencies and their assessment of credit ratings. One critique regards the conflict between a credit rating agency's economic incentives and providing an ethical and research-based analysis. The conflict means that a credit rating agency might set a credit rating that benefits the issuer, rather than the public, and the rating might therefore not wholly reflect the real value of the company (Levin & Coburn, 2011). If a firm is not correctly rated, the credit rating cannot be believed actually to reduce information asymmetry. Therefore, there must be a critical view on the assessment of credit ratings in the analysis, as this might affect the results.

Credit ratings are also proven to be important for the choice of capital structure, according to Graham and Harvey (2001). They argue that the credit rating affects the choice of issuing new debt or not. Debt reduces financial flexibility, so issuing new debt might reduce the financial flexibility of a firm, which could lead to a downgrade in credit rating (Graham & Harvey, 2001). This relates

to previous studies, where Kisgen (2006), for example, finds that firms near a credit rating upgrade or downgrade issue less debt.

3.2 Capital Structure

Miller and Modigliani (1958) early studied the importance of a firm's capital structure for its market value. They assumed perfect capital markets, i.e. no transaction costs, no trading restrictions, no distress or bankruptcy costs and no costs related to changing ownership. They found that a firm's market value is independent of its capital structure (Miller & Modigliani, 1958). However, no such perfect capital markets exist. Therefore, several authors have questioned this and developed their own theories and hypotheses.

First out was the classical trade-off theory, which suggests that firms choose their capital structure by weighing the costs of equity or debt against the benefits, and thereby select the source of financing where the benefits exceed the costs. The costs of debt include costs related to financial distress, and the benefits of debt include the tax shield that it creates (Kraus & Litzenberger, 1973). When the costs of issuing debt are lower than the costs of issuing equity, firms will, according to this theory, issue debt. However, this theory is based on debt being a cheap source of financing, and always being available, which is not the case, and some authors therefore question the theory. Especially for firms with low credit ratings, below investment grade, it could be challenging to access debt as financing. The implication of this theory on the study in this paper is that costs of debt are lower if a firm has a higher credit rating, due to more favourable terms and conditions from creditors. This implies that firms with higher credit ratings will issue debt according to this theory.

The pecking order theory was introduced by Myers (1984) as he questioned the classical trade-off theory. This theory specifies how the order of financing sources are preferred in a firm. Internal financing is the source of financing that is the most preferred, followed by debt and lastly equity. Equity is considered to be the least favoured source of financing, according to this theory, as it has a signalling effect, suggesting that the firm's equity is overvalued (Myers, 1984). According to the pecking order theory, firms will issue debt rather than equity, if this is possible, and uses equity as a "last resort". The existence of a credit rating provides better access to bond markets, implying that firms that have a credit rating have better possibilities to issue debt.

The free cash flow hypothesis, developed by Jensen (1986), suggests that the managers of firms with large amounts of free cash flow are more likely to invest this in negative net present value projects, instead of paying it out to shareholders in dividends. This suggests that firms holding a

large portion of cash are more likely to make investments, e.g. mergers or acquisitions, rather than firms holding a smaller portion of cash (Jensen, 1986). Relating this finding to this study, it implicates that firms holding a large cash balance will more likely finance an M&A with cash, than equity.

The market timing theory introduced by Baker and Wurgler (2002) suggests that the capital structure of a firm will be a function of historical misvaluations due to the market's valuation of equity. When the market values equity higher, firms tend to issue equity and repurchase debt. When the market, on the other hand, value debt higher, firms tend to issue debt and repurchase equity. If a firm historically has experienced greater undervaluation of equity, it will have a higher amount of debt than equity. Typically, equity is more misvalued than debt (Baker & Wurgler, 2002). This theory suggests that firms will issue debt, and thereby use this (cash) as payment method in M&As when the market value debt higher. The market overvaluation theory (Shleifer & Vishny, 2003) is an expansion of the market timing theory, suggesting that acquirers favour stock acquisitions if their equity is relatively overvalued to the equity of the target. This is due to the wish to decrease acquisition costs (Shleifer & Vishny, 2003).

Lastly, Lemmon and Zender (2010) aimed to test traditional theories regarding capital structure, and therefore performed a study on whether debt capacity has an impact on the choice of capital structure. They suggest that if external funds are required, and if debt capacity is not a concern, debt is usually preferred over equity (Lemmon & Zender, 2010). To receive a higher credit rating, a firm should not have too high leverage. Firms with higher credit ratings therefore usually hold a steady and low debt to equity ratio, implying that they have spare debt capacity. This suggests, according to Lemmon and Zender's study, that firms with a higher level of credit rating will issue debt and thereby use cash as payment in M&As.

A conclusion from these theories is that firms that have a credit rating generally have better access to bond markets, and firms that have a higher level of credit rating generally have lower costs of debt due to more favourable terms and conditions, and also more spare debt capacity. Acquiring firms that have a credit rating, and more specifically a higher level of rating, are by this more likely to issue debt and are therefore more likely to finance M&As with cash. These conclusions are consistent with the results in previous research, for example the findings in the study by Karampatsas, Petmezas and Travlos (2014).

3.3 Information Asymmetry

The definition of information asymmetry is that one of two parties knows more than the other does, i.e. has access to some information that the other party lacks. When choosing source of financing, information asymmetry has to be considered, as some sources of financing have a signalling effect. Equity, for example, has a stronger signalling effect compared to debt, implying that the company's equity might be overvalued if issuing new equity (Myers & Majluf, 1984). This implies that firms would prefer to issue debt, rather than equity, if possible, to avoid this signalling effect.

The information content hypothesis suggests that credit ratings contain private information about a firm, as the credit rating agencies receive private and valuable information about the firm, which otherwise is unavailable to the market. This implies that the credit rating acts as a tool to reduce information asymmetry around a firm (Ederington et al., 1987).

Theories regarding information asymmetry related to M&As are mostly associated with the insecurity of the valuation of the target. When there is significant uncertainty regarding the value of the target, meaning that the target has a better understanding of its value than the potential acquirer does, the acquirer usually chooses to use a higher amount of equity as payment. This is done to reduce the risk of overpaying. The risk of overpaying is diminished since the acquirer and target share the losses arising from overpayment when equity is used as payment (Hansen, 1987). In cross-border M&As, there is greater information asymmetry involved than in domestic deals. As discussed in previous research, this depends on cultural, governance and transparency factors, since the acquirer knows less about a target in another country than a target in its own country. If the acquirer is insecure about the value of the target, it will therefore use equity as payment in the deal. The existence of a credit rating for the target, however, contributes to reducing information asymmetry around the target according to the information content hypothesis, since it provides information on the quality of the firm and the country, along with its ability to repay debt. This makes it easier for the acquirer to correctly understand the value, which reduces the risk in the deal, implying that the M&A will more likely be paid with cash if the target has a credit rating.

Using cash as payment, however, signals confidence in the deal, as the losses related to overpayment is restricted to the bidder (Fishman, 1989). Fishman also argues that using cash as payment method will fight off competitors since this implies a high valuation of the target, and a bidding war will lead to overpayment (Fishman, 1989). This suggests that acquiring firms will use cash as payment if they want to signal their confidence in a deal.

The conclusion from these theories is that cross-border M&As involve greater information asymmetry than domestic M&As, which means that the existence of a credit rating is more important for these, to reduce information asymmetry. In M&As, where the target firm has a credit rating, there is less risk involved, meaning that it is more likely that these deals will be financed with cash. This is in line with the results in previous research, for example, Huang, Officer and Powell (2016) find that a larger amount of equity is used as payment in cross-border M&As, as higher risk is involved in these deals than in domestic deals.

3.4 Economic Intuition and Hypotheses

Based on the previous research and the theory above, intuition suggests that firms having a credit rating will more likely use cash as payment method in an M&A, as they have better access to bond markets. The first hypothesis is therefore as follows:

H_{0,1}: Firms with credit ratings will more likely finance a merger or acquisition with cash.

Firms that have a higher level of credit rating will more likely finance an M&A with cash, as they face better opportunities to borrow, due to lower costs of debt. The second hypothesis is therefore as follows:

H_{0,2}: Firms with a higher credit rating level will more likely finance a merger or acquisition with cash.

In deals where the target firm has a credit rating, or a higher level of credit rating, it is also more likely that the M&A will be financed with cash, as the existence of a credit rating and a higher level of rating, reduces information asymmetry. The third and last hypothesis is therefore as follows:

H_{0,3}: For rated target firms, the acquiring firm will more likely finance a merger or acquisition with cash.

4 Methodology

This chapter will present the research method and the empirical method used in this paper. The chapter starts with a presentation of the research method, followed by the econometric models, as well as the regressions performed in this study. Lastly, a discussion regarding endogeneity will be presented.

4.1 Research Method

Two main methods can be applied in research, and these are a deductive and an inductive approach. The deductive approach is a method where one or several hypotheses are developed, based on existing theories. The hypothesis is then tested empirically, on the collected data sample. The inductive approach, on the other hand, does not aim to test existing theories. Instead, it is used to develop new theories. This is done by collecting a data sample, that will be used to identify patterns, which will result in a new theory (Sekaran & Bougie, 2016). In this study, the deductive approach is applied, as the aim is to test how credit ratings affect the choice of payment method in M&As, using the theories regarding credit ratings, capital structure and information asymmetry discussed in the previous chapter, on the collected data.

To answer the research question of a study, two research methods can be applied, and these are quantitative research and qualitative research. Quantitative research is a method where a numerical data sample is collected and then used to test one or several hypotheses. This method thereby uses measurable data, which then can be evaluated empirically. Qualitative research is a method where non-numerical data is instead collected (Sekaran & Bougie, 2016). To answer the research questions of this paper, quantitative research is used. As this study tests hypotheses, the use of quantitative data is necessary, so that it will be possible to measure and understand the variables used in the study empirically.

When performing a research study, it is important to reflect on its reliability and validity. Reliability means verifying that temporary differences do not influence the results of the study, as well as consistently collecting data. High reliability suggests that it should be possible for anyone to repeat the study and maintain the same results. Assessing reliability can be done by considering the reliability of the collected data as well as the reliability of the methods used (Sekaran & Bougie, 2016). Validity regards the truthfulness of the conclusions in a study, and in quantitative research the most important aspect is the goodness of measures, meaning if the variables measure what they are supposed to measure (Sekaran & Bougie, 2016). Validity can be divided into internal validity and external validity, where internal validity is if there exists a causal relationship between the variables, and external validity is to what extent the results are generalizable (Sekaran & Bougie,

2016). The implication of reliability and validity in this study will be discussed more in detail below in this chapter, as well as in chapter 5 and 6.

4.2 Econometric Method

The data used in this paper is pooled cross-sectional data, which is data where the variables are collected at different points in time. This paper aimed to follow a similar empirical method as in previous research on the same topic, whereas a similar approach used by Huang, Officer and Powell (2016) and Karampatsas, Petmezas and Travlos (2014) will be followed. Both these studies use pooled cross-sectional data as well, with payment method as dependent variable and firm characteristics as well as deal characteristics as independent variables. Following a similar econometric method as previous research, makes it possible to compare the results from the studies.

In this study, four base regressions have been performed. The first regression uses payment method as dependent variable and the existence of a credit rating for the target and acquirer as main explanatory variables. The second regression uses fraction of cash as dependent variable and the existence of a credit rating for acquirer and target as main explanatory variables. Regression three and four have the same arrangement but use acquirer rating level as main explanatory variable. Heteroscedasticity-robust standard errors are used in all regressions in line with the method used in previous research on the same topic. The different models are discussed in more detail below.

The econometric study has been performed using Stata, and by following the models and regressions below, the study can easily be replicated. Applying a similar method as previous research makes it easy to understand and follow, which makes the results comparable. This increases the external validity as well as the reliability of the study, as the results can be considered to be generalizable, and the methodology can easily be followed.

4.2.1 Probit Model

When studying a dependent variable that is binary, a probit model or a logit model can be used. According to Wooldridge (2016), the probit model is more popular than the logit model in econometrics. This depends on that it is more easily analysed due to properties of the normal distribution (Wooldridge, 2016). In previous research, the probit model has also been used, and the authors thereby consider this to be the most appropriate model for studying a dependent variable that is a binary. The probit model will thus be used to study the dependent variable payment method. This variable will take the value 0 if a deal is paid with less than 50% cash, and 1 if a deal is financed with more or equal to 50% cash.

The base model used on all observations, rated and non-rated firms, with payment method as dependent variable, is as follows:

$$Prob(\text{Payment Method} = 1|x) = G(\beta_0 + \beta \text{Acquirer Credit Rating} + \beta \text{Target Credit Rating} + \beta \text{Firm Characteristics} + \beta \text{Deal Characteristics} + \epsilon)$$

The base model used on the rated sub-sample of acquirers, with payment method as dependent variable, is as follows:

$$Prob(\text{Payment Method} = 1|x) = G(\beta_0 + \beta \text{Acquirer RatingLevel} + \beta \text{Target RatingLevel} + \beta \text{Investment Grade} + \beta \text{Firm Characteristics} + \beta \text{Deal Characteristics} + \epsilon)$$

The probit model is based on the standard normal cumulative distribution function, and the function of G is defined as follows:

$$G(z) = \Phi(z) \equiv \int_{-\infty}^z \phi(v)dv$$

where $\phi(z)$ is the standard normal density

$$\phi(z) = (2\pi)^{-\frac{1}{2}} \exp\left(-\frac{z^2}{2}\right)$$

4.2.2 GLM Logit Model

When studying a dependent variable that is a fraction, several models can be used, including linear and non-linear models. Wooldridge (2016) argues that non-linear models, as the logit and probit models, are more appropriate for studying a fraction, than linear models. Linear probability models include some limitations, such as that the function can take values outside of the interval of [0,1]. This can although be avoided by using the logit model or probit model to study a fraction, as these functions take on values strictly in the interval of [0,1] (Wooldridge, 2016). A non-linear model is therefore chosen to observe the dependent variable fraction of cash, as this can take any value in the interval of [0,1].

When deciding between the logit and the probit model, to measure a fraction, the Generalized Linear Model (GLM) logit model has been chosen, which is in line with Papke and Wooldridge (1996), as well as previous research.

