Track 6: International finance, accounting and corporate governance

Competitive paper submission

# Contextualizing the cost of financing FDI: The roles of country specific risk, distance and expectations

**Abstract:** We extend international business research by integrating institutional context into a cost of debt framework using a dataset of 4,412 greenfield foreign direct investments (FDI) from developed into non-developed markets. Using hierarchical linear modelling, we show that the financial consequences of internationalization into risky countries depend on both levels of home and host country risk, as well as the political distance between the two. Furthermore, we find that recent risk trends affect post entry financing costs because they form lenders' expectations on future country development and ultimately influence the pricing of debt. Our results stress the importance of institutional context in international diversification and in cost of debt determination in particular.

**Keywords**: Cost of debt, country risk, diversification, foreign direct investments, institutional distance, expectations

# Contextualizing the cost of financing FDI

## 1. Introduction

Research in International Business (IB) has extensively explored the antecedents of entry and establishment modes for foreign ventures (Brouthers & Nakos, 2004, Johanson & Vahlne, 1977, Morschett, *et al.*, 2010). Potential financial constraints imposed by the effect of large investments in non-developed markets on the cost of financing, however, have only been explored to a limited extent, resulting in calls for further investigation into the topic (Agmon, 2006, Bowe, *et al.*, 2010). However, the availability and specifically the cost of raising debt are crucial for managers of international investment projects (Sharpe, 1964). The well-established literature on underinvestment (Myers & Majluf, 1984) and asset substitution (Jensen & Meckling, 1976) attest to the pivotal importance of cost of debt in investment decision making, particularly for risky international investments (Mansi & Reeb, 2002, Reeb, *et al.*, 2001).

An abundance of studies analyse the cost of capital in international settings (Adler, 1974, Koedijk & Van Dijk, 2004, Schramn & Wang, 1999, Shapiro, 1978, Stulz, 1995). The majority of them focus on how the cost of equity relates to the degree of firm-specific internationalization (Chen, *et al.*, 2011, Gray, *et al.*, 2013), while ignoring the institutional context altogether. Underlying these studies is the assumptions that internationalization per se affects the cost of capital in a certain way; irrespective of characteristics of the countries a firm internationalizes from and into. Markets are treated as institutionally interchangeable and companies are assumed to internationalize from identical settings.

Few studies relate financial decisions of a company to home country institutions (Demirgüç-Kunt & Maksimovic, 1999, Rajan & Zingales, 1998, Rajan & Zingales, 1995) and carry out empirical comparisons between companies of different origins, while ignoring both the

overall degree of internationalization and the institutional characteristics of the host markets they internationalize into. Finally, a very small number of studies have analysed the cost of debt and how it is affected by firm level internationalization (Mansi & Reeb, 2002, Qi, *et al.*, 2010, Reeb, *et al.*, 1998, Reeb, *et al.*, 2001, Van Binsbergen, *et al.*, 2010). Rather than looking at specific market entries and their local configuration of institutions, they compare companies with different degrees of internationalization, irrespective of specific host country risk (De Jong, *et al.*, 2008). There has been no attempt so far, to integrate home and host country institutional setting into a comprehensive model of cost of debt and diversification.

This gap is surprising as research shows that a large share of risk, particularly in multinational enterprises (MNEs), is derived from the country risk of the investment locations (Damodaran, 2003, Miller, 1992). Investment decisions are based on the expected returns, corrected for risk (Fama & French, 2004). Consequently, what managers are interested in is the evaluation of future project cash flows and of the risk associated with them. As a result, it seems relevant to take into account the level of country risk at home and abroad, as well as expected changes thereof. Often, strategy research disregards both of these boundary conditions, assuming a "finance follows fundamentals" perspective by analysing strategy without taking into account the financial preconditions and ramifications (Forssbæck & Oxelheim, 2008 p. 631). In our paper we address this conceptual gap by analysing at the relationship between cost of debt and country risk in greenfield foreign direct investments into non-developed markets.

In particular, we analyse the effect of internationalization on the cost of debt, taking into account home and host country risk and the expectations formed as a result of recent risk dynamics, as well as institutional distance between the countries. We hence integrate research from financial economics with conceptionalizations of risk based on country-level institutions from IB. We conduct our study in an environment where companies from developed countries make greenfield investments in non-developed countries in order to get a clear picture of

relative risk. This allows us to explicitly analyse the effect of an internationalization step on overall risk and hence the cost of capital. We take a perspective following the trade-off theory of capital structure which assumes that the cost of capital is a function of the corporate risk portfolio (Myers, 1984, Myers & Majluf, 1984). Accordingly, the addition of a risky investment to the portfolio increases the cost of debt, since additional debt means additional financial risk on top of the business risk resulting from the internationalization step (Bruner, 1988).

We contribute to theory in five ways. First, and rather generally, we increase the integration of finance and IB literature that has been called for (Agmon, 2006) by providing evidence for the relevance of trade-off theory for strategic decisions of internationalization. Second, we contribute to finance literature, extending studies on the effects of internationalization on cost of debt by taking into account the institutional context of the internationalizing firm. Third, we add to entry mode and internationalization process research by assessing the impact of both status quo and future expectations of country risk. We believe this dynamic, forward looking approach to the investment decision has the potential to better represent the decision-making process of managers when evaluating investment projects, not only concerning the cost of financing, but also other applications where uncertainty and expectations of future change play a role (Hayakawa, *et al.*, 2013). Fourth, we extend the notion of risk in trade-off theory; adding a dynamic element to static trade-off theory (with dynamic trade-off theory dealing with dynamic in a different sense). Finally, and most importantly, we contribute to the multinationality-performance literature as we acknowledge and measure the context of internationalization and provide a contextual theory of the diversification benefit.

We test our hypotheses in a novel setting of greenfield investments from developed to non-developed countries. This provides a clear empirical setting where only risk-increasing investments are present. Also, greenfield investments are straightforward examples for

investments where the returns of an investment project are unaffected by frictions of adaptation as present in mergers or acquisitions. We use hierarchical linear modelling to explicitly account for firm-level and country-level effects while controlling for the impact of industries. This allows estimating our model more efficiently and without the bias introduced by non-separation of error terms originating from effects stemming from different levels of analysis.

## 2. Theory and Hypotheses

Corporate strategy, finance and IB literature acknowledge close links between strategic decisions and financial constraints faced by the firm (Filatotchev & Piesse, 2009, Kochhar & Hitt, 1998). Similarly, finance literature provides theories that link financial resources with strategic decisions and investment behaviour (Beck & Demirguc-Kunt, 2006, Beck, *et al.*, 2005). The availability of capital and the avoidance of financial distress are essential requirements for any investment decision – and for large scale, risky foreign direct investment in particular.

Capital structure generally consists of two complementary ingredients with different properties: *debt and equity*. Unlike equity, debt has explicit cost. While the cost of equity is usually estimated using the capital asset pricing model (CAPM) (Sharpe, 1970), the cost of debt is manifest and directly observable in the interest rate. Firms have a strong preference for financing risky investments with debt (Myers, 1984, Myers, 1977, Myers & Majluf, 1984). The two components are interrelated, however, and depend on the ratio of debt to equity (leverage ratio). For financial managers, the relative cost of debt and equity are decisive in strategic decisions such as market entries, because they are the only sources of external finance. In our analysis, we focus on *cost of debt*, because, unlike equity, the change in cost of debt following the investment proxies the additional ex-post costs of financial distress. Since

debt directly imposes liquidity constraints on companies, its cost is expected to be more strongly affected by an increase in risk than the cost of equity. Also, finance theory and research has shown that risky investments, like market entries, will be preferably financed with debt (Myers, 1984). The most prominent theories explaining the cost of capital are pecking order theory (Myers, 1984, Myers, 1977, Myers & Majluf, 1984) and trade off theory (Kraus & Litzenberger, 1973).

We base our theoretical reasoning for testing the changes of cost of debt on *trade-off theory* because it explicitly includes investment risk and cost of financial distress and allows us to hypothesize that a foreign direct investment in a non-developed market will increase agency cost, cost of financial distress and ultimately cost of debt. Also, empirical evidence suggests that most firms actually do use capital structure targets (Graham & Harvey, 2001) which only make sense from a trade-off perspective. Trade-off theory argues that firms have a natural tendency towards using debt due to agency costs of free cash-flows (and debt tax shield). This tendency for increasing leverage is limited by increasing bankruptcy costs (or cost of financial distress). The probability for bankruptcy is both an important determinant of expected bankruptcy cost and strongly linked to business risk. The key consequence of this risk and return trade-off is that there exists an optimal capital structure at which the marginal agency benefit of debt is balanced with the expected cost of bankruptcy.

Trade-off theory does not explicitly address issues of international context or internationalization. However, there are two clears links between cost of capital and the international context of the investment. From a *risk perspective*, additional risks resulting from the presence in various, distant markets (exchange rate risk, political risk etc.) should increase the cost of debt. As a consequence, the change in cost of debt must be contingent upon the institutional context of the host market the company internationalizes into. Second, *diversification theory*, predicts that internationalizing multinationals (MNCs) may have lower

firm-specific risk (Shapiro, 1978), higher financial leverage and ultimately lower cost of debt (Fatemi, 1984). Accordingly, imperfectly correlated risks between markets lead to a lower overall risk and hence lower cost of debt. Unlike the risk effect, diversification results not from host country contingencies, but from the correlation or distance between home and host country.

The empirical findings regarding the effect of international diversification are inconsistent. Much capital structure literature reports higher cost of capital for highly internationalized companies (Burgman, 1996, Charles, *et al.*, 1997, Fatemi, 1984). In some cases, firm level diversification seems to be outweighed by higher systematic risk (Bartov, *et al.*, 1996, Burgman, 1996, Reeb, *et al.*, 1998). Kwok and Reeb (2000) formulate the upstream-downstream hypothesis according to which the overall effect of internationalization depends on the difference in institutional developments between the home and host country. Their empirical analysis shows that risk effects and hence the cost of capital differ between internationalization from developed to non-developed markets and vice versa. This is similar to our reasoning, but our attempt goes beyond acknowledging different starting points and effects of internationalization to a detailed integration of the institutional context in market entries.

