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Debt and Equity Market Development as Determinant of Source of Financing and Method of Payment in M&A

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ABSTRACT

In this paper we extend current research on capital market development, source of financing and the method of payment in mergers and acquisitions. By comparing the relative development between debt and equity markets we examine acquirers' consideration of the relative cost between the two markets. We show that in markets where the debt market is relatively more developed compared to the equity market, acquiring firms are more likely to use debt than equity as source of financing and vice versa. We also document a connection between acquiring firms' choice of source of financing and method of payment.

Keywords: Method of payment, source of financing, mergers & acquisitions, information asymmetry, relative cost of financing, capital market development, acquisition premium

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1. INTRODUCTION

The method of payment in merger and acquisitions (m&a) has been researched extensively, but little focus has been dedicated to understand the connection between financing conditions in the capital market and the choice of financing and method of payment. The aim of this study is therefore to advance the understanding of the connection between capital markets and firms' choice of financing and method of payment in m&a. Throughout the paper, we refer to the acquirers' choice between paying target shareholders with cash or equity as the *method of payment*, while the underlying financing of cash and equity payments is referred to as the *source of financing*¹.

Capital markets consist of debt and equity markets, and firms looking to raise external financing can therefore choose between raising debt and issuing equity. Ex ante it is difficult to predict under which circumstances and to what extent these two financing sources will be used. Previous literature investigating firms' choice of financing suggests that firms try to minimize the economic cost from information asymmetry between themselves and outside investors when choosing between debt and equity (Demirgüç-Kunt & Maksimovic 1996a). Since information asymmetry in the capital market have been shown to decrease when capital markets become more developed (Stulz 1999), several scholars have examined the impact of capital market development on firms' capital structures (see e.g. Demirgüç-Kunt & Maksimovic 1996a, Agarwal & Mohtadi 2004). These studies have discovered that firms increase their debt-to-equity ratio as the debt market becomes larger and more liquid and decrease their debt-to-equity ratio as the equity market becomes larger and more liquid.

However, to our knowledge, no previous study has extended this research to an m&a context and examined the link between source of acquisition financing and capital market development. Nor have previous studies tried to compare the relative development between debt and equity markets, its impact on source of financing and its link to the method of payment.

In order to investigate the development of capital markets, we conceptualize market development as market size and liquidity in relation to GDP. We continue by operationalizing our investigation of the development of debt and equity markets by constructing indices representing the development of each sample country's debt and equity market. The indices are based on proxies identified in previous literature as relevant measures of debt and equity market development². Taking

¹ We provide a clarification of the difference between the source of financing and method of payment in Figure 5 in Appendix A.

² Further specification can be found in Section 3.2.1 Indicators of capital market development

a new approach when examining the effect of capital market development, we also construct a *relative* and *total* development index that reflects the relative and combined total development of debt and equity markets.

Building on previous research we hypothesize a number of connections between the relative and total market development and acquirers' choice of financing and method of payment. By comparing the use of debt and equity as source of financing with the relative development of debt and equity markets, we find supporting evidence of increased debt financing in relatively developed debt markets, and increased equity financing in relatively developed equity markets. The findings support the hypothesis that relative development between debt and equity markets reflects a relative cost of financing, which affects firms' incentives to use debt or equity as acquisition financing. We also provide support for a to our knowledge uninvestigated link between the relative development of the debt and equity market, the choice of acquisition financing and the method of payment.

Furthermore, we hypothesize and find supporting evidence for that the absolute development of the equity market lowers the acquisition premium in equity payments. Since developed markets exhibit lower information asymmetry between acquirers and targets, it should make equity safer for target shareholders to accept and consequently the acquirer can pay a lower premium.

Our study adds to several parts of the current literature on capital market development as well as choice of financing and method of payment in m&a. We demonstrate that a new approach of examining the relative market development provides insight into firms' consideration of the relative cost between debt and equity. Furthermore, we extend findings related to the link between capital market development and capital structure to also apply for source of financing and method of payment in m&a.

The remainder of this study is organized as follows. In section 2 we discuss previous literature and formulate our hypotheses. In section 3 we outline our empirical design and describe our data. In section 4 we interpret and discuss our results. In section 5 we discuss the robustness of our results. In our final section 6 we conclude our findings and discuss topics for future research.

2. PREVIOUS RESEARCH AND HYPOTHESES

2.1 Source of financing in mergers and acquisitions

The source of financing in m&a has largely been ignored in previous literature, and the vast majority of scholars have not made a distinction between the source of financing and the method of payment. Martynova & Renneboog (2009) recognize that acquisitions with the same means of payment but

different sources of financing are in fact quite distinct. In this study we examine the source of financing in m&a by relating it to the relative development between the debt and equity markets.

2.1.1 Asymmetric information and financing

Theory on corporate financing suggests that firms optimize their investment financing by reducing the economic cost arising from information asymmetry between firms and outside investors (Demirgüç-Kunt & Maksimovic 1996a). According to neoclassical theory, firms should evaluate investment opportunities based on their net present value and disregard whether additional external financing is necessary since capital can be raised through a fairly valued security at any time in the market (Myers & Majluf 1984). However, given the discrepancy between the efficient and fully informed capital market proposed by neoclassical theory and the one faced by firms, several additional explanations to firms' financing decisions have been suggested. Myers & Majluf (1984) presents the implications for corporate financing resulting from information asymmetry between managers and external parties. They argue that in a market where management knows more about the true value of investment projects than outsiders and where collecting information is costly, companies will at times pass up on positive net present value projects due to insufficient external financing. Furthermore, information asymmetry will also affect the management's choice between using internal or external financing since they come at different costs. The authors conclude that internal financing will be preferred over external, since external financing entails costs to compensate for the asymmetric information between the firm and outside investors.

2.1.1 Capital market development and financing

Previous literature offers no consistent measurement of capital market development, and many different proxies have been used to measure debt and equity market development. For the purposes of this study, two different approaches of looking at the effect of capital market development provide us with an empirical background to further build on.

One string of previous research has focused on using size and liquidity as measures of capital market development, and the implications of having a developed capital market have thereafter been understood by for example examining firms' capital structure and relative growth rates. Using size and liquidity as measures of capital market development, Demirgüç-Kunt & Maksimovic (1996a) discovered that development of equity markets lead to lower debt-to-equity ratio, whereas growth in

the banking sector lead to higher debt-to-equity ratio³. Agarwal & Mohtadi (2004), using similar size and liquidity measures to describe capital market development, found equivalent results. Raghuram & Zingales (1998) documented that firms operating in developed capital markets, measured by looking at the domestic credit and market capitalization and the quality of accounting standards, grew comparatively faster than a similar set of companies in developing markets, suggested to follow from a lower cost of external capital for investments.

Another string of research has examined the relationship between differences in corporate governance structure across countries and the source of financing and method of payment in m&a. Since studies have presented a relation between countries' legal environment and the breadth and size of the capital market (see e.g. La Porta et al 1997), corporate governance measures could to some extent be seen as a proxy for capital market development. Martynova & Renneboog (2009) discover that corporate governance practices influence the use of external financing. Moreover, Rossi & Volpin (2004) find that the probability of an all-cash payment decreases with the degree of shareholder protection in the acquirer country, indicating that acquisitions paid with stock require an environment with high shareholder protection.

In this study we will examine source of financing and method of payment in m&a and use measures over liquidity and market size as proxy for capital market development since these measures have been frequently employed in previous literature (see e.g. Demirgüç-Kunt & Maksimovic 1996, Rajan & Zingales 1998, Agarwal & Mohtadi 2004). Furthermore, these measures capture how capital markets accommodates firms' financing demands while also to some extent mirror institutional conditions.

2.1.1 Relative development and financing

Information asymmetries and other market imperfections are not uniformly present across markets but instead dependent on market development, with developed capital markets exhibiting less frictions than undeveloped markets (Stulz 1999). Hence, different capital markets present firms with unequal incentives to use external financing since the cost of external capital will stand in proportion to the degree of market imperfections such as information asymmetry and illiquidity (Demirgüç-Kunt & Maksimovic 1996a, Amihud & Mendelson 2000). Martynova & Renneboog (2009) stipulate that

³ The study also found interesting differences in debt-to-equity ratio depending on the current stage of market development. For large firms in developing equity markets, the debt-to-equity ratio *increases* following incremental growth in the equity market.

acquirers' choice between debt and equity financing is predominantly influenced by cost of capital concerns, which makes the relative development between debt and equity markets interesting to investigate in order to understand the determinants of m&a financing.

When equity markets develop and transparency increases, some of the information asymmetry between equity providers and firm insiders is mitigated (Demirgüç-Kunt & Maksimovic 1998, Love 2003). Equity prices in more developed equity markets reflect the intrinsic value of a company more accurately since the enhanced dissemination of information and greater external coverage lowers the uncertainty for outsiders and thereby lowers the cost of equity (Stulz 1999). Thus, in countries where the equity market, compared to the debt market, is relatively more developed firms should be incentivized to use more equity as source of financing than in markets where the equity market is relatively less developed. We formulate our first hypothesis as follows.

H1. *In relatively more developed equity markets firms will use more equity as source of financing in m&a*

Continuing with the debt market, previous studies on firms' choice of financing have shown that the debt-to-equity ratio tend to increase as debt markets develop (e.g. Demirgüç-Kunt & Maksimovic 1996a, Agarwal & Mohtadi 2004) since firms take advantage of the decreasing cost of debt that follows from decreasing asymmetric information between creditors and borrowers. In capital markets where the debt market is relatively more developed compared to the equity market, firms should become more debt focused and take advantage of the relatively lower cost of debt when raising cash to finance m&a transactions. Viewed differently, firms could also consider equity financing to be relatively more expensive and therefore use more debt financing. Both perspectives produce the same outcome of more debt financing in relatively developed debt markets. In order to investigate the legitimacy of this argument, we formulate our second hypothesis as follows.

H2. *In relatively more developed debt markets firms will use more debt as source of financing in m&a*

Although seemingly similar to the inverse of **H1**, this hypothesis is needed since the frequency of other types of payments than ordinary cash or equity⁴ might depend on market development per se.

When investigating debt financing there is an interesting timing dimension. As mentioned earlier, previous studies have shown that firms' debt-to-equity ratios increase as a result of more developed debt markets (Demirgüç-Kunt & Maksimovic 1996a, Agarwal & Mohtadi 2004). However,

⁴ For example preferred convertible debt, convertible debt, options or warrants.

in a transaction context firms might not decide to raise debt in conjunction with the actual merger or acquisition. Instead, firms could raise debt at an earlier point in time and have debt-raised cash on their balance sheet to use for future cash paid m&a. Therefore, firms reporting to have used only internal cash to finance the merger or acquisition might realistically have obtained some of the cash from previous debt issues. To understand how cash paying acquirers choose to utilize the debt market and whether previous findings on capital structure and debt markets hold when considering the relative development, we examine if acquirers in relatively more developed debt markets take on more leverage. This argument is formulated in our third hypothesis as follows.

H3. *The debt-to-equity ratio for firms paying with cash in m&a is higher in relatively more developed debt market*

2.1.2 Total development and financing

Firms have the choice between using internal funds and raising external funds in the capital market in conjunction with a transaction. Myers & Majluf (1984) states that firms' preference for internal over external financing would not apply in the absence of information asymmetry between managers and outsiders. Demirgüç-Kunt & Maksimovic (1998) corroborates this statement in their examination of differences in legal institutions and stock markets and external financing. They find evidence of an increasing reliance on external capital⁵ in countries with more active stock markets and higher institutional development. When applying this notion into the m&a realm, there should exist a positive relation between the development of the capital market (regardless if it is driven by equity or debt market development) and firms' propensity to use external sources as financing source for m&a. It leads us to our fourth hypothesis, as follows.

H4. *In more developed capital markets firms will use more external financing as source of financing in m&a*

2.2 Method of payment in mergers and acquisitions

2.2.1 The link between source of financing and method of payment

There is an important difference between the source of financing and the method of payment. While the method of payment only takes two forms (cash or equity), the source of financing adds an internal and external dimension. Cash to finance acquisitions can come both from internal sources originating from operations or previous issues of debt and equity instruments, or externally from capital raised in

⁵ Measured as the proportion of increases in total assets financed by long-term debt and newly issued shares.

the capital market in direct connection to the acquisition. The relation is illustrated in Figure 5 in Appendix A.

Neoclassical theory has no explanation for the method of payment in m&a, but previous literature has discovered several separate factors influencing the use of cash and equity. Considerations relating to for example the effect on ownership structure (see e.g. Amihud et al. 1990, Martin 1996 and Faccio & Masulis 2005), shareholder protection rights (see e.g. Rossi & Volpin 2004), size (see e.g. Grullon et al 1997, Ghosh & Ruland 1998) and tax treatment (see e.g. Ayers 2003, Burch 2013) have been identified as determinants of method of payment. A final aspect that several scholars have examined is the role of information asymmetry on the method of payment (see e.g. Hansen 1987, Faccio & Masulis 2005 and Martynova & Renneboog 2009) which is interesting for our purposes since it is related to the level of capital market development.

If the choice between using debt and equity as source of financing is contingent on the relative development between debt and equity markets and the associated cost of capital, it is likely that this relation also affects the choice between using cash or equity to pay target shareholders. Since issuing debt for m&a financing implies that target shareholder will be paid with cash, a relatively more developed debt market with lower cost of debt from less market imperfections should lead firms to use cash more often as payment method. Through this insight, we formulate our fifth hypothesis as follows.

H5. *Cash payments in m&a will increase with a relatively more developed debt market*

Unlike for debt markets and cash payments, there exists no immediate link between an increase of equity as source of financing and using equity as the method of payment. The reason for this is that firms can choose between using either cash or equity as payment method when issuing equity to finance m&a transactions, whereas issuing debt by definition leads to a cash payment. Hence, the link between equity financing and equity payments is not as natural as for debt markets and cash payments.

2.2.2 Information asymmetry and method of payment

When investigating equity as payment method in mergers and acquisitions, we have to consider the issue of asymmetric information between the acquirer and the target shareholders. In his seminal paper, Hansen (1987) presents a model for the optimal payment method in m&a using a theoretical bargaining game with two agents operating under asymmetric information. He concludes that a firm will be more likely to offer target shareholders equity when it perceives its stock to be overvalued and

cash when it perceives its stock to be undervalued. Since target shareholders are aware of this strategy, they will be more reluctant to accept equity as payment method due to the information advantage of the acquirer.

