
EMERGING MARKET ACQUISITIONS

Intriguing, but what are the

SHAREHOLDER VALUE EFFECTS?

Although executives and boards argue in favour of the extensive benefits of acquisitions in emerging markets, theory and research suggests that not only benefits but also costs and valuation issues are accentuated when making acquisitions in emerging markets. The aim of this thesis is to add to the existing research by studying the shareholder value effects following acquisitions in emerging markets by developed market firms. The data sample consists of 1,079 acquisitions between 2000 and 2013 of which 144 were undertaken in emerging markets. Following short and long run event studies, results suggest that investors initially expect shareholder value to be created but that these expectations are reversed to shareholder value destruction in the months following the acquisition. Furthermore, results do not support a difference in shareholder value creation between acquisitions in emerging and developed markets. This thesis and its findings contribute to the existing body of research in primarily two ways. Firstly, the significant difference between emerging and developed market acquisitions documented in previous research, is not found to be robust when restricting the sample of developed market acquisitions to only include cross border deals. Secondly, the findings of this thesis contrast to the positive long term performance suggested by previous researchers and thus open up for further research.

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Happy reading,

Patrik Stockhaus & Terese Svensson

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1. EMERGING MARKET ACQUISITIONS AND THE SHAREHOLDER VALUE EFFECTS

Emerging market acquisitions are becoming increasingly prevalent among firms in developed markets. Ever since the deregulation of capital markets in emerging economies in the late 1980s and early 1990s there has been a great interest among developed market firms to acquire in emerging markets (Chari, et al., 2010) and the trend has continued into the 21st century. Between 2002 and 2011, the number of deals between developed and emerging markets has increased on average by 12 percent annually and accounted for 9 percent of global M&A activity in 2011 (AT Kearney, 2012).

Following a more diligent review of press releases¹ by firms in developed markets announcing acquisitions in emerging markets, three typical reasons for the acquisition emerge: opportunities for growth, access to cost competitive production factors and access to new technology. One example is the recent announcement by the Dutch based delivery firm TNT to acquire the Brazilian market leader in domestic express deliveries, Mercúrio. In the press release, the following rationale was given:

“This transaction adds to TNT's strategic objective to become number 1 in selected emerging markets. Mercúrio's cross-border network provides us with an excellent opportunity to grow and expand even further throughout South-America”

However, economic and financial valuation theory stipulates that availability of benefits – such as growth – is not the sole determinant of shareholder value creation following acquisition announcements. Rather, shareholder value effects are a function of both benefits and cost of acquisitions along with the ability to correctly price the asset. Based on a review of previous research, emerging market acquisitions are not only associated with accentuated acquisition benefits but also accentuated acquisition costs and greater uncertainty in valuation compared to acquisitions in developed markets. Thus the question of whether firms acquiring in emerging markets manage to create shareholder value is not straight forward and subject for empirical research.

Following a literature review, the empirical evidence of the shareholder value effects of emerging market acquisitions is considered limited and in some instances inconsistent. The main article within this field Chari, et al. (2010) finds indications of positive shareholder effects following acquisitions in emerging markets and a positive difference compared to acquisitions in developed markets. These results are not confirmed in other studies by for example Deshpande, et al. (2012) who do not find indications of shareholder creation. With the inconsistency in findings, along with weaknesses in application of methods, it is considered to be a need for additional research within the field of shareholder effects following acquisitions in emerging markets. Furthermore, the data sample used in previous research has ranged back to acquisitions in the 1980's. As it has been documented that investor behaviour and thus stock market reactions varies with time, it is of interest to study the shareholder effects on current data.

¹ In total 40 press releases were researched, constituting approximately 25 percent of the total number of emerging market deals in the final sample of this thesis.

1.1. AIM, RESEARCH QUESTION AND OPERATIONALISATION

Following the economic relevance of the topic and the identified research opportunity, the aim of this thesis is to add to the existing research by studying, on a current dataset, the shareholder value effects following acquisitions in emerging markets from the perspective of a developed market acquirer. In order to fulfil this aim, the research question of this study is:

*What are the shareholder value effects following acquisitions in emerging markets
announced between 2000 and 2013?*

The research question contains two ambiguous expressions open for interpretations: *effects* and in *emerging markets*. In this thesis, *effects* are defined broadly and include both the initial expectations of value effects following the acquisition announcement as well as the subsequent long run observed shareholder value effects. Moreover, effects are defined as both abnormal return and difference in abnormal return compared to acquisitions in developed markets. Following a review of existing definitions, *emerging markets* are in this thesis defined as markets with low level of economic development, high level of growth and an ongoing convergence to developed markets. This economic definition of emerging markets is further operationalised in section 4.1.1.

Following the aim, definitions and limitations, the research question is operationalised through short run and long run event studies, each including two statistical tests.² The short run event study measure expectation of shareholder value effects by investors at the point of announcement. The long run event study measure shareholder value effects during the first two years following the acquisitions. The first statistical tests in each group relate to the *direction* of shareholder value effects following announcement of acquisitions in emerging markets and the second relate to the *difference* in shareholder effect between acquisitions in emerging and developed markets.

1.2. DELIMITATIONS

The delimitations of this study are given by the perspective along with choice of acquisitions and time period studied as well as the scope of the research question.

The thesis is written from the *perspective* of the shareholders in a developed market strategic acquirer acquiring a target with operations relating to local market conditions. A developed market strategic acquirer implies that the acquiring firm is an industrial incumbent in a developed market. The reason for delimiting the thesis to acquisitions by strategic acquirers is that they are associated with synergies and integration costs, which will be an important aspect of the literature review and analysis of previous research. The delimitation to developed market acquirers is simply given by the research topic. Throughout the thesis, if not stated otherwise, acquisitions in emerging or developed markets refer to acquisitions made by developed market acquirers.

One important aspect of using share price return measurement – i.e. event studies – as a method to research shareholder value effects is that there is causality between the studied event and the share price return. A causal

² Short run event studies refer to the study of share price returns during days surrounding acquisition announcements while long run event studies refer to the study of share price return over months and years following acquisition announcements.

relationship between the event and the share price return can be said to exist when the event is theoretically likely to have a notable impact on the share price.³ One necessary condition for causality between acquisition and share price return to occur is that the acquisition is large enough compared to the size of the acquirer – i.e. relevant for the shareholders of the acquiring firm. In contrast to previous research, a *relevance ratio* is used in this thesis to limit the sample. Thus only acquisitions where the acquired company is more or equal to five percent of the acquirer in terms of sales or market capitalisation are included.

The study is delimited in terms of *time* and is conducted on a sample of acquisitions announced between 2000 and 2013 where the acquiring firm is domiciled in a developed market. The total sample is then divided into two subsamples. The first subsample consists of acquisitions in emerging markets. The second subsample consists of acquisitions in a developed market different from the home market of the acquirer.

The study is also delimited in terms of scope of the research question. There is no attempt in this thesis to research explanatory factors of shareholder value effects following acquisitions in emerging markets. The thesis sole focus is – as written in the aim and research question – to research the shareholder value effects following acquisitions in emerging markets. With regards to researching the difference in shareholder effects between announcements of acquisitions in emerging or developed markets, the research scope is delimited to only study whether such a difference exists or not.

1.3. STRUCTURE OF THESIS

The paper consists of four main parts: previous research, method and data, empirical results and lastly empirical analysis. Previous research serves as an introduction for the reader to the prevalence of emerging market acquisitions and how shareholder value can theoretically be created through acquisitions in emerging markets. The theoretical reasoning is then contrasted with a review of the empirical evidence from previous research.

The method section begins with a breakdown of the research question into four tests, two for the short run and two for the long run event study. The method used in order to answer the research question is thereafter outlined along with a detailed description of the sampling of the data. Following the method and data, results are presented.

In the empirical analysis section, the empirical results are interpreted in relation to previous research and operationalisation. Thereafter, the robustness of the results are tested and discussed. Robustness tests of the results are done in order to test the sensitivity of results against assumptions and method choices made. Following the robustness tests, the findings are problematised and contrasted with previous findings and conclusions are drawn along with a discussion of the reliability and validity of the study. Finally, concluding remarks and reflections on the study are presented.

³ It is considered an empirical question whether the event actually has an impact – thus the emphasis is on the theoretical likeliness.

2. PREVIOUS RESEARCH

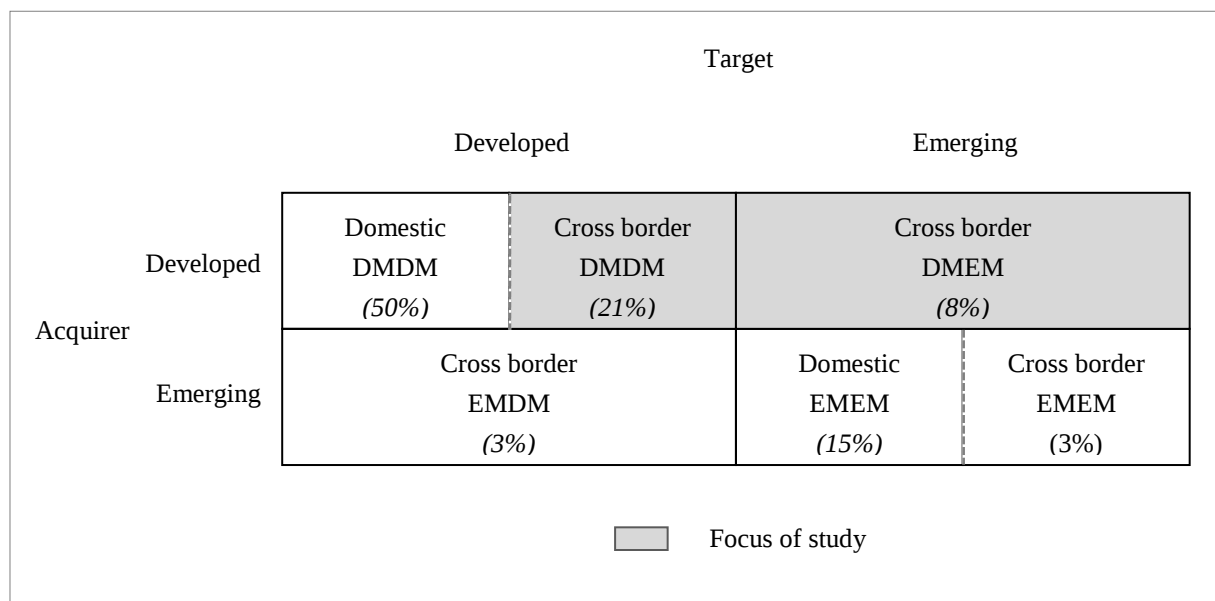
The section serves as an introduction for the reader to emerging market acquisitions and its shareholder value effects. Firstly, a theoretical framework of assessing shareholder value creation following acquisition announcements is presented. Using that theoretical framework, accentuations of benefits, cost and valuations issues relating to the setting of emerging market are highlighted. These theoretical considerations are then contrasted with empirical findings of shareholder value effects following acquisition announcements in developed and emerging markets.

In this section previous research is found to support that the shareholder value effects following acquisitions in emerging markets might differ compared to acquisitions in developed markets. However, as previous research suggests that benefits, costs and valuation issues are accentuated in the setting of emerging markets, the direction of shareholder value effects and the potential difference to acquisitions in emerging markets are considered empirical questions. As the studies of short run event studies are considered to be incomplete and no long run event study is identified it is considered to be a research opportunity to study: 1) the expectations of shareholder value effects using the method of short run event studies and, 2) the long run shareholder value effects following an emerging market acquisition announcement using the method of long run event studies.

2.1. GLOBAL MARKET FOR ACQUISITIONS

Prior to discussing previous research, the focus of this thesis is discussed from a perspective of global mergers and acquisition (M&A hereafter). The focus is given by two dimensions of the global M&A market. The first dimension relates to the level of economic development. As described in the introduction, the nations of the deal participants – i.e. the acquirer and the acquired company (“the target” hereafter) – can be divided into either emerging or developed markets based on the level of economic development. The second dimension relates to whether the acquisition is domestic (within the same country) or cross border (between two countries). Figure 1 illustrates the global market for M&A based on these two dimensions, where the level of economic development of the acquirer is on the vertical axis and the level of economic development of the target is on the horizontal axis. As a domestic acquisition occurs between deal participants in the same country, the economic development must by definition be the same. Therefore the upper left and lower right box in the figure is divided between domestic and cross border acquisitions. Similarly, acquisitions with deal participants in countries with different economic development must by definition be cross border acquisitions, as shown in the lower left and upper right box. The percentage in each box implies what share of the total M&A (in terms of number of deals) that specific type of M&A constitutes.

FIGURE 1: GLOBAL MARKET FOR MERGERS & ACQUISITIONS AND FOCUS OF THE STUDY



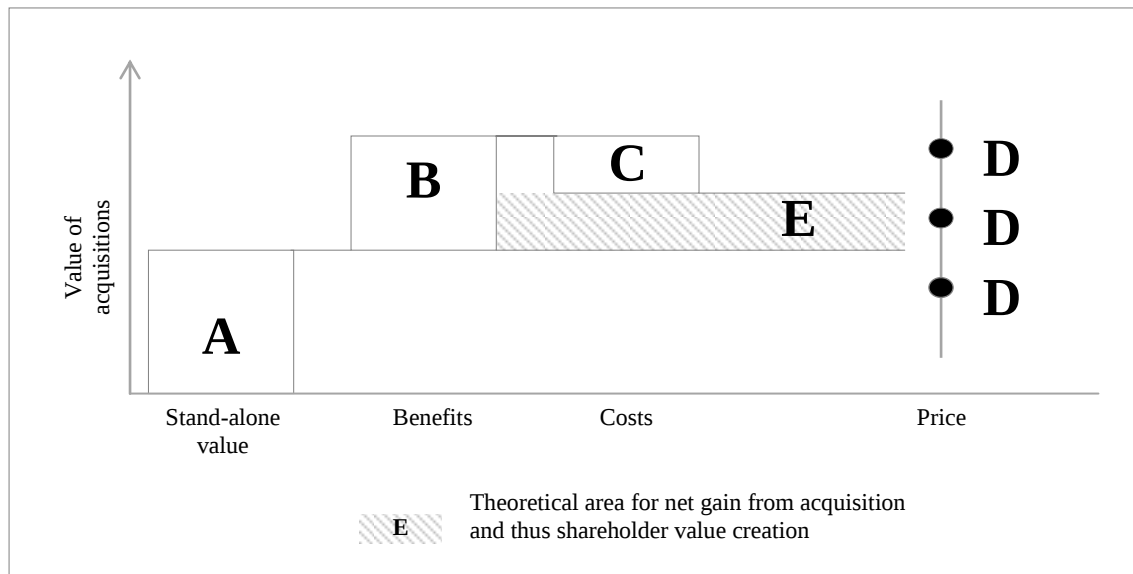
Description: the above figure illustrates the global market for mergers and acquisitions divided by economic development of the deal participant nations. Acquirer economic development is on the vertical axis and target economic development on the horizontal axis. Percentages illustrate the share of total mergers of acquisitions from year 2000 until year to date 2013. Numbers are based on the data sample used in this thesis, see section 4.1.1

The grey shaded area of Figure 1 illustrates the focus of this study – i.e. cross border acquisitions in emerging and developed markets by developed market acquirers. Together these two types of deals constitute approximately 30 percent of the total market for M&A. Moreover, acquisitions in emerging markets constitute approximately 40 percent of the total cross border M&A completed by developed market acquirers. Thus the phenomenon of acquisitions in emerging market is of economic importance and the shareholder value effects ought to be of relevance for the acquirers’ investors.

2.2. VALUE COMPONENTS OF ACQUISITIONS AND ITS ACCENTUATION IN THE SETTING OF EMERGING MARKETS

The theoretical value of an acquisition from an acquirer's point of view can be said to consist of four components: the stand-alone value of the target plus the benefits less the costs and the price paid. Figure 2 illustrates this dynamic and each aspect will be elaborated on below, partly adopted from Koller, et al. (2010)

FIGURE 2: ILLUSTRATION OF VALUE COMPONENTS OF ACQUISITIONS



Description: The figure illustrates a simplified value equation of an acquisition consisting of three areas representing different value components: A, B, C, and D. Area A is the stand-alone value of the firm, Area B represents the benefits the acquirer will get from including the company in its group. Area C is the acquisition related costs associated with the acquisition. Lastly, the D-points represent different potential price points of the acquisition. If a price equal to the highest point is paid, then the acquisition will result in a net loss for the firm, as the price is higher than the total value of the A, B, C and D components. The two lower price points would imply a net gain for the firm. Area E represents the theoretical area for net gain. The lower limit is given by that the existing owners of the target would not be willing to sell at a lower price than the stand-alone value

The stand-alone value (area A) represents the value of the target without consideration to any benefits or costs. The benefits (area B) are the potential synergies that the acquiring firm aims to realize, i.e. the increase in value of the target firm attributable to it coming under the acquirer's control.⁴ The costs (area C) are the potential costs incurred due to the acquisition other than the price paid – e.g. integration costs. The price paid (point D) is simply the price that the acquiring firm pay to the target firm shareholders. Lastly, the theoretical area for net gain (area E) is the difference between the stand-alone value of the target (the minimum value for which the target existing shareholders are willing to sell) and the net effects of acquisition costs and gains. Each component is described below, including a description of what previous research has found with regards to the factors. Moreover, previous research relating to these components in the setting of emerging markets is presented.

⁴ Or similarly, increases in the value of the acquiring firms attributable to the target coming under the acquirers control.

2.2.1. STAND-ALONE VALUE OF THE TARGET – AREA A

The standalone value of the target is simply the current value of the company as is. Several methods have been suggested in order to estimate this value. Following the method of Discounted Cash Flow (DCF), the stand-alone value consists of the present value of the expected cash flows from the company on a standalone basis, i.e. without the value of any synergies. For any listed firm, the stand-alone value typically corresponds to the market capitalisation.⁵

Theoretically, if there are no synergies between the acquirer and the target, the target shareholders will not be willing to sell unless they get a price higher or equal to their estimated stand-alone value. Similarly, the acquirer shareholders will not be willing to pay more than their estimate of the stand-alone value. Thus, assuming that the target and acquirer shareholders estimate the same stand-alone value, there can only be zero net present value deals for both parties. On the other hand, if there are synergies, the target and acquirer shareholders can have the same estimates of stand-alone and synergy values and still realize positive net present value deals if they share the value of the synergies.

2.2.2. BENEFITS FROM M&A – AREA B

Acquisitions can give access to valuable distribution channels in new markets (Holtbrügge & Baron, 2013). The access to distribution channels is a potential source of value creation as the acquiring company can use it to reach new attractive markets with its existing products and thus grow quickly without investments in expanding its product range (Koller, et al., 2010). This is especially true in industries where a high proportion of the product value is attributable to intangible assets (e.g. technologies and brands) since there is no limit to the scalability of intangible assets.

By acquiring another firm and merging it with the acquiring firm's operations, it is possible to realize economies of scale. In its simplest form, economies of scale can be realized by sharing fixed costs on a larger number of units sold. For example if the two firms combined can share administrative functions, eliminate double work or reduce the number of production plants by utilizing excess capacity. Increasing the size of the firm can also have important strategic benefits in the form of increased bargaining power with suppliers and customers resulting in lower input costs and the potential to charge higher prices respectively. Furthermore, a cost advantage reached through economies of scale can be an important deterrent against the entry of new competitors (Porter, 2008).

Acquisitions of un-related firms acting as suppliers or customers in the value chain are known as vertical integrations. By integrating vertically, the acquirer can eliminate transaction and agency costs in the operations by reducing the threat of opportunism (Barney & Hesterly, 2008). Furthermore, by integrating backwards, it can be possible to lower the cost of input goods if the suppliers have high margins and the goods can be produced efficiently.

Included in the acquisition of a firm's assets are also the target employees' skills and experience. Synergies may be realized when the acquiring firm use the target's expertise in its own home markets (Seth, et al., 2002). On the other hand, another possible benefit of an acquisition is if the acquiring firm's managers are more skilled or

⁵ Market capitalisation is the share price times the total shares outstanding. The above statement is true for free float adjusted market capitalisation values.

experienced than the target's current managers. If the target has an ineffective management it can be acquired at a discount and the acquiring firm's management can improve the business (Berk & DeMarzo, 2011).

Accentuation of benefits

Based on a review of previous research, four accentuations of benefits associated with acquisitions in emerging markets are found: access to fast growing markets, benefits from infinite scalability of intangible assets, access to cost efficient production and governance benefits.

As described in the introduction, the most cited reason – and thus the most frequently anticipated benefit – for acquisitions in emerging markets is *growth*. While developed markets generally grow slowly, many emerging markets have a fast growing middle class which becomes more and more powerful in terms of purchasing power (Atsmon, et al., 2012).

The *infinite scalability of intangible assets* is also a source of potential benefit associated with acquisitions in emerging markets. This accentuated benefit is *de facto* a derivative of the increased growth opportunities. If the developed market firm owns a large share of intangible assets such as brand or patent, these could be shared with the newly acquired company and ultimately the new market. All else equal, the potential benefits from sharing this intellectual property with a fast growing market would be larger than for a slow growing market.

One of the classical reasons for investing in emerging markets is the access to *cost efficient production*. By integrating backwards into emerging markets or expanding existing production activities through acquisitions in emerging markets it possible to lower production costs. Thus, access to low cost production factors is an important source of value creation when entering emerging markets (Holtbrügge & Baron, 2013).

By including targets in emerging markets in the search process, the scope for finding poorly managed targets increase and thus the possibility of *governance benefits*. This is especially true for targets in markets with weak corporate governance rules where the risk of management entrenchment is high (Han Kim & Lu, 2013). Thus, in emerging markets there should be an increased possibility of buying companies which are undervalued due to poor management at a low price and then replace it with a management team leveraging the knowledge of the acquirer.

Another aspect of *governance benefits* is that weak institutions of emerging markets can create benefits in an acquisition by firms from developed markets (Chari, et al., 2010). Examples of weak institutions are rule of law, corporate governance practices, shareholder protection and intellectual property rights. When a firm from a developed market acquires control of a firm in an emerging market, the developed market acquirer can share its better corporate governance practices, for example legal and accounting standards, and thus increase the value of the target (Chari, et al., 2010). Simply the fact that the company is merged into a superior institutional structure of the acquirer increases the value of the acquisition. Bris & Cabolis (2008) find that the better the shareholder protection and accounting standards in the acquirer's country, the higher the merger premium becomes. The authors argue that the improvements in accountability and transparency imposed on the target company when they come under the control of the acquirer are positively valued by the market. Similar results are found by Danbolt & Maciver (2012) who find that differences in accounting quality and international variations in governance systems have a significant impact on abnormal returns. In industries which are intensive in

intangible assets, strong intellectual property rights protection is crucial for firms to be able to make investments. If the institutions protecting the intellectual property rights are not in place, as might be the case in emerging markets, the local emerging market firms will be reluctant to invest (Chari, et al., 2010). The intellectual property protection of the developed market acquirer could therefore facilitate investments and eventually additional growth.

2.2.3. COSTS OF M&A – AREA C

In addition to synergies there are also acquisition related costs. Costs that like the synergies are specific to the *combined* firm after an acquisition and that would not have occurred if the two firms had continued to operate as two separate entities.

The classical problem of acquisitions, and especially large acquisitions, is when the deal is closed and it is time to realize all the expected benefits and synergies – the integration. Without integration, the acquirer and the target would continue to operate as two separate firms with limited room for value creating synergies. Integration can however prove difficult when the employees of the two firms are from different cultures. Differences in culture might make teamwork and coordination more difficult and thereby increase the costs of integration (Ahern, et al., 2011). Furthermore, after closing much of management attention will be needed to successfully integrate the acquired firm into the acquirer's organization. This is attention that would otherwise be put into investment opportunities elsewhere and thus there is an indirect cost of large complex acquisitions (Yu, et al., 2005).

Growth through acquisitions increases the complexity of The Firm which could result in potential diseconomies of scale. Larger firms could be more difficult to manage than smaller and run the risk of becoming more slow moving in response to market changes and overly bureaucratic (Canbäck, et al., 2006).

