Norwegian School of Economics
Bergen, Fall 2016

THE WEALTH EFFECTS OF M&A IN EMERGING MARKETS

An empirical study of value creation and value distribition, and new evidence on the relationship between corruption and target pre-annoucement stock price runup

AUTHORS:
EIRIK SKARPÅS
DAG STENSENG

THESIS ADVISOR:
PROFESSOR, KARIN S. THORBURN

Master thesis in Master of Science in Economics and Business Administration – Major in Financial economics

NORWEGIAN SCHOOL OF ECONOMICS

ABSTRACT

The takeover literature appears to lack comprehensive studies on the shareholder wealth effects of mergers and acquisitions (M&A) in emerging markets (EMs). In this thesis, using a sample consisting of 542 initial takeover bids originating from 21 emerging economies, we provide a unified analysis of the value creation in M&A and the distribution of value between target- and bidder firms. Further, we examine the differences in value creation and value distribution between EMs and the United States (US) by including a control sample consisting of 2 379 US initial takeover bids. To measure value creation, we calculate both the capitalization-weighted combined cumulative abnormal returns surrounding the bid announcement, and the combined dollar returns per dollar spent on takeovers. To measure the value distribution, we calculate the difference in dollar returns received by the target and bidder, normalized by their combined pre-merger market capitalization, as well as the fraction of combined dollar returns received by the target. When analyzing the differences between EMs and the US, we control for commonly accepted deal-, firm-, and country characteristics. We find that while premiums received by targets are significantly lower in EMs than in the US, there is no significant difference in value creation. Further, EM targets receive a significantly smaller share of the value creation than their US counterparts. Hence, our results suggest that bargaining power is lower for EM targets. In addition, we present evidence indicating a positive relationship between the degree of corruption and target pre-announcement stock price runup.

FOREWORD

This master thesis was written as part of our Master of Science degree in Economics and Business Administration at the Norwegian School of Economics (NHH). We have specialized in Financial Economics and have spent this fall investigating the shareholder wealth effects of mergers and acquisitions in emerging markets.

When searching for a thesis topic in August, we discovered that the existing research on the wealth effects of mergers and acquisitions in emerging markets was scarce. We therefore set out to build on the existing research and conduct a comprehensive analysis to hopefully fill a gap in the literature. This process has allowed us to apply the knowledge we have acquired during our studies in order to solve complex problems. Overall, working with this thesis has been a rewarding experience and a suitable conclusion to our time at NHH.

We would like to thank our thesis advisor, Professor Karin S. Thorburn, for her invaluable counseling. Her support and input throughout the process have been crucial and given us the motivation necessary to complete this thesis.

The views, findings, and conclusions in this thesis are solely those of the authors.

Bergen, December 2016

Eirik Skarpås

Dag Stenseng

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1 INTRODUCTION

This thesis examines the shareholder wealth effects of mergers and acquisitions (M&A) in emerging markets (EMs), using a sample consisting of 542 initial takeover bids originating from 21 emerging economies. Initially, we employ various measures of wealth effects to examine the value creation in M&A and the distribution of value between target- and bidder firms. Next, we examine the differences between EMs and the United States (US) by including a control sample consisting of 2 379 US initial takeover bids. When comparing the two samples, we first investigate whether there exists a difference with regard to the premium received by targets, before examining the differences in value creation and value distribution.

During the 1980s, emerging- and developing economies accounted for approximately 36 percent of global GDP, measured in purchasing power parity terms, and approximately 43 percent of global GDP growth (IMF, 2016). For 2010-2015, the numbers were 56 percent and 79 percent, respectively. Accordingly, a predominantly advanced-economy lens for viewing the global economy has become increasingly outdated. The differential in growth prospects between EMs and advanced economies is expected to increase in the coming years (see Figure 1.A enclosed in Appendix A). As developed economies become less dependable as a source of growth and investment returns, the inflow of capital to EM debt and equities can be expected to increase. In spite of the importance and relevance of the emerging economies, research on the shareholder wealth effects of M&A has focused almost exclusively on advanced economies. In our opinion, this has created a gap in the literature. This thesis aims to fill this gap by providing a unified analysis of the wealth effects of M&A in EMs.

The shareholder wealth effects of M&A in the US market for corporate control have been subject to extensive research. The literature generally agrees that M&A creates value for US targets. Results regarding bidder returns, however, are mixed. Overall, most studies support the view that while targets capture the lion's share of the synergies, bidders on average break even. In recent studies, however, new measures of value creation and value distribution have been introduced. Using one such measure, Ahern (2012) finds that targets gain only modestly

more than bidders, and that bidders capture the largest share of the dollar returns in more than a quarter of mergers.

The small amount of research on the shareholder wealth effects of M&A in EMs can be partly attributed to challenges regarding data availability. The lack of data is caused by a combination of a lack of coverage of EMs in M&A databases, and few transactions in general. As deals involving listed targets are uncommon, existing research focuses almost exclusively on bidder firms. Interestingly, most studies find significant abnormal returns to EM bidders. Based on such findings, some papers conclude that bidder returns are higher in EMs than in the US (e.g. Ma, Pagán, & Chu (2009)). We argue, however, that the findings of existing studies cannot be directly compared to the findings of similar studies on the wealth effects of M&A in the US. First, such comparisons do not take into consideration the possible differences regarding factors determining the outcome and terms of M&A. Moreover, studies differ with regard to sampling criteria, sample periods, and measures of wealth effects. In this thesis, we seek to address these issues by taking a more comprehensive approach. To allow for a comparative analysis, we include a control sample consisting of 2 379 US initial takeover bids. In contrast to the majority of the existing research, we examine both target- and bidder returns, as well as synergistic gains and the division of these. In addition, we employ several measures of wealth effects. We believe the three abovementioned factors make this thesis a valuable contribution to the existing research on the wealth effects of M&A in EMs.

We use the Thomson Reuters SDC Platinum Mergers and Acquisitions database to retrieve deal- and firm specific data. As our sample includes international deals, time series data on stock prices, indices, market capitalization, and trading volume is retrieved from Thomson Reuters Datastream. Our final EM sample consists of 542 initial takeover bids announced between 01/01/2000 and 31/12/2015. We use the event study methodology to discern the influence of takeover announcements on shareholder wealth. To capture the effect of potential information leakage prior to the bid announcement, we employ an event window extending from 42 days before, to one day after the announcement date. To increase the

validity of our analysis, we introduce several robustness measures regarding central research design issues.

The takeover literature provides a range of methods for measuring the wealth effects of M&A. As a starting point, we examine target- and bidder cumulative abnormal returns surrounding the bid announcement. Further we analyze value creation through the capitalization-weighted combined cumulative abnormal returns and the combined dollar returns per dollar spent on takeovers. To investigate the value distribution, we analyze the difference between the dollar returns received by the target and bidder, normalized by their combined market capitalization 43 trading days prior to the bid announcement. For a sub-sample containing only deals where both the target and bidder earn positive dollar returns, we calculate the fraction of combined dollar returns received by the target.

Analyzing the premium received by targets, we find a significant difference between EMs and the US. When controlling for deal- and firm characteristics, the premium received by targets is 11.6 percentage points lower in EMs than in the US. The difference in premium is robust to the degree of competition in the market for corporate control. However, due to a high degree of correlation between the competition proxy and the dummy variable used to measure the difference between the EM- and US sample, we chose not to control for competition going forward.

After confirming a difference in premium, we investigate whether this difference is attributable to value creation, value distribution, or both. Analyzing both the combined cumulative abnormal returns and combined dollar returns per dollar spent on takeovers, we find no evidence of any difference in value creation. We do, however, observe that targets receive significantly lower returns in EMs, both in percentage terms and when analyzing normalized dollar returns. Further, the cumulative abnormal returns to bidders are significantly higher in the EM sample. As for the value distribution, our findings strongly indicate that targets are worse off in EMs, receiving a smaller share of the combined returns than their US counterparts. This points towards targets having lower bargaining power in EMs.

In addition to the findings above, we present new evidence regarding the relationship between the degree of corruption and pre-event abnormal returns to targets. Controlling for deal- and firm characteristics, we find significantly higher target runup in EMs relative to the US. The difference is, however, not robust to country differences in the degree of corruption. Given the sign and significance of the corruption proxy, our analysis indicates that a higher degree of corruption is associated with higher target runup, ceteris paribus.

The rest of the thesis is structured as follows. Section 2 provides a thorough review of existing relevant literature. In Section 3, the hypotheses tested in the thesis are presented. Section 4 describes the sample selection process and presents summary statistics of the final sample. Section 5 discusses the methodology used in the empirical analysis. Section 6 contains a thorough description of the wealth effect measures used in the analysis. Section 7 presents the results of the empirical analysis. In Section 8, the thesis is concluded, while suggestions for further research on the topic are presented in Section 9.

2 THEORETICAL ASPECTS

M&A stands out as one of the most researched areas in corporate finance. According to Cartwright & Schoenberg (2006), finance scholars have primarily focused on the issue of whether M&A creates or destroys shareholder wealth. The majority of the existing literature focuses on the US market for corporate control. In the first part of this section, we discuss the definition of M&A, present motives for M&A advanced in the literature, and present important determinants of the outcome and terms of M&A. In the second part, we discuss different methods of evaluating M&A performance. In the third part, we review important research on the shareholder wealth effects of M&A in the US and outline the existing research on the wealth effects of M&A in EMs. In the last part of this section, we present different measures of wealth effects and discuss their pros and cons.

2.1 M&A: DEFINITIONS, MOTIVES, AND DETERMINANTS

2.1.1 DEFINITION OF M&A

The terms *merger* and *acquisition* seem to be used interchangeably in the takeover literature. According to Sherman & Hart (2006), the distinction in meaning may not really matter, since the net result is often the same: two companies (or more) that had separate ownership are now operating under the same roof, usually to obtain some strategic or financial objective. Following Moeller, Schlingemann, & Stulz (2004), we define an M&A transaction as a deal in which a combination of business entities takes place, or in which a bidder seeks to increase its holdings in a target firm from less than 50 percent to more than 50 percent of stock or assets. Following Schwert (1996), we define a successful M&A transaction as one in which the bidder obtains control of the target by acquiring a majority of the target's shares. Accordingly, we define an unsuccessful transaction as one in which the bidder's offer to acquire the target does not lead to a change in control.

2.1.2 MOTIVES FOR M&A

According to Berkovitch & Narayanan (1993), three major motives for takeovers have been advanced in the literature: the synergy-, agency-, and hubris hypothesis. They argue that while the majority of takeovers in the US market for corporate control are motivated by

synergies, a non-negligible proportion of deals are motivated by agency problems and hubris. This is of importance to our analysis, as the motivation for corporate takeovers have major implications for the synergistic gains and their division.

The synergy hypothesis assumes that managers of both target- and bidder firms maximize shareholder wealth and therefore only engage in takeover activity if it results in gains to their firm's shareholders. DePamphilis (2010) describes synergies as the notion that two business entities create greater shareholder wealth when combined, as opposed to operating separately. Synergies can be divided into two categories, namely operating and financial. Operating synergies consists of economies of scale, which is the spreading of fixed costs over increasing production levels, and economies of scope, which is using a specific set of skills or an asset currently employed in producing a specific product to produce related products. Financial synergies refer to the impact of M&A on the cost of capital of the acquiring firm or combined unit, resulting from the transaction. Theoretically, the cost of capital could be reduced if the merged firms have uncorrelated cash flows or realize financial economies of scale. Unconditional on the bargaining power of the target, if takeovers are motivated by synergies, target-, bidder-, and combined gains will be positive and positively correlated.

The agency hypothesis suggests that takeovers are primarily motivated by the self-interest of the bidder's management. DePamphilis (2010) suggests that agency problems arise when there is a difference between the interests of incumbent managers and the firm's shareholders. For example, Jensen (1986) argues that managers have incentives to use the free cash flow of the firm to grow it beyond its optimal size, rather than to pay out dividends. Growth increases the power of the management by increasing the resources under their control, and is associated with increased compensation. Berkovitch & Narayanan (1993) suggest that takeovers motivated by the self-interest of the bidder's management result in agency costs that reduce the total value of the combined firm. The agency motive for takeovers also increases the demand for target firms, and thus targets' bargaining power. Hence, the more severe the agency problem, the higher the target returns and the lower the bidder returns.

The hubris hypothesis, proposed by Roll (1986), maintains that there are no gains from takeovers and that takeovers occur because the management of bidder firms make mistakes in estimating gains. He argues that in the case of no synergies, a bid above the current market price of the target firm is not economically justifiable. Paying a premium in such a scenario simply represents a transfer of value from the bidder to the target. Consequently, if the hubris hypothesis dominates in the market for corporate control, takeovers are not beneficial for bidders. Additional motives for M&A are presented in Appendix B.1.

2.1.3 DETERMINANTS OF THE OUTCOME AND TERMS OF M&A

A notable amount of the research on M&A focuses on factors determining the outcome- and terms of transactions. In the following, we present the research on which we base our choices regarding which control variables to include in our analysis.

Huang & Walking (1987) were amongst the first who established that target returns are significantly higher in cash offers than stock offers. In accordance with this, Asquith, Bruner, & Mullins (1990) show that bidder returns are positive for cash bids and negative, and significantly smaller, for equity financed bids. Due to its effect on target- and bidder returns, it is essential to control for the method payment when analyzing the wealth effects of M&A.

