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**The effect of target countries' economic
performance on the success of cross-border
mergers and acquisitions**

A short-term study in the European Union

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Summary

- Title:** The effect of target countries' economic performance on the success of cross-border mergers and acquisitions – A short-term study in the European Union
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- Key words:** Cross-border Mergers and Acquisitions (M&As), Economic performance, Cumulative Abnormal Returns (CAR), European Union (EU), Sovereign risk rating
- Purpose:** The purpose of this thesis is to test whether cross-border M&As in high-performing target countries are more successful than in low-performing target countries with a focus on the acquirer's short-term performance.
- Methodology:** A quantitative approach is used to perform an event study and cross-sectional regression on the acquirer's returns. To analyze the impact of economic performance, target countries are divided in low and high-performing economies according to their sovereign risk rating.
- Theoretical perspectives:** The theoretical perspective starts with an introduction of cross-border M&As with a focus on the European Union and then looks closer at motives, risks and success factors of cross-border M&As. Another main theoretical focus is on the economic performance of a country. Main theories include FDI theory and Fire Sale Theory.
- Empirical foundation:** All public intra-European M&As performed by EU members as of 2007 with a transaction value of more than 100 million between the year 2008 - 2015 are empirically tested. The final sample includes 231 transactions.
- Conclusions:** The results of this research indicate that in the short-run cross-border M&As in low as well as high-performing target countries are successful. In the short-run, cross-border M&As in target countries with a low sovereign risk rating perform better than in target countries with a high sovereign risk rating.

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1. Introduction

This chapter includes thesis background, problem statement, delimitations and purpose. This chapter ends with an overall thesis outline.

1.1. Background

In the past decade, the number of mergers and acquisitions (M&As) has increased significantly in Europe with the focus being on intra-European M&As compared to domestic and transatlantic M&As. During this time, the size and geographical distribution of European M&As have become remarkable with the volume of M&As by European acquirers being similar to that of US firms for the first time (Moschieri & Campa, 2014).

Globalization is shaping today's business world and makes it more and more difficult to stay competitive in the domestic market. Competition increases, and foreign competition often exploits cost and resource advantages while consumers demand higher quality for lower prices. Through cross-border M&As, the global market becomes more concentrated and small competitors are outlasted. Compared to firms in bigger countries, European firms are too small to fully take advantage of economies of scale and therefore benefit from M&As in the times of globalization (Geroski & Vlassopoulos, 1990).

Foreign direct investment (FDI) has increased significantly in the past decade, most of these being categorized as cross-border M&As. The frequency and volume of M&As is related to the economic performance of both target and acquirer countries. High-income European countries are among the top 20 countries for cross-border M&As in terms of volume and value (Brakman, Garretsen & van Marrewijk, 2007). The amount of inward and outward FDI depends on the development of a country, as explained by the Investment Development Path (IDP) which categorizes countries in stages according to their development and ownership and local advantages. While less developed countries have more inward FDI due to cheap resources, developed countries have a high amount of both inward and outward FDI due to technological advancements and the need to expand the market in the case of saturation (Narula & Guimón, 2010). The stage of a country is influenced by common regulations and integration in the European Union (EU) as the common trade regulations facilitate FDI. Eastern European inward FDI per capita has increased significantly more than those of developed countries from 1990 to 2009 (Durán & Úbeda, 2005). EU integration has given new possibilities to foreign investors.

While multinational enterprises first improved their operations by integrating Eastern Europe in their supply chain due to significant cost advantages, later on most multinationals decided to seek economies of scope and scale in the core EU countries due to larger markets and well-developed innovation systems (Dunning 2008 cited in Durán & Úbeda, 2005).

The development and performance of the economy bring different advantages for cross-border M&As. While low-performing countries offer low cost advantages, high-performing countries tend to have better technologies and innovation systems. For firm financial performance to increase as a result of a cross-border M&A, the acquirer's managers must understand their motives and the impact of the target country's economy on the success and process of the cross-border M&A. Due to cultural and legal barriers which may not arise in domestic M&As, the management of cross-border M&As can be more difficult and raise more risks. It thus seems relevant to investigate whether M&As in high and low-performing target countries are successful and whether one group may be more successful than the other.

1.2. Problem statement

General research has found inconclusive results about the performance of cross-border M&As. While some researchers find small positive Cumulative Abnormal Returns (CAR) (e.g. Goergen & Renneboog, 2004), others find small negative effects (e.g. Danbolt 1996; Fuller, 2002) and yet others find CARs being zero (e.g. Conn et al., 2005). In order to make significant implications, research has started to take on specific perspectives to explain the inconclusive results. This thesis investigates the influence of economic performance of a target country on the success of cross-border M&As.

Research by Makaew (2010) concludes that the majority of cross-border transactions occur when both the acquirer and the target are in booming economies and not when the target's country is performing poorly. This finding contradicts the common belief that the majority of cross-border mergers occur when the target's economy is facing a recession or a financial crisis, and that acquirers take advantage of liquidity-constrained targets as they offer relatively cheap assets (Krugman, 1998; Desai, Foley, and Forbes, 2007; Acharya, Shin & Yorulmazer, 2009; Aguiar & Gopinath, 2005). There is a gap in existing literature regarding the impact of country performance on the success of cross-border M&As. Since investment decisions regarding M&As are motivated by the desire to generate future value, it is found of more interest to

evaluate the success of M&As in different performing economies than the frequency in order to give better recommendations for managers.

The success of M&A transactions can be measured as its ability to generate wealth to shareholders. The measures and research methods vary extensively between previous studies of shareholder value creation and there is even discussion about whether this type of transaction generates value for the acquiring firm's shareholders or if the value is mainly achieved by the target firm's owners. A variety of factors can influence the ability of a combination of firms to be more profitable than the individual firms that were combined. The effect of the majority of those factors will only be verified in the long-run when firms are actually operating together. Despite this, research commonly uses short-term measures to evaluate this long-run performance as other factors that may influence the long-run valuation can lead to misleading results.

In every M&A transaction there are two sides to contemplate, the acquiring firm and the target firm. The macroeconomic settings that characterize one country will be crucial in determining both the inflow and outflow of FDI, and each of the parties involved in M&As will play an important role in the ability to achieve a successful transaction.

1.3. Delimitations

The short-term focus of this study reflects the impact of cross-border M&As in the perception of investors and market participants about the value of the company. Therefore, it reflects their long-term views about the ability to create a more profitable company through an acquisition.

The economic performance of the target country is measured using the sovereign risk rating considering this gives an overall impression of the economic state of the country. To evaluate the success, the acquirers' perspective is taken by analyzing the value of the acquiring firm in the wake of the acquisition of a target. For this purpose, the original location of the acquirer is not given too much emphasis with the crucial variable being the location of the target firm and the different reactions and responses that investors give to it.

1.4. Research question

What is the effect of intra-European public cross-border M&As on short-term performance when the target is located in a country with a high sovereign risk rating vs. a country with a low sovereign risk rating?

1.5. Purpose

The purpose of this thesis is to test whether cross-border M&As in high-performing target countries are more successful than in low-performing target countries based on Makaew (2010) who has found that cross-border M&As are more likely to occur when the acquirer and target are located in booming economies. The focus is not on the volume of mergers, but on the success in the short-term. A different angle compared to existing literature is given due to the focus on success, the EU sample, the time frame around the global financial crisis of 2008 and the division of economic performance of the target country based on the sovereign risk rating. Due to the different sample and new data, this study expands existing literature and fills the gap of examining the success rather than the frequency of cross-border M&As. Next to theoretical aims, this study also has practical implications as the results can be used for managers' decision-making of cross-border M&As to make it more profitable.

1.6. Thesis outline

The rest of the paper is structured as follows. Chapter 2 provides information about existing literature and examines theories of cross-border M&As to give a foundational knowledge before investigating the research question. Chapter 3 describes the methodology used to answer the research question. This is followed by Chapter 4 which shows the empirical findings and Chapter 5 in which these findings are analyzed and discussed. Lastly, the study is concluded, and limitations and further research possibilities are discussed.

2. Theory

This chapter first introduces cross-border M&As than looks closer and intra-EU cross-border M&As which is followed by motives, risks and success factors of cross-border M&As. After this, the impact of economic performance of a country is discussed which leads to the hypotheses.

2.1. Introducing cross-border M&As

2.1.1. Definition of M&As

A merger can be defined as a business combination of two companies in which only one of them prevails and the other ceases to exist. During a merger, the buyer undertakes the assets and liabilities of the target company (Gaughan, 2007). For this combination to happen the acquirer must purchase the shares of the target company and this acquisition must be accepted by the target's board of directors who then submits it to stockholders' approval. The realization of a merger is dependent upon the proportion of the stockholders that accept the offer. According to IFRS 3, business combinations can be structured in numerous manners in order to achieve different legal, taxation or other objectives, including one entity becoming a subsidiary of another, the transference of net assets from one entity to another or the creation of a new entity. A distinction can be made between M&As with the latter being defined as a transaction where the acquiring company buys the majority stake of the target allowing it to keep its name and separate legal structure. For the purpose of this research both transactions will be treated equally, and the term M&A will be used for it.

This research focuses on cross-border M&As, a type of merger in which the transaction is done between organizations in different countries. A cross-border M&A may enable the buyer to benefit from the country-specific already existing know-how of the target, human resources, distribution network and client portfolio (Gaughan, 2007). Cross-border acquisitions performed to enter a new geographic market are subject to slight to moderate integration changes due to a low level of consolidation, moderate level of standardization and high level of coordination (Schweiger & Very, 2003). One of the dominant issues in a cross-border acquisition regards the potential resignation of key employees with specific-country know-how. The usage of a cross-border M&A as a way of entering into a new country is often influenced by firm-level factors, industry-level factors and country-level factors (Shimizu et al., 2004).

Mergers can be further distinguished between horizontal, vertical and conglomerate types. A horizontal M&A occurs whenever two competing companies in the same line of business combine. M&As between two firms with buyer-seller, client-supplier or value chain linkages are referred to as vertical M&As. Conglomerate M&As are defined as mergers between companies in unrelated businesses (Buckley & Ghauri, 2002).

2.1.2. Summary of literature

Previous research has examined literature of cross-border M&As on a detailed level, for example Neergard and Waldstrøm (2007) conducted a literature review including 66 articles. As this thesis includes this summarized study, no further details are examined regarding general theory. Instead, the focus is on literature which is particularly relevant for the research question. Table 1 (Appendix A) summarizes the articles that are evaluated.

The first perspective concerns general theory and findings of cross-border mergers. The article of Makaew (2010) is used as a starting point of interest for the research question examined in this thesis. Makaew (2010) creates a dynamic model of cross-border M&As by measuring the aggregate volume and aggregate frequency of M&A activities. His findings show that cross-border mergers waves are highly correlated with business cycles and more mergers occur when both, the acquirer and the target, are operating in countries with booming economies. Shimizu et al. (2004) find that transaction cost economies and agency theory are most commonly used to explain the value creation perspective. They suggest these theories may be of special importance in individualistic countries as these are more likely to take opportunistic actions than collective-oriented countries.

The second perspective of the literature review examines determinants of success of cross-border M&As. Neergard and Waldstrøm (2007) showed that most problems with cultural differences occur in the post-acquisition phase which means that these issues are not taken into account when evaluating short-term success. According to them, the most influential factors of successful cross-border M&As are national culture, organizational culture and communication. Erel, Liao and Weisbach (2012) further research determinants of the volume of cross-border M&As. Their most important findings indicate that geographical location, quality of accounting disclosure and bilateral trade increase the probability of a merger occurring between two different countries. In relation to economic performance of a country, Erel, Liao and Weisbach (2012) find that companies in countries whose stock market value has increased are most likely purchasers while companies from countries with low stock market value tend to be targets.

Epstein (2005) finds six determinants of M&A success: strategic vision and fit, deal structure, due diligence, pre-merger planning, post-merger integration and external factors. However, he does not distinguish between domestic and cross-border M&As.

The third perspective concerns the wealth effects of cross-border M&As. Previous research found inconclusive results. While some researchers find small positive CARs (e.g. Goergen & Renneboog, 2004), others find small negative effects (e.g. Danbolt 1996; Fuller, 2002) and yet others find CARs being zero (e.g. Conn et al., 2005). Goergen and Renneboog (2004) examine shareholder wealth effects of domestic and cross-border mergers with a focus on Europe. Their findings indicate that higher premiums are paid for cross-border M&As than for domestic ones while domestic M&As lead to higher wealth effects than cross-border ones. Gugler et al. (2001) study the effects on profit and sales of mergers using a global sample. However, no significant differences between domestic and cross-border M&As are found. Conn et al. (2005) study the long and short-run impacts on UK acquirers distinguishing domestic versus cross-border and public versus private M&As. Domestic public targets are found to have negative abnormal returns (AR) in the short and long-run, while cross-border public targets have zero ARs in the short-run and negative ones in the long-run. Cross-border M&As generally result in lower announcement period and post-acquisition returns than domestic M&As. National culture differences have a negative impact on long-run returns. Fuller et al. (2002) find that shareholders gain when purchasing a private or subsidiary firm but lose when it is public. Moreover, return increases with target size and stock payment. From the third theme of articles, it can be confirmed that short and long-term success differ significantly for M&As. Further, it is important to control for public and private firms, as results differ.

2.2. Intra-EU cross-border M&As

Considering that the sample of this research is located in a region with unique trade agreements and regulations it is necessary to recognize the characteristics of the EU that may have implications on the performance of M&As. The EU consists of 28 countries that operate as single market and represent a significant world trading power. With a GDP of 14 600 billion Euro in 2015, the EU's economy is ahead of that of the United States. Despite the fact that the EU population only represents around 7% of the world's population, its trade makes up approximately 20% of the world's imports and exports. More than half of the total trade of the EU is intra-European. Trade is facilitated by the EU's promotion of efficient and secure infrastructure. (European Union, 2018).