Another aspect of the costs of large firms is the increased risk of management entrenchment. The larger the firm is, the fewer the number of players (e.g. competitors, investment funds etc.) who have the resources to acquire it (Tuch & O'Sullivan, 2007). This reduces the probability that a poorly performing management team is replaced as the result of the firm being acquired and thus reduces the value of the firm (Mikkelsen & Partch, 1997).

Accentuation of costs

Based on a review of previous research, accentuations of costs associated with acquisitions in emerging markets are found with regards to cultural problems when integrating the acquired targets and subsequent management of the company.

One of the drawbacks of acquisitions discussed above is the difficulties with integrating a target with a different culture within the acquirer's organization. Even though there often are cultural differences between firms in the same country, cultural differences and thus integration difficulties can be expected to be greater in cross border acquisitions. There is evidence that cultural differences between acquirer and target countries are negatively associated with acquirer abnormal returns. This has been found by both Reus & Lamont (2009) and Chakrabarti, et al. (2009). Differences in culture have been found to not only reduce the acquirer abnormal announcement returns but also the target abnormal announcement returns (Ahern, et al., 2011). This indicates that cultural differences reduce the value of synergies. However, a large difference in culture might also cause the acquiring

firm to be even more careful in terms of deal selection criteria and due diligences. Chakrabarti, et al. (2009) find evidence in support of this reasoning as they find that acquisitions with great cultural differences have worse bidder announcement returns but perform better in the long run (36 months event window).

2.2.4. PRICE PAID – POINT D

When a company makes an acquisition, the price paid – or the deal value – reflect the valuation of the target done by management.⁶ Valuation is reliant on multiple assumptions and estimates relating both to financial forecasts such as growth of sales and cost as well as the theoretical model⁷ used for valuation. These estimates create room for managerial judgement. According to the hubris hypothesis, managers consistently overestimate their own ability to realize synergies and thus overestimate the value of the acquisition (Roll, 1986). Therefore, overconfident managers end up paying too much for the acquisition.

One of the classical sources of shareholder value destruction in the context of M&A is the agency costs related to management's empire building. Managers can be expected to want to run large companies due to the higher pay and increased prestige and thus overpay for acquisitions (Berk & DeMarzo, 2011). The difference between the hubris hypothesis discussed above and the discussion regarding empire building is that under the hubris hypothesis, managers believe that they act in the interest of the shareholders. The similarity is that in both cases, managers can be expected to overpay.

If there is intense competition for acquiring a target, the price is likely to be higher and thus the opportunity for the acquirer to make a net gain is reduced. This has been studied by Alexandridis, et al. (2010) who found that intensity in the market for corporate control, measured as the percentage of listed firms being acquired each year, is negatively associated with acquirer abnormal returns.

Accentuation of valuation issues and factors influencing the price paid

Based on a review of previous research, two main sources of accentuation of valuation issues associated with emerging market acquisitions are found. Firstly, an enhanced risk of managerial hubris for developed market firms is documented with regards to investments in emerging markets. Secondly, an increased complexity in technical valuation and a greater uncertainty in estimates caused by underlying market factors. Furthermore, the competition in the market for corporate control influences the price paid.

Managerial judgment and the risk of hubris: As discussed in above, estimates are crucial and necessary in any valuation. Several reports indicate that management and boards of companies from developed markets might overestimate the availability of gains in emerging markets. Thus the room for managerial judgment might cause a risk of overvaluation and ultimately lower net gains. Firstly, Glen, et al. (2000) argues that competition might be as high in emerging as in developed markets. Secondly, Ju, et al. (2013) show that emerging market quickly catch up to the technical capability standard of developed country companies. Lastly, Atsmon, et al. (2012) data illustrates how emerging market companies outperform developed country companies in terms of growth.

⁶ Acquisitions could be considered beyond the daily activities of the firm and then the board of directors are also engaged in the acquisition.

⁷ Such as discounted free cash flow or present value of expected dividends.

Even though emerging markets are growing at a faster pace than developed countries, this does not necessarily mean that it is easy to earn good returns for expanding companies. Glen, et al. (2000) find in their working paper that the persistence of profits in seven emerging markets was less than that for developed markets. They interpret this as an indication that the intensity of competition is at least as high in emerging markets as in developed markets.

There is also evidence that even though developed market companies entering emerging markets might have a competitive advantage at first, the local emerging market firms quickly close the gap. Ju, et al. (2013) study the development of technological capabilities (TC) for DM firms entering China and compare with local Chinese firms. They find that while the foreign firms possess higher levels of TC, the local firms can develop their TC faster than foreign firms. That is, established companies are relatively more productive with their research input in order to generate new products on the market. However, as innovation knowledge is transferred with time, local companies experience a higher TC growth rate and also earns a higher return on TC. It is further shown that the marginal contribution of TC on Return on Assets (ROA) is lower for foreign companies.

Also in the case of growth rates, there are indications that the local emerging market companies outperform their developed market based competitors. In the McKinsey quarterly article by Atsmon, et al. (2012) emerging market based companies were found to grow faster than their developed market counterparts even in emerging markets where none of the companies were headquartered, i.e. “neutral turf”. Three reasons are put forward in the article. Firstly, emerging market based companies are found to have had higher reinvestment rates. Secondly, emerging market based companies are found to reallocate their capital toward new business opportunities more dynamically. Thirdly, the article argues that multinational companies domiciled in developed markets generally aim at the higher end of the market by leveraging their brand to reach high income customers. Local companies on the other hand tailor their products towards the fast growing middle class with low cost products. This conclusion aligns with London & Hart (2004) who argue that companies based in developed countries experience difficulties in reaching the market at “the bottom of the economic pyramid”. They conclude that the traditional model of expanding to new (developed) markets might not be sufficient for success in emerging markets.

Complexity in technical valuation: As described in the section above relating to the pricing and valuation of a target, valuation consists of a number of underlying assumptions and forecasts. The economic cycles in emerging markets are often more pronounced (Soussa & Wheeler, 2006) which together with volatile exchange rates (Kiymaz, 2004) makes forecasting more difficult. Furthermore, differences in accounting standards and potentially high levels of inflation makes analysis of historical performance difficult (Koller, et al., 2010). Koller, et al. (2010) devotes a separate chapter to valuation in emerging markets and recommends a triangulation approach with multiple valuation techniques to address the complexity.

A reduced competition in the market for corporate control in emerging markets indicates that there should be greater possibilities for developed market firms to negotiate a low price and thus achieve a higher net gain. Alexandridis, et al. (2010) found that the competition in the market for corporate control was most intense in the US, UK and Canada. By applying the competition indexes calculated by Alexandridis, et al. (2010) to the

countries used in this sample a lower intensity of competition in emerging markets can be observed. The average competition index in emerging markets is 0.7 percent compared to 1.9 percent in developed countries.⁸

2.2.5. THE STOCK MARKET AND PERCEPTIONS OF VALUE CREATION

Upon the acquisition announcement, investors (or the “market”) receive information regarding the existence of the acquisition and in some instances the price paid – i.e. management’s valuation. Investors react to the announcement through either trade the acquiring company share price upward (share price increase and positive returns), downward (share price decrease or negative returns) or by letting the share price remain the same.

In theory, what decides whether the share is traded upward, downward or remains the same is whether the investors expect the management to have achieved a net gain or a net loss – i.e. if investors expect the company to have paid a price higher or lower than the total fair value of the acquisition (indicated by area E in Figure 2). A net gain would imply that the value of the firm has increased – and thus that shareholder value has been created (lower and mid D point). A net loss would imply that the value of the firm has increased – and thus that shareholder value has been destroyed (upper D point).

Valuation issues and the relation to uncertain estimates

In the standard set up of short run event studies, an assumption of market efficiency in the semi strong form⁷ (market efficiency hereafter) is made (MacKinlay, 1997). Using the assumption of market efficiency, researchers are able to assume that investor expectations at the point of acquisition correctly reflect the total long run shareholder value effects following acquisitions. Based on sections 2.1.5 and 2.1.6, there is reason to believe that the complexity of valuing an acquisition – especially in the setting of emerging markets – might lead to imprecise estimations and the assumption of market efficiency to fail⁹.

Disregarding assumptions of market efficiency, short run event studies can only be interpreted as indicators of investors’ *expectations* of shareholder value effects based on the information released in the acquisition announcement. In order to research the long run shareholder value effects there is a need to conduct a long run event study. Thus it is argued that in the setting of emerging markets, long run studies might be especially called for.

Thus, apart from increasing the difficulty for management to price the asset, valuation issues might also lead to imprecise estimates of shareholder value effects by the investors. As discussed in the introduction, the underlying assumption of short run event studies is the availability of precise estimates and the relevance of conducting a long run event study increases with the risk of imprecise estimates. Thus it is argued that in the setting of emerging markets, long run studies might be especially called for. The accentuations of valuation issues and its research implications are further elaborated on below.

⁸ Competition index is calculated as the mean percentage of listed firms in a country being acquired each year during the period 1990-2007 (Alexandridis, et al., 2010).

⁹ As described in section 2.2.4, acquisitions are complex to value – even for the managers conducting the deal. It is therefore reasonable to believe that investors face a similar complexity when forming their expectations regarding the economic consequences of the acquisition. With a great complexity when forming expectations, it is also likely that the expectations might differ from the true value of the deal. In summary, it is unlikely that the investors manage to form timely and precise expectations regarding the economic effect of an acquisition at the time of announcement.

2.2.6. EMPIRICAL AREAS FOR RESEARCH

Two questions emerge from the above discussion. The first question relates to the net effect of the value components following acquisitions in emerging markets. More specifically, whether acquisitions in emerging markets are on average shareholder value creating or destructive – i.e. whether potential benefits outweigh the costs and whether the acquiring firms manage to pay a price that lies within the area for net gain and shareholder value creation. The second question relates to the net accentuation effect of the value components following acquisitions in emerging markets. More specifically, whether acquisitions in emerging market are on average more or less value destructive than acquisitions in developed markets – i.e. whether potential accentuations of benefits outweigh the accentuation of the costs and whether managers are better or worse in paying the price within the area of net gain. Both of these questions have attracted attention from empirical researchers historically. The studies, its results and also limitations are described in the next section.

2.3. EMPIRICAL FINDINGS REGARDING SHAREHOLDER VALUE EFFECTS FOLLOWING EMERGING MARKET ACQUISITIONS

As will be presented below, empirical evidence suggest a *positive expectation* of shareholder value creation following announcements of acquisitions in emerging markets and a *positive difference* compared to acquisitions in developed markets. However, inconsistencies and results potentially dependent on sample selection criteria are identified. Although argued that long run event studies might be especially called for within research of acquisitions in emerging markets, no such study is found in the previous research. Therefore, previous research in adjacent areas is reviewed. It is found that event studies on general shareholder performance following acquisition announcements suggest negative long run abnormal returns. Moreover, researchers have documented a negative cross border effect in long run event studies. Thus, it is reasonable to expect similar – negative – results when studying long run shareholder value effects following acquisitions in emerging markets. However, contrary to expectations, the few indicators found suggest a positive long run performance following acquisitions in emerging markets. Based on previous research, it is therefore considered to be a research opportunity to study shareholder value effects following announcements of acquisitions in emerging markets using both short and long run.

2.3.1. SHORT RUN EVENT STUDIES OF ACQUISITIONS IN EMERGING MARKETS

In this section the empirical evidence of short run share price returns following acquisitions in emerging markets is reviewed. The learnings following this review are that the main precedent studies have found positive abnormal share price returns around the announcement of emerging market acquisitions. Furthermore, one of the main precedent studies (Chari, et al., 2010) has found significantly more positive abnormal returns following announcements of emerging market acquisitions compared to acquisitions in developed markets – however with some limitations in the sample selection. The evidence is however not one sided. The other main preceding study (Deshpande, et al., 2012) found positive but not significant acquirer abnormal returns following announcements of emerging market acquisitions. Studies restricted to the financial industry have reported both positive and negative abnormal returns. Moreover, as the empirical evidence include deals from the late 1980s and 1990s and market behaviour has changed over time, it is considered to be of interest to study a more current data sample. These aspects are summarised and described below.

TABLE 1: REVIEW OF PREVIOUS RESEARCH USING SHORT RUN EVENT STUDIES

Researcher and year of publication	Research findings		Time period studied
	DMEM	Diff DMEM vs. DMDM	
Main precedent studies			
Chari, et al. 2010	Positive abnormal returns	DMEM more value creating than DMDM	1986-2006
Deshpande, et al. 2012	Positive abnormal returns (not significant)	Not tested	1984-2008
Studies on acquisitions within financial industry			
Kiyamaz (2004)	Positive abnormal returns	DMEM more value creating than DMDM	1989-1999
Soussa & Wheeler (2006)	Negative abnormal returns	Not tested	1990-2003

Description: the above table summarises a comparison between the two main precedent studies of shareholder value effects and two additional studies conducted on financial industry acquisitions in emerging market by developed market firms. Three key dimensions of the data samples are compared. Firstly, the documented short run aggregated abnormal return following acquisitions in emerging markets is compared. Secondly, the difference in short run aggregated abnormal return between acquisitions in emerging and developed market is compared. Lastly, the time span between the year of the first acquisition and the year of the last acquisition in the data sample is compared. DMEM stands for acquisitions by developed market firms in emerging markets. DMDM stands for acquisitions by developed market firms in another developed market (cross border acquisition)

Results of previous studies

Chari, et al. (2010) study a sample of 594 DMEM cross border acquisitions between 1986-2006 and find that developed market firms experience a mean positive abnormal announcement return of 1.16 percent over a three day event window when the bidder acquires control of the target. For firms in developed market acquiring firms in other developed markets they found no significant abnormal return. When comparing the abnormal returns following acquisition announcement, they find that the abnormal announcement returns are significantly higher for acquisitions in emerging markets compared to acquisitions in developed markets.

In relation to Chari, et al. (2010), it should be noted that the sample of acquisitions in developed markets was not restricted to cross border acquisitions. Instead the sample contained both domestic and cross border acquisitions. A mixed sample of domestic and cross border deals might be negatively skewed compared to a pure cross border sample (as in the case of the emerging market deals). Danbolt & Maciver (2012) found that cross border acquisitions are associated with higher abnormal bidder returns relative to domestic acquisitions. A similar positive “cross border effect” was also found (although not statistically significant) by Ahern, et al. (2011). Based on the data in Figure 1, approximately 35 percent of all deals can be expected to be domestic. 76 percent of the acquirers in the Chari, et al. (2010) sample of developed market acquisitions were domiciled in the US, UK or Canada, i.e. the most competitive M&A markets where acquirers’ abnormal returns at acquisition announcements have been found to be the lowest (Alexandridis, et al., 2010).

Deshpande, et al. (2012) study developed market firms acquiring emerging market firms during a similar period, 1984-2008. A slight positive but not significant abnormal share price return for the bidder at the time of the

acquisition is found. Their sample was restricted to only include transactions where the acquirer was followed by at least one financial analyst and thus the sample was reduced to 226 observations.

Mixed results are also found in studies focused on emerging market acquisitions in the financial services industry. Kiyamaz (2004) study the abnormal share price return of US financial institutions announcing cross border acquisitions during 1989-1999. He finds that acquiring a target in an emerging market is associated with a more positive abnormal announcement return for the acquirer. He argues that the higher abnormal return following an acquisition in emerging markets is due lack of competition in emerging markets and thus poses an opportunity for bidders to use their expertise to generate sales and higher wealth gains. The Bank of England working paper by Soussa & Wheeler (2006) reports significant negative acquirer abnormal returns for a sample of 215 acquisitions by UK banks between 1990 and 2003.

Only one of the preceding studies has restricted the sample with regards to deal value.¹⁰ None of the studies have taken the relative size of the target to the acquirer into consideration. As can be seen in the data used in this thesis (see section 4), a majority of acquisitions constitute less than five percent of the acquirer in terms of sales or market capitalisation. Thus, these studies are likely to have been done on acquisitions constituting only a fraction of the acquiring firm. It is argued that the quality of data and relevance of the study could be improved by adopting a relevance ratio – i.e. the target size relative to the acquirer size.

Time period studied and the changing behaviour of investors

As reported in Table 1 above, the majority of empirical research on acquisitions in emerging market has been conducted on acquisitions announced from the 1980's to the first decade of the new millennium. General studies on acquisitions – without a distinction between emerging and developed markets – suggest that shareholder value effects might depend on the time period studied, indicating that investor behaviour changes over time.¹¹ Except for studies including acquisitions in the 1950s and 1960s, findings have generally been of negative or non-significant acquirer returns. However, more recently there have been indications of a changing trend towards positive abnormal announcement results suggesting a need for studies on current data samples.

In conclusion, the empirical evidence on short run abnormal share price returns for acquisitions in emerging markets could be considered inconsistent and sample dependent. Moreover, previous research has mainly focused on studying a time period ranging from the 1980's to the first decade of the new millennium. Therefore, a need to revisit the short run returns associated with announcements of emerging markets acquisitions is identified.

¹⁰ Chari, et al. (2010) restricts their sample to only include acquisitions with a deal value above 1 USD million.

¹¹ Studies which find positive acquirer returns are have typically been limited to earlier studies, for example by Franks & Harris (1989). They included acquisitions during the 1950s and 1960s when it appears that acquirers were able to gain more from acquisitions (Bradley, et al., 1988). Later studies indicate that acquisitions often have a negative, and at the best an insignificant, impact (Tuch & O'Sullivan, 2007). The pattern of negative or insignificant returns has remained in current studies on samples of US and UK acquisitions (Alexandridis, et al., 2010). However, Tuch & O'Sullivan (2007) do note that more recent evidence from other countries than the US and the UK have reported more positive announcement abnormal returns. Campa & Hernando (2004) found insignificant gains to acquirers for when studying takeovers in Central Europe and Ben-Amar & André (2006) reported positive abnormal announcement returns for their sample of firms in Canada.

2.3.2. LONG RUN EVENT STUDIES OF ACQUISITIONS IN EMERGING MARKETS

Although there have been short run event studies of shareholder value effects following acquisitions in emerging markets, no long run study of abnormal share price returns has been found. Given the difficulties and complexities in valuation of acquisitions in emerging markets discussed above, it can be argued that a long run event study of share price returns is especially called for in the case of emerging market acquisitions. The high level of uncertainty at the time of the acquisition announcement indicates that the long run returns can be expected to differ from the expectations formed at the time of the announcement. Therefore, the lack of long run event studies in the area of emerging market acquisitions provide an interesting research opportunity but makes comparisons with previous findings difficult.

The empirical evidence from long run event studies following acquisitions without any distinction between cross border and domestic reveals negative long run results regardless of which model is used for estimating expected returns. Studies of cross border acquisitions have also resulted in strongly negative results. However, long run studies of the share price returns following emerging market acquisitions are scarce in the literature. The existing findings of the long run changes in accounting ratios and analyst forecasts indicate an increased performance following emerging market acquisitions.

Researcher and year of publication	Research findings		Time period studied
	Research design	Key finding	
Panel A			
Studies on domestic acquisitions (abnormal share price returns)			
Alexandridis, et al. (2006)	36 month abnormal return, expected return estimated with Fama French three factor model	Significant negative abnormal returns	1991-1998
Sudarsanam & Mahate (2003)	24 month abnormal return, expected return estimated with multiple models	Significant negative abnormal returns	1983-1995
Studies on cross border acquisitions (abnormal share price returns)			
Aw & Chatterjee (2004)	6, 12, 18 and 24 month abnormal return following cross border acquisition, expected returns estimated with market model.	Significant negative abnormal returns	1991-1996
Panel B			
Studies on emerging market acquisitions (accounting measures)			
Chari, et al. 2010	Change in ROA in the year following the acquisition	Positive increase in ROA, unique to the DMEM sample	1986-2006
Deshpande, et al, 2012	Change in analyst forecast and realized earnings in the year following the acquisition	Positive increase in both forecasted and realized earnings	1984-2008

Description: the above table summarises the results of preceding long run studies. Panel A reports the results of long run studies of abnormal share price returns following acquisitions. Three key dimensions of the studies are compared. Firstly, the event window and used metrics. Secondly, the aggregated abnormal returns found. Lastly, the time span between the year of the first acquisition and the year of the last acquisition in the data sample is compared. Panel B reports the findings on long run studies of changes in accounting measures following acquisitions. Three key dimensions of data are compared. Firstly, the studied accounting measure and event window. Secondly, the change in the studied measure following an emerging market acquisition. Lastly, the time span between the year of the first acquisition and the year of the last acquisition in the data sample is compared.

Results from long run event studies on general samples of acquisitions

Analysis of the long run share price return for acquiring firms reveals overwhelmingly negative results (Tuch & O'Sullivan, 2007). The negative results are replicated with different models for calculating abnormal share price returns. Alexandridis, et al. (2006) study a sample of 164 domestic acquisitions using both the Fama French three factor model and the market model for estimating normal returns. They find significant negative abnormal returns 36 months after the acquisition. Furthermore, Sudarsanam & Mahate (2003) study a sample of 519 domestic acquisitions. They analysed abnormal Buy-and-Hold Returns compared to both the constant mean return and market models as well as matched reference portfolios formed using size and the book to market ratio.¹² Regardless of estimation model, Sudarsanam & Mahate (2003) found significant negative returns in the 24 month period following an acquisition.

Results from long run event studies on cross border acquisitions

Aw & Chatterjee (2004) test the long run ($t + 6, 12, 18$ and 24 months) share price returns of UK firms acquiring large (> 400 USD million) domestic, US and Continental European targets between 1991 and 1996. By using event study methodology with a long event window they find that all acquirers reported negative aggregated abnormal return which became more negative over time. Acquirers of domestic firms reported less negative aggregated abnormal return and acquirers of Continental Europe firms reported the most negative aggregated abnormal return. However, significance levels were compromised due to a small sample size (79 observations, 38 domestic, 29 US and 12 Continental Europe).

Researchers focused on the emerging market complexities insinuate positive long run effects

Chari, et al. (2010) and Deshpande, et al. (2012) suggest positive long run effects following emerging market acquisitions by developed market acquirers. In connection to their studies on short run (three day event windows) share price returns, Chari, et al. (2010) and Deshpande, et al. (2012) included tests of long run performance using accounting ratios and changes in (forecasted and realized) earnings respectively. Chari, et al. (2010) found that firms making acquisitions in emerging markets on average experienced higher increases in return on assets in the year following the acquisition compared to firms acquiring in developed markets.¹³ Deshpande, et al. (2012) found that the average analyst forecast of earnings and realized earnings increased in the year following an acquisition in an emerging market compared to the year prior to the acquisition.

The improvements in accounting ratios and earnings figures following acquisitions in emerging markets are contrasting to the findings of negative abnormal returns following domestic and cross border acquisitions. The indications of improved performance suggest that there might be a difference in the post acquisition share price returns compared to domestic and developed market acquisitions. This contrast highlights the need for a long run study of the abnormal share price returns following an emerging market acquisition.

¹² See section 3.2.2

¹³ However, after restricting the sample to acquisitions where the deal value was at least 15% of the acquirer's market capitalisation only 19 observations of emerging market acquisitions were included.

3. STATISTICAL TESTS & METHOD

The method section is structured as follows. Firstly, the operationalisation of the research question is presented based on the background and previous research presented in section 2 of this paper. The operationalisation consists of one short and one long run event study including two statistical tests each. Secondly, the specific set up for the short and long run are presented. In the short run event study, the same method can be used for both tests. However, in the long run event study two different methods will be applied. As will be more thoroughly described below, the Fama French three factor model is used to estimate the long run aggregated abnormal returns for emerging market acquisitions and the matched reference portfolio method¹⁴ is used to measure the difference in aggregated abnormal returns between acquisitions in emerging and developed markets. The design and assumptions of these models are presented separately. Lastly, the underlying assumptions of the event study will be discussed.