Numerous studies have examined the impact of institutional quality on foreign market choice, entry mode or ownership choice and general foreign investment decisions (Capron & Guillén, 2009, Delios & Henisz, 2000, Rueda-Sabater, 2000, Yiu & Makino, 2002, Zaheer & Zaheer, 1997). This acknowledgement of the institutional setting is shared by both theoretical perspectives presented above. From a risk perspective, weak institutions increase risk and hence cost of debt. From a diversification perspective, institutional distance may actually reduce the correlation between markets and hence may reduce overall risk and the cost of debt. In the context of cost of capital, several prominent authors have stressed the need to

move beyond corporate and national logic and come up with international cost of debt models that account for the international nature of firms and the institutional settings they operate in (Stulz, 1999 :8). *"There may be factors unique to multinational firms that affect their optimal capital structures, and that the traditional capital structure models for domestic corporations may be inadequate."* (Burgman, 1996: 563).

Several studies so far have looked at how contingencies in the external macro environment of a company affect the pricing of debt, or equity (Bancel & Mittoo, 2004, Booth, *et al.*, 2001, Brounen, *et al.*, 2006, Demirgüç-Kunt & Maksimovic, 1999, Fan, *et al.*, 2012, Giannetti, 2003, Graham & Harvey, 2001, Hall, *et al.*, 2004). Giannetti (2003) finds that institutional aspects such as creditor protection, stock market development and legal enforcement heavily influence companies' financing choices. Qi, *et al.* (2010) show that political rights in the host country negatively affect the cost of corporate bonds. Armstrong, *et al.* (2000) show that different bankruptcy laws in the markets of MNCs affect the pricing of both equity and debt. Burgman (1996) find significant negative effects of internationalization on cost of debt. The most extensive study on country-specific effects on capital structure was carried out by De Jong, *et al.* (2008).They show that country specific factors like GDP growth rate, legal enforcement, creditor/shareholder right protection and capital formation, have both a direct and indirect impact on leverage and the cost of capital. Several macro and institutional factors like GDP growth rate, legal enforcement, creditor/shareholder right protection and capital formation have an influence on leverage (they do not specifically address cost of debt).

When analysing the effect of an investment on the cost of debt of an internationalizing firm, one needs to consider home country and host country institutions. If the home country risk is low, investments in risky countries make more of a difference to overall risk and hence cost of debt. When home country risk is high (for a developed market), the marginal risk from a

greenfield investment into a non-developed market will be comparatively lower, as will be the negative effect on the cost of debt.

> **Hypothesis 1**: The higher the home country risk, the lower the increase in the cost of debt.

Looking at the host country institutional setting, we hypothesize that investments in risky environments increase overall corporate risk, the probability of default and the cost of financial distress. Therefore, the riskier the investment context in question, the higher will be the effect on the price of issuing debt.

> **Hypothesis 2**: The riskier the country of investment destination, the higher the increase in the cost of debt.

In addition to the absolute quality of institutions in either market, the change in cost of debt may depend on the distance between the two. Institutional distances introduce uncertainty and costs into an internationalization effort (Berry, *et al.*, 2010), which is likely to affect the change in cost of debt. Given certain levels of country risk, the effect of internationalizing into an emerging market will be higher when the two markets are institutionally distant. Greenfield investments involve high set-up cost and high asset specificity. Once the investment is made, developed country firms face a lock-up situation. Local government and other stakeholders may act opportunistically to extract cash-flows from the investment by altering the terms of contract (Anderson & Gatignon, 1986, Teece, 1986, Williamson, 1979). On the other hand, firms from developed markets internationalizing into non-developed countries, may diversify risk. When home country growth stagnates, non-developed countries may provide a source of revenues which is imperfectly correlated with the home market (Bodnar, *et al.*, 1999, Burgman, 1996, French & Poterba, 1991, Geringer, *et al.*, 1989, Hennart, 2011, Kwok & Reeb, 2000, Reeb, *et al.*, 1998, Reeb, *et al.*, 2001, Rugman, 1976, Shapiro, 1978). Consequently, two conflicting effects are at play. Recent developments in IB

have provided measures for the difference between countries that are, in their construction, not directly related to country risk. Berry, *et al.* (2010) developed a framework with nine dimensions of institutional distance. Because of the dominant role of political risk in greenfield investments in non-developed countries, we use the measure for political risk. Since we explicitly account for country risk in H1 and H2, the diversification effect is expected to be captured by political distance.

> **Hypothesis 3:** The higher the political distance between the target country and the home country, the lower the increase in the cost of debt.

Assuming that distance introduces uncertainty and hence triggers an increase in cost of debt, we need to account for the fact that the effect of distance may be different for investments in different host country settings. Depending on distance, the understanding of how risks can be mitigated is reduced. Accordingly we formulate an interaction term:

> **Hypothesis 4:** The higher political distance between home and host country, the stronger the increasing effect of host country risk on the cost of debt.

When evaluating investment projects, expectations of future returns and risk are crucial factors for corporate decision makers. Therefore, investors' evaluation of an investment project and hence the cost at which they are ready to finance it, depends not only on the risk level at the time of investment, but also on the expectations of how risks will change. In the absence of reliable estimates for future risk, investors use past changes of risk to estimate future changes (Bofinger & Schmidt, 2003, Jacowitz & Kahneman, 1995, Tversky & Kahneman, 1974) Therefore, we use first difference in past country risk, as a superior measure of managers' risk expectations. We expect that an improvement in country-level risk (both at home and abroad) leads to positive expectations and a lower increase in the cost of debt.

**Hypothesis 5a**: The larger the risk reduction in the country of investment destination, the lower the cost of debt increase because of international investment projects.

**Hypothesis 5b**: The larger the risk reduction in the home country of the investing firm, the larger the cost of debt increase because of international investment projects into a riskier country.

## 3. Sample and Methods

We choose to limit our analysis to firms from developed markets internationalizing into non-developed economies. The cost of debt determination has shown to be different for companies from markets with different levels of development (Booth, *et al.*, 2001 ). Also, there is more variation in host country settings among non-developed countries. Finally, focusing on high-risk investments allows us to trace the effects of host country risk on cost of debt and we can make sure that the investment projects in question always have countries as targets that are riskier than the home countries.

We obtain a sample of 4,412 greenfield investments between 2005 and 2011 from developed into non-developed markets using the fDi Markets database maintained by the Financial Times. It is the most comprehensive source of cross border greenfield investments covering all countries and sectors. It is used by international institutions such as UNCTAD to compile greenfield FDI data (UNCTAD, 2014 :8).

We use greenfield FDI data for three reasons. First FDI is subject to specific sources of uncertainty such as political risk and exchange rates. . Other risk are more pronounced in an FDI context (cultural, financial) due to the higher market commitment. As a result, we believe that FDI will have a more pronounced effect on a company's cost of debt. Second, concentrating on greenfield investments and excluding mergers and acquisitions reduces

confounding effects resulting from target company characteristics. Finally, greenfield investment projects provide a clear treatment and traceable change in company structure allowing us to track changes in the cost of debt before and after treatment. We believe this quasi-experimental approach is more efficient than just relating companies' degree of internationalization to their cost of debt in cross-sectional data.

Our definition of non-developed markets is based on the Morgan Stanley Capital International Index. The index is the most widely used equity benchmark index for emerging markets (Asness, *et al.*, 2013). Overall, the data included investments from 21 developed countries into 30 non-developed countries. As expected, the most prominent source countries in terms of number of transactions were the USA (36%), Germany (19%), France (10%) and Japan (8%) and the most frequent destination countries were China (27%), India (16%) and Brazil (8%).

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insert table 2-4 about here
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We conduct hierarchical linear analysis to account for differences in error terms between the firm and country levels. We test the superiority of random over fixed effects before introducing cross-level interactions into the model. We also control for year and industry effects using dummies. Hierarchical linear modelling is superior to ordinary least square modelling because it explicitly incorporates different levels of error clusters (Hox, 2002).

## 4. Variables and Measurement

**Table 1** provides a full description of variables.

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**Dependent variable:**

Our main dependent variable is the cost of debt in the year following the greenfield FDI obtained from Bloomberg. We also run models with the change in cost of debt in the year and the two years following the greenfield investment as robustness checks. We use yearly rather than monthly changes in cost of debt to account for the fact that capital structure is rather sticky and changes involve adjustment costs (Byoun, 2008, Fama & French, 2002, Kraus & Litzenberger, 1973, Shyam-Sunder & C. Myers, 1999).

The mean cost of debt for our sample companies is 2.751 per cent annually. **Figure 1** illustrates the distribution of cost of capital. In the year following the market entry, the cost of capital decreased by 0.3709 per cent on average. The average decline in cost of debt should not be interpreted as a causal effect since it does not control for company, country and time-level effects. **Figure 2** illustrates the changes in cost of debt following the market entry within our sample.

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insert figure 1-2 about here
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**Independent variables**

To test our hypotheses (H1-H5), we include six independent variables. We include absolute country risk measures for home and host countries (H1 and H2). Country risk is a multidimensional construct as risk can stem from varying sources (Miller, 1992). As a consequence, we believe that an isolated consideration of certain types of risk does not capture the full complexity of a country's institutions. Therefore, we follow Bevan and Estrin (2004) and use the "country risk score" provided by the Economist Intelligence Unit (EIU) to operationalize the host-country's institutional quality. To account for the time lag between investment decision and market entry, we use the risk country scores for both home and host country in the year before the investment.

We use measure for political distance (H3) obtained from (Berry, *et al.*, 2010) to control for the diversification effect of international greenfield investments. We create an interaction term between distance and country risk (H4) and we calculate the year-on-year changes in levels of country risk for both home and host country (H5a and H5b) to capture changes in expectations.