Regarding recent M&As activity in Europe, the frequency has increased significantly with the size and geographical distribution of European M&As becoming remarkable (Moschieri & Campa, 2014). Moschieri and Campa (2014) find that in contrast to US deals, European M&As are mostly private transactions and typically done through friendly takeovers. Moreover, their analysis indicates that foreign deals of the EU have increased significantly between 2001 and 2007 with around 400 transactions per year. Intra-European M&As have increased significantly compared to domestic and transatlantic M&As. Geroski and Vlassopoulos (1990) add that European firms are too small to fully exploit economies of scale and therefore M&As are a way to gain competitive advantage in the world market. Moschieri and Campa (2014) further observe that most European M&A deals are paid by cash and common acquisition techniques are public tender offers and private deals. They conclude that the European M&A market is leading towards industry consolidation and that European targets are becoming more attractive over time to acquirers from outside the EU.

The EU has facilitated trade through the existence of a common currency. The introduction of the Euro has decreased transaction costs for cross-border M&As and those transaction costs associated with currency volatility and common EU regulations have decreased national barriers. Moreover, the EU has implemented a 'Takeover Bids Directive' (Directive 2004/25/EC of the European Parliament and of the Council) in 2004 which coordinates EU member states and regulates the market in relation to takeover bids. This directive also includes regulations for shareholder protection throughout the EU which firms must comply with. Still, golden shares and various regulatory and antitrust provisions can be used as a way for national governments to have control over who owns some large companies before approving significant M&A deals (Campa & Hernando, 2004).

Even though the EU member states share certain regulations and are thus more alike than other countries, differences such as legal, normative and political issues, still exist which can be obstacles for the cross-border M&A market (Moschieri & Campa, 2014). This implies that even though the EU is an integrated area, local differences still arise and can have a significant impact on M&A deals.

2.3. Motives of cross-border M&As

Decisions regarding a company growth must be carefully planned and executed in order to generate future value. Growth can be achieved through organic growth or acquisitions with the

latter representing a much more rapid process (Gaughan, 2007). In previous literature, a large number of reasons are used to motivate the companies' engagement in acquisitions transactions, however not all of them translate in an increase of shareholders wealth. In this section, the following motives are discussed: Synergies, Fire sale theory, Macroeconomic environment, Agency theory, Hubris theory.

2.3.1. Synergies

According to the efficiency theory, M&As are planned and executed as a way to achieve synergies (Trautwein, 1990). In the context of M&As, synergies can be described as the ability of a business combination to become more profitable than the sum of the individual companies. Synergies can be divided into cost, revenue, market power, and intangible synergies (Schweiger & Very, 2003). Revenue synergies are usually aimed for but harder to achieve than cost synergies. Market power synergies are associated with an increase in gross margins since the company is able to further increase the prices without a loss in demand. Intangible synergies consist of the ability to make use of brand name extension or specific know-how, either from the industry, product or country. Intangible synergies, revenue synergies and cost synergies related to country specific characteristics and know-how are of particular relevance for the success of cross-border M&As.

2.3.2. Fire sale theory

One motive justifying cross-border M&As is related to the existence of cheap assets. During a period of low country performance, a firm situated in that country may see itself financially distressed, thus being compelled to sell assets at a high discount considering its reduced bargaining power (Ang & Mauck, 2010). According to Krugman's (2000) fire sale theory, if domestic companies are more efficient at managing their own projects and the financial distress is caused by external factors such as country recession, then the compelled cross-border sale of assets generates inefficiency. Contrarily, the cross-border sale of assets is positive if domestic firms have access to cheap financing at riskless interest rates and the creditors are not efficient in monitoring the quality of the investment projects, thus leading to domestic investment in inefficient projects with low expected returns.

2.3.3. Macroeconomic environment

Productivity, demand and business environment can also drive cross-border M&As since Makaew (2010) found evidence that firms perform cross-border transactions when the acquirer's country demand is stronger, the productivity is higher, and the business environment is good in order to gain access to new investment opportunities. The target country's size and economic growth can also be considered a motive for the cross-border transactions and acquirer choice of the target location (Neto, Brandão & Cerqueira, 2008). On the other hand, low-performing countries are commonly associated with a low-cost location and acquiring firms can seek targets in such locations in order to reduce their costs and increase their profits (Lebedev et al., 2015).

2.3.4. Agency theory

The agency theory motive for pursuing M&As is based on the principal-agent theory that regards the difference in interests between principals (shareholders) and agents (managers). The central idea is that M&As result in the extraction of value from the acquirers' shareholders by acquirer management (Berkovitch & Narayanan, 1993). Agency theory suggests that some transactions are motivated by the self-interest of the acquirer management to achieve different purposes such as maximizing the size of the firm due to the correlation between firm size and compensation (Odgen et al., 2003). The more severe the agency problem, the higher the target gain and subsequently the acquirers' loss (Berkovitch & Narayanan, 1993). Cross-border M&As are often associated with agency problems due to the existence of high information asymmetry as communication is more difficult between different countries and cultures with this issue becoming further problematic the greater the distance between the two countries (Brooks & Jongwanich, 2011).

2.3.5. Hubris theory

According to the Oxford Dictionary (n.d.), hubris can be defined as excessive pride or self-confidence. In the financial context, hubris theory is dependent upon the assumption that management makes mistakes while evaluating potential targets. Research by Roll (1986) found that on average acquirers pay excessive prices for the targets and the observed acquisition premiums are higher than the actual increase in economic value of the combined company. Hubris theory suggests during the acquisition process, the target's value should increase, and

the value of the acquirer should decrease as shareholders oppose the deal. The joined value of the target and the acquirer should marginally fall, and management's overconfidence or overestimation may lead to opposite results (Roll, 1986). This overestimation of expected synergies can be responsible for loss of acquirers' shareholders value. This overconfidence can be a severe problem especially in cross-border M&As as it may be harder to detect due to the high information asymmetry.

2.3.6. Other motives for cross-border M&As

Besides the above-mentioned motives, Brooks and Jongwanich (2011) explain five key reasons to invest abroad. First, companies can use a cross-border M&A to access strategic natural resources which are not available in their home country. Some resource-rich countries are therefore more likely to attract foreign companies than others. Second, cross-border M&As can be used to gain market access or expand the market. Other countries may have a bigger market size and therefore firms can merge in foreign countries to explore new markets, but also to expand the current one when the domestic market size is limited. However, this may be affected by trade barriers or problems of linking international customers in targeted markets. Third, a cross-border merger can be motivated by efficiency enhancement. Efficiency can be increased for example through lower labor costs or a cheaper real exchange rate. This increases the production efficiency, but also the international competitiveness of the acquirer. Fourth, another motive of cross-border M&As is to acquire or augment specific assets. To maintain or improve the competitive advantage, a firm can acquire proprietary assets of another firm through M&As. In this case, it often happens that the acquirer lacks an ownership advantage outside of its domestic market and therefore needs to acquire a foreign firm. Lastly, financial development of the acquirer's country can play an important role when investing overseas. Financial deep markets are crucial in helping companies to invest overseas to provide funds.

2.4. Risks of cross-border M&As

While the motives of cross-border M&As show clear benefits for the acquirers, cross-border merging also bears significant risks and costs. The European Commission (2005) divides potential risks into three sub-categories. Execution risks are hurdles which may affect the outcome of a bid or even block a deal. One-off costs are costs which occur due to the merger between different countries; they would not appear if it would be a domestic merger. Third, ongoing costs are those costs which exist due to management of the merged companies which

would not exist if the merger would be domestic. The European Commission (2005) further groups the risks into five categories: legal obstacles, tax obstacles, consequences of regulatory requirements, economic obstacles and attitudinal obstacles.

First, legal obstacles appear due to the companies involved being subject to different local rules and requirements. Legal requirements can also restrict the type of offer and lead to ongoing costs due to employment legislation and data protection. Tax obstacles can lead to further risks and costs of cross-border M&As. There is an uncertainty on tax arrangements as taxation is dealt with on a national level, leading to uncertainty of tax impact on cross-border M&As. Moreover, transfer pricing becomes complex when operating in multiple countries. Third, risks due to regulatory requirements exist because of uncertainty and imperfections of regulations in cross-border mergers. The supervisory approval process becomes more complex in cross-border M&As due to more stages of and thus needs more time, leading to higher costs. A lack of transparency while using multiple reporting requirements leads to additional administration costs. Fourth, economic barriers bear additional risks for cross-border M&As. Higher transaction costs may exist due to the division of the European equity markets. Synergies may be limited in cross-border M&As as there are some fixed costs which cannot be spread across countries and some parts of the business may still need to be adapted to the local environment, e.g. customer service due to language barriers. Lastly, attitudinal barriers may appear in cross-border mergers. These include political intervention which may block a cross-border merger, but also employee reluctance as they may not accept being managed by an acquirer from another country. Ongoing costs could also exist, if consumers of the target country do not trust a company from abroad, leading to a significant disadvantage for foreign companies over local firms (European Commission, 2005). Whenever the target is located in a low-performing country the uncertainty, transaction costs and risks are generally higher.

Overall, motives and potential risks need to be examined well before conducting a cross-border M&A. Significant advantages and disadvantages can affect the merger and therefore firms need to assess in their own situation whether the motive of the merger is achievable and outweighs the risks.

2.5. Success factors of M&As

Research has found many possible determinants that can affect the success of cross-border M&As and the success of M&As in general terms. As the emphasis of this paper is on the effect of economic performance of a country on the success of M&As, the below mentioned determinants are only shortly discussed and integrated in the regression as control variables.

2.5.1. Overall M&A success factors

Industry

An industry consists of firms that produce or deliver a certain type of product or service. Industries can be classified according to the Standard Industrial Classification (SIC) code which was developed in the US and is commonly used by governments to classify an industry using a four-digit code. The degree to which the industries of the target and bidder are related can have an impact on the success of the M&A. Conn et al. (2005) emphasizes that previous research has shown that related industry mergers have a positive impact on acquirer performance (e.g. Mitchell & Stafford, 2000; Cosh & Guest, 2001; Fuller et al., 2002; and Megginson et al., 2004). Fuller et al. (2002) show that in some industries, it is much more common to bid in their own industry than in others, e.g. in the candy and soda or petroleum industry.

Hostile and Friendly Takeover

The acquisition method refers to whether the takeover has been hostile or friendly. Schnitzer (1996) defines a hostile takeover as a tender offer by the acquirer which is made directly to the target's shareholders. A friendly takeover, in turn, is approved by shareholders and management of the target. A merger is considered the friendliest acquisition method as both firms are joined together instead of one firm solely taking over another. A hostile takeover is very expensive as it includes high costs for lawyers, defenses, such as poison pills, and a high premium to shareholders. According to Schnitzer (1996), the choice of hostile or friendly takeovers is highly affected by the information asymmetry between acquirer and target. This information asymmetry is especially influential in friendly takeovers when the manager has inside information. Schnitzer (1996) shows that the higher the uncertainty about the outcome of the performance of the M&A, the higher the likelihood that the takeover will be hostile. In comparison, Conn et al. (2005) show in their study about cross-border mergers that hostile

takeovers perform better than friendly ones; however, it must be acknowledged that hostile takeovers only make up 10 % of their sample.

Method of Payment

M&As can be paid in various ways, including cash, security or stock payment and leveraged buy-outs.

The method of payment is correlated with the outcomes of M&As for targets and acquirers. Cash payments are associated with higher Abnormal Returns (AR) for the target's shareholders, while acquirer's shareholders show a negative relationship with stock returns and normal return in cash transactions (Blackburn, Dark & Hanson, 1997). Home country bias in stock payments can lead to higher trading costs, lower liquidity, exchange risk and limited access to firm information for cross-border M&As (Faccio & Masulis, 2005). Due to these high costs and high risk, stock payment is one of the most expensive ways of financing a M&A.

Relative size

The relative size of the M&A deal is defined as the transaction value divided by the market value of the acquiring firm (Conn et al., 2005). While Conn et al. (2005) find that non-cash M&As increase the relative size of the target for private M&As, the opposite is found for other groups; a larger relative size deteriorates the effect on announcement period and long-run returns.

2.5.2. Cross-border M&A success factors

Exchange rate

Cross-border mergers are affected by exchange rate issues when located in countries with different local currencies. The exchange rate is defined by the rate at which one currency can be exchanged for the other and can be seen as the value of a country's currency. As the focus of this thesis is on the EU, most of the deals are not affected by exchange rate issues, nevertheless the different values of currency deals such as Pound Sterling or Swedish Krona are compared to Euro.

Froot and Stein (1991) examine exchange rates and FDIs and find that a country will engage in more cross-border M&As when their exchange rate is strong due to a comparative advantage over local acquirers. They further confirm that a depreciated currency can give foreigners an advantage in buying control of productive corporate assets.

Trade differences

Trade differences appear in cross-border M&As due to different laws, restrictions and norms. Trade differences can be measured through the Index of Economic Freedom. Economic freedom is often associated with high economic growth (Haan & Sturm, 2000). However, there has been a strong debate in this field, as socialists believe that socialism and import-substitution models of development will increase economic growth, while others believe that economic growth is associated with state control (Haan & Sturm, 2000). Various definitions of economic freedom are stated by researchers. Gwartney and Lawson (2003) state that economic freedom is in place when individuals acquire property without fraud and this is protected from physical invasions by others and the individuals have the right to exchange, use or give the property away. Another well-known definition is stated by Wright (1982 cited in Haan & Sturm, 2000) who associates economic freedom with the extent to which individuals can deliberately perform economic activities of their choice individually and collectively, irrespective of the political structure.