3.1. OPERATIONALISATION OF RESEARCH QUESTION

The operationalisation of the research question is done through one short and one long run event study, each including two statistical tests.¹⁵ The short run event study measure the expectation of shareholder value effects by investors at the point of announcement. The long run event study measure the shareholder value effects during the first two years following the acquisition announcement. The long run shareholder effects are measured in intervals of 6 months – i.e. at 6, 12, 18, and finally 24 months. The first tests in each group relate to the *direction* of shareholder value effects following announcement of acquisitions in emerging markets and the second relate to the *difference* in shareholder effect between acquisitions in emerging and developed markets. The test variable is the average aggregated abnormal return following the acquisition announcement. Aggregate abnormal return is a collective term used in this thesis for the different measures of abnormal share price returns for the acquiring firm's shareholders following an acquisition announcement. Abnormal refers to return other than the expected return and aggregate refers to that the abnormal returns are aggregated over the research period chosen. For example, the aggregated return in the short run event study is the sum of abnormal returns during the three days surrounding the acquisition announcement. As described in detail in the following method section, the aggregated abnormal return is measured using either cumulative abnormal returns (CAR), abnormal performance index (API) or Buy-and-Hold Returns (BHR) in the different tests. Each test and the specified interpretation will be described below.

Short run event study

The short run event study is used as a method to capture the investors' initial *expected* value effects of an acquisition. The initial expectations are measured as the aggregated abnormal returns during the time of the acquisition announcement. The aggregated abnormal return metric used is Cumulative Abnormal Return (CAR),

¹⁴ Matched reference portfolio method is a method where the return of a sample firm is matched with the return of a portfolio of control firms based on pre specified characteristics. The abnormal return is then the difference in return between the sample firm and the matched reference portfolio. The alteration consists of that instead of constructing portfolios of traded firms on the same market place as the sample firm, portfolios of firms making acquisitions in developed markets are constructed.

¹⁵ Short run event studies refer to the study of share price return during days surrounding acquisition announcements while long run event studies refer to the study of share price return over months and years following acquisition announcements.

which is further described in section 3.2.1. Table 2 summarises the statistical tests and the interpretations given a rejection of the null hypothesis. Table 2 will be the guiding table for the interpretations of test results in section 5.2.1 *Results of the short run event study*. The interpretations and the connection to the research question are further elaborated on below.

TABLE 2: STATISTICAL TESTS & INTERPRETATIONS IN THE SHORT RUN EVENT STUDY

Test number	Method	Alternative hypothesis	Interpretation of results following a rejection of the null hypothesis
(1)	Short run event study using the market model	DMEM CAR(-1;1) $\neq$ 0	DMEM acquisition announcements are associated with <i>expectations</i> of shareholder value creation/destruction
(2)		DMEM CAR(-1;1) $\neq$ DMDM CAR(-1;1)	Investor expectations of value creation differ between announcements of DMEM and DMDM acquisitions

Description: The above table describes the two statistical tests included in the short run event study. The alternative hypotheses are presented along with the interpretation of the test results. DMEM stands for acquisitions done by companies in Developed Markets (DM) in Emerging Markets (EM). DMDM stands for acquisitions done by companies in Developed Markets (DM) in another Developed Market (DM) - i.e. cross border acquisition. CAR stands for Cumulative Abnormal Return and is the aggregated abnormal return metric used in the short run event study. The CAR is calculated based on daily returns over the event window, defined as one day prior until one day following the acquisition announcement.

The economic interpretation of the results of test 1 is that the direction (positive or negative) of short run aggregated abnormal share price return indicates whether investors *expect* the acquisition to be shareholder value creating or destructive as described in section 2.1.5 in previous research. The economic interpretation of the results of test 2 is that a statistically significant difference would indicate that investors expect acquisitions in either emerging or developed markets to be more shareholder value creating.

Long run event study

The long run event study measure the shareholder value effects during the first two years following the acquisition announcement. The long run shareholder effects are measured in intervals of 6 months – i.e. at 6, 12, 18, and finally 24 months. As was briefly mentioned above and as will be thoroughly discussed in section 3.2.2, two different methods will be used in the long run event study. The method choices are dependent what question the different tests aims to answer. Test number 3 is constructed to give an answer to the *direction* (positive or negative) of the long run aggregated abnormal return following acquisitions in emerging markets – i.e. what abnormal shareholder return can be attributed to acquisition. In order to perform test number 3, the Fama French three factor model is used to estimate the aggregated abnormal return. Test number 4 is constructed to give an answer to the *difference* in long run aggregated returns between acquisitions in emerging and developed markets. In order perform test number 4, the method of matched reference portfolios will be used.¹⁶

¹⁶ Matched reference portfolio method is a method where the return of a sample firm is matched with the return of a portfolio of control firms based on pre specified characteristics. The abnormal return is then the difference in return between the sample firm and the matched reference portfolio. The alteration consists of that instead of constructing portfolios of traded firms on the same market place as the sample firm, portfolios of firms making acquisitions in developed markets are constructed.

An event study using the Fama French three factor model measures the return relative to the expected return given that no acquisition had been made. Thus the abnormal return estimated using the Fama French three factor model offers an immediate interpretation of the aggregated abnormal return – i.e. the abnormal return an investor has received as a result of the acquisition – and is therefore suits the purpose of performing test 3. In contrast, the matched reference portfolio method (as specified in this thesis)¹⁷ is only concerned with the difference in realised returns following emerging and developed market acquisition announcements. By using realised returns, rather than expected returns, the comparison becomes more direct resulting in statistical advantages. An effect from the model is that the resulting measure – aggregated difference in return – does not have an immediate economic interpretation as the constructed portfolio is merely theoretical. However, the model suits the purpose of test 4.

Abnormal Performance Index (API) is used as the measure of aggregated abnormal return metric when applying the Fama French three factor model. Buy-and-Hold Returns (BHR) are used as the aggregated abnormal return metric in test number 4. Table 3 summarises the statistical tests and the interpretations given a rejection of the null hypothesis. Table 3 will be the guiding table for the interpretations of test results in section 5.2.2. The interpretations and the connection to the research question are further elaborated on below.

TABLE 3: STATISTICAL TESTS & INTERPRETATIONS IN THE LONG RUN EVENT STUDY

Number	Method	Alternative hypothesis	Interpretation of results following a rejection of the null hypothesis
(3)	Long run event study using Fama French three factor model	DMEM API(6,12,18,24) $\neq 0$	DMEM acquisition announcements are associated with long run positive/negative shareholder value effects for the acquirer shareholders
(4)	Long run event study using matched reference portfolios	DMEM BHR(6,12,18,24) $\neq$ DMDM BHR(6,12,18,24)	Acquirer long run shareholder value effects following acquisition announcements differ between DMEM and DMDM acquisitions

Description: Above table describes the two statistical tests included in the long run event study. The alternative hypotheses are presented along with the interpretation of the test results. DMEM stands for acquisitions done by companies in Developed Markets (DM) in Emerging Markets (EM). DMDM stands for acquisitions done by companies in Developed Markets (DM) in another Developed Markets (DM) - i.e. cross border acquisition. CAR stands for Cumulative Abnormal Return and is the aggregated abnormal return metric used in the short run event study. The CAR is calculated based on daily returns over the event window, defined as one day prior until one day following the acquisition announcement.

The economic interpretation of test 3 is that the direction (positive or negative) of the long run aggregated abnormal return indicates that shareholder value has been created following the acquisition announcement.¹⁸ The economic interpretation of test 4 is that a statistically significant difference would indicate that one type of acquisition¹⁹ has created more shareholder value than the other.

¹⁷ As is described in section 3.2.2, the matched portfolio in this thesis is a portfolio of acquirers making acquisitions in developed markets in the same time period, with similar size and valuation. The standard matched portfolio as described by (Lyon, et al., 1999) consists of traded firms in the same market place as the sample firm (acquirer in emerging markets) with similar size and valuation. Thus, following (Lyon, et al., 1999), the matched reference portfolio method could render an economically interpretable result.

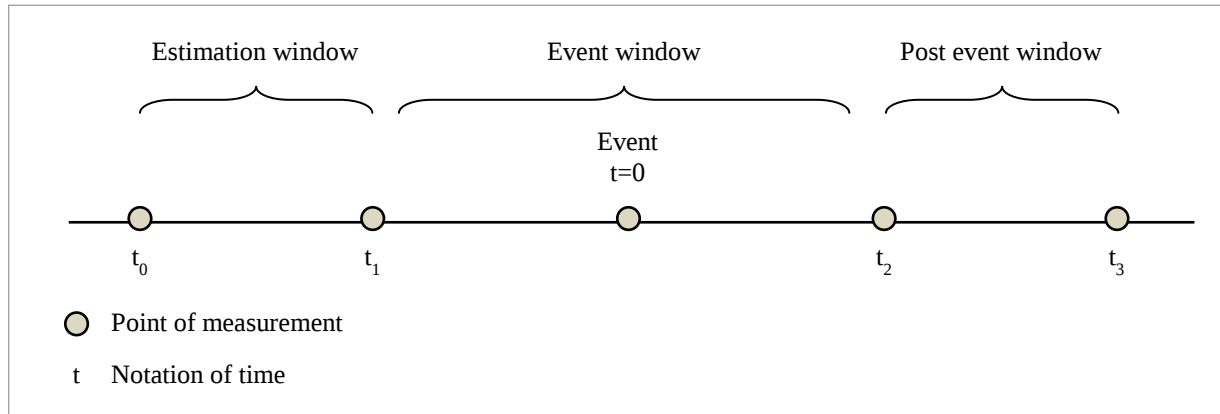
¹⁸ These two hypotheses are tested using the Fama French three factor model as described in section 2.3.2. As this model suffers from methodological problems which cannot be perfectly corrected for. Therefore, another model (matched reference portfolios) has been used when testing the difference between DMEM and DMDM acquisitions.

¹⁹ Within the same category of time, size and BTM.

3.2. DESIGN AND USE OF THE EVENT STUDY METHOD

Following the operationalisation of the research question, the event study design employed in this operationalisation is presented. The event study design includes elaboration regarding the four key components of the standard event study: 1) estimators for abnormal return and aggregated abnormal return, 2) estimation window, 3) event window and 4) hypothesis test. The event study components can be illustrated as in Figure 3.

FIGURE 3: STANDARDISED EVENT STUDY



The method design used in this study is based on the standard set up and, for the sake of clarity, only the special considerations will be considered in the main body of the thesis. The standard event study is described in more detail in section 9.1.2 in appendix following MacKinlay (1997). The event study design will be divided between long and short run event studies, as the assumptions and set up differs significantly depending on research horizon.

3.2.1. SHORT RUN EVENT STUDY SET UP & ASSUMPTIONS

The assumptions for the event study are summarised in Table 4:

TABLE 4: SHORT RUN EVENT STUDY SET UP AND ASSUMPTIONS

Category	Main assumption
Expected return model	Market model
Aggregated abnormal return metric	Cumulative Abnormal Return (CAR)
Estimation window (days)	(-250;-25)
Event window (days)	(-1;1)
Significance level	1%, 5%, 10%

The constant mean return offers the simplest and most straight forward specification, followed by the market model (one factor model) and multi factor models. Adding factors increase the explanatory power of the model and is thus intellectually appealing. However, additional factors (besides the market factor) have little marginal explanatory power (MacKinlay, 1997). The *expected return model* for this study will therefore be the market model. The market model is preferred to the constant mean return model as it reduces the variance of return related to variance in the return of the market portfolio (MacKinlay, 1997).

The *market model* relates the return of any security to the return of a market portfolio. Following MacKinlay (1997) the basic function can be written as:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad (1)$$

Where R_{it} denotes return for any security (denoted i) at a certain point in time (denoted t). Similarly R_{mt} denotes the return of the market portfolio at a certain point in time. The return of a given security at a given point in time is then explained by the three model parameters: α , β and ε . α denotes the (firm specific) intercept of the return which is unexplained by the return of the market portfolio. β is a parameter reflecting the sensitivity of the security return to variance of the market portfolio, commonly referred to as the market beta. Lastly, ε is an error term which contains the portion of return which cannot be explained by either the intercept or the market beta. The expected mean of the error term is zero and with a standard variance.

For the purpose of this thesis, the local market index for each acquirer country is used as a proxy for the market portfolio. The return on the index is calculated in accordance to the specification in equation 17 in section 9.1.2. The estimation regression run over the estimation window in order to obtain the estimated model parameters can be written as:

$$R_{it} = \hat{\alpha}_i + \hat{\beta}_i R_{index,t} \quad (2)$$

Where R_{it} denotes realized return for any security (denoted i) at a certain point in time during the estimation window (denoted t). Similarly $R_{index,t}$ denotes the return of the local market index approximating the market portfolio at a certain point in time t . $\hat{\alpha}_i$ and $\hat{\beta}_i$ are estimated model parameters. All estimation regressions are run correcting for heteroscedasticity. Using the estimated model parameters, the expected return for each security during the event window is estimated as $\hat{R}_{it}$ in the following estimation model:

$$E(R_{it}) = \hat{R}_{it} = \hat{\alpha}_i + \hat{\beta}_i R_{index,t} \quad (3)$$

Where $E(R_{it})$ denotes expected return for any security (denoted i) at a certain point in time during the event window (denoted t). Similarly $R_{index,t}$ denotes the return of the local market index approximating the market portfolio at a certain point in time t . $\hat{\alpha}_i$ and $\hat{\beta}_i$ are the estimated model parameters.

Abnormal return for each security is calculated as realised return less expected return following the standard set up for event studies, as described in section 9.1.2 and the chosen *aggregated abnormal return metric* is Cumulative Abnormal Return (CAR) has been calculated based on the following expression:

$$CAR_{t_1,t_2} = \sum_{t=t_1}^{t_2} AR_t \quad (4)$$

The definition of *estimation windows*²⁰ of previous researchers have varied between 365 to 170 days before the event window (e.g. Chari, et al. (2010), Deshpande, et al. (2012) and Danbolt & Maciver (2012)). As there is no common praxis we choose an estimation window equal the one used by Aktas, et al. (2007), namely a window

²⁰ Estimation window is defined as trading days relative to the announcement day e.g. if the deal was announced on a Monday, the trading day preceding the announcement (previous Friday) has a relative trading day of -1, but a relative calendar day of -2.

span of 225 days. In order to secure that no potential event associated information leakage is included in the estimation period, the window ends 25 days prior to the event day. The estimation window thus become $t_0 = -250; t_1 = -25$.

Event window: The event is defined as the announcement day of the acquisition.²¹ Studies performed regarding potential lag in incorporation of information by the market suggest a speedy incorporation. Result shows that information is incorporated within 15-90 minutes after the announcement (Mitchell & Netter, 1989). However, in order to secure capturing the entire implementation of an event, the event window is defined to range from one day before the event to one day after ($t_1 = -1; t_2 = 1$) day following the event.

SUMMARY OF HYPOTHESIS, STATISTICAL TESTS AND INTERPRETATION OF RESULTS

Following the operationalisation, two separate t-tests will made. The tests are specified as in Table 2 and the decision rule, specification of test statistic and assumptions follows those in section 9.1.2.

1. Test if the sample mean of aggregated abnormal return of acquisitions in emerging markets is statistically different from zero
2. Test if the difference in sample mean of aggregated abnormal return of acquisitions in emerging and developed markets is statistically different from zero

Statistical tests		
	(1)	(2)
Alternative hypothesis	$H1_1: \widehat{CAR}_{DMEM} \neq 0$	$H1_3: \widehat{CAR}_{DMEM} - \widehat{CAR}_{DMDM} \neq 0$
Null hypothesis	$H0_1: \widehat{CAR}_{DMEM} = 0$	$H0_3: \widehat{CAR}_{DMEM} - \widehat{CAR}_{DMDM} = 0$

In order to perform a t-test on the estimated means of aggregated abnormal return, an OLS regression correcting for heteroscedasticity is run. The estimation model for the OLS regression can be written as:

$$\widehat{CAR}_{1,t} = \hat{\beta}_0 + \hat{\beta}_1 DMEM \quad (5)$$

Where $\widehat{CAR}_{1,t}$ is the estimated CAR following the announcement and DMEM is a dummy variable taking the value 1 if the acquisition is made in an emerging market and 0 if the acquisition is made in a developed market, $\hat{\beta}_0$ is the estimated mean CAR for acquisitions in developed markets and $\hat{\beta}_1$ is the estimated contribution to estimated mean CAR for acquisitions in emerging market. Thus the sum of $\hat{\beta}_0$ and $\hat{\beta}_1$ is the estimated mean CAR for acquisitions in emerging markets. For the sake of clarity, three results of hypothesis test will be

²¹ In the acquisition data used three deal dates are reported: 1) rumour date, 2) announcement date and 3) completion date. According to Bureau van Dijk (2013), the rumour date is set to the day when the deal is first mentioned in publicly available media. The announcement date is the date when details of the deal have been provided, when a formal offer has been made or when one of the companies involved in the deal has confirmed it. Lastly, the completion date is the date when the deal closes or when competition authorities approve it. The probability of the deal increases with the dates. Rumour is the weakest form, where the probability of transaction is difficult to define. Upon the acquisition announcement, the deals participants have intentions to complete the transactions however it is contingent upon a number of clearances. Clearances could be for example financing, competition authorities approvals and due diligence. It is not until completion that the deal is certain. Given these three event dates, the announcement date is still considered as the main event.

presented: 1) $\widehat{CAR}_{DMM}$ - estimated mean CAR for acquisitions in emerging markets ($\hat{\beta}_0$ and $\hat{\beta}_1$), 2) $\widehat{CAR}_{DMM} - \widehat{CAR}_{DMDM}$ - the estimated contribution to estimated mean CAR for acquisitions in emerging market ($\hat{\beta}_1$).

3.2.2. LONG RUN EVENT STUDY SET UP & ASSUMPTIONS

Fama French three factor model will be used in order to estimate the aggregated abnormal return used in statistical test 3 – i.e. test the aggregated abnormal return following acquisitions in emerging and developed markets respectively.

The method of matched reference portfolios²² will be used to test the difference in aggregated abnormal return between acquisitions in emerging and developed markets, i.e. to estimate the aggregated abnormal return used in statistical test 4. By using the matched reference portfolio method, sample companies making acquisitions in emerging markets are matched with portfolios of companies making acquisitions in developed markets. The method of matched reference portfolios is seen as superior as it allows a direct comparison between developed and emerging market targets without estimating expected returns. As each of these methods requires different assumptions and set ups, each will be described separately below.

SHAREHOLDER VALUE EFFECTS USING FAMA FRENCH THREE FACTOR MODEL

The Fama French three factor model is considered the preferred *expected return model* when estimating the long run abnormal return following acquisitions. Given the use of an asset pricing model as estimation model, Fama French three factor model has methodological advantages compared to the alternative following a higher explanatory power.²³ As documented by several researchers (e.g. Tuch & O'Sullivan (2007), Jegadeesh & Narasimhan (2009) and Lyon, et al. (1999)) long run event studies using asset pricing models suffer from methodological issues. These issues will be discussed in section 3.3 and taken into consideration when discussing the validity of the thesis in section 6.3.2.

Other commonly used models for estimating long run returns are: a Bayesian approach, the calendar-time approach (or Jensen alpha approach), non-parametric bootstrap approach, and the Jegadeesh & Narasimhan (2009) method correcting for heteroscedasticity and autocorrelation. All these methods provide benefits compared to asset pricing models, but they are not free from methodological issues.²⁴ Following a research of the different methodologies it has been concluded that the magnitude of improvement compared to complexity in application is not large enough to apply them in this thesis. Also, the limited previous research using Bayesian approach and the Jegadeesh & Narasimhan (2009) method restrict the possibility to compare results with previous research.

²² Matched reference portfolio method is a method where the return of a sample firm is matched with the return of a portfolio of control firms based on pre specified characteristics. The abnormal return is then the difference in return between the sample firm and the matched reference portfolio.

²³ A possible alternative asset pricing models is for example the Capital Asset Pricing Model (CAPM). CAPM has received heavy critic and is disregarded as an asset pricing model by many researchers.

²⁴ All models except the Jegadeesh & Narasimhan (2009) method still have an issue as they are not unbiased when performing tests on non-random samples.

TABLE 5: LONG RUN EVENT STUDY SET UP AND ASSUMPTIONS (1)

Category	Main assumption
Risk adjustment method	Market risk, SMB and HML
Aggregated abnormal return metric	Abnormal Performance Index (API)
Estimation window (months)	$(-36;-12)^{25}$
Event window (months)	$(6,12,18,24)$
Significance level	1%, 5%, 10%

The Fama French tree factor model is a multifactor model with one market factor (market return) and two company specific factors (one size factor “SMB” and one valuation related factor “HML”) to capture systematic risk. Based on (Fama & French, 1993), the expected return using the three factor model can be written as:

$$R_{i,t} = \alpha_i + R_{f,t} + \beta_{1,i}(R_{m,t} - R_{f,t}) + \beta_{2,i}SMB_t + \beta_{3,i}HML_t + \varepsilon_{i,t} \quad (6)$$

Where $R_{i,t}$ represent simple return of a share i at time t . The time unit chosen for the long run study is monthly.²⁶ R_f stands for risk free market rate, R_m for return of a chosen market portfolio. SMB and HML are factors constructed based on differences of returns of portfolios formed by size and Book-to-Market ratios. β_i represent the sensitivity of the individual firm i to unexpected changes in the specific factor of interest. The construction of Fama French three factor model is described in greater detail in section 9.1.3 in appendix.

In order to estimate the expected return of a particular share, estimates are retrieved using OLS regressions over an estimation window preceding the event. The estimation model can be written as:

$$(\widehat{R_t - R_f})_t = \hat{b}_{0,i} + \hat{b}_{1,i}(R_{m,t} - R_{f,t}) + \hat{b}_{2,i}SMB_t + \hat{b}_{3,i}HML_t \quad (7)$$

Where $R_{i,t}$ represent simple return of a share i at time t , R_f stands for risk free market rate, R_m for return of a chosen market portfolio. SMB and HML are factors constructed based on differences of return of portfolios formed by size and Book-to-Market ratios (see description in section 9.1.3 in appendix). SMB and HML factors have been extracted on a regional basis from the Fama French database (French, 2013). The market portfolio has been approximated with the local market index for each acquirer country. These considerations are described in greater detail in section 4.1.3. $\hat{b}_i$ represent the estimated sensitivity of the individual firm i to unexpected changes in the specific factor of interest.

The estimated factor sensitivities $\hat{b}_{1,i}$, $\hat{b}_{2,i}$ and $\hat{b}_{3,i}$ are then used for estimating the expected return for the event window as shown in equation:

$$(\widehat{R_t - R_f})_t = E(R_i - R_f)_t \quad (8)$$

²⁵ $(-36;-12)$ means that the estimation period ranges from 36 months prior to the acquisition announcement until 12 months prior to the acquisition announcement. Thus the theoretical maximum of estimation window is 24 months.

²⁶ Monthly frequency has been chosen as previous research suggests that it contains less noise than daily or weekly data, but still offers enough observations for the Fama French three factor model regressions. Furthermore, (Barber & Lyon, 1997) suggests that the rebalancing bias becomes more severe using daily rather than monthly returns.

Abnormal Performance Index (API) is chosen as *aggregated abnormal return metric* following Kothari & Warner (1997) and Ball & Brown (1968). API is used rather than CAR in long run event studies based on the advantages put forward by e.g. Lyon, et al. (1999). CAR and API has similar interpretation, where the main difference is that abnormal returns are added when computing CAR and multiplied when calculating API, thus API includes the effect of compounding. In the case of single share being more volatile than the benchmark portfolio, simple CAR can be inflated (in the case of negative CAR^{comp}) or deflated (in the case of positive CAR^{comp}) (Lyon, et al., 1999). The mathematical formula for API can be written as follows, where $R_{i,t}$ represent simple return of a share i at time t . $P_{i,t}$ represent the price of a share i at time t .

$$API_{i,t} = \prod_t^T (1 + ret_{i,t}) \quad (9)$$

$$\text{Where} \quad R_{i,t} = (1 + ret_{i,t}) = \frac{P_{i,t}}{P_{i,t-1}} \quad (10)$$

The *estimation window* should not be longer than necessary as the relevance of the estimation declines with its length. However, it needs to be long enough in order to provide precise estimates. Based on that the estimation window should be at least as long as the event window, a 24 months estimation window is used in this thesis. Furthermore, a minimum requirement of a 12 month estimation window has been applied.