Building on Hansen's proposed strategy, target firms should become more willing to accept equity as the method of payment following lower information asymmetry in more developed markets. Here, relative development between equity and debt market plays no immediate explanatory role since the acceptance of equity is exclusively contingent on the information asymmetry present between the acquirer and target in the equity market. The increased acceptance of equity as payment method in more developed equity market following less information asymmetry should induce firms to increase their use of equity as method of payment. In order to interpret the impact of equity market development on firms' method payment, we therefore examine the *absolute* level of development of the equity market. We examine this by formulating the following hypothesis.

H6. *Equity as the method of payment in M&A increase with the development of the equity market*

As previously stated, target shareholders inclination to accept the acquirer's equity as payment method for a merger or acquisition should stand in proportion to the level of information asymmetry on the market (Faccio & Masulis 2005). Higher information asymmetry makes it costly to monitor the target firm and prevent management opportunism (Williamson et al 1975, Teece 1980). Hence, in less developed equity markets plagued by information asymmetry, acquiring firms should have to pay an additional premium – on top of the standard control premium – in order convince target shareholders to accept equity in lieu of cash. Zhu & Jog (2009) estimates the information asymmetry by measuring the variance of residuals obtained from applying the simple market model and finds that acquisition premiums decrease in markets that exhibit lower information asymmetry. Following our argument of lower information asymmetry and higher acceptance of equity in more developed equity markets, it should be true that the additional premium resulting from the information asymmetry between the acquirer and target decreases as markets develops. We investigate this relation by formulating our final hypothesis as follows.

H7. *In countries with more developed equity markets, bid premiums in M&A decrease in equity paid transactions*

3. EMPIRICAL DESIGN AND DATA

In order to test our hypotheses, we construct indices based on size and liquidity of the capital markets. We create indices over the relative development between debt and equity markets, absolute development of the equity market and the total development of the combined markets. Using a worldwide sample of m&a transactions over eleven years, we then apply these indices in fixed effect regressions with dummies controlling for time and country.

3.1 Data and sample selection

We have collected a sample of 19,825 domestic m&a transactions conducted by listed non-financial firms between 2002 and 2012 in 61 different countries. We do not limit our studies to any specific countries, other than that data over the indicators over capital market development must be available and at least one transaction within the selection criteria must have available data. Using a worldwide sample over eleven years enables us to highlight the general relation between capital market development and the source and method of payment⁶.

Transaction and firm data is collected using FactSet's database and macro indicators are collected from the World Bank's online database. Financial firms are excluded from the dataset since their capital structure is affected by investor insurance schemes and minimum capital requirements (Rajan & Zingales 2005). Also, financial firms have different access to capital with debt-like liabilities that cannot be strictly compared to interest bearing debt issued by non-financial firms (Rajan & Zingales 2005). We limit the sample to only include public acquirers since financial reports of private firms are often not publically available and since they cannot raise capital in the public equity market. Furthermore, only domestic transactions will be analyzed since the increased information asymmetry present in cross-border transactions and differences in the level of investor protection between acquirer and target countries have been shown to influence the method of payment (Rossi & Volpin 2004). Furthermore, Chen et al (2009) found that capital market development affects the occurrence of cross-border transactions.

The minimum transaction size is similarly to previous studies set to one million dollar (see e.g. Alshwer et al 2011) and the minimum size of book value of assets is also set to one million dollar. We exclude transactions where the acquirer has negative book value of equity, following Faccio & Masulis (2005). The low cutoff point for transaction sizes (one million dollar) enables us to capture a wide size

⁶ Dividing the sample into continents with more than ten countries yields overall similar conclusions.

range of transactions, while at the same time excluding very small transactions. Finally, public companies owned by a government, a joint venture or registered as subsidiary are excluded due to the likely difference in access to financing and potentially unreliable company financial information, e.g. distorted by parent company financials.

3.2 Variable definition and empirical approach

3.2.1 Indicators of capital market development

Similarly to previous research with the purpose of examining the effect of capital market development on firms' financing we conceptualize the capital market development as the size and liquidity of the debt and equity market in relation to GDP (see e.g. Demirgüç-Kunt & Maksimovic 1996a, Raghuram & Zingales 1998, Agarwal & Mohtadi 2004, Beck et al 2009). We operationalize our examination of the relative and absolute effect of capital market development by creating different indices.

3.2.1.1 Indicators equity market development

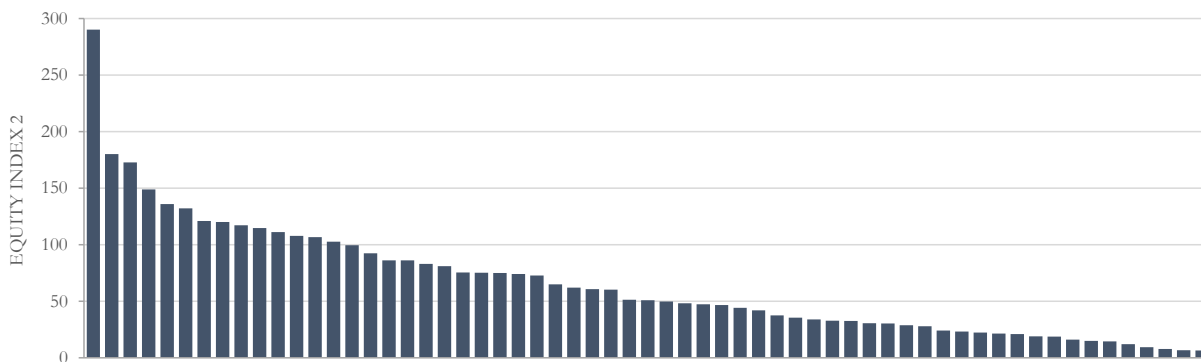
Previous studies have shown that the size and liquidity of the equity market influence the debt-to-equity ratio, the capital allocation between industries and future economic growth (Demirgüç-Kunt & Maksimovic 1996a, Raghuram & Zingales 1998, Wurgler 2000). Developed equity markets enable firms to lower their cost of equity by lowering information asymmetry between firm insiders and outsiders, decreasing liquidity risk as well mitigating idiosyncratic risk by offering greater opportunities for diversification (Stulz 1999). To capture the size and liquidity of an individual market, we use three different proxies for equity market development which is in accordance with the approach taken by several previous studies (see e.g. Demirgüç-Kunt & Maksimovic 1996, Raghuram & Zingales 1998, Agarwal & Mohtadi 2004). The measures are collected from World Bank and describe the following.

1. Total domestic stock market capitalization to GDP
2. Total value of shares traded to GDP
3. Total value of shares traded to market capitalization

The first measure represents the relative size of the equity market as well as availability of diversification and the country's capacity to allocate capital to investment projects in the real economy. The two latter ratios function as proxies for market liquidity and captures the ability to trade large blocks of shares as well as the trading frequency. High turnover has been shown to correlate with low transaction costs and proxy a well-behaving market with smaller frictions and lower cost of equity

(Amihud & Mendelson 2000). The three different measures complement each other since an equity market might be large but not liquid and liquid but not large (Agawral & Mohtadi 2004). Similarly to previous studies (see e.g. Demirgüç-Kunt & Maksimovic 1996a and Agarwal & Mohtadi 2004) we construct indices in order to produce a tangible one-variable output that includes either two or three of the above proxies for equity market development. The first index, denoted EQUITY INDEX 1, is an equally-weighted index of the total domestic stock market capitalization to GDP and the total value of shares traded to GDP. The second index, denoted EQUITY INDEX 2, includes the two measures in EQUITY INDEX 1, but also adds the total value of shares traded to market capitalization. The distribution of EQUITY INDEX 2 across countries can be viewed in Figure 1. We observe large differences across countries and hence a wide dispersion in equity market development.

Figure 1. Distribution of EQUITY INDEX 2 across countries



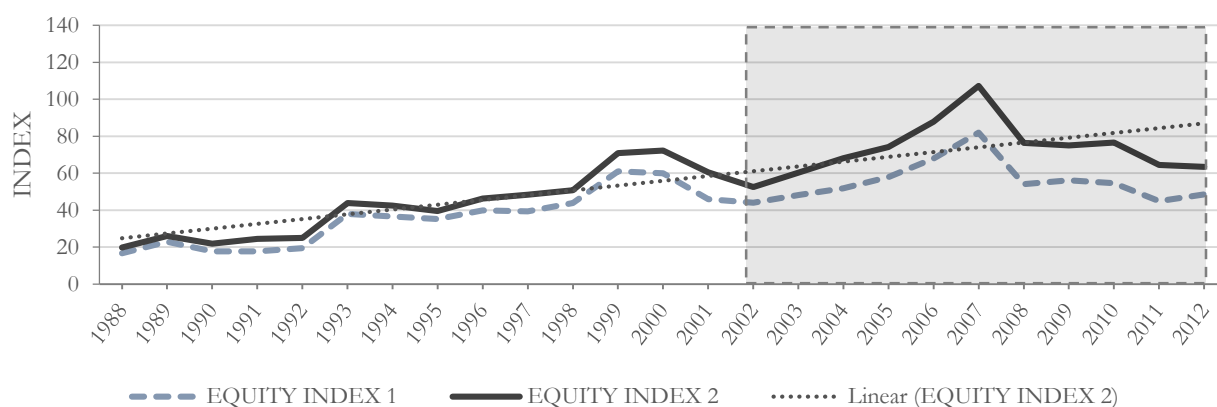
This figure reports the distribution for EQUITY INDEX 2 across all 61 countries. The reported values are averaged across 2002-2012, weighted by the number of transactions each year. Hong Kong represents the maximum value of 290 and Bulgaria represents the minimum value of 6.

As visible, Hong Kong obtains a very high index value for equity market development, which is likely due to the fact that many outside firms are listed in Hong Kong. The average value for the two indices for each country can be viewed in Table 7 in Appendix B. We find that Hong Kong, Switzerland and the United States have the three most developed equity markets. Demirgüç-Kunt & Maksimovic (1996b) found that Hong Kong, Japan, Germany had the most developed stock markets, for a dataset covering 1980-1991.

The development of the equity indices over time is presented in Figure 2. We observe that the measures of equity market development fluctuate over time and are sensitive to economic cycles. For example, a steep decrease in the indices can be observed during the global financial crisis of 2008. Even though crises might to some extent reflect an actual stagnation in the development of equity

markets, economic cycles have the potential to influence our findings since we do not aim to capture the effect of economic cycles on the method and source of financing. However, our fixed effect model with time and country dummies will enable us to significantly decrease the effect of economic cycles.

Figure 2. EQUITY INDEX 1 and EQUITY INDEX 2 over time



This figure reports average values for EQUITY INDEX 1 and EQUITY INDEX 2 respectively for the countries with available data from 1988-2012. The shadowed area refer to the time period of this study between 2002 and 2012.

3.2.1.2 Indicators debt market development

The development of the debt market represents the importance of debt capital to finance investment opportunities in the real economy. Banks play a crucial role in providing capital to companies in need of financing, and in highly developed debt markets a substantial part of total financing should come from banks. In order to examine the level of development of the debt market, we apply three different measures:

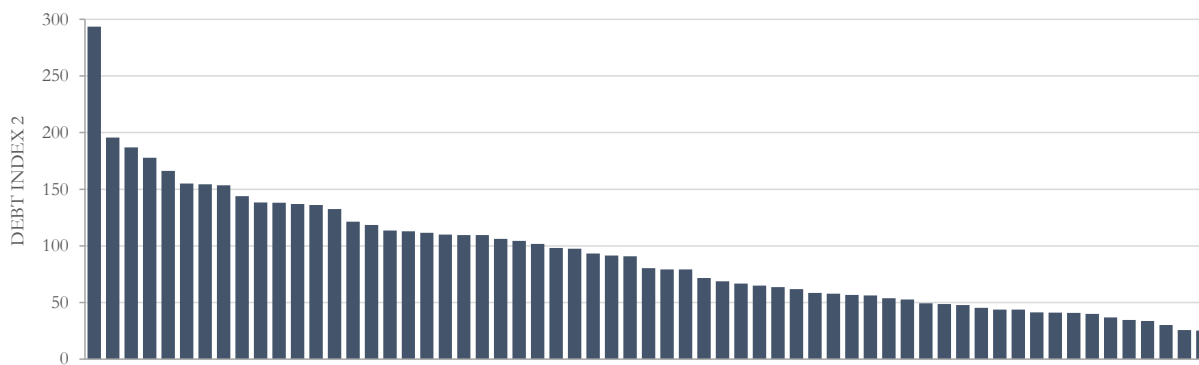
1. Domestic credit to private sector by banks in relation to GDP
2. The ratio of bank's liquid liabilities (M2) to GDP
3. Bank deposits of domestic assets to GDP

The first ratio describes the overall importance of the banking sector in allocating capital to firms, and a high ratio would signal that the banking sector is relatively large compared to the overall economy. The second ratio describes a measure of the size of the formal financial system, while the third ratio measures the specific liquidity and savings role played by banks and help further quantify banks importance in the economy. Several previous studies have used a combination of these three ratios as proxies for debt market development (e.g. Pagano 1993, Demirgüç-Kunt & Maksimovic 1996a, Levine & Zervos 1998, Agarwal & Mohtadi 2004). As when measuring equity market development we

construct two indices, which include either two or three of the mentioned measures. We denote the first index DEBT INDEX 1, which consists of the average of the domestic credit to private sector by banks in relation to GDP and the ratio of bank’s liquid liabilities to GDP. The second index, denoted DEBT INDEX 2, include the two measures in DEBT INDEX 1, but also adds bank deposits of domestic assets to GDP.

Figure 3 shows the distribution of DEBT INDEX 2 across countries. Cyprus obtains a very high value for debt market development, which could be explained by its role as off-shore financial center. The measures and indices of the debt market development for each country can be viewed in Table 8 in Appendix B. We observe that Cyprus, Hong Kong and Japan have the three most developed debt markets.