The Index of Economic Freedom is measured by the Heritage Foundation/Wall Street Journal. It is a combination of several attributes, namely international trade, international capital flows, black market, government intervention, monetary policy and inflation, banking, price controls and regulation and market entry and lastly property rights. The index is based on a survey with various questions, followed by ratings given to each dimension; every dimension receives equal weight in the index (Haan & Sturm, 2000).

Cultural differences

Hofstede (1984) defines culture as the shared programming of the mind which differentiates the individuals of one society from another. Cross-border M&As are subject to the issue of dealing with cultural differences as the acquirer and target firm are in different countries. In the case of this thesis, it can be seen that although the whole population is made of European countries there are still significant differences among cultures. This can have a significant impact on the M&A process, especially considering the integration process which may take longer due to cultural distance leading to a time lag in M&A success.

Cultural difference is commonly measured according to the four original dimensions of Hofstede (1984): Individualism vs. Collectivism, Power distance, Uncertainty avoidance and Masculinity vs. Femininity. Individualism and Collectivism refers to the degree of interdependence between individuals, where individualism stands for a society in which

individuals take care of themselves, while collectivism refers to a culture where individuals rely on other people around them. Power distance is defined as the degree to which people in a society accept an unequal distribution of power in institutions which in turn affects the amount of power of the members of society. Uncertainty avoidance refers to the extent to which individuals within a society are uncomfortable with uncertainty. A high uncertainty avoidance implies that individuals who do not stick to rules are not accepted by society. Lastly, Masculinity is evident when members of a society prefer material success and success is defined by achievement. Femininity on the other hand refers to a society that cares for the weak and values life quality. (Hofstede, 1984)

Geographical distance

Geographical distance of a cross-border M&A is defined as the air distance between the capital of the acquirer and target country. Previous research has found that the further the distance between the acquirer and target country, the more difficult it is to conduct and supervise the merger (Brooks & Jongwanich, 2011). Barriers to enter the target country become higher, the larger the distance. Moreover, investment costs are expected to increase the further the geographical distance due to higher information asymmetry issues (Giovanni, 2005 cited in Brooks & Jongwanich, 2011).

2.6. Economic performance of a country

The economic performance of a country is defined as the total economic activity of a country and can play an important role for M&As, considering both the target and the acquirer country's economic state.

Foreign investment and the state of the economy a company operates in are directly related as the country's economic development is reliant on the net outward situation which equals the difference between inward and outward FDI (Trufin, 2011). Dunning (1981 cited in Brooks & Jongwanich, 2011) created an IDP model which shows a positive correlation between a country's development of its income level and its investment profile. This can be associated with the relation between cross-border mergers and the economic performance of a country. The paradigm illustrates the stage of the economic state of a country and relates it to the amount of inward, outward and net outward FDI. The IDP, as illustrated in figure 1, shows five different stages and relates these to ownership advantages of domestic companies and multinational enterprises and location advantages of countries (Narula & Guimón, 2010). First, in- and

outward FDIs are very small due to few ownership and location advantages as limited domestic markets are combined. In the second stage, inward FDI grows due to location advantages which makes the countries more interesting to multinational countries. This stage refers to less developed countries with a good infrastructure and weak local competition as ownership advantages of domestic companies however remain weak in this stage. These countries represent low-performing countries with more inward than outward FDI. The outward FDI increases in the third stage because local firms become more competitive to foreign companies. During the fourth stage, outward FDI becomes positive after a phase of continuous growth. In the last stage where countries are most developed, the net outward investment position (NOI) fluctuates around zero, but in practice are often significantly positive or negative (Narula & Guimón, 2010). The fourth and fifth stage represent high-performing countries. Inward FDI is high as foreign companies seek for new markets, efficiency and asset augmentation. Brooks and Jongwanich (2011) conclude that a well-developed macroeconomic environment, considering monetary, fiscal and exchange rate policies, can reduce risks for foreign investments and therefore has a positive effect on FDI streams. Boudier-Bensebaa (2004 cited in Trufin 2011) applies the IDP in Central and Eastern Europe and finds that the strongest performing Eastern European countries, consisting of Czech Republic, Estonia, Slovenia, Hungary, Slovakia, Poland, Latvia, Lithuania and Croatia, are placed in stage 2 of the IDP while other EU countries are mostly placed in stage 4. This is consistent with the assumption that low-performing countries are placed in stage 2 and high-performing ones in stage 4 and 5.

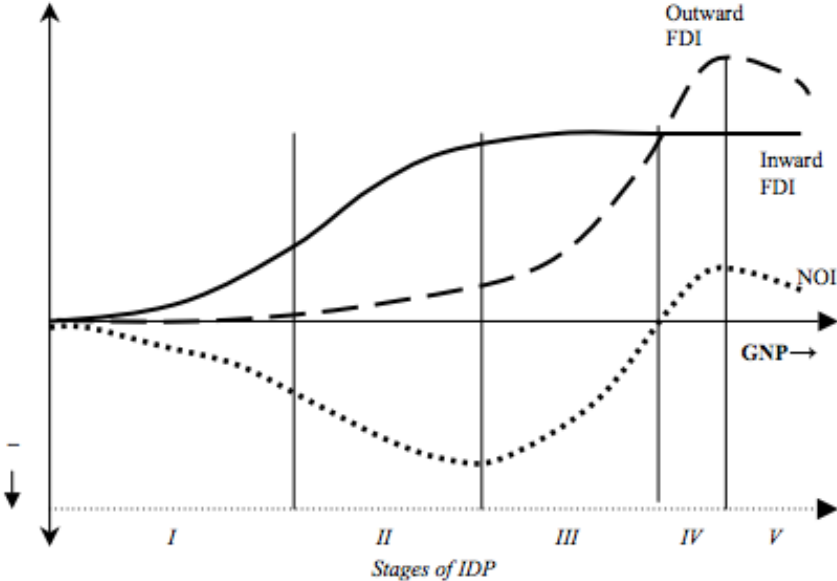


Figure 1: Stages of IDP (Source: Narula & Dunning, 2010)

Following the risks of cross-border M&As mentioned in section 2.4. and Dunning's (1981) IDP model, it can be implied that an assessment of the macro environment is necessary before conducting a cross-border merger in order to assess the success of a merger.

Overall, it can be concluded that the economic performance of a country and the amount of cross-border M&As are correlated. Moreover, there is also a relation between the economic state of the merger and the target economy.

2.6.1. Measures of country economic performance

Economic performance can be measured in different ways. In this section, sovereign risk rating, gross domestic product (GDP), GDP growth, purchasing power, investment level, unemployment and sovereign risk rating are considered.

GDP is a monetary value which is measured by subtracting imports from expenditure on final goods and services (OECD, 2018). GDP data is easily accessible from OECD and long-term forecasts can also be retrieved, so that it is possible to forecast the economic performance of a target country when considering a cross-border merger. GDP per capita makes comparisons between countries possible, as this indicates the GDP divided by the population of the country. However, this measure leads to countries with low population having a very high GDP per capita and can thus become an inaccurate measure for the purpose of a country comparison. GDP should therefore only be seen as a relative measure compared to other factors instead of being an absolute measure of economic performance. A possible relative measure is the GDP growth rate. This relative measure can be compared between countries. However, this measures the economic growth and thus does not imply anything about the initial economic state. It is thus not possible to see whether the country is high- or low-performing by this measure alone, but it considers how the country's economy is developing over time. Another way to measure GDP is at purchasing power parity (PPP). This compares a range of goods' prices in different countries and compares how much of a product can be purchased with a dollar of the local currency. PPP makes it easier to compare GDP between countries as different currencies are then comparable. Still the PPP is a not an accurate measure by itself considering it does not account for the size of the economy and so it does not allow for a correct comparison between two different countries.

Another type of measure for economic performance is the investment level of a country. Investment refers to capital expenditures. The level of investment is measured as percentage of

GDP and can be computed by subtracting personal and government expenditures as well as net exports from GDP. As investment is a function of aggregate demand, an increase in investment will lead to an increase in aggregate demand and therefore boost short-term economic performance as capital increases which simultaneously increases productivity (Greenlaw & Taylor, 2014). If capacity is available, an increase in aggregate demand and investment will lead to economic growth, but if the economy is at full capacity, the increase will lead to inflation. However, it must be acknowledged that investment is not the only factor which affects aggregate demand, consumer spending also contributes to it. Therefore, investment level should not be used as a single measure. To be accurate, it would need a composite measure together with other factors, such as GDP or GDP growth.

Unemployment is also considered to be a potential measure for economic performance. The unemployment rate is defined as the percentage of unemployed workers in the total work force. Okun's Law states that if the unemployment rate increases by 1%, then the real GDP will decrease by 2%. This relationship is existent as output depends on the amount of work used. Okun's Law thus indicates a straight relation between economic growth and employment. However, research has shown that Okun's Law varies over time and is affected by economic climates. Therefore, the exact correlation coefficients may not exactly hold at all times. Yet, it does confirm the relation between economic growth and unemployment and thus shows that unemployment is a useful measure for economic performance of a country.

One measure that includes a weighted assessment of the previous indicators is the country sovereign risk rating as measured by S&P Global, consisting of economic measures, financial figures, fiscal and debt parameters, balance-of-payments data, and external balance sheet information (S&P, 2017). The economic performance of a country is strongly related to the sovereign risk rating. Overall ratings based on these measures vary from D, being the worst, to AAA, being the best possible rating. Chen et al. (2015) find that economic growth is strongly linked to a change in sovereign risk rating and a change can affect economic growth via changes in interest-rate and capital-flow. Thus, the sovereign risk rating can influence economic activity and indicate changes in the overall economic performance of a country. As sovereign risk ratings are available globally, countries can easily be compared to evaluate the economic state. According to Reinhart (2002), sovereign risk ratings serve as a summary measure of a country's probability of default with the lower rating countries presenting more difficulty to borrow from the international capital market and also influencing the ability of those countries' private sector to borrow from international sources. Based on this and considering that sovereign risk ratings

include a conglomerate of performance measures, it is concluded that it represents a more exhaustive and complete approach to the analysis of country performance. Even though unemployment is concluded to be a useful measure of economic performance, it is also included in the composite measure of the sovereign risk rating and therefore will not be included separately.

It has to be acknowledged that the above-mentioned measures are not comparable in absolute terms. Comparisons may not be accurate at times when considering low- and high-performing countries and lead to biases, e.g. countries with emerging economies in comparison to EU members will always be low-performing when working with absolute measures, but within the range of emerging countries two countries that are due to comparison to Europe classified as low-performing, may perform very differently. In that case relative measures are needed. However, in this thesis the focus is on EU members with all economies being developed, thus a comparison is possible.

2.7. Hypotheses

In this thesis, the study of Makaew (2010) is further tested. Makaew (2010) found that M&As are more frequent when both countries are in a booming economy. This is further examined by conducting an event study on cross-border acquisitions inside the EU in low and high-performing countries. The focus is not on the volume of mergers, but on the success in the short-term. This adds to previous literature by bringing together research about cross-border M&As, determinants of success and the impact of cross-border M&As.

The focus is on the short-run stock price performance which is measured by the cumulative abnormal return (CAR) which will be further explained in Chapter 4. The higher the CAR, the more successful is the M&A. Even though most research has found negative or zero CAR in the short-term, a positive CAR is expected due to recently increasing globalization and common EU regulations reflected in this sample. First, the success of cross-border M&As in low and high-performing target countries is tested. Then the success of the two is compared to investigate what is more successful.

Makaew (2010) finds that the strong demand, high productivity and a good business environment of booming economies as well as new opportunities to enter a market are a common motive to perform a M&A. Based on this, it is tested whether M&As in high-performing target countries lead to a positive short-term success:

H1: Cross-border M&As in high-performing target countries lead to a positive CAR.

Next, short-term success is tested for M&As in low-performing target countries. The following hypothesis is based on the fire sale theory which states that M&As in economies in recession are successful due to the possibility of acquiring cheap, undervalued assets.

H2: Cross-border M&As in low-performing target countries lead to a positive CAR.

The last hypothesis extends Makaew's (2010) results who found that M&As occur more often, when the acquirer and the target are located in booming economies. Therefore, it is tested whether this finding implies that M&As in high-performing countries are more successful. Thus, the third hypothesis is as follows:

H3: Cross-border M&As in high-performing target countries lead to a higher CAR than in low-performing target countries.

3. Method

This chapter starts with an outline of the research strategy which is followed by the data collection method and description of variables that are latter used in the regression. After this the event study methodology is explained step by step which leads to the regression. Statistical tests are then described and finally the reliability and validity of the model are discussed.

3.1. Theory and research strategy

This research follows a quantitatively deductive approach with the hypotheses being generated from the existing theory of Makaew (2010) and extends his research by focusing on the short-term success instead of the volume of M&As. The acquirer's perspective is taken by analyzing the short-term cross-border M&A performance through the value of the acquiring firm in the wake of the acquisition. The research strategy includes quantitative data which will be empirically tested through an event study using a European sample of the years 2008 - 2015. To gain a general understanding, past literature is reviewed using Google Scholar with the key search terms being: Cross-border M&A, success of cross-border M&A, M&A trends and event study methodology.

3.2. Data Collection and Description of Variables

The M&A transactions included in the sample are collected from S&P Capital IQ and this information is deemed to be reliable with S&P Global Market Intelligence being awarded the *Best Research Provider* as of 2017 by the Inside Market Data Awards/Inside Reference Data Awards. The benchmark return given by the equal-weighted market index, the stock prices and market value of the acquirer firm are collected from Thomson Reuters Datastream. Exchange rates are downloaded from Bank of Portugal. To measure the impact of trade differences, the Index of Economic Freedom of the World is retrieved from the Heritage Foundation. The composite index based on Hofstede's (1991) numerical classifications of four national cultural dimensions is obtained from Hofstede Insights. The geographic distance between capitals is attained through Google Maps.