The *event windows* chosen for the long run event studies are 6, 12, 18 and 24 months post announcement. It is desirable to keep the event window as short as possible in order for the estimation of return to be as relevant as possible. Estimations of parameters outside the range of the data are associated with risk as the researcher implicitly assumes that the return development during the estimation period is representative also for the event period (Lyon, et al., 1999). However, it is also crucial to capture the most critical aspects of the post-acquisition integration process and the major occasions when investors obtain new information about the deal. Based on sample data and previous research, three points in the integration process are considered of particular interest to capture. Firstly, data suggest that the average time between the announcement of the acquisition and the completion is approximately three months.²⁷ Thus the first point of measurement following the short run event study should be beyond three months. Secondly, Galpin (2008) suggest that the first 12 months after the acquisition are critical for the integration process. Thus a point of measurement would preferably be beyond 12 month past completion of the deal (approximately 15 months post acquisition). Lastly, following Colombo, et al. (2007) 24 months post acquisition is considered to be an appropriate time interval to evaluate the total performance of the post-acquisition integration process. Furthermore, in the 24 months following the announcement information will have been provided to investor through at least one annual report and five quarterly reports. Following this reasoning it has been concluded that the event windows should be created in six month intervals up to 24 months following acquisition announcement.

DIFFERENCE IN SHAREHOLDER VALUE EFFECTS USING MATCHED REFERENCE PORTOLIOS

It is desirable avoid using asset pricing models if possible as the use of these models introduces potential bias to the sample and might cause misleading results. Test number 4 is constructed to give an answer to the *difference* in long run aggregated returns between acquisitions in emerging and developed markets. As the time frame of

²⁷ This estimation is done based on the raw sample of deals retrieved containing 147 797 deals and calculated as the difference between the announcement and completion date.

the acquisition is standardized with reference to the acquisition date²⁸, it is possible to directly compare the returns of the two subsamples by months relative to the acquisition date. By comparing the two samples directly, there is no need to estimate returns using an asset pricing model. By using the method of matched reference portfolios, the subsamples can be compared directly.

The underlying idea of matched reference portfolios is to compare the return of a sample firm to the return a portfolio of reference firms. The usage of matched reference portfolios in long run event studies was advocated by Barber & Lyon (1997) and has been widely used since. In the standard set up described in Barber & Lyon (1997), sample firms are matched with portfolios of random companies on the share market. For the purpose of this thesis, the standard method is amended and sample companies (acquisitions in emerging markets) are matched with portfolios of companies making acquisitions in developed markets. The assumptions and the portfolio construction are described below.

TABLE 6: LONG RUN EVENT STUDY SET UP AND ASSUMPTIONS (2)

Category	Main assumption
Risk adjustment method	Matched portfolios on with respect to time, size and BTM
Aggregated abnormal return metric	Buy-and-Hold Returns (BHR)
Estimation window (months)	-
Event window (months)	(6,12,18,24)
Significance level	1%, 5%, 10%

No estimation window is used following matched portfolio methodology and event window assumptions are unchanged compared to the Fama French three factor model estimation.

Creating portfolios and matching of companies

As mentioned above, the Barber & Lyon (1997) approach to matching of portfolios is amended in this thesis.²⁹ Instead of forming portfolios of all shares available on each share exchange, portfolios are constructed of firms acquiring in developed markets following certain characteristics. Each firm acquiring in emerging markets is then matched against the appropriate portfolio of developed market acquiring firms following the same characteristics. An illustration of construction of portfolios is found in Table 7 and further described below:

TABLE 7: ILLUSTRATION OF PORTFOLIO CONSTRUCTION BASED ON TIME, SIZE AND BOOK-TO-MARKET RATIO

Portfolio																				
Time	1				2				3				4				5			
Time-size	1.1		1.2		2.1		2.2		3.1		3.2		4.1		4.2		5.1		5.2	
Time-size-BTM	1.1.1	1.1.2	1.2.1	1.2.2	2.1.1	2.1.2	2.2.1	2.2.2	3.1.1	3.1.2	3.2.1	3.2.2	4.1.1	4.1.2	4.2.1	4.2.2	5.1.1	5.1.2	5.2.1	5.2.2
Portfolio number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

²⁸ A relative time scale is created as illustrated in Figure 3 above, where the event date is set as $t=0$ and each point in time before and after is scaled as number of time units (months or days) away from the event window.

²⁹ In the standard set up of the method of matched reference portfolios, Lyon, et al. (1999) construct seventy reference portfolios in two steps. First they construct fourteen portfolios based on size, and then for each portfolio of size they create 5 portfolios based on BTM ratios. The portfolios are created using all listed shares on the New York Stock Exchange (NYSE) and American Exchange (AMEX). The portfolios are rebalanced and recreated on June each year.

The approach used for portfolio construction is as follows:

- 1) All developed market acquisitions are ranked in terms of date of acquisition, and partitioned into five time portfolios
- 2) Each time portfolio is ranked in terms of sales in the year of the acquisition and partitioned into 2 additional time-size portfolios
- 3) Each size portfolio is then lastly ranked in terms of Book To Market (BTM hereafter) and partitioned into 2 additional time-size-BTM portfolios. At total, 20 reference portfolios of developed market acquisitions are created as illustrated in table Table 7
- 4) Each emerging market acquisition is matched against the appropriate developed market portfolio based on the following approach:
 - a. Firstly, emerging market deals are matched with the correct time portfolio
 - b. Within each time portfolio, emerging market deals are matched with the correct time-size portfolio based on if the sales of the acquirer is larger or smaller than the median sales for the time portfolio
 - c. Within each time portfolio, emerging market deals are matched with the correct time-size-BTM portfolio based on if the BTM of the acquirer is larger or smaller than the median BTM for the time portfolio
- 5) Monthly compounded returns ($CR_{i,t}$) are calculated for each sample firm (company announcing an acquisition in emerging market). Portfolio returns ($CR_{p,t}$) are calculated as the average monthly compounded return of all reference firms (companies announcing an acquisition in developed markets) in each portfolio.

The characteristics, upon which the portfolios are constructed and matching is done, are chosen in order to provide a like-for like comparison between sample firms and reference portfolios. Thus the risk adjustment is incorporated in portfolio construction and matching rather than estimation regression model factors. Three factors are chosen as characteristics: time, size and valuation. Time is chosen as the share price returns are likely to vary depending on time.³⁰ Size (operationalised as sales of acquirer) and valuation (operationalised as BTM) are chosen as they have historically proved to explain abnormal returns (Fama & French, 1992). Furthermore, size and valuation are also the additional factors used in the Fama French three factor model. The size and BTM variables are calculated as follows where t is the time of acquisition:³¹

$$BTM_{i,t} = \frac{\text{Book value of equity}_{i,t}}{\text{Market capitalization}_{i,t}} \quad (11)$$

$$Size_i = Sales_{i,t} \quad (12)$$

Following (Lyon, et al., 1999) sample firm returns ($CR_{i,t}$) and reference portfolio returns ($CR_{p,t}$) are calculated as follows:

$$CR_{i,t} = \prod_{t=1}^{T_0+\tau} (1 + r_{i,t}) - 1 \quad (13)$$

³⁰ See section 2.3.1.

³¹ The book and sales values are the latest reported book values before the announcement of the acquisition.

$$CR_{p,t} = \sum_{i=1}^n \frac{[\prod_{t=1}^{T_0+\tau} (1+r_{i,t})]^{-1}}{n_{T_0}} \quad (14)$$

Where p stands for a portfolio number and n stands for number of securities traded in that given month. R represents the return for a specific security i in any given month t and τ represent the investment horizon (6,12,18 or 24 months). Thus the portfolio return is the average compounded returns for the securities trading in that month. The abnormal return is then calculated as:

$$BHR_{i,\tau} = AR_{i,\tau} = R_{i,\tau} - E(R_{i,\tau}) = CR_{i,\tau} - CR_{p,\tau} \quad (15)$$

Where $AR_{i,\tau}$ is the abnormal return for a security i at the investment horizon τ . BHR are calculated for each acquisition in emerging market for each event window (6, 12, 18 and 24 month). Thus BHR is interpreted as the difference in compounded return between acquisitions in emerging markets and a matched portfolio of developed markets.

SUMMARY OF HYPOTHESIS, STATISTICAL TESTS AND INTERPRETATION

Following the operationalisation, two separate t-tests will made. The tests are specified as in Table 2 and the decision rule, specification of test statistic and assumptions follows those in section 9.1.2.

1. Test if the sample mean of aggregated abnormal return of acquisitions in emerging markets is statistically different from zero
2. Test if the difference in sample mean of aggregated abnormal return of acquisitions in emerging and developed markets is statistically different from zero

The hypotheses can be summarised as:

Hypothesis number		
	(3)	(4)
Alternative hypothesis	$H1_1: \widehat{API}_{DMEM} \neq 0$	$H1_3: \widehat{BHR} \neq 0$
Null hypothesis	$H0_1: \widehat{API}_{DMEM} = 0$	$H0_3: \widehat{BHR} = 0$

In order to perform a t-test on the sample means of API, an OLS regression correcting for heteroscedasticity is run. One regression for each event window (6,12,18 and 24 months) are run. The estimation model for the OLS regression can be written as:

$$\widehat{API}_t = \hat{\beta}_0 + \hat{\beta}_1 DMEM \quad (16)$$

Where $\widehat{API}_t$ is the estimated API following the announcement and DMEM is a dummy variable taking the value 1 if the acquisition is made in an emerging market and 0 if the acquisition is made in a developed market, $\hat{\beta}_0$ is the estimated mean API for acquisitions in developed markets and $\hat{\beta}_1$ is the estimated contribution to mean API for acquisitions in emerging market. Thus the sum of $\hat{\beta}_0$ and $\hat{\beta}_1$ is the estimated mean API for acquisitions in emerging markets. For the sake of clarity, two results of hypothesis test will be presented: 1) the mean API for acquisitions in emerging markets ($\hat{\beta}_0$ and $\hat{\beta}_1$) and 2) the mean API for acquisitions in developed markets ($\hat{\beta}_0$).

3.3. ESSENTIAL ASSUMPTIONS UNDERLYING EVENT STUDIES

Based on previous research, the three essential assumptions underlying event studies are: 1) unanticipated event and 2) no confounding effects and 3) unbiased estimators.³² Each of these assumptions will be described below, along with potential factors contributing to a study that do not fulfil the underlying assumptions.

Unanticipated event: The first assumption underlying event studies is that the event should be unanticipated by the market. The most common reason for this assumption to fail is that information has *leaked* to the market. Leakage can occur either through insider information leakage, or due to external analysis of circumstances surrounding the firm.

No confounding effects: The second assumption underlying event studies is that no other event causing an abnormal return occurs within the studied event window – i.e. an assumption of no confounding effects in the event window. An example of confounding effects is the announcement of another significant acquisition or the unveiling of an environmental liability. The risk of confounding effects increases with the length of event window and decreases with the size of the sample.

Unbiased estimators: If the mean is systematically different from zero, the test statistic is biased 9.1.2. The test statistic can also be biased if the standard deviation is too small (or too large) (Kothari & Warner, 1997). There are multiple reasons for potential bias in sample, which will be described below.

A basic assumption underlying the statistical tests is that the sample is independently distributed. That is, one event is independent of other events. Dependence – or cross correlation – can enter the sample in several ways, of which three is of particular interest: overlapping calendar time, firm/industry specific dependence and market/timing dependence (Brav (2000) and Kothari & Warner (2006)). Even small amounts of correlation, might lead to significant misspecification (Kothari & Warner, 2006).

Firstly, dependence might enter the sample through *overlapping calendar time*. The risk for this dependence is highly associated with the definition of the event window. For short event windows, the likelihood of having two events occurring simultaneously is limited. However, for long run event windows, this risk increases significantly. Secondly, it is unlikely for acquisition announcements to be random events i.e. they are likely to be endogenous with respect to past performance and *firm or industry characteristics*. For example, there might be a higher propensity for firms within certain industries such as technology firms to engage in M&A (Kothari & Warner, 2006). Technology firms might then be cross related and non-independent. Lastly, there might be *market or timing dependence*. One example of timing dependence that has been brought forward in previous literature is merger waves. It is clearly so that the number and value of acquisitions varies between years. Thereby, acquisitions could be correlated with specific market sentiment or valuation.

³² The assumption of efficient markets is often considered a key underlying assumption of short run event studies (e.g. Tuch & O'Sullivan (2007)). We agree with this assumption for short run event studies. As described in both the introduction and section 2.1.5, the assumption of efficient market is necessary in order to draw conclusions of the whole value of the firm based solely of the short run reaction. In our study, no conclusions regarding value creation following acquisition announcements are made based solely on the result of the short run event study. Rather, the short run event study is made in order to document the expected value creation by investors at the point of announcement. Rather than assuming market efficiency with regards to acquisition announcements, we challenge it with our study.

The critique brought forward by Barber & Lyon (1997) towards the use of asset prices is partly based on the occurrence of rebalancing and a new listing bias when using asset pricing models. A *rebalancing bias* relates to a negative bias which might occur in the case of usage of market indexes when estimating expected returns. The negative bias originates from that indexes are regularly rebalanced, while the sample firm abnormal returns are not. The *new listing bias* refers to that indexes contain newly listed companies, companies known to have abnormally low returns, while sample firms have a long historical share price record. The inclusion of underperforming firms in the benchmark leads to a positive bias in sample.

Lastly, there might be biases related to the method of calculating abnormal return – referred to as *measurement bias* (following Barber & Lyon (1997))³³. Barber & Lyon (1997) argue that the Cumulative Abnormal Return (CAR) measure brings a positive bias to the sample due to compounding of monthly or daily returns and name this *measurement bias*. However, CAR is not the only way of measuring performance in event studies, and therefore the concept of *measurement bias* is broadened in this thesis. Mainly five return metrics have been used in previous studies: CAR, Continuously Compounded Abnormal Returns (CCAR), Buy and Hold Returns (BHR), Abnormal Performance Index (API) and Cumulative Average Abnormal Returns (CAAR). Each measure has different meaning and different interpretation. In this thesis CAR, API and BHR are used. The choice of aggregated abnormal performance metric is driven by the characteristics of data and the aim of the test. A discussion regarding the different specifications of aggregate abnormal return along with an example illustrating the limitations of our data sample is found in section 9.1.4 in appendix along with a numerical example of API compared to other return metrics in Table 24.

³³ We acknowledge that the naming of this bias is unfortunate as it has an ambiguous interpretation. We however chose to keep the original terminology as set out by (Barber & Lyon, 1997) for the sake of consistency.

4. DATA

The operationalisation in section 3.1 and methods described above require data regarding acquisitions in emerging and developed markets. More specifically, acquisitions with an acquirer domiciled in a developed country and a target in either an emerging market or another developed market. In addition to deal specific data, financial data related to the acquirer and the target is needed in order to perform the short and long run event studies. Thus the data collection can be divided into three distinct areas: 1) identification and selection of deals that meet the aim and research question, 2) collection of data for the short run event study and 3) collection of data for the long run event study.

4.1.1. IDENTIFYING RELEVANT ACQUISITIONS AND COMPANIES

As will be described below, key considerations regarding the data sampling relate to the causality between the event and the share price return – i.e. that the acquisitions have a theoretical possibility of impacting the share price. For the purpose of this thesis, a causal relationship between the event and the share price is assumed to be theoretically established if the deal is substantial. Substantial is further defined as considerable: ownership, acquired share of the targets outstanding share capital and relative size between the target and the acquirer.

Table 8 summarises the data considerations made and the impact on the number of observations. Each of these considerations along with other data considerations are also described in detail below. The order of descriptions follows the order that the data sample was cut.

(1) Time period: The data sample is limited to deals announced between January 2000 and September 2013. The time period is given, and restricted, by time period of data from Zephyr.³⁴ As discussed in the previous research section, the observed abnormal share price returns following acquisition announcements have changed over time which makes it interesting to study a current data sample.

(2) Company status: A natural and necessary data constraint given the chosen method of event studies is that only listed³⁵ acquirers are included in the sample, as the research is conducted on the price of the acquirers (listed) share.

³⁴ Compared to other current studies on cross border acquisitions, for example (Chari, et al., 2010), (Deshpande, et al., 2012) and (Danbolt & Maciver, 2012), the sample in this thesis is more recent. A more recent data sample implies that that the time period is more concentrated to recent times but does not necessarily mean that previous researchers have not included the time period used in this thesis in their sample.

³⁵ *Listed* refers to that the company's shares are traded on an open market place such as Nasdaq OMX exchanges.

TABLE 8: DATA LOSS TABLE FOR IDENTIFICATION OF ACQUISITIONS

Selection method			Sample overview		
Step	Category	Decision rule	Deal observation count	Deal observation loss	Percentage of original sample
Raw data from Zephyr					
1	Time interval	>1999	1 079 385		100.00%
2	Company status	Listed acquirer	232 152	847 233	21.51%
3	Deal status	Completed	147 797	84 355	13.69%
4	Acquired ownership share and final ownership share	Minimum 45% acquired ownership share and a final ownership of more than 50% i.e. control	71 347	76 450	6.61%
Sample processing of raw data in Stata					
5	Information requirements	Target & acquirer country, announcement date, target name, acquired ownership share, acquirer identification number, single and valid deal identification number	67 744	3 603	6.28%
6	Information leakage	Rumour date = announcement date	58 844	8 900	5.45%
7	Origin of deal participants ¹⁾ and M&A category	Cross border acquisition with acquirer in developed market; country ≠ Virgin Islands (British), Cayman Islands, Gibraltar, Guernsey, Supranational	16 565	42 279	1.53%
8	Industry	≠ mining, exploratory research companies, natural resource companies, public administration	15 364	1 201	1.42%
9	Target sales at the point of acquisition or deal value	Known	9 481	5 883	0.88%
Raw data from Datastream					
10	Datastream financial information	Valid and available	7 493	1 988	0.69%
Sample processing of raw data in Stata					
11	Relevance ratio ²⁾	> 5%	1 353	6 140	0.13%
12	Other deal in sample	One acquisition per acquirer that meets the data requirements i.e. only acquirers with one relevant deal in sample	1 220	133	0.11%

Description: Above table illustrates the data loss step down from an original complete raw data sample to the desired data sample for the study. Each step is described by the consideration, the decision rule and the consequences on data loss.

Note: 1) Country status is primarily based on OECD categorization. 2) Relevance ratio defined as either sales or deal value relevance ratio. Sales relevance ratio is defined as last year available (LYA) net revenue of target at the time of the acquisition divided by LYA net revenue of the acquirer. Deal value relevance ratio defined as deal value divided by market value of outstanding shares of the acquirer three months prior to the acquisition.

(3) *Deal status*: As this thesis aim to capture the long run abnormal share price returns following an acquisition it is important that the deals observed are completed.

(4) *Acquired stake*: As written in the introduction of this section, a causal relationship between the event and the share price is assumed to be theoretically established if the deal is substantial. The first condition of an acquisition being substantial is that the acquirer gains control over the target. Control in this thesis has been defined as the acquirer acquiring at least 45 percent and owning at least 51 percent of outstanding share capital after acquisition.³⁶

Control is used as a component of the definition of significant acquisitions of three main reasons. Firstly, control in terms of ownership stake requires consolidation and thus the information of the acquisition is more transparent in the financial accounts. Secondly, control has proven to be the main contributing factor to shareholder value effects in previous studies e.g. Chari, et al. (2010). Lastly, the level of operational attention of the target is likely to be related to the ownership share. The level of operational attention from the acquirer is of particular interest in this thesis as arguments of costs and benefits discussed in section 2.2 of previous research relies on an assumption of post-merger integration. If no post-merger integration takes place, then the background and previous research presented in section 2 becomes less relevant along with the relevance of the research question.

(5) *Information requirements*: The raw data sample retrieved from Zephyr contains observations of acquisitions with incomplete data. Therefore the data sample needs to be cleaned so that only observations that meet the requirements of necessary information are kept in sample. Necessary information for the purpose of this thesis has been defined as: 1) information regarding the domicile of the acquirer and the target company, 2) specified announcement date, 3) disclosed and valid name of target,³⁷ 4) information of the acquired stake (percentage of target acquired), 5) Bureau van Dijk identification number of the acquirer and deal, and finally 6) that each deal is only occurring one time in the sample.³⁸

(6) *Pre-announcement information leak*: As discussed in section 3.3 it is of importance to define and measure an unexpected and clearly identifiable event. Thus it is also of importance to minimise the risk of information leak of the acquisition to the market prior to the acquisition date. Information leak will lead to diluted share price reaction and thus a less clearly identifiable event. If there is a rumour in the market regarding the acquisition prior to the actual acquisition then there is a risk of information leakage causing the event to be anticipated. In

³⁶ The joint criteria consisting both of a 45 percent acquisition share and a 51 percent control is created in order to capture the most relevant and representative deals for the sample. Control can be influenced over a target at lower levels of ownership shares than 50 percent. Thus it is possible that a de facto controlling acquirer owns 30 percent prior to the acquisition and then acquires additional 20 percent in order to gain legal control. De facto control can be achieved if the acquirer is a significant market participant in the targets market (supplier or customer), through informal relations or an otherwise dispersed ownership. As control was already exercised prior to the acquisition in the example, there is a risk that the acquisition is merely a technicality with limited impact on operations. The acquired ownership share is thus set to 45 percent in order to capture deals with operational relevance.

³⁷ Target name is deemed necessary in order to be able to control the deal using secondary sources such as Factiva and press releases.

³⁸ In some instances, deals in the retrieved data sample occurred with multiple deal id. The deals were done with the same acquirer and the same date. As some of these identified multiple deal ids' did not have a disclosed deal value or acquired stake, the total deal value and acquired stake could not be concluded. Due to this uncertainty, deals with multiple deal id are excluded from the data sample.

order to limit the risk of including anticipated events, only deals with a rumour date³⁹ equal to the announcement date will be included. In order to further ensure that the announcement date is the true event date, the announcement date in Zephyr has been cross-checked with publication dates of press releases.

(7) *Origin of deal participants and categorisation of emerging and developed markets:*⁴⁰ Following the background and previous research, it is of interest to study acquisitions done by firms in developed markets in either emerging or developed markets. Furthermore, as highlighted in section, it is of importance to compare acquisitions in emerging markets with cross border acquisitions in developed markets. These considerations are illustrated in Figure 4. The grey shaded area is the focus of this study – i.e. cross border acquisitions by developed markets in either other developed markets or in emerging markets.

FIGURE 4: FOCUS OF STUDY

		Target			
		Developed		Emerging	
Acquirer	Developed	Domestic DMDM (50%)	Cross border DMDM (21%)	Cross border DMEM (8%)	
	Emerging	Cross border EMDM (3%)		Domestic EMEM (15%)	Cross border EMEM (3%)

Focus of study

A categorization of countries in developed or emerging markets is not readily available. Thus prior to limiting the data sample the countries of the deal participants must be categorized. Countries in the data sample have been categorized primarily based on the membership in Organisation for Economic Co-operation and Development (OECD). All member countries of OECD have been classified as being developed market except for the Eastern European countries and countries stated as emerging economies by the OECD.⁴¹ All countries stated as emerging economies by the OECD have been classified as being emerging markets. Eastern European countries have been considered transition economies⁴² and classified as being emerging markets. Countries with unclear economic and market status along with classification as “supranational” have been excluded.⁴³ A complete list of the economic development categorisation is found below in Table 9.

³⁹ Zephyr includes information of rumour date. The rumour date is defined as the first day when information about the acquisition “breaks” in media – i.e. the first day when the acquisition is named in any official media.

⁴⁰ OECD categorization is considered the most holistic base for categorization as it considers the economic as well as the institutional development.

⁴¹ The countries which are members of OECD but are stated to be emerging economies are Mexico, Chile and Turkey.

⁴² Chari, et al. (2010) choose to exclude what they called “transition economies” which they defined as Hong Kong, Singapore and the economies of Eastern Europe.

⁴³ Virgin Islands (British), Cayman Islands, Gibraltar, Guernsey or as Supranational.