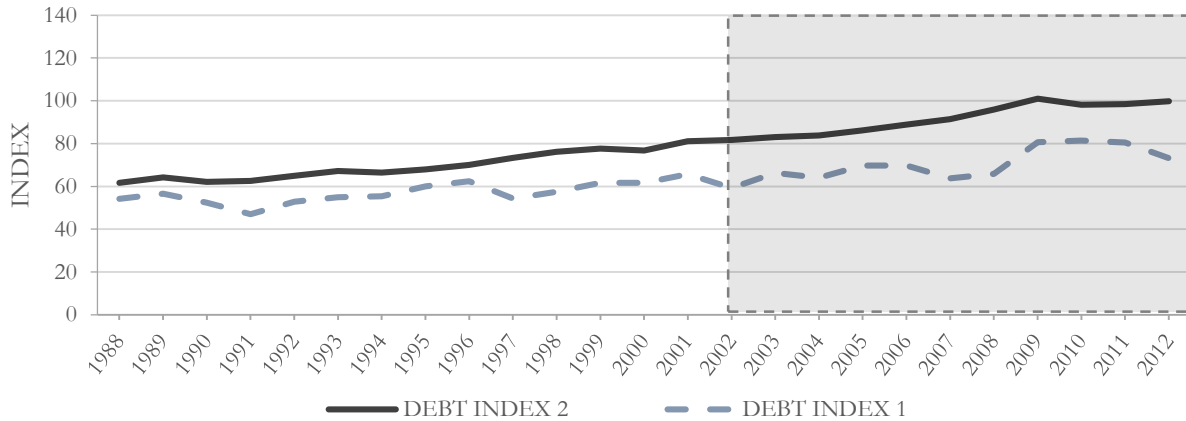
Figure 3. Distribution across countries for DEBT INDEX 2



This figure reports the distribution for DEBT INDEX 2 across all 61 countries. The reported values are averaged across 2002-2012, weighted by the number of transactions each year. Cyprus represents the maximum value of 294 and Peru represents the minimum value of 25.

The two indices over debt market development over time can be viewed in Figure 4. Here we observe a more linear trend than for our equity indices. On average, our measures of debt market development seem to be less affected by economic cycles. But in the same way as for the equity indices, economic cycles have the potential to influence our findings. However, as mentioned, our fixed effect model with time and country dummies will enable us to significantly decrease the effect of economic cycles.

Figure 4. DEBT INDEX 1 and DEBT INDEX 2 over time



This figure reports average values for DEBT INDEX 2 for the countries with available data from 1988-2012. The shadowed area refer to the time period of this study between 2002 and 2012.

3.2.1.3 Relative development index

We continue by constructing an index that measures the relative development between the equity and debt market (RELATIVE INDEX) by comparing them against each other. This measure is created by dividing DEBT INDEX 2 with the sum of DEBT INDEX 2 and EQUITY INDEX 1⁷. If the relative index takes a value close to 1 it implies that the country has a highly developed debt market but a very low developed equity market and vice versa. The relative indices for each country can be viewed in Table 9 in Appendix B.

3.2.1.4 Total development index

Finally, we construct an index over the combined development of the equity and debt market by first normalizing the measure of DEBT INDEX 2 and EQUITY INDEX 2 on a scale to 100. The normalization is done in order to give equal weight to the debt and equity market development⁸. The variable TOTAL INDEX is then constructed by equally weighting of the standardized DEBT INDEX 2 and EQUITYINDEX 2. The total index for each country can be viewed in Table 9 in Appendix B.

⁷ A relative index constructed by using DEBT INDEX 2 and EQUITY INDEX 2 would produce similar results, but using the first two measures helps reducing multicollinearity in our models.

⁸ By normalizing the indices on a scale to 100 the maximum level is related to the highest observed level of development in each market. This normalization is highly affected by outliers, however when excluding these we get no significant changes to our results.

3.2.2 Model specification

The sample consists of 61 countries over an eleven year period between 2002 and 2012. Thus, the dataset involves both a cross-sectional and time dimension. Similarly to Demirgüç-Kunt & Maksimovic's (1996a) study of the effect of the stock market development on capital structure, we include time and country dummies in order to control for unmeasured differences in capital markets between countries and years. Without dummy variables for time and country, economic cycles and country idiosyncratic factors could jeopardize an accurate interpretation of the results.

In order to test our hypotheses we employ three different kind of regressions, each assigned to accurately reflect what we purport to examine for the dependent variable. Similarly to previous studies (see e.g. Faccio & Masulis 2005, Ismail & Krause 2010) we measure the percentage of equity/cash in each transaction when investigating the method of payment⁹. This operationalization enables us to capture more information in our dependent variable than a binary or ordered variable would. Since the equity/cash portion of a transaction can only take values in the interval $[0, 100]$ we use a Tobit estimator with two boundaries. The minimum and maximum points of the portion of equity/cash, 0 and 100, are censoring points and our model can therefore not assign a predicted value lower or and higher than the censoring points, which could introduce biases in our regression (Wooldridge 2010). Schematically and with y_{iy}^* as our dependent variable, with i denominating country and y denominating year, the Tobit estimator and the censoring condition can be expressed in its general form as follows.

$$y_{iy}^* = \beta_0 + \beta_1 X_{iy} + \varepsilon_{iy}$$
$$y_{iy} = \begin{cases} 0 & \text{if } y_{iy}^* \leq 0, \\ y_{iy}^* & \text{if } 0 < y_{iy}^* < 100, \\ 100 & \text{if } 100 \leq y_{iy}^*, \end{cases}$$

In our regressions we employ the standard form of the Tobit regression, with the modification for heteroscedasticity-consistent standard errors¹⁰.

Our dependent variables for the source of financing in the transaction are binary indicators since the percentage amounts are not available. These indicator takes either the value 0 (no

⁹ In order to assure robustness we also test our hypothesis regarding the method of payment with binary and ordered indicators and find that logistic regressions and ordered probit regressions generate similar results. These results can be viewed in Appendix F, Table 16 and 17.

¹⁰ Further specifications of the Tobit regression model are provided by for example Amemiya (1984).

equity/debt/external source) or 1 (equity/debt/external source used). We consequently use a logistic regression expressed in its general form as follows.

$$\text{logit}_{iy} = \beta_0 + \beta_1 X_{iy} + \varepsilon_{iy}$$

Where the predicted probability is given by

$$p_{iy} = \exp(\text{logit}_{iy}) / [1 + \exp(\text{logit}_{iy})]$$

Finally, when investigating firms' debt-to-equity ratio and the acquisition premium in transactions paid with equity, we use an ordinary least square regression (OLS) since the dependent variable is assumed to be discrete.

3.2.3 Model specifications source of financing

In order to answer our first hypothesis concerning the relative development of the equity and debt market on the use of equity as source of financing, we regress the use of equity against the relative size of the debt and equity market, in country i at year y . When examining our hypothesis we want to know if the acquirer to any extent have taken advantage of the equity market as financing source, and therefore measure the incidence of *any* equity used. Since the dependent variable is binary, we use a logistic regression model expressed as follows.

$$\begin{aligned} (1) \text{ ANY EQUITY}_{iy} &= \beta_0 + \beta_1 \text{RELATIVEINDEX}_{iy} + \beta_2 X_{\text{EQUITYINDEX}_{iy}} + \sum \beta_3 X_{\text{FIRM}_{iy}} \\ &+ \sum \beta_4 X_{\text{MACRO}_{iy}} + \sum \beta_5 X_{\text{YEAR}_{iy}} + \sum \beta_6 X_{\text{COUNTRY}_{iy}} + \varepsilon_{iy} \end{aligned}$$

The dependent variable ANY EQUITY takes the value 1 if any equity has been used by the acquiring firm to finance the transaction and 0 if not. RELATIVE INDEX represents the independent variable that measures the size of the debt market compared to the total capital market, by dividing the debt index to the sum of the debt and equity markets indices. The variable describes whether the capital market in the transaction country is relatively focused on equity or debt. We expect to see a negative relation between a relatively more developed debt market and equity as a source of financing, in accordance with **H1**. $X_{\text{EQUITYINDEX}}$ represents a control variable for the absolute development of the equity market. We include this control variable as we believe that the absolute development of the equity market could have an effect on the method payment by mitigating information asymmetries and indirectly influence the source of financing. X_{FIRM} represents a vector of control variables that

relates to different firm characteristics identified in previous research to have an effect on the source or financing¹¹. X_{MACRO} likewise represents a vector of control variables for different macroeconomic indicators identified to affect the source of financing in previous research¹². Finally, X_{YEAR} and $X_{COUNTRY}$ represent dummy variables for each year and country.

In our second regression model, we examine the relation between the relative size of the debt and equity market and the use of debt as source of financing in cash payments. Since our dependent variable is binary, we apply a logistic regression model as follows.

$$(2) ANY DEBT_{iy} = \beta_0 + \beta_1 RELATIVEINDEX_{iy} + \sum \beta_2 X_{FIRM}_{iy} + \sum \beta_3 X_{MACRO}_{iy} + \sum \beta_4 X_{YEAR}_{iy} + \sum \beta_5 X_{COUNTRY}_{iy} + \varepsilon_{iy}$$

ANY DEBT takes the value of 1 if the transaction is financed in any part with debt and 0 if not. Since we only examine cash payments we do not include a control variable for the absolute development of the equity market. We expect to see a positive relation between using debt as a source of financing in cash payments and a relatively more developed debt market, as stated in **H2**.

The third regression tests the relation between the relative size of the debt and equity market and the debt-to-equity ratio of firms. We apply an OLS regression and specifies the model as follows.

$$(3) DEBT/EQUITY_{iy} = \beta_0 + \beta_1 RELATIVEINDEX_{iy} + \beta_2 X_{EQUITYINDEX}_{iy} + \sum \beta_3 X_{FIRM}_{iy} + \sum \beta_4 X_{MACRO}_{iy} + \sum \beta_5 X_{YEAR}_{iy} + \sum \beta_6 X_{COUNTRY}_{iy} + \varepsilon_{iy}$$

The dependent variable DEBT/EQUITY is measured as the acquiring firm's book value of financial debt divided by the market value of equity before announcement. Since firms are hypothesized to take advantage of relatively more developed debt markets, as stated in **H3**, we expect to see a positive relation between the dependent variables DEBT/EQUITY and relatively more developed debt market (RELATIVE INDEX).

In Model (4) we test the relation between the absolute development of the total capital market and the use of external financing. We apply a logistic model as follows.

¹¹ Further specifications of the control variables for firm characteristics can be found in section 3.3 control variables.

¹² Further specifications of the control variables for macro economy can be found in section 3.3 control variables.

$$\begin{aligned}
(4) \text{ ANY EXTERNAL}_{iy} &= \beta_0 + \beta_1 \text{ TOTALINDEX}_{iy} + \sum \beta_2 X_{\text{FIRM}}_{iy} + \sum \beta_3 X_{\text{MACRO}}_{iy} \\
&+ \sum \beta_4 X_{\text{YEAR}}_{iy} + \sum \beta_5 X_{\text{COUNTRY}}_{iy} + \varepsilon_{iy}
\end{aligned}$$

The variable ANY EXTERNAL takes the value of 1 if any equity, debt or other financial instrument is used as a source of financing and 0 if not. TOTAL INDEX is measured as the weighted total development of the equity and debt market development. In accordance with **H4**, we expect to see a positive relation between TOTAL INDEX and the dependent variable ANY EXTERNAL.

3.2.4 Model specifications method of payment

In our fifth regression Model (5) we test the relation between the relative development of the debt and equity market and cash payments. We measure the dependent variable as a percentage of total consideration which follows previous studies examining determinants of the method of payment (see e.g. Faccio & Masulis 2005, Ismail & Krause 2010) and we expect to see a positive relationship between the relative index and the percentage of cash in the consideration. The dependent variable describe equity as a percentage of total consideration and can therefore only take a value between 0 and 100. As previously discussed, this introduces censoring conditions and we therefore apply a tobit regression as follows.

$$\begin{aligned}
(5) \% \text{ CASH}_{iy} &= \beta_0 + \beta_1 \text{ RELATIVEINDEX}_{iy} + \beta_2 X_{\text{EQUITYINDEX}}_{iy} + \sum \beta_3 X_{\text{FIRM}}_{iy} \\
&+ \sum \beta_4 X_{\text{MACRO}}_{iy} + \sum \beta_5 X_{\text{YEAR}}_{iy} + \sum \beta_6 X_{\text{COUNTRY}}_{iy} + \varepsilon_{iy}
\end{aligned}$$

As stated in hypothesis (**H5**) we expect to see a positive relation between the relative index and the percentage of cash in the consideration.

For the sixth regression Model (6), we examine the impact of the absolute development of the equity market (EQUITY INDEX). Since an increase of equity as method of payment could also be driven by higher relative attractiveness of equity as a source of financing, we include our relative index in the model to control for this possibility.

(6 a) % EQUITY_{iy}

$$= \beta_0 + \beta_1 EQUITYINDEX_{iy} + \beta_2 X_{RELATIVEINDEX}_{iy} + \sum \beta_3 X_{FIRM}_{iy} \\ + \sum \beta_4 X_{MACRO}_{iy} + \sum \beta_5 X_{YEAR}_{iy} + \sum \beta_6 X_{COUNTRY}_{iy} + \varepsilon_{iy}$$

Here we expect to see a positive relation between the equity market development and % EQUITY since a better absolute development of the equity market should facilitate using equity as payment method, as stated in **H6**.

In order to further investigate the impact of equity market development on equity as part of total consideration in transactions, we rerun the regression in (6a) but drop RELATIVE INDEX as control variable. By doing so, we aim at disentangling the effect of absolute size of the equity market on using equity as the payment method. Following this procedure, we get an identical regression but without our relative index as control variable, as visible below.

(6 b) % EQUITY_{iy}

$$= \beta_0 + \beta_1 EQUITYINDEX_{iy} + \sum \beta_2 X_{FIRM}_{iy} + \sum \beta_3 X_{MACRO}_{iy} \\ + \sum \beta_4 X_{YEAR}_{iy} + \sum \beta_5 X_{COUNTRY}_{iy} + \varepsilon_{iy}$$

In our seventh and final model, we want to measure the development of the equity market and its effect on the size of the premium paid in transactions where target shareholders receive equity as payment. We therefore regress the premium on the development of the equity market (EQUITY INDEX) using an OLS regression specified as follows.