The base model used on all observations, rated and non-rated firms, with fraction of cash as dependent variable is as follows:

$$\begin{aligned} \text{CashFraction} = & G(\beta_0 + \beta \text{Acquirer Credit Rating} + \beta \text{Target Credit Rating} \\ & + \beta \text{Firm Characteristics} + \beta \text{Deal Characteristics} + \varepsilon) \end{aligned}$$

The base model used on the rated sub-sample of acquirers, with fraction of cash as dependent variable, is as follows:

$$\begin{aligned} \text{CashFraction} = & G(\beta_0 + \beta \text{Acquirer RatingLevel} + \beta \text{Target RatingLevel} \\ & + \beta \text{Firm Characteristics} + \beta \text{Deal Characteristics} + \varepsilon) \end{aligned}$$

The logit model is based on the cumulative distribution function for a standard logistic random variable, and the function of G is defined as follows:

$$G(z) = \frac{\exp(z)}{[1 + \exp(z)]} = \Lambda(z)$$

This function will only take on values in the interval of [0,1].

4.3 Endogeneity

Endogeneity is an important problem in many studies and is defined as a correlation between the error term and the explanatory variables in a regression. There are two types of endogeneity issues, which are omitted variable problem and selection problem (Wooldridge, 2016). The risk of excluding an explanatory variable although it should have been included is difficult to eliminate completely. By including all the commonly used controls together with additional explanatory variables relevant to this study, the risk has been minimised. Selection bias is present if an explanatory variable is non-randomly allocated throughout the sample. According to Liu and Malatesta (2005) and An and Chan (2008), it can be argued that firms, at least partially, determines whether or not to obtain a credit rating or to acquire a higher rating depending on the associated costs and benefits. This means that there is a likelihood that the decision is based on firm-specific characteristics, which would result in endogeneity and biased estimates if not accounted for in the model.

In order to tackle this problem, the method of using control function approach is used, as suggested by Wooldridge (2010). This is done by first estimating a reduced function, which consists of the endogenous variable regressed on the appropriate instruments and exogenous variables, similar to the first stage of a Two-Stage Least Square (2SLS) regression. The residuals from the reduced function are then included as a variable in the second and third, structural, regressions with *payment method* and *fraction of cash* as dependent variables estimated using GLM logit model and probit model respectively, previously mentioned in section 4.2. If the residuals are statistically significant, the null

hypothesis of no endogeneity can be rejected, and the variable is considered exogenous, otherwise not. For the first examined variable, *credit rating existence*, the reduced function is estimated using a probit estimator due to the binary nature of the variable. For the other, *credit rating level*, a regular OLS is employed since it is a continuous variable.

4.3.1 Instrumental Variables

The instrumental variables in this study are *industry profitability*, *industry risk*, *industry fraction* and *industry level*. These instrumental variables are used in the study by Karampatsas, Petmezas and Travlos (2014) as well.

Industry profitability is the median profitability in the industry and is defined as the ratio of EBITDA to total assets.

Industry risk is defined as the standard deviation of the industry profitability, i.e. the ratio of EBITDA to total assets.

Industry fraction is defined as the fraction of firms with credit ratings within the same 2-digit SIC-code industry group, and use the log of 1 plus this fraction. This variable is used as previous studies suggest that firms operating in a well-established industry are more likely to obtain a credit rating.

Industry level is defined as the median credit rating level of firms within the same 2-digit SIC-code industry group.

5 Data and Descriptive Statistics

The purpose of this chapter is to describe the data used in this study, along with the sources of the data. This is followed by a description of the variables used when performing the empirical study, along with descriptive statistics of the variables.

5.1 Sample Selection

This paper studies M&A deals on the European market. The time period that will be examined is the years between 2000 and 2018, and this was chosen to capture different waves of the market, including the financial crisis in 2008. The sample collected is all domestic and cross-border M&A deals with a value greater than €1 million, which have been made by an acquirer in Europe during the examined time period. Another criterion for the observations in the original sample is that the final stake of ownership for the acquirer is 50% or higher of the target firm. This original sample contains 12,009 observations, and from this, some observations have been removed.

The first removal is observations where the acquiring firm does not have an ISIN-number, and this was done due to the difficulty of matching this data with collected variables. The next removal is observations where the payment method is missing, as this variable is necessary for this study. Another removal is observations where acquirers operate in the financial sector (SIC-code 6000-6999) and regulated utilities (SIC-code 4900-4999). This omission is done due to the difference in business model in financial firms, and the linkage to the state of regulated utilities, which makes the structure of these firms very different to other firms, and therefore difficult to compare. This removal has also been made in several previous articles on M&As (Faulkender & Petersen, 2006; Uysal, 2011; Xu, 2017). The last excluded observations are M&As where the acquirer is located in Romania, Switzerland and Czech Republic, as the number of observations in these countries are five or lower, and will therefore be omitted in the regressions.

The final sample consists of 4,629 observations, of which 806 acquiring firms have a credit rating, and the remaining 3,823 acquiring firms do not have a credit rating. In the final sample, 2,198 observations are cross-border M&As, and the remaining 2,431 observations are domestic M&As. This can be seen in Exhibit 5.1 below.

Exhibit 5.1: Domestic & Cross-border M&As

	Domestic	Cross-border	Total
Rated acquirer	240	566	806
Unrated acquirer	2,191	1,632	3,823
<i>Total</i>	<i>2,431</i>	<i>2,198</i>	<i>4,629</i>
Rated target	20	55	75
Unrated target	2,411	2,143	4,554
<i>Total</i>	<i>2,431</i>	<i>2,198</i>	<i>4,629</i>

A description of the distribution of M&As per country and year can be seen in Table 1, and an illustration of the distribution can be seen in Figure 1. Here it can be seen that almost half of the M&As have been made in the UK during the examined time period. The country with the second highest number of M&As is France. However, this amount is only around one-fourth of the M&As made in the UK. The country with the lowest number of observations included in the sample, fulfilling the criteria for the sample, is Slovakia, where seven M&As have been made in the years between 2000 and 2018. Looking at the distribution of M&As by year, it can be seen that the number of M&As each year increased until 2008, when it instead decreased. In 2010, the number of deals again increased and has since then been on a steady level between 200 and 300 each year.

5.2 Data Sources

The dataset on the M&As, including the characteristics of the deals, was collected through Moody's analytical company Bureau van Dijk's database Zephyr, which contains hourly updated information on M&As, IPOs, venture capital and private equity deals. Data on the main explanatory variables, credit ratings, was collected from Thomson Reuters' database Eikon, which contains market data and financial information from the whole world. Firm characteristics were also collected from this source. Country-level variables have been obtained through the database of the PRS Group, which contains data of political and country-risk factors for countries in the whole world.

The sources for the data collection in this study, are established and commonly used by researchers and the financial industry, as well as updated regularly. Zephyr is the largest and most well-known database for deals, and Thomson Reuters' Eikon is widely used in previous research. These sources can therefore be considered to be reliable, which gives the data sample high reliability.

5.3 Variable Definitions

This thesis will include similar variables as previous studies on the subject. The explanatory variables are divided into three groups; credit rating, firm characteristics and deal characteristics. Instrumental variables and other control variables have also been included, and all of these will be described below. Some relevant variables from previous research have been excluded due to different reasons, and this will also be described below. A summary of the definitions of all variables used in the study can be found in Appendix 2. A summary of all statistics of the variables can be found in Table 2.

5.3.1 Dependent Variables

This study uses two measures for payment method. First, a binary - *payment method* - and second, the *fraction of cash* used in the transaction. The variable payment method can take two shapes, either 1 if equal to 50% or more in cash, and 0 if equal to less than 50% in cash. The mean of payment method is 0.80, as can be seen in Table 2. This implies that 80% of the examined deals are paid with 50% or more in cash.

The variable fraction of cash is a continuous variable and can be any number in the interval of [0,1]. The mean of fraction of cash is 0.79, which means that firms pay M&As using a fraction of 79% cash on average. Karampatsas, Petmezas and Travlos (2014) also use these dependent variables, whereas Huang, Officer and Powell (2016) only use payment method as dependent variable. The authors of this thesis decided to use both variables as dependent, to be able to get a greater understanding of the choice of the payment method.

5.3.2 Credit Rating

This study includes several variables that capture different aspects of credit ratings. These are *the existence of a credit rating for the acquirer*, *credit rating level of the acquirer*, *investment grade*, *the existence of a credit rating for the target* and *credit rating level of the target*.

First, *the existence of a credit rating for the acquirer* is a binary that will be 1 if the acquiring firm has a credit rating and 0 if the firm does not have a credit rating. The mean of this variable is 0.17, as can be seen in Table 2, meaning that 17% of the acquiring firms have a credit rating.

The credit rating level of the acquirer and *the credit rating level of the target* can take 21 grades, based on the rating scales provided by Standard & Poor's and Moody's. Number 21 is the highest rating, AAA by Standard & Poor's or Aaa by Moody's, and number 1 is the lowest rating, C by Standard & Poor's and C by Moody's. The rating scales and which rating is assigned to which number can be seen in Appendix 3. Firms that do not have a credit rating are assigned with the number 0. The

credit rating level of the acquirer has a mean of 2.43 which would imply that the acquiring firms, on average, has a rating of CC, according to Standard & Poor's and C according to Moody's. This is however not true, as only 806 of the acquiring firms are rated, and all the unrated firms therefore lower the mean a lot, as they are assigned with 0. The credit rating level of the target, on the other hand, has a mean of 0.194, which means that the target firms, on average, has a rating of C according to Standard & Poor's and Moody's. This is however not true either, based on the same argument as for the acquiring firms, and only 75 of the target firms are rated. The maximum value for the rating level of the acquirer is 20, which means that the firm/s with the highest rating/s are assigned with a rating of AA+ by Standard & Poor's, or Aa1 by Moody's. The maximum value for the rating level of the target is 19, implying that the target firm/s with the highest rating/s are assigned with a rating of AA by Standard & Poor's, or Aa2 by Moody's.

If an acquiring firm has an *investment grade* rating, this variable will be 1, and 0 otherwise. The definition of an investment grade rating can be seen in Appendix 3. The mean of investment grade is 0.15, suggesting that 15% of the acquiring firms have an investment grade rating.

The existence of a credit rating for the target is also a binary that will be 1 if the target firm has a rating and 0 otherwise. The mean of this variable is 0.16, meaning that 16% of the target firms have a credit rating.

The existence of a credit rating for the acquirer and target and the level of the credit rating were used as main explanatory variables in the study by Karampatsas, Petmezas and Travlos (2014) as well. As suggested by theory, the expected signs of these variables are positive, as theory implies that credit ratings have a positive impact on using cash as payment method.

5.3.3 Firm Characteristics

These variables are characteristics of the acquiring firm. These include *size*, *collateral*, *leverage*, *run-up*, *book-to-market*, *cash flow to assets*, *number of analysts* and *profitability*.

Size is measured as the natural logarithm of the market value of equity (market cap) of the acquiring firm. This is a measure of debt capacity, as a larger firm is usually more diversified, with a lower probability of default. This makes it easier for them to access debt, which means that their debt capacity is higher than for smaller firms. This implies that larger firms will more likely use cash as payment method. The mean of size is 6,000,000,000, as can be seen in Table 2. *Collateral* is also a measure of debt capacity and is defined as the ratio of tangible assets to total assets. The mean of collateral is 0.21, which suggests that the acquiring firms on average have 21% of tangible assets to total assets. Size and collateral are used by Faccio and Masulis (2005), and they suggest that a higher

debt capacity makes it more probable that an acquiring firm pays an acquisition with cash. This can be related to theory, as Lemmon and Zender (2010) find that firms with a higher debt capacity, will more likely issue debt than equity.

Leverage is a measure of the financial condition of a firm and is defined as the ratio of long-term debt and current debt to book value. The expected sign of this variable is difficult to predict, as Faccio and Masulis (2005) find a negative connection between leverage and probability of using cash as payment, but Harford, Klasa and Walcott (2009) find a positive connection. The mean of leverage is 0.20, implying that the acquiring firms, on average, have 20% debt compared to book value.

Run-up is defined as the market-adjusted buy-and-hold returns for the acquirer, and the mean of this variable is 0.15. This variable can be related to the market timing theory. Acquirers tend to favour stock acquisitions when their equity is relatively overvalued to the equity of the target firm. Run-up is therefore expected to have a negative sign.

Book-to-market is a measure of growth opportunities and is defined as the ratio of book market of equity to market value of equity. The mean of book-to-market is 0.50. As suggested by Martin (1996), firms with high growth opportunities will less likely finance an M&A with cash, whereas firms with a high book-to-market ratio will more likely finance an acquisition with cash.

Cash flow to assets is defined as the ratio of cash flow to total assets and is a measure of free cash flow. This can thereby be related to Jensen's free cash flow hypothesis (1986). Firms with higher cash flow are more likely to engage in M&As and are more likely to pay these with cash. The mean of cash flow to assets is 0.06, meaning that the cash flow of acquiring firms on average is 6% of its total assets.

Number of analysts is defined as the number of analysts following the acquiring firm and is a measure of information asymmetry. A higher number of analysts imply lower information asymmetry, and it is then more likely that the deal is paid with cash. The maximum value of number of analysts in the sample is 54, and the lowest is 0, whereas the mean number of analysts is 9.

Profitability is defined as the ratio of EBITDA to total assets and is a measure of the financial condition of a firm. This variable is expected to have a positive impact on using cash as payment in an acquisition, as higher profitability implies a stable financial condition, which makes it easier to raise debt. The mean of profitability is 0.18, which suggests that the EBITDA of acquiring firms on average is 18% of its total assets.

5.3.4 Deal Characteristics

Deal characteristics include *cross-border*, *diversifying deals*, *europazone*, *interest rate spread*, *relative size* and *public target*.

Cross-border is a binary that indicates if the target country is located in another country than the acquirer. This variable will be 1 if the deal is a cross-border deal and 0 if the deal is a domestic deal. Cross-border is a measure of information asymmetry, implying that cross-border deals will less likely be financed with cash than domestic deals, and the sign is thereby expected to be negative. The mean of cross-border is 0.47, as can be seen in Table 2, which means that 47% of the deals in the sample are cross-border deals.