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**Figure 3** shows the distributions of home (1) and host country risk indicators (2). As expected when firms from developed countries internationalize into emerging markets, host country risk is on average higher than home country risk. We excluded 109 cases where this is not the case to obtain an intuitively clear distribution. Overall, there is considerable variation in both home and host country risk measures and each market entry in our sample is a down-stream investment into a country with higher than home country risk.

**Project or investment-level controls**

We control for size of the foreign direct investment using the reported local FDI capital expenditure in the FDI markets database. We control for the year and the industry of the investment.

**Company-level controls**

We control for historic cost of debt using the cost of debt in the previous year t-1. Following Demirgüç-Kunt and Maksimovic (1999) we use long-term debt to total assets as a measure of leverage ratio. In addition we include the ratio of equity over total assets to account for capital structure characteristics not included in the debt-ratio measure.

Industry and geographic diversification have shown to affect companies cost of debt (Bodnar, *et al.*, 1999, Kwok & Reeb, 2000, Reeb, *et al.*, 1998, Reeb, *et al.*, 2001). We include the number of NACE industry codes for each firm to account for industry diversification and the ratio of international revenues to total assets as a measure for pre-market entry geographic diversification.

Fama and French (2002) have shown that cash-flow volatility and the beta of a company influences a company's cost of debt and capital structure. Rather than using the log of total assets as a proxy variable, we decide to use the five-year asset beta as reported in the Orbis database of Bureau van Dijk as a more direct measure of company specific risk.

As cost of debt are highly dependent on agency cost, firm governance and shareholder structure play an important role in determining a company's cost of debt. We control for governance structure by including the number of recorded shareholders. Research on internal capital markets has shown that managers can use complexity of organizational structure in highly diversified firms for empire building and inefficient decision making (Cline, *et al.*, 2014). This opportunistic behaviour is anticipated and priced by creditors increasing the cost of debt. We capture this holding effect by including the number of companies in group, number of subsidiaries and number of affiliates in group as measures of organizational complexity. We follow (Fama & French, 2002) and use annual pre-interest pre-tax earnings to end-of-year total assets as and EBIT ratio as controls for company profitability andcontrol for investment opportunities using the ratio of a firm's total market value to its book value.

The relative costs of monitoring smaller loans are higher (Beck, *et al.*, 2008, De Jong, *et al.*, 2008, Demirgüç-Kunt & Maksimovic, 1999). Hence, SMEs should have higher fixed cost of borrowing (Beck, *et al.*, 2008). Also, large firms are expected to have lower default rates and hence lower cost of debt (Reeb, *et al.*, 2001). We use the natural log of total assets, the number of affiliates and the number of employees as controls for company size.

Expected investments can influence a company's cost of capital (Fama & French, 2002). We control for cash availability and retained earnings using the ratio of cash equivalents to total assets (Fama & French, 2002). We use the ratio of fixed to total assets and the ratio of R&D expenditure to total assets as a measure of firm investment intensity and expected investment intensity (Fama & French, 2002). R&D expenditure is available for just about 50% of firms. To avoid a reporting bias we follow the procedure of Fama and French (2002) and include a dummy for firms with reported R&D expenses.

**Host country-level controls**

Several macro variables have shown to have an effect on capital structure and cost of debt (Demirgüç-Kunt & Maksimovic, 1999). We include country level controls for GDP growth, total GDP, inflation (Consumer price index), lending rate, one year exchange rate volatility and inward FDI. Firms in emerging markets have shown to have lower leverage (De Jong, *et al.*, 2008). To distinguish different types of emerging markets, we include dummies based on Hoskisson, *et al.* (2013) In their five-group classification of mid-range economies, they differentiate emerging markets based on improvements in (a) their institutional environment and (b) their factor markets (Hoskisson, *et al.*, 2013).

## 5. Results

Descriptive statistics and partial correlations of the variables in our models can be found in figure 4 and table 6. We find no problematic or surprising cross-correlations.

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insert figure 4 and table 5 about here
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Cost of debt has been shown to be affected by variables on different levels of aggregation, which is why it is important to follow a stepwise procedure, introducing each level at the

time. We run an empty model (1) in **Fehler! Verweisquelle konnte nicht gefunden werden.** including the fixed effects specification for industries, years, and destination countries for the 4,412 observations we collected. The intercept is significant and gives us a conditional mean cost of debt of 3.024 percent in the year after the FDI for the reference industry and year. We observe significantly higher changes in cost of debt in automotive components, biotechnology, building & construction materials, metals, paper, printing & packaging. All year dummies are highly significant indicating strong cyclical changes in cost of debt. The coefficient for year 2008 is positive indicating a rise in cost of debt during the financial crisis followed by a strong recovery and decline in 2009.

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We then introduce company level determinants of cost of debt in model (2) and closely follow Fama and French (2002) therein. The intercept remains significant and positive at a somewhat lower level. We control for past cost of debt using the cost of debt in the previous year. Consequently, the other variables can be interpreted as net of the cost of capital in the year minus one and hence as affecting the change, not the absolute value of the cost of debt. We do not report insignificant controls. The coefficient of the cost of debt in the previous year, as expected, is significant and positive indicating that companies with previously high costs of debt continue to have higher cost of debt after the market entry. Companies with more long term debt experience larger increases in the cost of debt when undertaking additional risky projects. As suggested by Griffin and Andrew Karolyi (1998), the effect of international diversification on cost of debt is more relevant (and highly significant) than the effect of industry diversification, which is insignificant in our model.

The agency cost variables that account for company complexity are highly significant, providing support for the hypothesis that creditors anticipate and price opportunistic

behaviour in complex organizations. Profitability, as expected, reduces increases in the cost of debt because of the alleviation of liquidity concerns with increasing profitability. Both the governance and profitability controls vary in sign, which is an outcome of the regression model when including multiple controls for quite similar construct.

We find evidence that larger firms in terms of assets are affected to a lesser degree by the risk increases from investments in emerging markets. This is straightforward, given that we also control for investment size. Collateral in terms of fixed assets and cash are also found to help reduce additional cost of debt, again due to alleviation of liquidity constraints (for the latter) and securitization (for the former). Overall, our results of the company level-model are largely consistent with cost of capital theory and with reputable empirical work (Fama & French, 2002).

In model 3 we introduce a number of host country-level controls. Interestingly, we find that only exchange rate volatility has a negative effect on the increase in the cost of debt. Given that we test exchange rate risk controlling for country risk, this could mean that managers tend to hedge more of their exposure if currency fluctuations are higher. The other country-level controls are insignificant.

Our first contextual model 4 introduces home country risk. As hypothesized (H1), we find that the investment in a non-developed market affects companies from home countries with higher risk to a lower degree. In model 5 we add host country risk, yet do not find significant support for our hypothesis (H2) that the risk in the host country is positively related to the increase in cost of debt.

In model 6 and 7 we include our measure of political distance. We run a fixed effects model and a model using host country random effects. Comparing the resulting deviance increase between the two models shows that, while model fit increases, the random effects model is not significantly superior to the more parsimonious fixed effects model, mainly because of the

large number of degrees of freedom that results from our complex model. Still, in order to properly account for the cross-level variance given the interaction term we introduce in model 7, we account for random effects in models 7 and 8. Results indicate that political distance between the emerging economy and the home market of the MNE is negatively related to the increase in cost of debt (H3). Investments involving higher distance result in lower changes of cost of debt, confirming our hypothesis that diversification is captured by distance.

Model 8 introduces the interaction term and finds support for the interaction effect proposed (H4). Looking at the effect on the coefficient of host country risk and political distance, it becomes apparent that the effects of those two variables on cost of debt are highly contingent on each other. With the interaction of the two variables included in the model, the respective effects can only be interpreted together. If mean values for the respective other variable are taken, we find support for hypotheses 2 and 3. Yet, the overall effects are contingent on each other.

In model 9 we add our measure for risk expectations (H5a&b) to the analysis. For the home country, we find that an improvement in the home country risk level leads to a decrease in additional cost of debt, following the logic proposed above. We hence find confirmatory evidence for H5b, if only on a low level of significance. With regards to H5a, however, we do not find a significant effect of the change in country risk in the host country. This could be due to the fact that expectations about future improvements in non-developed countries tend to be highly uncertain and therefore investors do not account for them as much as they do for expectations about the home countries which are, in our sample, more developed and therefore more predictable. As such, changes in institutional quality in developed market are more reliable anchors than in non-developed countries (Jacowitz & Kahneman, 1995, Tversky & Kahneman, 1974).

Throughout our models, the control variables do not change much in significance which we take as a sign for the robustness of our model. Also, robustness checks with the change of the cost of debt as a dependent variable and without the cost of debt in the previous year as a control variable yield very similar results. We therefore are confident that our findings are robust.

## 6. Discussion and Conclusion

Our empirical examination largely supports the hypotheses we developed based on the trade-off theory. We find clear and robust evidence that cost of debt changes in internationalization and the effect of diversification are contingent on the institutional context. Our findings suggest that the level of home country risk, the level of target country risk and the distance between the two countries affect subsequent changes ion cost of debt.

Also, our analysis provides support for the assumption that risk perceptions, resulting from past trends in country risk, translate into changes in the cost of debt. We do not find support on our conservative statistical cut-off level for a diversification effect stemming from internationalization. Yet we believe that this finding, or rather the lack thereof, is accountable to statistical conservativeness and our empirical setting. Overall, we believe that the contributions to literature that we intend to make are, on a general level, strongly supported by our empirical findings.

Apart from the empirical contributions we make with the comprehensive dataset of greenfield investments in non-developed markets and the method we apply, our theoretical contribution to literature has five strands. Answering the calls of Agmon (2006) and Bowe, *et al.* (2010), we integrate findings from financial economics into a problem that is core to IB: the risk of internationalizing and its effects on strategy. We contribute to finance literature by taking into account that financial capital that a company based in country A used to invest in country B

may well come from a country C. Hence, it is important to look at the risk environments of both countries A and B to come to conclusions about the cost of capital.