(7) PREMIUM_{iy}

$$= \beta_0 + \beta_1 EQUITYINDEX_{iy} + \beta_2 X_{RELATIVEINDEX}_{iy} + \sum \beta_3 X_{FIRM}_{iy} \\ + \sum \beta_4 X_{MACRO}_{iy} + \sum \beta_5 X_{YEAR}_{iy} + \sum \beta_6 X_{COUNTRY}_{iy} + \varepsilon_{iy}$$

Where the dependent variable PREMIUM represents the additional consideration offered above the closing price of the target equity price thirty days before announcement¹³. Here we also include a

¹³ Previous literature suggest the equity price four weeks ahead of announcement is ideal to use (Kesner et al 1994, Flanagan & O'Shaughnessy 2003)

control variable for the relative market development. We expect to see a negative relationship between the equity market development and the premium paid in transactions, as stated in our hypothesis **H7**.

3.3 Control variables for firm and macroeconomic characteristics

Research has identified several determinants of source of financing and method of payment in mergers and acquisition. In order to isolate the effect of market development when testing our hypotheses we use a set of control variables in our regressions. To highlight the difference among our control variables, we divided them into two categories: *firm characteristics* and *macroeconomic indicators*. The control variables have been carefully collected from previous research where they have been discovered to effect the financing or payment decision. The first set of control variables, *firm characteristics*, captures idiosyncratic company and transaction factors and their rationale for inclusion are presented briefly below¹⁴.

ASSET SIZE to GDP. Measures the relative size of the company to the entire economy, and is used by Demirgüç-Kunt & Maksimovic (1996a) and Chen (2009) as a proxy for firms' access to capital markets.

CASH to ASSETS. Cash-rich companies will in general use less external financing in accordance with Myers (1984) pecking order theory of financing. Kaplan & Zingales (1997) and Chen (2009) suggest that there could also exist a pecking order within m&a with firms preferring to pay the target with internally available cash.

COMPETING OFFER. Betton & Eckbo (2000) and Flanagan & O'Shaughnessy (2003) discover that bid premiums tend to increase when there are several competing bids.

DEBT / EQUITY. Substantial financial leverage can deter companies from using additional debt in transactions due to the debt overhang issue identified by Myers (1977). Martynova & Renneboog (2009) identified leverage to have significant explanatory power for the source of financing.

EARNINGS to ASSETS. Profitability has shown to be inversely correlated with leverage (Titman and Wessels 1988) and is included to capture effects on debt financing for highly profitable firms.

¹⁴ A complete and more comprehensive description of how each control variable is measured can be found in Appendix C.

FIXED to TOTAL ASSETS. If a company's total assets consist of predominantly fixed assets it will be able to offer more collateral and thereby increase their debt financing compared to firms with predominantly current assets (Booth et al 2001).

HIGH TECH. Huang et al (2014) finds that firms in the high tech industry use more equity as payment method in order to share the uncertainty of future development in the industry.

HOSTILE. Cash offers have a higher probability of success in hostile takeover and is therefore used extensively in such transactions (Fishman 1989).

MINORITY. When acquiring a minority stake in the target company, acquirers are more likely to use cash (Faccio & Masulis 2005).

MKT TO BOOK. Hansen (1987) stipulates that acquirers with superior information about the intrinsic value of its stock price will use equity when the company is overvalued and vice versa. Several studies (e.g. Brown & Ryngaert 1991 and Baker & Stein 2004) use market to book value to confirm this hypothesis.

PRIVATE. For private targets, cash is preferred since current owners often have concentrated their wealth to the private company (Faccio & Masulis 2005).

REL SIZE. In transactions where the acquirer and target are of similar size, Hansen (1987) and Martin (1996) and Zhang (2001) found that equity became more frequent as method of payment. The relation seem intuitive given that few companies should be able to raise an amount of cash that is equivalent to their own size. Hence, the relative size of the acquirer and target will have an effect on the method of payment.

SALES to FIXED. Based on the same intuition as *Fixed to total assets* but with fixed assets expressed as a percentage of total sales (Demirgüç-Kunt & Maksimovic 1996a).

SIZE. Large firms are in general more diversified and have lower bankruptcy risk which introduces scalability in borrowing of financial debt (Faccio & Masulis 2005)

SUBSIDIARY. Faccio & Masulis (2005) identify that cash is more prevalent when a subsidiary is spun off, since the target company wants to use the proceeds for reducing debt or making new acquisitions.

The control variables pertaining to macroeconomic factors capture economywide trends and preconditions that empirical studies have been found to influence the source of financing and method

of payment in mergers and acquisitions¹⁵. Therefore, our macroeconomics factors control for the following factors¹⁶.

FDI to GDP. We implicitly control for GDP and the associated growth through the definition of our indices, however, foreign direct investments (FDI) could affect firms' choice of financing by providing additional growth opportunities. We therefore control for FDI in our regressions, similar to what has been done in previous studies (see e.g. Agarwal & Mohtadi 2004).

INFLATION. High inflation might lead capital markets to offer fewer debt instrument for long-term financing which makes companies more reliant on equity financing (Demirgüç-Kunt & Maksimovic 1996, Agarwal & Mohtadi 2004).

3.4 Descriptive statistics for source of financing and method of payment

Descriptive statistics of the total sample over the source of financing is presented in Table 1. From Table 1 we can conclude that the acquirers in our sample frequently use cash (any cash is included in 83 % of the transactions). Any debt is used in about 7 % of the transactions and any equity in 35 %. The characteristics of our dataset resemble that of Martynova & Renneboog (2009), who found that equity was used as source of financing in 34 % of the transactions for a dataset between 1993 and 2001. Statistics over the source of financing for our dataset for each country can be viewed in Table 13 in Appendix D.

Descriptive statistics of the total sample over method of payment is presented in Table 2. The table shows the method of payment for our transactions divided into equity, cash and mixed payment. As visible, 73 % of transactions included only cash, 14 % only equity and 13 % mixed payments. The split between payment methods for our data is similar to Huang's et al (2014) that compiled statistics over the method of payment between 1990 and 2010 for 85,000 domestic and cross-border transactions globally. Huang et al (2014) reported 72 % only cash transaction, 12 % all equity transactions and 16 % mixed transactions which strengthen the notion that our data captures the global split between payment methods. Statistics over the method of payment for each country can be viewed in Table 14 in Appendix D.

¹⁵ Additionally, we also tested cross capital formation (investments) in relation to GDP and GDP with no change in our interpretations of the result. These two control variables were excluded due to high multicollinearity.

¹⁶ A complete and more comprehensive description of how each control variable is measured can be found in Appendix C.

Table 1: Descriptive statistics for source of financing

	Source of payment				
	Number of Transactions	EXTERNAL			INTERNAL
		ANY DEBT	ANY EQUITY	ANY EXTERNAL	ANY CASH
Percentage of sample					
Total sample	16248 ¹⁷	6.8	34.6	39.3	82.9

This table reports the number of transaction and statistics for source of financing in the total sample. ANY DEBT (EQUITY) measures if any debt (equity) has been used as a source of financing. ANY EXTERNAL measures if any equity, debt or other external source has been used to finance the transaction. ANY CASH measures whether any internal cash has been used to finance the transaction. Further specifications of variables can be found in Appendix C.

Table 2: Descriptive statistics for method of payment

	Method of payment						
	Number of Transactions	% CASH	% EQUITY	% OTHER	ONLY CASH	ONLY EQUITY	MIXED
					Average of sample		
Total sample	19825	80.2	19.6	0.2	72.6	14.2	12.6

This table reports the number of transaction and statistics for method of payment for the sample. % CASH (EQUITY) indicates the percentage of cash (equity) in the consideration paid. % OTHER reports the percentage warrants/options/convertible debt/convertible preferred stock. ONLY CASH (EQUITY) measures the percentage of the sample paid to at least 98 % with cash (equity). MIXED measures the percentage of the sample paid with a mixture of equity and cash. Further definitions of variables can be found in Appendix C.

4. EMPIRICAL RESULTS

The empirical results from our examinations of the effect of capital market development on the source of financing and the method of payment, debt-to-equity ratio and acquisition premiums in equity paid m&a are discussed in two different parts. The relative development between the debt and equity markets is consistently expressed as the debt market divided by the sum of debt and equity market. Hence, an increase in the RELATIVE INDEX imply a greater focus on debt compared to equity.

¹⁷ The total sample consists of 19,825 transactions, but we only have a source of financing specified in 16,248 transactions.

In the first part, we discuss how market development explain the acquiring firms' choice of source of financing. Our results show that in countries where the equity market is relatively more developed, firms use relatively more equity as source of financing in m&a. Similarly, in countries where the debt market is relatively more developed, firms use more debt. The increased use of debt as financing source is visible in both aspects that we examine; acquirers paying with cash use more debt as the immediate source of m&a financing, but also have higher debt-to-equity ratio before the transaction. When looking overall at acquirers' source of financing, we discover a positive relation between total capital market development and the use of external financing, confirming Demirgüç-Kunt & Maksimovic (1998) suggestion of diminishing importance of firms' internal capital as the external capital market develops and provides an increasingly better substitute. The results are in line with what we hypothesized and confirm hypotheses **H1**, **H2**, **H3** and **H4**.

In the second part, we discuss how debt and equity market development explains the method of payment, as well as premiums in transactions where target shareholders receive equity. We find that relatively more developed debt markets lead to more cash payments, confirming hypothesis **H5**. The results on the impact of equity market development and equity payments are however inconclusive. When looking exclusively at the relation between the absolute size of the equity market and equity as payment method, we find the expected positive relation, implying that acquirers use equity to pay target shareholders more frequently in developed equity markets. This relation could be explained by less information asymmetry between the acquirer and target shareholders. However, we suspect that the increase could also be driven by relatively more attractive conditions for equity financing, and not by less information asymmetry between acquirers and targets. Hence, we run the risk of omitted variable bias and therefore include a control variable for the relative market development. When running the regression and controlling for the relative development between equity and debt market, the results change and we discover a negative relationship between equity payments and more developed equity markets. We can therefore neither confirm nor reject hypothesis **H6**.

Finally, we look at the relation between premiums in transactions where target shareholders receive equity and the absolute size of the equity market. We find that premiums in equity paid transactions decrease as equity markets develop, confirming hypothesis **H7** of smaller compensation for the information asymmetry between acquirers and targets in better developed equity markets. A summary of all our hypotheses and the empirical findings are presented in Table 3.

Table 3: Summary of hypotheses and empirical result

H1. <i>In relatively more developed equity markets firms will use more equity as source of financing in m&a</i>	<i>Supported</i>
H2. <i>In relatively more developed debt markets firms will use more debt as source of financing in m&a</i>	<i>Supported</i>
H3. <i>The debt-to-equity ratio for firms paying with cash in m&a is higher in relatively more developed debt market</i>	<i>Supported</i>
H4. <i>In more developed capital markets firms will use more external financing as source of financing in m&a</i>	<i>Supported</i>
H5. <i>Cash payments in m&a will increase with a relatively more developed debt market</i>	<i>Supported</i>
H6. <i>Equity as the method of payment in m&a increase with the development of the equity market</i>	<i>Inconclusive</i>
H7. <i>In countries with more developed equity markets, bid premiums in m&a decrease in equity paid transactions</i>	<i>Supported</i>

The empirical results from the logistic regression on the source of financing can be found in Table 4. The results from the OLS regression on how capital markets affect the premium and debt-to-equity ratio can be found in Table 5. Finally, the results from the tobit regressions showing the effect of capital markets on the method of payment can be found in Table 6.

A correlation matrix as well as the variance inflation factors (VIF) for two regression models can be found in Table 15 in Appendix E. We observe an expected strong correlation between the relative index and the debt and equity index. The strong correlation can become problematic since it could introduce multicollinearity in our regression models. The VIF for the relative index in regression model (6a) is 10.0 when both the equity index and the relative index are included in the model. When the relative index variable is dropped in model (6b) the VIF is reduced to 5.6. In general for all regression models the VIF is about 10 when two indices are included and around 5 to 6 with only one index. Strictly speaking, only perfect correlation is a violation of the underlying assumptions in a multiple regression (Newbold et al 2013), but limited multicollinearity could pose a problem with interpreting coefficient estimates. However, a VIF of around 5-6 is generally not seen as problematic (Marquardt 1970, Belsley et al 1980). Except for **H6** where the result is inconclusive, all other

conclusions remains the same regardless of whether a control variable for the market development is included or not¹⁸.

4.1 Source of financing in mergers and acquisitions

In this part we examine if the relative and total development of the capital markets can explain the acquirers' source of financing in accordance with hypotheses **H1**, **H2**, **H3** and **H4**. The results from the logistic regressions explaining the source of financing are visible in Table 4 and the result from the OLS regression explaining acquirers' debt-to-equity ratio can be found in Table 5.

4.1.1 Relative development and financing

Model (1) presents evidence of a negative and significant relationship between firms' use of equity as financing source and relatively more developed debt markets measured by our relative index. This relation suggests that firms use less equity when debt markets are comparatively more developed, and more equity when equity markets are comparatively more developed. Our empirical result from Model (1) thus supports hypothesis **H1** since it suggests an increase in the use of equity as financing source in relatively more developed equity markets, as a consequence of fewer market imperfections. In a more developed equity market, firms are able to issue equity more frequently and at a lower cost since the information asymmetry between insiders and outsiders is less severe and the market more liquid (Stulz 1999). Looking at the control variables for Model (1), we find that an increase in the acquirers' debt-to-equity ratio surprisingly leads to a decrease in the likelihood of using equity as source of financing. This relation is opposite to what we expect following Myers (1977) theory of a debt overhang deterring leveraged firm from further debt financing. Instead, it seems to be the case that firms continue using debt when financing m&a even if they are already leveraged.

In Model (2) we examine the relation between a relatively more developed debt market and debt financing. We find that debt financing increases in relatively more developed debt markets, albeit the relation is statistically weaker than in Model (1). This confirms hypothesis **H2**. We believe this relation follows from the fact that relatively more developed debt markets offers relatively lower cost of debt financing through better dissemination of information, as well as an improved ability for creditors to properly assess borrowers. From our control variables we see that acquirers with more fixed assets in relation to total assets are more likely to finance transactions using debt, which should stem from them being able to offer more collateral to creditors.