TABLE 9: EMERGING OR DEVELOPED MARKET CATEGORISATION OF COUNTRIES

Developed markets	OECD	Emerging markets	OECD
Australia	Yes	Algeria	
Austria	Yes	Argentina	
Bahamas		Belarus	
Belgium	Yes	Brazil	
Canada	Yes	China	
Denmark	Yes	Czech Republic	Yes
Finland	Yes	Estonia	Yes
France	Yes	Hungary	Yes
Germany	Yes	India	
Greece	Yes	Indonesia	
Hong Kong		Jordan	
Iceland	Yes	Malaysia	
Ireland	Yes	Malta	
Italy	Yes	Mexico	Yes
Japan	Yes	Morocco	
Luxembourg	Yes	Panama	
Netherlands	Yes	Poland	Yes
New Zealand	Yes	Russian Federation	
Norway	Yes	Slovakia	Yes
Portugal	Yes	South Africa	
Singapore		Taiwan	
Spain	Yes	Thailand	
Sweden	Yes	Turkey	Yes
Switzerland	Yes	United Arab Emirates	
United Kingdom	Yes		
United States Of America	Yes		
South Korea	Yes		

Description: The table above describes the categorisation of countries as either emerging or developed based on the level of economic development in the country. OECD categorisation has been used as the basis for the categorisation, and thereby information whether the country is a member of OECD is included.

(8) *Industry*: As mentioned in the introduction, this study is written from a shareholder perspective of a developed market strategic acquirer acquiring *a target with operations relating to local market conditions*⁴⁴. Examples of acquisitions where the targets operations are not directly linked to the local market conditions are acquisitions within natural resources industries. Natural resources are rather related to a global marketplace driven by global market supply and demand. Thus companies relating to agriculture, gas water & electricity, mining or minerals industry have been excluded from the sample. Similarly, defence companies have also been excluded.⁴⁵

It is worthwhile noting that companies in financial industries are included in the sample. Financial firms are often mechanistically excluded from samples in empirical research as the financial statements and dynamic of

⁴⁴ As the reasoning in this thesis is based on that benefits, costs and valuation issues are related to characteristics of emerging markets. These benefits, costs and valuation issues are then in turn dependent on the characteristics of the operations of the acquirer and target. For example, benefits can originate from the ability of the acquiring firm to use the distribution networks of the target to push its own brands and goods into the fast growing emerging markets – i.e. sales synergies. It is therefore a basic assumption – and a limitation – that the operations of the target are related to the local markets and thus the characteristics of emerging (or developed) markets.

⁴⁵ As the industry classification is on an aggregated level, also companies classified as “public administration” are excluded from the sample. However, the prevalence of these companies in cross border acquisitions between developed and emerging markets is assumed to be limited.

financial performance differs greatly. However, as this thesis is focused on share price return and not on specific accounting items, it is considered reasonable to include them in sample.

(9-10) *Datastream information and information of target sales and deal value:* Financial (market capitalisation and accounting line items) data for the acquirer has been extracted from Datastream. For the sake of consistency, all items have been extracted in Euro.⁴⁶ Financial data for the target has been extracted, also in Euro, from the Orbis database. The currency conversion has been necessary to be able to calculate relevance ratios and for a meaningful analysis of firm characteristics in terms of for example sales, total assets and market capitalisation. Acquisitions with deal participants missing the desired data have been excluded.

(11) *Deal of relevant size:* As described in section 3.2, the short and long run share price return is measured in order to estimate the shareholder value effects following acquisitions. One important aspect of using share price return measurement – i.e. event studies – as a method is that there is a clear causality between the studied event and the share price return. A causal relationship between the event and the share price return can be said to exist when the event is theoretically likely to have a notable impact on the share price.⁴⁷ One necessary condition for causality between acquisition and share price return to occur is that the acquisition is large enough compared to the size of the acquirer – i.e. relevant for the shareholders of the acquiring firm.

However, a persistent problem with research of acquisitions is the low level of disclosure with regards financial details of the acquisition and the deal participants. Thus a *relevance ratio* is constructed in this thesis. The relevance ratio makes use of both financials of the deal participants (target sales relative to the acquirer sales) as well as deal financials (deal value relative to the market capitalisation of the acquirer. Both ratios are defined as follows:

$$Relevance\ deal = \frac{Deal\ value}{Market\ capitalization_{acquirer}}$$

$$Relevance\ revenue = \frac{Revenue\ at\ the\ time\ of\ acquisition_{target}}{Revenue\ at\ the\ time\ of\ acquisition_{acquirer}}$$

A combined relevance ratio is then constructed through substituting missing values of *relevance deal* with *relevance revenue* when the deal value of the acquisition is missing (and thus the ratio of relevance deal).⁴⁸ The combined relevance ratio is then used in order to capture the acquisitions relevant for this study. Although an arbitrary choice, a relevance ratio of 5 percent has been chosen as the minimum level for an acquisition to be included. The level is considered reasonable as a lower ratio would compromise the potential causality with share price return, and a higher ratio would cause too heavy data losses with regards to larger acquirers.⁴⁹

⁴⁶ Share price data are however extracted in the currency the share is denominated in as only the returns (in percentages) are of interest for this study. By using the original currency for return calculations, exchange rate effects are minimized.

⁴⁷ It is considered and empirical question whether the event actually has an impact – thus the emphasis on the theoretical likeliness.

⁴⁸ Deal financials are considered a superior metric as it is more closely tied to the shareholder value of the deal.

⁴⁹ The ultimate example is Apple. With a current market capitalisation of 490 USD billion, a 5 percent acquisition would imply a deal value of USD 25 billion which is approximately the size of Volvo Group.

(12) *Confounding effects*: Another aspect that can limit of the causality between event and share price return are potential confounding effects described in section 3.3. One apparent confounding effect is if the acquirer performs other significant acquisitions during the event window. The inverse of the argument of relevance ratio implies that acquisitions of less relevance than 5 percent of the acquirer should not have a causal impact on the share price and not result in confounding effects. Thus only other deals in the sample might cause confounding effects. Following that assumptions, all acquirers with multiple deals in the sample remaining after selection of relevance ratio are dropped. Other significant acquisitions are not the only potential source of confounding effects and a more elaborate discussion regarding this risk is found in section 3.3.

4.1.2. SHORT RUN EVENT STUDIES

Following the identification of relevant deals, there is additional data losses relating to the specific method applied. Firstly, general considerations regarding the data treatment in the short run event study are discussed. Following the discussion of general considerations, data losses relating to the implementation of the short run event study is presented and discussed below.

GENERAL CONSIDERATIONS

For the short run event study, daily closing share prices has been extracted from Datastream. The share prices have been extracted on trading day rather than calendar day basis as it would not be meaningful to include days when the share is not traded.

Choice of market index: The local market index of each acquirer country has been used. Each index is presented in table . MSCI indexes are value weighted indexes including dividends, free float adjusted and screened for size, liquidity and minimum free float (Morgan Stanley Capital International (MSCI), 2012). MSCI indexes have been chosen when available for the sake of consistency. The MSCI index is not available for Iceland and Luxembourg, where instead OMX index has been used. The index return has been calculated in accordance with the return equation described in section 9.1.2.

DATA LOSS

Table 10 summarises the data considerations made and the impact on the number of observations. Each of these considerations along with other data considerations are also described in detail below. The order of descriptions follows the order that the data sample was cut.

(13-14) *Missing share price, estimation window and thin trading*: Even though the financial data for an acquirer is available, the share price for some acquisitions was found to be missing at the time of announcement. At total 57 deals are lost as an effect of missing share price. Following the method design in section 3.2.1, all deals that do not fulfil the requirements of event and estimation windows are dropped.

During a review of the data sample, some acquirers were found to have thin trading of their shares. Thin trading implies that the share is infrequently traded and in some instances that the price is not updated on a daily basis. Thus a difference between calendar days and trading days relative to the event will emerge. For example, if the acquisition is announced on a Monday and the next time the share is traded is on the following Wednesday, then the Wednesday is two calendar days away but only one trading day from the acquisition. Thin trading or market illiquidity is an example of market inefficiency. Thus there is a risk that the information contained in an

acquisition announcement is less efficiently incorporated in the share price. In order to secure the quality of data, observations with a date difference between calendar and trading days more than 4 days within the event window are excluded from the sample.

Deals with missing share price and estimation windows with less than 100 trading days are excluded. All deals with a trading date difference larger than four days (the trading day preceding the event is more than four calendar days before the announcement) are excluded due to thin trading.

TABLE 10: DATA LOSS TABLE RELATING TO SHORT RUN EVENT STUDY

Selection method			Sample overview		
Step	Category	Decision rule	Deal observation count	Deal observation loss	Percentage of original sample
Sample size before data losses relating to short run event study			1 220		
Short run event study					
13	Share price	Available	1 163	57	95%
14	Estimation window and trading difference	estimation window > 100 trading days, difference between calendar days and trading days < 4	1 079	84	88%

Description: Above table illustrates the data loss step down from the sample before data losses relating to short run event study. Each step is described by the consideration, the decision rule and the consequences on data loss.

4.1.3. LONG RUN EVENT STUDY

Building on the sample of acquisitions used in the short run event study, there is additional data losses relating to the two long run event study methods. Firstly, general considerations regarding the data treatment in the long run event study are discussed. Following the discussion of general considerations, data losses relating to the implementation of the two long run event study methods are presented and discussed below.

GENERAL CONSIDERATIONS

Share prices for the acquiring company have been retrieved for the day of the announcement and for the same date number on a monthly basis going forward. If the date number coincide with a weekend or bank holiday, the nearest preceding price has been used.

Matching Fama French factors with acquirers: The matching or Fama French factors with the returns of acquirers consists of two steps. Firstly, High-Minus-Low (HML) and Small-Minus-Big (SMB) factors are extracted from the Fama French data base on regional level.⁵⁰ The regional factors and descriptions are summarised in Table 25 in appendix. These factors are then matched with the local market index in the country of domicile of the acquirer. Thus the combined Fama French dataset consists of local market index and regional Fama French factors. The returns of the acquirer are thereafter matched with the Fama French dataset. The reason for not using the regional market indexes provided by the Fama French website is that they are denominated in USD and thus would introduce a potential currency exchange effect in the market returns.

⁵⁰ Regions consists of Europe, Japan, Asia Pacific ex Japan and North America.

The local market indexes are the same as the country market indexes described above (see section 3.2.2), with one exception. As the data sample used in this study contains small firms, it is considered relevant to use an all-share index rather than S&P 500 for the US acquirers. The MSCI all-share index for the New York stock exchange only dates back to 2003. Thus S&P 500 is used from 2000 until 2003 and thereafter MSCI index is used. An example of the matching is as follows: an acquirer from Canada completing an acquisition in May 2005 was matched to North American HML and SMB Fama French factors and MSCI Canada market returns for May 2005.

DATA LOSSES

Table 11 summarises the data considerations made and the impact on the number of observations. Each of these considerations are described in detail below. The order of descriptions follows the order that the data sample was cut.

(15-16) Missing price, estimation & event window: Following a review of the data sample, share price series was found to include inconsistencies. Firstly, prices for some of the acquirers remained unchanged over several months. Secondly, some prices were missing. These inconsistencies could either be due to thin trading or data entry errors. For the sake of prudence, all share prices which are unchanged for 30 days are treated as missing and firms with missing share price for more than 5 percent of all existing observations have been dropped from the sample. Furthermore, firms with event windows with less than 6 months and estimation windows with less than 12 months data are excluded.

Following this mechanical and rule based cleaning of prices a manual review of the data was made. In the manual review, a total number of 16 firms were found to have deviant return patterns. More specifically, these firms had one point at which the price decreased to practically zero and then returned back to historical levels in the next month. No plausible explanation other than data entry error is found. For the sake of prudence, acquirers with deviant return patterns have been excluded.

(17-18) Fama French and matched reference portfolio specific data losses: apart from the general data losses in long run return, specific losses related to the method are incurred. Firstly, restrictions on the availability of estimation window described in section 3.2.2, all observations with an estimation window less than 12 months have been dropped. Secondly, as the matched reference portfolio method is dependent on availability of book-to-market ratio and size, observations missing this data have been dropped. The result of the specific data losses is that the number of observations in the two different methods of long run event studies differ.

TABLE 11: DATA LOSSES RELATING TO LONG RUN EVENT STUDIES

Selection method			Sample overview		
Step	Category	Decision rule	Deal observation count	Deal observation loss	Percentage of original sample
Sample size before data losses relating to long run event study			1 079		
Long run event study					
15	Share price	Available for at least 95% of all existing observations ¹⁾ between -36 months and +24 months ²⁾ , event window > 6 months	672	407	62%
16	Deviant	Observations with meaningful returns and return patterns are kept in sample	656	16	60%
<i>Fama French three factor model</i>					
17	Estimation and event window	Estimation window of at least 12 months	561	95	52%
<i>Matched reference portfolios</i>					
18	Size and book-to-market ratio	Available	509	147	47%

Description: Above table illustrates the data loss step down from the sample before data losses relating to long run event studies. Both general and method specific data losses are presented. Each step is described by the consideration, the decision rule and the consequences on data loss.

Note: 1) Existing observations refer to the theoretical number of observations i.e. if the share was introduced to the stock exchange -24 months before the acquisition and lived throughout the 24 month event window, then the theoretical number of observations are 48. 2) all share price returns above 100% are removed from the estimation window and replaced with missing values. This is done in order for the estimation window to be representative for estimations of the model parameters used in the Fama French three factor model regression. The data loss relating to these measures are limited and there is a substantial overlap between miss-entries (as described in data loss step number 15).

4.1.4. DATA SOURCES, PROCESSING AND QUALITY

The primary source of deal data is the Zephyr database administered by Bureau van Dijk. The Zephyr data has later been complemented and validated using secondary sources such as publicly available reports and company announcements. The primary source for publicly available information has been company websites and Factiva. Financial data⁵¹ for the acquiring company has been retrieved from Datastream and Worldscope databases. Additional financial and factor data for the Fama French three factor model has been retrieved from the Fama French database.⁵² Factors for Small Minus Big (SMB) and High Minus Low (HML) has been extracted on a regional basis. The factor data retrieved is specified in Table 25 in appendix. All data retrieved has been processed using the statistical software Stata.

The overall quality of data sources is considered to be high. Datastream and Worldscope are frequently used by researchers as data sources for financials and are therefore considered to be of good quality. The data has also been manually checked as described above. Potential areas for errors in the deal data retrieved from Zephyr is the announcement date, deal value and financials of deals participants. Firstly, Zephyr might have entered announcement day based on a press release or article which was not the first to the market. Secondly, deal value could be misreported as a result of miscalculation or misunderstanding by Zephyr or journalists. Lastly, financials of deal participants might be misreported due to wrong accounting and reporting level of firm. Following cross checking of announcement dates, deal value and financials with press releases and annual reports, neither of these sources of potential error is considered an issue. The processing using Stata is done based on so called Do-files which are possible to double-check in hindsight. Following a diligent review, the potential risk of errors in data processing is considered limited.

⁵¹ Tickers and share price for acquiring companies and market index for market places of the acquiring firms.

⁵² In order to estimate the individual securities sensitivities to the market, SMB and HML factors each of the factors must be retrieved. It was deemed beyond the scope of this thesis to create our own factors and instead factors and index development was downloaded from the Fama French database.

5. EMPIRICAL RESULTS

The section of empirical results is structured in two main sections. Firstly, descriptive statistics will be presented and discussed. The aim of the discussion is to identify differences in the data sample compared to previous research, between the two subsamples of data (acquisitions in emerging and acquisitions in developed markets) and lastly to identify potential outliers of the estimated aggregate abnormal returns. Secondly, the empirical results of the short and long run event study are presented, following the structure laid out in the method section. The results of each event study will be presented through a graphical illustration of aggregated abnormal return and a table of results from the statistical tests.

5.1. DESCRIPTIVE STATISTICS

The presentation and discussion of descriptive statistics of data sample and estimated aggregated abnormal returns is divided into three sections. In the first section the data used in this study is contrasted with previous research. In the second section the two subsamples of data are analysed in order to identify discrepancies between subsamples of data that might impact the results when testing the differences in abnormal returns following announcements of acquisitions in emerging and developed markets. In the third section, estimated aggregated abnormal return is analysed in order to identify potential outliers that might impact the results.

5.1.1. DATA SAMPLE CHARACTERISTICS COMPARED WITH PREVIOUS RESEARCH

A comparison between the characteristics of the data sample used in this thesis and previous research is summarised in Table 12. Four key dimensions of the data samples are compared: 1) the sample size in terms of number of studied deals, 2) the time span between the year of the first acquisition and the year of the last acquisition in the data sample and 3) the median deal size. Lastly, the main geographical focus and deal flow is studied. Each of these dimensions is elaborated on below.

TABLE 12: DATA SAMPLE CHARACTERISTICS COMPARED WITH PREVIOUS RESEARCH

Researcher and year of publication	Number of emerging market deals studied (sample size)	Time period between the oldest and the newest emerging market deal studied	Median deal size of the sample of emerging market deals	Geographical focus and deal flow in sample
Sample used in this study	144	2000-2013	27 USDm	Primarily US and UK acquirers and targets in Asia, Eastern Europe and South America
Chari, et al., 2010	594	1986-2006	53 USDm	Primarily US and UK acquirers and targets in South America, South Korea and China
Deshpande, et al., 2012	226	1984-2008	Not reported	Primarily US, UK and German acquirers and targets in South America and China

Description: the above table summarises a comparison between the data sample used in this study and the data samples used in the two main precedent studies of shareholder value effects following acquisitions in emerging market. Four key dimensions of the data samples are compared. Firstly, the sample size in terms of number of studied deals in emerging markets is compared. Secondly, the time span between the year of the first acquisition and the year of the last acquisition in the data sample is compared. Thirdly the median deal size in USD is compared. Lastly, the main geographical focus and deal flow is studied.

Sample size and time period studied: As can be seen in Table 12 the total number of emerging market deals amount to 144 in the short run event study. Thus, the sample is smaller compared to the samples used in preceding studies. Chari, et al. (2010) and Deshpande, et al. (2012) use samples of 594 and 226 observations respectively. The smaller sample size of this study compared to previous research is primarily related to two aspects. Firstly, only acquisitions announced between 2000 and 2013 are studied in this thesis in contrast to the preceding studies which include acquisitions from the late 1980s and the 1990s. Secondly, the sample used in this thesis is restricted to deals where the target is of substantial relative size to the acquirer. None of the preceding studies have employed this restriction and are thus likely to include acquisitions where the target is only a small fraction of the combined firm. The restriction on relative size is used to increase the causality between the abnormal return and the identified event (as described in section 4.1.1). It is argued that the quality of data and relevance of the study improved by adopting the relevance ratio.

The *size of the deals* used in this sample is somewhat smaller compared to previous studies. As can be seen in Table 12, median deal size of acquisitions in emerging market is 27 USD million⁵³ compared to 53 in (Chari, et al., 2010). Similarly, the median deal size of acquisitions in developed markets is 49 USD million compared to 125 USD million in Chari, et al. (2010).

Table 13 reports the most frequent countries of origin for firms acquiring in emerging markets. As can be seen in Table 13, the US and the UK, together account for 69 (48 percent of total) acquisitions in emerging markets. Thus the *geographical deal flow* in the sample is dominated by acquirers from the US and UK, as has been the case in previous studies (i.e. Deshpande, et al., 2012; Chari, et al., 2010). As can also be seen in Table 13, there is a difference in acquisitions patterns between firms in the USA and in the UK which seems related to the proximity of deal participants. UK acquirers make a relatively higher share of acquisitions in eastern European emerging markets, while US acquirers make a relatively higher share of acquisitions in Central and South America. Similarly, Japanese acquirers make a relatively higher share of acquisitions in Asia.

⁵³ Calculated using an 2000-2013 average exchange rate of 1.23 USD/EUR.

TABLE 13: COUNTRIES OF DEVELOPED MARKET ACQUIRERS AND REGIONS OF EMERGING MARKET TARGETS

	Target regions						Total (% of total)
	Asia	Europe	South America	Central America	Africa	Oceania	
Acquirer countries							
United States	26	1	9	12	1		49 (36.0%)
United Kingdom	8	6	1		5		20 (14.7%)
Japan	16		1				17 (12.5%)
Canada	2	1	5	5	1	2	16 (11.8%)
Finland		7					7 (5.1%)
France	1	4	1				6 (4.4%)
Sweden		5					5 (3.7%)
Germany	1	2	1				4 (2.9%)
Singapore	3						3 (2.2%)
Netherlands	1	2					3 (2.2%)
Hong Kong	3						3 (2.2%)
Italy	3						3 (2.2%)
Total (% of total)	64 (47.1%)	28 (20.6%)	18 (13.2%)	17 (12.5%)	7 (5.1%)	2 (1.5%)	136

Description: the table summarises the geographical deal flow between developed market acquirers and emerging market target regions. The 11 countries most frequently conducting acquisitions are included in the table, one on each row. The reason for including 11 rather than 10 countries is that both Hong Kong and Italian firms had conducted the same amount of deals (3). Each region where an emerging market deal has been conducted is presented in one column each. Both the countries of the acquiring firms as well as the regions are sorted in descending order with the highest number of deals first.

In section 2.2 in previous research it was discussed that one potential reason for accentuated acquisition costs is cultural distance. The underlying assumption for such reasoning is that there is a notable cultural distance between the countries of the deal participants. Thus if, as indicated in Table 13, emerging market acquisitions are done in closely located countries, then there is a possibility that the cultural distance is not substantial. However, approximately 45 percent of the emerging markets acquisitions are done in Asia, by non-Asian firms. Thus the majority of acquisitions are estimated to be by acquirers not located close to the targets. Thus the reasoning regarding cultural distance remains valid, however, care will be taken when analysing the results with regards to that a substantial share of acquisitions are made by deal participants located closely.⁵⁴

⁵⁴ Another noteworthy aspect of the geographical deal flow, although not directly relevant to answer the research question is that smaller countries such as Sweden and Finland has a higher rank than Germany in terms of number of acquisitions made in emerging markets.

5.1.2. SUBSAMPLE DIFFERENCES IN DESCRIPTIVE DATA

As mentioned above, the purpose of this section is to compare the subsamples of data used in this study with regards to key metrics to identify differences that might influence the results in tests 2 and 4 as outlined in section 3.1. Previous research has indicated that size differences, the valuation of the acquirer and time are explanatory factors for abnormal returns (Tuch & O'Sullivan, 2007), (Moeller, et al., 2004). Table 14 summarises the descriptive statistics of the data sample. In order to thoroughly analyse the size and valuation differences, descriptive statistics for the relative size of the target, acquirer market capitalisation and sales, deal value, target sales and acquirer valuation are included. Furthermore, reactions might be time dependent and therefore the distribution of deals over time per subsample of emerging and developed market is reported below in Table 15.

TABLE 14: DESCRIPTIVE STATISTICS BY EMERGING AND DEVELOPED MARKET ACQUISITIONS

	Relevance ratio (Fraction)	Market capitalisation acquirer (EURm)	Sales acquirer (EURm)	Deal value (EURm)	Sales target (EURm)	Book to Market acquirer (Fraction)
DMDM						
Median	0.10	361	352	40	22	0.49
95 percentile	1.31	9 662	11 133	1 597	833	1.58
5 percentile	0.05	12	8	2	NA	0.12
Observations	935	858	898	832	526	826
DMEM						
Median	0.09	221	345	22	19	0.60
95 percentile	1.56	8 117	13 595	599	274	2.36
5 percentile	0.05	4	10	1	2	0.19
Observations	144	138	126	138	51	126
Diff DMDM - DMEM						
Difference median	0.01	139	7	18	3	-0.11
<i>(DMEM as % of DMDM)</i>	<i>(91%)</i>	<i>(61%)</i>	<i>(98%)</i>	<i>(56%)</i>	<i>(87%)</i>	<i>(123%)</i>
Observations	790	720	772	694	475	700
<i>(DMEM as % of DMDM)</i>	<i>(16%)</i>	<i>(16%)</i>	<i>(14%)</i>	<i>(17%)</i>	<i>(10%)</i>	<i>(15%)</i>

Description: This table summarises the sample of cross border acquisitions with a publicly listed acquirer domiciled in a developed market announced between 2000 and 2013 where the target that is at least 5% the size of the acquirer. DMDM represents deals where the acquirer and the target are domiciled in (different) developed markets. DMEM represents deals where the acquirer is domiciled in a developed market and the target is domiciled in an emerging market. Relevance ratio is the relative size of the target compared to the acquirer in terms of deal value to acquirer market capitalisation or target sales to acquirer sales depending on data availability. Market capitalisation acquirer is the market value of the acquirer's equity in million Euro at the point of acquisition. Sales of acquirer and target is the reported sales at the time of acquisitions in million Euro. Deal value is the transaction size in million Euro. Book to Market is the ratio between the acquirer's book value of equity and market value of equity.