Third, moving the analysis of risk from a static to a dynamic perspective is crucial when evaluating decisions on investment governance. By explicitly taking into account the status-quo of risk evaluation and its change, we hope to better model the decision-making process. From a DCF perspective, investment projects are evaluated based on expected future changes to company assets: free cash flows. The risk evaluation, however, is classically static. Companies commonly include an extra premium in the discount rate they apply to their international investments (Lessard, 1996). Our research shows that the dynamic of risk, may have a more important effect than the absolute risk. While it is true that risk, to some extent, is a dynamic construct as such, it is straightforwardly possible to develop expectations about future changes to company risk.

Fourth, the extension of the conceptualization of risk to expected changes may also provide insights in another stream of research: transaction cost theory. When analysing entry mode decisions researchers have repeatedly stressed that country risk and cultural distance are insufficient measures of uncertainty (Zhao, *et al.*, 2004). Adding the first order expectations about future changes in uncertainty, as we propose in this paper, may also help to get a better grasp of different aspects of uncertainty in entry mode studies based on transaction cost theory.

Finally, we help to disentangle conflicting and inconclusive findings from the past by explicitly modelling the diversification and risk effects of internationalization. We show that benefits and costs from internationalization are contingent on the institutional context of home and host country, the distance between them and the risk trends within them.

Despite the extensive dataset and clear theoretic perspective, our study has several limitations. While we can account for changes in cost of capital and country risk, as well as the size of the

greenfield investment, we cannot control for changes in several other company-level variables such as international diversification or number of recorded shareholders during the time when the greenfield investment we analyse occurs. This may be problematic as changes in cost of debt may be attributable to variations in these company-level determinants, rather than host country effects. Given the large dataset, however, we hope that these changes — as they are largely unrelated to the greenfield investment – average out to zero. Also, the nature of our international sample makes it necessary to convert several key variables into a common currency (in our case USD). Depending on the value of the home currency to the USD, the value of these variables may vary and may be biased. The strong significance of exchange rate volatility may be a sign of such a bias. However, considering the percentage measure of our dependent variable we do not see any potential bias. Finally, reverse causality may be an issue. It is plausible that firms anticipate lower cost of debt and decide to enter high risk markets when the price for debt in the future is low.

Our results indicate several promising avenues for research. Further studies should go deeper into the institutional characteristics of host countries, combining risk related aspects with corporate governance indicators such as the measures developed by La Porta, *et al.* (1998) and Berkowitz, *et al.* (2003). Also, country risk could be disaggregated into different concepts of risk in order to identify the macro drivers of cost of debt change. Our investigation into the effect of countries moving in and out of the category “emerging” does not yield conclusive results, even though we used a one-dimensional and a recently developed two-dimensional approach for categorization. Further research into the connection of risk and this categorization would indeed be interesting. Finally, trading off risk and diversification and appropriately capturing the two is a challenge and should be investigated into more.

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# Appendix

**Table 1: Description of variables**

| | |
|---|---|
| **Dependent Variable** | |
| (1) cost of debt (t+1) | Total cost of debt in the year following greenfield investment into developing market ( Bloomberg). |
| **Investment level controls** | |
| (2) Log FDI capital expenditure | Log of total capital expenditure for greenfield investment as measure of size (fDi Markets by Financial Times). |
| **Company level controls** | |
| (3) Cost of debt (t-1) | Cost of debt in the year preceding the investment as a control for past cost of debt (Bloomberg). |
| (4) Long term debt ratio | Book value of long-term debt over total assets as an indicator of creditworthiness (Bureau Van Dijk). |
| (5) Equity ratio | Book value of equity over total assets as an indicator of creditworthiness (Bureau Van Dijk). |
| (6) Industry diversification | Number of NACE industry codes as a control for pre-investment industry diversification (Bureau Van Dijk). |
| (7) International diversification | Foreign revenues over total assets as a control for pre-investment internationalization (Bureau Van Dijk). |
| (8) Company beta | Five-year asset beta as a control for company specific risk (Bureau Van Dijk). |
| (9) Num. recorded shareholders | Number of shareholders in year of investment as an indicator of governance structure (Bureau Van Dijk). |
| (10) Num. recorded affiliates | Number of recorded affiliated companies as an indicator for the size (Bureau Van Dijk). |
| (11) Companies in group | Number of companies in group as an indicator for the complexity and agency cost (Bureau Van Dijk). |
| (12) Num. recorded subsidiaries | Number of recorded subsidiaries (ownership >50%) as an indicator for agency cost (Bureau Van Dijk). |
| (13) Pre-tax earnings | Pre-tax earnings (Bureau Van Dijk). |
| (14) EBIT ratio | Earnings before interest and tax over total assets as an indicator of profitability (Bureau Van Dijk). |
| (15) Market-to book value | Market capitalization over total assets as a measure of investment opportunities (Bureau Van Dijk). |
| (16) Log total assets | Log of total assets in the year of the greenfield investment as an indicator of the size (Bureau Van Dijk). |
| (17) Log Number of employees | Log Number of employees in the year of the greenfield as an indicator for the size (Bureau Van Dijk). |
| (18) Fixed asset ratio | Fixed assets over total assets as an indicator of investment intensity (Bureau Van Dijk). |
| (19) Cash ratio | Cash and cash equivalents over total assets as a measure of firm liquidity (Bureau Van Dijk). |
| (20) R&D ratio | Reported R&D spending over total assets as an indicator of investment intensity (Bureau Van Dijk). |
| (21) R&D dummy | Dummy variable indicating R&D ratio data availability. 1 = company reports R&D ratio; 0 = company does not report R & D ratio. Based on the procedure applied by (Fama & French, 2002) |
| **Host country controls** | |
| (22) GDP growth | Percentage change in real GDP over previous year on a yearly basis in % change pa as an indicator of host country growth (Economist Intelligence Unit). |
| (23) Log GDP total | Log GDP at purchasing power parity (PPP) on a yearly basis in USD billions as an indicator of host country size (Economist Intelligence Unit). |
| (24) Consumer price index | Percentage change in consumer price index in local currency period average over previous year on a yearly basis in % change pa as an indicator of host country inflation (Economist Intelligence Unit). |
| (25) Lending rate | Lending interest rate on a yearly basis in % as an indicator of host country financial development (Economist Intelligence Unit). |
| (26) Exchange rate volatility | One-year volatility in the year prior to the investment as a measure of exchange rate risk (Economist Intelligence Unit). |
| (27) Inward FDI | Net direct investments flows on a yearly basis in USD billions as a measure of country attractiveness (Economist Intelligence Unit). |
| (28) Emerging market type | Emerging market category based on (Hoskisson, *et al.*, 2013). |
| **Main independent variables** | |
| (29) Home country risk | (H1a) Total home country risk score for the year of the greenfield investment as a proxy for home country risk and institutions (EIU country risk database by Bureau Van Dijk). |
| (30) Home country risk improvement | (H2b) Change in home country risk score from the year (t-2) to the year t-1) preceding the of the greenfield investment as an indicator for investor expectations. (EIU country risk database by Bureau Van Dijk). |
| (31) Host country risk | (H1b) Total host country risk score for the year of the greenfield investment as a proxy for host government risk and institutions (EIU country risk database by Bureau Van Dijk). |
| (32) Host country risk improvement | (H2a) Change in host country risk score from the year (t-2) to the year t-1) preceding the of the greenfield investment as an indicator for investor expectations. (EIU country risk database by Bureau Van Dijk). |
| (33) Political distance | (H3) Economic distance between home and host country as a measure of the marginal diversification effect of the investment (Berry, *et al.*, 2010). |
| **Controls** | |
| (33) Year | Year of the greenfield investment (fDi Markets by Financial Times). |
| (34) Industry | Industry classification of the greenfield investment (fDi Markets by Financial Times). |