Diversifying deals is a binary which is defined as if the target and acquirer are operating in the same industry or different industries. This variable is a measure of information asymmetry. If they operate in different industries, the variable will be 1, and 0 otherwise. If a deal is diversified, it involves greater information asymmetry, implying that it is less likely that it will be paid with cash. The mean of diversifying deals is 0.47, suggesting that 47% of the deals are made where firms operate in different industries.

The variable *europazone* is a binary indicating if the target is located in a country within Europe. It therefore takes the value 1 if the target country is located in Europe, and 0 if the target country is located outside of Europe. This variable is also a measure of information asymmetry. Cross-border deals where the countries are located on different continents involve even greater information asymmetry. This is due to more significant differences in language and culture, which makes it less probable that these deals are paid with cash. *Europezone* has a mean of 0.75, meaning that 75% of the deals are with target countries located inside Europe.

Interest rate spread is a measure of market credit conditions. This variable is defined as the spread between the average rate on corporate loans and the government rate. Harford, Klasa and Walcott (2009) argues that a higher spread implies more financing or credit constraints, which makes it more difficult to access debt, and an M&A will therefore more likely be paid with equity. The mean of interest rate spread is 127.66 basis points, implying that the average interest rate is 1.28%.

Relative size is the size of the target compared to the size of the acquirer. In previous research, where this variable is used, the finding is that a larger relative size decreased the probability of using cash as payment method. The mean of relative size is 0.09, which means that the size of the deal, on average, is 9% of the size of the acquirer.

Public target is also a binary, which will be 1 if the target is public, and 0 if the target is private. This variable is a measure of target status on the choice of payment method. There is less information asymmetry around a public target than a private target, as regulations force these firms to disclose more information. An M&A deal where the target is a public firm is, based on this, more likely to be paid with cash. Public target has a mean of 0.17, which implies that 17% of the target firms are public.

5.3.5 Control Variables

There are other control variables included in this study as well, apart from firm characteristics and deal characteristics, and these are *industry*, *year*, *country* and *country-level variables*.

Industry is defined using the 2-digit SIC level and is by this divided into 57 different sectors, based on the Security of Exchange and Commission's code list (Security of Exchange and Commission, 2019). As described above, firms within the financial sector and regulated utilities are excluded, consequently firms with SIC-code 6000-6999 and 4900-4999.

Year is included as a control variable, and the years included are 2000-2018, which is the examined time period in the study.

Country is also a control variable, and there are 19 country variables included in the regressions, as there are 19 acquiring countries included in the sample.

Country-level variables include ICRG (International Country Risk Guide) and market to GDP ratio. ICRG captures the aspect of governance risk. There are several components of ICRG, and the ones included in this study are corruption, government stability, bureaucracy quality and law and order. Market to GDP ratio is defined as equity market capitalisation to GDP and measures the financial market development of a country. These variables are used by Huang, Officer and Powell (2016), however, they include them as main explanatory variables. As this thesis examines a different perspective, these variables are instead included as control variables in this study.

6 Empirical Analysis

The purpose of this chapter is to present the results of the study made in the paper. This will be followed by an analysis of these results, using previous research and theories presented throughout the paper.

As a summary, the aim of this paper is to analyse if credit ratings have an impact on the choice of payment method in cross-border and domestic M&As. The hypotheses that will be answered in this chapter is as follows:

H_{0,1}: Firms with credit ratings will more likely finance a merger or acquisition with cash.

H_{0,2}: Firms with a higher credit rating level will more likely finance a merger or acquisition with cash.

H_{0,3}: For rated target firms, the acquiring firm will more likely finance a merger or acquisition with cash.

The results will be analysed in light of previous research and theories discussed throughout the paper, to be able to see how previous findings correspond with the findings in this paper. This will lead down to the hypotheses being answered. A section on endogeneity control is also included before the analysis.

6.1 Results

As described in chapter 4, four base regressions have been performed to examine the impact of the existence of a credit rating on the choice of payment method and the fraction of cash used, as well as the impact of the level of the credit rating on the choice of payment method and the fraction of cash used. Outputs from the regressions using the probit model, with payment method as dependent variable, can be seen in Table 3 and 5. Outputs from the regressions using the GLM logit model, with fraction of cash as dependent variable, can be found in Table 4 and 6.

In order to trust the estimated coefficients, the correlation of the variables had to be examined. Looking at their correlations in Table 7, the correlation coefficients are overall well within acceptable levels, but three variable pairs need to be examined more closely. The two pairs of rating existence and rating level for both acquirer and target are above 0.9, which is to be considered as too high. In this case, the variables are not included in the same model and thereby not causing any interference. The last one is the correlation between the credit rating level of the acquirer and the dummy variable for if the acquirer possesses an investment grade rating, which has a correlation

of 0.76. Although it is high, the authors are not considering it to be too high. This can be somewhat expected and indicating that a large portion of the rated acquirers has high ratings. Furthermore, the different models show high robustness looking at the consistency of the size of the coefficients, their signs and significance. Except for when no controls are added to the model, including rating existence, all the estimated coefficients show great consistency.

Beginning with the probit regressions, with the *existence of a credit rating for acquirer and target* as main explanatory variables, it can be seen that the *existence of a credit rating for the acquirer* has a significant positive effect on the probability of the transaction being cash-dominated, when not including control variables. However, when adding control variables, the significance is lost, and the existence of a credit rating for the acquirer seems to have a negative effect on the probability of the transaction being cash dominated. The *existence of a credit rating for the target* has a significant negative effect on using cash as payment, with and without control variables. This implies that if the target firm has a credit rating, the acquiring firm will more likely pay the M&A with equity.

Regarding the firm characteristics, the variables *size*, *run-up*, *collateral*, *cash flow to assets* and *profitability* has a significant effect on the choice of payment method. Of these, size, collateral, cash flow to assets and profitability have a positive impact on using cash as payment, whereas run-up has a negative effect on using cash as payment. Looking at the deal characteristics instead, the variables *cross-border*, *relative size* and *public target* have a significant effect on the choice of payment method. Relative size and public target have a negative effect on using cash as payment, and cross-border has a positive effect on using cash as payment.

Moving over to the probit regressions with *credit rating level of acquirer and target* as main explanatory variables, it can be seen that the *credit rating level of the acquirer* has a significant positive effect on using cash as payment when including control variables. The *credit rating level of the target*, however, has a negative but not significant effect on using cash as payment. An *investment grade* rating for the acquirer has a slightly positive, but not significant, effect on using cash as payment.

Of the control variables in these regressions, only *size*, *collateral*, *book-to-market*, *diversifying deals* and *public target* have a significant effect on the choice of payment. According to the signs of the variables, size, collateral and public target have a negative impact on using cash as payment, whereas book-to-market and diversifying deals have a positive impact on using cash as payment.

Changing perspective to the logit regressions, beginning with the logit regressions with the *existence of a credit rating for the acquirer and target* as main explanatory variables, it can be seen that the *existence of a credit rating for the acquirer* only has a significant effect on the fraction of cash used in a transaction

when not including any control variables. However, the sign of the coefficient is positive in all regressions. Regarding the *existence of a credit rating of the target* firm, this variable has a significant negative effect with and without control variables, on the fraction of cash.

Of the firm characteristics in these regressions, *size*, *run-up*, *collateral* and *profitability* have a significant effect on the choice of payment method. Size, collateral and profitability positively affect the fraction of cash, whereas run-up negatively affects the fraction of cash. Of the deal characteristics in these regressions, *cross-border*, *relative size* and *public target* significantly affect the fraction of cash, but only cross-border has a positive effect.

In the last logit regressions, with *rating level of acquirer and target* as main explanatory variables, it can be seen that both the *rating level of the acquirer* and if the acquirer has an *investment grade rating* have a significant effect on the fraction of cash used in the transaction. However, the *rating level of the target* does not have a significant effect on the fraction of cash. The rating level of the acquirer, as well as if the acquirer has an investment grade rating, has a positive impact on the fraction of cash used in the payment. Looking at the marginal effects evaluated at the mean, found in table 10, from these significant variables in both regressions a one-step increase in the acquirers rating level will lead to a 1,8 % increase in probability that the payment method is cash dominated and a 0,45 % increase on the fraction of cash used in the transaction.

Size, *collateral* and *book-to-market*, of the firm characteristics, seem to have a significant effect on the fraction of cash. Size and collateral with a negative effect, and book-to-market with a positive effect. Of the deal characteristics, *relative size*, *diversifying deals* and *public target* have a significant effect on the fraction of cash. However, only diversifying deals has a positive effect.

The regressions discussed above, where the results can be seen in Tables 3, 4, 5 and 6, was done including all countries in Europe. The same regressions have also been done, excluding the UK, as the majority of the examined M&A deals have been made in the UK. The regression outputs from these regressions, excluding the UK, can be seen in Appendix 4. These results are rather similar to the results from the regressions including all observations. However, the main difference is that neither the existence of a credit rating nor the rating level have a significant effect on the choice of payment method or fraction of cash. The control variables behave rather similar as in previous regressions, except for cross-border, where the coefficients now are larger than before, but still positive.

6.2 Endogeneity Control

In order to determine whether the credit rating variables could be treated as exogenous or endogenous, the control method outlined in section 4.3 was performed. First, the variable of credit rating existence was examined using the control function approach with structural regressions with both dependent variables, payment method and fraction of cash. Table 8 presents the results of these regressions, and in the reduced regression (1) we can see that two out of three excluded instruments, *industry fraction* and *industry risk*, shows significance on a 1% and 5%-level respectively with positive coefficients. Looking at the first structural regression, the Wald test of endogeneity in the lower panel has a p-value far above the critical level. The second structural, with the estimated residuals included from the reduced function, shows no observable statistical significance for the residual variable *rating residual*. This taken together means that the null hypothesis of no endogeneity cannot be rejected. Thereby, exogeneity in the variable determining credit rating existence is assumed.

Furthermore, the second credit rating variable which could be suspected to be endogenous is also tested using the same control function approach. The results from this can be seen in Table 9, which reports similar results as for *credit rating existence*. In the first reduced regression, two of three excluded instruments, *industry fraction* and *industry risk*, were significant at a 1 %-level with positive coefficients. Again, judging by the high p-value from the Wald test of endogeneity for the first structural regressions and no evidence of significance for the *rating residual* variable in the second, the null hypothesis cannot be rejected, and *rating level of acquirer* is also assumed to be exogenous. Thereby, the results from the original regressions will be used for the analysis.

6.3 Analysis

As discussed in section 6.1, the *existence of a credit rating of the acquirer* only has significant effect on the choice of payment method and fraction of cash when not including control variables. This suggests that the effect from the control variables are captured by the existence of a credit rating when these are not included. Therefore, the existence cannot be said to have any real effect on the choice of payment nor the fraction of cash used in the payment. As discussed in chapter 2, previous research has found that the existence of a credit rating leads to a larger amount of debt in a firm and a higher probability of making acquisitions and paying these with cash (Faulkender & Petersen, 2006; Harford & Uysal, 2014). For the firms in the examined sample in this thesis, this does not seem to be the case, as the existence of a credit rating has no statistically significant impact on the choice of payment. However, as discussed by Kisgen (2006 & 2009), firms close to a downgrade or upgrade in credit rating issue less debt than firms not close to a change in rating, and firms that

were recently downgraded on average reduce debt. This could have an impact on the choice of payment method. Since a variable regarding if a firm was recently upgraded or downgraded is not included in the regressions, it is difficult to tell if this could have an impact. This might therefore be an explanation for why the *existence of a rating of the acquirer* does not have a significant impact on the choice of payment method or fraction of cash used in the payment.

The *existence of a credit rating of the target*, however, has a significant effect on the choice of payment method as well as the fraction of cash. The sign of this coefficient is negative, though, which is the opposite of what was expected. This implies that an acquiring firm will more likely pay an M&A with equity if the target firm has a credit rating. This result conflicts with the results in previous research as well as with what was expected from theory. According to Poon, Chan and Firth (2013), having a credit rating reduces information asymmetry, and therefore an acquisition of a rated target firm would more likely be paid with equity. However, the sign of this coefficient could somehow be described by omitted variable bias. The variable size of target has not been included in the study, as data on this could not be found. Generally, rated firms are larger than unrated firms, which means that some of the effect from size could have been captured by the existence of a credit rating for the target. This could explain the negative sign of this variable. As discussed by Levin and Coburn (2011), there is a conflict between pleasing the issuer and the public when rating a firm, implying that some firms are not correctly rated. This could also somehow describe the negative sign of the *existence of a credit rating of the target*, as these firms might be incorrectly rated, which leads to that information asymmetry is not reduced.

From the results it can be seen that rating level has a greater impact on the choice of payment method and fraction of cash, than the existence of a credit rating has, as the *rating level of the acquirer* is significant in both cases. This coefficient is also positive in both regressions, which means that a higher rating level of the acquirer leads to a higher probability of an M&A being paid with cash, or a higher fraction of cash, if the acquiring firm has a high rating level. The sign of the coefficient of rating level of the acquirer is therefore as expected from theory and previous research, as it is in line with the findings from Karampatsas, Petmezas and Travlos (2014).

The variable *investment grade for the acquirer*, however, does not show any specific pattern, or significance, in the regressions, which makes it difficult to draw any conclusion from these results. Having an investment grade rating therefore does not seem to have a great impact on the choice of payment. The *rating level of the target* shows significance in the regressions not including control variables, but not in the regressions where controls are included. This shows that this variable

captures some effect from the controls in the first regressions, and therefore has no real impact on the choice of payment method.

When looking at the control variables in the regressions with the existence of a credit rating of the acquirer and target as main explanatory variables, it can be seen that many of them have a significant effect on the choice of payment method and the fraction of cash. The signs of these variables are somewhat as expected, but some coefficients have an opposite sign than expected and will be discussed further. First, the firm characteristic *number of analysts* was expected to have a positive sign, but in all regressions, this variable has a negative sign. As discussed in chapter 5, a higher number of analysts leads to lower information asymmetry and the likelihood of a deal being paid with cash increases. These regressions however show the opposite. An explanation for this could be that a higher number of analysts leads to that the acquiring firm is correctly valued, implying that the target firm might prefer the payment to be made in equity.