The empirical evidence on the association between the relative size of the target and acquirer returns is mixed and contradicting (Tuch & O'Sullivan, 2007). As can be seen in Table 14, median *relevance ratios* are similar in the sample of acquisitions in emerging markets and the sample of acquisitions in developed markets. Thus, based on inconsistent previous research and the lack of difference no need to introduce control variables is identified.

Table 14 also illustrates that acquirer *market capitalisation* and *deal value* are larger for acquisitions in developed markets whilst *acquirer sales* and *target sales* at the point of acquisition is similar. Market capitalisation and deal value in emerging market deals are approximately 40 percent smaller than for acquisitions in developed markets.

Previous research suggests that the size of the acquirer is negatively associated with abnormal announcement returns (Moeller, et al., 2004). This is explained with the reasoning that the managerial hubris hypothesis (Roll, 1986) becomes more pronounced in large firms. The intuition is that managers of large firms will be less careful in negotiating relatively small deals and therefore more likely to offer a large premium. Following this thought, the sample of firms making emerging market acquisitions could be expected to experience higher abnormal share price returns. Thus, based on the documented association between size and acquirer abnormal return in previous research along with an identified difference between subsamples, a control variable of acquirer size is included in cross sectional control regressions as described in section 5.3. A review of the empirical evidence gives no clear indication of any positive or negative association between deal size and acquirer returns and thus no need to control for this difference is identified.

The firms acquiring in emerging markets have higher Book-to-Market (BTM) ratios, indicating a lower relative valuation compared to firms acquiring in developed markets. One possible interpretation is that firms with lower valuation (higher BTM ratios) are more likely to pursue acquisition opportunities in emerging markets. The BTM ratio has been found to be positively associated with announcement returns (Sudarsanam & Mahate, 2003; Tuch & O'Sullivan, 2007) and the managers of successful firms might be more likely to pursue ill thought through acquisitions due to an overconfidence in their ability to extract synergies (Roll, 1986). Therefore, there is a need to control for the effects of differences between the subsamples in terms of BTM ratios and a cross sectional control regression is run as described in section 5.3.

Table 15 reports the deal distribution by year. The distribution of deals by year is considered relatively even and no substantial difference is found between the distributions of the subsamples and thus, no need to control for time is identified.

TABLE 15: DISTRIBUTION OF EMERGING AND DEVELOPED MARKET ACQUISITION BY YEAR

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
DMDM	73	66	67	35	66	72	66	82	79	50	66	96	90	27	935
DMEM	6	6	9	13	13	7	18	8	12	4	11	14	16	7	144
Total	79 (7.3%)	72 (6.7%)	76 (7.0%)	48 (4.4%)	79 (7.3%)	79 (7.3%)	84 (7.8%)	90 (8.3%)	91 (8.4%)	54 (5.0%)	77 (7.1%)	110 (10.2%)	106 (9.8%)	34 (3.2%)	1 079

Description: This table summarises the time distribution of cross border acquisitions with a publicly listed acquirer domiciled in a developed market announced between 2000 and 2013 where the target that is at least 5% the size of the acquirer. DMDM represents deals where the acquirer and the target are domiciled in (different) developed markets. DMEM represents deals where the acquirer is domiciled in a developed market and the target is domiciled in an emerging market.

SUMMARY OF SUBSAMPLE DIFFERENCES

The subsamples in this study – acquisitions in emerging and acquisitions in developed markets – are found to be similar with regards to relevance ratio, acquirer and target sales and distribution over time. A negative difference in market capitalisation of the acquirer and deal value between emerging market and developed market

acquisitions is found along with a difference in book-to-market ratio where acquirers in emerging markets has a higher ratio on average than acquirers in developed markets. Previous research suggests a significant association between acquirer abnormal returns and two of the metrics where a difference is found – acquirer size and acquirer book-to-market ratio. Therefore acquirer size and valuation are controlled for as a robustness test of the results. The results and interpretation of the robustness tests are found in section 6.2.1.

5.1.3. OUTLIERS IN SAMPLE

As described above, the purpose of this section is to identify potential outliers in the estimated aggregated abnormal returns used in the event studies. Table 16 summarises the descriptive statistics for the abnormal share price returns in the short and long run⁵⁵ event studies. The first section reports the statistics for acquisitions in developed markets and the bottom section reports the statistics for acquisitions in emerging markets. The standard statistics of median, maximum and minimum of the estimated aggregate abnormal return is presented. The limit of the highest and lowest 5 percent is also included in order to conclude whether statistical outliers exist within the mid 90 percent of the sample.

TABLE 16: ESTIMATED AGGREGATED ABNORMAL SHARE PRICE BY EMERGING AND DEVELOPED MARKET ACQUISITIONS.

Event study horizon Expected return model	Short run event study Market model	Long run event study Fama French three factor model	Long run event study Matched reference portfolios
Aggregated abnormal return	CAR (-1;1)	API (0;24)	BHR(0;24)
Percentage decimal points	Value	Value	Value
DMDM			
Mean	0.01	0.10	0.01
Max	0.42	7.56	4.16
95 percentile	0.08	1.96	1.08
Min	-0.25	-1.00	-1.27
5 percentile	-0.06	-0.93	-0.86
Standard deviation	0.05	1.08	0.64
Observations	935	358	379
DMEM			
Mean	0.01	-0.10	0.04
Max	0.62	3.05	2.26
95 percentile	0.13	2.03	1.55
Min	-0.39	-0.98	-1.26
5 percentile	-0.09	-0.95	-0.97
Standard devitaion	0.10	0.85	0.69
Observations	144	52	51

Description: This table summarises descriptive statistics of the estimated aggregate abnormal returns following cross border acquisitions with a publicly listed acquirer domiciled in a developed market announced between 2000 and 2013 where the target that is at least 5% the size of the acquirer. DMDM represents deals where the acquirer and the target are domiciled in (different) developed markets. DMEM represents deals where the acquirer is domiciled in a developed market and the target is domiciled in an emerging market. The statistics are reported for each or the sub samples separately, and in five different metrics. The standard statistics of mean, maximum and minimum of the estimated aggregate abnormal return is presented. The limit of the highest and lowest 5% is also included in order to conclude whether statistical outliers exist within the mid 90% of the sample.

⁵⁵ The 24 month period is chosen for the long run studies as potential errors or un-normal estimations will be amplified with the length of compounding.

As can be seen in Table 16, both positive and negative statistical outliers – defined as observations more than three standard deviations from the mean⁵⁶ – can be found in the short run event study (event window of one day prior until one day following the acquisition announcement). The highest Cumulative Abnormal Return (CAR) observed is 62 percent, which equal 6 standard deviations from the mean. The lowest CAR is -40 percent, which equal 4 standard deviations from the mean. Thus there is a risk that results are influenced by these outliers and thereby robustness test is performed and discussed in section 6.2.1 including only the middle 90 percent of observations. The middle 90 percent of observations ranges between +/- 1.4 standard deviations from the mean.

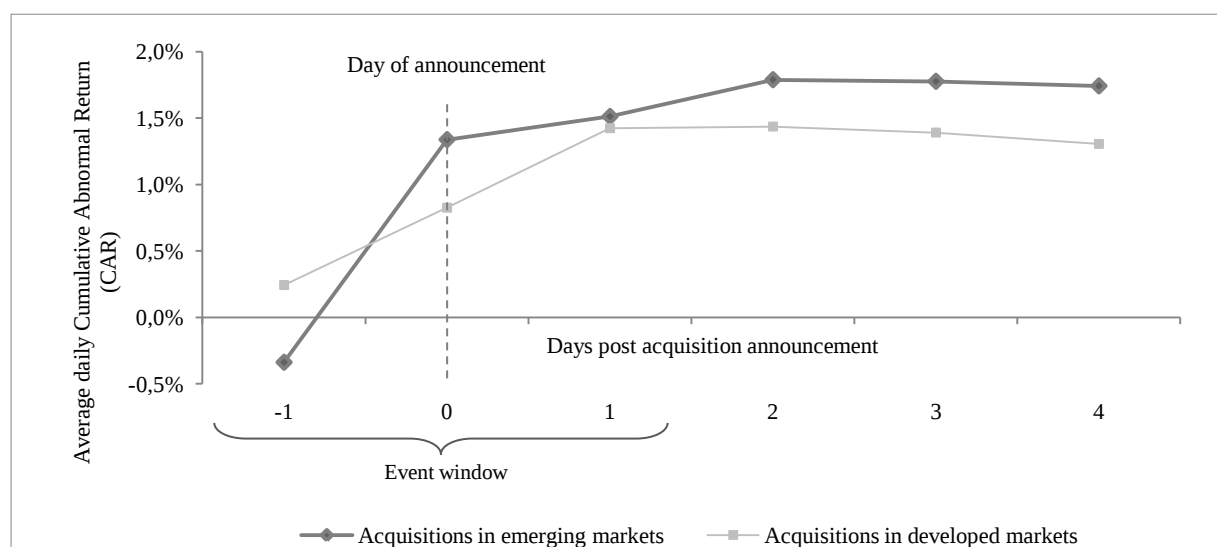
Based on Table 16, positive statistical outliers can be found in both the long run event study using the Fama French three factor model and the matched reference portfolio method. The highest Abnormal Performance Index (API) measured using the Fama French three factor model amounts to 756 percent, which equal 7 standard deviations from the mean. The highest Buy-and-Hold Return (BHR) using the matched reference portfolio amounts to 426 percent, which equal 4 standard deviations from the mean. No negative statistical outliers can be identified as the minimum of API and BHR equal 1 and 2 standard deviations from the mean respectively.⁵⁷ Given the positive statistical outliers, there is a risk that results are influenced by these outliers and thereby robustness test is performed and discussed in section 6.2.1 including the middle 90 percent of observations for both the Fama French three factor model and the matched reference portfolio. The test is run with restrictions on both the negative and positive side in order not to bias the sample, although no negative statistical outliers were identified.

5.2. EVENT STUDY RESULTS

5.2.1. RESULTS OF THE SHORT RUN EVENT STUDY

As described in the introduction and background, the short run event study is used as a method to capture the investors' initial *expected* value creation of an acquisition. The initial expectations are measured through the Cumulative Abnormal Return (CAR) measured as the sum of the abnormal returns over the event window. The event window is in this study defined as the three days surrounding the announcement date and the expected returns are estimated using the market model as described in section 3.2.1. The average CAR following the acquisition announcement is illustrated in Graph 1.

GRAPH 1: AVERAGE SHORT RUN CUMULATIVE ABNORMAL RETURN



As can be seen in Graph 1, positive Cumulative Abnormal Returns (CAR(-1;1)) is found for emerging market acquisition announcements from the day of the announcement (t=0) and onwards. The CAR increases from one day prior until one day past the acquisition. From one day past the acquisition (t=1) the CAR remains stable until four days after the announcement day (t=4), and five days since the start of the cumulation of abnormal returns. This pattern indicates that the investors reacted clearly to the acquisition and that the value effects were incorporated by the close of stock markets one day post acquisition announcement. The CARs following acquisitions in emerging and developed markets are similar in terms of pattern and magnitude. Thus the graphical illustration suggests that no difference is to be found between investors' expectations of shareholder value creation following acquisitions in emerging and developed markets. Although the reaction seems clear based on Graph 1, there is a risk that similar reactions occur regularly for these types of firms – i.e. the abnormal return is not related to the specific event. In order to control for this, a graph illustrating the abnormal return over an extended time period is presented and discussed in section 6.2.1.

The statistical tests are reported in Table 17 where the estimated average CAR is reported in two columns. In the first column, average CAR is estimated for the subsample of acquisitions in emerging markets alone. In the second column, both CAR of acquisitions in emerging and developed market are included. The estimated average CAR for acquisitions in developed markets are reported on the first row and the estimated difference in average CAR between acquisitions in emerging and developed markets is reported on the third row. The P-value, or the statistical significance, is reported below each estimated average CAR. A P-value below 10 percent is interpreted as statistically significant. Lastly, the number of observations included in the statistical test is reported.

TABLE 17: STATISTICAL TEST OF SHORT RUN CUMULATIVE ABNORMAL RETURN

	Subsample tested	
	DMEM	DMEM & DMDM
CAR average	0.015*	0.014***
<i>P-value</i>	0.08	0.00
CAR average contribution DMEM	-	0.001
<i>P-value</i>	-	0.92
Number of observations	144	1 079

Description: This table Summarise the results of a t-test of the estimated Cumulative Abnormal Return (CAR) following announcements of cross border acquisitions with a publicly listed acquirer domiciled in a developed market announced between 2000 and 2013 where the target that is at least 5% the size of the acquirer. DMEM represents acquisitions where the acquirer is domiciled in a developed market and the target is domiciled in an emerging market. DMDM represents deals where the acquirer and the target are domiciled in (different) developed markets. The first column contains statistics for the sub sample of acquisitions in emerging markets. The second column contains statistics on for the total sample where the contribution of aggregated abnormal return relating to the target being an emerging market target is reported separately. P-value is the probability, expressed as a percentage, of obtaining a test statistic at as extreme as the one observed, assuming that the population mean aggregated abnormal return is zero. *, ** and ***denote statistical significance at the 10%, 5% and 1% levels respectively.

The findings from analysing the CAR graph are confirmed in the statistical tests. CAR estimated on a short run window (-1;1) is positive and significant at the 10 percent level using a two tailed test. Thus data suggests that the null hypothesis can be rejected and that CAR is statistically different from zero. The three day CAR sample mean is approximately 1.5 percent. Assuming the median market capitalisation of 221 Euro million, a 1.5 percent return represents an increase of 3 Euro million of the value of the firm in three days. By dividing the value increase with the sample average deal value, a 15 percent return on investment is implied by the

cumulative abnormal return following the acquisition announcement. Thus the CAR is also considered to be economically significant.

The small difference in CAR between acquisitions in emerging and developed markets was not found to be statistically different from zero.

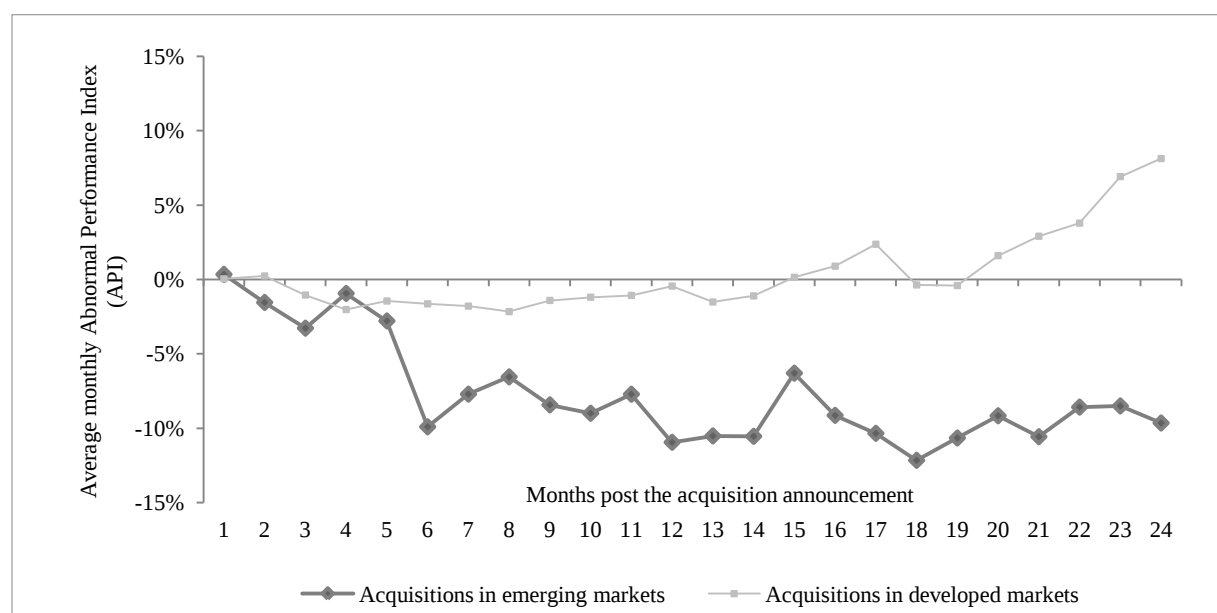
5.2.2. RESULTS OF LONG RUN EVENT STUDIES

As discussed in the method section, two different methods have been applied as described in Table 3 for the long run event study. The Fama French three factor model is used to estimate the long run aggregated abnormal returns for emerging market acquisitions and the matched reference portfolio method⁵⁸ is used to measure the *difference* in aggregated abnormal returns between acquisitions in emerging and developed markets.

LONG RUN ABNORMAL SHARE PRICE RETURNS FOLLOWING ACQUISITIONS

The Fama French three factor model is used to estimate expected return. The metric used for aggregated abnormal return over the time period studied is Abnormal Performance Index (API). The API is calculated by compounding monthly abnormal returns i.e. the API for month 12 is the compounded abnormal returns for the period 0-12 months post announcement. The interpretation of API is thus similar to the interpretation of cumulative abnormal returns (CAR) as described in section 5.2.1. Graph 2 illustrates the API development over the total 24 month research period. The methodology is described in detail in section 3.2.2.

GRAPH 2: AVERAGE LONG RUN ABNORMAL PERFORMANCE INDEX



As can be seen in Graph 2 data indicates a negative trend in API throughout the researched period post acquisition announcement for acquisitions in emerging markets. API is positive with an API of 0.3 percent in the first month. Thus by the end of the first month, the initial increase of 1.5 percent found in the short run event

⁵⁸ Matched reference portfolio method is a method where the return of a sample firm is matched with the return of a portfolio of control firms based on pre specified characteristics. The abnormal return is then the difference in return between the sample firm and the matched reference portfolio. The alteration consists of that instead of constructing portfolios of traded firms on the same market place as the sample firm, portfolios of firms making acquisitions in developed markets are constructed.

study are almost reversed. Following the first month, the API is consistently negative. During the first five months following acquisition the average API is approximately -1.5 percent. From the month 6 and onwards, the API shifts in level and stabilises towards the end of the research period at approximately -10 percent API. As can be seen in Graph 2, the API for acquisitions in emerging markets fluctuates for then the API for developed markets. It is also worth noting that there seems to be a difference between the API following acquisitions in emerging and developed markets. While the API following emerging market acquisitions is consistently negative, API following acquisitions in developed market fluctuates around zero and becomes positive towards the end of the research period. However, the difference will be directly measured using the matched reference portfolio method discussed below.

The statistical tests are reported in Table 18 where the estimated average API is presented for each event window studied: 6, 12, 18 and 24 months. The P-value and the number of observations included in the regressions are presented along with the estimated API. A P-value below 10 percent is interpreted as statistically significant.

TABLE 18: STATISTICAL TEST OF LONG RUN ABNORMAL PERFORMANCE INDEX

	Months following the acquisition announcement			
	6	12	18	24
API average	-0.1**	-0.11	-0.12	-0.10
P-value	0.03	0.16	0.17	0.40
Number of observations	63	60	58	52

Description: This table summarise the results of a t-test of the estimated Abnormal Performance Index (API) following announcements of acquisitions in emerging markets with a publicly listed acquirer domiciled in a developed market announced between 2000 and 2013 where the target that is at least 5% the size of the acquirer. Results at four different event windows are presented (6, 12, 18 and 24 months after the acquisition announcement). API is calculated using expected returns estimated using the Fama French three factor model. P-value is the probability, expressed as a percentage, of obtaining a test statistic at as extreme as the one observed, assuming that the population mean aggregated abnormal return is zero. *, ** and ***denote statistical significance at the 10%, 5% and 1% levels respectively.

The results of the statistical tests reported in Table 18 confirm the pattern identified in Graph 2. The abnormal performance index (API) for the sample of firms acquiring in emerging markets is significantly different from zero at the 5 percent level in the period six months after the acquisition announcement. Beyond 6 months the negative API is not statistically significant on conventional levels and the negative abnormal returns found in the graph cannot be confirmed. A visual analysis of the graph suggests that compounded abnormal returns do not seem to return to zero which indicates that after six months there are no abnormal returns to cancel out the negative six month returns.

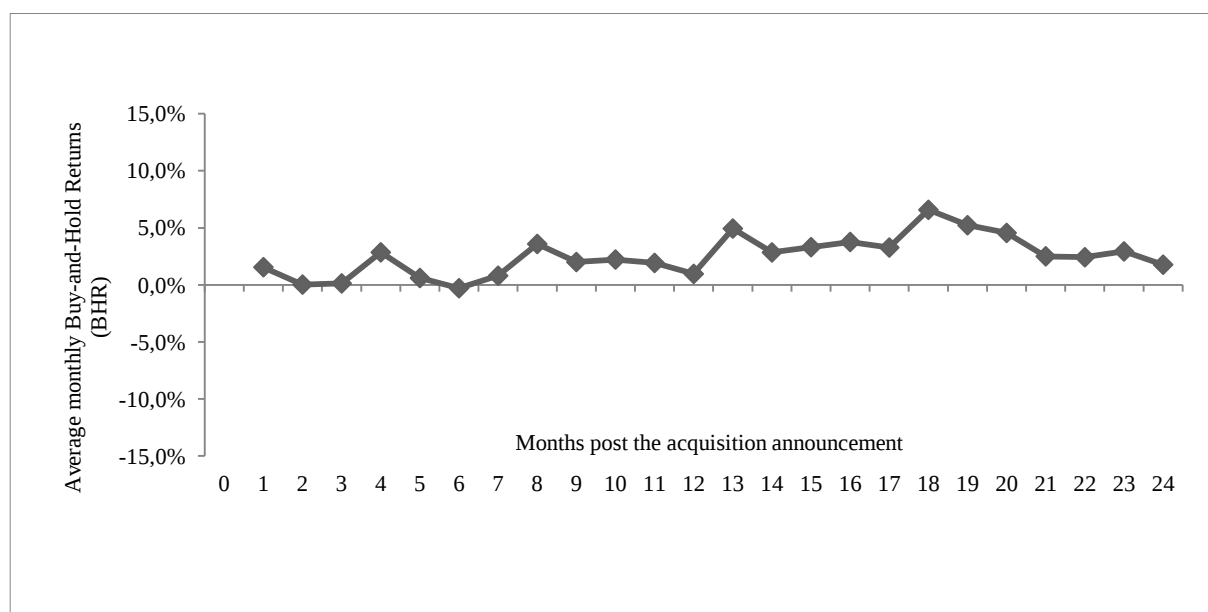
Observation losses with research horizon

The number of observations decreases from 63 in the first event window (6 months) to 52 in the last event window (24 months), as can be seen in Table 18. This decrease is the result of two factors. The first factor is that some acquisitions are announced less than 24 months ago – i.e. the sample includes deals announced up until February 2013, or 6 months prior to the extraction of the data. The second factor is that some acquirers have filed for bankruptcy or been acquired themselves during the period between 6 months and 24 months post the event. Thus there is a risk that the results in the early windows are driven by the results of recent acquisition announcements or by firms later removed from the stock market. This potential risk for bias result is hereafter called *observation loss bias* and is controlled for in section 6.2.1.

DIFFERENCE IN LONG RUN ABNORMAL SHARE PRICE RETURNS FOLLOWING ACQUISITIONS

The matched reference portfolio method is used in order to measure the difference in aggregated abnormal returns between acquisitions in emerging and developed markets.⁵⁹ Aggregated abnormal return is measured using Buy and Hold Returns (BHR) which is the difference in return between a firm making an emerging market acquisition and a portfolio of firms making a developed market acquisition. Thus the 12 month BHR is the return the investor would have received if taking a long position in the firm acquiring in emerging market and a short position in a matched portfolio of firms acquiring in developed markets. The development of BHR from the announcement of the acquisition until 24 months post acquisition can be found in Graph 3.