Regarding the form of the deal, Jensen & Ruback (1983) show that both target- and bidder firms earn significantly higher abnormal returns in tender offers than mergers. They also find that both target- and bidder firms on average experience negative abnormal returns in unsuccessful tender offers and mergers. This is in line with the findings of Dodd (1980) and Asquith (1983), who find significant negative abnormal returns to targets at the announcement of merger terminations. Their findings are further confirmed by Ruback (1988), who finds that there are large costs to targets, in the form of large stock price declines, in relation to the termination of tender offers.

Investigating firm size and the gains from acquisitions, Moeller et al. (2004) find that the announcement returns to bidders are roughly two percentage points higher for small bidders than large bidders, irrespective of the form of financing. Rossi & Volpin (2004) show that

also target gains decrease with target size. Further, Betton, Eckbo, Thompson, & Thorburn (2014) find a positive relationship between relative size, measured as the ratio of the target- and bidder pre-merger market capitalization, and bidder returns.

Concerning competition in the market for corporate control, the results of Bradley, Desai, & Kim (1988) suggest that competition among bidding firms increases the returns to targets and reduces the average returns to bidders to a level that is not significantly different from zero. Interestingly, Alexandridlis, Petmezas, & Travlos (2010) find that bidders beyond the most competitive takeover markets, which encompass the US, Canada, and the United Kingdom, pay lower premiums and realize gains. Analyzing bidders' pre-announcement ownership in targets, Betton & Eckbo (2000) show that toehold bidding increases the probability of deal success, and that toeholds are associated with lower offer premiums in winning bids. This is in line with the findings of Grossman & Hart (1980), who show that the larger the initial toehold, the higher the bidder returns.

Singh & Montgomery (1987) show that acquisitions involving companies which are related in product-, market-, or technological terms have greater combined dollar returns than unrelated acquisitions. They also find that target returns are significantly higher in related acquisitions. Regarding the relationship between target- and bidder returns, Schwert (1996) suggests that pre-offer target stock price runup is an added cost for bidders. In contrast, Betton et al. (2014) show that both combined- and bidder returns are positively related to the target's total returns.

Betton et al. (2014) show that hostile bids have a lower chance of being successful. Interestingly, Comment & Schwert (1995) show that while antitakeover mechanisms increase the bargaining power of targets, they do not prevent a significant proportion of takeovers. In fact, Hirshleifer & Titman (1990) find that managerial defensive mechanisms sometimes increase the probability for deal success. Zeckhauser & Pound (1990) state that rumors can significantly influence the stock price trends of target firms before an actual takeover announcement. Further, they show that rumors are likely to cause higher volatility and trading volume for stocks of target firms that eventually receive a takeover bid.

2.2 EVALUATING M&A PERFORMANCE

There are two methods of evaluating M&A performance advanced in the takeover literature. Most papers analyze the abnormal stock returns of the involved parties surrounding the M&A announcement, while a relatively small proportion of studies examine the long-run operating performance of acquiring firms. (Agrawal & Jaffe, 2000). When analyzing the long-run operating performance of firms, an accounting-based methodology is applied. As accounting-based measures of profit are subject to manipulation by insiders practicing subjective accounting procedures, they often fail to indicate the true performance of firms (McWilliams & Siegel, 1997). Further, when using an accounting-based methodology, it is challenging to separate the true effects of an M&A-event from confounding factors. As successful transactions typically result in an integration of the involved parties, measuring the gains to targets is often not achievable.

Although some critics argue that acquisitions are long-term strategic investments, and therefore should not be evaluated based on stock market reactions, the consensus is that the initial price reaction is a good predictor of actual long-run performance (McWilliams & Siegel, 1997). When examining the abnormal stock returns surrounding the M&A announcement, the event study methodology is used. An obvious advantage of the event study methodology is its ability to measure the shareholder wealth effects of both parties involved in the transaction. The methodology seeks to measure the effect of an event through estimating a model that predicts normal returns, before comparing the actual- and expected returns around the time of the event. Assuming that stock prices reflect the discounted value of all future cash flows, and given that the semi-strong form of the efficient market hypothesis holds, the true value of an M&A-event should be reflected in the stock prices immediately after the bid announcement (Fama (1970)). In this thesis, we analyze the wealth effects of M&A through the stock market feedback.

2.3 THE SHAREHOLDER WEALTH EFFECTS OF M&A

2.3.1 EVIDENCE FROM THE US

The shareholder wealth effects of M&A in the US market for corporate control have been subject to extensive research. Researchers unanimously agree that M&A creates value for US targets. With regard to bidder returns, the literature provides somewhat more conflicting findings. Despite this, most studies agree that while targets' shareholders gain, bidders' shareholders on average break even upon the announcement of M&A. For example, Jensen & Ruback (1983) review thirteen studies investigating abnormal returns surrounding takeover announcements. They find the average excess returns to targets to be 30 percent and 20 percent for successful tender offers and mergers, respectively. On average, bidders gain 4 percent in successful tender offers, but have no abnormal returns surrounding successful mergers. Further, they find that both target- and bidder firms have negative average abnormal returns in unsuccessful tender offers and mergers. A comprehensive review of the literature on shareholder wealth effects of M&A in the US is enclosed in Appendix B.2.

2.3.2 EVIDENCE FROM EMERGING MARKETS

Even though the number of M&A transactions in EMs has been growing at a rapid pace during the last decades, research on the wealth effects of M&A is scarce (Ma et al. (2009)). One reason for this is likely the lack of coverage of EMs in M&A databases. Further, there has historically been relatively few M&A transactions in EMs. According to Ma et al. (2009), this can be explained by relatively small economies of scale- and scope not facilitating synergistic gains to the same extent as more advanced economies. As the majority of M&A transactions involve non-listed targets, the existing research on M&A in EMs have been primarily focused on bidder firms.

Table 2.3.A below summarizes the four existing studies we deem relevant to the hypotheses proposed in this thesis. As shown in the rightmost column, three of the studies focus on Asian countries, while one analyzes the BRICKS-economies. Interestingly, all four studies find positive average cumulative abnormal returns to bidders. Wong & Cheung (2009) employs a longer event window than the other studies, and find substantially larger average bidder

returns. We note that none of the studies use a sample period starting prior to year 2000. For a thorough review of the literature on wealth effects of M&A in EMs, see Appendix B.3.

Table 2.3.A. Summary of existing research on the wealth effects of M&A in EMs

Author(s)	Average Bidder CAR*	Event Window	N	Period	Emerging Markets
Ma, Pagán, & Chu (2009)	1.7 %	(-2, +2)	1477	2000-2005	China, India, Hong Kong, Indonesia, Malaysia, Philippines, Singapore, South Korea, Taiwan, & Thailand
Wong & Cheung (2009)	2.3 %	(-50, 0)	658	2000-2007	Hong Kong, China, Taiwan, Singapore, South Korea, & Japan
Isa & Lee (2010)	1.5 %	(-1, 1)	139	2000-2005	Malaysia
Sehgal, Banerjee, & Deisting (2012)	2.0 %	(-1, 1)	214	2005-2009	Brazil, Russia, India, China, South Korea, & South Africa

*Cumulative abnormal returns

2.3.3 JUSTIFYING THE DIFFERENCES

The positive abnormal returns to bidders found in the studies of M&A in EMs are not in line with the findings of the vast majority of US studies, which indicate negative or neutral returns (e.g. Asquit & Kim (1982); Bradley et al. (1988); Jensen & Ruback (1983); Morck, Shleifer, & Vishny (1990); Mulherin & Boone (2000)). According to Sehgal, Banerjee, & Deisting (2012), the observed differences are not surprising, considering what they refer to as the emerging nature of these markets. Ma et al. (2009) describe the EMs as suffering from poor legal environments as well as weak enforcement of existing laws.

Alexandridlis et al. (2010) study the wealth effects of M&A in relation to competition in the market for corporate control. Interestingly, they conclude that acquirers beyond the most competitive takeover markets, the US, Canada and the United Kingdom, pay lower premiums and realize returns. For the acquiring firms in the most competitive markets, however, they find at best zero abnormal returns in the days surrounding the bid announcement – likely due to the high premiums paid for targets. Accordingly, differences in the competition in the market for corporate control could explain the observed differences between EMs and the US with regard to bidder returns.

In an extensive study of the legal environment in 49 countries around the world, La Porta, Lopez-de-Silanes, Shleifer, & Vishny (1997) assess the relationship between determinants of the legal environment and the scope of the capital markets. They find that countries with poor legal environment, described by its legal rules and their enforcement, have smaller and narrower capital markets. Rossi & Volpin (2004) study the determinants of M&A around the world, and find that the volume of M&A activity is significantly larger in countries with better accounting standards and stronger shareholder protection. Thus, one would expect narrower capital markets and less M&A activity in EMs, compared to the US.

2.4 SYNERGISTIC GAINS AND THEIR DIVISION

2.4.1 VALUE CREATION

As mentioned, Jensen & Ruback (1983) show that while targets on average realize large positive abnormal returns, bidders on average break even. Based on this, they suggest that corporate takeovers on average generate positive synergistic gains in the US. However, their findings are based on studies that examine the returns to target- and bidder firms separately, which can be problematic. If the bidder realizes slightly negative returns and greatly exceeds the target in size, their combined returns could be negative both in percentage- and dollar terms.

Mulherin & Boone (2000) measure the total value creation as the sum of the abnormal returns received by the target and bidder, weighted by their respective market capitalization. They find the average combined announcement returns to be 3.6 percent in the US. Using a similar approach, Bradley et al. (1988) report that merger announcements increase the combined market value of US target- and bidder firms by an average of 7.4 percent, or $117 million. In their study, combined dollar returns are calculated as the combined cumulative abnormal returns multiplied by the combined market capitalization of the target and bidder six trading days prior to the bid announcement.

Moeller et al. (2004) apply similar methods to those of Bradley et al. (1988) to analyze a sample consisting of 12 023 US acquisitions. As they find that the combined announcement returns are 1.4 percent or -$42.4 million on average, their findings are somewhat more

conflicting. When drawing overall inferences about a sample based on dollar returns, large transactions will be highly influential on the results. Therefore, Moeller et al. (2004) introduces a new measure of value creation – dollar gains normalized by deal value. Using this measure, they find that bidders on average gain 5.6 cent per dollar spent on takeovers.

Although all the abovementioned studies indicate that M&A is value creating in the US, the findings of Moeller et al. (2004) illustrate that bidders with large negative returns can adversely affect the conclusions drawn. This is a dynamic we take into consideration when determining which measures of value creation to utilize in our analysis.

2.4.2 VALUE DISTRIBUTION

In order to conduct our analysis, it is essential to identify reliable measures of the value distribution between target- and bidder firms. According to Ahern (2012), drawing inferences about bargaining outcomes from percentage returns is misleading. As bidders are typically much larger than targets, comparing percentage returns does not necessarily paint a correct picture of the value distribution. This issue can be partially solved by comparing the dollar returns received by the target and bidder. However, as previously mentioned, when drawing overall inferences about a sample based on dollar returns, large transactions will be highly influential on the results.

To cope with this issue, Ahern (2012) measures the division of gains as the difference in dollar returns received by the target and bidder, normalized by their combined pre-merger market capitalization. In his study, he finds that targets gain only modestly more than acquirers. He also finds that acquirers have greater dollar returns than targets in more than a quarter of mergers. His findings are in sharp contrast to the popular view that targets capture the lion's share of takeover gains. Ahern (2012) also suggests measuring the value distribution by calculating the fraction of the combined dollar returns received by the target. This measure, however, is only valid for deals where both the target and bidder receive positive dollar returns (see Section 6.1).

2.4.3 PREMIUM

In an M&A transaction, the premium can be defined as the difference between the pre-bid stock price of the target and the price implicit in the offer. It can be viewed as a function of the total synergies in the transaction and the target's bargaining power. The total premium can be split into two individual parts, namely runup and markup. The runup is defined as the pre-bid stock price increase leading up to the announcement. Theoretically, the markup is the difference between the stock price immediately before the public announcement and the offer price. However, several studies define markups through cumulative abnormal returns (e.g. Betton et al. (2014); Schwert (1996)). Due to problems introduced by cross listings and shifting exchange rates when analyzing international data, using such an approach could be beneficial in this thesis (see Section 4.4). However, defining markups using stock returns can be problematic. Given efficient markets, the post bid stock price should reflect the offer price, adjusted for the uncertainty in connection with deal completion. Accordingly, premiums defined through stock returns are not comparable when analyzing samples with innate differences in the success probability. In order to use stock returns as a proxy for premiums in such cases, it is necessary to control for the differences in success probability.

3 HYPOTHESIS

In the following section, the hypotheses tested in this thesis are presented. As mentioned in Section 2.3.2, the takeover literature appears to lack comprehensive studies on the shareholder wealth effects of M&A in EMs. Through testing the hypotheses formulated below, we aim to provide new insight into this area of research. For descriptions of all variables discussed below, see Appendix C.2. For detailed descriptions of all wealth effect measures employed in our analysis, see Section 6.1.

We first examine whether premiums, measured through stock market feedback, are significantly lower in EMs compared to the US. Lower premiums paid for targets could explain the relatively high returns to bidders found in previous studies on M&A in EMs. This would be in accordance with the research of Alexandridlis et al. (2010), who show that acquirers beyond the most competitive takeover markets pay lower premiums. The following hypothesis is developed:

H_1: PREMIUMS ARE SIGNIFICANTLY LOWER IN EMERGING MARKETS THAN IN THE US

When testing H_1 using regression analysis, the dependent variable is the target total cumulative abnormal returns. An indicator variable, taking a value of one for deals originating from EMs and zero otherwise, is used to determine whether there is a significant difference in the premium received by targets. Further, a set of control variables on the country-, deal-, and firm level that have been shown to affect premiums (see Section 2.1.3) are included in the model.