The deal characteristics *interest rate spread*, *cross-border*, *public target* and *Europezone* also have opposite signs of what was expected. *Interest rate spread* does however not have any significant effect on the payment method and fraction of cash, and the coefficients in all regressions are very small, whereas not much attention will be paid to this variable. *Cross-border* was expected to have a negative impact on the choice of payment method and the fraction of cash, as cross-border deals involve greater information asymmetry than domestic deals, and this was the finding by Huang, Officer and Powell (2016). An explanation for the sign of this coefficient could be that European countries are quite homogenous, and therefore the need for risk mitigation by paying with equity is reduced. As discussed by Kang and Kim (2010), Erel, Liao and Weisbach (2012) and Ahern, Daminelli and Fracassi (2015), language, culture and geography impact whether to make M&As or not, and thereby the payment method. Sharing a common language or culture therefore implies that the risk is lower, and the need for reducing risk by paying with equity is lowered. *Public target* was expected to have a positive sign, as theory suggests that a public firm involves less information asymmetry than a private firm. This variable however affects payment method and fraction of cash, with strong significance, negatively. The authors do not find an intuitive explanation for this, and will therefore leave this for further research. *Europezone* was also expected to have a positive sign, but the results show the opposite. The regressions including all control variables are not significant however, and the coefficients are rather small, whereas it is difficult to analyse the reason for this.

In the regressions with rating level of the acquirer and target as main explanatory variables, many of the variables have opposite signs than expected. *Leverage*, *run-up*, *profitability* and *interest rate spread* have opposite signs of what was expected, but they have no significant effect on the choice of

payment method or fraction of cash in these regressions, and will therefore not be discussed more in detail. The firm characteristic variable *size*, however, was expected to have a positive sign, as it is more likely that larger firms can easily access debt, and will therefore pay an M&A with cash, as discussed in theory. The sign and value of the coefficient of this variable however fluctuate a lot in the regressions, and it is only significant when including all control variables. It is therefore difficult to draw any conclusion regarding this variable. *Collateral* was also expected to have a positive sign, as a high ratio of collateral implies a high debt capacity (Faccio & Masulis, 2005; Lemmon & Zender, 2010). This variable shows significance in all regressions with payment method as independent variable. The reason for this is difficult to explain, as theory states the opposite, and previous research has found the opposite sign for this variable. *Diversifying deals* has a significant positive effect on payment method and fraction of cash, which is the opposite of what was expected. In diversified deals, greater risk and information asymmetry are involved, and it would therefore be more likely for an acquirer to pay this kind of transaction with equity. Theory however suggests that an acquirer can use cash as payment to signal confidence in a deal (Fishman, 1989), which could be a reason why acquirers in diversifying deals choose cash as payment, to show their confidence even though the target firm operates in a different industry. *Public target* has a significant negative effect on the choice of payment method and fraction of cash in all regressions, which is the opposite of what was expected. In this case, the opposite sign of the coefficient might be explained by a possible bias, as the sample of public targets in these regressions is very small.

The variables describing the difference in country risk between the acquirer and the target, measured by the ICRG indexes, all have the expected signs. The two risk measurements that have the highest significance are *corruption* and *bureaucracy stability*, which are both showing negative signs. As the variable is measured as the difference between the two countries, a negative value in an observation would indicate that the target country has a lower (worse) index. Therefore, a negative coefficient would mean that if the target country's index is lower than the acquiring, the probability of the deal being cash financed and the fraction of cash used would be lower. This goes in line with the findings related to the increased risk involved in cross-border deals as discussed by Huang, Officer and Powell (2016).

In the regressions where the UK is excluded, the results are rather similar to the regressions where the UK is included, as discussed in the previous section. The main difference between the two samples is that *rating level of the acquirer* does not have a significant effect on the choice of payment method and fraction of cash when excluding the UK. This implies that the *level of the credit rating of*

the acquirer is more important for the choice of payment method in the UK than in the rest of Europe.

In previous research, some variables are frequently recurrent. These include hostile deal and tender offer, and are characteristics of the deal. In previous studies, these variables have had a significant effect on the choice of payment method, and could, therefore, have been interesting to include in this study as well. However, they were excluded due to lack of data. Hostile deals and tender offers are variables that take into account how the deal is performed, with regards to competition. These variables could have been interesting to include in the regressions, as theory predicts how these might affect the choice of payment method. The exclusion of these variables could, therefore, affect the results, and this should, therefore, be taken into account. Hostile deals and deals involving high competition are more likely to be paid with cash (Fishman, 1989). Tender offers are also more likely to be paid with cash (Travlos, 1987). The variable size of target has also been excluded, as discussed above, and this seems to have affected the results.

The concept of validity, discussed in chapter 4, is important to take into consideration when analysing the results. External validity is in this study ensured by using a representative sample, a long time period and performing regressions and analysing results with and without the UK. In the sample used in the study, all countries in Europe, where an M&A has been made, is included, which makes the sample representative and increases the validity. The regressions are performed both including and excluding the UK, as the majority of the M&As in the sample has been made here. This increases the validity, as only including regressions with the UK could give a twisted result. The time period examined is 18 years, which is quite long. This period captures the financial crisis of 2008, as well as different business cycles. This therefore contributes to high validity, as it captures different cycles in time. Internal validity is ensured by including several control variables in the study. A high number of control variables increases the probability of the explanatory variables measuring what they are supposed to measure. Based on the above, the study performed in this thesis can be considered to have high validity, according to the authors.

To summarise, and answer the hypotheses, the results from this study show that the existence of a credit rating for acquirer or target does not have a significant effect on the choice of payment method or the fraction of cash. The level of the credit rating of the acquirer, however, has a significant positive effect on the choice of payment method and fraction of cash. To answer the hypotheses, the first hypothesis can be rejected, as there is no statistical significance for that firms with credit ratings will finance an M&A with cash. The second hypothesis is however accepted, as the regressions show that firms with a higher level of rating, with statistical significance, will more

likely pay an M&A with cash. The third hypothesis is also rejected, as neither the existence of a rating nor the level of the rating of the target has any significant effect on the choice of payment method or fraction of cash. However, the second hypothesis can only be accepted when looking at the whole sample of the study, including the UK. Excluding the UK from the sample, makes the variable rating level of the acquirer insignificant, and in this case, the second hypothesis should be rejected as well.

7 Conclusion

This chapter will present a summary of the study performed in this paper, along with the findings from the study. The contribution to research of this paper is also discussed. Lastly, suggestions for further research on the topic will be presented.

7.1 Summary and Discussion

This paper had as purpose to investigate if the existence of a credit rating for the acquirer and target has an impact on which payment method is used. Also, it was examined if the level of the credit rating of the acquirer and target influences which financing source is used. The study was performed using a sample of 4,629 domestic and cross-border M&A deals from the European market, collected from Bureau Van Dijk's database Zephyr. The methodology used is a probit and a GLM logit model to examine the dependent variables payment method and fraction of cash. The main explanatory variables regard credit ratings and are the *existence of a credit rating for the acquirer and target*, and the *level of the credit rating for the acquirer and target*. This study has provided results that somewhat differs from previous research and the predictions from theory.

First, the *existence of a credit rating for the acquirer* does not have a significant effect on the choice of payment method. However, the *level of the rating for the acquirer* has a significant positive effect on using cash as payment. These results are partly in line with theory and previous research, as they imply that a higher rating would lead to paying an M&A with cash, which was found in this study as well. However, theory and previous research also predict that the existence of a credit rating should affect the choice of payment method, which is not the case in this study, as the results from the regressions show that the existence of a credit rating does not have a significant effect on payment method. This implies that having a credit rating in Europe is not as important as in the US. To answer the research questions, the first question can be answered with no. There is no statistical significance for the payment method being influenced by the existence of a credit rating of the acquirer and target in cross-border or domestic M&As. However, the answer to the second research question is yes. There is statistical significance for the level of the credit rating of the acquirer influencing which payment method is used in M&As. As discussed in the previous chapter, however, the variable rating level of the acquirer only shows significance when including the UK in the sample. The answer to research question two is therefore only yes when the whole sample, including the UK, is used in the regressions. This shows that the impact of the level of the rating for the acquirer is important to the choice of payment method in the UK, but not as important in

the other European countries included in the sample. Based on this, credit ratings seem to be of greater importance in the UK and the US, compared to other European countries.

In previous research, there are studies on what determinants exist in cross-border M&As when choosing payment method, and studies on how credit ratings affect the choice of payment method in M&As. However, these perspectives have not been combined in previous research. The impact of credit ratings, specifically, when choosing payment method in cross-border M&As, have not been studied before.

Europe is a relatively unexplored market regarding payment method in M&As in previous research. Most studies have been made using data from the whole world, or only the US market. The authors of this thesis, therefore, decided to examine the European market in particular, to find potential differences to other markets. This thesis fills two gaps in research, by combining the two perspectives discussed above, as well as studying another market than previous research.

The results, discussed above, differs from previous research. This implies that there are differences between the US and Europe regarding credit ratings. This thesis has therefore also contributed to research by showing that there are differences between the US and Europe in the importance of credit ratings, as the existence of a credit rating seems to be of minor importance in Europe.

7.2 Further Research

This study, and most previous studies, have examined rather large markets. It could therefore be of interest to study a smaller, more homogenous market, to see what the results would be. For further research, a suggestion is to study a smaller market within Europe, for example, Scandinavia or eastern Europe. These smaller markets are more homogenous, as the countries share more similar culture and language, which makes information asymmetry less significant, and the intuition is therefore that credit ratings would have an even lower impact on the choice of payment method here. Another suggestion is to study another continent where M&As are common, Asia. It could be of interest to examine what impact credit ratings might have on the choice of payment method in cross-border M&As here, and compare those results to the results from the studies in Europe and the US.

To develop the study of this thesis, another suggestion for further research is to study why credit ratings actually have a smaller impact on the choice of payment method in cross-border and domestic M&As in Europe, than in the US, as this was outside the scope of this thesis.

As discussed in chapter 6, the variable existence of a credit rating for target, probably captures the variable size of the target, as well, which makes the results somewhat unreliable regarding this variable. One suggestion for further research is thus to perform the same study as in this paper, but including the variable size of the target, to see if the results would differ, and there would be an impact on the choice of payment method if the target firm is rated.

8 Reference list

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9 Tables

Table 1: M&A distribution by country and year

Country:	M&As:	Year:	M&As:
United Kingdom	2,238	2000	166
France	407	2001	131
Sweden	346	2002	193
Germany	250	2003	254
Italy	195	2004	311
Netherlands	173	2005	377
Spain	166	2006	334
Finland	163	2007	342
Poland	157	2008	277
Ireland	146	2009	149
Norway	120	2010	219
Belgium	82	2011	219
Denmark	56	2012	206
Greece	43	2013	211
Austria	28	2014	233
Portugal	24	2015	279
Bulgaria	19	2016	256
Hungary	9	2017	238
Slovakia	7	2018	234
<i>Total:</i>	<i>4,629</i>	<i>Total:</i>	<i>4,629</i>

Table 2: Summary statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
<i>Dependent variables:</i>					
Fraction of cash	4,629	0.779	0.353	0	1
Payment method	4,629	0.8	0.4	0	1
<i>Credit rating variables:</i>					
Credit rating level of acquirer	4,629	2.434	5.408	0	20
Existence of a credit rating for acquirer	4,629	0.174	0.379	0	1
Investment grade	4,629	0.148	0.355	0	1
Existence of a credit rating for target	4,629	0.016	0.126	0	1
Credit rating level of target	4,629	0.194	1.566	0	19
<i>Firm characteristics:</i>					
Size (th)	4,629	6,000,000	18,100,000	704	262,000,000
Leverage	4,629	0.204	0.193	0	5.122
Run Up	4,629	0.145	0.686	-0.889	27.571
Collateral	4,629	0.208	0.194	0	1.123
Book-to-market	4,629	0.502	0.547	-13.374	5.995
Cash flow to assets	4,629	0.058	0.555	-32.551	0.703
Number of analysts	4,629	9.018	10.106	0	54
Profitability	4,629	0.178	0.379	-3.377	1.962
<i>Deal characteristics:</i>					
Interest rate spread	4,629	127.657	73.595	42.254	484.756
Relative size	4,629	0.094	0.114	0.0003	2.398
Diversifying deals	4,629	0.472	0.499	0	1
Cross-border	4,629	0.475	0.499	0	1
Public target	4,629	0.169	0.375	0	1
Europe zone	4,629	0.748	0.434	0	1