GRAPH 3: AVERAGE LONG RUN BUY-AND-HOLD RETURNS



Using the method of matched reference portfolios, data show a flat but slightly positive BHR during the research period. A positive trend can be identified until month 18, and thereafter a slight decline leading to a 24 month BHR of 4 percent. A 24 month BHR of 4 percent is return an investor would receive if taking a long position in an emerging market acquiring firm at the point of acquisition and a short position in a portfolio of similar firms making developed market acquisitions and then holding that position for 24 months. A visual inspection of the graph suggests that the BHR is positive but close to zero in all periods. It is however necessary to study the statistical tests to determine if BHR is significantly different from zero.

The results from the statistical tests of the BHR are reported in Table 19. The estimated average BHR is presented for each event window studied: 6, 12, 18 and 24 months. The P-value and the number of observations included in the regressions are presented along with the estimated average BHR. A P-value below 10 percent is interpreted as statistically significant.

⁵⁹ Matched reference portfolio method is a method where the return of a sample firm is matched with the return of a portfolio of control firms based on pre specified characteristics. The abnormal return is then the difference in return between the sample firm and the matched reference portfolio. In this thesis, the sample firms are the firms making acquisitions in emerging market. The emerging market firms are then matched to a portfolio formed by firms making acquisitions in developed markets.

TABLE 19: STATISTICAL TEST OF LONG RUN BUY AND HOLD RETURNS

	Months following the acquisition announcement			
	6	12	18	24
Average BHR	0.03	0.04	0.10	0.04
<i>P-value</i>	<i>0.60</i>	<i>0.53</i>	<i>0.24</i>	<i>0.71</i>
Number of observations	59	57	56	51

Description: This table summarise the results of a t-test of the estimated Buy-and-Hold Returns (BHR) following announcements of acquisitions in emerging markets with a publicly listed acquirer domiciled in a developed market announced between 2000 and 2013 where the target that is at least 5% the size of the acquirer. Results at four different event windows are presented (6, 12, 18 and 24 months after the acquisition announcement). BHR is calculated using expected returns estimated using the matched reference portfolio model. P-value is the probability, expressed as a percentage, of obtaining a test statistic at as extreme as the one observed, assuming that the population mean aggregated abnormal return is zero. *, ** and ***denote statistical significance at the 10%, 5% and 1% levels respectively.

The results of the statistical tests reported in Table 19 confirm the pattern identified in Graph 3. The estimated average BHR is not significantly different from zero at the 10 percent significance level. Non-statistically significant results are treacherous to interpret, however, the low magnitude of the coefficients and the high P-values lend weak support that data cannot support a difference in share price returns can be found between acquisitions in emerging and developed markets.

Observation losses with research horizon

The number of observations decreases from 59 in the first event window (6 months) to 51 in the last event window (24 months), as can be seen in Table 18. Following the reasoning in the previous section, it is thereby a risk that the results in the early windows are driven by the results of recent acquisition announcements or by firms later removed from the stock market. This potential risk for bias, *observation loss bias*, is controlled for in section 6.2.1.

6. EMPIRICAL ANALYSIS

Following the results of the study, the empirical analysis is presented. The focus of the analysis is to answer the research question. In order to do so, the analysis is structured in four main sections: summary of results and interpretations, robustness tests, problematisation of results and conclusion. Firstly, the results of the four tests presented in section 5.2 are summarised and interpreted based on interpretation Table 2 and Table 3. Following this summary, robustness tests of the results are made with regards to the key sensitivities addressed in section 5. The results of the study as well as the results of the robustness tests are then problematised. The problematisation consists of contrasts to previous research and contrasts in results. Building on the results, robustness tests and problematisation, a conclusion of the study is made with regards to the research question. Lastly, the validity, reliability and possibility to generalise this conclusion is analysed and concluding remarks as well as suggestions for further research are offered.

6.1. SUMMARY OF RESULTS AND INTERPRETATION

The initial short run study, using a three day event window and the market model for estimating expected returns, suggests a statistically significant *positive* aggregated abnormal return at the announcement of acquisitions in emerging markets. The long run event study, using the Fama French three factor model for estimating expected returns, suggests a statistically significant negative aggregated abnormal return 6 months following the announcement of an emerging market acquisition. Beyond 6 months, no significant abnormal returns are documented but a visual inspection of the abnormal return graph indicates that the aggregate abnormal share price returns remain below zero. No statistically significant abnormal return difference is found between firms acquiring in developed or emerging markets when using matched reference portfolios. Table 20 summarises these empirical findings of this study. Interpretations following section 3.1 are presented below.

TABLE 20: SUMMARY OF EMPIRICAL RESULTS

Test	Observations	Mean aggregated abnormal return	P value
Short run event study			
<i>Market model three day event window</i>			
DMEM	144	1.5%	0.08
DMDM vs. DMEM	1 079	0.1%	0.92
Long run event studies			
<i>Fama French three factor model 6 months post event</i>			
DMEM	63	-9.9%	0.03
<i>Matched reference portfolios 6 months post event</i>			
DMEM vs. DMDM	59	3.0%	0.60
<i>Fama French three factor model 24 months post event</i>			
DMEM	52	-9.7%	0.40
<i>Matched reference portfolios 24 months post event</i>			
DMEM vs. DMDM	51	3.6%	0.71

Description: This table summarises the test results of short and long run event studies of the estimated aggregate abnormal returns following cross border acquisitions with a publicly listed acquirer domiciled in a developed market announced between 2000 and 2013 where the target that is at least 5% the size of the acquirer. DMDM represents deals where the acquirer and the target are domiciled in (different) developed markets. DMEM represents deals where the acquirer is domiciled in a developed market and the target is domiciled in an emerging market.. Three metrics are displayed. First, observations are the number of acquisitions included in each event study. Second, mean of aggregated abnormal return is the observed sample mean of aggregated abnormal returns during the event window. Third, P value is the probability, expressed as a percentage, of obtaining a test statistic as extreme as the one observed, assuming that the population mean aggregated abnormal return is zero. The short run event study is a three day (-1;1) event study using the market model for estimated expected returns and Cumulative Abnormal Return (CAR) as aggregate abnormal return metric. It is described in detail in section 3.2.1. Results of event studies of long run horizon of 6 and 24 months are presented. For each horizon, the aggregate abnormal return is estimated using the Fama French three factor model and the difference between aggregated abnormal return is estimated using the matched reference portfolio method. The methodological considerations are described in detail in section 3.2.2. The aggregated abnormal return for the long run event studies are monthly compounded returns.

Following the operationalisation and interpretation presented in Table 2, these results can be interpreted as announcements of acquisitions in emerging markets are associated with investor expectations of value creation. Based on the patterns identified in Graph 1, the investors seem to incorporate their expectations of shareholder value creation within the three days surrounding the event. Furthermore, results following the short run event study can be interpreted as that data does not support investors having different expectations of value creation following acquisitions in emerging markets compared to acquisitions in developed markets.

Following the operationalisation and interpretation presented in Table 3, the negative long run abnormal share price returns are interpreted as emerging market acquisitions being shareholder value destructive in the first 6 months despite the initial positive investor expectations. Weak support is found regarding the acquisition to be continued shareholder value destructive throughout the 24 months following the acquisition announcement. Furthermore, the results cannot support any difference in shareholder value effects following acquisitions in emerging and developed markets.

As has been highlighted in connection with these results, these results and interpretations might be sensitive to data sample characteristics. Moreover, the results are also subject to assumptions and methodological choices. Thus prior to drawing any conclusions, these results are to be robustness tested and problematised below.

6.2. ROBUSTNESS OF RESULTS

6.2.1. ROBUSTNESS TESTS

Following the analysis of descriptive statistics and the empirical results, potential sensitivities in the results have been highlighted. Firstly, in section 5.1.2 it was established that the results of the difference in aggregated abnormal return might be sensitive for identified differences between subsamples. Those identified differences were: on average smaller acquirers measured as market capitalisation at the point of announcement and lower valuation for acquirers of targets in emerging markets. Secondly, it was documented that the samples contained outliers and that the results might be contingent on these. Thirdly, the potential risk of fluctuations in daily abnormal returns surrounding the event was raised and lastly, observation loss was documented in the long run event studies implying a risk that the results in the shorter event windows (6,12,18) is driven by short lived firms. Table 21 summarises the setup and methodology of conducting these robustness tests and the subsequent results. In order to provide consistency, the table is divided into two halves. To the left, the aspects to be tested are described along with the method used for testing and the rationale for the test. To the right, the results of the robustness tests are presented following the structure of the tests outlined in the operationalisation section and Table 2 and Table 3. Each of these robustness tests are discussed below.

TABLE 21: SUMMARY OF ROBUSTNESS TESTS AND RESULTS

Aspect to be tested	Method used for robustness tests	Rationale	Result of robustness test			
			Short run		Long run	
			DMEM	Diff DMEM vs. DMDM	DMEM	Diff DMEM vs. DMDM
Size and valuation difference between subsamples (section 5.1.2)	Regressions of aggregated abnormal return on control variables	Differences between subsamples might lead to biased results	-	Robust	-	Robust
Outliers in aggregated abnormal returns (section 5.1.3)	Tests excluding observations with the 5% lowest and highest values on aggregated abnormal return	Results might be driven by outliers	Robust	Robust	Negative aggregated abnormal return in all event windows	Robust
Fluctuations in daily abnormal return surrounding the event	Visual inspection of the volatility of abnormal return	The observed abnormal return identified at the event might not be unique	Robust	-	-	-
Observation loss in long run event study (section 5.2.1 & 5.2.2)	Tests including firms with a 24 month survival post acquisition announcement	Results might be driven by a difference between surviving and non-surviving firms	-	-	Robust	Robust

Description: the table above summarises the findings following robustness tests of the results. In the first column, the aspects for which the results should be tested for are presented along with a reference to the section where they are mentioned. In the second column, the method for the robustness test is described. In the third column, the reason for the robustness test – i.e. how the factors in column one might impact the results. In the remainder four columns, a short summary of the findings from the robustness tests are found.

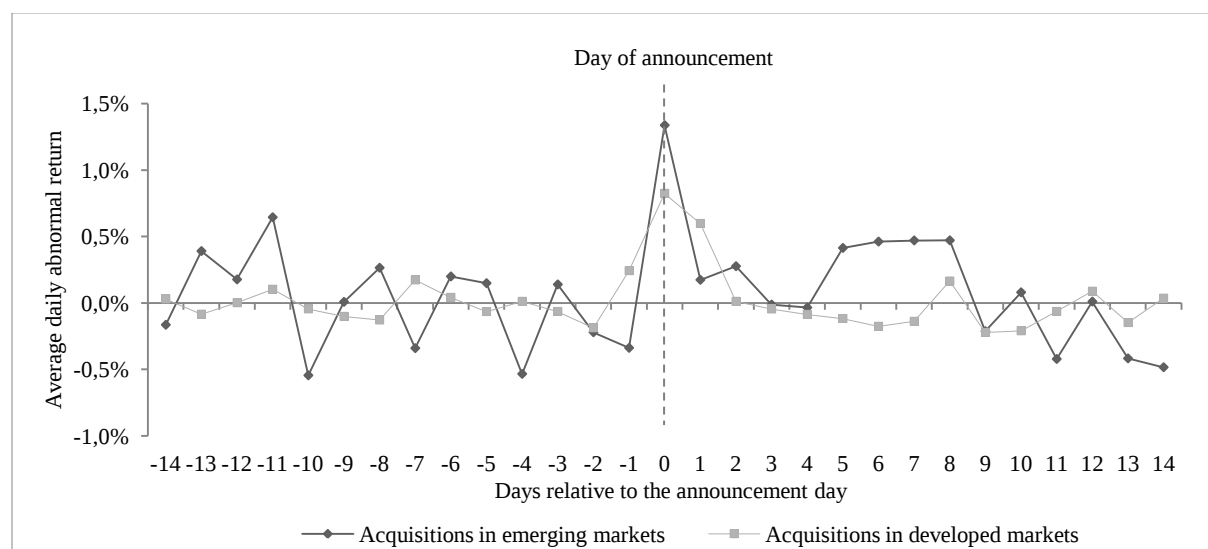
Firstly, differences between firms acquiring in emerging and developed markets with regards to the size of the acquirer, in terms of market capitalisation, and valuation, in terms of book-to-market ratio, was documented in section 5.1.2. As previous research has identified these factors to be associated with abnormal returns, robustness tests of these factors are performed. The robustness test is done using a regression of aggregated abnormal return on market capitalisation in Euro million and book-to-market ratio as control variables. Regressions results are reported in Table 26 and Table 27 in appendix. Results of the difference in abnormal returns between acquisitions in emerging and developed markets are considered robust with regards to market capitalisation of acquirer and book-to market ratio. The difference – the DMEM dummy variable – is found to be statistically non-significant in all specifications for both the short and long run event studies and thus the results are found to be robust. The interpretation of the results from the main study remains.

Secondly, statistical outliers of aggregate abnormal return were identified in section 5.1.3. As outliers have the potential to make the result dependent on a few observations, the tests of this study are redone including only the mid 90 percent of aggregated abnormal return – i.e. excluding the observations with the 5 percent highest and

lowest values of aggregated abnormal return. As can be seen in Table 28 in appendix, the results of the short run event study are found to be robust when excluding outliers. In the long run event study using the Fama French model, the aggregated abnormal return is found to be negative in all event windows tested for acquisitions in emerging markets when excluding outliers. These results are reported in Table 29 in appendix. Thus the results of non-significant aggregated abnormal return in the event windows longer than 6 months are not found to be robust.⁶⁰ The difference using matched reference portfolio is robust as it remains non-significant which can be seen in Table 30 in appendix. The interpretation of results regarding the short run event study remains following robustness tests of outliers. The interpretation of results regarding the long run event study is altered following robustness tests of outliers. Following interpretation Table 2, these results can be interpreted as announcements of acquisitions in emerging markets are associated with investor shareholder value destruction following announcements of acquisitions in emerging markets when excluding outliers. The interpretation of results regarding the difference in aggregated abnormal return remains.

Thirdly, the need for studying abnormal returns over an extended period of time was identified in section 5.2.1. Although statistical tests provide an answer regarding the abnormal returns found in event window, it does not capture any potential disturbance before or after the event window. If abnormal returns reaches similar magnitudes as found in the event window are found prior or after the event window, the sample can be said to contain indications that the reaction is not related to the specific event. In Graph 4, daily abnormal returns (not cumulated) before and after the announcement are presented in order to analyse the abnormal returns prior and after the event window.

GRAPH 4: AVERAGE ABNORMAL RETURN BEFORE AND AFTER THE ACQUISITION ANNOUNCEMENT



As expected, a clear positive abnormal share price return peak is observed at the announcement date for acquisitions in emerging market. However, several abnormal share price return peaks are observed in the period 14 days prior and 14 days post announcement indicating variance in the sample of abnormal returns. Given the

⁶⁰ It should be noted that the returns for acquisitions in developed markets become significantly negative when excluding outliers and the difference in aggregated abnormal return is reduced between acquisitions in emerging and developed market.

variance, there is a potential risk that the return peak at the announcement day is not fully attributable to the event. However, none of the return peaks prior to or after the event reaches the same magnitude as on the event window. Moreover, these return peaks are most likely related to the low number of observations of acquisitions in emerging markets. Thereby it is considered that the pattern of abnormal return illustrated in Graph 4 does not lend reason to question the results of the short run event study. Thus the interpretation of the results from the main study remains.

Lastly, a loss of observations was found in the 24 months compared to the 6 months event window in the long run event studies. In order to test whether the results are dependent on firms with different survival additional tests (reported in Table 31 and Table 32 in appendix) were performed including only firms surviving 24 month post acquisition announcements. The results were found to be robust for observation loss bias. The interpretation of the results of the long run event study thereby remains.

6.2.2. CONTRAST TO PREVIOUS RESEARCH

Given the results of the main event studies and the results of the robustness tests, it is of interest to contrast these findings with those of previous research. The comparison serves as a way to identify the contributions of this thesis to academic research, but also as a robustness discussion of the documented empirical findings.

The results found in the short run event study contrast to previous findings by Chari, et al. (2010) as no difference between acquisitions in emerging and developed markets is found. The magnitude and direction of the abnormal share price return for acquisitions in emerging markets is approximately the same as found in Chari, et al. (2010) (1.5 percent in this study and 1.16 percent in Chari). The contrasting findings are thus attributable to the positive share price reaction of developed market acquisitions. One possible explanation for this is, as mentioned in the review of previous research, that the sample of developed market acquisitions used by Chari, et al. (2010) included domestic acquisitions which later have been found to be associated with lower acquirer returns than cross border acquisitions (Danbolt & Maciver, 2012). According to Danbolt & Maciver (2012), cross border acquisitions generate on average 1.5 percent percentage points higher abnormal announcement returns than corresponding deals (“a cross border effect”). It is argued that the approach taken in this thesis provide a more accurate comparison between acquisitions in emerging and developed markets as both samples only include cross border acquisitions. Thus, any difference between the abnormal returns in the subsamples is not attributable to a higher prevalence of the “cross border effect” in one of the subsamples. Another less likely explanation is that the differences are due to different market conditions in the partly different time periods studied.

The finding of negative post acquisition abnormal share price returns is qualitatively similar to the negative returns found in the preceding long run study on cross-border acquisitions, Aw & Chatterjee (2004). However, Aw & Chatterjee (2004) found statistically significant negative returns in all periods following six months and of higher magnitudes. One potential contributing explanation to this contrast is that Aw & Chatterjee (2004) use the market model as the expected return model rather than the Fama French three factor model used in this study. As argued in section 3.2.2, the Fama French three factor model is considered superior to the market model

The negative long run aggregated abnormal returns found in this study are in contrast with the indications of positive post acquisition performance found in Chari, et al. (2010) and Deshpande, et al. (2012) as discussed in section 2.3.2. Possible reasons for the contrasting results could be that Chari, et al. (2010) only included 19 emerging market acquisitions in their study and thus the indicated performance increase could be a result of chance. Deshpande, et al. (2012) only studied the change in forecasted and realised *absolute* earnings numbers, i.e. without relating it to the size of the investment. Thus, the change in absolute earnings numbers is not an accurate measure of the *profitability* of the acquisition. It is argued that the analysis of share price returns in combination with the restriction to relatively large deals used in this thesis is more comprehensive and suggests that acquisitions in emerging markets are associated with negative abnormal share price returns in the long run.

6.2.3. PROBLEMATISATION OF RESULTS

The section of problematisation of results serves to discuss the results of the study in the light of the methodological choices made as well as potential contradictions in results. Three aspects have been considered primary importance. Those aspects are: operationalisation of aggregated abnormal returns, definition of emerging markets and contrast between results in long run event study.

OPERATIONALISATION OF AGGREGATED ABNORMAL RETURNS

In this study asset pricing models have been used in order to estimate the expected returns. Previous research (Lyon, et al., 1999; Kothari & Warner, 1997; Jegadeesh & Narasimhan, 2009) suggests that asset pricing models introduces bias to the sample and might lead to misleading results. Furthermore, the average goodness of fit for the estimated Fama French three factor model is relatively low (0.2) for the sample of acquisitions in emerging markets. Thus there are indications that the Fama French three factor model fails to adequately explain the historical returns and thus limit the validity of the expected returns. However, as mentioned in section 2.3.2, the Fama French three factor model remain the superior model in order to estimate expected and abnormal returns using an asset pricing model in long run event studies. Thus the fundamental trade off is between conducting the research and acknowledging and attempting to mitigate the drawbacks, or refrain from conducting the research in the first place. In this thesis, it has been argued that a long run event study of shareholder effects is called for and needed. Thus the research is considered relevant and contributing to the knowledge in the research field, despite the drawbacks of the Fama French three factor model and it is acknowledged that the results might be contingent on the method choices and drawbacks previously identified with regards to Fama French three factor model.

DEFINITION OF EMERGING MARKETS

The concept and use of the term emerging market is not clearly defined and used inconsistently in both practice and the literature. As mentioned in the introduction, when using the term emerging markets researchers and practitioners often refer to the economies with low level of economic development, high level of growth and an ongoing convergence to developed markets. Following this general definition, an operationalisation has been made as described in section 4.1.1 mainly following the categorisation of OECD. The operationalisation is mainly driven by two considerations. On one hand, it is desirable to limit the choice of emerging markets to those countries where the emerging market characteristics are the strongest (i.e. lowest degree of economic development and highest degree of growth). However, it is shown in the raw data that the stronger the emerging market characteristics, the fewer acquisitions are made by developed markets. Thus, by limiting the number of

emerging markets there will be a substantial loss of observations causing the methodology to be invalid. Thus a broad operationalisation is needed in order to be able to study the phenomena using the statistical methods at hand. On the other hand, by broadening the definition, the relevance of the research subject might be compromised. In total, it is considered that the results are likely to be dependent on the operationalisation of the emerging market definition. Although the operationalisation of the definition of emerging markets is specific to this thesis, it is in line with operationalisations done in previous studies. Thus the operationalisation is considered valid, and so the results with respect to the definition of emerging markets.

CONTRAST BETWEEN RESULTS IN LONG RUN EVENT STUDY

Even though the abnormal returns in the matched reference portfolio model are of low magnitude and not statistically significant, the positive sign of the Buy-and-Hold Returns (BHR) could be seen as unexpected given the results of the Abnormal Performance Index (API) following the long run event study using Fama French for estimating expected returns. This difference will be elaborated on below.

Firstly, the two models are different, using different measures and thereby rendering different interpretations. Contrasting results are therefore not necessarily an area for concern. The event study using the Fama French three factor model measure the returns relative to the *expected* returns estimated based on that company's share price return development during an estimation period prior to the acquisition. In contrast, the matched reference portfolio method (as specified in this thesis)⁶¹ is only concerned with *realised* returns following the announcement. It is not unreasonable that a model dependent on an estimation period generate different results than a model merely concerned with realised returns given that the dynamics of the share price differs between the estimation window and the event window.

Secondly, the results could be due to high variance in sample. As was documented in section 5.1.3, positive outliers existed in both the emerging and developed market sample. Positive outliers in the developed market sample would impact the average API directly in the Fama French model. Positive outliers in the method of matched reference portfolios on the other hand would impact the BHR through first being a part of a portfolio average, and secondly through the average of BHR. The Fama French model is therefore more sensitive to outliers in the developed market sample than the method of matched reference portfolios. Thus, the results of an event study using matched reference portfolios should be more similar to the results of the event study using Fama French model excluding outliers. As shown in Graph 5 in appendix, this is also found to be the case.

Thirdly, the identified contrast could be due to different risk adjustment in the different models. The Fama French three factor model correct and controls for market related, size related and valuation related risks and mispricing when estimating the abnormal return, while the matched reference portfolio method adjusts for risk through the portfolio formation. As mentioned in section 3.2.2, the risk adjustment in the matched reference portfolio method is done by matching firms based on size and valuation – i.e. the same parameters as are controlled for in the Fama French three factor model. The only factor that is not controlled for in the matched

⁶¹ As is described in section 3.2.2, the matched portfolio in this thesis is a portfolio of acquirers making acquisitions in developed markets in the same time period, with similar size and valuation. The standard matched portfolio as described by Lyon, et al. (1999) consists of traded firms in the same market place as the sample firm (acquirer in emerging markets) with similar size and valuation. Thus, following Lyon, et al. (1999), the matched reference portfolio method could render an economically interpretable result.

reference portfolio is market risk (“the CAPM beta”). However, based on the low explanatory factor of the market factor found in previous research (Fama & French, 1992) and the fact that the firms are similar in all other respects, a market factor related explanation seem farfetched.

Lastly, disregarding any potential model sensitivity to outliers and slight differences in risk adjustment it remains a fact that the statistical tests are not significant. As a non-significant result indicate a high variance of the estimated mean, it is not unlikely that the data shifts form based on method.

6.3. CONCLUSION

The aim of this thesis has been to contribute to the existing research by studying the shareholder value effects following acquisitions in emerging markets from the perspective of a developed market acquirer using current data. This aim was to be achieved by answering the research question:

*What are the shareholder value effects following acquisitions in emerging markets
announced between 2000 and 2013?*

Following the definitions of effects and emerging markets and the delimitations of the study presented below, the research question was operationalised through one short run and one long run event study. The event studies researched the *direction* of shareholder value effects following announcement of acquisitions in emerging markets and the *difference* in shareholder effects between acquisitions in emerging and developed markets.