¹⁸ The results of these regressions can be found in Tables 18, 19 and 20 in Appendix F

Table 4: Logistic regressions explaining the source of financing

	SOURCE ANY EQUITY		SOURCE ANY DEBT		SOURCE ANY EXTERNAL	
	(1)		(2)		(4)	
	All		PAYM. ANY CASH		All	
	coeff.	wald	coeff.	wald	coeff.	wald
RELATIVE INDEX	-2.193***	18.71	1.477*	2.27		
TOTAL INDEX					0.014***	6.42
Control variables: Firm characteristics						
ASSET SIZE to GDP	8.29***	6.22	14.215***	8.61	10.144***	10.34
CASH to ASSETS	0.279***	6.63	-2.096***	80.04	-0.047	0.19
COMPETING OFFER	-0.679***	8.11	-0.238	0.29	-0.636***	7.52
DEBT / EQUITY	-0.018*	2.07	0.007	0.15	0.012	0.43
EARNINGS to ASSETS	-0.055**	3.02	0.051**	2.74	-0.045*	2.30
FIXED to TOTAL ASSETS	0.345***	11.56	0.526***	10.12	0.421***	18.30
HIGH TECH	0.091**	3.52	-0.344***	13.54	0.046	0.92
HOSTILE	-0.012	0.00	0.136	0.06	0.096	0.10
MINORITY	-1.575***	347.67	-0.533***	8.80	-1.472***	338.71
MKT to BOOK	0.007***	13.49	-0.007**	3.15	0.006***	11.01
PRIVATE	-0.938***	262.46	-0.703***	38.44	-0.924***	258.52
REL SIZE	0.437***	73.55	0.035**	3.73	0.556***	92.66
SALES to FIXED	0.001**	3.22	-0.0001	0.23	0.0004*	2.26
SIZE	-0.698***	618.23	-0.758***	252.20	-0.717***	679.54
SUBSIDIARY	-0.455***	99.35	0.193***	5.85	-0.334***	58.70
Control variables: Macroeconomic						
FDI to GDP	0.009	0.72	0.042**	4.58	0.017*	2.56
INFLATION	0.05***	6.17	-0.093**	3.19	0.02	1.09
Control: EQUITY INDEX 2	-0.001	0.37				
Intercept	2.453***	44.05	0.024	0.00	1.307***	27.42
Country dummies	Yes		Yes		Yes	
Year dummies	Yes		Yes		Yes	
Number of observations	16248		13469		16248	
Cox & snell R ²	0.18		0.09		0.18	
Nagelkerke R ²	0.25		0.19		0.24	

***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. This table reports how the relative market and total market development explains the source of financing. The coefficients is in log-odd units. Wald reports the estimate of the coefficient divided by its standard error. SOURCE ANY EQUITY is a dummy variable that takes the value of 1 if any equity has been the source of financing. SOURCE ANY DEBT is a dummy variable that takes the value of 1 if any debt has been the source of financing. SOURCE ANY EXTERNAL is a dummy variable that takes the value of 1 if any external source of financing has been used in the transaction. RELATIVE INDEX measures the relative size of the debt market compared to the sum of the debt and equity market. TOTAL INDEX is an index that measure the average development of the normalized debt and equity market. Further definitions of variables can be found in Appendix C.

This relations was also found by Martynova & Renneboog (2009). Somewhat surprising, size is negatively correlated with debt financing, which does not support Faccio & Masulis (2005) suggestion of greater revenue diversification for large firms leading to lower bankruptcy risk and therefore more debt capacity. We also find evidence of a positive relation between debt financing and higher earnings to assets, which confirms Titman & Wessels (1988) result of an inverse relation between profitability and debt financing. Finally, higher inflation decreases the use of debt as source of financing, possibly due to a lack of long-term debt instruments in financial markets located in countries with higher inflation (Agarwal & Mohtadi 2004).

When continuing our investigation of the impact of more developed debt markets, we turn to Table 5 and identify a positive relation between a relatively more developed debt market and acquiring firms' debt-to-equity ratio. We conclude that in relatively more developed debt markets, acquirers paying with cash do not only use more debt as acquisition financing, but also as general financing expressed as a higher debt-to-equity ratio. The higher debt-to-equity ratio in relatively more developed debt markets is likely a corollary of more attractive debt financing conditions. The results confirm hypothesis **H3** and show that our relative measure yield the same relation between debt financing and debt market development as for Demirgüç-Kunt & Maksimovic (1996a) and Agarwal & Mothadi (2004). Examining the control variables for Model (3), we find that more fixed assets total assets increase the debt-to-equity ratio, which as previously mentioned should be due to more collateralizable assets (Martynova & Renneboog 2009).

4.1.2 Total development and financing

For the final part of the impact of market development on firms' source of financing, we find that external financing increases as the total capital market make out a greater portion of a country's economy. As visible from Table 4, there is a strongly significant and positive relationship between the development of capital markets (TOTAL INDEX) and the use of external financing (SOURCE ANY EXTERNAL), indicating that firms use more external capital as the overall capital market develops. Our discovered relation confirms hypothesis **H4** and corroborates Demirgüç-Kunt & Maksimovic's (1998) suggestion of decreasing importance of firms' internal capital as information asymmetry between investors and firms decreases and external capital become a substitute for internal capital. Scrutinizing the impact of our control variables, it is visible that large firms (measured as asset size to GDP) use more external financing, hence confirming Demirgüç-Kunt & Maksimovic (1996a) argument of better access to the capital market for larger firms. However, we find no statistically

significant evidence for Kaplan & Zingales (1997) theory of a pecking order in m&a financing that would make companies with large cash holdings compared to total assets more prone to use cash as source of financing.

4.2 Method of payment in mergers and acquisitions

In this part we examine the impact of the market development on the method of payment, and apply a Tobit model due to the fact that our predicted variable is confined to an interval between 0 and 100. The results from the Tobit model explaining the method of payment can be found in Table 6 and the result from the OLS regression explaining premiums in equity payments are found in Table 5.

4.2.1 The link between source of financing and method of payment

We start by interpreting the results obtained in Model (5), and identify a positive relationship between a relatively more developed debt market and cash as the method of payment in transactions. This relation confirms our suggested link between relatively more attractive debt financing conditions and increased use of cash as payment method, and we confirm hypothesis **H5**. Our findings suggest that firms take the cost of financing into consideration in their choice of payment method. Thus, the underlying market conditions in the debt and equity market have an effect on the method of payment. When interpreting our control variables, we discover a few interesting results. We find that hostile acquisitions include more cash payments, confirming the result of Fishman (1989), and a negative relation between the market-to-book value of equity and the incidence of cash payments. The relation confirms Hansen's (1987) theory of acquirers being more inclined to offer target shareholders cash when the market-to-book value of the acquirer is low, and offer equity for higher values of market-to-book. This result has also been discovered in other previous studies (Brown & Ryngaert 1991 and Baker & Stein 2004). Finally, we also confirm Faccio & Masulis' (2005) finding that if the target is a private company, the likelihood of a cash as payment method increases.

4.2.2 Information asymmetry and method of payment

In Model (6a) we examine the impact of the absolute development of the equity market while controlling for the relative development. We discover a significant and negative relationship between paying target shareholders with equity and operating in a more developed equity market. The results run counter to what one would expect, since a better developed equity market leads to better dissemination of information and less information asymmetry between acquirers and target shareholders.

Table 5: OLS regressions explaining debt-to-equity and acquisition premium

	DEBT / EQUITY		EQUITY PREMIUM	
	(3)		(7)	
	PAY. ANY CASH		PAYM. ONLY EQUITY	
	coeff.	t-stat.	coeff.	t-stat.
RELATIVE INDEX EQUITY INDEX 2	0.76***	2.81	-0.002***	-2.83
Control variables: Firm characteristics				
ASSET SIZE to GDP	-1.238	-0.84	0.834	0.54
CASH to ASSETS	-0.637***	-9.43	0.071	1.10
COMPETING OFFER	-0.134	-0.91	0.043	0.45
DEBT / EQUITY			-0.009**	-1.69
EARNINGS to ASSETS	-0.013	-1.09	0.035	0.59
FIXED to TOTAL ASSETS	0.254***	4.37	-0.029	-0.54
HIGH TECH	-0.134***	-4.54	-0.039*	-1.43
HOSTILE	-0.095	-0.43	-0.015	-0.18
MINORITY	0.043	1.18	0.056	1.02
MKT to BOOK	-0.001*	-1.33	0.002**	1.90
PRIVATE	0.047	1.20		
REL SIZE	0.151***	13.83	-0.012	-0.58
SALES to FIXED	0.000	0.97	-0.000	-0.18
SIZE	0.138***	9.03	-0.015	-1.06
SUBSIDIARY	0.009	0.37		
Control variables: Macroeconomic				
FDI to GDP	0.009*	1.42	0.005	0.68
INFLATION	0.003	0.26	-0.028***	-3.06
Control: EQUITY INDEX 2	0.0005	0.92		
Intercept	-0.537***	-2.59	1.006***	4.45
Country dummies	Yes		Yes	
Year dummies	Yes		Yes	
Number of observations	17013		837	
R ²	0.06		0.18	
Adjusted R ²	0.05		0.119	

***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. This table reports how the relative market development explains the debt-to-equity ratio of acquiring firms and how the absolute equity market development explains the premium in equity paid transactions. DEBT / EQUITY measures total financial debt divided by market value of equity before the transaction. EQUITY PREMIUM measures the percentage difference between the consideration and the share price of the target 30 days before announcement. DEBT / EQUITY and EQUITY PREMIUM have been winsorized to values between 0 and 100. RELATIVE INDEX measures the relative size of the debt market compared to the equity market. EQUITY INDEX 2 is an index that measure the development of the equity market. Further definitions of variables can be found in Appendix C.

Table 6: Tobit regressions explaining payment method

	PAYMENT % CASH		PAYMENT % EQUITY		PAYMENT % EQUITY	
	(5)		(6a)		(6b)	
	coeff.	t-stat.	coeff.	t-stat.	coeff.	t-stat.
RELATIVE INDEX EQUITY INDEX 2	334.95***	7.00	-0.24***	-2.82	0.165***	2.57
Control variables: Firm characteristics						
ASSET SIZE to GDP	-610**	-1.99	612**	2.01	603**	1.96
CASH to ASSETS	-3.151	-0.31	1.699	0.16	2.295	0.22
COMPETING OFFER	89.819***	3.86	-89.36***	-3.84	-88.521***	-3.78
DEBT / EQUITY	3.899	1.21	-3.783	-1.17	3.266***	0.25
EARNINGS to ASSETS	-39.814***	-4.02	38.229***	3.86	38.507***	3.89
FIXED to TOTAL ASSETS	-10.302**	-2.21	10.895**	2.33	10.987***	2.35
HIGH TECH	-17.296	-0.53	17.521	0.54	17.452	0.54
HOSTILE	2.958**	1.75	-2.915**	-1.75	-2.992**	-1.74
MINORITY	176.217***	18.20	-176.702***	-18.16	-178.203***	-18.32
MKT to BOOK	-0.366***	-2.46	0.363***	2.50	0.388***	2.61
PRIVATE	161.134***	25.45	-161.853***	-25.60	-161.933***	-25.56
REL SIZE	-6.991**	-1.75	6.89**	1.75	7.071**	1.74
SALES to FIXED	-0.018	-1.09	0.015	0.91	0.014	0.88
SIZE	69.235***	23.56	-68.514***	-23.49	-68.445***	-23.33
SUBSIDIARY	29.688***	6.59	-30.182***	-6.70	-30.06***	-6.67
Control variables: Macroeconomic						
FDI to GDP	-2.31**	-2.28	2.309**	2.27	2.126**	2.08
INFLATION	-4.69***	-2.44	4.401**	2.29	4.682***	2.44
Control: RELATIVE INDEX			-345.408***	-7.23		
Control: EQUITY INDEX 2	0.221***	2.61				
Intercept	-486.819***	-3.56	598.008***	4.4	284.174**	2.21
Country dummies	Yes		Yes		Yes	
Year dummies	Yes		Yes		Yes	
Number of observations	19825		19825		19825	
McFadden's adjusted R ²	0.07		0.07		0.07	
McKelvey & Zavoina's R ²	0.29		0.29		0.28	

***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. The table reports how the relative market development explains the method of payment. The t-statistics are based on heteroscedasticity-consistent standard errors. PAYMENT % EQUITY measures the percentage of consideration paid in equity in each transaction. PAYMENT % CASH measures the percentage of consideration paid in cash in each transaction. RELATIVE INDEX measures the relative size of the debt market compared to the equity market. Further definitions of variables can be found in Appendix C.

Supported by Faccio & Masulis (2005) suggestion of increased willingness to accept equity as payment method in market with less asymmetric information, we hypothesized that the relation would be the opposite. However, when rerunning the regression and dropping the relative index measure as in

Model (6b), we see that the coefficient change sign and the suggested relation become the opposite. The different results in Model (6a) and (6b) make an accurate interpretation our findings difficult, since we run the risk of either omitted variable bias or coefficients affected by multicollinearity. The effect of equity market development on the use of equity as payment method therefore remains inconclusive.

Finally in our last Model (7), which is visible in Table 5, we scrutinize the relation between absolute equity market development and the premium in transactions paid entirely with equity. We discover that for equity paid transactions there is a negative relationship between premium paid and level of development of the equity market. The result support or hypothesis that in better developed equity markets, information asymmetry between acquirers and target shareholders is less severe and acquirers therefore need to pay a lower additional premium (on top of the control premium) in order for target shareholders to accept the offer. Our results are in line with the negative relation between information asymmetry and acquisitions premiums identified by Zhu & Jog (2009). Contrastingly, Rossi & Volpin (2004) found that premiums are higher in countries with better shareholder protection rights. They suggest that higher premiums could stem from reduced cost of capital and hence increased competition among bidders. Consequently, using shareholder protection as proxy for market development yields different results and interpretations than our operationalization of market development.

5. ROBUSTNESS

5.1 Data sample, outliers and measurement

The dataset underlying our empirical tests is created using FactSet, and we have subsequently scrutinized it for systematic errors and outliers. We notice a lot of missing values for the source of financing in our data, and this could potentially be of systematic nature and not random. A possible explanation for the missing values could for example be that it is less likely to report using internal cash as financing. Furthermore, arrangements with bridge financing, which is common in certain countries, could affect the reported source of financing. A company might for example receive a short-term loan as temporary bridge financing and then issue equity or long-term debt to repay the loan¹⁹. In such cases, the debt market facilitates the transaction by providing initial financing, although

¹⁹ However, Kahl et al (2015) found that the bridge financing in the form of commercial papers was repaid mostly with the proceeds from long-term debt.

the transaction is ultimately financed with equity. However, the absence of initial bridge financing would likely not affect the acquirers' decision of equity as source of financing, and the acquirer would instead have to issue equity immediately. For this reason, we do not believe that bridge financing arrangements alter the underlying market dynamics we examine.