**Figure 1: Cost of debt t+1**

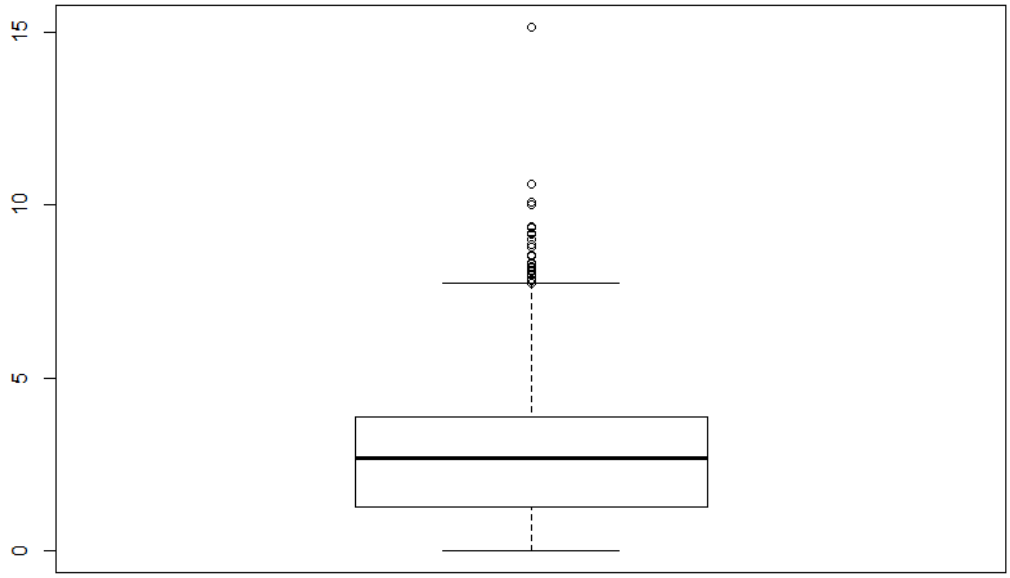



**Figure 2: Change in cost of debt t+1**

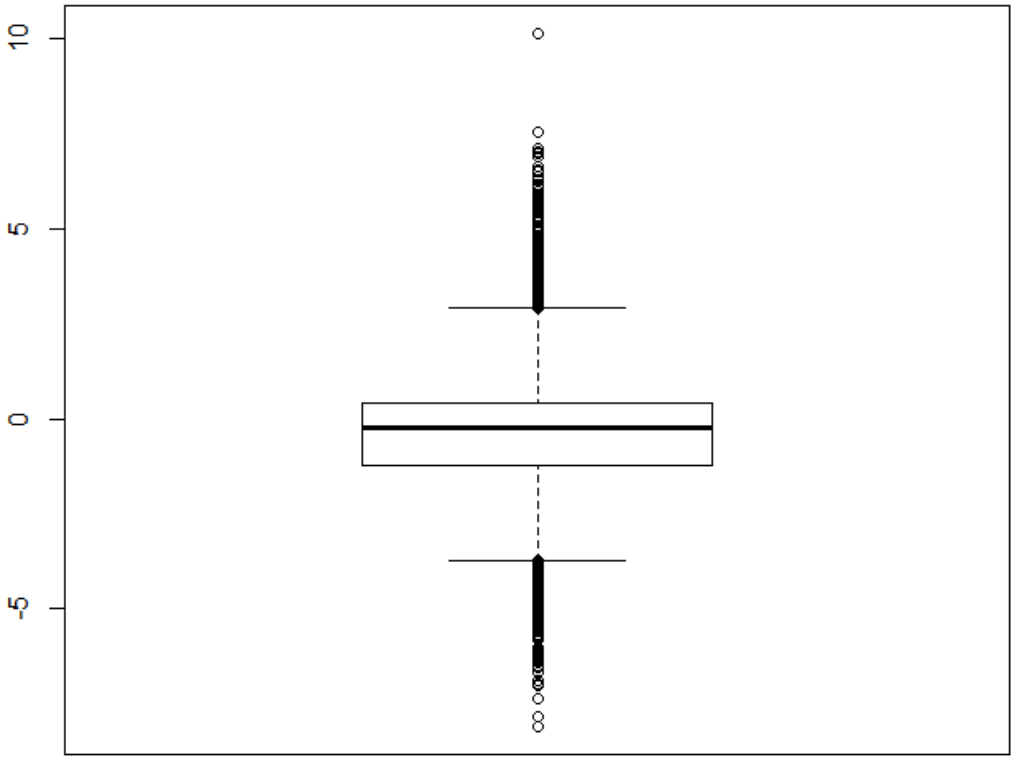



**Figure 3: EIU Country risk difference (1=Source Country; 2 = Host Country)**

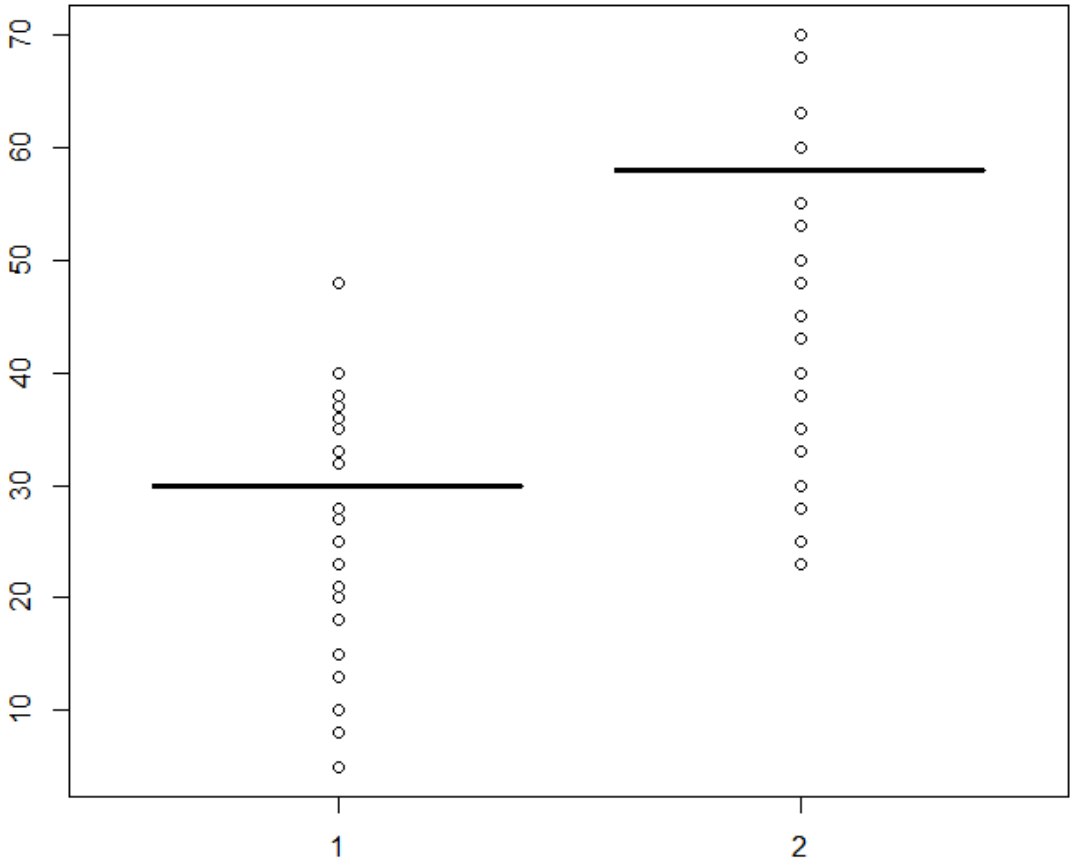

70
60
50
40
30
20
10
1
2

**Table 2: Industry distribution**

| Industry | N | Industry | N |
|---|---|---|---|
| Food & Tobacco | 387 | Alternative/Renewable energy | 67 |
| Chemicals | 362 | Semiconductors | 61 |
| Industrial Machinery, Equipment & Tools | 326 | Medical Devices | 61 |
| Communications | 276 | Aerospace | 60 |
| Automotive Components | 267 | Engines & Turbines | 54 |
| Software & IT services | 267 | Real Estate | 52 |
| Automotive OEM | 246 | Building & Construction Materials | 47 |
| Business Services | 187 | Paper, Printing & Packaging | 43 |
| Textiles | 184 | Non-Automotive Transport OEM | 32 |
| Metals | 153 | Business Machines & Equipment | 30 |
| Consumer Products | 152 | Biotechnology | 28 |
| Electronic Components | 150 | Warehousing & Storage | 27 |
| Coal, Oil and Natural Gas | 124 | Financial Services | 25 |
| Transportation | 117 | Ceramics & Glass | 21 |
| Plastics | 111 | Leisure & Entertainment | 14 |
| Beverages | 106 | Space & Defence | 14 |
| Pharmaceuticals | 93 | Wood Products | 6 |
| Rubber | 86 | Minerals | 6 |
| Hotels & Tourism | 85 | Healthcare | 5 |
| Consumer Electronics | 80 | Total | 4412 |

**Table 3: Year distribution**

| year | N |
|---|---|
| 2005 | 355 |
| 2006 | 442 |
| 2007 | 410 |
| 2008 | 676 |
| 2009 | 720 |
| 2010 | 684 |
| 2011 | 671 |
| Total | 4412 |

**Table 4: Source and destination country distribution**

| Source Country | N | Source Country | N |
|---|---|---|---|
| United_States | 1600 | Netherlands | 56 |
| Germany | 844 | Austria | 44 |
| France | 455 | Norway | 32 |
| Japan | 339 | Switzerland | 28 |
| United_Kingdom | 255 | Canada | 15 |
| Sweden | 224 | Singapore | 13 |
| Spain | 171 | Israel | 8 |
| Finland | 137 | New_Zealand | 7 |
| Italy | 60 | Australia | 4 |
| Belgium | 59 | Ireland | 3 |
| Denmark | 58 | Total | 4412 |

| Destination Country | N | Destination Country | N |
|---|---|---|---|
| China | 1200 | Slovakia | 68 |
| India | 689 | Chile | 61 |
| Brazil | 333 | Ukraine | 45 |
| Mexico | 289 | Peru | 37 |
| Poland | 251 | Egypt | 35 |
| Romania | 206 | Nigeria | 34 |
| Thailand | 170 | Tunisia | 34 |
| Czech_Republic | 146 | Croatia | 25 |
| Argentina | 127 | Kenya | 25 |
| Hungary | 114 | Ghana | 17 |
| South_Korea | 110 | Venezuela | 14 |
| Turkey | 101 | Macedonia_FYR | 13 |
| Colombia | 87 | Botswana | 7 |
| South_Africa | 86 | Moldova | 4 |
| Bulgaria | 80 | Slovenia | 4 |
| | | Total | 4412 |