Table 3: Credit Rating Existence - All Observations

VARIABLE:	Payment Method						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Rating characteristics</i>							
Rated Acquirer	0.572*** (0.0669)	-0.0897 (0.0919)	-0.0863 (0.0931)	-0.0932 (0.0930)	-0.0309 (0.0986)	-0.0571 (0.0995)	-0.0222 (0.101)
Rated Target	-0.488*** (0.164)	-0.771*** (0.169)	-0.353** (0.172)	-0.355** (0.173)	-0.375** (0.177)	-0.355** (0.178)	-0.424** (0.181)
<i>Firm characteristics</i>							
Size		0.201*** (0.0190)	0.203*** (0.0194)	0.202*** (0.0195)	0.200*** (0.0200)	0.209*** (0.0202)	0.187*** (0.0206)
Leverage		-0.157 (0.137)	-0.142 (0.139)	-0.137 (0.139)	-0.300** (0.141)	-0.271* (0.142)	-0.184 (0.147)
Run-Up		-0.230*** (0.0369)	-0.225*** (0.0366)	-0.228*** (0.0365)	-0.220*** (0.0363)	-0.170*** (0.0365)	-0.171*** (0.0360)
Collateral		0.366*** (0.133)	0.403*** (0.134)	0.465*** (0.134)	0.603*** (0.154)	0.571*** (0.157)	0.597*** (0.167)
Book-to-market		0.0157 (0.0413)	0.0538 (0.0434)	0.0573 (0.0440)	0.0315 (0.0441)	0.0471 (0.0457)	0.0546 (0.0490)
Cash flow to assets		0.331* (0.174)	0.306* (0.167)	0.297* (0.163)	0.295** (0.136)	0.272** (0.127)	0.237** (0.120)
Number of analysts		-0.0103** (0.00463)	-0.00868* (0.00465)	-0.00784* (0.00464)	-0.00601 (0.00483)	-0.00545 (0.00495)	-0.00169 (0.00492)
Profitability		0.173** (0.0719)	0.196*** (0.0728)	0.208*** (0.0729)	0.191*** (0.0712)	0.207*** (0.0703)	0.372*** (0.0829)
<i>Deal characteristics</i>							
Interest rate spread			0.000100 (0.000296)	0.000142 (0.000302)	0.000325 (0.000309)	0.000939 (0.000589)	0.000508 (0.000599)
Relative size			-0.895*** (0.216)	-0.890*** (0.216)	-0.875*** (0.219)	-0.853*** (0.216)	-0.912*** (0.223)
Diversifying deals			-0.0174 (0.0444)	-0.0255 (0.0445)	-0.0397 (0.0486)	-0.0525 (0.0493)	-0.0595 (0.0501)
Cross-border			0.133** (0.0584)	0.144** (0.0592)	0.136** (0.0615)	0.153** (0.0622)	0.281*** (0.0665)
Public target			-0.564*** (0.0634)	-0.567*** (0.0646)	-0.546*** (0.0657)	-0.560*** (0.0663)	-0.489*** (0.0679)
Europe-zone			-0.0493 (0.0698)	-0.0890 (0.0737)	-0.153** (0.0772)	-0.163** (0.0783)	-0.00620 (0.0827)
<i>Deal characteristics</i>							
Market to GDP ratio				0.0784 (0.0814)	0.0700 (0.0864)	0.216** (0.0889)	-0.321 (0.199)
ICRG Government stability				-0.0105 (0.0245)	-0.00530 (0.0250)	-0.0157 (0.0261)	-0.0242 (0.0268)
ICRG Corruption				-0.0931** (0.0451)	-0.127*** (0.0463)	-0.111** (0.0465)	-0.0179 (0.0494)
ICRG Law and Order				0.0714 (0.0565)	0.0712 (0.0580)	0.0354 (0.0568)	0.0595 (0.0618)
ICRG Bureaucracy Quality				-0.107* (0.0631)	-0.0434 (0.0639)	-0.0543 (0.0646)	-0.169** (0.0705)
<i>Controls:</i>							
Industry of acquirer	-	-	-	-	Yes	Yes	Yes
Year	-	-	-	-	-	Yes	Yes
Country of acquirer	-	-	-	-	-	-	Yes
Constant	0.770*** (0.0226)	-3.087*** (0.353)	-3.003*** (0.371)	-3.031*** (0.385)	-2.868*** (0.796)	-3.339*** (0.795)	-2.785*** (1.080)
Observations	4 629	4 629	4 629	4 629	4 629	4 629	4 629

Regression using a probit model on the variable Payment Method. All regressions adjusted with robust standard errors shown in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 4: Credit Rating Existence - All Observations

VARIABLE:	Fraction of Cash						
	(8)	(9)	(10)	(11)	(12)	(13)	(14)
<i>Rating characteristics</i>							
Rated Acquirer	1.154*** (0.113)	0.0299 (0.149)	0.0342 (0.149)	0.0227 (0.149)	0.108 (0.157)	0.0808 (0.157)	0.127 (0.158)
Rated Target	-0.618** (0.253)	-1.114*** (0.260)	-0.530** (0.264)	-0.523** (0.265)	-0.556** (0.269)	-0.488* (0.266)	-0.555** (0.275)
<i>Firm characteristics</i>							
Size		0.311*** (0.0289)	0.305*** (0.0298)	0.303*** (0.0299)	0.295*** (0.0295)	0.303*** (0.0295)	0.274*** (0.0297)
Leverage		-0.193 (0.201)	-0.166 (0.205)	-0.185 (0.205)	-0.417** (0.200)	-0.378* (0.201)	-0.236 (0.209)
Run-Up		-0.330*** (0.0552)	-0.328*** (0.0548)	-0.337*** (0.0545)	-0.321*** (0.0534)	-0.240*** (0.0523)	-0.244*** (0.0513)
Collateral		0.930*** (0.208)	0.968*** (0.208)	1.036*** (0.207)	1.013*** (0.226)	0.923*** (0.228)	0.922*** (0.239)
Book-to-market		0.0383 (0.0627)	0.0915 (0.0677)	0.0936 (0.0688)	0.0460 (0.0651)	0.0641 (0.0694)	0.0650 (0.0755)
Cash flow to assets		0.607 (0.500)	0.547 (0.484)	0.526 (0.469)	0.407 (0.267)	0.349 (0.214)	0.301 (0.187)
Number of analysts		-0.0103 (0.00756)	-0.00740 (0.00748)	-0.00614 (0.00745)	-0.00190 (0.00771)	-0.000620 (0.00787)	0.00430 (0.00776)
Profitability		0.269** (0.134)	0.310** (0.134)	0.321** (0.133)	0.327*** (0.110)	0.360*** (0.104)	0.555*** (0.118)
<i>Deal characteristics</i>							
Interest rate spread			-0.000175 (0.000415)	-0.000151 (0.000424)	4.13e-05 (0.000428)	0.00106 (0.000820)	0.000577 (0.000824)
Relative size			-1.210*** (0.313)	-1.207*** (0.314)	-1.198*** (0.316)	-1.171*** (0.304)	-1.239*** (0.315)
Diversifying deals			-0.0241 (0.0617)	-0.0319 (0.0618)	-0.0318 (0.0668)	-0.0507 (0.0676)	-0.0589 (0.0684)
Cross-border			0.223*** (0.0836)	0.240*** (0.0847)	0.236*** (0.0868)	0.264*** (0.0870)	0.441*** (0.0931)
Public target			-0.790*** (0.0993)	-0.794*** (0.101)	-0.761*** (0.102)	-0.778*** (0.102)	-0.673*** (0.104)
Europe-zone			-0.114 (0.100)	-0.125 (0.106)	-0.211* (0.109)	-0.218** (0.109)	-0.0159 (0.116)
<i>Deal characteristics</i>							
Market to GDP ratio				0.0640 (0.121)	0.0462 (0.128)	0.237* (0.133)	-0.424 (0.310)
ICRG Government stability				-0.0406 (0.0348)	-0.0394 (0.0356)	-0.0561 (0.0373)	-0.0649* (0.0387)
ICRG Corruption				-0.108 (0.0661)	-0.148** (0.0665)	-0.128* (0.0663)	-0.0337 (0.0716)
ICRG Law and Order				0.150* (0.0815)	0.158* (0.0824)	0.107 (0.0801)	0.189** (0.0903)
ICRG Bureaucracy Quality				-0.201** (0.0940)	-0.133 (0.0941)	-0.142 (0.0935)	-0.294*** (0.105)
<i>Controls:</i>							
Industry of acquirer	-	-	-	-	Yes	Yes	Yes
Year	-	-	-	-	-	Yes	Yes
Country of acquirer	-	-	-	-	-	-	Yes
Constant	1.117*** (0.0316)	-4.981*** (0.532)	-4.650*** (0.561)	-4.649*** (0.583)	-4.219*** (1.314)	-4.939*** (1.325)	-3.974** (1.861)
Observations	4 629	4 629	4 629	4 629	4 629	4 629	4 629

Regression using a GLM Logit model on the variable Fraction of Cash. All regressions adjusted with robust standard errors shown in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 5: Credit Rating Level - Rated Observations

VARIABLE:	Payment Method						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Rating characteristics</i>							
Rating Level Acquirer	0.0449 (0.0400)	0.0680 (0.0431)	0.0679 (0.0434)	0.0710 (0.0446)	0.0684 (0.0492)	0.136*** (0.0499)	0.224*** (0.0714)
Investment Grade Acquirer	0.311 (0.246)	0.267 (0.242)	0.287 (0.241)	0.275 (0.242)	0.564* (0.289)	0.299 (0.302)	0.343 (0.332)
Rating Level Target	-0.0392** (0.0169)	-0.0436** (0.0178)	-0.0183 (0.0185)	-0.0166 (0.0190)	-0.0188 (0.0201)	-0.0272 (0.0204)	-0.0292 (0.0209)
<i>Firm characteristics</i>							
Size		0.00418 (0.0680)	-0.00105 (0.0680)	-0.00699 (0.0714)	-0.0868 (0.0926)	-0.122 (0.0913)	-0.262** (0.104)
Leverage		0.176 (0.508)	0.350 (0.521)	0.217 (0.514)	0.907 (0.644)	1.267* (0.653)	1.055 (0.672)
Run-Up		-0.288 (0.308)	-0.195 (0.327)	-0.191 (0.305)	-0.218 (0.307)	-0.164 (0.299)	0.00112 (0.329)
Collateral		-1.052*** (0.390)	-0.845** (0.410)	-0.896** (0.412)	-1.125** (0.558)	-1.026* (0.557)	-1.499** (0.601)
Book-to-market		0.431* (0.248)	0.435* (0.254)	0.375* (0.226)	0.606** (0.309)	0.519 (0.317)	0.675* (0.367)
Cash flow to assets		1.171 (1.082)	1.115 (1.081)	1.431 (1.011)	1.306 (1.241)	0.0738 (1.211)	0.461 (1.441)
Number of analysts		-0.00892 (0.00759)	-0.00760 (0.00775)	-0.00498 (0.00773)	-0.00718 (0.00892)	0.00213 (0.00997)	0.0144 (0.0109)
Profitability		0.0321 (0.193)	0.0247 (0.189)	0.0832 (0.202)	0.300 (0.261)	0.285 (0.286)	-0.0542 (0.535)
<i>Deal characteristics</i>							
Interest rate spread			0.000797 (0.000902)	0.000482 (0.000884)	0.000438 (0.000984)	0.00302 (0.00247)	0.00496 (0.00303)
Relative size			-1.331*** (0.462)	-1.296*** (0.477)	-1.211** (0.507)	-0.947* (0.538)	-0.878 (0.549)
Diversifying deals			0.241* (0.134)	0.248* (0.135)	0.312** (0.151)	0.337** (0.163)	0.386** (0.181)
Cross-border			0.290* (0.168)	0.290* (0.170)	0.248 (0.182)	0.349* (0.199)	0.286 (0.225)
Public target			-0.346** (0.145)	-0.391*** (0.148)	-0.485*** (0.161)	-0.513*** (0.163)	-0.674*** (0.191)
Europe-zone			0.0851 (0.160)	0.0606 (0.170)	0.0657 (0.186)	0.0500 (0.190)	0.109 (0.199)
<i>Deal characteristics</i>							
Market to GDP ratio				-0.361* (0.219)	-0.417* (0.246)	-0.268 (0.268)	-0.128 (0.514)
ICRG Government stability				0.00484 (0.0467)	0.0555 (0.0534)	0.0565 (0.0548)	0.0874 (0.0656)
ICRG Corruption				-0.153 (0.0954)	-0.179* (0.0959)	-0.182* (0.107)	-0.304** (0.124)
ICRG Law and Order				0.195 (0.133)	0.206 (0.135)	0.176 (0.127)	0.290** (0.140)
ICRG Bureaucracy Quality				-0.0308 (0.136)	0.0117 (0.150)	0.0361 (0.149)	-0.182 (0.157)
<i>Controls:</i>							
Industry of acquirer	-	-	-	-	Yes	Yes	Yes
Year	-	-	-	-	-	Yes	Yes
Country of acquirer	-	-	-	-	-	-	Yes
Constant	0.477 (0.406)	0.255 (1.477)	0.0101 (1.502)	0.394 (1.535)	2.113 (1.921)	1.094 (1.970)	3.350 (2.161)
Observations	806	806	806	806	722	722	706

Regression using a probit model on the variable Payment Method. All regressions adjusted with robust standard errors shown in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 6: Credit Rating Level - Rated Observations

VARIABLE:	Fraction of Cash						
	(8)	(9)	(10)	(11)	(12)	(13)	(14)
<i>Rating characteristics</i>							
Rating Level Acquirer	0.0868 (0.0742)	0.116 (0.0758)	0.110 (0.0765)	0.121 (0.0793)	0.0990 (0.0876)	0.194** (0.0832)	0.283** (0.124)
Investment Grade Acquirer	0.648 (0.411)	0.643 (0.409)	0.682* (0.403)	0.678* (0.401)	1.040** (0.476)	0.825 (0.509)	0.951* (0.531)
Rating Level Target	-0.0713** (0.0281)	-0.0734** (0.0308)	-0.0311 (0.0313)	-0.0270 (0.0327)	-0.0345 (0.0355)	-0.0476 (0.0350)	-0.0441 (0.0339)
<i>Firm characteristics</i>							
Size		0.0258 (0.128)	0.0241 (0.127)	0.00708 (0.132)	-0.0632 (0.170)	-0.110 (0.168)	-0.289* (0.175)
Leverage		0.488 (0.947)	0.686 (0.960)	0.433 (0.893)	1.952 (1.215)	2.612** (1.243)	2.004 (1.232)
Run-Up		-0.450 (0.576)	-0.276 (0.618)	-0.311 (0.561)	-0.356 (0.557)	-0.0764 (0.500)	0.0976 (0.518)
Collateral		-1.395** (0.684)	-0.965 (0.728)	-0.974 (0.736)	-1.384 (0.905)	-1.313 (0.899)	-1.811* (0.938)
Book-to-market		1.096** (0.534)	1.095** (0.541)	0.875** (0.443)	1.522** (0.671)	1.497** (0.672)	1.844** (0.877)
Cash flow to assets		1.868 (1.815)	1.852 (1.789)	2.111 (1.703)	2.075 (2.280)	0.0693 (2.147)	1.027 (2.560)
Number of analysts		-0.0200 (0.0143)	-0.0174 (0.0144)	-0.0138 (0.0142)	-0.0156 (0.0163)	-0.00457 (0.0185)	0.0113 (0.0196)
Profitability		0.156 (0.392)	0.0995 (0.377)	0.194 (0.408)	0.517 (0.490)	0.460 (0.536)	-0.0308 (1.020)
<i>Deal characteristics</i>							
Interest rate spread			0.00165 (0.00156)	0.00113 (0.00152)	0.000898 (0.00180)	0.00525 (0.00403)	0.00667 (0.00462)
Relative size			-2.325*** (0.694)	-2.219*** (0.745)	-1.994** (0.814)	-1.647* (0.929)	-1.577* (0.906)
Diversifying deals			0.484** (0.233)	0.504** (0.230)	0.562** (0.259)	0.584** (0.271)	0.597** (0.287)
Cross-border			0.372 (0.290)	0.376 (0.292)	0.363 (0.312)	0.605* (0.344)	0.502 (0.392)
Public target			-0.565** (0.259)	-0.642** (0.261)	-0.788*** (0.289)	-0.781*** (0.288)	-0.950*** (0.322)
Europe-zone			0.0295 (0.270)	0.0908 (0.304)	0.158 (0.340)	0.165 (0.320)	0.215 (0.331)
<i>Deal characteristics</i>							
Market to GDP ratio				-0.722* (0.427)	-0.782 (0.477)	-0.591 (0.502)	0.228 (0.835)
ICRG Government stability				-0.0419 (0.0794)	0.0380 (0.0920)	0.00783 (0.0972)	0.0523 (0.113)
ICRG Corruption				-0.203 (0.160)	-0.162 (0.165)	-0.121 (0.184)	-0.372* (0.217)
ICRG Law and Order				0.483* (0.269)	0.428 (0.277)	0.295 (0.256)	0.525* (0.290)
ICRG Bureaucracy Quality				-0.205 (0.249)	-0.159 (0.272)	-0.0945 (0.273)	-0.406 (0.286)
<i>Controls:</i>							
Industry of acquirer	-	-	-	-	Yes	Yes	Yes
Year	-	-	-	-	-	Yes	Yes
Country of acquirer	-	-	-	-	-	-	Yes
Constant	0.606 (0.752)	-0.355 (2.791)	-0.765 (2.756)	-6.81e-05 (2.770)	15.64*** (3.456)	13.05*** (3.763)	17.66*** (3.586)
Observations	806	806	806	806	806	806	806