At the country level, we investigate whether a potential difference in premium is robust to differences in the degree of competition in the market for corporate control – a characteristic that has been found to be an important predictor of premiums in previous international studies (e.g. Alexandridlis et al. (2010)). The deal specific control variables include whether the deal was successful, the size of the toehold, method of payment, relative size, industry relatedness, whether the deal was structured as a tender offer, whether several bidders were involved,

whether the bid triggered any defense mechanisms, and whether the bid was hostile. The firm characteristics encompass the liquidity of the target- and bidder stock and the natural logarithm of the target's market capitalization. We also include indicator variables for the target- and bidder industry and the year of the transaction.

Given efficient capital markets, the target's stock price after the bid announcement reflects the price implicit in the bid, adjusted for the uncertainty associated with the completion of the transaction. Accordingly, it is problematic to use stock market returns as a proxy for the premium if there exist systematic differences in deal probability between the two samples (see Section 2.4.3). To control for this, we predict the success probability for each transaction, and include the fitted values as an explanatory variable in the regression (see Section 4.5).

After determining whether there exists a significant difference in premium, we proceed by examining the factors of which the premium is constituted. Ultimately, the premium can be viewed as the target's share of the value creation inherent in the deal. A difference in premium can thus stem from differences in value creation, value distribution, or both.

We initially investigate whether there is a difference between EMs and the US with regard to value creation. Generally, EMs have less developed capital markets and weaker economies compared to the US. Countries with strong economies and developed capital markets often have well-functioning and flexible regulations, facilitating synergistic gains (La Porta et al. (1997)). Further, in poorly developed capital markets, financially constrained companies have a limited ability to access capital, which in turn inhibits value creating M&A deals. We formulate the following hypothesis:

H_2: THE COMBINED VALUE CREATION IS SIGNIFICANTLY LOWER IN EMERGING MARKETS THAN IN THE US

Using different measures of value creation as the dependent variable, H_2 is tested through several regression analyses. First, the target- bidder-, and combined cumulative abnormal returns are examined over three time periods: the runup period leading up to the bid

announcement, the three days surrounding the bid announcement, and the total return period. Next, target-, bidder- and combined dollar returns per deal value are examined over the total return period. As before, an indicator variable, taking a value of one for deals originating from EMs and zero otherwise, is used to determine whether there is a significant difference in the value creation between the two samples. Deal- and firm characteristics found to affect the value creation are included as control variables. The deal specific variables include toehold size and relative size, as well as dummy variables for year, successful deals, rumors, method of payment, industry relatedness, tender offers, several competing bidders, defense mechanisms, and hostility. The firm characteristics encompass target- and bidder liquidity, as well as dummies for target- and bidder industry. Following Betton et al. (2014), when analyzing bidder returns, the target total cumulative abnormal returns are included as an explanatory variable.

Previous studies analyzing bidder returns in EMs find significant pre-event returns, indicating leakage of information regarding the upcoming bid announcement. As mentioned in Section 2.3.3, Sehgal et al. (2012) state that significant leakage is expected due to the emerging nature of these economies. However, no existing studies have, to our knowledge, provided any direct evidence suggesting economies with poor legal environment, weak law enforcement, etc. have more information leakage, ceteris paribus. Nonetheless, we aim to account for the possibility of such a relationship in our analysis. To control for this, each transaction is assigned a corruption score based on the country from which the transaction originates and the year of the transaction. This allows us to examine whether a possible difference in runup is robust to differences in corruption levels (see Section 4.5 for more on the corruption proxy).

Given the existence of a difference in value distribution, premiums in EMs can be lower than in the US even when synergistic gains are similar. It is thus interesting to test for differences in value distribution unconditional on the inferences drawn regarding value creation. The value distribution in an M&A transaction can be expressed as the share of the total value creation received by each of the involved parties. The share received by the target can be interpreted as an indication of the bargaining power of the target relative to the bidder. As

discussed in Section 2.3.3, several studies have shown that US targets receive a disproportionally large share of the total value creation when compared to other markets. Further, research points to bidder returns being higher in EMs compared to the US. Even though higher bidder returns could be explained by higher synergies, we argue that it is more reasonable to assume that this is a result of EM targets having lower bargaining power. We formulate the following hypothesis:

H_3: COMPARED TO THE US, THE VALUE DISTRIBUTION IS TILTED IN FAVOR OF BIDDERS IN EMERGING MARKETS

The most obvious measurement of value distribution is the target's share of dollar returns. However, this measure is only valid in cases where both the target and bidder earn positive dollar returns. The target's share of dollar returns is thus calculated for a sub-sample satisfying this criterion. Further, we define a second measure of the value distribution as the difference in the dollar returns received by the target and bidder, normalized by their combined pre-merger market capitalization. Both measures of value distribution are calculated for the announcement- and total return period. Using these measures, the value distribution is tested through regression analysis. Apart from the dependent variables, we employ the same variables as when the analyzing value creation.

4 DATA

In this section, we provide a detailed description of the data gathering process. Further, we present summary statistics of the final sample. The data required to test the hypotheses presented in Section 3 is comprehensive. The complete data set covers deal- and firm characteristics shown to influence the outcome and terms of M&A; daily stock returns, market capitalization, and traded volume of the involved firms; and time varying characteristics of the countries from which the deals originate. All variables are described in Appendix C.2.

4.1 DATA SOURCES

There are several options when considering which M&A database to utilize. Thomson Reuters SDC Platinum Mergers and Acquisitions database (SDC) is considered the industry standard, and covers more transactions in EMs than comparable databases (Ma et al. (2009)). Considering the objectives of this thesis, we choose to retrieve data on deal- and firm characteristics from SDC. Thomson Reuters Datastream (Datastream), a financial time-series database, is used to extract daily market capitalization, turnover by volume, stock price data, and corresponding index data, for all firms in the sample. Datastream is considered the industry standard for international stock price data, and can be linked to SDC without difficulty. Country characteristics, which include Corruption Perceptions Index scores and the degree of competition in the market for corporate control, are retrieved from various sources described in Section 4.5.

4.2 COUNTRIES AND SAMPLE PERIOD

The existing research on value creation and value distribution in EMs is narrow in scope. Most studies cover few countries, use short sample periods, and analyze only bidder returns (e.g. Isa & Lee (2011); Ma et al. (2009); Sehgal et al. (2012); Wong & Cheung (2009)). We seek to study the wealth effects of M&A in a broader selection of emerging economies over a longer sample period.

To determine which countries to include in our sample, we combine several sources. First, we include the 23 countries that constitute the MSCI Emerging Market Index (MSCI, 2016). The index is well renowned and often used by practitioners when defining EMs. Next, we cross check with the FTSE Emerging Index (FTSE Russel, 2016). As both these indices exclude countries on the basis of tax levels and investor access, we also include BBVA's EAGLEs and Nest list (BBVA Research , 2015). BBVA's EAGLEs and Nest list identifies key EMs through analyzing the expected GDP growth of a wide range of economies. The EAGLEs are countries with a higher expected GDP growth, over the next ten years, than the average of the G7-economies excluding the US. The Nest-countries are expected to have a higher GDP growth than the G7-economy with the lowest expected growth.

By combining the two indices with BBVA's EAGLEs and Nest list, we obtain an initial country selection of 35 EMs. See Table 4.2.A in Appendix C.1 for an overview of the countries included in each of the three sources. As shown in Section 2.3.2, none of the previous studies on the wealth effects of M&A in EMs have used a sample period prior to year 2000. This is likely due to low data availability. To ensure a somewhat even distribution of deals over time, we use a sample period from 01/01/2000 to 31/12/2015.

4.3 SAMPLE SELECTION CRITERIA

Table 4.3.A below provides a description of the sample selection process and displays the criteria applied in order to arrive at our final EM sample of 542 initial takeover bids.

Table 4.3.A. Selection criteria, EM sample

Selection Criteria	Source	Number of Exclusions	Sample Size
All initial control bids in SDC (FORMC = M, AM) for EM targets between 01/01/2000 and 31/12/2015	SDC		60 994
Public target and bidder, and domestic deals only	SDC	59 163	1 831
Target and bidder have Datastream codes	SDC	373	1 458
Deal value > $5 million	SDC	691	767
Bidder seeking to own > 50 percent of target	SDC	19	748
Bidder owns < 50 percent of target at bid announcement	SDC	12	736
Available market capitalization 43 trading days prior to bid announcement (target and bidder)	DS	14	722
Target and bidder have zero trading volume in less than 90 percent of the days in both the estimation- and event window	DS	159	563
Bidder is not involved in multiple bids in the period from 50 days before to 50 days after bid announcement	SDC	10	553
Stock prices are available from at least 168 days before to one day after announcement	DS	5	548
Each country has more than one deal		6	542
Final sample			542

*SDC = Thomson Reuters SDC Platinum Mergers and Acquisitions database, **DS = Thomson Reuters Datastream
The table displays the criteria applied in order to arrive at a final sample of 542 EM takeover bids.

At the outset, all initial takeover bids between 01/01/2000 and 31/12/2015 for targets registered in one of the 35 initial EMs are retrieved from SDC. As we seek to analyze the combined value creation and control for country characteristics, cross-border transactions must be excluded. We use the daily stock prices surrounding the bid announcement to calculate abnormal stock returns. Thus, we require both the target and bidder to be publicly traded. As Datastream codes are used to extract stock prices and match them to the data from SDC, transactions where these are missing for either of the involved parties are excluded. In accordance with our definition of M&A in Section 2.1.1, we only include transactions in which the bidder is seeking to own more than 50 percent of the target and has an ownership below 50 percent at the time of the bid announcement.

In line with existing research (e.g. Betton et al. (2014)), we employ a minimum requirement with regard to the transaction value. Considering that deals generally are smaller (in dollar terms) in EMs than in the US, and the fact that we seek to maximize the sample size, we chose to use a relatively low threshold of $5 million. In order to calculate the abnormal stock

returns precisely, we require that stock prices are available from minimum 168 days before to one day after the bid announcement (see Section 5.2 for more on the length of the estimation window). As the market capitalization 43 trading days prior to the initial bid announcement is used to calculate dollar returns and combined abnormal returns, we exclude deals where this is missing for either target or bidder.

As the methodology we employ builds on an assumption of efficient capital markets, it is important to have some degree of liquidity in the securities that are analyzed. We therefore chose to exclude transactions where either target or bidder have zero trading volume in more than 90 percent of the days in either the estimation- or event window. To account for the effects of confounding factors, the sample is scanned for transactions where the bidder is involved in multiple bids in the period from 50 days before to 50 days after the bid announcement. We also require that all EMs in the sample have more than one M&A transaction in the sample period. The final EM sample consists of 542 takeovers, covering 21 emerging economies.

The adjusted closing price of all target- and bidder stocks are extracted from 355 days before to 255 days after the bid announcement using Datastream. A non-negligible proportion of the companies in the EM sample are listed in a developed country. When companies are listed in a different country than their base of operations, their corresponding stock index does not necessarily serve as a good proxy for the market portfolio. Therefore, to increase the robustness of our analysis, we extract daily price data for all firms' main stock exchange index, as well all countries' MSCI country index. This allows us estimate normal returns using two different proxies for the market portfolio. A list of the indices retrieved from Datastream is shown in Table 4.3.B in Appendix C.1.

As we seek to analyze differences in the wealth effects of M&A in EMs and the US, we produce a corresponding sample consisting of US transactions using the same criteria as for the EM sample. The final US sample consists of 2 379 initial takeover bids announced between 01/01/2000 and 31/12/2015. A detailed overview of the sample selection process is shown in Table 4.3.C in Appendix C.1.

4.4 DATA RELIABILITY IN SDC

SDC generally provides reliable data from globally consistent, locally-focused sources. However, it is still necessary to spread every number provided from the database.

To analyze the premium paid for targets, one would typically use the bid premium. The bid premium is calculated as the percentage difference between the stock price a certain number of days prior to the initial offer, which is provided in Datastream, and the offer price provided in SDC. To confirm the validity of the offer prices provided in SDC, we compare them to the target stock prices one day after the bid announcement. Surprisingly, we uncover unjustifiable deviations for a significant proportion of the EM deals. After closer examination, we conclude that the offer prices in SDC often are unreliable for EM deals.

We also encounter issues when analyzing targets listed in a different country than their base of operations. For example, for a target registered in India and listed in Germany, the local currency offer price in SDC is provided in Indian rupees, while the local currency stock price from Datastream is provided in euro. Retrieving the data in dollars would introduce noise in connection with shifting exchange rates. It would thus be necessary to identify all affected deals and convert either the offer price or the pre-announcement stock price. Due to the unreliability of the offer prices, we define premiums through abnormal stock returns.

4.5 SAMPLE VARIABLES

In addition to the deal- and firm characteristics retrieved from SDC, we calculate several other variables which are described in the following paragraphs.

Brown & Warner (1985) examine the properties of daily stock data and how the particular characteristics of these data affect the event study methodology. They show that low liquidity can impact the measurement of abnormal returns. To control for this, each firm's daily liquidity is calculated and averaged over the estimation window:

$$Liquidity(\%)_i = \frac{1}{250} \sum_{t=-292}^{-43} \frac{V_{i,t} * P_{i,t}}{Mcap_{i,t}} * 100$$

where $V_{i,t}$ is the traded volume of security *i* at day *t*, $P_{i,t}$ is the closing price of security *i* at day *t*, and $Mcap_{i,t}$ is the market capitalization of stock *i* at day *t*. This formula is used, instead of a standard liquidity measure, due to the poor coverage of shares outstanding in Datastream.