**Table 5: Country pair distribution**

| Source - Destination | N | Source - Destination | N | Source - Destination | N |
|---|---|---|---|---|---|
| United_StatesChina | 481 | United_StatesRomania | 26 | SpainPoland | 13 |
| United_StatesIndia | 297 | FrancePoland | 25 | GermanyUkraine | 12 |
| GermanyChina | 209 | FranceTurkey | 25 | SpainColombia | 12 |
| United_StatesMexico | 157 | United_StatesChile | 25 | SpainMexico | 12 |
| United_StatesBrazil | 140 | GermanySouth_Korea | 24 | United_KingdomMexico | 12 |
| JapanChina | 130 | SwedenPoland | 24 | United_KingdomSouth_Africa | 12 |
| GermanyIndia | 128 | United_StatesHungary | 24 | United_StatesBulgaria | 12 |
| FranceChina | 122 | FranceArgentina | 23 | United_StatesNigeria | 12 |
| JapanThailand | 69 | FranceColombia | 22 | FinlandPoland | 11 |
| United_StatesPoland | 68 | SpainBrazil | 22 | FranceMexico | 11 |
| GermanyBrazil | 63 | FranceBrazil | 21 | GermanyColombia | 11 |
| SwedenChina | 56 | GermanySouth_Africa | 21 | NetherlandsIndia | 11 |
| United_StatesArgentina | 56 | United_KingdomBrazil | 21 | SpainCzech_Republic | 11 |
| FranceRomania | 54 | FranceThailand | 20 | SwedenRomania | 11 |
| United_KingdomChina | 54 | GermanyArgentina | 20 | FinlandBrazil | 10 |
| GermanyCzech_Republic | 53 | DenmarkChina | 19 | FranceSouth_Korea | 10 |
| JapanIndia | 53 | JapanMexico | 19 | GermanyTunisia | 10 |
| GermanyPoland | 51 | SpainChina | 19 | ItalyChina | 10 |
| United_StatesSouth_Korea | 49 | United_StatesEgypt | 19 | ItalyRomania | 10 |
| GermanyRomania | 47 | BelgiumChina | 18 | JapanBrazil | 10 |
| SwedenIndia | 45 | FranceBulgaria | 18 | JapanPoland | 10 |
| United_KingdomIndia | 45 | FranceTunisia | 17 | SwedenCzech_Republic | 10 |
| GermanyMexico | 44 | GermanyThailand | 17 | SwedenHungary | 10 |
| FranceIndia | 43 | GermanyTurkey | 16 | United_KingdomCzech_Republic | 10 |
| GermanyHungary | 40 | SpainRomania | 15 | BelgiumRomania | 9 |
| United_StatesThailand | 40 | United_StatesPeru | 15 | FranceUkraine | 9 |
| FinlandChina | 35 | United_StatesSlovakia | 15 | United_StatesKenya | 9 |
| United_StatesCzech_Republic | 33 | GermanyBulgaria | 14 | BelgiumIndia | 8 |
| United_StatesSouth_Africa | 33 | JapanSouth_Korea | 14 | JapanCzech_Republic | 8 |
| FinlandIndia | 30 | SwedenBrazil | 14 | SingaporeChina | 8 |
| GermanySlovakia | 30 | SwedenMexico | 14 | SpainPeru | 8 |
| United_KingdomPoland | 30 | AustriaRomania | 13 | (Other) | 601 |
| United_StatesTurkey | 30 | NetherlandsChina | 13 | | |
| United_StatesColombia | 29 | SpainArgentina | 13 | Total | 4412 |

**Table 6: Descriptive statistics**

| Statistic | N | Mean | St. Dev. | Min | Max |
|---|---|---|---|---|---|
| (1) cost of debt (t+1) | 4,412.00 | 2.75 | 0.98 | 0.94 | 4.41 |
| (2) FDI capital expenditure | 4,412.00 | 3.28 | 1.63 | -3.10 | 8.70 |
| (3) Cost of debt (t-1) | 4,412.00 | 3.13 | 1.31 | 0.00 | 10.61 |
| (4) Long term debt ratio | 4,412.00 | 0.30 | 0.15 | 0.00 | 1.54 |
| (5) Equity ratio | 4,412.00 | 37.58 | 17.16 | -88.54 | 94.32 |
| (6) Industry diversification | 4,412.00 | 4.56 | 1.42 | 2.00 | 10.00 |
| (7) International diversification | 4,412.00 | 0.00 | 0.01 | 0.00 | 0.24 |
| (8) Company beta | 4,412.00 | 1.03 | 0.39 | 0.00 | 5.99 |
| (9) Num. recorded shareholders | 4,412.00 | 71.85 | 33.08 | 0.00 | 245.00 |
| (10) Num. of recorded affiliates | 4,412.00 | 0.32 | 0.30 | 0.00 | 2.34 |
| (11) Companies in group | 4,412.00 | 0.32 | 0.31 | 0.00 | 2.33 |
| (12) Number recorded subsidiaries | 4,412.00 | 0.19 | 0.77 | 0.00 | 6.48 |
| (13) After-tax earnings ratio | 4,412.00 | 0.06 | 0.07 | -0.97 | 0.38 |
| (14) EBIT ratio | 4,412.00 | 0.08 | 0.08 | -0.97 | 0.56 |
| (15) Market-to book value | 4,412.00 | 0.00 | 0.03 | -1.50 | 0.60 |
| (16) Log total assets | 4,412.00 | 16.50 | 1.87 | 9.53 | 19.72 |
| (17) Number of employees | 4,412.00 | 10.60 | 1.83 | 1.95 | 14.60 |
| (18) Fixed asset ratio | 4,412.00 | 0.25 | 0.16 | 0.00 | 0.92 |
| (19) Cash ratio | 4,412.00 | 0.12 | 0.10 | 0.00 | 0.76 |
| (20) R&D ratio | 4,412.00 | 0.03 | 0.04 | 0.00 | 0.87 |
| (21) R&D dummy | 4,412.00 | 0.72 | 0.45 | 0.00 | 1.00 |
| (22) GDP growth | 4,412.00 | 5.88 | 4.45 | -14.76 | 15.01 |
| (23) log GDP total | 4,412.00 | 7.45 | 1.56 | 2.22 | 9.60 |
| (24) Consumer price index | 4,412.00 | 5.49 | 4.10 | -0.85 | 30.37 |
| (25) Lending rate | 4,412.00 | 11.67 | 9.95 | 3.39 | 55.38 |
| (26) Exchange rate volatility | 4,412.00 | 0.04 | 0.03 | 0.00 | 0.21 |
| (27) Inward FDI | 4,412.00 | 47.08 | 65.72 | -22.18 | 231.65 |
| (28) Home country risk | 4,412.00 | 22.10 | 5.74 | 11.00 | 40.00 |
| (29) Host country risk | 4,412.00 | 42.64 | 6.38 | 23.00 | 74.00 |
| (30) Political distance | 4,412.00 | 20.29 | 7.86 | 4.73 | 31.20 |
| (31) Host country risk * political risk | 4,412.00 | 857.39 | 338.48 | 150.26 | 1,932.00 |
| (32) Home country risk trend | 4,412.00 | 1.14 | 3.72 | -9.00 | 13.00 |
| (33) Host country risk trend | 4,412.00 | -0.14 | 3.72 | -10.00 | 11.00 |