3.2.1. Selection Criteria

Since the goal is to study transactions within EU economies, the buyer and target country were limited to the EU members as of 2007. The entrance of new member states and data availability were crucial in defining the sample years. The years of the sample included in this research were selected based on the fact that from 2005 all EU companies were forced to follow the same accounting standards, therefore increasing the comparability of data. As the accounting standards apply to public firms and to ensure data availability, only public companies are selected. It was also considered relevant to use more recent data since the majority of the existing literature on this topic includes pre-2008 financial crisis samples. In line with previous literature (eg. Goergen & Ronneboog, 2004) only transactions with value greater than 100 million Euro are selected. Transactions that presented all the needed data with the following requirements available in S&P Capital IQ were considered in the sample:

- **Transaction type:** Merger/Acquisition;
- **Transaction status:** Closed;
- **Geographic Locations of Target/Issuer:** Ireland, United Kingdom, Italy, Belgium, France, Germany, Luxembourg, Netherlands, Portugal, Spain, Bulgaria, Romania, Slovenia, Estonia, Latvia, Lithuania, Austria, Czech Republic, Hungary, Poland, Slovakia, Sweden, Denmark, Finland, Greece, Cyprus and Malta;
- **Geographic Locations of Acquirer/Buyer:** Ireland, United Kingdom, Italy, Belgium, France, Germany, Luxembourg, Netherlands, Portugal, Spain, Bulgaria, Romania, Slovenia, Estonia, Latvia, Lithuania, Austria, Czech Republic, Hungary, Poland, Slovakia, Sweden, Denmark, Finland, Greece, Cyprus and Malta;
- **Company Type:** Public;
- **Total transaction value:** Greater than 100 million Euro
- **Announcement Date:** 01/01/2008 – 31/12/2015.

With the above-mentioned criteria, this research ends up with a sample of 231 transactions.

3.2.2. Dependent variable: CAR - Performance of Cross-border M&As

Performance can be evaluated in non-financial and financial terms. Non-financial measures have been employed to align business activities and performance with strategic goals. In this thesis, the focus is on financial performance which refers to how well a company uses its assets to generate revenues. Financial performance can be measured using accounting or market measures; the selection of measures depends on the type of stakeholder as they have different interests in the firm. However, the usage of accounting-based measures presents some serious disadvantages regarding the potential distortion by manipulation, different accounting methods or changes in accounting procedures over time or between firms (Wang & Moini, 2012). Appleyard (1980 cited in Danbolt, 1996) highlights that if the acquirer uses acquisition rather than merger accounting, only the proportion of the target's profits earned after the acquisition will be included in the joint accounts. At the same time, all assets would be added to the balance sheet, thus reducing reported return on assets. Considering that such factors could generate significant validity problems (Hult et al., 2008), this research will use market measures of success, assuming the existence of market efficiency through which it is established that the market capitalization reflects the full effect of these transactions.

Looking at market measures, previous literature includes different measures of performance such as buy and hold abnormal returns (BHAR) and CAR. Most of the discussion regarding the usage of BHAR instead of CAR is focused on the long-run measures of performance (e.g. Fama, 1998 who favours CAR and Lyon et al. (1999) who recommends BHAR) with the majority of previous research short-run performance being measured by CAR (e.g. Goergen & Ronneboog, 2004; Conn et al., 2005). AR is a common measure used in event studies. AR is calculated by the difference between the actual return and the expected return. The CAR can then be defined as the sum of daily AR over a certain period in an event study (Gaughan, 2007). After evaluating different accounting and market measures, it is concluded that CAR is the most useful and reliable measure of firm financial performance in the short-run and is therefore used as the dependent variable in the regression.

The returns will be measured using the stock price of the acquirer firm. The stock price entails information about realized cash flows and earnings and rapidly incorporates new information (Dechow, 1994). Assuming the existence of an efficient market, stock prices are seen as an efficient firm performance measure as they encompass all publicly available information related to a firm's expected future cash flows, the riskiness of these cash flows and the appropriate

discount rate to apply. The efficient market hypothesis by Fama (1970 cited in Ogden et al., 2003) regards the impact on the stock prices of the existing competition in the financial markets. This theory asserts that at all times the stock price reflects true value of a security. It relies on the same set of assumptions as the ideal capital market model: capital markets are frictionless, market players have homogeneous expectations, no single market participant can change the stock price of a security, capital structure of the firm is fixed, and firms capital is available and fixed (Ogden et al., 2003).

3.2.3. Explanatory Variable

Sovereign Risk Rating

To test the main hypothesis regarding the impact of the target country's economic performance on M&A success, all transactions are classified as having a target that belongs to a high-performing economy or not. This is done by matching each transaction with the target's sovereign risk rating by the end of the year of the deal in question. The information regarding the country economic performance is obtained through the sovereign risk rating given by S&P by the end of each year. The methodology for the sovereign risk rating attribution is available for public consultation reflecting the fairness and clearness of such attribution.

Sovereign risk rating represents a strong proxy for the economic performance of a country with the rating attribution including multi-level country assessment. A country's institutional assessment evaluates factors such as the behavior of its government institutions and the effects of these on the policy making decisions, the promotion of balanced economic growth, the attitude towards economic or political shocks, the promotion of transparency and accountability of data (S&P, 2017). The economic assessment includes measures such as the GDP per capita and economic volatility, growth and diversity. The external assessment includes factors such as currency analysis and the ability of that country to meet both private and public-sector obligations to external parties. The fiscal assessment reflects country features such as long-term fiscal patterns, the level of fiscal flexibility, debt position, access to funding and other potential contingent risks. The monetary assessment includes procedures such as the evaluation of the exchange rate policy, inflation trends and the level of diversification of the capital markets (S&P, 2017). Cantor and Packer (1996) argue that sovereign risk ratings accurately capture and complement the information contained in other macroeconomic indicators.

According to the rating methodology of S&P Global (2018), all countries with a sovereign rating below BBB- are regarded as having significant speculative characteristics and these are commonly called “Junk” ratings as opposed to “Investment Grade” ratings. Speculative ratings may still have some quality and protective characteristics but those may be outweighed by a large adverse condition. Considering that a country rated as BBB is considered as being potentially threatened by adverse or changing economic conditions, this may eventually weaken its capacity to meet the required financial commitments. It is assumed that these no longer represent a stable and high-performing economy. Therefore, it is defined that whenever a country presents a sovereign risk rating higher than BB it is considered a high-performing country, with A- representing the first rating of a high-performing economy. S&P Global (2018) defines the countries included in this category as the ones presenting a strong capacity to meet its financial commitments. The risk ratings are then transformed into a dummy variable having two categories. Appendix B includes the country categorization per year.

High Performing = Assigned the value 1 if the targets sovereign rating by the time of the deal is equal to or higher than A- and equal to 0 otherwise

3.2.4. Control Variables

The following control variables are based on previous literature as discussed in section 2.5.

Exchange rate = value of the exchange rate between the currency of the deal and the Euro as of the deal date

Industry = Assigned the value 1 if the first two digits of SIC code are equal and 0 otherwise.

Hostile = Assigned the value 1 if acquisition is hostile and 0 otherwise.

Method payment = Assigned the value 1 if payment is non-cash and 0 otherwise.

Relative size = Transaction value divided by market value of acquiring firm on the announcement day

Trade = Assigned the value 1 if target country average Index of Economic Freedom is higher than the average of all sample countries and 0 otherwise.

Culture = Composite cultural index of the target country subtracted by composite cultural index of the acquirer country

Geographic distance = Linear distance between the acquirer country capital and the target country capital

3.3. Event Study

Event study methodology assumes that the studied event will immediately be reflected in stock prices reflecting the market efficiency (MacKinlay, 1997). The method, based on Conn et al.'s (2005) methodology approach for measuring AR, will be described following the steps suggested by MacKinlay (1997) for an event study.

3.3.1. Event definition and event window

The first step to perform this research is to identify the period over which the security prices of the companies involved in the transaction will be examined – the event window (MacKinlay, 1997). In this research and according to Conn et al. (2005), the Brown and Warner's (1985) standard event study methodology is used to compute the CARs for the three-day period (-1,1), where -1 represents the previous day, 0 represents the announcement day and 1 the following day. The reason for including the day after and the previous day is to capture the price effects of the acquisition, which can take place after the stock market closes on the announcement day and the existence of market information prior to the announcement (MacKinlay, 1997).

3.3.2. Normal and abnormal returns

The normal return represents the stock return that is expected if no event would take place. The abnormal return is the actual verified return of a security by the end of the predefined event window deducted from the normal return of the company over the event window (MacKinlay, 1997).

Following Conn et al. (2005) methodology, the ARs of the acquiring company are estimated using the market-adjusted model with the market returns being given by the *Datastream* equal-weighted market index for the same period. The index used is the *MSCI equal weighted price index* for Europe. An equal-weighted index puts the same emphasis on small and large stocks by giving the same weight to every stock of the portfolio therefore avoiding large stock concentration (MSCI, 2018). This index serves as an approximation for market returns. The market-adjusted model assumes that the mean of a stock is constant throughout time. This implies that the best predictor of returns for a given security is the current return on the market and no information other than the one available in the defined event period is required to assess abnormal or excess returns for this period (Peterson, 1989). The usage of the market-adjusted return model does not adjust for Capital Asset Pricing Model (CAPM) risk and thus does not

include the firm's distinct systematic risk. Despite this, Brown and Warner (1985) showed that for short-window event studies weighting the market return by the firm's specific beta does not significantly improve the model estimation suggesting there is no advantage in using the market model. This also implies that the market-adjusted model does not require the definition of an estimation period for the computation of market returns which are then measured in the same time frame as the stock prices. Conn et al. (2005) further justifies the absence of systematic risk estimators by the fact that acquirers can make multiple acquisitions over the sample increasing the probability that past transactions would be included in the estimation period potentially making beta estimations meaningless.

In this market-adjusted model, the AR is given by the actual return of the firm i on day t , given by R_{it} , deducted by the observed return of the reference market on day t , given by R_{mt} :

$$AR_{it} = R_{it} - R_{mt}$$

In this model, the market returns represent the expected normal returns. The first step is then to calculate the actual returns of the stocks included in the sample by the end of the event window, for each firm i on day t , R_{it} . This is done by calculating the return for every time period included in the event window, using the last transaction price when the market closes, where P_i represents each company stock price.

$$R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}}$$

This calculation is repeated with t being the pre-event day and the day following the event day. Therefore, the stock prices from the $t-2$ until $t+1$ are also required to calculate the actual return for each day of the event period. Considering that some announcement dates fall on the weekend, stock prices cannot be retrieved on the exact date. Therefore, if the announcement day falls on the weekend, t equals the next working day, $t-1$ the first working day before t and $t+1$ the first working day after t . Whenever there are multiple acquirers, the stock price of the acquirer with the biggest stake is considered.

3.3.3. Estimation: Calculating normal return

To compute the normal returns required by the model the market return given by the *Datastream* equal-weighted market index is chosen, as referred to in section 3.3.2. The normal return for each day in the event window is given by R_{mt} , where t is the event day and is calculated as follows:

$$R_{mt} = \frac{MSCI_t - MSCI_{t-1}}{MSCI_{t-1}}$$

This calculation is repeated with t being the pre-event day and the day following the event day. Therefore, the MSCI values from the t-2 until t+1 are also required to calculate the normal return for each day of the event period.

3.3.4. Testing: Calculating abnormal returns

To infer conclusions about the impact of the target country on AR, the CAR for every period in the event window is calculated. Thus, conclusions of the impact of the event on the stock prices in the event window as a whole are drawn.

$$CAR = \sum_{t=-1}^{t=1} AR_{it}$$

The null hypothesis and the alternative hypothesis are formulated as follows:

H1₀: CAR ≤ 0 for high-performing target countries

H1₁: CAR > 0 for high-performing target countries

H2₀: CAR ≤ 0 for low-performing target countries

H2₁: CAR > 0 for low-performing target countries

H3₀: High-performing targets CAR ≤ Low-performing targets CAR: β₁ ≤ 0

H3₁: High-performing targets CAR > Low-performing targets CAR: β₁ > 0

3.3.5. Univariate analysis

As suggested by Conn et al. (2005), the t-statistics are estimated using the cross-sectional variation of AR since the traditional event study approach, in which pre-event asset returns are used to estimate variance of returns, does not contemplate the fact that the studied event can induce higher variance in the stock returns.

In order to get an overview of the sample, descriptive statistics are analyzed and compared to previous literature. To test for the existence of positive ARs individually for both high-

performing targets and low-performing targets, two univariate analysis are computed. For this purpose, a one tailed t-test is performed for two different samples, one including only high-performing target countries and the other including only low-performing target countries. In addition, a two-tailed t-test is performed to compare the two sample groups and to investigate whether their returns are significantly different from each other.

3.4. Regression

The regressions are all ran using the econometric software EViews, thus statistical computations using this data should present correct results given the referred specifications.

To test the effect on CAR for each transaction, the following cross-sectional regression analysis is performed controlling for the effect of a number of variables.

$$\text{CAR} = \alpha + \beta_1 \text{High Performing} + \beta_2 \text{Exchange rate} + \beta_3 \text{Industry} + \beta_4 \text{Hostile} + \beta_4 \text{Method payment} + \beta_5 \text{Relative size} + \beta_6 \text{Trade} + \beta_7 \text{Culture} + \beta_8 \text{Geographic distance}$$

3.5. Statistical Tests

The parameters of this regression are estimated using the ordinary least squares (OLS) method. Various statistical tests are performed on the model to make sure the assumptions for OLS hold.

Zero mean

The first assumption of the OLS model is that the average value of the error term is zero. Considering that the model includes a constant intercept, given by α , this assumption holds (Brooks, 2002).