The short run abnormal share price return was found to be positive for acquisitions in emerging markets. The results are interpreted as investors, at the time of announcement, having expectations of a net gain – and thus shareholder value creation – following announcements of acquisitions in emerging markets between 2000 and 2013. Contrary to previous research, data did not support a difference in abnormal share price reaction between acquisitions in emerging and developed markets in the studied time period. Although contrasting, the results are considered complementary to previous research given the sample selection choices and time period studied.

The documented positive short run reaction was followed by a negative long run aggregated abnormal return in the 6 month period following the acquisition announcement in emerging markets. This negative abnormal return was found not persistent over an extended time period⁶² when running tests on the full sample. However, the negative performance was found to be persistent when excluding outlier observations. The results are interpreted as investors in the months following the acquisition announcement having perceived a net loss – and thus shareholder value destruction – following announcements of acquisitions in emerging markets between 2000 and 2013. Data did not support a difference in abnormal share price returns between acquisitions in emerging and developed markets in the studied time period. The findings of negative shareholder value effects following announcements of emerging market acquisitions are found to be in line with previous research of cross border acquisitions, however contrasting to what has been suggested in research of emerging market acquisitions by developed market acquirers.

⁶² Extended event window refers to 12, 18 and 24 months after the announcement.

6.3.1. RELIABILITY

The question of reliability is concerned with whether the study is designed and method applied in a way that the results would be yield the same results in repeated trials. The reliability is considered high in this thesis as the data is publicly available, the method thoroughly described and the data selection process is mainly rule based.

6.3.2. VALIDITY

The question of validity is concerned with whether the method used is capturing what is attempted to be measured. In order to assess the study's validity it is analysed it at two levels. Firstly, the validity of the estimation method *per se* is analysed i.e. if the estimation models used have the capacity to measure abnormal share price returns of the acquiring firm. Secondly, the validity of the event method with regards to the identified event is analysed, i.e. whether the abnormal share price return can reliably be connected to the acquisition as the identified researched event.

Given the methods used, the validity of the estimation model is considered to be high with regards to both the estimation model and short run event study method. The assumptions set out in section 3.3 are considered to be fulfilled with relatively high certainty. The event is clearly defined and possible to isolate from confounding effects and leakage (unexpected events). Furthermore, it is reasonable to assume that the estimators are unbiased.

In the long run event study, there is considered to be a risk that the assumptions set out in section 3.3 are not fulfilled. Primarily, the assumptions of unbiased estimators and no confounding effects are of concern. Identified factors which might relate to *biased estimators* are: 1) cross correlation in sample, 2) method related biases and 3) sample selection bias. Firstly, cross correlation in the sample is inevitable as the sample contains overlapping event windows⁶³. Moreover, there might be cross correlation relating to industries and firm specific effects. Secondly, the Fama French three factor model suffers from rebalancing, new listing and measurement bias. Lastly, sample selection might have introduced biased through a non-random sampling method. As there is a risk that the occurrence of acquisition is not random (Graham, et al., 2008), potential systematic differences between firms could have entered the sample. The following criteria are considered critical regards to sample selection bias in the method: requirement of a known deal financials and the relevance ratio criteria. Firstly, as only a minority of deals are reported with deal value or known target financials, there is a risk that the selection of deals and acquirers might be biased. Secondly, the relevance ratio might also introduce sample selection bias through non random sampling. It is reasonable to believe that only financially strong companies or companies with certain governance structure and strategy have the ability to acquire targets larger than 5 percent of sales or market capitalisation.

As set out in section 4.1.1 measures have been taken in order to limit the risk of *confounding effects*. However, it cannot be guaranteed that other corporate events following the acquisition have not disturbed the results. The risk of confounding effects is decreasing with the size of the sample. Thus the risk is smaller for the sample of acquisitions in developed market than the sample of acquisitions in emerging markets. Therefore the conclusions regarding acquisitions in emerging markets should be interpreted with caution. In total, the validity of the estimation method and the long run event study method is considered limited.

⁶³ The research period for each company covers 24 months and the total time period studied covers 156 months. Since the dataset contains more than 6 firms, it is inevitable to have overlapping event windows.

6.3.3. POSSIBILITY TO GENERALISE THE RESULTS

The question of possibility to generalise the results is concerned with whether the results can be extended and assumed to hold for data that has not been included in the study. The level of generalizability is dependent on whether the sample used can be considered representative for the greater population of data – i.e. all acquisitions in emerging markets by developed firms in the past and in the future.

As has already been argued for, historical research suggests that the shareholder value effect following acquisitions is dependent on the time period studied. Thus there is reason to believe that the results of the study are not possible to generalise beyond the time period between 2000 and 2013. A final note with regards to changing return patterns over time is found in the concluding remarks.

The second aspect impacting the possibility of generalising the results is whether the data sample used can be considered representative for all acquisitions in emerging markets by developed firms in the given time period studied. The representativeness is given by the size of the sample and any potential bias in sample. As can be seen in the data loss table in section 4.1.1 approximately one third of the acquisitions are lost due to the lack of deal value or sales and the final data sample constitute approximately a tenth of the original sample when cutting the data sample on relevance ratio. Thus the sample is a small portion of the total population of deals. However, as the sample used in short run event studies consists of more than 140 acquisitions, the sample is considered large enough to be representative. The last aspect is then whether the data sample contains any bias. Previously in section 6.3.2 it was noted that the sample contains smaller deals and smaller acquirers on average compared to the samples of previous researchers. Thus it could be argued that the possibility to generalise the results is reduced. In total however, the generalizability within the time period studied is considered to be high.

7. CONCLUDING REMARKS AND SUGGESTIONS FOR FURTHER RESEARCH

The empirical results found in this study suggest an initial expectation of shareholder value creation by investors at the announcement of acquisitions in emerging markets by a developed market acquirers between 2000 and 2013. However, data support that this initial perception of value creation is reversed to a perception of value destruction in the months following the acquisitions in emerging markets. A difference in shareholder value effects between acquisitions in emerging and developed markets could not be documented.

One possible interpretation of these results is that the markets are inefficient. The possible inefficiency consist of an overreaction by investors at the time of the announcement, and thereafter a negative post announcement drift as more information regarding the acquisitions and integration costs are released in the months following the announcement. Following the notion of market efficiency, investors should not react negative to these news if they could have been expected at the announcement. If a systematic pattern can be documented – as in this thesis – then the news should have been expected and no post announcement drift would be documented. Future research focusing on published post announcement information relating to emerging market deals, as well as the shareholder effect of those is welcomed.⁶⁴ An improved understanding of the information flow, as well as the shareholder value effect would contribute to understand the potentially identified market inefficiency.

A contrary interpretation is that the market is efficient but that the results of our study are a consequence of either methodological limitations or that they are news to the market. The aspect of methodological limitations is considered thoroughly discussed in the thesis and is therefore not further elaborated on. However, the second aspect – that this information is news to the market – is lastly given some thought and attention.

It is perhaps both brave and a bit naïve to suggest that the findings of this thesis are news to the market and thus that the market following the publication this thesis will timely and precisely adjust the reactions and estimations of shareholder value creation following announcements of emerging market acquisitions. However, there is a glimmer of a reflection of a truth in that statement. As previously mentioned, researchers have documented a trend where acquisitions in general were found to be shareholder value creative in the 50's and 60's. This shareholder creation was later reversed; some argue it to be a result of the increasing competition in the capital markets. As emerging capital markets are argued to be less mature than developed capital markets, it is thus a possible thought that the maturation of emerging capital markets is lagging. Thus, there is a possibility that the suggested positive long term performance documented by Chari, et al. (2010) is valid for a period of less mature emerging capital markets, and that the results found in this thesis is an indication of maturing emerging capital markets. Hence, it is reasonable to believe that future studies will document neutral or negative initial expectations of shareholder value creation, as the knowledge of the negative long run shareholder value effects are priced in. The thought is intriguing, and left for future researchers to explore.

⁶⁴ We have done a screening of previous research in order to identify existing research within this field, however without finding any research specifically addressing the topic of post announcement information regarding deals in emerging or developed markets.

8. REFERENCES

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9. APPENDIX

9.1.1. ACRONYMS

TABLE 22: ACRONYMS USED IN THESIS

Acronyms	Definition
AR	Abnormal Return
BHR	Buy and Hold Returns
BTM	Book To Market
CAPM	Capital Asset Pricing Model
CAR	Cumulative Abnormal Return
CCAR	Continuously Compounded Abnormal Return
DM	Developed Market
ER	Expected Return
EM	Emerging Market
HML	High Minus Low
M&A	Mergers & Acquisitions
MSCI	Morgan Stanley Capital International
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Squares
SMB	Small Minus Big

9.1.2. STANDARD EVENT STUDY SET UP

For each security – denoted as i – and time unit – denoted t – return can be written as in equation 17:

$$R_{i,t} = ER_{i,t} + AR_{i,t} \quad (17)$$

$$R_{i,t} = \frac{P_{i,t}}{P_{i,t-1}} - 1 \quad (18)$$

Where R denotes realized return and ER denotes expected return, AR denotes abnormal (unexpected return) and P denoted share price. The expected return is unconditional upon the event, while the abnormal return is conditional upon the corporate event. Writing this differently abnormal return can be written as:

$$R_{i,t} - ER_{i,t} = AR_{i,t} \quad (19)$$

Thus the abnormal return can be seen as the difference between the realized return and the expected return. When the event window spans several time units⁶⁵, the abnormal returns need to be aggregated over each time unit in order to measure the total impact on shareholder value considering the entire event window. Abnormal returns can be aggregated following different methods.⁶⁶ The choice of method depends on the preference of the researcher, characteristics of the sample data and the purpose of the study.

The realized return is readily available in the data as the closing price⁶⁷ of a security for the desired time unit or trading frequency⁶⁸. However, the expected return needs to be estimated in order to calculate the abnormal

⁶⁵ Time units could be either days or months or years.

⁶⁶ Methods that will be used in this thesis are Cumulative Abnormal Return (CAR), Abnormal Performance Index (API) and Buy-and-Hold Returns (BHR).

⁶⁷ Latest price of which a sell and buy of the security.

return. Just as in the case of aggregation of returns, expected returns can be estimated following different models. The choice of model depends on the preference of the researcher, characteristics of the data and the purpose of the study.

The *event window* is defined as the time under which the new information associated with the event is incorporated in the price (McWilliams & Siegel, 1997). Depending on the assumption of market efficiency and the time investors require to incorporate the new information, the length of the event window differs.

Estimation window is the time period prior to the event window which is used in the estimation model for expected returns. All models for expected returns do not require an estimation window. The length of the estimation varies. As the sole purpose for the estimation window is to estimate the expected returns, the results is not particularly sensitive for the length of the estimation window per se. Rather it is of greater importance that the estimation window is representative. Ideally the estimation period should not be contaminated with uncorrelated events (Aktas, et al., 2007).

Hypothesis test: Due to that the population variance is unknown, the sample is assumed to follow the *student's t-distribution*. Given a random sample of n observations with mean of aggregated abnormal return of $\bar{x}$ and standard deviation of s from a normally distributed population with zero mean, the random variable t follows the *student's t-distribution* with $(n-1)$ degrees of freedom and can be written as:

$$t_{n-1} = \frac{\bar{x}_{t_1, t_2}}{s/\sqrt{n}} \quad (20)$$

Where $\bar{x}_{t_1, t_2}$ denotes the sample aggregated abnormal return over the event window. The aim of the statistical test is to find out whether there is an aggregated abnormal return over the event window or not. Thus the null hypothesis to be tested is whether the aggregated abnormal return over the event study is equal to the zero population mean. The null and alternative hypothesis can be written as:

$$H_0: \bar{x}_{t_1, t_2} = 0 \quad (21)$$

$$H_1: \bar{x}_{t_1, t_2} \neq 0 \quad (22)$$

The null hypothesis is rejected if:

$$t_{n-1} = \frac{\bar{x}_{t_1, t_2}}{s/\sqrt{n}} > t_{n-1, \alpha} \quad (23)$$

Where α denotes the desired significance level.

9.1.3. FAMA FRENCH THREE FACTOR MODEL

$\beta_{1,i}$ can be compared to the classical $\beta_{1,i}$ of the market model, which captures the sensitivity between the return of the specific stock and the non-diversifiable risk of the market portfolio. $\beta_{2,i}$ and $\beta_{3,i}$ instead, captures the sensitivity between the return of the specific stock and risk factors associated with size and BTM levels. SMB and HML are not theoretically derived (in contrast to CAPM) and are not evident as risk factors themselves.

⁶⁸ Commonly used frequencies are daily, monthly and quarterly trading depending on the definition of the event window and purpose of the study.

However, they are believed to be proxies for – yet unknown – risk factors in the market which contribute to explaining returns of securities.

SML stands for Small Minus Large and HML stands for High Minus Low. The SML and HML factors are constructed as described below following (Fama & French, 1993). Firstly, the total market⁶⁹ is divided in 6 portfolios by *size* and *valuation* which are used to form the SMB and the HML factors. The size factor is based on the market capitalisation of each share, while the valuation factor is based on the Book-to-Market (BTM) ratio. The different portfolios can be illustrated as in Table 23.

TABLE 23: FAMA FRENCH FACTORS

Size factor	Valuation factor	Portfolio number
Small	Value (High)	1
	Neutral (Medium)	2
	Growth (Low)	3
Big	Value (High)	4
	Neutral (Medium)	5
	Growth (Low)	6

The SMB factor is constructed as the difference between the average return of small portfolios (1,2,3) minus big portfolios (4,5,6). The HML factor is constructed as the difference between the average return of high BTM portfolios (1,4) less the average return of low BTM portfolios (3,6).

9.1.4. NUMERICAL EXAMPLE ILLUSTRATING DIFFERENT RETURN METRICS

API is used rather than CAR in long run event studies based on the advantages put forward by e.g. (Lyon, et al., 1999). In the case of single stock being more volatile than the benchmark portfolio, simple CAR can be inflated (in the case of negative CAR^{comp}) or deflated (in the case of positive CAR^{comp}) compared to the metric of Buy-and-Hold Returns (BHR) (Lyon, et al., 1999).

However, API is used rather than BHR due to the characteristics of our estimated abnormal return. For large shares of the data sample, the estimated abnormal return is consistent negative. As BHR takes the standpoint of an investor taking a long position in the studied stock and a short position in a market portfolio and holds this position for all studied periods without rebalancing, the compounded abnormal returns extreme. API on the other hand takes the standpoint of an investor who takes a long position in the stock and a short position in the market portfolio and holds this position for one period (one month). At the end of each period he rebalances the portfolio so that he holds equal value of the long and short positions. Thus the compounded returns, given negative abnormal returns, become less extreme compared to BHR. This dynamic is illustrated in Table 24.

Table 24 illustrates an example of an investment constantly generating 5 percent in realized returns, compared to an expected return of 10 percent with consequently an abnormal return of -5 percent. If an investor takes a long position in the realized return and a short position in the expected return at period 0, the investor will then have a net wealth of 95 in period 2 consisting of a positive return of 5 percent in the realized return (long position) and -

⁶⁹ In the Fama French 1993 case, all shares traded on New York Stock Exchange (NYSE) on CSRP (Center for Research in Security Prices).

10 percent in the expected return (short position). In period 6, the investor would have continued to compound excess negative returns in the short position and a negative development in net wealth as a result.

TABLE 24: NUMERICAL EXAMPLE ILLUSTRATING DIFFERENT RETURN METRICS

	Period				
	1	6	12	18	24
Realized return	5%	5%	5%	5%	5%
Expected return	10%	10%	10%	10%	10%
Abnormal return	-5%	-5%	-5%	-5%	-5%
API	-5%	-26%	-46%	-60%	-71%
BHR	-5%	-43%	-134%	-315%	-662%
CAR	-5%	-30%	-60%	-90%	-120%

This simple example illustrates the effect found in our data running test regressions. On an aggregated level, the abnormal return found in the event window is negative, leading to extreme BHR. Even though these extreme values might be correct in a strict sense from an investor perspective they are difficult to interpret in relation to a perspective of measuring performance. In this case, the BHR fell short of -100 percent which is deemed unrealistic. An investor taking the assumed positions would not maintain those positions resulting in those kinds of returns. Returns less than -100 percent are not possible with API (Kothari & Warner, 1997). Therefore the API metric is chosen to measure returns relative to the benchmark models, paying careful attention to the interpretation of the results. In addition to the API measure, the simple additive CAR measure will also be used as a robustness test.

9.1.5. FAMA FRENCH REGIONAL FACTORS

TABLE 25: FAMA FRENCH REGIONAL FACTORS

Item	Description
European Factors	The European factors and portfolios include Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.
Japanese Factors	The Japanese factors and portfolios include only Japan.
Asia Pacific ex Japan Factors	The Asia Pacific factors and portfolios include Australia, Hong Kong, New Zealand, and Singapore.
North American Factors	The North American factors and portfolios include Canada and the United states.

Description: Above table lists and describes the regional Fama French factors used in order to estimate the expected return as specified in section 3.2.2

9.1.6. ROBUSTNESS TESTS

Control regressions

TABLE 26: CONTROL REGRESSIONS OF SHORT RUN EVENT STUDY RESULTS

	(1)	(2)	(3)
Intercept	0.014***	0.028**	0.027**
<i>P-value</i>	0.00	0.01	0.01
DMEM	0.00	0.00	-0.006
<i>P-value</i>	0.92	0.93	0.49
Size (logarithm of acquirer market capitalisation)		0.00	0.00
<i>P-value</i>		0.18	0.17
Valuation (book to market ratio)			0.00
<i>P-value</i>			0.91
N	1 079	988	947
R2	0.000	0.004	0.004
R2 adjusted	-0.001	0.002	0.001

Description: above table summarises the results following a build-up of control factors. As there are three control factors in total, there are three columns with results. For each column one additional factor is added. Intercept is the mean value of API excluding the control factors expressed in percentages. DMEM is a dummy variable assigned value 1 if the target is domiciled in an emerging market and 0 if domiciled in a developed market. Size is the logarithm of the acquirers market capitalisation at the point of acquisition expressed in EURm. Valuation is the book-to-market ratio of the acquiring firm at the time of acquisition.

TABLE 27: CONTROL REGRESSIONS OF LONG RUN EVENT STUDY RESULTS

	(1)	(2)	(3)
Intercept	0.03	-0.07	0.16
<i>P-value</i>	0.60	0.74	0.45
Size (logarithm of acquirer market capitalisation)		0.01	-0.01
<i>P-value</i>		0.61	0.73
Valuation (book to market ratio)			-0.1**
<i>P-value</i>			0.04
N	59	59	59
R2	0.00	0.00	0.06
R2 adjusted	0.00	-0.01	0.03

Description: above table summarises the results following a build-up of control factors. As there are three control factors in total, there are three columns with results. For each column one additional factor is added. Intercept is the mean value of BHR excluding the control factors expressed in percentages. Size is the logarithm of the acquirers market capitalisation at the point of acquisition expressed in EURm. Valuation is the book-to-market ratio of the acquiring firm at the time of acquisition.

Outliers

TABLE 28: SHORT RUN EVENT STUDY RESULTS EXCLUDING OUTLIERS

	Subsample tested	
	DMEM	DMEM vs DMDM
CAR average	0.015***	0.013***
<i>P-value</i>	0.00	0.00
CAR average contribution DMEM	-	0.002
<i>P-value</i>	-	0.66
N	134	1 026

Description: This table summarise the results of a t-test of the estimated Cumulative Abnormal Return (CAR) following announcements of cross border acquisitions with a publicly listed acquirer domiciled in a developed market announced between 2000 and 2013 where the target that is at least 5% the size of the acquirer. DMEM represents acquisitions where the acquirer is domiciled in a developed market and the target is domiciled in an emerging market. DMDM represents deals where the acquirer and the target are domiciled in (different) developed markets. The first column contains statistics for the sub sample of acquisitions in emerging markets. The second column contains statistics on for the total sample where the contribution of aggregated abnormal return relating to the target being an emerging market target is reported separately. P-value is the probability, expressed as a percentage, of obtaining a test statistic at as extreme as the one observed, assuming that the population mean aggregated abnormal return is zero. *, ** and ***denote statistical significance at the 10%, 5% and 1% levels respectively.

TABLE 29: LONG RUN EVENT STUDY RESULTS EXCLUDING OUTLIERS (1)

	Months post event by deal type			
	6	18	24	36
Average API	-0.11***	-0.17***	-0.17**	-0.17*
<i>P-value</i>	0.00	0.00	0.01	0.06
N	57	54	54	48

Description: This table summarise the results of a t-test of the estimated Abnormal Performance Index (API) following announcements of acquisitions in emerging markets with a publicly listed acquirer domiciled in a developed market announced between 2000 and 2013 where the target that is at least 5% the size of the acquirer. Results at four different event windows are presented (6, 12, 18 and 24 months after the acquisition announcement). API is calculated using expected returns estimated using the Fama French three factor model. P-value is the probability, expressed as a percentage, of obtaining a test statistic at as extreme as the one observed, assuming that the population mean aggregated abnormal return is zero. *, ** and ***denote statistical significance at the 10%, 5% and 1% levels respectively.

TABLE 30: LONG RUN EVENT STUDY RESULTS EXCLUDING OUTLIERS (2)

	Months post event			
	6	12	18	24
Average BHR	0.02	0.03	0.08	0.00
<i>P-value</i>	0.58	0.59	0.24	0.96
N	55	53	52	47

Description: This table summarise the results of a t-test of the estimated Buy-and-Hold Returns (BHR) following announcements of acquisitions in emerging markets with a publicly listed acquirer domiciled in a developed market announced between 2000 and 2013 where the target that is at least 5% the size of the acquirer. Results at four different event windows are presented (6, 12, 18 and 24 months after the acquisition announcement). BHR is calculated using expected returns estimated using the matched reference portfolio model. P-value is the probability, expressed as a percentage, of obtaining a test statistic at as extreme as the one observed, assuming that the population mean aggregated abnormal return is zero. *, ** and ***denote statistical significance at the 10%, 5% and 1% levels respectively.

Observation loss

TABLE 31: LONG RUN EVENT STUDY EXCLUDING OBSERVATION LOSS FIRMS (1)

	Months post event by deal type			
	6	12	18	24
API	-0.1*	-0.10	-0.12	-0.10
P-value	0.06	0.25	0.22	0.40
N	52	52	52	52
R2	0.000	0.000	0.000	0.000

Description: This table summarise the results of a t-test of the estimated Abnormal Performance Index (API) following announcements of acquisitions in emerging markets with a publicly listed acquirer domiciled in a developed market announced between 2000 and 2013 where the target that is at least 5% the size of the acquirer. Results at four different event windows are presented (6, 12, 18 and 24 months after the acquisition announcement). API is calculated using expected returns estimated using the Fama French three factor model. P-value is the probability, expressed as a percentage, of obtaining a test statistic as extreme as the one observed, assuming that the population mean aggregated abnormal return is zero. *, ** and ***denote statistical significance at the 10%, 5% and 1% levels respectively.

TABLE 32: LONG RUN EVENT STUDY EXCLUDING OBSERVATION LOSS FIRMS (2)

	Months post event			
	6	12	18	24
Compounded BHR	0.14	0.19	0.23	0.22
P-value	0.18	0.18	0.16	0.30
N	56	56	56	56

Description: This table summarise the results of a t-test of the estimated Buy-and-Hold Returns (BHR) following announcements of acquisitions in emerging markets with a publicly listed acquirer domiciled in a developed market announced between 2000 and 2013 where the target that is at least 5% the size of the acquirer. Results at four different event windows are presented (6, 12, 18 and 24 months after the acquisition announcement). BHR is calculated using expected returns estimated using the matched reference portfolio model. P-value is the probability, expressed as a percentage, of obtaining a test statistic as extreme as the one observed, assuming that the population mean aggregated abnormal return is zero. *, ** and ***denote statistical significance at the 10%, 5% and 1% levels respectively.

GRAPH 5: AVERAGE ABNORMAL PERFORMANCE INDEX FOLLOWING ACQUISITION ANNOUNCEMENTS EXCLUDING OUTLIERS