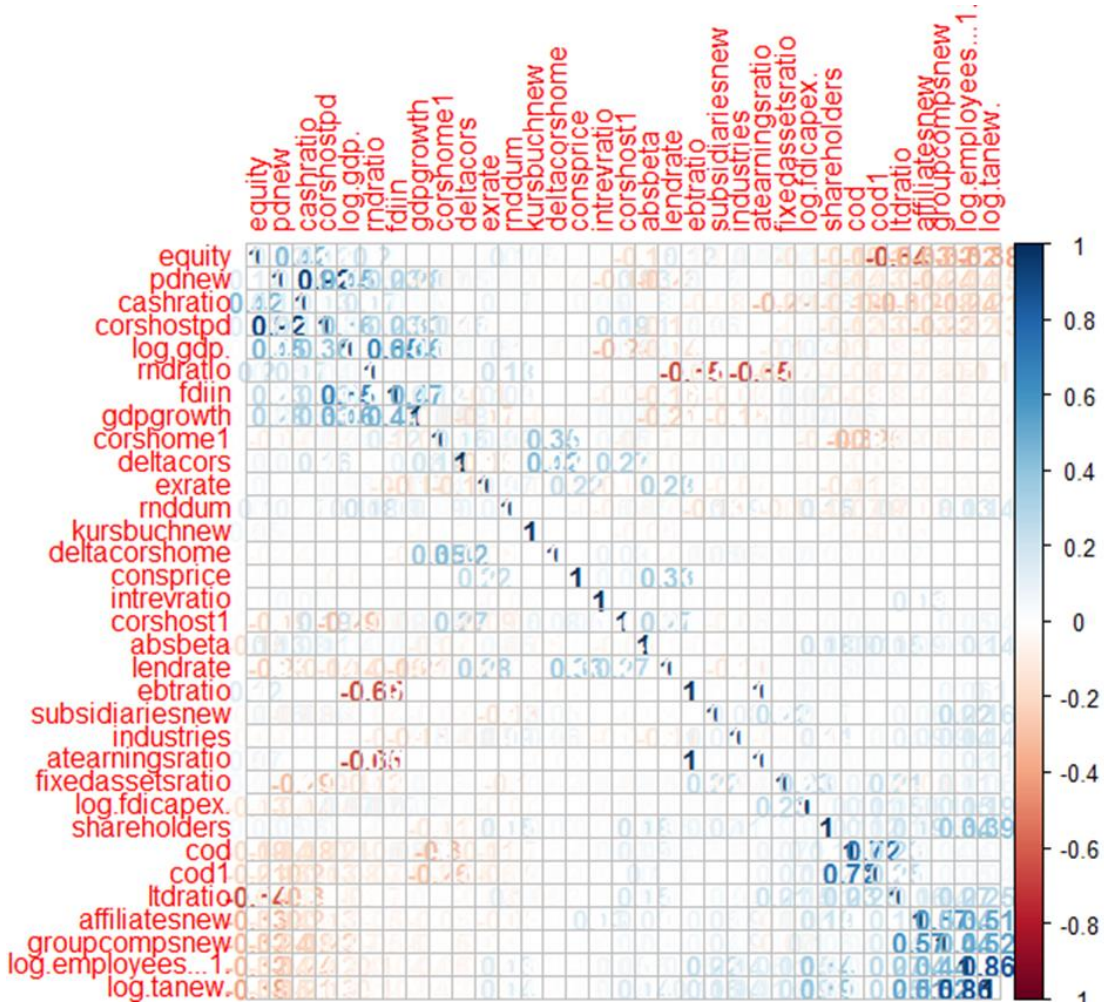
**Table 7: Correlation table 1**

| Correlations | -1 | -2 | -3 | -4 | -5 | -6 | -7 | -8 | -9 | -10 | -11 | -12 | -13 | -14 | -15 | -16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) cost of debt (t+1) | 1 | | | | | | | | | | | | | | | |
| (2) FDI capital expenditure | 0.024 | 1 | | | | | | | | | | | | | | |
| (3) Cost of debt (t-1) | 0.497 | 0.056 | 1 | | | | | | | | | | | | | |
| (4) Long term debt ratio | 0.008 | 0.186 | 0.181 | 1 | | | | | | | | | | | | |
| (5) Equity ratio | 0.028 | -0.127 | -0.112 | -0.628 | 1 | | | | | | | | | | | |
| (6) Industry diversification | 0.003 | 0.015 | 0.019 | 0.065 | -0.022 | 1 | | | | | | | | | | |
| (7) International diversification | 0.019 | -0.003 | 0.048 | 0.091 | -0.07 | 0.065 | 1 | | | | | | | | | |
| (8) Company beta | 0.043 | 0.031 | 0.164 | 0.213 | -0.118 | 0.062 | 0.002 | 1 | | | | | | | | |
| (9) Num. recorded shareholders | 0.156 | 0.061 | 0.174 | 0.139 | 0.067 | 0.091 | 0.141 | 0.272 | 1 | | | | | | | |
| (10) Num. of recorded affiliates | 0.005 | 0.14 | -0.025 | 0.141 | -0.316 | 0.09 | 0.145 | -0.017 | 0.051 | 1 | | | | | | |
| (11) Companies in group | 0.026 | 0.13 | -0.011 | 0.119 | -0.294 | 0.086 | 0.093 | -0.04 | -0.071 | 0.879 | 1 | | | | | |
| (12) Number recorded subsidiaries | -0.024 | 0.043 | -0.037 | -0.038 | 0.019 | 0.111 | -0.039 | -0.148 | 0.033 | -0.163 | -0.096 | 1 | | | | |
| (13) After-tax earnings ratio | 0.059 | -0.039 | -0.085 | -0.274 | 0.373 | 0.013 | -0.01 | -0.133 | 0.22 | -0.083 | -0.088 | 0.086 | 1 | | | |
| (14) EBIT ratio | 0.048 | -0.041 | -0.105 | -0.293 | 0.395 | 0.005 | -0.01 | -0.137 | 0.229 | -0.083 | -0.09 | 0.113 | 0.965 | 1 | | |
| (15) Market-to book value | -0.013 | -0.019 | -0.015 | -0.093 | 0.082 | -0.002 | 0.002 | -0.025 | -0.003 | 0.011 | 0.009 | 0.013 | 0.047 | 0.056 | 1 | |
| (16) Log total assets | -0.069 | 0.254 | -0.071 | 0.238 | -0.339 | 0.143 | 0.047 | 0.004 | 0.218 | 0.626 | 0.592 | 0.181 | 0.045 | 0.039 | 0.008 | 1 |
| (17) Number of employees | -0.035 | 0.158 | -0.063 | 0.141 | -0.353 | 0.162 | 0.022 | -0.031 | 0.139 | 0.526 | 0.511 | 0.347 | 0.059 | 0.056 | 0.01 | 0.867 |
| (18) Fixed asset ratio | -0.063 | 0.249 | -0.03 | 0.256 | 0.03 | -0.023 | 0.009 | -0.059 | 0.003 | -0.128 | -0.142 | 0.352 | -0.01 | 0.021 | 0.009 | 0.081 |
| (19) Cash ratio | 0.002 | -0.132 | -0.1 | -0.395 | 0.389 | -0.014 | -0.025 | 0.057 | 0.109 | -0.188 | -0.164 | -0.11 | 0.26 | 0.27 | 0.03 | -0.156 |
| (20) R&D ratio | -0.005 | -0.123 | -0.063 | -0.217 | 0.216 | 0.017 | -0.005 | 0.096 | 0.127 | -0.113 | -0.114 | -0.134 | 0.091 | 0.1 | 0.015 | -0.043 |
| (21) R&D dummy | -0.044 | 0.021 | -0.055 | 0.131 | 0.046 | 0.074 | 0.063 | 0.196 | 0.076 | 0.056 | 0.057 | -0.261 | -0.026 | -0.035 | -0.024 | 0.087 |
| (22) GDP growth | 0.108 | 0.087 | -0.069 | -0.063 | 0.062 | -0.093 | 0.008 | 0.038 | -0.024 | -0.002 | -0.006 | 0.009 | 0.021 | 0.031 | -0.017 | -0.035 |
| (23) log GDP total | -0.094 | 0.131 | -0.041 | -0.008 | 0.048 | -0.009 | -0.015 | 0.097 | 0.036 | -0.072 | -0.074 | 0.036 | 0.014 | 0.019 | -0.012 | -0.054 |
| (24) Consumer price index | 0.041 | -0.026 | 0.056 | 0.024 | 0.002 | -0.017 | -0.011 | -0.024 | 0.065 | 0.003 | 0.02 | 0.06 | 0.052 | 0.051 | -0.013 | 0.057 |
| (25) Lending rate | 0.025 | 0.024 | 0.04 | 0.027 | -0.008 | -0.127 | -0.01 | -0.023 | 0.071 | 0.003 | 0.003 | 0.008 | 0.036 | 0.042 | -0.002 | 0.029 |
| (26) Exchange rate volatility | -0.035 | 0.002 | 0.064 | -0.033 | 0.016 | -0.09 | -0.023 | 0.007 | 0.008 | -0.064 | -0.063 | -0.025 | 0.022 | 0.027 | 0.008 | -0.038 |
| (27) Inward FDI | -0.07 | 0.113 | -0.055 | 0.023 | 0.023 | -0.047 | -0.02 | 0.058 | 0.002 | -0.044 | -0.056 | 0.006 | 0.008 | 0.0002 | -0.002 | -0.037 |
| (28) Home country risk | -0.303 | 0.009 | -0.217 | 0.133 | 0.01 | 0.028 | 0.052 | -0.058 | 0.125 | -0.054 | -0.064 | -0.023 | -0.091 | -0.124 | -0.034 | -0.061 |
| (29) Host country risk | 0.03 | -0.04 | -0.045 | -0.011 | 0.023 | -0.035 | -0.011 | -0.072 | -0.024 | 0.032 | 0.034 | 0.009 | 0.002 | -0.00004 | -0.016 | 0.049 |
| (30) Political distance | -0.088 | -0.028 | -0.053 | 0.008 | 0.152 | 0.101 | -0.02 | 0.25 | 0.176 | -0.346 | -0.337 | 0.16 | 0.082 | 0.096 | -0.017 | -0.158 |
| (31) Host C risk * Pol risk | -0.073 | -0.041 | -0.072 | 0.002 | 0.157 | 0.098 | -0.023 | 0.219 | 0.164 | -0.328 | -0.318 | 0.156 | 0.081 | 0.094 | -0.027 | -0.14 |
| (32) Home country risk trend | -0.01 | 0.005 | 0.071 | 0.038 | 0.005 | 0.045 | 0.022 | -0.05 | 0.065 | -0.004 | -0.003 | 0.043 | -0.141 | -0.145 | -0.016 | -0.019 |
| (33) Host country risk trend | -0.025 | -0.019 | -0.092 | 0.019 | 0.002 | 0.042 | 0.004 | -0.005 | -0.055 | -0.02 | -0.01 | 0.013 | -0.115 | -0.124 | -0.043 | -0.021 |

**Table 8: Correlation table continued**

| | -17 | -18 | -19 | -20 | -21 | -22 | -23 | -24 | -25 | -26 | -27 | -28 | -29 | -30 | -31 | -32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) cost of debt (t+1) | | | | | | | | | | | | | | | | |
| (2) FDI capital expenditure | | | | | | | | | | | | | | | | |
| (3) Cost of debt (t-1) | | | | | | | | | | | | | | | | |
| (4) Long term debt ratio | | | | | | | | | | | | | | | | |
| (5) Equity ratio | | | | | | | | | | | | | | | | |
| (6) Industry diversification | | | | | | | | | | | | | | | | |
| (7) International diversification | | | | | | | | | | | | | | | | |
| (8) Company beta | | | | | | | | | | | | | | | | |
| (9) Num. recorded shareholders | | | | | | | | | | | | | | | | |
| (10) Num. of recorded affiliates | | | | | | | | | | | | | | | | |
| (11) Companies in group | | | | | | | | | | | | | | | | |
| (12) Number recorded subsidiaries | | | | | | | | | | | | | | | | |
| (13) After-tax earnings ratio | | | | | | | | | | | | | | | | |
| (14) EBIT ratio | | | | | | | | | | | | | | | | |
| (15) Market-to book value | | | | | | | | | | | | | | | | |
| (16) Log total assets | | | | | | | | | | | | | | | | |
| (17) Number of employees | 1 | | | | | | | | | | | | | | | |
| (18) Fixed asset ratio | 0.069 | 1 | | | | | | | | | | | | | | |
| (19) Cash ratio | -0.189 | -0.314 | 1 | | | | | | | | | | | | | |
| (20) R&D ratio | -0.088 | -0.312 | 0.469 | 1 | | | | | | | | | | | | |
| (21) R&D dummy | -0.082 | -0.144 | 0.042 | 0.441 | 1 | | | | | | | | | | | |
| (22) GDP growth | -0.023 | -0.034 | 0.056 | 0.099 | 0.064 | 1 | | | | | | | | | | |
| (23) log GDP total | -0.057 | -0.057 | 0.032 | 0.087 | 0.061 | 0.593 | 1 | | | | | | | | | |
| (24) Consumer price index | 0.048 | -0.017 | 0.012 | -0.004 | -0.032 | -0.057 | -0.121 | 1 | | | | | | | | |
| (25) Lending rate | 0.003 | 0.001 | 0.013 | -0.02 | -0.019 | -0.238 | -0.116 | 0.223 | 1 | | | | | | | |
| (26) Exchange rate volatility | -0.057 | 0.014 | -0.02 | -0.022 | -0.014 | -0.17 | 0.05 | 0.195 | 0.309 | 1 | | | | | | |
| (27) Inward FDI | -0.047 | -0.039 | 0.017 | 0.042 | 0.041 | 0.528 | 0.704 | -0.208 | -0.181 | -0.138 | 1 | | | | | |
| (28) Home country risk | -0.103 | 0.077 | 0.03 | -0.121 | -0.032 | -0.067 | 0.018 | 0.039 | 0.002 | -0.068 | 0.092 | 1 | | | | |
| (29) Host country risk | 0.062 | 0.004 | 0.046 | 0.017 | 0.003 | 0.089 | -0.208 | 0.47 | 0.139 | -0.166 | -0.038 | 0.105 | 1 | | | |
| (30) Political distance | -0.131 | 0.06 | 0.107 | 0.085 | 0.04 | 0.266 | 0.438 | -0.094 | -0.248 | 0.056 | 0.242 | -0.074 | -0.158 | 1 | | |
| (31) Host C risk * Pol risk | -0.11 | 0.055 | 0.123 | 0.088 | 0.049 | 0.305 | 0.374 | 0.044 | -0.196 | -0.019 | 0.241 | -0.034 | 0.178 | 0.933 | 1 | |
| (32) Home country risk trend | -0.009 | 0.054 | -0.023 | -0.058 | -0.048 | -0.054 | -0.031 | -0.008 | -0.024 | -0.031 | -0.056 | 0.416 | 0.1 | -0.047 | -0.018 | 1 |
| (33) Host country risk trend | -0.007 | 0.026 | 0.023 | -0.009 | 0.025 | 0.088 | -0.067 | 0.032 | -0.11 | -0.208 | -0.028 | 0.236 | 0.269 | 0.022 | 0.115 | 0.484 |