Normality

The normality assumption of the OLS model implies that the error term follows a normal distribution function. Although non-normality can be caused by the existence of few outliers, testing for normality of the error term is crucial to determine the ability of inference about the coefficient estimates. The absence of normality may lead to the results being imprecise, less powerful and thus have less ability to identify actual variances in the data set. To test for the existence of normality in the error term, histograms are examined as well as the Jarque-Bera coefficient and p-value. The p-value presented indicates whether or not to reject the null hypothesis of normality in the model (Brooks, 2002).

Multicollinearity

An implied assumption of the OLS model is that the explanatory variables are not correlated between them. The existence of collinearity between the variables included in the model, translates into one variable being predicted from another which affects the value of the coefficients included in the model. However, in practice it is not likely that the correlations are zero and as long as they are small, this will not cause major problems (Brooks, 2002). A correlation matrix is constructed in order to test for the existence of multicollinearity between the variables.

Linear relationship

The existence of a linear relationship between the independent variable and the dependent variables is crucial for the OLS model to predict accurate and reliable coefficients and if no linear regression is verified between the variables it is required to change the variables included in this model. To test the existence of a linear relationship in the model, the Ramsey test is performed which consists of testing whether non-linear combinations of the fitted values help explain the dependent variable. If one of the new variables is statistically significant, the model is incorrectly specified (Ramsey, 1969).

Heteroskedasticity

It is required to test for heteroskedasticity to control for the OLS assumption that requires that the error term must not present any variance with respect to the independent variable. A model that presents heteroskedasticity is not optimal, as that means that all observations in the OLS are given equal weight, even though observations with larger variances hold less information than those with smaller variances. As suggested by Brooks (2002), the White test for heteroskedasticity is performed and the p-values are then examined to conclude if the null hypothesis of homoskedasticity can be rejected.

3.6. Reliability and Validity

Reliability regards the consistency of a measure regarding an event, and it is concerned with whether the results of a study are repeatable or not (Bryman & Bell, 2011). A research with a high degree of reliability generates the same results if replicated. Therefore, the methodology of this research has been described step by step in order to allow for a proper understanding and possible replication.

Validity is considered one of the most important criteria of research and is concerned with the integrity of the research inferred conclusions meaning the absence of systematic errors. Validity can be divided into internal and external validity. (Bryman and Bell, 2011)

External validity concerns the way companies are selected to participate in the research in a sense that the results of a study could be generalized beyond the specificity of the current research framework (Bryman & Bell, 2011). Event studies are commonly used for research regarding the effect of transaction on AR and furthermore MacKinlay's (1997) steps of conducting an event study are followed. The regression models and statistical tests are performed in accordance with Conn et al. (2005). The problem of endogeneity can be present in the regressions potentially representing a problem that could not be solved. Besides this, only the transactions available in Capital IQ were considered which can introduce a bias in the base of the sample. Apart from that, the external validity of the research is strong, and it is possible to replicate this research using different regions for the buyer and target country.

Internal validity concerns the issue of causality between the studied variables (Bryman & Bell, 2011). For the purpose of this thesis the question would be if one can be sure that it is the target's economic performance which is responsible for a variation in the success of M&As and not another factor that is producing an apparent causal relationship. The first step to answer this question is to analyze whether the effects of a transaction can be measured through the changes in share prices. The second step is then to generate a model that can calculate the expected changes in stock prices assuming no event would have taken place. The methods used in this research follow Conn et al. (2005) and are similar to previous studies attempting to measure the value creation for acquirers from an announcement. Endogeneity is present whenever any effect other than the one caused by the event is captured during the event window. By using a shorter event window of three days the risk of an unwanted effect is to a certain extent controlled for. Further, by having a large sample size, the impact of undesired external influence decreases. Since the sample includes 231 transactions it is considered that the internal validity is positive. Internal validity can also be jeopardized by the proxies used in the regressions for country-specific factors or company characteristics variables. The proxies used for this might result in an underestimation of the coefficient and significance of that variable.

4. Empirical results

This chapter introduces the results of the three hypotheses tested. It starts with descriptive statistics and looks closer at the dependent variable CAR and then the regression results are presented.

4.1. Descriptive statistics

Using descriptive statistics, the sample used for the analysis is presented. As illustrated in figure 2, an unequal distribution over time of the number of transactions included in the sample is present. 2012 was the year with the least amount of transactions (15) and 2015 was the year with most transactions (41) included in the sample. The sample shows that during the years following the global financial crisis of 2008, the number of M&As decreased significantly and started to increase only from 2012 with a small increase in between the years of 2009 and 2010.

In figure 3, the number of M&As are illustrated by country. The division of target and buyer shows how many outward and inward investments in terms of cross-border M&As have taken place in each country. France and the UK have made the most acquisitions, 43 and 42 respectively, while no buyers come from Estonia, Lithuania or Bulgaria. The UK and the Netherlands have been targeted by cross-border European acquirers the most, 36 and 34 times respectively, while Malta has not been targeted. This nevertheless is also influenced by the size of the economy, as Malta is very small compared to the UK and the Netherlands. In general, more acquisitions take place in Western than in Eastern Europe. This may be due to the fact that Western European economies are generally speaking stronger than Eastern European economies. This however, is to be questioned and will be investigated further as low and high-performing economies will be compared in further statistical tests.

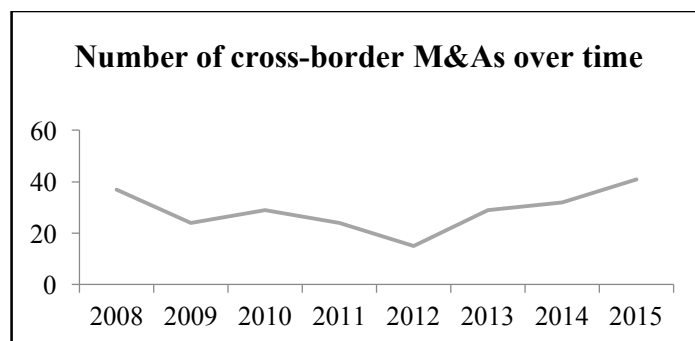


Figure 2: Number of cross-border M&As over time

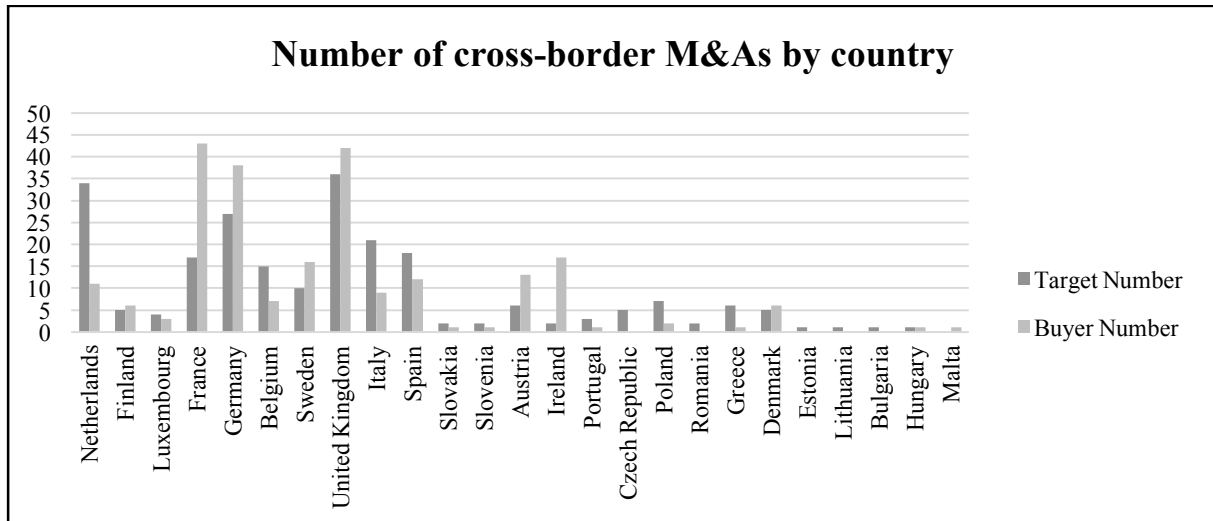


Figure 3: Number of targets and buyers per country

Table 1 below shows further descriptive statistics of the sample. In total, 231 transactions are included in the sample. As some acquirers carry out multiple M&As in a short time, the total number of acquirers is 169 which means that on average one acquirer makes 1,37 acquisitions. The most transactions made by one acquirer are 8 M&As within the time span of the sample. On average the transaction value is 1 990 million Euro. As it is investigated whether it is more successful to acquire a company in a low- or high-performing target, the sample can be divided accordingly and shows that 199 acquisitions were made in high-performing target countries, and only 32 in low-performing target countries. This may be related to the minimum transaction value and can lead to a bias in the sample, which will be further discussed in the limitations of this study (section 6.2.). 37 of the 231 acquisitions were made in Euro. More than half of the observations were M&As in the same industry, and thus are horizontal M&As. Half of the sample are cash mergers, while the others used another payment method, such as stocks. To look at trade differences, the Index of Economic Freedom of the World is used, and the sample indicates that 133 of 231 acquisitions were made in countries with an index higher than the average of the sample which indicates an economy of free and easy trade.

Table 1: Description of the sample

| Descriptive Statistics | Number | % |
|---|--------|------|
| N° of acquisitions | 231 | 100% |
| N° of acquirers | 169 | - |
| Mean N° of acquisitions by acquirer | 1,37 | - |
| Maximum N° of acquisitions by acquirer | 8 | - |
| Mean Transaction Value | 1990 | - |
| N° of transactions for high-performing targets | 199 | 86% |
| N° of transactions for low-performing targets | 32 | 14% |
| N° of acquisitions in Euro | 37 | 16% |
| N° of acquisitions within the same industry | 127 | 55% |
| N° of acquisitions different industry | 104 | 45% |
| N° of cash acquisitions | 115 | 50% |
| N° of non-cash acquisitions | 116 | 50% |
| N° of acquisitions where target country average Index of Economic Freedom higher than the average | 133 | 58% |
| N° of acquisitions where target country average Index of Economic Freedom lower than the average | 98 | 42% |

The following tables show the descriptive statistics of the independent and control variables which are not dummies. Table 2 represents the whole sample as well as the high-performing and low-performing target sample. The *variable exchange rate* is also excluded in the descriptive statistics as no conclusion can be drawn from the mean of different exchange rates. Moreover, the variable *Hostile* has been excluded and is no longer analyzed as the sample only includes friendly M&As. This is in line with previous literature that shows European M&As are mostly friendly. For the total sample the CAR is on average 1% but if only the low-performing population is considered this value is higher (2%). The CAR shows extreme values as the minimum value is -51% and the maximum value 22% with a standard deviation of 6%. The most extreme positive value regards the low-performing sample whereas the most extreme negative value regards the high-performing sample. The extreme values indicate that the sample has some outliers, therefore data is winsorized at 95%. Winsorizing data at 95% means that 2,5% of the lowest and 2,5% of the highest values are replaced with the lowest and highest value of the remaining sample data.

The geographic distance is on average 919km, with the closest distance between target and acquirer being 173km, which is only registered in the high performing sample. The furthest distance included in the sample is 2989km, representing the distance between Sweden and Portugal. The relative size is influenced by the transaction value and the market value of the acquirer at the announcement date. It is on average 40 million Euro, with values ranging from approximately 0 to 8655,56 million Euro. Lastly, the variable *culture* indicates that acquisitions are made between extremely low and extremely high culturally different countries. On average,

for the total sample there is cultural difference of 42, which indicates that the cultures between the acquirer and target countries are different, however also show many similarities as they are far from the maximum value. The mean cultural difference is slightly lower (38) if only the population of low-performing countries is included and slightly higher (43) if only the high-performing population is considered.

Table 2: Descriptive statistics for the whole sample as well as the two groups

| | CAR | Geographic | Relative Size | Culture |
|------------------------|-------|------------|---------------|---------|
| Total Sample | | | | |
| Mean | 0,01 | 920 | 40 | 42 |
| Median | 0,01 | 888 | 0,07 | 38 |
| Maximum | 0,22 | 2989 | 8656 | 157 |
| Minimum | -0,51 | 173 | 0,00 | 3 |
| Standard Deviation | 0,06 | 541 | 570 | 30 |
| N | 231 | 231 | 231 | 231 |
| High Performing | | | | |
| Mean | 0,01 | 856 | 47 | 43 |
| Median | 0,01 | 814 | 0,07 | 40 |
| Maximum | 0,20 | 2946 | 8656 | 157 |
| Minimum | -0,51 | 173 | 0,00 | 3 |
| Standard Deviation | 0,06 | 508 | 614 | 31 |
| N | 199 | 199 | 199 | 199 |
| Low Performing | | | | |
| Mean | 0,02 | 1313 | 2,28 | 38 |
| Median | 0,02 | 1177 | 0,07 | 35 |
| Maximum | 0,22 | 2989 | 56 | 99 |
| Minimum | -0,06 | 226 | 0,00 | 3,00 |
| Standard Deviation | 0,06 | 581 | 582 | 24 |
| N | 32 | 32 | 32 | 32 |

4.2. Cumulative Abnormal Returns

High-Performing

To test the first hypothesis which states that high-performing target countries lead to a positive CAR, the one-tailed t-test with a 99% confidence interval is performed on the high-performing sample data, as presented in table 3. According to the Critical values of Student's t-distribution for different probability levels, α and degrees of freedom, and considering that p equals 0.001 and n equals 199 for this sample, the t critical value is approximately 1,65. Therefore, considering that the sample t-statistic is higher than the critical value (3.1366), H_0 is rejected and it is concluded that with 99% confidence the CAR for high-performing target countries is positive.