Regression using a GLM Logit model on the variable Fraction of Cash. All regressions adjusted with robust standard errors shown in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 7: Correlation matrix

	Rating Level Acquirer	Rated Acquirer	Inv. Grade Acquirer	Rated Target	Rating Level Target	Size	Leverage	Run-Up	Collateral	Book-to-Market	Cash flow to assets	Number of analysts	Profitability	Interest rate spread	Relative size	Diversifying deals	Cross-border	Public target	Europe-zone
Rating Level Acquirer	1																		
Rated Acquirer	0,981	1																	
Inv. Grade Acquirer	0,761	0,710	1																
Rated Target	0,181	0,178	0,156	1															
Rating Level Target	0,187	0,176	0,171	0,963	1														
Size	0,609	0,543	0,577	0,177	0,193	1													
Leverage	0,143	0,169	0,121	0,058	0,047	0,068	1												
Run-Up	-0,050	-0,048	-0,049	-0,012	-0,012	-0,023	-0,036	1											
Collateral	0,126	0,126	0,109	0,019	0,016	0,075	0,298	-0,002	1										
Book-to-Market	-0,025	-0,019	-0,028	-0,010	-0,009	-0,047	-0,188	-0,115	0,092	1									
Cash flow to assets	0,038	0,036	0,035	0,010	0,010	0,033	-0,318	-0,029	0,061	0,102	1								
Number of analysts	0,658	0,635	0,628	0,155	0,154	0,557	0,137	-0,080	0,146	-0,093	0,073	1							
Profitability	0,088	0,087	0,084	-0,002	-0,003	0,035	0,014	-0,052	0,091	-0,032	0,223	0,097	1						
Interest rate spread	-0,061	-0,056	-0,056	-0,010	-0,015	-0,044	-0,040	-0,116	-0,090	0,160	0,010	-0,050	0,013	1					
Relative size	-0,074	-0,072	-0,076	0,037	0,039	-0,057	0,021	-0,001	0,000	0,038	-0,034	-0,108	-0,043	0,007	1				
Diversifying deals	-0,009	-0,014	-0,004	-0,049	-0,050	-0,036	-0,046	-0,005	-0,079	0,015	0,011	-0,027	-0,036	0,023	-0,003	1			
Cross-border	0,213	0,214	0,191	0,066	0,057	0,165	0,037	-0,016	0,034	-0,078	0,047	0,277	0,117	0,007	-0,041	-0,060	1		
Public target	0,217	0,211	0,203	0,282	0,272	0,228	0,050	-0,011	0,077	0,047	0,023	0,254	0,085	0,005	0,006	-0,043	0,057	1	
Europe-zone	-0,185	-0,184	-0,167	-0,067	-0,054	-0,162	-0,025	0,029	-0,032	0,061	-0,034	-0,230	-0,030	-0,043	0,018	0,013	-0,608	-0,044	1
Market to GDP ratio	-0,093	-0,106	-0,075	-0,049	-0,049	-0,015	-0,073	0,029	-0,042	-0,114	-0,020	-0,096	0,015	-0,146	0,035	-0,009	-0,042	-0,169	-0,034
ICRG Gov. stability	-0,043	-0,047	-0,036	0,015	0,020	0,005	-0,023	-0,032	-0,002	0,020	-0,009	-0,071	-0,042	-0,052	-0,015	0,001	-0,120	0,033	0,221
ICRG Corruption	0,111	0,109	0,110	0,017	0,010	0,111	0,025	-0,010	0,101	-0,020	0,016	0,162	0,117	-0,006	-0,004	-0,054	0,225	0,021	-0,310
ICRG Law and Order	0,133	0,140	0,130	0,011	0,000	0,100	0,032	0,007	0,094	-0,028	0,021	0,127	0,118	0,022	-0,022	-0,061	0,278	0,027	-0,352
ICRG Bur. Quality	0,052	0,056	0,052	-0,005	-0,011	0,052	0,016	-0,011	0,117	-0,006	0,013	0,073	0,074	0,024	-0,012	-0,080	0,168	-0,024	-0,207
	Market to GDP ratio	ICRG Gov. stability	ICRG Corruption	ICRG Law & Order	ICRG Bur. Quality														
Market to GDP ratio	1																		
ICRG Gov. stability	0,022	1																	
ICRG Corruption	0,177	0,091	1																
ICRG Law and Order	0,090	-0,058	0,695	1															
ICRG Bur. Quality	0,127	-0,021	0,726	0,699	1														

Table 8: Endogeneity Credit Rating Existence

	(1)	(2)	(3)
Rated Acquirer		-1.860 (1.131)	-1.170 (5.246)
Rating Residual			1.297 (5.248)
IV-Industry Fraction	2.215*** (0.708)		
IV-Industry Profitability	-0.0167 (0.159)		
IV-Industry Risk	0.116** (0.0452)		
Rated Target	0.136*** (0.0484)	-0.124 (0.294)	-0.380 (0.762)
Size	0.0527*** (0.00417)	0.262*** (0.0354)	0.341 (0.269)
Leverage	0.184*** (0.0254)	0.182 (0.268)	-0.00240 (0.969)
Run-Up	-0.00306 (0.00339)	-0.158*** (0.0409)	-0.250*** (0.0554)
Collateral	-0.0887*** (0.0265)	0.348 (0.229)	0.789 (0.601)
Book-to-market	0.0664*** (0.0106)	0.175** (0.0881)	0.148 (0.344)
Cash flow to assets	-0.000363 (0.0105)	0.210* (0.117)	0.302 (0.187)
Number of analysts	0.0119*** (0.001000)	0.0202 (0.0146)	0.0197 (0.0627)
Profitability	-0.0156 (0.0106)	0.300*** (0.103)	0.539*** (0.132)
Interest rate spread	-0.000144 (0.000102)	0.000194 (0.000630)	0.000395 (0.00111)
Relative size	0.00653 (0.0347)	-0.805*** (0.255)	-1.231*** (0.317)
Diversifying deals	0.00449 (0.00841)	-0.0426 (0.0493)	-0.0561 (0.0694)
Cross-border	-0.0211* (0.0113)	0.204** (0.0922)	0.414*** (0.140)
Public target	-0.0135 (0.0137)	-0.452*** (0.0903)	-0.691*** (0.134)
Europe-zone	-0.0158 (0.0144)	-0.0359 (0.0783)	-0.0419 (0.162)
Market to GDP ratio	0.0169 (0.0339)	-0.253 (0.187)	-0.396 (0.349)
ICRG Government stability	0.00535 (0.00496)	-0.0126 (0.0274)	-0.0579 (0.0503)
ICRG Corruption	-0.0158* (0.00924)	-0.0479 (0.0482)	-0.0545 (0.111)
ICRG Law and Order	0.0358*** (0.0111)	0.119* (0.0664)	0.237 (0.214)
ICRG Bureaucracy Quality	-0.00547 (0.0131)	-0.155** (0.0675)	-0.304*** (0.110)
Constant	-1.338*** (0.119)	-5.175*** (1.123)	-5.546 (5.346)
Wald test		1.83	0.06
(p-Value)		(0.177)	(0.805)

Regression (1) is the reduced regression performed on Rated Acquirer, (2) is the structural IV-Probit regression on Payment Method and (3) is the structural GLM Logit regression on Fraction of Cash. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. N = 4629

Table 9: Endogeneity Credit Rating Level

	(1)	(2)	(3)
Rating Level Acquirer		0.293** (0.140)	-0.197 (1.672)
Residual Rating Level			0.479 (1.696)
IV-Industry Level	0.254*** (0.0487)		
IV-Industry Profitability	-0.694 (0.424)		
IV-Industry Risk	0.553*** (0.168)		
Investment Grade Acquirer	3.206*** (0.163)	-0.536 (0.533)	2.488 (5.518)
Rating Level Target	0.0252 (0.0157)	-0.0233 (0.0192)	-0.0320 (0.0544)
Size	0.705*** (0.0486)	-0.135 (0.113)	0.0483 (1.201)
Leverage	-2.295*** (0.347)	1.078* (0.636)	0.904 (3.982)
Run-Up	-0.487** (0.231)	-0.127 (0.318)	-0.136 (0.954)
Collateral	0.908*** (0.315)	-0.917** (0.404)	-1.375 (1.779)
Book-to-market	-0.0332 (0.132)	0.363 (0.233)	1.828** (0.891)
Cash flow to assets	4.018*** (1.057)	-0.599 (1.148)	2.954 (7.440)
Number of analysts	-0.00624 (0.00555)	-0.00205 (0.00868)	0.00834 (0.0235)
Profitability	0.689*** (0.228)	0.0190 (0.202)	0.300 (0.799)
Interest rate spread	0.000528 (0.00102)	0.00262 (0.00206)	0.00692 (0.00472)
Relative size	-0.481 (0.473)	-0.996** (0.464)	-1.808* (1.009)
Diversifying deals	0.100 (0.0955)	0.271* (0.139)	0.645* (0.340)
Cross-border	0.104 (0.117)	0.372** (0.188)	0.552 (0.440)
Public target	-0.0241 (0.103)	-0.436*** (0.147)	-0.962*** (0.325)
Europe-zone	-0.0395 (0.123)	0.0700 (0.182)	0.196 (0.332)
Market to GDP ratio	-0.782*** (0.257)	-0.206 (0.222)	-0.147 (1.642)
ICRG Government stability	0.00332 (0.0374)	0.0204 (0.0492)	0.0539 (0.114)
ICRG Corruption	0.0236 (0.0805)	-0.132 (0.101)	-0.361* (0.212)
ICRG Law and Order	0.000435 (0.0810)	0.181 (0.125)	0.525* (0.290)
ICRG Bureaucracy Quality	-0.216** (0.0960)	-0.00237 (0.136)	-0.509 (0.435)
Constant	-8.419*** (1.140)	0.0556 (1.667)	14.87 (9.443)
Wald test (p-Value)		1.83 (0.212)	0.08 (0.777)

Regression (1) is the reduced regression performed on Rating Level Acquirer, (2) is the structural IV-Probit regression on Payment Method and (3) is the structural GLM Logit regression on Fraction of Cash. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. N = 806

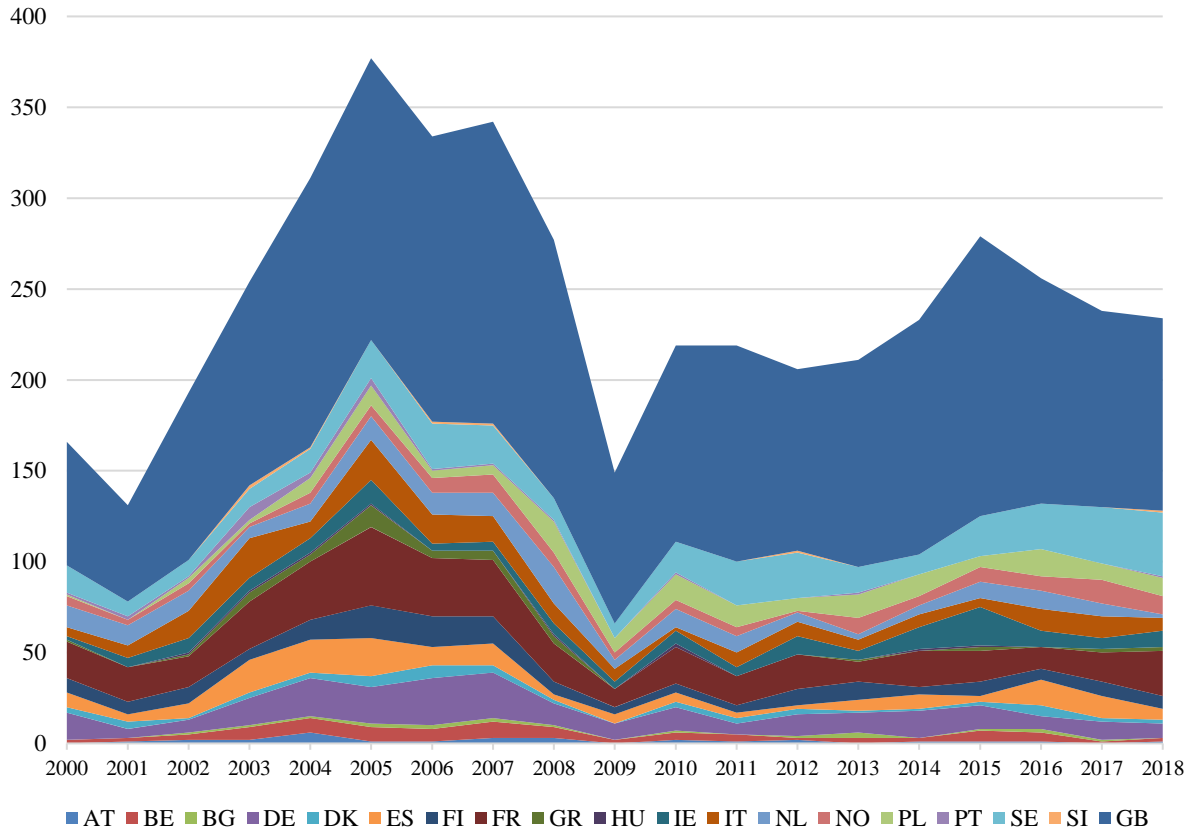
Table 10: Marginal Effects

	Payment Method	Fraction of Cash
Rating Level Acquirer	0.0180	0.00453
	(1,8%)	(0,45%)

Marginal Effects evaluated at the mean for the variable Rating Level Acquirer from regressions (7) and (14) respectively found in table 5 and 6.