As discussed in Section 2.4.3, the post bid stock price reflects the offer price, adjusted for the uncertainty in connection with deal completion. Accordingly, premiums defined through stock returns are not comparable when analyzing samples with innate differences in the success probability. In our case, it is necessary to control for the success probability of each deal when analyzing the difference in premium between the two samples. To achieve this, we first generate a variable taking the value of one if the deal turned out to be successful and zero otherwise. Next, we regress this dummy variable on all the determinants of the outcome and terms of M&A discussed in Section 2.1.3 using a logistic regression model. The fitted values represent the estimated success probability of each deal. The success probability is included as an explanatory variable, $P(\widehat{Success})$, when analyzing the premium. See Table 4.5.A in Appendix C.3 for regression output and Appendix D.3 for theory regarding binary response models.

We use the Corruption Perceptions Index (CPI) published by Transparency International (Transparency International, 2000-2015) as a proxy for the degree of corruption in a specific country at a specific point in time. Based on 13 different surveys and assessments from 12 different institutions, the CPI ranks most of the countries in the world by their perceived level of corruption on a yearly basis. Even though corruption is a difficult phenomenon to measure, the CPI is generally thought to be a good proxy, and is therefore satisfactory to our purpose. After retrieving the yearly corruption score for each country over a 15-year period, each deal is matched with its corresponding corruption score, *CPI Score*, based on the year and country of the deal. Table 4.5.B in Appendix C.3 shows each country's yearly CPI score over the sample period.

Following Alexandridlis et al. (2010), we measure the degree of competition in the market for corporate control, *competition (%)*, as the proportion of public firms acquired over a certain period. The competition proxy is calculated for each country, each of the 15 years

included in the sample. Subsequently, all deals are assigned a competition score based on the country and year of the deal. Yearly observations on the number of listed firms in each country is obtained from World Bank's WDI database (The World Bank, 2016). Yearly information regarding the number of public firms acquired in each country is gathered from SDC using the criteria shown in Table 4.5.C below.

Table 4.5.C. Acquisitions of listed targets, selection criteria

Selection Criteria	**Source**	**Sample Size**
All completed deals in SDC (Deal Type ≠ 5, 6, 7, 8, 9) for US and EM target firms between 01/01/2000 and 31/13/2015	SDC*	231 120
Public target	SDC	26 039
Percentage ownership after transaction > 50	SDC	8 386
Bidder owns < 10 percent of target firm at the bid announcement	SDC	7 715
Final sample		7 715

*SDC = Thomson Reuters SDC Platinum Mergers and Acquisitions database
The table displays the criteria applied in order determine to the number of public firms acquired each year in each country

When measuring the degree of competition in the market for corporate control, we consider only completed acquisitions, and exclude spin-offs, recapitalizations, self-tenders, exchange offers, and repurchases. Following Alexandridlis et al. (2010), we consider only transactions where the bidder receives majority control, and exclude transactions where the toehold exceeds 10 percent. This ensures that deals in which competition may be diluted by bidders owning relatively large stakes in targets prior to the transaction, affording them a relative advantage, are excluded. Table 4.5.D in Appendix C.3 shows the yearly competition proxy for each country.

We also calculate the relative size between the target and bidder firm, *ln relative size*, as the natural logarithm of the ratio of the target- and bidder pre-merger market capitalization:

$$ln\,relative\ size_i = \ln(\frac{Mcap_{T,8wp}}{Mcap_{B,8wp}})$$

where $Mcap_{T,8wp}$ and $Mcap_{B,8wp}$ are the market capitalizations, 43 trading days prior to the bid announcement, of the target and bidder, respectively. The market capitalization is retrieved one day prior to the start of the event window to ensure that it is not influenced by the upcoming bid announcement. The natural logarithm of the target market capitalization, *ln target mcap,* is included as an explanatory variable when analyzing premiums.

4.6 SUMMARY STATISTICS

Table 4.6.A below shows a summary of a selection of deal characteristics in the two samples.

Table 4.6.A. Sample characteristics

Variable	EM	US
Number of deals	542	2 379
Deal success rate (%)	71.0	86.6
Cash deals	254	893
Stock deals	230	622
Hybrid deals	58	864
Tender offers	42	327
Deals with toehold	216	83
Deals with rumor	46	114
Bids triggering a defense mechanism	0	119
Deals with related industry	395	1 991
Deals with several bidders	9	158
Hostile bids	12	168

Deal success rate (%) is calculated as the number of successful deals in the sample, divided by the total number of deals. Cash deals include transactions where the method of payment is cash only, while stock deals are transactions financed only through stock. Hybrid deals utilize both cash and stock. Deals with rumor include all deals that started as a rumor. Deals with related industry denotes deals where the target and bidder share the same first two digits of their SIC code.

The US sample is more than four times larger than the EM sample measured in number of deals. Out of the 542 initial control bids in the EMs, 390 resulted in a change in control. This yields a success rate of 71.0 percent. Comparably, the success rate is 86.6 percent in the US sample. This substantial difference further confirms the need to control for success probability when defining premiums through stock returns. Interestingly, deals in which the bidder already owns a stake in the target is much more common in the EM sample. The three methods of payment are relatively evenly distributed in the US sample, with cash-, stock-, and hybrid deals accounting for approximately 38-, 26-, and 36 percent of the sample, respectively. In the EM sample, however, only 11.7 percent of deals make use of a combination of stock and cash. 7.8 percent and 13.8 percent of the bids in the EM- and the US sample, respectively, are tender offers.

Hostile takeover defense mechanisms were not triggered by any of the bids in the EM sample. This is in line with the findings of Nenova (2006), who concludes that anti-takeover mechanisms, such as poison pills or staggered boards, are uncommon almost everywhere

outside the US. The absence of defense mechanisms can possibly be explained by fewer hostile deals in general, as a substantially smaller share of the bids are hostile in the EM sample. With only 1.7 percent of deals having several involved bidders, this is also a much less common occurrence in the EM sample. We note that 8.5 percent of deals began as rumors in the EM sample, while the number is substantially lower, at 4.8 percent, in the US sample. This could indicate more leakage, and possibly higher runup, in the EMs. Compared to 83.7 percent in the US sample, 72.9 percent of deals involve target- and bidder firms operating in the same industry in the EM sample.

Table 4.6.B. Summary statistics of key variables

Variable	EM					US				
	Average	sd	p1	Median	p99	Average	sd	p1	Median	p99
Deal value ($m)	480	1 265	5	98	6 778	1 866	6 463	8	242	34 580
$P(\widehat{Success})$	70.8	14.7	15.1	72.9	94.9	86.6	17.0	12.1	92.3	98.7
Target mcap ($m)	556	1 536	4	123	7 421	1 313	4 941	3	158	25 707
Bidder mcap ($m)	3 284	7 885	7	723	38 451	15 232	41 624	10	1 611	198 442
Relative size (%)	44.9	62.3	0.3	24.6	319.6	30.0	45.5	0.1	12.7	239.1
Toehold size (%)	12.0	17.1	0.0	0.0	49.2	0.6	4.2	0.0	0.0	22.0
Target liquidity (%)	0.5	0.9	0.0	0.2	4.3	0.8	4.5	0.0	0.4	4.1
Bidder liquidity (%)	0.6	1.2	0.0	0.2	4.8	0.8	0.8	0.0	0.5	3.7
Competition (%)	1.4	1.2	0.2	1.2	7.2	7.4	1.2	5.4	7.7	9.1
CPI score	46	11	21	48	62	75	2	71	75	78

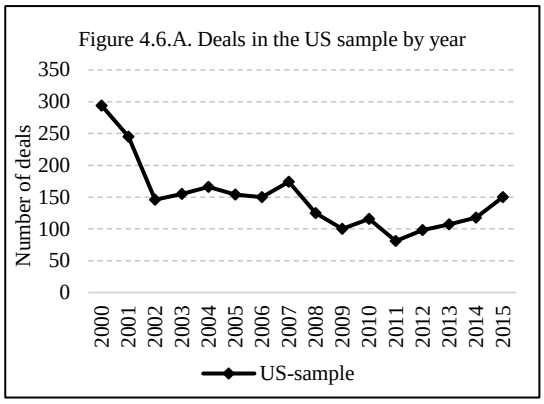
sd = standard deviation, p1 = 1st percentile, p99 = 99th percentile. *Relative size (%)* is the ratio of the target- and bidder market capitalization 43 days prior to the bid announcement. All other variables are described in detail in Appendix C.2.

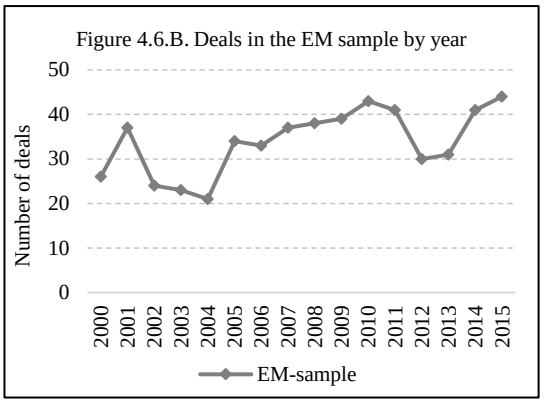
As shown in Table 4.6.B, the average deal value is $480 million in the EM sample – approximately one fourth of the US sample average. In both samples, a few large observations significantly impact the average deal value. This is reflected through the substantially lower median deal values of $98 million and $242 million in the EM- and US sample, respectively. Similar to what we observe regarding the success rate, the estimated average deal probability is lower (by 15.8 percentage points) in the EM sample.

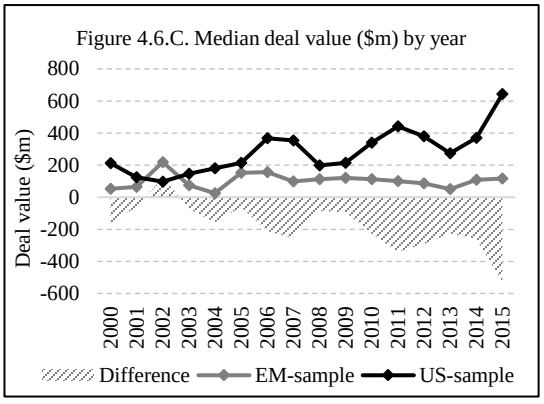
Targets are on average 2.4 times larger in the US sample. As the median target size is much more similar in the two samples, we can conclude that some large targets strongly influence the average in the US sample. Bidders are on average 4.6 times larger in the US sample, while only 2.2 times larger when comparing the medians. Nonetheless, the difference between the two samples with regard to firm size is larger for bidders than targets, which is

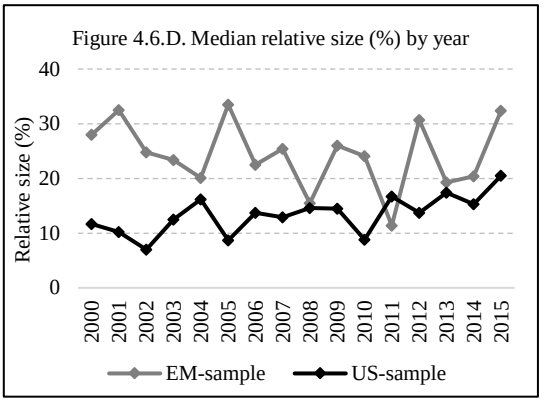
reflected in the relative size. Targets are on average approximately half the size of bidders in the EM sample and one third the size of bidders in the US sample.

Looking at the average and median toehold in the EM sample, we can deduct that while most bidders have not established a toehold position in the target, a substantial proportion own a large stake. Not surprisingly, the average liquidity is lower in the EM sample for both target- and bidder firms. However, the average liquidity is similar for targets and bidders within each sample. With regard to competition, we observe both a low average, median, and standard deviation in the EM sample – indicating generally low levels of competition in the market for corporate control. In the US, the competition is substantially higher, with an average of 7.4 percent of publicly listed companies being acquired each year. The US has a stable and high CPI score, indicating low perceived corruption. The EM sample has more variation and a lower average CPI score, indicating higher average perceived corruption.









Source: SDC and Datastream. All variables are described in detail in Appendix C.2.

As shown in Figure 4.6.B, the number of deals per year varies between 21 and 44 in the EM sample, with 2015 being the most active year. The compound annual growth rate in the number of deals over the sample period is 3.6 percent in the EM sample. In the US sample, the most active year is 2000 – the height of the dot-com bubble. After 2000, however, we observe a falling trend in the number of deals until 2011. The compound annual growth rate in the number of deals for the US sample is a negative 4.4 percent.

As the median deal value has an increasing trend in the US sample, but stays relatively constant in the EM sample, we observe an increasing difference in median deal value between the two samples over the sample period. This is illustrated by the shaded area in Figure 4.6.C. As shown in Figure 4.6.D, the median relative size has a slightly increasing trend in the US sample. In the EM sample, it behaves more erratically. However, the difference in relative size between the two samples seem to narrow by the end of the sample period. Table 4.6.C in Appendix C.4 shows the data that form the basis for the graphs above. In addition, Table 4.6.D in Appendix C.4 shows summary statistics by nation.

5 METHODOLOGY

In the following section, we present the methodology used to investigate the hypotheses introduced in Section 3. First, important aspects regarding the process of conducting an event study, including research design issues, are thoroughly discussed. Subsequently, the methods used for analyzing the abnormal returns are presented. Important pitfalls of regression analysis relevant to our analysis are briefly discussed in Appendix D.3.