In order to avoid that extreme values drive the results in our regressions, we test the robustness of our result by winsorizing the data at the 99 percentile. In doing so, we check that a few extreme observations are not changing the interpretation of our results. For example, Cyprus and Hong Kong report very high levels of market development which might affect our results. However, when rerunning the regressions on winsorized data, we obtain similar results as for the initial data and can therefore conclude that outliers are not driving our results.

Continuing to the possibility of measurement problems, Levine & Zervos (1998) suggest that differences in the way government define, measure and collect variables might introduce inconsistently across countries. Although this cannot be adjusted for, we have used widely accepted macroeconomic measurements in order to minimize the risk of measurement problems. We are also unable to adjust for different accounting practices between countries that could distort some of the company specific control variables used in the regressions.

Another aspect to consider is the fact that in certain countries some firms might choose to finance m&a transactions through capital markets outside their country of domicile. In this case the firm is not confined to the financing available in the domestic market. If we were able to exclude these companies the effect would likely be an increase in explanatory power in our regressions models.

When using a worldwide sample, data collection becomes more difficult since specific data is sometimes not available in certain countries. First, previous literature have identified ownership structure to have an effect on the method of payment (see e.g. Martin 1996, Ghosh and Ruland 1998, Stulz 1999) and we are unable to control for this. Secondly, Demirgüç-Kunt and Maksimovic (1996a) find that differences between the tax treatment of debt and equity securities across countries have an effect on firms' choice of capital structure, which we do not have data to control for. Finally, separate tax treatment between cash and equity financed m&a that might affect the acquirers' choice of financing (Faccio & Masulis 2005) are also not controlled for. We deal with these possible omitted variable biases by introducing dummies for country and year. In doing so, the fixed effects reduce the likelihood that the relationship is driven by an omitted variable even if we cannot control for these separately.

5.2 Multicollinearity

As discussed in the empirical result section, our indices over debt, equity and relative market development are closely related. The correlation matrix and VIF factors are reported in Appendix E. Signs of multicollinearity can be detected from the strong correlation of 0.76 between RELATIVE INDEX and EQUITY INDEX 2 and from VIF factors close to 10 for Model (6a). The presence of possible multicollinearity becomes more apparent as the EQUITY INDEX 2 change sign when we run the regression for Model (6b). Since possible multicollinearity makes the interpretation of the coefficients in Model (6a) and (6b) ambiguous, we consider the results to be inconclusive for these two models. As for the rest of the models, the results are not significantly affected by dropping different independent variables. We report the result of the regression models when the control variable for capital market development has been dropped in Table 18, 19 and 20 in Appendix F.

5.3 Statistical models and measurement of dependent variable

There are several alternatives for measuring the dependent variable in our regression on method of payment. We chose to express the method of payment variable as a percentage of considerations transferred, since we believe that this measure contain more information than if we made the variable ordered or binary. However, the final percentage of equity or cash in a transactions is sometimes affected by the preferences of target shareholders, since laws in some countries mandate that an offer to pay shareholders with equity must be accompanied with a similar cash offer (Faccio & Masulis 2005). We control for this by performing an ordered probit regression where we test the choice between cash, equity or a mixture of both. The result of this regression is reported in Table 16 in Appendix F. From the regression output we observe that the results do not significantly change and our previous findings of the effect of the market development remains. However, this approach could be questioned as well, since the order is not obvious. The choice of paying with a mixture is not necessarily a compromise between debt and equity, but could instead be driven by distinct factors. In order to control for this, we also perform a logistic regression for model (5) and (6), with the results reported in Table 17 in Appendix F. Once again, we observe that our findings are unaffected by the choice of specification of the dependent variable for method of payment.

5.4 Capital market development

We create two indices over the development of the debt and equity markets, respectively, which includes either two or three measures of market development. We do so in order to examine if the

results from our empirical model change when excluding a particular measure of market development. The results obtained from the unreported regressions with different indices show that the choice of index (and consequently whether to include two or three measures of market development) makes no significant difference for the interpretation of the stated results.

As previously discussed, economic cycles could affect the indices by temporarily exacerbating their value, and there is no easy way to control for these economic cycles beyond using a fixed effect model with year and country dummies. In an attempt to exclude the effect of economic cycles we create a linear trend using the least-square-method for the debt and equity market, from when data over our measures of development was first available. In these unreported regressions with linearized development indicators we observed no significant change to our previous result. The information value of linearized data could however be questioned, but the results from the regression using linearized values should point to that our results are not primarily driven by temporary fluctuations in market valuation.

When examining the role of the relative size of debt and equity markets on the method of payment, we assume that market conditions (i.e. availability and liquidity) affect the firms' choice between cash and debt as financing source. One could argue that the opposite could also hold true; that capital markets adapt to the preference of firms and adjust their availability accordingly. However, we find this relation to be unlikely since the capital markets have distinctive characteristics such as equity markets being sensitive to regulatory regimes or that government or government-like institutions control the supply of credit. The assumptions of causality in our hypotheses seem intuitive.

6. CONCLUSION

This study contributes to the existing literature on firms' source of financing and method of payment in m&a by demonstrating the role of relative development between debt and equity markets. Through documenting the importance of differences in development between debt and equity markets when examining acquirers' choice of acquisition financing, we add a previously uninvestigated dimension to the accumulated knowledge on the source of financing. In capital markets where the equity market is relatively more developed than the debt market, we discover greater use of equity as source of financing. We find the same relation to hold between relatively more developed debt markets and debt financing. Our findings support theories that market frictions and information asymmetry between firms and investors decrease as markets develop, and that firms take advantage of this to decrease financing costs. We also add further insight into the field of determinants of payment method in m&a

by connecting acquirers' payment choice to the relative cost between debt and equity financing. Additionally, we find that premiums in equity paid transactions decrease with the level of equity market development, supporting our hypothesis that asymmetric information between the acquirer and target shareholders decreases in more developed equity markets.

When interpreting our results it is necessary to consider that the indices over debt and equity market development are susceptible to economic cycles influencing equity prices as well as the amount of available credit. Furthermore, ownership structure and tax considerations could have some explanatory power. However, even if we cannot separately control for this, the fixed effect model with country and time dummies reduces the likelihood of omitted variable bias.

The results in this study have several interesting implications for future research. Since the relative development between debt and equity markets have been shown to influence the method of payment, results from studies on the determinants of payment method in a particular area of the world cannot be generalized to apply in other markets without controlling for difference in relative market development. Additionally, building on Beck & Demirgüç-Kunt's (2009) finding that equity markets have grown faster than debt markets in the last decade, the relation between debt and equity markets in a country will likely change over time. If the trend of faster growing equity markets continues, the relative cost of financing should develop in favor of more equity financing. Furthermore, as the equity market continues to develop we would expect to see lower future acquisitions premiums, and as both the equity and debt markets develop we would expect to see an increased use of external financing.

Finally, in order to further expand knowledge on the relative development between debt and equity markets, source of financing and the method of payment, we suggest for future research to examine post-announcement stock returns for acquiring firms depending on the level of capital market development. Previous literature has identified that the method of payment as well as the source of financing has an effect on acquirers' post-announcement stock return (Travlos 1987, Andrade et al 2001, Martynova & Renneboog 2009). Martynova & Renneboog (2009) found that a significantly negative price revision followed the announcement of not only takeovers fully paid with equity but also of takeovers that involved equity financing. We believe that these signaling effects are likely to differ depending on the level of debt and equity market development.²⁰

²⁰ For example, an equity issuance when the relative cost of equity is high could potentially imply an even more negative signaling effect.

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APPENDIX

Appendix A: Relationship between source of financing and method of payment

Figure 5: The relationship between method of payment and source of financing

Payment method Equity	Payment method Cash	
Source of payment	Source of payment	
Equity	Internal	External
	Operations	Debt
	Old Debt	Equity
	Old Equity	

This figure reports the relationship between method of payment and source of financing. An equity paid transaction can only be financed with equity. However, there are different ways to finance a cash payment. A cash payment could be financed with either external financing (issuing equity or borrowing) or from internal sources within the firm. The internal sources can originate from internal operations, money borrowed before the transaction or previously issued equity.

Appendix B: Capital market indicators

Table 7: Indicators over equity market development by country

	Equity market indicators (average %)				
	MARKET CAP to GDP	STOCKS TRADED to GDP	TURNOVER	EQUITY INDEX 1	EQUITY INDEX 2
Hong Kong SAR, China	445	349	77	397	290
United States	118	226	197	172	180
Switzerland	205	210	102	208	173
United Kingdom	122	177	148	149	149
Korea, Rep.	85	143	180	114	136
Spain	89	138	169	114	132
South Africa	207	104	52	155	121
Singapore	182	110	68	146	120
Sweden	105	125	122	115	117
Finland	95	122	126	109	115
Netherlands	86	114	134	100	111
Saudi Arabia	69	121	134	95	108
China	71	102	146	87	107
Australia	118	101	89	109	103
Japan	82	98	118	90	99
Canada	113	86	78	100	92
France	77	79	102	78	86
Kuwait	123	75	61	99	86
Norway	63	68	119	65	83
Germany	43	60	140	51	81
India	77	61	89	69	75
Turkey	33	46	147	39	75
Italy	37	50	137	44	75
Malaysia	143	45	34	94	74
Thailand	73	57	88	65	73
Israel	88	48	58	68	65
Russian Federation	60	44	82	52	62
Denmark	60	44	78	52	61
Chile	137	24	19	81	60
Egypt, Arab Rep.	66	35	53	50	51
Brazil	60	34	58	47	51
Belgium	65	33	51	49	50
Czech Republic	25	23	97	24	48
Ireland	56	31	56	43	47
Hungary	28	24	88	26	47
Qatar	74	25	33	50	44
Greece	53	26	46	40	42
Portugal	35	21	58	28	38
Indonesia	34	17	56	25	35
Vietnam	16	13	73	14	34
Austria	30	16	52	23	33
New Zealand	39	15	43	27	32
Philippines	58	12	22	35	31
Poland	32	14	45	23	30
Mauritius	77	4	6	40	29
Bangladesh	13	9	61	11	28
Peru	62	4	7	33	24
Colombia	49	6	15	27	23
Mexico	31	8	28	19	22
Trinidad and Tobago	62	1	1	31	21
Slovenia	47	4	12	26	21
Sri Lanka	32	6	19	19	19
Pakistan	19	5	31	12	19
United Arab Emirates	18	5	25	11	16
Oman	28	4	13	16	15
Croatia	39	1	3	20	14
Kazakhstan	29	2	5	15	12
Ukraine	21	1	6	11	9
Cyprus	11	2	10	7	8
Lithuania	12	1	7	6	7
Bulgaria	15	1	4	8	6

This table reports the different equity market indicators by country sorted by EQUITY INDEX 2. The values are averaged over the time period and weighted by the number of transactions each year. MARKET CAP to GDP measures the market capitalization of listed domestic firms to GDP. STOCKS TRADED to GDP measures the total value of shares traded during the year compared to GDP. TURNOVER measures the total value of shares traded during the year to market capitalization. The first two measures are averaged to construct EQUITY INDEX 1 and all three measures are averaged to construct EQUITY INDEX 2. Further specifications of variables can be found in Appendix C.

Table 8: Indicators over debt market development by country

Debt market indicators (average %)					
	M2 to GDP	CREDIT TO PRIVATE to GDP	DEPOSIT to GDP	DEBT INDEX 1	DEBT INDEX 2
Cyprus	269	296	315	283	294
Hong Kong SAR, China	279	146	162	213	196
Japan	214	183	163	199	187
Netherlands	183	166	184	174	178
Ireland	185	157	156	171	166
United Kingdom	136	164	165	150	155
Spain	148	152	161	150	153
Canada	139	158	135	148	144
Switzerland	139	153	171	146	154
China	167	121	124	144	137
Austria	174	113	128	143	138
Germany	174	106	134	140	138
United States	79	187	63	133	110
Korea, Rep.	128	135	101	132	121
Portugal	118	142	149	130	136
Malaysia	131	110	114	120	118
Denmark	69	170	158	120	133
Thailand	116	111	111	114	113
France	126	98	116	112	114
Vietnam	110	107	112	108	109
South Africa	72	143	77	108	97
Singapore	118	97	119	108	112
Belgium	125	84	110	105	106
New Zealand	83	123	124	103	110
Australia	89	115	110	102	104
Sweden	79	116	79	97	91
Italy	103	91	111	97	102
Mauritius	100	88	106	94	98
Israel	92	88	99	90	93
Greece	93	80	100	86	91
Chile	70	100	67	85	79
Finland	86	74	78	80	79
Croatia	79	68	93	74	80
Bulgaria	73	69	6	71	49
Ukraine	55	83	68	69	69
Norway	55	81	79	68	71
Egypt, Arab Rep.	89	41	69	65	67
Slovenia	58	67	69	62	65
United Arab Emirates	61	59	71	60	64
Lithuania	48	70	43	59	54
Kuwait	55	61	57	58	58
India	71	45	59	58	58
Hungary	56	58	54	57	56
Brazil	63	47	75	55	62
Bangladesh	61	43	66	52	57
Qatar	53	43	61	48	52
Poland	50	43	38	46	44
Saudi Arabia	53	38	53	45	48
Turkey	50	41	55	45	49
Philippines	59	30	42	45	44
Czech Republic	55	32	48	44	45
Russian Federation	45	39	39	42	41
Trinidad and Tobago	51	30	43	41	41
Kazakhstan	38	41	43	40	41
Oman	37	40	43	39	40
Colombia	35	38	37	37	37
Sri Lanka	39	30	35	34	35
Indonesia	41	27	32	34	34
Pakistan	40	17	33	28	30
Peru	33	21	21	27	25
Mexico	27	20	29	24	26

This table reports the different debt market indicators by country sorted by DEBT INDEX 2. The values are averaged over the time period and weighted by the number of transactions each year. M2 to GDP measures the ratio of bank's liquid liabilities in relation to GDP. CREDIT TO PRIVATE to GDP measures domestic credit to private sector by banks in relation to GDP. DEPOSIT to GDP measures bank deposits of domestic assets in relation to GDP. The first two measures are averaged to construct DEBT INDEX 1 and all three measures are averaged to construct DEBT INDEX 2. Further specifications of the variables can be found in Appendix C.