Table 3: T-Test of CAR for high-performing economies

| Hypothesis testing CAR (high-performing) > 0 | | <i>T-statistic</i> | <i>P-value</i> |
|--|----------|--------------------|----------------|
| n | 199 | | |
| Mean | 0.009045 | | |
| Std. Deviation | 0.040678 | | |
| T-Test | | 3.1366 | 0.001* |

*, **, *** refers to 1%, 5% and 10% significance level

Low-Performing

The same procedure is utilized to test the second hypothesis which states that low-performing target countries lead to a positive CAR, as presented in table 4. According to the Critical values of Student's t-distribution for different probability levels, α and degrees of freedom, and considering that p equals 0.025 and n equals 32 for this sample, the t critical value is approximately 1,79. Therefore, there is also evidence that with 95% confidence that cross border M&As in low-performing target countries lead to a positive CAR.

Table 4: T-Test of CAR for low-performing economies

| Hypothesis testing CAR (low-performing) > 0 | | <i>T-statistic</i> | <i>P-value</i> |
|---|----------|--------------------|----------------|
| n | 32 | | |
| Mean | 0.017108 | | |
| Std. Deviation | 0.047576 | | |
| T-Test | | 2.034136 | 0.0025** |

*, **, *** refers to 1%, 5% and 10% significance level

Differences between High-Performing and Low-Performing

Lastly a two-tailed t test is conducted to examine if there is a significant difference in CAR and AR between the two samples, as presented in table 5. On average the CAR is 1,7% for low-performing target economies and 0,9% in acquisitions with high-performing target economies. For both type of target economies, the AR increases from the day before the announcement to the day of the announcement. The day after the announcement, a contrasting difference can be seen between the two economies. While M&As carried out in low-performing countries indicate a decline in AR of 0,8%, the AR of M&As in high-performing target economies increases slightly by 0,2%. However, the T-Statistics show no significant difference between high-and low-performing target countries. This may be related to the unequal sample size, as 199 high-performing and only 32 low-performing targets are included in the sample and this can lead to a sample bias. A T-Test is a univariate test, which means that only the effect of the

unique variable CAR is tested. To indicate whether the difference between low- and high-performing economies is significant, a multivariate analysis is needed. The multivariate analysis includes other variables which can also impact the CAR besides the state of the economy.

Table 5: T-Test to test for the difference of the sample groups

| | <i>Low-Performing</i> | <i>High-Performing</i> | <i>T-Statistic</i> | <i>P-Value</i> |
|----------------|-----------------------|------------------------|--------------------|----------------|
| Average CAR | 1,7% | 0,9% | 1,02 | 0,31 |
| Average AR T-1 | 0,5% | 0,0% | 1,12 | 0,26 |
| Average AR T | 1,2% | 0,2% | 1,08 | 0,28 |
| Average AR T+1 | 0,4% | 0,4% | 0,11 | 0,92 |

*, **, *** refers to 1%, 5% and 10% significance level

4.3. Regression

4.3.1. Reliability of the regression model

The results of the diagnostic tests on the final regression model, performed in order to evaluate if the assumptions of an ordinary least square (OLS) hold for the model, revealed that in general no corrections need to be performed.

Normality

The histogram presented in appendix C demonstrates a rather normal distribution confirmed by the fairly low Jarque-Bera coefficient of 2,5. The high probability value of the Jarque-Bera test, around 28%, confirms that the null hypothesis of normality cannot be rejected and therefore no corrections were performed regarding normality.

Multicollinearity

In appendix D the correlation matrix for all the variables is presented. From this table, it is possible to conclude that no pair of variables presents a significant correlation. The highest correlation present in this model is between variables that measure trade differences and high-performing, which is equal to 0,39, still not representing a high correlation level. Therefore, it is possible to assume that the model does not present multicollinearity and no corrections regarding this are required.

Linear relationship

Considering the high p-values verified for the Ramsey test, included in appendix E, it is not possible to reject the null hypothesis of having a linear relationship. Therefore, no changes were performed in the original model regarding linearity.

Heteroskedasticity

The white test for heteroskedasticity was performed and, as exhibited in appendix F, all the p-values obtained are sufficiently high so that the null hypothesis of homoskedasticity cannot be rejected.

4.3.2. Regression results

After dropping the variable *Hostile* due to no hostile M&As in the sample data, the final regression used is the following:

$$CAR_i = \alpha + \beta_1 \text{High performing} + \beta_2 \text{Exchange_rate} + \beta_3 \text{Industry} + \beta_4 \text{Method payment} + \beta_5 \text{Relative size} + \beta_6 \text{Trade} + \beta_7 \text{Culture} + \beta_8 \text{Geographic distance}$$

As presented in table 6, there is no statistical significant relationship between the variables included in the model and the CAR considering a 1% significance level. Considering a 5% significance level, the variables that measure the relative size of the acquirer and trade differences present a statistical significant relationship with the dependent variable. Despite this, the relative size of the acquirer presents a very small impact on the CAR with β_5 being approximately equal to zero. As for the existence of trade differences, according to the regression results, the fact that the target country average Index of Economic Freedom is higher than the average of the EU, increases the CAR by around 1,28%.

For a 10% significance level, the explanatory variable is considered statistical significant presenting a probability of rejecting the null hypothesis of around 8%. According to the output from the regression, the fact that a transaction involves a target located in a country that presents a sovereign rating higher or equal to “A-”, considered a high-performing country, will impact the CAR negatively by about 1,52%. All other variables included in the regression present no statistical significant relationship with the dependent variable. In line with previous research (Danbolt, 1996; Fuller et al. 2002), this lack of relationship is also reflected in the low R-squared value of 0,06, which indicates that this model is unable to explain the majority of the variability of the CAR.

Table 6: Results of the regression

| <i>Variable</i> | <i>Coefficient</i> | <i>Std. Error</i> | <i>t-Statistic</i> | <i>Probability</i> |
|-------------------------|--------------------|-------------------|--------------------|--------------------|
| C | 0.025097 | 0.011763 | 2.133558 | 0.0340** |
| High-Performing | -0.015209 | 0.008784 | -1.731408 | 0.0848*** |
| Exchange Rate | -0.000626 | 0.001050 | -0.596508 | 0.5514 |
| Culture | -0.000139 | 9.29E-05 | -1.496274 | 0.1360 |
| Industry | 0.001399 | 0.005577 | 0.250751 | 0.8022 |
| Method of Payment | 0.003733 | 0.005568 | 0.670398 | 0.5033 |
| Relative size | -1.14E-05 | 4.81E-06 | -2.373943 | 0.0185** |
| Trade | 0.012871 | 0.006179 | 2.083033 | 0.0384** |
| Geographic | -4.81E-06 | 5.32E-06 | -0.904182 | 0.3669 |
| N | 231 | | | |
| Adjusted R ² | 0.030683 | | | |
| F-Statistic | 1.910054*** | | | |

*, **, *** refers to 1%, 5% and 10% significance level

5. Analysis

The analysis starts by examining the results of the three first hypotheses. The rest of the chapter is structured as follows: economic performance, management motives, sample differences, other factors and long-term implications.

5.1. Are cross-border M&As in high-performing countries successful?

The univariate analysis supports the first hypothesis stating that M&As in high-performing target countries lead to positive CAR with a confidence interval of 99%. The mean is approximately 1%. The results are in line with Makaew (2010) who concludes that M&As in high-performing target countries are successful as they open new investment opportunities and market access. He further states that most M&As are driven by a strong demand, high productivity and good business environment of the target country. The sample data is also consistent with Makaew's (2010) findings as a significantly higher number of M&As were performed in high than in low-performing target countries. Further, the results of Junrong and Zhongfa (2010) are supported which indicate that a steady economic growth of the target country leads to an increase in the amount of cross-border M&As.

5.2. Are cross-border M&As in low-performing countries successful?

The univariate analysis also supports the second hypothesis stating that cross-border M&As in low-performing target countries lead to positive CAR with a confidence interval of 95%. The average CAR is approximately 1,7%. The descriptive statistics (table 5) show that ARs drop drastically after the announcement day but remain positive throughout the event window. The sample data is in line with Makaew's (2010) results which indicate that less M&As are carried out in economies that are suffering from recession than in booming economies. Statistics of the United Nation Conference on Trade and Development (UNCTAD) (2000) confirm this as activity of Central and Eastern European inward cross-border M&As has fluctuated significantly over the years and this region corresponds to most of the low-performing target countries of the sample of this thesis.

5.3. Are cross-border M&As in high-performing target countries more successful than in low-performing target countries?

The regression output suggests that the third hypothesis, which states that cross-border M&As in high-performing target countries lead to a higher CAR than low-performing target countries, is rejected considering that the coefficient, given by β_1 , is statistically significant at a 90% confidence level. This coefficient indicates that M&As in high-performing target countries lead to a 1,5% lower return than in low-performing target countries.

Regarding the number of cross-border M&As performed in each type of target economy, 86% of the sample represents M&As being performed in high-performing target countries. Nevertheless, the rejection of this hypothesis indicates that although M&As in high-performing target countries are more likely to occur, they produce lower ARs and are thus less successful. However, due to low statistical significance no strong conclusion can be inferred from this result and only indications for the motives of merging in different type of economies can be implied.

5.4. Importance of target country economic performance - what does it really mean?

The economic performance of a target country has an impact on the M&A success as the variable that measures the target country economic performance in the regression analysis is significant at 90% confidence level. The low confidence level indicates that even though results are significant conclusions should be drawn with caution. Despite this, factors such as the equity market, the competitive environment, resources, economic and political stability are discussed as it is believed that those affect the economic performance of a country and thus seem to have an impact on the success of M&As.

Considering the short-term effect of cross-border M&As, it can be implied that cross-border M&As in low-performing target countries are more successful as the competitive advantage can be obtained faster. While high-performing target countries are more suitable for long-term plans due to the stable economic and political situation, low-performing target countries have a less competitive environment, making it easier to gain market share rapidly which is perceived positively by the market. A cross-border M&A in a low-performing target country is more likely to occur due to new market opportunities than due to financial reasons as the economic

growth of the country is weak. Furthermore, low-performing target countries are attractive to acquirers as they are usually associated with low stock prices.

The results support the theory that cross-border M&As in low-performing target countries are more successful than in high-performing ones due to misvaluation of the target's stock prices (UNCTAD, 2000). This means that the stock price may not reflect the true value of the company. Low-performing target countries often have underdeveloped equity markets or economic systems which lead to difficulties in pricing assets appropriately and in turn increases the probability of wrong valuation (UNCTAD, 2000). Current shareholders may undervalue the firm and an acquirer can forecast higher earnings due to imperfections in the capital market or bad management of the target firm. This lets the acquirer make a cheap investment and leads to a successful M&A if the acquirer's anticipated earnings are true. Firms from low-performing countries often face high-performing and powerful acquirers in the M&A negotiation which indicates an advantage for acquirers and could lead to more success. This may be even more relevant if no other bidders are involved in the M&A process and the acquirer is in a strong position during the negotiation. This is also confirmed by Erel, Liao and Weisbach (2012) who suggest that the difference of the stock market performance between the two countries involved in the transaction increases the likelihood that firms in high-performing countries purchase firms in low-performing countries.

The positive returns found can be related to the motive of seeking resources. Low-performing target countries may have resources that are not available in the acquirer's country and are in high demand. The acquisition of these resources can give the acquirer a competitive advantage in its home country and thus lead to a successful cross-border M&A. In addition, M&As in low-performing countries can create synergies just like M&As in high-performing countries and therefore lead to a positive CAR, e.g. through intangible, operating or informational synergies.

High-performing target countries are more economically and politically stable which is associated with easier trade as transaction costs as well as risks of failure are decreased (Danbolt, 2004). The results show no evidence for this; However, as this research focuses on the EU, trade is facilitated among all countries included in the sample, which is further explained in section 5.6.4.

5.4.1. FDI theory

The sample data is consistent with previous research which has found that high-performing economies are more likely to be target countries for outward FDIs (e.g. Kiyamaz, 2004; Globerman & Shapiro, 2005; Tuman & Emmert, 2004) as economic growth draws the attention of foreign investors and undermines the investors' confidence. The results are further in line with Bogach and Noy (2012) who conclude that the recent global financial crisis has been associated with a general decline in FDI as the crisis did not affect only a specific region.

According to FDI theory, high-performing target economies tend to have a stronger domestic competition than low-performing economies. This may also explain the greater success of low-performing target M&As as multinational firms have more opportunities to obtain market power. Kang (1993 cited in Danbolt, 2004) states that multinational firms have a competitive advantage over local firms due to the existence of asymmetries and market, capital and factor imperfections. High-performing target economies usually have a more competitive environment than low-performing target countries as more financial resources are available. While competition can make it more difficult to gain market share, cross-border M&As may increase concentration and eliminate or reduce competition from smaller companies. Cross-border M&As are said to increase concentration especially in industries with weak regulations (UNCTAD, 2000) which is the case for low-performing target countries. Considering that during times of lower economic performance the local competitors will be even weaker and face more financial and productivity constraints than the cross-border firms exacerbating the level of asymmetries, the ability to achieve multinational power and succeed with the M&A in low-performing target countries will be even higher.

5.4.2. Fire sale theory

The results of this thesis support Krugman's (2000) fire sale theory as cross-border M&As in low-performing countries are shown to be more successful. During times of low economic performance, bank liquidity tends to decrease and the market for assets settles only at "fire-sale" prices leading to cross-border investors from high liquidity countries being interested in performing acquisitions if prices fall sufficiently low (Desai, Foley, & Forbes, 2007). The acquisition of cheap assets with a lower premium may increase the ability to achieve successful M&As since the performance improvements and synergies realization do not have to attain such a significant value in order to offset the premium paid for the target. Krugman's (2000) fire sale theory suggests that cross-border M&As are successful when domestic firms are

financially constrained and unable to effectively take part in profitable local investments. This leads to an advantage for acquirers who perform cross-border M&As in these low-performing and financially constrained target economies, which supports the finds of this research. Next to the cheap assets, low-performing target economies also offer opportunities for product market imperfections (Danbolt, 1996), such as cheap materials, labor and production costs which can lead to the creation of operating synergies and cost minimization.