**Figure 4: Correlation heatmap**



| | (1) Empty model | (2) Corporate model | (3) Country model | (4) Home Country | (5) Host Country |
|---|---|---|---|---|---|
| Constant | 3.024*** | 2.808*** | 2.957*** | 3.355*** | 3.194*** |
| | (0.186) | (0.228) | (0.266) | (0.281) | (0.332) |
| Cost of debt t-1 | | 0.197*** | 0.197*** | 0.192*** | 0.192*** |
| | | (0.010) | (0.010) | (0.010) | (0.010) |
| Long term debt ratio | | 0.621*** | 0.622*** | 0.623*** | 0.621*** |
| | | (0.123) | (0.123) | (0.122) | (0.122) |
| Equity ratio | | 0.003*** | 0.003*** | 0.003*** | 0.003*** |
| | | (0.001) | (0.001) | (0.001) | (0.001) |
| Int. diversification | | -2.819** | -2.918** | -2.745** | -2.735** |
| | | (1.235) | (1.230) | (1.227) | (1.227) |
| Company beta | | -0.045 | -0.048 | -0.058 | -0.059* |
| | | (0.036) | (0.036) | (0.036) | (0.036) |
| Recorded shareholders | | 0.003*** | 0.003*** | 0.003*** | 0.003*** |
| | | (0.001) | (0.001) | (0.001) | (0.001) |
| Recorded affiliates | | -0.201** | -0.231*** | -0.229*** | -0.229*** |
| | | (0.088) | (0.088) | (0.088) | (0.088) |
| Companies in group | | 0.330*** | 0.343*** | 0.348*** | 0.349*** |
| | | (0.080) | (0.080) | (0.080) | (0.080) |
| Pre-tax earnings | | 4.203*** | 4.238*** | 4.316*** | 4.320*** |
| | | (0.626) | (0.624) | (0.622) | (0.622) |
| EBIT ratio | | -3.940*** | -3.977*** | -4.063*** | -4.066*** |
| | | (0.513) | (0.512) | (0.510) | (0.510) |
| Log total assets | | -0.063*** | -0.062*** | -0.064*** | -0.064*** |
| | | (0.016) | (0.016) | (0.016) | (0.016) |
| Fixed assets ratio | | -0.236** | -0.234** | -0.219** | -0.218** |
| | | (0.102) | (0.102) | (0.102) | (0.102) |
| Exchange rate volatility | | | -3.986*** | -3.764*** | -3.727*** |
| | | | (0.606) | (0.607) | (0.608) |
| Home country risk | | | | -0.019*** | -0.019*** |
| | | | | (0.004) | (0.004) |
| Host country risk | | | | | 0.003 |
| | | | | | (0.003) |
| Political distance | | | | | |
| Host country risk * Political distance | | | | | |
| Home country risk trend | | | | | |
| Host country risk trend | | | | | |
| Controls | YES | YES | YES | YES | YES |
| Year | YES | YES | YES | YES | YES |
| Industry | YES | YES | YES | YES | YES |
| Observations | 4,412 | 4,412 | 4,412 | 4,412 | 4,412 |
| Log Likelihood | -4,932.767 | -4,661.224 | -4,660.238 | -4,653.509 | -4,657.892 |
| Akaike Inf. Crit. | 9,969.533 | 9,466.449 | 9,476.477 | 9,465.017 | 9,475.785 |
| Bayesian Inf. Crit. | 10,301.920 | 9,926.679 | 9,975.059 | 9,969.992 | 9,987.151 |

*Note:* *p<0.1; **p<0.05; ***p<0.01

Additional controls include: log of FDI capital expenditure, industry diversification, market-to-book value, log of number of employees, R&D ratio, R&D dummy, number of subsidiaries, cash ratio, host country GDP growth, log of host country GDP, consumer price index host country, host country lending rate, host country classification acc. Hoskisson et al (2013), and host country incoming FDI.

| | (6) Distance model | (7) RE Distance model | (8) Interaction model | (9) Trend model |
|---|---|---|---|---|
| Constant | 3.241*** | 3.309*** | 4.792*** | 4.581*** |
| | (0.331) | (0.328) | (0.431) | (0.443) |
| Cost of debt t-1 | 0.193*** | 0.181*** | 0.181*** | 0.181*** |
| | (0.010) | (0.010) | (0.010) | (0.010) |
| Long term debt ratio | 0.625*** | 0.601*** | 0.608*** | 0.614*** |
| | (0.122) | (0.121) | (0.120) | (0.120) |
| Equity ratio | 0.003*** | 0.003*** | 0.003*** | 0.003*** |
| | (0.001) | (0.001) | (0.001) | (0.001) |
| Int. diversification | -2.701** | -2.691** | -2.684** | -2.738** |
| | (1.228) | (1.208) | (1.204) | (1.204) |
| Company beta | -0.055 | -0.064* | -0.069** | -0.069** |
| | (0.036) | (0.035) | (0.035) | (0.035) |
| Recorded shareholders | 0.003*** | 0.003*** | 0.003*** | 0.003*** |
| | (0.001) | (0.001) | (0.001) | (0.001) |
| Recorded affiliates | -0.236*** | -0.213** | -0.215** | -0.217** |
| | (0.088) | (0.087) | (0.086) | (0.086) |
| Companies in group | 0.349*** | 0.322*** | 0.325*** | 0.326*** |
| | (0.080) | (0.079) | (0.078) | (0.078) |
| Pre-tax earnings | 4.307*** | 4.543*** | 4.486*** | 4.512*** |
| | (0.622) | (0.617) | (0.615) | (0.615) |
| EBIT ratio | -4.047*** | -4.282*** | -4.250*** | -4.277*** |
| | (0.510) | (0.507) | (0.505) | (0.505) |
| Log total assets | -0.064*** | -0.056*** | -0.056*** | -0.056*** |
| | (0.016) | (0.016) | (0.015) | (0.015) |
| Fixed assets ratio | -0.214** | -0.207** | -0.207** | -0.212** |
| | (0.102) | (0.100) | (0.100) | (0.100) |
| Exchange rate volatility | -3.660*** | -3.375*** | -3.104*** | -3.134*** |
| | (0.609) | (0.606) | (0.605) | (0.609) |
| Home country risk | -0.019*** | -0.013*** | -0.011*** | -0.008* |
| | (0.004) | (0.004) | (0.004) | (0.004) |
| Host country risk | 0.003 | 0.002 | -0.029*** | -0.027*** |
| | (0.003) | (0.003) | (0.007) | (0.007) |
| Political distance | -0.006* | -0.004 | -0.086*** | -0.083*** |
| | (0.004) | (0.005) | (0.016) | (0.017) |
| Host country risk | | | 0.002*** | 0.002*** |
| * Political distance | | | (0.0004) | (0.0004) |
| Home country risk | | | | -0.010* |
| trend | | | | (0.006) |
| Host country risk trend | | | | -0.006 |
| | | | | (0.004) |
| Controls | YES | YES | YES | YES |
| Year | YES | YES | YES | YES |
| Industry | YES | YES | YES | YES |
| Observations | 4,412 | 4,412 | 4,412 | 4,412 |
| Log Likelihood | -4,661.239 | -4,613.484 | -4,606.976 | -4,613.261 |
| Akaike Inf. Crit. | 9,484.477 | 9,392.968 | 9,381.953 | 9,398.522 |
| Bayesian Inf. Crit. | 10,002.240 | 9,923.511 | 9,918.888 | 9,948.241 |

*Note:* *p<0.1; **p<0.05; ***p<0.01

Additional controls include: log of FDI capital expenditure, industry diversification, market-to-book value, log of number of employees, R&D ratio, R&D dummy, number of subsidiaries, cash ratio, host country GDP growth, log of host country GDP, consumer price index host country, host country lending rate host country classification acc. Hoskisson et al (2013), and host country incoming FDI.