Table 9: Indicators over total and relative market development by country

	Relative and total indicators (average %)	
	RELATIVE INDEX	TOTAL INDEX
Hong Kong SAR, China	0.4	62.8
Cyprus	10	50.8
Switzerland	0.4	43.8
Japan	0.7	41.9
Netherlands	0.6	41.6
United Kingdom	0.5	41.5
Spain	0.6	39.5
United States	0.4	36.9
Korea, Rep.	0.5	34.5
China	0.6	34.2
Canada	0.6	33.9
Ireland	0.8	33.1
Germany	0.7	31.7
Singapore	0.4	31.2
South Africa	0.4	28.9
Denmark	0.7	28.7
Australia	0.5	28.2
France	0.6	28.1
Malaysia	0.6	27.7
Sweden	0.5	27.4
Portugal	0.8	27.0
Austria	0.9	26.9
Thailand	0.6	26.6
Finland	0.4	25.1
Italy	0.7	24.9
Belgium	0.7	23.1
Israel	0.6	22.4
Vietnam	0.9	22.1
New Zealand	0.8	22.0
Norway	0.5	20.6
Greece	0.7	19.7
Mauritius	0.7	19.6
Chile	0.5	19.6
Saudi Arabia	0.4	19.1
Kuwait	0.4	18.6
India	0.5	17.6
Egypt, Arab Rep.	0.6	16.5
Turkey	0.5	15.9
Brazil	0.5	15.7
Croatia	0.8	15.1
Hungary	0.7	14.3
Qatar	0.5	13.4
Russian Federation	0.5	13.3
Slovenia	0.7	13.2
Ukraine	0.9	12.6
Czech Republic	0.7	12.6
Bangladesh	0.8	12.5
United Arab Emirates	0.8	12.5
Philippines	0.6	10.5
Poland	0.7	10.5
Lithuania	0.9	9.8
Indonesia	0.6	9.3
Trinidad and Tobago	0.6	9.2
Bulgaria	0.9	9.0
Colombia	0.6	8.6
Oman	0.7	8.3
Kazakhstan	0.7	8.2
Sri Lanka	0.6	7.8
Pakistan	0.7	7.0
Peru	0.5	6.7
Mexico	0.6	6.6

This table reports the relative and total market development by country sorted by TOTAL INDEX. The values are averaged over the time period and weighted by the number of transactions each year. RELATIVE INDEX measures the debt market development compared to the sum of the debt and equity market development. TOTAL index measures the average development of the debt and equity market. Further specifications can be found in Appendix C.

Appendix C: Definitions and descriptions of variables and indicators

Table 10: Definitions and descriptions of macroeconomic indicators

Macroeconomic indicators	Definition
MARKETCAP to GDP	Measured as the market capitalization of listed domestic companies at the end of the year as a percentage of GDP the same year. Market capitalization is measured as the share price times the number of shares outstanding. Investment companies, mutual funds and other collective investment vehicles are excluded. Source: The World Bank
STOCKS TRADED to GDP	Measured as the total value of shares traded during the year as a percentage of GDP for the same period. Source: The World Bank
TURNOVER	Measured as the total value of shares traded during the year divided by the average market capitalization for the same year. Average market capitalization is calculated as the average of the end-of-year values for the current year and the previous year. Source: The World Bank
EQUITY INDEX 1	Measured as the average of MARKETCAP to GDP and STOCKS TRADED to GDP. Source: The World Bank
EQUITY INDEX 2	Measured as the average of MARKETCAP to GDP, TURNOVER and STOCKS TRADED to GDP. Source: The World Bank
M2 to GDP	M2 stands for money and quasi money and corresponds to lines 34 and 35 in the International Monetary Fund's (IMF) International Financial Statistics. M2 comprise the sum of currency outside banks, demand deposits other than those of the central government, and the time, savings, and foreign currency deposits of resident sectors other than the central government. Measured as percentage of GDP. Source: The World Bank
CREDIT TO PRIVATE to GDP	Measures in relation to GDP the financial resources provided to the private sector by other depository corporations (deposit taking corporations except central banks), such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable, that establish a claim for repayment. Source: The World Bank
DEPOSIT to GDP	Measured as total assets held by deposit money banks as percentage of GDP. Assets include claims on domestic real nonfinancial sector which includes central, state and local governments, nonfinancial public enterprises and private sector. Source: The World Bank
DEBT INDEX 1	Measured as the average of M2 to GDP and CREDIT TO PRIVATE to GDP. Source: The World Bank
DEBT INDEX 2	Measured as the average of M2 to GDP, CREDIT TO PRIVATE to GDP and DEPOSIT to GDP. Source: The World Bank
RELATIVE INDEX	Measures as EQUITY INDEX 1 divided by the sum of EQUITY INDEX 1 and DEBT INDEX 2. This indicator is designed to capture the relative size of the debt market relatively to the sum of the debt and equity market.
TOTAL INDEX	In order to construct the variable TOTAL INDEX the measure of DEBT INDEX 2 and EQUITY INDEX 2 are first normalized to a scale to 100. This is done in order to give equal weight to the debt and equity market development by relating the level of development to the highest observed level of development in each market respectively. The variable TOTAL INDEX is then constructed by equally weighting of the normalized DEBT INDEX 2 and EQUITY INDEX 2.

Table 11: Definitions and descriptions of variables for source and method

Variables	Definition
Source of financing:	
ANY DEBT	Dummy variable that takes the value 1 if any debt is used as source of financing and the value 0 if other sources of financing have been used. Financing classified as venture capital is excluded. Source: FactSet
ANY EQUITY	Dummy variable that takes the value of 1 if any equity has been used as the source of financing and the value 0 if other sources of financing have been used. Source: FactSet
ANY EXTERNAL	Dummy variable that takes the value 1 if any external source of financing is used in the transaction and 0 if only internal cash is used in the transaction. External source include equity (vendor placing or company share issue), debt (bank debt or bonds), warrants or mezzanine. Financing classified as venture capital is excluded. Source: FactSet
ANY CASH	Dummy variable that takes the value of 1 if any internal cash has been used as the source of financing and 0 if no internal cash has been used as source of financing. Source: FactSet
DEBT / EQUITY	Measured as the book value of the total amount of financial debt in the latest report proceeding the announcement divided by the market value of equity two months before the announcement date. The variable has been winsorized to take a value between 0 and 100. Source: FactSet
Method of payment:	
ONLY CASH	Dummy variable that takes the value of 1 if the transaction is paid to at least 98% with cash and 0 if not. Source: FactSet
ONLY EQUITY	Dummy variable that takes the value of 1 if the transaction is paid to at least 98% with equity and 0 if not. Source: FactSet
MIXED	Dummy variable that takes the value of 1 if the transactions is paid with a mixture of equity and 0 if the transaction is paid with at least 98% only equity or cash. Source: FactSet
PREMIUM	Measured as the percentage difference between the stock price 30 days before announcement and the successful bid price. The variable has been winsorized to take a value between 0 and 100. Source: FactSet
% CASH	Measured as the percentage cash of the total consideration paid. The percentage amount refers only to the consideration paid and excludes any contingent/future consideration. Source: FactSet
% EQUITY	Measured as the percentage equity of the total consideration paid. The percentage amount refers only to the consideration paid and excludes any contingent/future consideration. Source: FactSet
% OTHER	Measured as the percentage of warrants/options/convertible debt/convertible preferred debt of the total consideration paid. The percentage amount refers only to the consideration paid and excludes any contingent/future consideration. Source: FactSet

Table 12: Definitions and descriptions of control variables

Control variables	Definition
Firm characteristics:	
ASSET SIZE to GDP	Measured as book value of assets divided by GDP in millions in the country of the acquirer at the year of the transaction. Source: FactSet
CASH to ASSETS	Cash and short term investments divided by the total book value of assets from the latest financial report preceding the announcement. Source: FactSet
COMPETING OFFER	Dummy variable that takes the value of 1 if more than one firm was bidding for the target during the time between announcement and completion. Source: FactSet
EARNINGS to ASSETS	Measured as earnings divided by the book value of assets in the latest financial report before the announcement date. Source: FactSet
DEBT / EQUITY	Measured as the book value of the total amount of financial debt in the latest report preceding the announcement divided by the market value of equity two months before the announcement date. The variable has been winsorized to take a value between 0 and 100. Source: FactSet
FIXED to TOTAL ASSETS	Measured as the book value of net property plant and equipment to the book value of total assets. Source: FactSet
HIGH TECH	Indicator that takes the value 1 if the firm is operating in an industry classified high tech. In accordance with Loughran and Ritter (2001) and Ljungqvist and Wilhelm (2003) the following SIC codes are classified as high tech industry: 3571, 3572, 3575, 3577, 3578 (computer hardware), 3661, 3663, 3669 (communications equipment), 3674 (electronics), 3812 (navigation equipment), 3823, 3825, 3826, 3827, 3829 (measuring and controlling devices), 4899 (communication services), and 7370, 7371, 7372, 7373, 7374, 7375, 7379 (software). Source: FactSet
HOSTILE	Dummy variable that takes the value 1 if the transaction is classified as hostile. Source: FactSet
MINORITY	Dummy variable that takes the value 1 if a minority stake is acquired. Source: FactSet
MKT to BOOK	Measured as the acquirer's market value of equity two months before the transaction to the Book Value of assets in the latest financial report before the transaction date. Source: FactSet
PRIVATE	Dummy variable that takes the value 1 if the target is not a public company listed on a stock exchange. Source: FactSet
REL SIZE	Measured as the equity base value of the transaction to the market value of acquirers' equity two months before the transaction. Source: FactSet
SALES to FIXED SIZE	Measured as net sales divided by net property plant and equipment. Source: FactSet Measured as the log of the inflation adjusted book value of assets in the acquirer's latest financial report before the announcement of the transaction. Source: FactSet
SUBSIDIARY	Dummy variable that takes the value 1 if the target is a subsidiary not listed on any stock exchange. Source: FactSet
Macroeconomic:	
FDI to GDP	Measure of the net inflows of foreign direct investments as percentage of GDP in the country of incorporation at the year of the transaction. Foreign direct investment are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors, and is divided by GDP. Source: The World bank
INFLATION	Annual inflation in the country of incorporation at the year of the transaction. Inflation measured by the consumer price index. Source: The World Bank

Appendix D: Descriptive statistics source of financing and method of payment

Table 13: Descriptive statistics for source of financing

Country	Number of Transactions	Source of payment			
		EXTERNAL			INTERNAL
		ANY DEBT	ANY EQUITY	ANY EXTERNAL	ANY CASH
Percentage of sample					
United States	6524	8.3	26.7	32.4	91.1
China	2241	0.6	30.5	31.0	82.2
United Kingdom	1909	14.7	37.7	46.0	92.9
Japan	1513	3.1	52.4	55.5	48.6
Australia	960	5.8	52.0	56.8	77.8
Canada	510	4.1	68.2	70.2	62.0
Malaysia	409	4.2	24.4	27.9	84.6
Korea, Rep.	208	0.5	22.6	23.6	78.4
South Africa	198	3.0	46.0	48.0	82.8
Singapore	182	6.6	42.3	46.7	81.3
India	162	2.5	41.4	43.2	60.5
France	140	6.4	32.9	37.1	88.6
Hong Kong SAR, China	130	11.5	43.1	50.8	73.1
Sweden	121	10.7	55.4	61.2	76.0
Italy	120	13.3	17.5	28.3	88.3
Thailand	107	7.5	22.4	29.9	81.3
Germany	93	8.6	41.9	48.4	74.2
Brazil	85	1.2	23.5	24.7	87.1
Spain	63	4.8	25.4	30.2	85.7
Russian Federation	55	5.5	21.8	27.3	83.6
Poland	49	2.0	36.7	36.7	79.6
Finland	48	6.3	41.7	43.8	81.3
Greece	45	0.0	26.7	26.7	75.6
Norway	36	2.8	25.0	25.0	91.7
New Zealand	34	0.0	14.7	14.7	94.1
Israel	34	2.9	23.5	26.5	85.3
Netherlands	33	24.2	42.4	51.5	93.9
Switzerland	32	15.6	34.4	46.9	84.4
Philippines	24	0.0	45.8	45.8	70.8
Ireland	24	8.3	54.2	58.3	100.0
Mexico	22	9.1	22.7	31.8	81.8
Portugal	20	0.0	10.0	10.0	90.0
Denmark	16	6.3	25.0	31.3	87.5
Indonesia	14	7.1	14.3	21.4	85.7
Austria	14	0.0	35.7	35.7	71.4
Belgium	12	16.7	33.3	41.7	75.0
Sri Lanka	11	0.0	9.1	9.1	90.9
Turkey	9	22.2	0.0	22.2	100.0
Saudi Arabia	5	0.0	80.0	80.0	80.0
Colombia	5	0.0	20.0	20.0	80.0
Egypt, Arab Rep.	4	0.0	50.0	50.0	75.0
Peru	3	0.0	0.0	0.0	100.0
Vietnam	3	0.0	66.7	66.7	33.3
Qatar	3	33.3	66.7	100.0	33.3
Chile	2	0.0	0.0	0.0	100.0
Croatia	2	0.0	0.0	0.0	100.0
Kazakhstan	2	0.0	0.0	0.0	100.0
Slovenia	2	0.0	0.0	0.0	100.0
Czech Republic	2	0.0	0.0	0.0	100.0
Cyprus	2	0.0	0.0	0.0	100.0
Hungary	1	0.0	100.0	100.0	100.0
Ukraine	1	0.0	0.0	0.0	100.0
Bangladesh	1	0.0	100.0	100.0	0.0
Bulgaria	1	0.0	0.0	0.0	100.0
Lithuania	1	0.0	100.0	100.0	100.0
Trinidad and Tobago	1	0.0	0.0	0.0	100.0
Kuwait	-	-	-	-	-
Mauritius	-	-	-	-	-
Oman	-	-	-	-	-
Pakistan	-	-	-	-	-
United Arab Emirates	-	-	-	-	-
Totals sample	16248	6.8	34.6	39.3	82.9

This table reports the number of transaction in each country in the sample and statistics for source of financing by country. ANY DEBT (EQUITY) measures if any debt (equity) has been used as a source of financing. ANY EXTERNAL measures if any equity, debt or other external source has been used to finance the transaction. ANY CASH measures whether any internal cash has been used to finance the transaction. Further specification of the variables can be found in Appendix C.