5.1 THE EVENT STUDY LITERATURE

When analyzing value creation and value distribution in M&A, it is crucial to have reliable measures of returns. The event study methodology, first suggested by Fama, Fisher, Roll, & Jensen (1969), is a widely used method for discerning the influence of specific events on shareholder wealth (Khotari & Warner, 2006). The methodology seeks to measure the effect of an event through estimating a model that predicts normal returns, before comparing the actual- and expected returns around the time of the event. The degree of abnormal returns at the time of the event provides a concrete and statistically testable measure of the impact of the event on the wealth of the firms' shareholders. Khotari & Warner (2006) provide a comprehensive overview of event study methods. They claim that the basic statistical format of the event study methodology has not changed over time, and point to Brown & Warner ((1980), (1985)) and MacKinlay (1997) providing solid event study frameworks, including discussions of key research design issues.

5.2 EVENT OF INTEREST, EVENT WINDOW AND ESTIMATION WINDOW

The initial undertaking when conducting an event study is to define the event of interest and identify the period over which the stock prices of the companies involved in the event will be studied – the event window (MacKinlay, 1997). As we seek to study the effects of M&A announcements on shareholder wealth, the event of interest is defined as the announcement of the transaction. The announcement date of each individual transaction is provided in SDC.

The event window is the period in which abnormal returns are calculated. This period should be coinciding with the period in which the abnormal returns are assumed to materialize. It is customary to define the event window to be larger than the specific period of interest (MacKinlay, 1997). An event window preceding the date of the event will capture any leakage of information. Through a study of 1 814 takeovers in the US, Schwert (1996) shows that the cumulative average abnormal returns start to rise approximately two calendar months, or 42 trading days, prior to the first bid announcement, indicating that the market receives signals of the upcoming transaction prior to its announcement. An event window exceeding the date of the event will capture any lagged market reactions caused by inefficient markets or the announcement being outside of trading hours. Accordingly, the event window should be determined individually in each study based on the likelihood of information leakage and lagged announcement effects.

Similar to Schwert (1996), this thesis defines premiums using cumulative abnormal returns in the response to takeover bid announcements. As discussed in Section 2.4.3, the bid premium might not be fully reflected in the market price on the day of the announcement, as the uncertainty of deal completion is reflected in the price. To correct for this, Schwert (1996) employs an event window extending 126 days past the date of the bid announcement. Betton et al. (2014), on the other hand, suggest a window extending only one day past the bid announcement. A shorter window minimizes the effects of subsequent takeover-related events, including bid revisions and withdrawal information (Betton et al. (2014)). However, one runs the risk of underestimating the premium implicit in the bid.

We choose to employ an event window extending from 42 days before, to one day after the announcement date. The event window is divided into two parts: the runup is defined as a period extending from 42 days to two days prior to the bid announcement, while the announcement period is defined as the three days surrounding the bid announcement. Employing such an event window is common practice in the M&A literature (e.g. Betton et a. (2014)). The shorter announcement period has higher accuracy due to lower probability of confounding effects from other market events, while the total return period, which combines

the runup and announcement period, allows for rumors and possible leakage prior to the announcement.

The estimation window is the period in which stock returns are used to model normal returns. The most common choice is to use the period prior to the event window (MacKinlay, 1997). There is no clear consensus in the literature regarding the length of the estimation window. MacKinlay (1997) supports an estimation window of 250 days, while Benninga (2014) suggests that 126 days, or half a year of trading days, should be a minimum requirement to ensure that the estimated parameters are reliable. In this thesis, an estimation window of 250 days is used when available, while 126 days is employed as a minimum requirement.

5.3 Choice of Model for Estimating Normal Returns

The normal returns are defined as the expected returns without conditioning on the event taking place (MacKinlay, 1997). The methods of modelling normal returns are widely discussed in the event study literature. MacKinlay (1997) groups the available approaches for modelling normal returns into two categories – statistical- and economic models. The statistical models can be derived from statistical assumptions regarding the behavior of stock returns. The economic models, however, are not based solely on statistical assumptions, but also rely on assumptions concerning investor behavior.

The two most common economic models are the Capital Asset Pricing Model (CAPM) and the Arbitrage Pricing Theory (APT). The CAPM, first introduced by Sharpe (1964) and Lintner (1965), is an equilibrium theory where the expected return of an asset is determined by its covariance with the market portfolio. Several studies have uncovered deviations from the CAPM, implying that the restrictions imposed by the CAPM on the market model are questionable (Fama & French, 1996). As a result, findings of event studies using the CAPM might be sensitive to these restrictions, causing the vast majority of researchers to favor the market model over the CAPM (MacKinlay, 1997). The APT, first introduced by Ross (1976), is an asset pricing theory where the expected returns of an asset is a linear combination of multiple risk factors. Generally, the literature shows that the most important factor in the model behaves like a market factor, while supplementary factors add relatively little

explanatory power (MacKinlay, 1997). Accordingly, the potential gains from using an APT model instead of the market model are small (Brown & Weinstein, 1985).

The most frequently used statistical models are the market model and constant mean return model. These models only rely on the assumption that asset returns are jointly multivariate normal, and independently and identically distributed over time (MacKinlay, 1997). Let μ_i be the mean return of stock *i* calculated over the estimation window. The constant mean return model can then be written as follows:

$$R_{i,t} = \mu_i + \zeta_{i,t} \tag{1}$$

$$E(\zeta_{i,t}) = 0 \qquad var(\zeta_{i,t}) = \sigma_{\zeta_i}^2$$

where *t* is the time index, $i = 1, 2, \ldots, N$ stands for security, $R_{i,t}$ is the return of security *i* over time *t*, and $\zeta_{i,t}$ is the error term. The constant mean return model is one of the simplest alternatives for modelling normal returns. Still, Brown & Warner ((1980), (1985)) show that it usually yields results similar to those of more complex models.

The market model is a statistical model which relates the returns of any given security to the returns of the market portfolio. It assumes the following linear relationship between the returns security *i* and the market portfolio:

$$R_{i,t} = \alpha_i + \beta_i R_{m,t} + \varepsilon_{i,t} \tag{2}$$

$$E(\varepsilon_{i,t}) = 0 \qquad var(\varepsilon_{i,t}) = \sigma_{\varepsilon_i}^2$$

where $R_{i,t}$ and $R_{m,t}$ are the returns of security *i* and the market portfolio, respectively, over time *t*, $\varepsilon_{i,t}$ is the zero mean error term, and α_i, β_i, and $\sigma_{\varepsilon_i}^2$ are the estimated parameters of the model. According to MacKinlay (1997), the market model represents a potential improvement over the constant mean return model. By eliminating the return of a stock that is related to general market movements, the variance of the abnormal returns is reduced. The market-adjusted return model is a restricted market model with α_i constrained to be zero and β_i constrained to be one (MacKinlay, 1997).

As there are few benefits of using the relatively complex economic models compared to the statistical models, we chose to focus on the market model and constant mean return model. Generally, the market model would be preferable to the constant mean return model. However, the market model could, under certain circumstances, introduce noise to the abnormal returns. Given the nature of our sample, we chose to estimate the normal returns using the constant mean return model, market model and market-adjusted return model. This allows us to examine whether our findings are robust to the choice of model.

5.4 CALCULATING ABNORMAL RETURNS

The abnormal returns are defined as the actual ex post returns minus the normal returns of a security, over the event window (MacKinlay, 1997). First, the parameter estimates for the normal performance model are calculated. Daily price series retrieved from Datastream are converted to daily returns using the following formula:

$$R_{i,t} = \ln(P_{i,t} \,/\, P_{i,t-1}) \tag{3}$$

where $R_{i,t}$ is the return of stock *i* over day *t*, and $P_{i,t}$ and $P_{i,t-1}$ is the closing price of stock *i* at day *t* and *t-1*, respectively. The daily return series are sufficient for estimating the constant mean return model. Abnormal returns are calculated using the following formula:

$$\widehat{AR}_{i,t} = R_{i,t} - \hat{\mu}_i \tag{4}$$

where $\widehat{AR}_{i,t}$ is the abnormal return for stock *i* over day *t*. To estimate the market model, the daily returns of the market portfolio is required. Generally, the market index should be a broad-based value-weighted index or a float weighted index (MacKinlay, 1997). If an event study is run for a certain country, the country's broadest stock index is usually used as the proxy for the market portfolio (Event Study Metrics, 2015). We utilize two groups of indices to represent the market portfolio: stock market indices based on the main stock exchange of each firm and MSCI country indices. Estimating the market model using both the country indices and stock exchange indices allows us to further examine the robustness of our findings. Daily returns are calculated using the following formula:

$$R_{m,t} = \ln(P_{m,t} \,/\, P_{m,t-1}) \tag{5}$$

where $R_{m,t}$ is the return of index *m* over day *t*, and $P_{m,t}$ and $P_{m,t-1}$ is the close of index *m* at day *t* and *t-1*, respectively. Using the returns of the stocks and their corresponding market proxies, the market model is estimated over the estimation window using ordinary least squares (OLS) regression. Using the estimated parameters $\hat{\alpha}_i$ and $\hat{\beta}_i$, the abnormal returns are calculated for each day in the event window. For a particular day, *t*, in the event window, the stock's abnormal return is defined as the difference between its actual return and its predicted return (i.e. the estimation error):

$$\widehat{AR}_{i,t} = R_{i,t} - (\hat{\alpha}_i + \hat{\beta}_i R_{m,t}) \tag{6}$$

where $\widehat{AR}_{i,t}$ is the abnormal return for stock *i* over day *t*. The abnormal returns must be aggregated in order to draw overall inferences for the event of interest. The daily abnormal returns are first aggregated over the event window to determine the cumulative abnormal returns for stock *i*:

$$\widehat{CAR}_i(T_1, T_2) = \sum_{t=T_1}^{T_2} \widehat{AR}_{i,t} \tag{7}$$

where $\widehat{CAR}_i(T_1, T_2)$ is the cumulative abnormal returns of stock *i* over the given time period (T_1 to T_2). Cumulative abnormal returns are calculated for the three time periods described in Section 5.2:

$$\widehat{CAR}_i(-42, -2) = Runup \tag{8}$$

$$\widehat{CAR}_i(-1, 1) = Announcement\ returns \tag{9}$$

$$\widehat{CAR}_i(-42, 1) = Total\ returns \tag{10}$$

Next, we divide the cumulative abnormal returns for each time period into four separate groups: EM targets (1), EM bidders (2), US targets (3) and US bidders (4). The returns are averaged within each group and over each time period using the following formula:

$$\overline{CAR}_{\gamma}(T_1, T_2) = \frac{1}{N_{\gamma}} \sum_{i=1}^{N_{\gamma}} \widehat{CAR}_i(T_1, T_2) \tag{11}$$

where γ = 1, 2, 3, 4 stands for group, $\overline{CAR}_{\gamma}(T_1, T_2)$ is the cumulative average abnormal returns for the given group over time period T_1 to T_2, and N_{γ} is the number of observations in group γ. The steps described in equation (7) and (11) yield the same end result as averaging abnormal returns of all securities over each day *t* in the event window, before aggregating the average abnormal returns over the event window.

5.5 Significance Tests of Abnormal Returns

Before testing the hypotheses introduced in Section 3, we seek to test whether the cumulative average abnormal returns are significantly different from zero. The null hypothesis in such a test is that there are no abnormal returns within the event window. When testing the returns, there are several statistical issues that one needs to consider. The choice of test statistic should be based on the research setting and the statistical issues the data holds (Müller, 2015). As described by MacKinlay (1997), event clustering can cause cross sectional correlation of abnormal returns and biases from event-induced volatility. Both these issues can possibly introduce a bias to the volatility measure. According to Müller (2015), event-induced volatility is a common issue when conducting studies on M&A-related events.

Due to its simplicity, the cross sectional test is an often used method of testing abnormal returns. However, Brown & Warner (1985) show that the method is prone to event-induced volatility. Patell ((1976), (1979)) attempts to surmount this issue by standardizing the abnormal returns in the event window. Although often used, the test proposed by Patell ((1976), (1979)) has been found to still be affected by event-induced volatility in several studies (e.g. Campbell & Wesley (1993); Kolari & Pyönnen (2010)). Boehmer, Masumeci, & Poulsen (1991) propose a further improved version of the standardized cross sectional test

which is immune to the abnormal returns' distribution within the event window and accounts for event-induced volatility and serial correlation (the BMP test). As a robustness measure, we chose to employ both a basic cross sectional test, as well as the BMP test. The test statistics are derived in Appendix D.1 and D.2.

6 MEASURES OF WEALTH EFFECTS

Based on the cumulative abnormal returns, we calculate several additional measures of wealth effects. In this section, we derive the measures of wealth effects utilized in our analysis and present a descriptive analysis of these.

6.1 VARIABLE DESCRIPTIONS

We first calculate the combined cumulative abnormal returns over the three event windows defined in Section 5.2. The combined cumulative abnormal returns are often used as a measure of value creation. Applying methods similar to those of Moeller et al. (2004), we calculate c*ombined returns (%)* as the capitalization-weighted average of the target- and bidder cumulative abnormal returns:

$$\widehat{CAR}(T_1, T_2)_C = \widehat{CAR}(T_1, T_2)_T * W_T + \widehat{CAR}(T_1, T_2)_B * W_B$$

where $\widehat{CAR}(T_1, T_2)_C$ are the combined cumulative abnormal returns of the target and bidder, and $\widehat{CAR}(T_1, T_2)_T$ and $\widehat{CAR}(T_1, T_2)_B$ are the cumulative abnormal returns of the target and bidder, respectively, over the time period T_1 to T_2. W_T and W_B are the target- and bidder's respective weights given by their market capitalization:

$$W_T = \frac{Mcap_{T,8wp}}{Mcap_{B,8wp} + Mcap_{T,8wp}}, \quad and \quad W_B = \frac{Mcap_{B,8wp}}{Mcap_{B,8wp} + Mcap_{T,8wp}}$$

where $Mcap_{T,8wp}$ and $Mcap_{B,8wp}$ are the market capitalization, 43 trading days prior to the bid announcement, of the target and bidder, respectively. The market capitalization is retrieved one day prior to the start of the event window to ensure that it is unaffected by the upcoming bid announcement.