10 Figures

Figure 1: M&As over time per country



Appendix 1: Literature Review

Author(s):	Year:	Topic:	Study:	Period:	Market:	Sample:	Sample:	Variables:	Method:	Findings:
Ahern, Daminelli & Fracassi	2015	Cross-border	Whether cultural values have an effect on mergers	1991-2008	World	SDC Platinum M&A database	20 893	Dependent: Log of size of merger, Independent: Trust, hierarchy, individualism	GMM instrumental variables regression	Strong evidence that trust, hierarchy and individualism affect merger volume and synergy gains. When different cultures, the volume of mergers are smaller
Boone, Lie & Liu	2014	Payment method	Determinants of payment method in M&As over time	1985-2013	World	SDC M&A database	2 590	Dependent: Payment method, Independent: Acquirer characteristics, deal characteristics	Logit regression	The fraction of stock as payment peaked in the 1990s, but has since surged again
Erel, Liao & Weisbach	2012	Cross-border	What determinants exist in cross-border mergers and acquisitions	1990-2007	US acquirers	SDC M&A database	56 978	Dependent: Cross-border M&As, Independent: Firm size, book leverage etc.	Cross-sectional regressions	Geography, the quality of accounting disclosure and bilateral trade increase the likelihood of cross-border mergers
Faccio & Masulis	2005	Payment method	Determinants of choice of payment method in M&As	1997-2000	Europe	SDC M&A database	3 667	Dependent: Payment method, Independent: Firm characteristics, deal characteristics	Tobit regression	Corporate governance and debt financing constraints have an impact on the decision of payment method
Faulkender & Petersen	2006	Credit rating	If source of capital has an effect on choice of capital structure	1968-2000	World	Compustat full coverage and research file	63 272	Dependent: Total debt to market value, Independent: Firm characteristics	Probit regression	Firms who have access to the public bond market have 35% higher leverage
Harford, Klasa & Walcott	2009	Payment method	If the existence of a target leverage level has impact on the choice of payment method in an acquisition	1981-2000	US	SDC M&A database	1 188	Dependent: Payment method, Independent: Firm characteristics	Tobit regression	If a firm has leverage over its target level, it is less likely to finance an acquisition with debt
Harford & Uysal	2014	Credit rating	If having access to debt markets affect investment decisions	1990-2011	World	Compustat and CRSP	69 162	Dependent: Target premium, target CAR, Independent: Firm characteristics, deal characteristics	Probit & tobit regression	Rated firms are more likely to make acquisitions than non-rated firms

Appendix 1: Literature Review (continued)

Author(s):	Year:	Topic:	Study:	Period:	Market:	Sample:	Sample:	Variables:	Method:	Findings:
Huang, Officer & Powell	2016	Cross-border	Whether the payment method in M&As can mitigate country-level governance risk for the acquirer	1990-2010	World	SDC Platinum M&A database	47 481	Dependent: Payment method, Independent: Cross-border	Probit regression	Greater use of stock as payment method in cross-border deals with targets from countries with high governance risk relative to that in the acquirer's country. Also, recently the use of stock has increased in cross-border deals, compared to cash
Kang & Kim	2010	Cross-border	Determinants of foreign acquirers' governance activities in US targets	1981-1999	US targets	SDC Platinum M&A database	268	Dependent: Governance activities, Independent: Information asymmetry proxies	Logit regression	Countries that share a common language or culture are more likely to engage in post-acquisition governance activities, than countries that do not share the same culture or language
Karampatsas, Petmezas & Travlos	2014	Credit rating	If credit rating has effect on the choice of payment method in M&As	1998-2009	US	SDC M&A database	6 819	Dependent: Payment method, fraction of cash, Independent: Credit rating, credit rating level, firm characteristics, deal characteristics	Probit & logit model	Bidders that have a higher level of credit rating are more likely to use cash as payment method in M&As
Kisgen	2006	Credit rating	If credit ratings have an impact on the choice of capital structure of a firm	1986-2001	World	Compustat rated firms	12 336	Dependent: Net debt relative to net equity issued, Independent: Credit rating	OLS regression & pooled time-series cross-section regression	Firms near a credit rating upgrade or downgrade issue less debt than firms not close to a change in rating, relative to equity
Kisgen	2009	Credit rating	If credit rating downgrades have an effect on a firm's leverage	1987-2003	World	Compustat rated firms	7 215	Dependent: Difference in leverage before and after upgrade or downgrade, Independent: Credit rating downgrade, credit rating upgrade	Logit regression & pooled time-series cross-section regression	Firms that were recently downgraded, on average reduces their leverage
Makaew	2011	Cross-border	Waves of cross-border M&As	1988-2008	World	SDC M&A database	412 810	Dependent: Merger, Independent: Exchange rate	Panel data regression	(1) Cross-border mergers come in waves that are highly correlated with business cycles, (2) Most mergers occur when both the acquirer and the target economies are booming, (3) Merger booms have both an industry-level component and a country-level component, (4) Acquirers tend to be more productive and targets tend to be less productive, compared to their industry peers

Appendix 1: Literature Review (continued 2)

Author(s):	Year:	Topic:	Study:	Period:	Market:	Sample:	Sample:	Variables:	Method:	Findings:
Martin	1996	Payment method	Choice of payment method in corporate acquisitions	1978-1988	US	Listed firms on NYSE or AMEX	4 239	Dependent: Payment method, Independent: Acquirer characteristics, target characteristics	Logistic regression	If high growth opportunities, the higher is the likelihood of using stock as payment method. If holding a high cash balance, it is more likely that the firm finances the acquisition with cash
Poon, Chan & Firth	2013	Credit rating	The impact of credit ratings on pricing in seasoned equity offerings	2002-2009	China	Listed companies in CSMAR financial database	441	Dependent: Amount of SEO underpricing, Independent: ROE, offer size, volatility etc.	OLS regression	In an SEO with a credit rating, the underpricing is reduced by 11-14% on average. There is also no significant difference between firms with speculative or investment grade rating
Rossi & Volpin	2004	Cross-border	Determinants in cross-border M&As	1990-1999	World	SDC Platinum M&A database	4 007	Dependent: Volume, Independent: Common law, accounting standards	OLS regression	M&A activity is greater in countries with better accounting standards and stronger shareholder protection
Travlos	1987	Payment method	The role of the payment method in explaining common stock returns and how the payment method differs between different types of takeovers.	1972-1981	US	CRSP	167	Dependent: Abnormal returns, Independent: Payment method	OLS regression	The results are independent of the type of takeover bid. Tender offers are often cash-offers, while mergers are usually common-stock offers.
Uysal	2011	Payment method	If target capital structure has an impact on the choice of making an acquisition and the choice of payment method in the acquisition	1990-2007	US	Compustat and CRSP	7 814	Dependent: Payment method, Independent: Firm characteristics, deal characteristics	Probit regression & tobit regression	Firms that have leverage above their target level are less likely to do acquisitions, and less likely to finance an acquisition with cash
Xu	2017	Cross-border	Valuation effects of cross-border M&A waves	1990-2010	World	SDC M&A database	54 811	Dependent: Acquirer's abnormal announcement return, Independent: Firm characteristics, deal characteristics	Multivariate regression	Overall, cross-border M&As promote efficient redeployment of corporate assets

Appendix 2: Variable definitions

Variable:	Definition:	Expected sign:
<i>Dependent variables:</i>		
Payment method	Dummy - 1 if equal to 50% or more in cash, and 0 if less than 50% in cash	
Fraction of cash	The fraction of cash used in the payment	
<i>Credit rating variables:</i>		
Existence of a credit rating for acquirer	Dummy - 1 if the firm has a credit rating, and 0 if the firm does not have a credit rating	(+)
Credit rating level of acquirer	Can take 21 grades based on the rating scales provided by S&P and Moody's	(+)
Investment grade	Dummy - 1 if the acquiring firm has an investment grade rating, and 0 if it does not	(+)
Existence of a credit rating for target	Dummy - 1 if the firm has a credit rating, and 0 if the firm does not have a credit rating	(+)
Credit rating level of target	Can take 21 grades based on the rating scales provided by S&P and Moody's	(+)
<i>Firm characteristics:</i>		
Size	Natural logarithm of the market value of equity of the acquiring firm	(+)
Collateral	The ratio of tangible assets to total assets	(+)
Leverage	The ratio of long-term debt and current debt to book value	(?)
Run-up	The market-adjusted buy-and-hold returns for the acquirer	(-)
Book-to-market	The ratio of book market of equity to market value of equity	(+)
Cash flow to assets	The ratio of cash flow to total assets	(+)
Number of analysts	The number of analysts following the acquiring firm	(+)
Profitability	The ratio of EBITDA to total assets	(+)
<i>Deal characteristics:</i>		
Cross-border	Dummy - 1 if the acquirer and target are located in different countries, and 0 if located in the same country	(-)
Diversifying deals	Dummy - 1 if the acquirer and target operates in different industries, and 0 if same industry	(-)
Europe zone	Dummy - 1 if the target is located in Europe, and 0 if the target is located outside Europe	(+)
Interest rate spread	The spread between the average rate on corporate loans and the government rate	(-)
Relative size	The size of the target compared to the size of the acquirer	(-)
Public target	Dummy - 1 if target is a public firm, and 0 if the target is a private firm	(+)

Appendix 3: Credit Rating Definitions

Rating level S&P:	Rating level Moody's:	Definition:	Numerical score:
AAA	Aaa	Extremely strong capacity to meet its financial commitments	21
AA+	Aa1		20
AA	Aa2	Very strong capacity to meet its financial commitments	19
AA-	Aa3		18
A+	A1		17
A	A2	Strong capacity to meet its financial commitments	16
A-	A3		15
BBB+	Baa1		14
BBB	Baa2	Changing circumstances might weaken the capacity to meet its financial commitments	13
BBB-	Baa3		12
↑ Investment Grade ↑			
BB+	Ba1		11
BB	Ba2	Less vulnerable than other low-rated obligations	10
BB-	Ba3		9
B+	B1		8
B	B2	Currently has the capacity to meet its financial commitments	7
B-	B3		6
CCC+	Caa1		5
CCC	Caa2	Vulnerable and dependent on economic conditions to meet its financial commitments	4
CCC-	Caa3		3
CC	Ca	Very vulnerable	2
C	C	Very vulnerable and lower seniority than higher ratings	1

Source: (S&P, 2019; Moody's, 2019)

Appendix 4: Regressions without UK

Credit Rating Existence - All Observations (Excluding UK)							
VARIABLE:	Payment Method						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Rating characteristics</i>							
Rated Acquirer	0.667*** (0.0788)	0.000210 (0.108)	-0.00481 (0.109)	0.00705 (0.110)	0.0464 (0.118)	0.00429 (0.120)	0.00325 (0.122)
Rated Target	-0.164 (0.201)	-0.456** (0.208)	-0.227 (0.211)	-0.204 (0.211)	-0.273 (0.220)	-0.241 (0.223)	-0.288 (0.225)
<i>Firm characteristics</i>							
Size		0.198*** (0.0242)	0.181*** (0.0252)	0.163*** (0.0254)	0.158*** (0.0269)	0.162*** (0.0273)	0.159*** (0.0281)
Leverage		-0.274 (0.180)	-0.200 (0.183)	-0.235 (0.183)	-0.333* (0.188)	-0.291 (0.190)	-0.332* (0.199)
Run-Up		-0.230*** (0.0509)	-0.223*** (0.0492)	-0.227*** (0.0466)	-0.229*** (0.0466)	-0.157*** (0.0466)	-0.156*** (0.0474)
Collateral		0.279 (0.195)	0.298 (0.199)	0.280 (0.200)	0.302 (0.238)	0.288 (0.238)	0.478* (0.257)
Book-to-market		0.0457 (0.0660)	0.0797 (0.0736)	0.0545 (0.0691)	0.0193 (0.0637)	0.0336 (0.0689)	0.0383 (0.0741)
Cash flow to assets		1.141*** (0.341)	1.177*** (0.359)	1.172*** (0.378)	1.206*** (0.356)	1.146*** (0.363)	1.305*** (0.387)
Number of analysts		-0.00640 (0.00532)	-0.00547 (0.00538)	-0.00328 (0.00529)	-0.00115 (0.00554)	0.00112 (0.00579)	0.00239 (0.00589)
Profitability		0.123* (0.0697)	0.120* (0.0716)	0.188** (0.0747)	0.195** (0.0773)	0.205*** (0.0783)	0.164* (0.0910)
<i>Deal characteristics</i>							
Interest rate spread			-0.000149 (0.000431)	-0.000519 (0.000440)	-0.000499 (0.000451)	0.000707 (0.000883)	0.000523 (0.000890)
Relative size			-0.853*** (0.281)	-0.823*** (0.286)	-0.886*** (0.284)	-0.889*** (0.284)	-0.937*** (0.286)
Diversifying deals			0.0569 (0.0610)	0.0478 (0.0611)	0.0116 (0.0675)	-0.00691 (0.0688)	0.00429 (0.0699)
Cross-border			0.373*** (0.0710)	0.409*** (0.0728)	0.413*** (0.0761)	0.409*** (0.0769)	0.396*** (0.0802)
Public target			-0.293*** (0.0760)	-0.313*** (0.0766)	-0.308*** (0.0780)	-0.334*** (0.0792)	-0.334*** (0.0803)
Europe-zone			0.0191 (0.0887)	0.0599 (0.0960)	0.0360 (0.100)	-0.00439 (0.101)	-0.0176 (0.104)
<i>Country-level variables</i>							
Market to GDP ratio				-0.455*** (0.102)	-0.478*** (0.104)	-0.345*** (0.110)	-0.494** (0.222)
ICRG Government stability				-0.0468 (0.0289)	-0.0427 (0.0295)	-0.0559* (0.0309)	-0.0361 (0.0320)
ICRG Corruption				0.0249 (0.0507)	0.0241 (0.0528)	0.0127 (0.0544)	0.0231 (0.0595)
ICRG Law and Order				0.0599 (0.0712)	0.0377 (0.0736)	0.0231 (0.0733)	-0.0254 (0.0803)
ICRG Bureaucracy Quality				-0.133* (0.0721)	-0.132* (0.0768)	-0.128 (0.0790)	-0.0825 (0.0847)
<i>Controls:</i>							
Industry of acquirer	-	-	-	-	Yes	Yes	Yes
Year	-	-	-	-	-	Yes	Yes
Country of acquirer	-	-	-	-	-	-	Yes
Constant	0.606*** (0.0315)	-3.276*** (0.458)	-3.034*** (0.484)	-2.434*** (0.497)	-2.153** (0.912)	-2.407** (0.937)	-2.196* (1.181)