Table 14: Descriptive statistics for method of payment

	Number of Transactions	Method of payment					
		% CASH	% EQUITY	% OTHER	ONLY CASH	ONLY EQUITY	MIXED
		Average of sample			Percentage of sample		
United States	7471	85.6	14.2	0.2	76.7	7.5	15.8
China	2893	84.3	15.6	0.1	83.2	14.2	2.6
United Kingdom	2063	83.8	15.9	0.3	68.9	6.8	24.3
Japan	2016	60.5	39.5	0.0	60.3	39.2	0.5
Australia	1116	69.5	30.3	0.2	56.6	19.2	24.2
Canada	561	53.4	46.1	0.4	38.5	33.9	27.6
Malaysia	437	78.5	21.2	0.3	75.7	16.5	7.8
Korea, Rep.	312	85.1	14.7	0.2	84.6	14.4	1.0
India	252	73.5	26.2	0.3	73.4	25.8	0.8
South Africa	232	73.3	26.5	0.3	60.8	15.5	23.7
Singapore	202	73.3	26.7	0.0	65.3	18.3	16.3
Italy	197	92.3	7.7	0.0	90.4	6.1	3.6
Brazil	184	91.3	8.7	0.0	89.1	6.0	4.9
France	179	83.0	16.9	0.1	77.7	11.2	11.2
Sweden	177	74.5	25.5	0.0	63.3	16.9	19.8
Thailand	142	85.9	14.1	0.0	85.9	13.4	0.7
Hong Kong SAR, China	136	61.7	33.0	5.3	53.7	24.3	22.1
Poland	134	90.5	9.5	0.0	88.1	6.7	5.2
Germany	132	77.1	22.9	0.0	72.7	18.9	8.3
Spain	130	89.1	10.9	0.0	87.7	8.5	3.8
Russian Federation	119	90.6	9.4	0.0	89.9	8.4	1.7
Greece	84	86.0	14.0	0.0	85.7	13.1	1.2
Finland	63	79.0	21.0	0.0	69.8	14.3	15.9
Norway	61	90.1	9.9	0.0	85.2	6.6	8.2
Israel	53	89.4	10.6	0.0	86.8	9.4	3.8
New Zealand	48	93.9	6.1	0.0	89.6	4.2	6.3
Netherlands	46	90.7	9.2	0.1	82.6	4.3	13.0
Switzerland	38	82.2	17.8	0.0	73.7	13.2	13.2
Indonesia	36	97.2	2.8	0.0	97.2	2.8	0.0
Portugal	34	94.1	5.9	0.0	94.1	5.9	0.0
Mexico	31	86.7	13.3	0.0	83.9	9.7	6.5
Turkey	30	100.0	0.0	0.0	100.0	0.0	0.0
Philippines	29	66.2	30.3	3.4	65.5	24.1	10.3
Ireland	28	89.4	10.6	0.0	57.1	0.0	42.9
Belgium	20	85.0	15.0	0.0	85.0	15.0	0.0
Denmark	19	85.1	14.9	0.0	84.2	10.5	5.3
Austria	18	74.2	25.8	0.0	72.2	22.2	5.6
Sri Lanka	16	93.8	6.3	0.0	93.8	6.3	0.0
Saudi Arabia	13	72.1	27.9	0.0	69.2	15.4	15.4
Peru	12	100.0	0.0	0.0	100.0	0.0	0.0
Colombia	7	85.7	14.3	0.0	85.7	14.3	0.0
Croatia	6	100.0	0.0	0.0	100.0	0.0	0.0
Chile	5	100.0	0.0	0.0	100.0	0.0	0.0
Egypt, Arab Rep.	5	71.0	29.0	0.0	60.0	20.0	20.0
Hungary	4	79.4	20.6	0.0	75.0	0.0	25.0
Kazakhstan	4	100.0	0.0	0.0	100.0	0.0	0.0
Kuwait	4	100.0	0.0	0.0	100.0	0.0	0.0
Slovenia	4	100.0	0.0	0.0	100.0	0.0	0.0
Vietnam	4	50.0	50.0	0.0	50.0	50.0	0.0
Czech Republic	3	100.0	0.0	0.0	100.0	0.0	0.0
Qatar	3	33.3	66.7	0.0	33.3	66.7	0.0
Cyprus	2	100.0	0.0	0.0	100.0	0.0	0.0
Ukraine	2	100.0	0.0	0.0	100.0	0.0	0.0
Bangladesh	1	0.0	100.0	0.0	0.0	100.0	0.0
Bulgaria	1	100.0	0.0	0.0	100.0	0.0	0.0
Lithuania	1	100.0	0.0	0.0	100.0	0.0	0.0
Mauritius	1	100.0	0.0	0.0	100.0	0.0	0.0
Oman	1	100.0	0.0	0.0	100.0	0.0	0.0
Pakistan	1	100.0	0.0	0.0	100.0	0.0	0.0
Trinidad and Tobago	1	100.0	0.0	0.0	100.0	0.0	0.0
United Arab Emirates	1	100.0	0.0	0.0	100.0	0.0	0.0
Total sample	19825	80.2	19.6	0.2	72.6	14.2	12.6

This table reports the number of transaction in each country in the sample and statistics for method of payment by country. % CASH (EQUITY) indicates the percentage of cash (equity) in the consideration paid. % OTHER reports the percentage warrants/options/convertible debt/convertible preferred stock. ONLY CASH (EQUITY) measures the percentage of the sample paid to at least 98 % with cash (equity). MIXED measures the percentage of the sample paid with a mixture of equity and cash. Further specifications of the variables can be found in Appendix C.

Appendix E: Correlation matrix

Table 15: Correlation matrix and variance inflation factors

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(VIF _(a)) (VIF _(b))		
(1) RELATIVE INDEX	1																					9.96	5.63	
(2) DEBT INDEX 2	,445**	1																						
(3) EQUITY INDEX 2	-,755**	,024**	1																					8.73
(4) TOTAL INDEX	-,250**	,688**	,742**	1																				
(5) ASSET SIZE to GDP	,065**	-,055**	-,117**	-,122**	1																			
(6) CASH to ASSETS	,000	,028**	-,041**	,048**	-,083**	1																		
(7) COMPETING OFFER	-,024**	-,020**	,012	-,005	,007	-,004	1																	
(8) DEBT / EQUITY	-,007	-,001	,014*	,010	-,001	-,002	-,001	1																
(9) EARNINGS to ASSETS	,006	-,002	-,007	-,006	,008	-,016*	,002	,000	1															
(10) FIXED to TOTAL ASSETS	,133**	-,038**	-,176**	-,153**	,120**	-,373**	,004	,005	,003	1														
(11) HIGH TECH	-,110**	-,043**	,134**	,068**	-,068**	,315**	,007	-,004	-,006	-,345**	1													
(12) HOSTILE	-,015*	-,016*	-,007	-,015*	,027**	,003	,113**	,000	,002	,019**	-,004	1												
(13) MINORITY	,204**	,031**	-,180**	-,110**	,103**	-,021**	-,013	-,002	,005	,109**	-,083**	,023**	1											
(14) MKT to BOOK	-,032**	-,002	,025**	,016*	-,018*	,063**	,001	-,001	-,007	-,038**	,009	,001	-,008	1										
(15) PRIVATE	-,082**	-,085**	,071**	-,006	-,124**	,024**	-,145**	-,017*	-,001	-,065**	,001	-,125**	-,125**	,009	1									
(16) REL SIZE	-,008	-,001	,014*	,010	-,001	-,002	-,001	1,000**	-,001	,005	-,004	,000	-,003	-,001	-,017*	1								
(17) SALES to FIXED	-,006	,032**	,017*	,034**	-,022**	,032**	-,003	-,001	,233**	-,113**	,039**	-,005	-,015*	,009	,022**	-,001	1							
(18) SIZE	,024**	,004	,048**	,038**	,345**	-,255**	,040**	,001	,051**	,177**	-,072**	,022**	,058**	-,081**	-,230**	,001	-,095**	1						
(19) SUBSIDIARY	,138**	,035**	-,103**	-,051**	,013	-,059**	-,038**	-,005	,001	,127**	-,090**	-,037**	-,016*	-,018**	,286**	-,005	-,010	,050**	1					
(20) FDI to GDP	-,120**	,086**	,090**	,124**	,030**	-,016*	-,008	-,002	-,002	,019**	-,086**	-,004	,047**	,014	,078**	-,002	-,004	-,162**	,033**	1				
(21) INFLATION	-,191**	-,478**	-,048**	-,356**	,044**	-,013	-,009	-,011	,016*	,043**	-,039**	-,005	,021**	,013	,103**	-,011	-,012	-,035**	,007	,038**	1			

**and * indicate significance at the 1% and 5% level, respectively. This table reports Spearman's correlation coefficients as well as the variance inflation factor (VIF) for the empirical models (6a) and (6b). RELATIVE INDEX measures the relative size of the debt market compared to the equity market. EQUITY (DEBT) INDEX 2 is an index over the equity (debt) market development. TOTAL INDEX measures the average development of the normalized equity and debt market measures. Further definitions of variables can be found in Appendix C.

Appendix F: Robustness

Table 16: Ordered probit regression explaining the choice between cash, equity or mixture

	PAYMENT	
	Coeff.	Wald
RELATIVE INDEX	1.866***	49.74
Control variables: Firm characteristics	Yes	
Control variables: Macroeconomic	Yes	
Control: EQUITY INDEX 2	0.001***	6.43
Intercept		
Country dummies	Yes	
Year dummies	Yes	
Number of observations	19825	
Cox & snell R ²		
Nagelkerke R ²		

***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. This table reports how the relative market development explains the method of payment. Wald reports the estimate of the coefficient divided by its standard error. The dependent variable PAYMENT takes a value of 2 for if the transaction is financed with at least 98% cash, 1 if the payment method is a mixture of cash and equity, and 0 if the transaction is financed with at least 98% equity. RELATIVE INDEX measures the relative size of the debt market compared to the equity market. Further specifications of the variables can be found in Appendix C.

Table 17: Logistic regressions explaining the method of payment

	PAYM. ONLY CASH		PAYM. ONLY EQUITY		PAYM. ONLY EQUITY	
	(5)		(6a)		(6b)	
	Coeff.	Wald	Coeff.	Wald	Coeff.	Wald
RELATIVE INDEX	2.697***	29.62				
EQUITY INDEX 2			-0.002**	4.04	0.003***	15.03
Control variables: Firm characteristics	Yes		Yes		Yes	
Control variables: Macroeconomic	Yes		Yes		Yes	
Control: RELATIVE INDEX			-4.303***	50.42		
Control: EQUITY INDEX 2	0.002**	5.23				
Intercept	-2.908***	64.69	1.817***	16.13	-0.943***	16.56
Country dummies	Yes		Yes		Yes	
Year dummies	Yes		Yes		Yes	
Number of observations	19825		19825		19825	
Cox & snell R ²	0.17		0.16		0.16	
Nagelkerke R ²	0.24		0.28		0.28	

***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. This table reports how the relative market development explains the method of payment. Wald reports the estimate of the coefficient divided by its standard error. PAYM. ONLY CASH is an indicator that takes the value of 1 if at the transaction is paid to at least 98% with cash. PAYM. ONLY EQUITY is an indicator that takes the value of 1 if the transaction is paid to at least 98% with equity. RELATIVE INDEX measures the relative size of the debt market compared to the equity market. Further specifications of the variables can be found in Appendix C.

Table 18: Logistic regression explaining source of equity without control index

	SOURCE ANY EQUITY	
	(1)	
	All	
	Coeff.	Wald
RELATIVE INDEX	-1.99***	26.57
Control variables: Firm characteristics	Yes	
Control variables: Macroeconomic	Yes	
Intercept	2.27***	108.61
Country dummies	Yes	
Year dummies	Yes	
Number of observations	16248	
Cox & snell R ²	0.18	
Nagelkerke R ²	0.25	

***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. This table reports how the relative market and total market development explains the source of financing when excluding the control variable for EQUITY INDEX 2. Wald reports the estimate of the coefficient divided by its standard error. SOURCE ANY EQUITY is an indicator that takes the value of 1 if any equity has been the source of financing. RELATIVE INDEX measures the relative size of the debt market compared to the equity market. Further specifications of the variables can be found in Appendix C.

Table 19: Tobit regression explaining % cash without control index

	PAYMENT % CASH	
	(5)	
	Coeff.	t-stat.
RELATIVE INDEX	253.074***	7.01
Control variables: Firm characteristics	Yes	
Control variables: Macroeconomic	Yes	
Intercept	-409.933***	-3.08
Country dummies	Yes	
Year dummies	Yes	
Number of observations	19825	
McFadden's adjusted R ²	0.07	
McKelvey & Zavoina's R ²	0.29	

***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. This table explains the percentage cash paid of the consideration transferred when excluding the control variable for EQUITY INDEX 2. The t-statistics are based on heteroscedasticity-consistent standard errors. PAYMENT % CASH measures the percentage of consideration paid in equity in each transaction. RELATIVE INDEX measures the relative size of the debt market compared to the equity market. Further specifications of the variables can be found in Appendix C.

Table 20: OLS regression explaining D/E and equity premium without control index

	DEBT / EQUITY		EQUITY PREMIUM	
	(3)		(7)	
	PAY. ANY CASH		PAYM. ONLY EQUITY	
	Coeff.	t-stat.	Coeff.	t-stat.
RELATIVE INDEX	0.76***	2.81	-0.001*	-1.29
Control variables: Firm characteristics	Yes		Yes	
Control variables: Macroeconomic	Yes		Yes	
Intercept	-0.573***	-2.59	0.310***	3.76
Country dummies	Yes		Yes	
Year dummies	Yes		Yes	
Number of observations	17013		837	
R ²	0.06		0.17	
Adjusted R ²	0.05		0.111	

***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. This table reports how the relative market development explains the debt-to-equity ratio of acquiring firms and how the absolute equity market development explains the premium paid in transactions paid with equity, when excluding control variables for market development. DEBT / EQUITY measures total financial debt divided by market value of equity. EQUITY PREMIUM measures the percentage difference between the consideration and the share price of the target 30 days before announcement. DEBT / EQUITY and EQUITY PREMIUM have been winsorized to values between 0 and 100. RELATIVE INDEX measures the relative size of the debt market compared to the equity market. Further specifications of the variables can be found in Appendix C.