Following Malatesta (1983), we calculate firm i's dollar returns over the event window, *dollar returns ($m)*, by multiplying the cumulative abnormal returns of firm i by its market capitalization 43 trading days prior to the bid announcement:

$$\widehat{\$CAR}(T_1, T_2)_i = \widehat{CAR}(T_1, T_2)_i * Mcap_{i,8wp}$$

Following Moeller et al. (2004), the *combined dollar returns* are calculated as the sum of target- and bidder dollar returns:

$$\widehat{\$CAR}(T_1, T_2)_C = \widehat{\$CAR}(T_1, T_2)_T + \widehat{\$CAR}(T_1, T_2)_B$$

These dollar returns could be used directly to analyze value creation. However, when drawing overall inferences about a sample based on dollar returns, large transactions will be highly influential on the results. To account for this, we normalize the combined dollar returns by their underlying deal value. This gives us a second, dollar based, measure of value creation. The measure can be interpreted as the dollar returns per dollar spent on takeovers:

$$Dollar\ returns\ per\ deal\ value\ = \frac{\widehat{\$CAR}(T_1, T_2)_i}{Deal\ value}$$

As pointed out by Ahern (2012), measuring the value distribution as the fraction of dollar returns received by the target or bidder is problematic if either or both firms have negative dollar returns. For instance, if the target- and bidder dollar returns are $10 million and -$9 million respectively, the target's share of the combined dollar returns would be 1000 percent ($10 million divided by $1 million). Value distribution is therefore measured as the difference between the target- and bidder dollar returns, normalized by their combined market capitalization 43 days prior to the bid announcement. This variable is denoted *difference in dollar returns (%)* and represents the relative gain to the target versus the bidder for each dollar of combined market capitalization:

$$\Delta\widehat{\$CAR}\left(T_1, T_2\right) = \frac{\widehat{\$CAR}(T_1, T_2)_T - \widehat{\$CAR}(T_1, T_2)_B}{Mcap_{T,8wp} + Mcap_{B,8wp}} * 100$$

We also calculate the fraction of the combined dollar returns received by the target, *target's share of combined dollar returns (%),* for the sub-sample of transactions where both firms receive positive dollar returns:

$$\%\widehat{\$CAR}(T_1, T_2)_T = \frac{\widehat{\$CAR}(T_1, T_2)_T}{\widehat{\$CAR}(T_1, T_2)_B\ +\ \widehat{\$CAR}(T_1, T_2)_B} * 100$$

6.2 DESCRIPTIVE ANALYSIS OF THE WEALTH EFFECT MEASURES

In the following, we present descriptive statistics on the wealth effect measures described above. We initially discuss the summary statistics of the cumulative abnormal returns, before examining the dollar-based measures. When discussing the summary statistics, we reference the results of the cross sectional test and BMP test, which are enclosed in Table 6.2.A and 6.2.B in Appendix E.1.

Table 6.2.C. Summary statistics of cumulative abnormal returns

Variable	EM						US					
	Average	**p-value**	**sd**	**p1**	**Median**	**p99**	**Average**	**p-value**	**sd**	**p1**	**Median**	**p99**
Runup (%)												
Target	6.24	***	23.65	-52.72	2.99	76.83	5.03	***	26.80	-67.51	2.92	83.11
Bidder	1.10		18.65	-45.36	0.44	49.13	0.64	*	17.62	-45.79	0.13	51.50
Combined	1.46	**	16.87	-39.77	0.89	45.87	0.85	***	15.72	-40.68	0.36	48.92
Announcement returns (%)												
Target	5.94	***	13.30	-19.62	3.61	45.36	21.20	***	23.26	-30.11	18.28	94.55
Bidder	1.44	***	7.10	-14.40	0.65	26.25	-1.36	***	9.07	-28.36	-0.84	23.19
Combined	1.69	***	6.58	-12.99	1.03	21.85	1.43	***	7.85	-21.69	0.91	25.34
Total returns (%)												
Target	12.18	***	27.89	-54.01	8.53	96.05	26.22	***	34.15	-64.75	23.53	133.82
Bidder	2.54	***	19.89	-55.06	1.52	54.39	-0.73	*	19.60	-55.30	-0.77	61.12
Combined	3.15	***	18.08	-42.14	2.51	54.92	2.27	***	17.93	-48.96	1.78	56.45

p-value from cross sectional test with H0: Variable=0, *p<0.1 **p<0.05 ***p<0.01.
sd = standard deviation, p1 = 1st percentile, p99 = 99th percentile

Numbers based on normal returns estimated using market model and stock indices. All variables are described in detail in Appendix C.2.

As shown in Table 6.2.C, targets in the EM sample have an average runup of 6.2 percent, compared to 5.0 percent in the US sample. By testing the target runup, we find that the pre-announcement leakage has significant valuation effects in both samples. Examining the median target runup, the samples are more similar, which indicates that outliers with high runups influence the average to a larger extent in the EM sample. Also for bidders, the runup is higher in the EM sample. Interestingly, the cross sectional test does not reject the null hypothesis of zero runup for EM bidders. This is not in line with the conclusions drawn in previous research (e.g. Ma et al. (2009); Sehgal et al. (2012)). Using the BMP test, we find the bidder runup to be marginally significant in both samples. Not surprisingly, the announcement returns to targets are significantly different from zero in both samples. EM targets on average receive approximately 15.5 percentage points lower announcement returns than the US targets. Conducting a standard t-test for equal means yields a t-value of -14.7, thus rejecting the null hypothesis of equal means. The bidders, however, are better off in the

EM sample with regard to announcement returns, with average returns of 1.4 percent compared to negative 1.4 percent in the US (both significantly different from zero). This is seemingly in line with the conclusions drawn by Ma et al. (2009) regarding higher bidder returns in EMs.

Looking at the total cumulative abnormal returns, EM targets on average earn a significant 12.2 percent, which is substantially lower than the average of 26.2 percent in the US sample. Bidders earn a significant average of 2.5 percent over the total return period in the EM sample, while the corresponding percentage is -0.7 for the US sample (marginally significant). In spite of large differences with regard to average target- and bidder total returns, the average total combined returns are similar in the two samples. The positive average total combined returns in both samples indicate that M&A on average creates value in both EMs and the US. As shown in Figure 6.2.A in Appendix E.2, the percentage of deals with positive combined returns is 56.5 and 57.0 percent in the EM- and US sample, respectively.

Figure 6.2.B and 6.2.C below show the cumulative average returns for targets in the EM- and US sample respectively. Examining Figure 6.2.C, it is clear that the abnormal returns surrounding the announcement make up the lion's share of the total abnormal returns in the US sample. More specifically, the runup on average only accounts for approximately one fifth of the total returns. Figure 6.2.B paints a very different picture for the EMs, where runup on average constitutes more than 50 percent of the target total abnormal returns. Looking at the shaded area in Figure 6.2.C, we see that the average target cumulative abnormal returns in the US sample increase steadily over the runup period, before suddenly climbing sharply in the three days surrounding the bid announcement. In the EM sample, however, the curve starts to steepen already thirteen days prior to the bid announcement.

Figure 6.2.B. Average target CAR (-42,142), EM sample

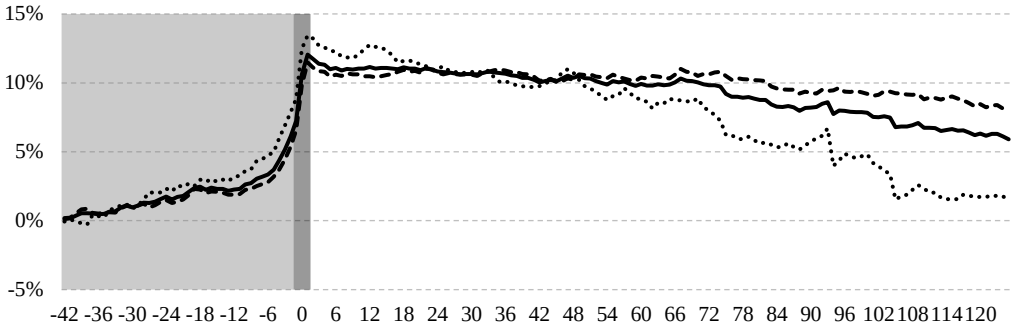
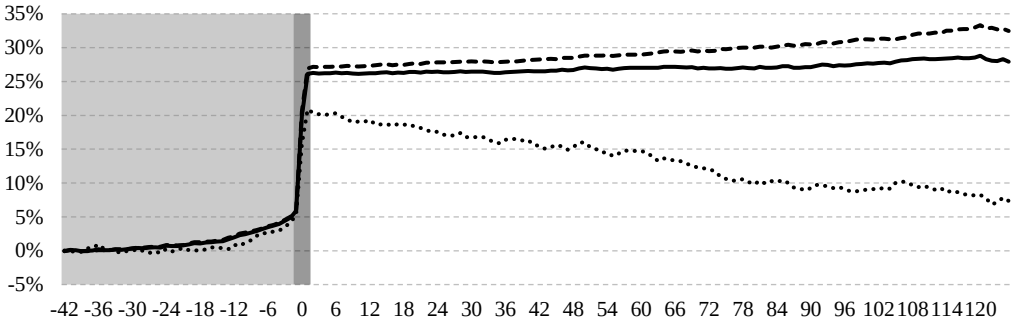


Figure 6.2.C. Average target CAR (-42,142), US sample



Source: SDC and Datastream. All variables are described in detail in Appendix C.2.

In contrast to the findings of previous studies, the short-dashed line in Figure 6.2.B shows that EM targets involved in deals that turned out to be unsuccessful earn higher runups and total returns, compared to those involved in successful deals. In the US sample however, we observe the familiar trend, where the targets involved in unsuccessful deals have more modest announcement returns compared to those involved in successful deals. For both samples, the average cumulative abnormal returns to targets in unsuccessful transactions eventually starts declining. In the US sample, the cumulative abnormal returns to targets involved in successful deals increases steadily in the months following the first bid announcement. This is likely due to a gradual reduction in the uncertainty in association with deal completion. In the EM sample, however, the cumulative abnormal returns decline in the months following the bid announcement also for targets involved in successful transactions.

This reversal could indicate a stock price overreaction in the runup- and announcement period in the EMs. Interestingly, Sehgal et al. (2012) find a similar reversal when analyzing bidder returns in the BRICKS-economies. They hypothesize that the reversal is caused by the market sensing a possible overpayment as the details of the deal seep in. This overpayment leads to value destruction for the bidders' shareholders, and thus causes a reversal in the cumulative abnormal returns. A reversal caused by overpayment would positively impact the target returns in the period after the announcement. However, it seems like this reasoning is unsound, as the reversal is clearly evident for targets as well.

Table 6.2.D. Summary statistics of dollar returns

Variable	EM					US				
	Average	**sd**	**p1**	**Median**	**p99**	**Average**	**sd**	**p1**	**Median**	**p99**
Announcement dollar returns ($m)										
Target	21	134	-152	2	418	190	967	-138	22	3141
Bidder	13	361	-1006	1	1288	-161	1795	-6049	-5	2806
Combined	34	395	-1442	3	1505	29	1791	-4765	6	4439
Total dollar returns ($m)										
Target	21	175	-503	6	647	183	1156	-495	24	3855
Bidder	9	1570	-3563	2	2186	-321	4567	-14848	-3	9811
Combined	30	1558	-3290	7	2244	-138	4521	-15045	10	10866
Announcement dollar returns/ deal value										
Target	0.07	0.19	-0.35	0.035	0.85	0.13	0.11	-0.12	0.12	0.39
Bidder	0.08	1.29	-3.88	0.02	5.58	-0.07	1.23	-4.95	-0.04	4.67
Combined	0.18	1.38	-3.81	0.06	6.01	0.06	1.25	-4.80	0.62	4.84
Total dollar returns/ deal value										
Target	0.08	0.37	-1.12	0.08	1.12	0.14	0.16	-0.40	0.15	0.44
Bidder	0.17	4.28	-11.44	0.07	18.04	-0.21	5.05	-22.29	-0.03	17.77
Combined	0.21	4.37	-11.87	0.14	18.10	-0.08	5.05	-22.08	0.08	17.84

sd = standard deviation, p1 = 1st percentile, p99 = 99th percentile
Numbers based on normal returns estimated using the market model and stock indices. All variables are described in Appendix C.2.

As shown in Table 6.2.D, targets in both the EM- and US sample earn positive total dollar returns on average. Interestingly, the 1st percentile is very similar for the two samples, both close to negative $500 million, while the 99th percentile is almost 500 percent larger in the US sample. Further, average bidder- and combined returns are positive in the EM sample, while negative in the US sample. The median combined dollar returns, however, are positive in the US sample, indicating outliers with large negative returns. The substantial differences in the dollar returns between the two samples are not surprising, given large differences in the average deal value and market capitalization (see Section 4.6).