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. N = 2391

Credit Rating Existence - All Observations (Excluding UK)

VARIABLE:	Fraction of Cash						
	(8)	(9)	(10)	(11)	(12)	(13)	(14)
<i>Rating characteristics</i>							
Rated Acquirer	1.197*** (0.135)	0.0513 (0.180)	0.0438 (0.181)	0.0702 (0.181)	0.132 (0.197)	0.0666 (0.201)	0.0450 (0.205)
Rated Target	-0.241 (0.315)	-0.749** (0.325)	-0.392 (0.331)	-0.349 (0.329)	-0.406 (0.342)	-0.339 (0.344)	-0.387 (0.354)
<i>Firm characteristics</i>							
Size		0.331*** (0.0383)	0.301*** (0.0408)	0.271*** (0.0407)	0.260*** (0.0420)	0.263*** (0.0432)	0.264*** (0.0446)
Leverage		-0.341 (0.282)	-0.254 (0.295)	-0.305 (0.289)	-0.434 (0.283)	-0.378 (0.291)	-0.388 (0.307)
Run-Up		-0.373*** (0.0828)	-0.364*** (0.0803)	-0.372*** (0.0753)	-0.391*** (0.0772)	-0.266*** (0.0755)	-0.268*** (0.0768)
Collateral		0.603* (0.323)	0.626* (0.335)	0.604* (0.331)	0.553 (0.382)	0.486 (0.384)	0.670 (0.417)
Book-to-market		0.0687 (0.118)	0.140 (0.149)	0.0907 (0.132)	0.0237 (0.102)	0.0455 (0.118)	0.0446 (0.131)
Cash flow to assets		1.575*** (0.530)	1.692*** (0.570)	1.703*** (0.583)	1.659*** (0.600)	1.536** (0.621)	1.791*** (0.664)
Number of analysts		-0.00841 (0.00904)	-0.00715 (0.00902)	-0.00449 (0.00883)	0.000105 (0.00928)	0.00439 (0.00961)	0.00614 (0.00983)
Profitability		0.228** (0.103)	0.228** (0.105)	0.336*** (0.111)	0.345*** (0.116)	0.368*** (0.119)	0.290** (0.135)
<i>Deal characteristics</i>							
Interest rate spread			-0.000530 (0.000655)	-0.00108 (0.000661)	-0.00102 (0.000676)	0.00103 (0.00137)	0.000855 (0.00140)
Relative size			-1.419*** (0.418)	-1.377*** (0.426)	-1.505*** (0.427)	-1.503*** (0.425)	-1.585*** (0.428)
Diversifying deals			0.0645 (0.0923)	0.0523 (0.0925)	-0.00794 (0.103)	-0.0324 (0.105)	-0.0270 (0.107)
Cross-border			0.570*** (0.107)	0.638*** (0.109)	0.666*** (0.115)	0.653*** (0.116)	0.639*** (0.119)
Public target			-0.472*** (0.123)	-0.495*** (0.124)	-0.510*** (0.126)	-0.532*** (0.128)	-0.535*** (0.131)
Europe-zone			-0.0609 (0.138)	0.0347 (0.151)	0.00349 (0.158)	-0.0540 (0.158)	-0.0890 (0.162)
<i>Country-level variables</i>							
Market to GDP ratio				-0.729*** (0.155)	-0.800*** (0.160)	-0.586*** (0.168)	-0.798** (0.350)
ICRG Government stability				-0.0953** (0.0442)	-0.0960** (0.0453)	-0.121** (0.0476)	-0.0871* (0.0504)
ICRG Corruption				0.0669 (0.0775)	0.0679 (0.0807)	0.0482 (0.0826)	0.0231 (0.0921)
ICRG Law and Order				0.0674 (0.109)	0.0390 (0.112)	0.0135 (0.111)	-0.00735 (0.126)
ICRG Bureaucracy Quality				-0.203* (0.108)	-0.189 (0.118)	-0.177 (0.121)	-0.0991 (0.133)
<i>Controls:</i>							
Industry of acquirer	-	-	-	-	Yes	Yes	Yes
Year	-	-	-	-	-	Yes	Yes
Country of acquirer	-	-	-	-	-	-	Yes
Constant	0.941*** (0.0468)	-5.581*** (0.721)	-5.016*** (0.781)	-4.076*** (0.795)	-3.454** (1.542)	-3.831** (1.569)	-3.386* (2.048)

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. N = 2391

Credit Rating Level - Rated Observations (Excluding UK)							
VARIABLE:	Payment Method						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Rating characteristics</i>							
Rating Level Acquirer	0.0494 (0.0456)	0.0363 (0.0490)	0.0271 (0.0494)	0.0117 (0.0527)	-0.00950 (0.0558)	0.1000 (0.0617)	0.101 (0.0892)
Investment Grade Acquirer	0.128 (0.278)	0.0674 (0.283)	0.166 (0.287)	0.150 (0.296)	0.366 (0.361)	0.0392 (0.422)	0.164 (0.459)
Rating Level Target	-0.0242 (0.0204)	-0.0230 (0.0222)	-0.00608 (0.0232)	-0.00469 (0.0241)	-0.0126 (0.0252)	-0.0273 (0.0280)	-0.0145 (0.0281)
<i>Firm characteristics</i>							
Size		0.100 (0.0851)	0.0550 (0.0891)	0.0603 (0.0903)	-0.0479 (0.109)	-0.163 (0.113)	-0.258** (0.124)
Leverage		-0.192 (0.605)	0.259 (0.647)	0.116 (0.656)	0.949 (0.864)	1.684* (0.900)	0.882 (0.995)
Run-Up		-0.106 (0.351)	-0.0823 (0.374)	-0.0372 (0.340)	0.00113 (0.358)	0.0769 (0.395)	0.296 (0.419)
Collateral		-0.548 (0.522)	-0.224 (0.547)	-0.455 (0.567)	-0.619 (0.721)	-0.0518 (0.791)	0.302 (0.872)
Book-to-market		0.782** (0.350)	0.804** (0.353)	0.732** (0.309)	1.533*** (0.412)	1.633*** (0.449)	2.245*** (0.566)
Cash flow to assets		1.370 (1.219)	1.168 (1.208)	1.931 (1.176)	1.910 (1.289)	1.209 (1.389)	2.760 (1.824)
Number of analysts		-0.00680 (0.00836)	-0.00354 (0.00845)	0.00126 (0.00837)	0.00101 (0.00957)	0.0227* (0.0121)	0.0337** (0.0134)
Profitability		0.163 (0.189)	0.128 (0.181)	0.354 (0.224)	0.446 (0.276)	0.636** (0.319)	0.690 (0.622)
<i>Deal characteristics</i>							
Interest rate spread			-0.000245 (0.00117)	-0.000817 (0.00121)	-0.00125 (0.00137)	-0.00134 (0.00310)	-0.000299 (0.00368)
Relative size			-1.830*** (0.669)	-1.908*** (0.710)	-2.128*** (0.779)	-2.491*** (0.811)	-2.681*** (0.913)
Diversifying deals			0.359** (0.157)	0.371** (0.160)	0.399** (0.184)	0.497** (0.204)	0.644*** (0.219)
Cross-border			0.510*** (0.188)	0.543*** (0.193)	0.711*** (0.219)	0.924*** (0.263)	0.722** (0.313)
Public target			-0.163 (0.162)	-0.186 (0.162)	-0.278 (0.176)	-0.312 (0.196)	-0.481** (0.234)
Europe-zone			0.156 (0.183)	0.186 (0.214)	0.260 (0.230)	0.303 (0.247)	0.249 (0.273)
<i>Country-level variables</i>							
Market to GDP ratio				-0.672** (0.283)	-0.750** (0.323)	-0.709** (0.350)	-0.0847 (0.625)
ICRG Government stability				-0.0499 (0.0598)	-0.00651 (0.0675)	-0.0374 (0.0734)	0.0237 (0.0904)
ICRG Corruption				-0.0418 (0.117)	-0.00991 (0.119)	-0.0542 (0.130)	-0.159 (0.147)
ICRG Law and Order				0.106 (0.156)	0.0805 (0.164)	0.0413 (0.147)	0.115 (0.157)
ICRG Bureaucracy Quality				-0.0650 (0.160)	-0.0471 (0.189)	0.0989 (0.182)	-0.177 (0.198)
<i>Controls:</i>							
Industry of acquirer	-	-	-	-	Yes	Yes	Yes
Year	-	-	-	-	-	Yes	Yes
Country of acquirer	-	-	-	-	-	-	Yes
Constant	0.521 (0.460)	-1.760 (1.925)	-1.285 (2.012)	-0.907 (1.996)	1.221 (2.355)	1.707 (2.500)	2.897 (2.689)

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1 N = 568

Credit Rating Level - Rated Observations (Excluding UK)							
VARIABLE:	Fraction of Cash						
	(8)	(9)	(10)	(11)	(12)	(13)	(14)
<i>Rating characteristics</i>							
Rating Level Acquirer	0.0994 (0.0869)	0.0749 (0.0920)	0.0589 (0.0913)	0.0362 (0.0979)	0.0336 (0.102)	0.189* (0.110)	0.154 (0.154)
Investment Grade Acquirer	0.306 (0.485)	0.167 (0.511)	0.330 (0.505)	0.298 (0.518)	0.557 (0.626)	0.275 (0.749)	0.642 (0.771)
Rating Level Target	-0.0587* (0.0334)	-0.0566 (0.0377)	-0.0207 (0.0379)	-0.0185 (0.0407)	-0.0419 (0.0443)	-0.0659 (0.0464)	-0.0556 (0.0455)
<i>Firm characteristics</i>							
Size		0.228 (0.164)	0.146 (0.173)	0.145 (0.166)	-0.0204 (0.202)	-0.160 (0.205)	-0.233 (0.216)
Leverage		-0.193 (1.166)	0.461 (1.263)	0.225 (1.256)	2.251 (1.645)	3.125* (1.633)	1.191 (1.704)
Run-Up		-0.188 (0.667)	-0.0866 (0.717)	-0.0154 (0.616)	-0.0266 (0.635)	0.221 (0.622)	0.497 (0.659)
Collateral		-0.865 (0.994)	-0.238 (1.072)	-0.526 (1.137)	-1.320 (1.261)	-0.551 (1.309)	-0.199 (1.317)
Book-to-market		1.594** (0.713)	1.567** (0.735)	1.358** (0.633)	2.631*** (0.739)	2.630*** (0.692)	3.442*** (0.877)
Cash flow to assets		1.890 (2.031)	1.587 (2.057)	2.603 (1.976)	2.616 (2.292)	0.910 (2.330)	2.621 (2.751)
Number of analysts		-0.0181 (0.0165)	-0.0117 (0.0162)	-0.00269 (0.0152)	-0.00238 (0.0184)	0.0273 (0.0234)	0.0404* (0.0229)
Profitability		0.373 (0.383)	0.269 (0.361)	0.730* (0.438)	0.826 (0.506)	0.976* (0.571)	1.373 (1.098)
<i>Deal characteristics</i>							
Interest rate spread			0.000227 (0.00215)	-0.00103 (0.00223)	-0.00195 (0.00271)	-0.000555 (0.00493)	0.000673 (0.00580)
Relative size			-3.434*** (1.071)	-3.694*** (1.213)	-3.982*** (1.294)	-4.187*** (1.262)	-4.360*** (1.400)
Diversifying deals			0.670** (0.290)	0.700** (0.293)	0.718** (0.336)	0.777** (0.347)	0.803** (0.340)
Cross-border			0.770** (0.336)	0.880** (0.355)	1.080*** (0.390)	1.411*** (0.453)	1.235** (0.545)
Public target			-0.384 (0.295)	-0.407 (0.293)	-0.529 (0.324)	-0.531 (0.332)	-0.766* (0.402)
Europe-zone			0.200 (0.318)	0.394 (0.402)	0.512 (0.425)	0.599 (0.437)	0.564 (0.497)
<i>Country-level variables</i>							
Market to GDP ratio				-1.390*** (0.507)	-1.331** (0.567)	-1.158* (0.592)	0.274 (0.975)
ICRG Government stability				-0.153 (0.110)	-0.0889 (0.121)	-0.168 (0.134)	-0.0720 (0.168)
ICRG Corruption				-0.00314 (0.198)	0.100 (0.213)	0.0957 (0.230)	-0.190 (0.271)
ICRG Law and Order				0.289 (0.306)	0.212 (0.338)	0.0608 (0.278)	0.269 (0.306)
ICRG Bureaucracy Quality				-0.258 (0.300)	-0.220 (0.355)	0.0201 (0.352)	-0.357 (0.389)
<i>Controls:</i>							
Industry of acquirer	-	-	-	-	Yes	Yes	Yes
Year	-	-	-	-	-	Yes	Yes
Country of acquirer	-	-	-	-	-	-	Yes
Constant	0.621 (0.871)	-4.535 (3.700)	-3.488 (3.778)	-2.644 (3.589)	14.92*** (4.260)	15.56*** (4.768)	14.74*** (4.973)

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1 N = 568