5.5. How do the management's motives influence the M&A success?

The M&A success is not only influenced by external factors, but also by the motives of the management of the company. While some managers seek to improve the firm's success by seeking new resources or gain market share as mentioned above, others carry out M&As to maximize their own utility.

Negative CAR is usually attributed to the management perspective motive and agency theory. Hubris theory can also lead to negative CAR as the bidding firms may have difficulties to value a target firm that is outside their own country. However, agency theory as well as hubris theory play a less significant role in countries that are more alike and share common regulations and risks such as the EU. Danbolt's (1996) results confirm this belief as he finds significantly large negative returns for firms outside the EU and only a small negative CAR for firms inside the EU.

Agency theory can also be related to the fact that the sample indicates that more M&As are performed in high-performing target countries. Considering that these types of M&As are more likely to occur although they generate lower returns indicates that the decision to carry out M&As is not only based on the analysis of the ability to realize synergies. Managers behaving in accordance with the agency theory may want to invest more in high-performing/booming economies considering that these types of economies will increase their self-esteem as these countries are typically associated with a higher social status. This can lead to negative effects in the long-run but the market may not be aware of this in the short-run.

5.6. How does the sample affect the results regarding the impact of target country economic performance on CAR?

5.6.1. Short-term perspective

As mentioned before, previous research which has not distinguished based on the type of economy, has shown inconclusive results of short-term wealth effects of acquirers. The contrasting effects can be a result of the different samples used and the focus of each study as shown in appendix A. As the event window of this thesis is only three days, the effects on return may be different due to the time effect and the firms not being able to fulfil shareholders' expectations in a longer time window measured in other studies. A positive CAR is mostly a result of achieved synergies. Considering that this study examines short-term effects, the effect on CAR is not the actual realized synergy, but it reflects the way the market perceives the possible achievement of synergies.

5.6.2. Financial crisis

Calderon and Didier (2009) have found that M&A activity increased during financial crisis due to fire sales. No evidence is found for this fact, however all countries of the sample were suffering from the financial crisis, so that even high-performing countries did not have enough financial resources to engage in more cross-border M&As. The M&A behavior after the 2008 financial crisis was influenced by the unconventional policies employed by the central banks. Despite the economic policies and serious attempts to restructure confidence in the economy, companies preferred to pursue careful strategies and reduce their risk exposure by growing their earnings per share through cost savings, share buybacks and investment constraints which affected the amount of M&As and the type of transactions carried out (Cretin, Dieudonné & Bouacha, 2015). In times of a financial crisis, cost reductions are of significant importance. The ability of achieving cost savings through the investment in low-performing target countries can justify the market perception of a higher value reflected in a higher CAR. Nevertheless, the higher frequency of M&As being performed in high-performing target countries indicates the unwillingness of investors to be exposed to low-performing target countries despite the fact that they present higher ARs.

5.6.3. Classification of target country economic performance

Another crucial difference between this research and Makaew (2010) that may have caused distinctive results, regards the differences between the classification of the countries, with Makaew (2010) dividing the sample between booming and non-booming economies and this research using sovereign risk ratings as a proxy for economic performance. His definition of “booming” economy is that of a setting in which the deviation from the trend is abnormally large relative to the country’s usual economic cycle. Contrarily to the definition of a booming economy, an economy classified with a high sovereign risk rating represents a steady and strong economy that will unlikely be affected by shocks. The actual level of economic performance of the country is another differentiating factor. Whereas a booming country can still represent a fairly low economic state as the status is based only on the growth level and not its initial value, a high-performing economy is not necessarily related to growth but can be in a high economic steady state. As suggested by Makaew (2010), M&As react to shocks in target countries meaning that a country which presents an unusual growth rate in GDP may generate an unusual inflow of FDI. This would not be significant if the high levels of GDP would present steady high levels as implied by a high sovereign rating.

5.6.4. European Union

As the sample of this thesis includes only EU members, the common regulations may partly offset the difficulty of managing cross-border M&As. The EU is designed to make trade easier and supports the members to work together which facilitates the engagement in intra-EU M&As. The chance of mispricing and imperfect information is decreased, as all public firms follow the same accounting standard and need to fully disclose their financial information. On the other hand, even though many regulations are the same for EU countries, some differences still arise which can create opportunities for cross-border M&As. For example, a different tax system can impact the marginal productivity of M&As. Due to these small market imperfections, companies that perform cross-border M&As are still able to reduce costs compared to domestic production (Goergen & Renneboog, 2004).

The motive of market access is less relevant in this sample due to all countries being part of the EU and thus having easy access to trade. As many studies investigate cross-border M&As between European and non-European countries, these M&As are often driven by the motivation to operate locally to avoid trade barriers (Danbolt, 2004). The different sample thus can make a significant difference in results as non-EU countries may be willing to pay a higher premium

than intra-EU M&As to gain market access. Additionally, transaction costs are assumed to be higher for non-European acquirers as they face new regulations and barriers which may be a reason for other studies to obtain a negative CAR. However, an intra-EU cross-border M&A can still be used for market growth as firms in target countries may know the clients better than the foreign acquirer. Due to the easy market access inside EU, market growth is facilitated and thus can lead to a faster success than for countries located in different trade regions as they need to adjust more and comply with more regulations they did not have to comply with before.

Low-performing target countries suffer more from economic and political instability which may imply a negative CAR as transaction costs are high (Danbolt, 1996). However, as the sample considers only the EU, political and economic instabilities are not as drastic as in other parts of the world and therefore have less impact on the success of the M&A. Even though targets may be located in low-performing countries, the actual investment risk might not be so big, suggesting that the market perception of such factors is not strong enough to negatively influence CAR. The lower transaction costs that characterize the sample of EU countries may also explain the success of investing in low-performing targets which would usually be associated with higher trade barriers, different takeover regulations and currency fluctuations.

In sum, the common regulations of the EU make trade and market access easier and thus facilitate the creation of synergies while they decrease the risk of management not acting in behalf of the shareholders.

5.7. What is the importance of other factors on cross-border M&A performance?

Despite the fact that the output constant, given by α , presents a positive value, no major conclusions can be drawn from this value since there is no case in which CAR will only be affected by the constant as some independent variables cannot take the value zero (e.g. Geographic distance).

This research found a significant relationship between the relative size of the acquirer and CAR, but the coefficient of such variable is approximately equal to zero implying that it does not greatly influence the value of the AR of the acquirer. The achieved results are in line with the results obtained by Conn et al. (2005) for short-term returns of public cross-border M&As.

Contrarily to Conn et al.'s (2005) research, the output from this regression suggests that trade differences have a statistical significant influence on the level of ARs. A transaction being

performed in a target country with an Index of Economic Freedom higher than the average of the EU leads to a higher CAR of around 1,28%. This result supports the view that free trade is better for value creation and is in line with the results from Carlsson and Lundström (2002) who prove that economic freedom increases growth. The different results obtained by this regression and the ones presented by Conn et al. (2005) may be due to the fact that the latter includes separate variables such as legal and accounting differences whose effect are included in the trade differences in this regression. The Index of Economic Freedom does not only cover trade freedom, but also rule of law and government size. While free trade exists throughout the EU, these categories of the index are still different in each EU country. This creates differences in the way companies are able to realize synergies in each country and can therefore affect the success of the M&A.

In line with Conn et al. (2005), this research fails to find a statistical significant relationship for exchange rates, cultural differences and industry relatedness. Contradicting results were observed regarding the method of payment. The results from this regression suggest that the fact that a transaction represents a cash merger opposed to a non-cash merger does not present a significant impact on the level of acquirer returns. Since this research focuses on short-term returns with a small event window this may disable the markets' ability to account for under- or overvaluation effects. Opposite results were also verified regarding geographical distance. Contrarily to Erel, Liao and Weisbach (2012) who state that geographic proximity increases the likelihood of the acquisitions and explain this with the fact that physical distance can increase the costs of combining the two firms, this research finds no evidence for the impact of geographic distance on CAR which is possibly related to the fact that only EU companies were included in the sample as referred in section 5.6.4.

5.8. What are the implications for the long-term?

As said before, the short-run returns reflect the market's perception of the ability to create value through M&As. Conn et al. (2005) suggest that different results may arise in the long-run due to the possibility that the market does not correctly predict the future performance of M&As. This future performance is highly dependent on the ability to actually achieve the aimed synergies. In low-performing target countries, local competitors lack financial resources, so cross-border M&As into such countries are advantageous and can easily be used to outperform local competition. This implies that in the long-run, cross-border M&As into low-performing target countries are associated with a highly significant market power synergy. Besides this, the

return can be enhanced by the fact that low-performing target economies are associated with lower production and labor costs. This would easily lead to cost synergies and cost minimization strategies in the long-run that might be harder in high-performing target countries. On the other hand, low-performing economies might be associated with reduced levels of demand and price ceilings which may limit the ability to achieve revenue synergies, suggesting the opposite effect on long-run returns.

The long-run return of M&As will also be dependent upon the motive behind the transaction which is something that the market agents might not be able to evaluate in the short-run. As mentioned in section 2.3.4., the transactions performed under agency motives might lead to lower level of returns due to the focus on maximizing one's own utility rather than following the company's goals.

The foreseeable increase in globalization in the future will have an impact on cross-border M&As and the associated returns. This globalization trend is reflected in countries becoming more similar and being progressively submitted to the same standards and behaviors (e.g. common regulations, common accounting standards, reduced cultural differences). International trade is also becoming easier due to the world's boost in infrastructure development and the formation of more trade agreements besides the EU. This implies that the risk of performing cross-border M&As is expected to decrease significantly in the future which might translate in higher levels of CAR in both types of target countries.

6. Conclusion

The final chapter states the main outcomes and recognizes limitations and future areas of research.

6.1. Concluding remarks

The results of this research indicate that cross-border M&As in low as well as high-performing target countries are successful. In the short-run, cross-border M&As in target countries with a low sovereign risk rating perform better than in target countries with a high sovereign risk rating. In combination with the company's motives, managers need to evaluate the target country's performance thoroughly before carrying out a M&A to ensure success. Especially in times of the global financial crisis, investors seem to value the acquisition of cheap assets. The results suggest that the EU has a positive impact on the success of cross-border M&As as it is easier to manage cross-border M&As in countries with common regulations.

6.2. Limitations and further research

There are limitations to this research that might impact the results and that could be used in future research.

As suggested by Fuller et al. (2002), it is important to evaluate the impact of an acquirer who performed multiple M&As over the sample period. This research is limited by the fact that acquirers were not distinguished based on the number of acquisitions performed. The value of the returns can therefore include the effect of more than one acquisition.

The fact that the sample is not evenly distributed between the two types of targets, with 199 high-performing and 32 low-performing, can implicate the existence of a bias in the drawn conclusions. The sample of this research is limited by a transaction value of 100 million Euro and previous research (Krugman, 2000) indicates that transactions in low-performing target countries are associated with the existence of cheap assets. The fact that a high transaction value is set for the sample may be limiting the inclusion of transactions in low-performing target countries. This could be further analyzed by replicating this study with a lower transaction value.

Another limitation of this research is related to the fact that all EU members are treated equally but some countries like the UK seem to have particular features, as suggested by previous literature (e.g. Goergen & Renneboog, 2004) and by the significant number of acquisitions performed by them when compared to other members of continental Europe.

It is of further interest to replicate this study using a sample non-exclusive to EU members. It would be relevant to investigate if the findings of this research are totally limited to EU specificities, for instance by using a sample of countries included in a different trade agreement (e.g. Mercosur, NAFTA). The impact of trade agreements and common regulations could further be tested by including a worldwide sample and controlling for the existence of common regulation or trade agreements. Furthermore, the acquirer location and economic performance could also be included to expand the findings of this research.

Although, as referred before, previous research has shown that in short-term event studies including the firm systematic risk does not significantly improve the model estimation (e.g. Brown and Warner, 1980), further research could be done with the usage of the market model to test if significant differences exist in this specific case.

In addition to this research, further studies could also be done to examine if other measures of country economic performance would lead to the same results, considering both the short and long-term effects. The results from such study could be used to analyze the macroeconomic factors that present a greater importance when choosing a target country.