Looking at the target total dollar returns per deal value, we see similar trends as for the cumulative abnormal returns. EM targets on average earn 8 cents per dollar spent, while the US targets earn an average of 14 cents on the dollar. Bidders in the EM sample on average earn 17 cents per dollar, while US bidders lose 21 cents. Thus, the average value distribution is seemingly tilted more towards bidders in the EM sample. As evident from Figure 6.2.D in Appendix E.2, the variation in dollar returns per deal value is substantially larger for bidders than targets in both samples. The average combined total dollar returns per deal value indicates that M&A on average creates value in the EM sample and destroys value in the US sample. This contrasts with the picture painted by the cumulative abnormal returns.

Table 6.2.E. Summary statistics of value distribution

Variable	EM					US				
	Average	**sd**	**p1**	**Median**	**p99**	**Average**	**sd**	**p1**	**Median**	**p99**
Difference in announcement dollar returns (%)	-0.006	5.248	-13.879	0.013	14.506	3.585	7.199	-14.788	2.567	25.793
Difference in total dollar returns (%)	0.202	14.121	-41.272	0.159	41.353	3.678	15.460	-41.913	3.319	48.176
Target's share of announcement dollar returns (%)	34.8	26.3	0.3	29.4	95.6	44.7	29.5	0.3	43.1	98.7
Target's share of total dollar returns (%)	30.3	22.8	0.7	23.8	92.6	35.3	27.7	0.3	29.4	96.9

sd = standard deviation, p1 = 1st percentile, p99 = 99th percentile
Numbers based on normal returns estimated using the market model and stock indices. All variables are described in Appendix C.2.

Studying the measures of wealth distribution in Table 6.2.E, we observe an average difference in announcement dollar returns close to zero in the EM sample, implying an equal wealth distribution between the target and bidder on average. The average difference in both announcement- and total dollar returns in the US sample, however, indicates a wealth distribution favoring targets. This is also evident when examining the distributions of the difference in dollar returns in Figure 6.2.E and 6.2.F in Appendix E.2. For the sub-sample including only deals where both the target and bidder earn positive dollar returns, we also see targets on average being worse off in the EM sample. The EM targets on average receive approximately 35 percent and 30 percent of the announcement- and total dollar returns, respectively, while the corresponding percentages are 45 and 35 for the US sample. Examining the distributions of the target's share of dollar returns in Figure 6.2.G and 6.2.H in Appendix E.2, the difference between the two samples is evident – while approximately 21.5 percent of targets receive more than 60 percent of the total value creation in the US sample, the corresponding percentage is only 10.0 percent in the EM sample.

7 EMPIRICAL ANALYSIS AND RESULTS

In this section, the results of our empirical analysis are presented. The analysis is structured in the same manner as Section 3. We first test whether premiums received by targets are lower in EMs than in the US (H_1). Next we investigate whether the value creation is significantly lower in EMs (H_2). Finally, we test whether the value distribution in EMs is tilted in favor of bidders when compared to the US (H_3). All regressions are estimated using OLS with heteroscedasticity-consistent standard errors, and contain unreported year- and industry fixed effects. See Appendix D.3 for more on heteroscedasticity.

7.1 PREMIUM

Table 7.1.A. Premium, regression output

	Dependent Variable: Target Total Returns (%)			
Independent Variables	**(1)**	**(2)**	**(3)**	**(4)**
EM (D)	-14.61***	-11.61***	-19.85***	-9.292**
	(1.426)	(3.400)	(6.066)	(3.714)
Competition (%)			-1.488*	
			(0.877)	
EM (D) * Competition (%)				-1.558
				(1.056)
Control variables	NO	YES	YES	YES
Constant	36.58***	44.46***	57.24***	44.81***
	(9.710)	(16.450)	(18.570)	(16.480)
Observations	2 921	2 921	2 921	2 921
Adjusted R-squared	0.050	0.163	0.163	0.163

Heteroscedasticity-consistent standard errors in parentheses, * p<0.1, ** p<0.05, *** p<0.01

The dependent variable is the target cumulative abnormal returns over the total return period (-42, 1) measured using the market model and stock exchange indices as the market proxy. All regressions include unreported year-, target industry-, and bidder industry dummies and are estimated using OLS. The control variables include the natural logarithm of the target market capitalization (*ln target mcap*), the estimated deal probability ($P(\widehat{Success})$), the liquidity of the target stock (*Liquidity target (%)*), the liquidity of the bidder stock (*Liquidity bidder (%)*), the natural logarithm of the relative size (*ln relative size*), the toehold size (*Toehold size (%)*) and dummies for industry relatedness (*Relatedness (D)*), success (*Success (D)*), all cash considerations (*Cash Only (D)*), all stock considerations (*Stock Only (D)*), whether the deal started as a rumor (*Rumor (D)*), whether the bid is hostile (*Hostile (D)*), whether several bidders were involved (*Several bidders (D)*), whether a defense mechanism was triggered (*Defense (D)*), and whether the deal was a tender offer (*Tender offer (D)*). *Competition (%)* is the proxy for the competition in the market for corporate control, and *EM (D) * Competition (%)* is an interaction term between the competition proxy and the EM dummy. All observations from both samples are included in the analysis. All variables are described in detail in Appendix C.2.

Regression (1) in Table 7.1.A shows the target total cumulative abnormal returns regressed on the EM dummy without control variables beyond the year- and industry dummies. The coefficient of the EM dummy is significant, implying that EM targets receive significantly lower premiums than US targets when controlling for year- and industry fixed effects. In

regression (2), we include the set of control variables that have been shown to affect premiums, as well as the estimated success probability of each deal. When controlling for these deal- and firm characteristics, the difference in premium between the two samples is reduced from 14.6 percent to 11.6 percent, while the coefficient is still significant on a one percent level. After including the control variables, the adjusted R-squared increases from 5.0 percent to 16.3 percent, indicating that the variation in the additional control variables explains 11.3 percent of the variation in the target total cumulative abnormal return.

Studying the coefficients of the control variables, we find the majority to be in line with existing research (see Section 2.1.3). Premiums received by targets decrease with target size, both in absolute terms and relative to bidder size. Premiums decrease with increasing bidder toeholds. We also observe that stock financed bids yield significantly lower premiums, while the opposite is the case for tender offers. In transactions that ended up being successful, premiums are larger, with a marginally significant coefficient.

As mentioned in Section 2.3.3, previous studies find a relationship between the degree of competition in the market for corporate control and the premium received by targets. As shown in regression (3), the difference in premium is still significant when including the competition proxy as an explanatory variable. This indicates that the difference in premium is robust to differences in competition in the market for corporate control.

Including the competition proxy introduces a multicollinearity problem to the model. As the degree of competition typically is relatively low in the EMs compared to the US, the variable closely resembles an inverse EM dummy. This is reflected in the correlation coefficient between the two variables of -0.9. When both variables are included in the premium-regression, the high correlation drastically inflates the standard errors of both the estimated coefficients. This multicollinearity causes the coefficient estimates to change erratically in response to small changes in the model or the data. According to Wooldridge (2009), such problems can indicate that the questions asked are too subtle for the available data to answer with any precision. As our main interest lies in the differences between the EM- and US sample, an inflation of the standard deviation of the variable capturing this difference is

problematic. More specifically, an increase in the standard error of the EM dummy could make it challenging to draw inferences regarding the differences between the two samples. For more on multicollinearity problems and how we detect them, see Appendix D.3.

A potential solution to the multicollinearity problem is to generate an interaction term between the EM dummy and the competition proxy (see regression (4)). Substituting this variable for the competition proxy would allow us to control for the differences in the degree of competition within the EMs only. However, the interaction term is not statistically significant and still highly correlated with the EM dummy. Moreover, the variable does not make economic sense, as the coefficient indicates that an increase in competition of one percentage point decreases the premium by 1.6 percentage points. As shown in Figure 7.1.A and 7.1.B in Appendix F, there is no clear relationship between competition and premium within the two samples. Considering the abovementioned, we chose to narrow the scope of our analysis, and not control for competition in the market for corporate control going forward. When excluding the competition proxy, parts of the effect of competition is potentially captured by the EM dummy.

7.2 VALUE CREATION

Table 7.2.A. Runup, regression output

	Dependent Variable: Runup (%)			
	Target	Target	Bidder	Combined
Independent Variables	**(1)**	**(2)**	**(3)**	**(4)**
EM (D)	4.420***	-0.38	0.0701	-1.447
	(1.497)	(2.823)	(2.208)	(2.055)
CPI Score		-0.170*	-0.0171	-0.0668
		(0.090)	(0.077)	(0.070)
Target total returns (%)			0.101***	
			(0.016)	
Liquidity target (%)	0.319	0.322	-0.214**	-0.176***
	(0.548)	(0.548)	(0.091)	(0.039)
Liquidity bidder (%)	-1.24	-1.161	-1.106*	-1.304**
	(0.791)	(0.797)	(0.669)	(0.607)
ln relative size	-1.801***	-1.791***	1.018***	0.502***
	(0.336)	(0.336)	(0.235)	(0.177)
Relatedness (D)	1.845	1.907	-0.482	0.35
	(1.705)	(1.706)	(1.128)	(0.975)
Toehold size (%)	-0.089	-0.091	0.0355	-0.0095
	(0.056)	(0.056)	(0.037)	(0.036)
Success (D)	-0.0119	-0.0335	0.198	0.744
	(1.569)	(1.569)	(1.316)	(1.112)
Stock Only (D)	0.0367	0.0896	0.661	-0.307
	(1.389)	(1.390)	(0.933)	(0.864)
Cash Only (D)	-0.319	-0.464	-1.11	-0.575
	(1.208)	(1.209)	(0.846)	(0.732)
Rumor (D)	4.467**	4.360**	-1.258	-1.008
	(1.936)	(1.940)	(1.005)	(1.165)
Hostile (D)	2.81	2.825	-1.661	-0.0626
	(2.719)	(2.716)	(1.551)	(1.345)
Several bidders (D)	8.449***	8.439***	0.918	2.132
	(2.561)	(2.556)	(1.453)	(1.319)
Defense (D)	-0.305	-0.313	-0.0176	-0.206
	(3.001)	(3.003)	(1.871)	(1.652)
Tender offer (D)	0.615	0.644	-0.441	0.0586
	(1.565)	(1.563)	(1.053)	(0.947)
Constant	9.175	21.76*	7.993	13.17*
	(9.395)	(11.590)	(7.189)	(7.014)
Observations	2 921	2 921	2 921	2 921
Adjusted R-squared	0.036	0.037	0.035	0.009

Heteroscedasticity-consistent standard errors in parentheses, * p<0.1, ** p<0.05, *** p<0.01

The dependent variable is the cumulative abnormal returns over the runup period (-42, -2) measured using the market model and stock indices as the market proxy. Combined returns are the capitalization-weighted cumulative abnormal returns (-42, -2). All regressions include unreported year-, target industry-, and bidder industry dummies and are estimated using OLS. All observations from both samples are included in the analysis. All variables are described in detail in Appendix C.2.

We initially test value creation through the cumulative abnormal returns. Regression (1) in Table 7.2.A indicates that the target runup is approximately 4.4 percentage points higher in EMs when controlling for deal- and firm characteristics. In regression (2), we test whether the difference in runup is robust to differences in corruption levels. As evident from the EM dummy, there is no longer a significant difference in runup between the two samples when controlling for the degree of corruption. Further, the coefficient of the corruption proxy is negative and significant. As a high CPI score implies low perceived corruption, the sign of the coefficient suggests that a higher degree of corruption is associated with higher runup, ceteris paribus. As shown in regression (3) and (4), there is no significant difference between the EM- and US sample with regard to bidder- and combined runup. Thus, analyzing the runup provides no evidence of a difference in value creation between EMs and the US.

Table 7.2.B. Announcement returns, regression output

	Dependent Variable: Announcement Returns (%)		
	Target	Bidder	Combined
Independent Variables	**(1)**	**(2)**	**(3)**
EM (D)	-11.88***	3.249***	0.191
	(1.022)	(0.529)	(0.435)
Liquidity target (%)	-0.0756	-0.0295	-0.0132
	(0.121)	(0.033)	(0.019)
Liquidity bidder (%)	-0.293	-0.261	-0.332*
	(0.457)	(0.219)	(0.197)
Target total returns (%)		0.0221***	
		(0.006)	
ln relative size	-3.361***	0.156	0.856***
	(0.321)	(0.130)	(0.098)
Relatedness (D)	0.37	-0.455	0.224
	(1.084)	(0.563)	(0.454)
Toehold size (%)	-0.132***	-0.0430**	-0.0435***
	(0.031)	(0.017)	(0.014)
Success (D)	1.247	0.996*	0.952**
	(1.097)	(0.561)	(0.456)
Stock Only (D)	-2.445**	-0.336	-1.064***
	(0.959)	(0.462)	(0.393)
Cash Only (D)	2.580**	2.211***	1.908***
	(1.020)	(0.461)	(0.395)
Rumor (D)	-7.712***	0.349	-0.985**
	(1.135)	(0.630)	(0.486)
Hostile (D)	3.300**	1.999**	2.736***
	(1.388)	(0.791)	(0.562)
Several bidders (D)	-4.728***	-0.574	-0.728
	(1.462)	(0.805)	(0.626)
Defense (D)	0.63	-0.897	-0.36
	(1.861)	(1.001)	(0.923)
Tender offer (D)	4.096***	-0.144	0.148
	(1.416)	(0.454)	(0.403)
Constant	11.35**	-8.052***	-0.65
	(5.610)	(1.746)	(1.616)
Observations	2 921	2 921	2 921
Adjusted R-squared	0.192	0.053	0.068

Heteroscedasticity-consistent standard errors in parentheses, * p<0.1, ** p<0.05, *** p<0.01

The dependent variable is the cumulative abnormal returns over the announcement period (-1, 1) measured using the market model and stock indices as the market proxy. Combined returns are the capitalization-weighted cumulative abnormal returns (-1, 1). All regressions include unreported year-, target industry-, and bidder industry dummies and are estimated using OLS. All observations from both samples are included in the analysis. All variables are described in detail in Appendix C.2.