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Appendices

Appendix A – Literature Review

| | <i>Author</i> | <i>Year</i> | <i>Title</i> | <i>Country data</i> | <i>Year of data</i> | <i>Method</i> | <i>Dependent variable</i> | <i>Independent variable</i> | <i>Control variable</i> | <i>Findings</i> |
|--------------------------------|----------------------|-------------|--|---------------------|---------------------|------------------------------|---|---|-------------------------|---|
| General theory | Shimizu et al. | 2004 | Theoretical foundations of cross-border M&As | N/A | N/A | Literature Review | N/A | N/A | N/A | Cultural distance is a useful proxy for a firm's country risk; Most common theories used for value creation: TCE, Agency theory |
| | Makaew | 2010 | A dynamic model of international M&As | Global | 1989 - 2008 | Regression analysis | Aggregate volume Aggregate frequency of M&A activities | Country Industry Year Deal size % acquired Method of payment Exchange rate Acquirer/target public status | N/A | Most mergers occur when both the acquirer and the target economies are booming; Acquirers tend to be more productive and targets tend to be less productive, compared to their industry peers |
| Determinants of success | Neergard & Waldstrøm | 2009 | Drivers of successful cross-border M&As | N/A | N/A | Meta-analysis of 66 articles | N/A | N/A | N/A | Most problems with cultural differences are in the post-acquisition phase; Most important influential factors: national culture, organizational |

| <i>Author</i> | <i>Year</i> | <i>Title</i> | <i>Country data</i> | <i>Year of data</i> | <i>Method</i> | <i>Dependent variable</i> | <i>Independent variable</i> | <i>Control variable</i> | <i>Findings</i> | |
|--------------------------------|---------------------|---|--|---------------------|---------------------|--|---|--|--|---|
| Erel, Liao & Weisbach | 2012 | Determinants of Cross-Border M&As | Universe of cross-border | 1990-2007 | Regression analysis | Volume of mergers Proportion of CBMAs for a particular country pair | Currency Stock market return Market-to-book equity Legal Language Religion | Country-pair fixed effects Target size Acquirer Size Industry | culture, communication Firms in countries whose stock market has increased in value tend to be purchasers while firms from weaker-performing economies tend to be targets | |
| Epstein | 2005 | The determinants and evaluation of merger success | US | 2000 | Case study | Success or failure of M&A | Internal data related to input processes and results of the merger | N/A | Six determinants of success of M&As: Strategic vision and fit, deal structure, due diligence, pre-merger planning, post-merger integration and external factors | |
| Wealth effects on CBMAs | Goergen & Renneboog | 2004 | Shareholder wealth effects of European domestic and cross-border takeover bids | Europe | 1993-2000 | Event study | CAAR | Hostility Type of acquisition Number of bidders Location Means of payment Industry Relative Size | Target & bidder characteristics Status of bid | Higher premiums are paid in cross-border bids than domestic; Domestic M&As trigger higher wealth effects than CBMAs |
| Gugler et al. | 2001 | The effects of mergers: an international comparison | Global | 1985-2000 | T-Test | Profit Sales | Profit difference Sales difference % positive | General changes in economy | no significant difference between domestic and CBMAs; | |

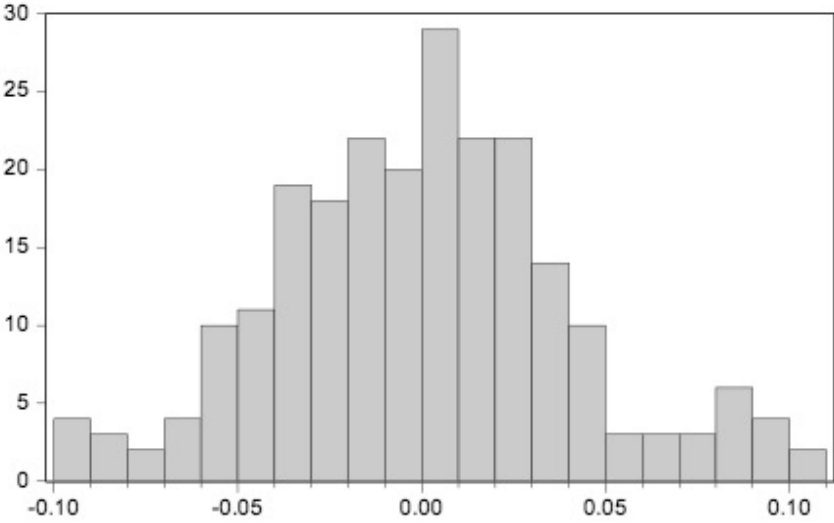
| <i>Author</i> | <i>Year</i> | <i>Title</i> | <i>Country data</i> | <i>Year of data</i> | <i>Method</i> | <i>Dependent variable</i> | <i>Independent variable</i> | <i>Control variable</i> | <i>Findings</i> |
|---------------|-------------|---|---------------------|---------------------|---------------------|---------------------------------------|--|--|--|
| | | | | | | | | | 3 categories were found: increase profit and increase market power; increase profit and increase efficiency; decrease profit and decrease efficiency |
| Conn et al. | 2005 | The Impact on UK Acquirers of Domestic, Cross-Border, Public and Private Acquisitions | UK | 1984-1988 | Event study | CAR BHAR CTAR | Domestic vs cross-border Private vs. Public | Industry Hostility Relative size Method of payment Region Value Glamour Subsidiary Related Trade Policy Governance system National culture differences High-tech | Acquisitions of both domestic and cross-border private targets result in positive announcement returns and zero long run returns; CBMAs result in lower announcement and long run returns than domestic acquisitions |
| Fuller et al. | 2002 | What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions | US | 1990-2000 | Regression analysis | CAR of public, private and subsidiary | Payment method Number of bid Tech industry Industry Subsidiary | Relative size Target size Relative size*Payment method | Shareholders gain when purchasing a private/subsidiary firm and lose when it is public; Return increases with target size and stock payment |

Appendix B – Country economic performance

| <i>Sovereign risk rating</i> | <i>2008</i> | <i>2009</i> | <i>2010</i> | <i>2011</i> | <i>2012</i> | <i>2013</i> | <i>2014</i> | <i>2015</i> |
|------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <i>Austria</i> | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AA+(*) | AA+(*) | AA+(*) | AA+(*) |
| <i>Belgium</i> | AA+(*) | AA+(*) | AA+(*) | AA(*) | AA(*) | AA(*) | AA(*) | AA(*) |
| <i>Bulgaria</i> | BBB | BBB | BBB | BBB | BBB | BBB | BB+ | BB+ |
| <i>Cyprus</i> | A+(*) | A+(*) | A(*) | BBB | CCC+ | B- | B+ | BB- |
| <i>Czech Rep.</i> | A(*) | A(*) | A(*) | AA-(*) | AA-(*) | AA-(*) | AA-(*) | AA-(*) |
| <i>Denmark</i> | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) |
| <i>Estonia</i> | A(*) | A-(*) | A(*) | AA-(*) | AA-(*) | AA-(*) | AA-(*) | AA-(*) |
| <i>Finland</i> | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AA+(*) | AA+(*) |
| <i>France</i> | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AA+(*) | AA(*) | AA(*) | AA(*) |
| <i>Germany</i> | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) |
| <i>Greece</i> | A(*) | BBB+ | BB+ | CC | B- | B- | B | CCC+ |
| <i>Hungary</i> | BBB | BBB- | BBB- | BB+ | BB | BB | BB | BB+ |
| <i>Ireland</i> | AAA(*) | AA(*) | A(*) | BBB+ | BBB+ | BBB+ | A(*) | A+(*) |
| <i>Italy</i> | A+(*) | A+(*) | A+(*) | A(*) | BBB+ | BBB | BBB- | BBB- |
| <i>Latvia</i> | BBB | BB | BB+ | BB+ | BBB | BBB+ | A-(*) | A-(*) |
| <i>Lithuania</i> | BBB+ | BBB | BBB | BBB | BBB | BBB | A-(*) | A-(*) |
| <i>Luxembourg</i> | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) |
| <i>Malta</i> | A(*) | A(*) | A(*) | A(*) | A-(*) | BBB+ | BBB+ | BBB+ |
| <i>Netherlands</i> | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AA+(*) | AA+(*) | AAA(*) |
| <i>Poland</i> | A-(*) | A-(*) | A-(*) | A-(*) | A-(*) | A-(*) | A-(*) | A-(*) |
| <i>Portugal</i> | AA-(*) | A+(*) | A-(*) | BBB- | BB | BB | BB | BB+ |
| <i>Romania</i> | BB+ | BB+ | BB+ | BB+ | BB+ | BB+ | BBB- | BBB- |
| <i>Slovakia</i> | A+(*) | A+(*) | A+(*) | A+(*) | A(*) | A(*) | A(*) | A+(*) |
| <i>Slovenia</i> | AA(*) | AA(*) | AA(*) | AA-(*) | A(*) | A-(*) | A-(*) | A-(*) |
| <i>Spain</i> | AAA(*) | AA+(*) | AA(*) | AA-(*) | BBB- | BBB- | BBB | BBB+ |
| <i>Sweden</i> | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) |
| <i>UK</i> | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) | AAA(*) |

(*) refers to high-performing economies

Appendix C – Normality Test



| | |
|-------------------|-----------|
| Series: Residuals | |
| Sample 1 231 | |
| Observations 231 | |
| Mean | 6.91e-18 |
| Median | 0.000490 |
| Maximum | 0.109101 |
| Minimum | -0.096792 |
| Std. Dev. | 0.040317 |
| Skewness | 0.218316 |
| Kurtosis | 3.262977 |
| Jarque-Bera | 2.500616 |
| Probability | 0.286417 |

Appendix D – Correlation matrix

| Correlation (Probability) | <i>CAR</i> | <i>Exchange Rate</i> | <i>Culture</i> | <i>Geographic</i> | <i>High Performing</i> | <i>Industry</i> | <i>Method Payment</i> | <i>Relative Size</i> | <i>Trade</i> |
|------------------------------|-------------------------|--------------------------|-----------------------|------------------------|----------------------------|------------------------|---------------------------|--------------------------|--------------|
| CAR | | | | | | | | | |
| Exch. Rate | -0,031588 (0,6329) | | | | | | | | |
| Culture | -0,10743 (0,1034) | 0,220244 (0,0007)* | | | | | | | |
| Geographic | -0,070326 (0,2872) | -0,034160 (0,6055) | 0,041570 (0,5296) | | | | | | |
| High-Performing | -0,066972 (0,3108) | 0,056564 (0,3922) | 0,054497 (0,4097) | -0,292284 (0,0000)* | | | | | |
| Industry | 0,014199 (0,8300) | 0,096742 (0,1427) | -0,016335 (0,8049) | 0,018975 (0,7742) | -0,136189 (0,0386)** | | | | |
| Met. Payment | 0,045328 (0,493) | 0,076995 (0,2438) | -0,048023 (0,4676) | 0,057273 (0,3862) | -0,098516 (0,1355) | 0,143139 (0,0296)** | | | |
| Relative Size | -0,148430 (0,0241)** | -0,021747 (0,7423) | -0,065938 (0,3184) | 0,046951 (0,4776) | 0,026990 (0,6832) | 0,056872 (0,3896) | -0,070945 (0,2829) | | |
| Trade | 0,091892 (0,1639) | 0,183229 (0,0052)* | 0,0233896 (0,7179) | -0,246114 (0,0002)* | 0,391089 (0,0000)* | -0,090163 (0,1720) | -0,153950 (0,0192)** | 0,055755 (0,3990) | |

*, **, *** refers to 1%, 5% and 10% significance level

Appendix E – Linear relationship (Ramsey Reset Test)

| Ramsey Reset Test | | | | |
|---|--------------------|-------------------|---------------------|--------------------|
| Omitted variables: Squares of fitted values | | | | |
| | <i>Value</i> | <i>df</i> | <i>Probability</i> | |
| T-Statistic | 0.391329 | 221 | 0.6959 | |
| F-Statistic | 0.153138 | (1, 221) | 0.6959 | |
| Likelihood ratio | 0.160012 | 1 | 0.6891 | |
| F-Test summary | | | | |
| | <i>Sum of Sq.</i> | <i>df</i> | <i>Mean Squares</i> | |
| Test SSR | 0.000259 | 1 | 0.000259 | |
| Restricted SSR | 0.373853 | 222 | 0.001684 | |
| Unrestricted SSR | 0.373594 | 221 | 0.001690 | |
| LR test summary | | | | |
| | <i>Value</i> | <i>df</i> | | |
| Restricted LogL | 414.4640 | 222 | | |
| Unrestricted LogL | 414.5440 | 221 | | |
| <i>Variable</i> | <i>Coefficient</i> | <i>Std. Error</i> | <i>T-Statistic</i> | <i>Probability</i> |
| C | 0.030531 | 0.018213 | 1.676335 | 0.0951*** |
| Culture | -0.000163 | 0.000111 | -1.465591 | 0.1442 |
| Exchange rate | -0.000791 | 0.001133 | -0.698120 | 0.4858 |
| Geographic | -5.74E-06 | 5.83E-06 | -0.983582 | 0.3264 |
| High-Performing | -0.019033 | 0.013150 | -1.447330 | 0.1492 |
| Industry | 0.001578 | 0.005607 | 0.281423 | 0.7786 |
| Method of payment | 0.004855 | 0.006272 | 0.774000 | 0.4398 |
| Relative size | -2.01E-06 | 2.45E-05 | -0.082215 | 0.9346 |
| Trade | 0.015674 | 0.009468 | 1.655483 | 0.0992*** |
| Fitted ² | -12.31937 | 31.48086 | -0.391329 | 0.6959 |
| N | 231 | | | |
| Adjusted R ² | 0.065046 | | | |
| F-Statistic | 1.708365*** | | | |

*, **, *** refers to 1%, 5% and 10% significance level

Appendix F – Heteroskedasticity (White Test)

| Heteroskedasticity: White Test | | | | |
|---------------------------------------|--------------------|-------------------|--------------------|--------------------|
| F-Statistic | 0.898741 | Prob. E | 0.5183 | |
| Obs.*R ² | 7.246713 | Prob. Chi-Square | 0.5103 | |
| Scaled explained SS | 7.573092 | Prob. Chi-Square | 0.4762 | |
| <i>Variable</i> | <i>Coefficient</i> | <i>Std. Error</i> | <i>T-Statistic</i> | <i>Probability</i> |
| C | 0.002087 | 0.000592 | 3.528807 | 0.0005* |
| Culture ² | 4.98E-08 | 4.68E-08 | 1.064150 | 0.2884 |
| Exchange rate ² | 3.17E-07 | 3.65E-06 | 0.086920 | 0.9308 |
| Geographic ² | 6.97E-11 | 1.24E-10 | 0.562389 | 0.5744 |
| High-Performing ² | -0.000982 | 0.000521 | -1.886430 | 0.0605*** |
| Industry ² | -5.65E-05 | 0.000332 | -0.170248 | 0.8650 |
| Method of payment ² | -0.000228 | 0.000332 | -0.686740 | 0.4930 |
| Relative size ² | -2.28E-11 | 3.30E-11 | -0.690026 | 0.4909 |
| Trade ² | 0.000543 | 0.000366 | 1.484179 | 0.1392 |
| N | 231 | | | |
| Adjusted R ² | -0.003534 | | | |
| F-Statistic | 0.898741 | | | |

*, **, *** refers to 1%, 5% and 10% significance level