Regression (1) in Table 7.2.B shows that targets in EMs receive 11.8 percentage points lower abnormal announcement returns than the US targets. Bidders, however, are better off in EMs, receiving 3.6 percentage points higher abnormal announcement returns (2). This is in line with the suggestions made in previous research (see Section 2.3.2). The results from regression (1) and (2) indicate a difference in the distribution of announcement returns between EMs and the US. As shown in regression (3), there is no significant difference in the combined abnormal announcement returns, indicating similar value creation in the two samples over the course of the announcement period.

Table 7.2.C. Total returns, regression output

	Dependent Variable: Total Returns (%)		
	Target	Bidder	Combined
	(1)	**(2)**	**(3)**
EM (D)	-7.461***	3.801***	0.627
	(1.754)	(1.211)	(1.128)
Target total returns (%)		0.123***	
		(0.018)	
Liquidity target (%)	0.244	-0.244**	-0.190***
	(0.664)	(0.121)	(0.053)
Liquidity bidder (%)	-1.533*	-1.374**	-1.666***
	(0.868)	(0.666)	(0.620)
ln relative size	-5.163***	1.173***	1.353***
	(0.424)	(0.250)	(0.202)
Relatedness (D)	2.215	-0.944	0.55
	(1.990)	(1.230)	(1.114)
Toehold size (%)	-0.221***	-0.00728	-0.0522
	(0.061)	(0.041)	(0.038)
Success (D)	1.235	1.196	1.705
	(1.834)	(1.412)	(1.206)
Stock Only (D)	-2.408	0.32	-1.391
	(1.594)	(1.030)	(0.955)
Cash Only (D)	2.261	1.116	1.390*
	(1.492)	(0.933)	(0.837)
Rumor (D)	-3.245	-0.898	-1.951
	(2.209)	(1.170)	(1.217)
Hostile (D)	6.110**	0.335	2.668*
	(3.024)	(1.558)	(1.438)
Several bidders (D)	3.721	0.344	1.408
	(2.749)	(1.620)	(1.438)
Defense (D)	0.325	-0.914	-0.563
	(3.099)	(2.044)	(1.955)
Tender offer (D)	4.711**	-0.589	0.195
	(1.961)	(1.165)	(1.058)
Constant	20.52**	-1.323	7.583
	(8.032)	(4.954)	(5.573)
Observations	2 921	2 921	2 921
Adjusted R-squared	*0.14*	0.048	0.027

Heteroscedasticity-consistent standard errors in parentheses, * p<0.1, ** p<0.05, *** p<0.01

The dependent variable is the cumulative abnormal returns over the total return period (-42, 1) measured using the market model and stock indices as the market proxy. Combined returns are the capitalization-weighted cumulative abnormal returns (-42, 1). All regressions include unreported year-, target industry-, and bidder industry dummies and are estimated using OLS. All observations from both samples are included in the analysis. All variables are described in detail in Appendix C.2.

When analyzing the total cumulative abnormal returns (Table 7.2.C), we observe similar trends as for the announcement returns. EM bidders earn 3.8 percent higher abnormal returns than US bidders (1), while there is no significant difference with regard to the combined total cumulative abnormal returns (2). This points towards value creation being similar in EMs and the US. Overall, all the regressions of combined abnormal returns indicate similar value creation.

With regard to the control variables in the regressions of the cumulative abnormal returns, the majority of our findings are consistent with the existing literature presented in Section 2.1.3. For targets, there is a negative and significant relationship between relative size and returns, indicating that larger targets, relative to the bidder, earn lower returns. Moreover, transactions that started as rumors have significantly higher target runup. The same is the case for transactions were several bidders are involved. In the announcement period, stock financed transactions yield lower target returns.

In the announcement- and total return period, toeholds have a negative relationship with target returns. In line with the findings of earlier studies, tender offers yield significantly higher target returns than mergers. Increasing target total cumulative abnormal returns yield higher bidder returns – a relationship that holds for all three return periods. As opposed to what we observe for targets, there is a positive and significant relationship between relative size and returns in both the runup- and total return period for bidders. Increased toeholds are associated with lower bidder runup, ceteris paribus. Looking at the combined value creation, there exists a positive relationship between relative size and the total cumulative abnormal returns.

Table 7.2.D. Dollar returns per deal value, regression output

	Dependent Variable: Total Dollar Returns per Deal Value		
	Target	Bidder	Combined
Independent Variables	**(1)**	**(2)**	**(3)**
EM (D)	-0.0490**	0.477	0.329
	(0.019)	(0.303)	(0.306)
Target total returns (%)		0.00997**	
		(0.00424)	
Liquidity target (%)	-0.00045	-0.0144	-0.013
	(0.001)	(0.018)	(0.014)
Liquidity bidder (%)	-0.0123	-0.054	-0.071
	(0.008)	(0.129)	(0.134)
ln relative size	-0.0165***	0.210*	0.139
	(0.003)	(0.127)	(0.120)
Relatedness (D)	0.00859	0.0375	0.124
	(0.014)	(0.341)	(0.342)
Toehold size (%)	-0.000418	0.00422	0.00226
	(0.001)	(0.0145)	(0.015)
Stock Only (D)	-0.0260**	0.0000915	-0.0831
	(0.010)	(0.203)	(0.206)
Cash Only (D)	0.0226**	0.520*	0.563**
	(0.011)	(0.271)	(0.272)
Rumor (D)	0.00281	-0.394	-0.411
	(0.017)	(0.323)	(0.326)
Hostile (D)	0.000997	-0.0608	0.0333
	(0.021)	(0.482)	(0.471)
Several bidders (D)	-0.00413	0.19	0.193
	(0.018)	(0.578)	(0.562)
Defense (D)	0.00222	-0.701	-0.686
	(0.019)	(0.783)	(0.776)
Tender offer (D)	0.0316***	0.208	0.281
	(0.011)	(0.408)	(0.408)
Constant	0.201**	0.108	0.538
	(0.091)	(0.773)	(0.793)
Observations	2 446	2 446	2 446
Adjusted R-squared	0.07	0.005	0.001

Heteroscedasticity-consistent standard errors in parentheses, * p<0.1, ** p<0.05, *** p<0.01

The dependent variable is the dollar returns over the total return period (-42, 1) divided by the deal value. Dollar returns are calculated by multiplying the cumulative abnormal returns with the market capitalization 43 trading days prior to the bid announcement. Combined dollar returns are the sum of the target- and bidder dollar returns. All regressions include unreported year-, target industry-, and bidder industry dummies and are estimated using OLS. Only the successful transactions from both samples are included in the analysis. This is due to the unreliable, and sometimes missing, deal values provided in SDC for unsuccessful EM deals. All variables are described in detail in Appendix C.2.

From the analysis of total dollar returns per deal value (Table 7.2.D), we observe that targets in EMs earn approximately 4 cents less than US targets per dollar spent on takeovers. For bidders, however, the EM dummy is not significant, although positive. There is no significant difference between the US and EMs with regard to the combined dollar returns per deal value. Consequently, the results point towards value creation being similar in EMs and the US. The control variables in the analysis of dollar returns per deal value are in line with the findings in the analysis of the cumulative abnormal returns.

Overall, neither the analysis of cumulative abnormal returns, nor the analysis of dollar returns per deal value indicates a difference in value creation between EMs and the US. This is a very surprising finding, and is not in line with our hypothesis.

7.3 VALUE DISTRIBUTION

Table 7.3.A. Value distribution, regression output

	Dependent Variables:			
	Difference in Dollar Returns		Target's Share of Dollar Returns	
	Total	Announcement	Total	Announcement
Independent Variables	**(1)**	**(2)**	**(3)**	**(4)**
EM (D)	-4.015***	-4.142***	-8.762***	-16.14***
	(0.784)	(0.329)	(2.048)	(2.254)
Liquidity target (%)	0.192***	0.0196	0.499*	0.191
	(0.032)	(0.013)	(0.263)	(0.749)
Liquidity bidder (%)	0.392	0.134	-0.218	0.344
	(0.420)	(0.135)	(0.827)	(0.853)
ln relative size	0.694***	0.826***	9.253***	8.850***
	(0.157)	(0.069)	(0.374)	(0.412)
Relatedness (D)	0.802	0.226	3.750**	5.388**
	(0.824)	(0.336)	(1.609)	(2.096)
Toehold size (%)	-0.00116	0.0167	-0.0823	-0.0381
	(0.028)	(0.010)	(0.072)	(0.077)
Success (D)	-1.129	-0.639*	0.775	-0.908
	(0.877)	(0.354)	(2.077)	(2.327)
Stock Only (D)	-0.196	-0.315	-2.279	-5.021**
	(0.667)	(0.305)	(1.740)	(2.075)
Cash Only (D)	-0.755	-1.322***	-1.042	-0.625
	(0.662)	(0.286)	(1.661)	(1.810)
Rumor (D)	1.231	-1.057**	1.597	-5.998*
	(0.934)	(0.462)	(2.955)	(3.266)
Hostile (D)	0.151	-0.184	3.478	0.467
	(1.086)	(0.465)	(3.290)	(3.247)
Several bidders (D)	0.369	-0.872*	4.938	-2.96
	(1.085)	(0.467)	(3.055)	(2.865)
Defense (D)	0.527	0.768	4.498	2.036
	(1.399)	(0.608)	(3.602)	(3.601)
Tender offer (D)	0.591	0.241	0.906	2.823
	(0.836)	(0.332)	(1.791)	(2.117)
Constant	4.185	10.07***	57.02***	67.62**
	(4.031)	(1.613)	(9.368)	(27.360)
Observations	2 921	2 921	1 221	1 119
Adjusted R-squared	0.023	0.143	0.393	0.369

Heteroscedasticity-consistent standard errors in parentheses, * p<0.1, ** p<0.05, *** p<0.01

The dependent variable in regression (1) and (2) is the difference in dollar returns between the target and bidder, normalized by the combined market capitalization of both parties 43 trading days prior to the bid announcement. Dollar returns are calculated by multiplying the cumulative abnormal returns with the market capitalization 43 trading prior to the bid announcement. The difference in dollar returns is calculated over the total return period in regression (1) and the announcement period in regression (2). The dependent variable in regression (3) and (4) is the target's share of the combined dollar returns. Combined dollar returns are the sum of the target- and bidder dollar returns. All regressions include unreported year-, target industry-, and bidder industry dummies and are estimated using OLS. All observations from both samples are included in regression (1) and (2). In regression (3) and (4), only deals where both target and bidder earn positive dollar returns are included (see Section 6.1). All variables are described in detail in Appendix C.2.

When investigating the value distribution, we first analyze the difference in dollar returns normalized by the combined market capitalization of the two firms 43 trading days prior to the bid announcement (Table 7.3.A, regression (1) and (2)). As predicted, the difference in dollar returns are significantly lower in EMs than in the US (4.0 percentage points for the total return period and 4.1 percent for the announcement period). This implies that the value distribution is tilted in favor of bidders in EMs compared to the US.

For robustness, we also analyze the target's share of total dollar returns for a sub-sample of transactions were both the target and bidder earn positive dollar returns (Table 7.3.A, regression (3) and (4)). The difference in value distribution is even more evident in the sub-sample. For the total return period, the share of the dollar returns received by targets are 8.8 percentage points lower in the EMs when compared to their US counterparts. The share of dollar returns received by targets over the announcement period are 16.1 percent lower in the EMs. The analysis of the value distribution is in line with our hypothesis of EM targets receiving a smaller share of the value creation than targets in the US. These results point towards EM targets having less bargaining power than their US counterparts. In addition, all regressions show a significant and positive relationship between relative size and the target's share of the value creation, and thus the target's bargaining power.

7.4 ROBUSTNESS

As mentioned in Section 5.3 and 5.4, we introduce several different measures to ensure that our findings are robust to choices regarding research design. Abnormal returns are calculated using three different models for estimating normal returns, namely the market model, market-adjusted return model, and constant mean return model. Further, the market model is estimated twice for each firm – once using an MSCI country index as a proxy for the market portfolio, and once using the index for the stock exchange on which the firm is listed. This leaves us with a total of four different measures of abnormal returns. For convenience, all regression outputs are based on abnormal returns calculated using the market model and stock exchange indices. In Table 7.4.A below, the EM dummy is reported, with heteroscedasticity-consistent standard errors in parenthesis, for the four most important regressions in our

analysis, using the four different measures of normal returns. As evident, all inferences are robust to the choice of model and market proxy.

Table 7.4.A. Robustness check, EM (D)

Model	**Market Proxy**	**Combined Total Returns (%)**	**Combined Total Dollar Returns per Deal Value**	**Difference in Total Dollar Returns**	**Target's Share of Total Dollar Gains**
MM	Stock index	0.627	0.329	-4.015***	-8.762***
		(1.128	(0.306)	(0.784)	(2.048)
MM	Country index	0.841	0.186	-3,907***	-11.285***
		(1.146)	(0.298)	(0.779)	(1.961)
MARM	Stock exchange	0.518	0.054	-3.099***	-8.754***
		(1.063)	(0.287)	(0.710)	(2.020)
CMRM	n.a.	0.087	-0.137	-2.961***	-8.489***
		(1.269)	(0.380)	(0.872)	(2.019)

MM = market model, MARM = market-adjusted return model, CMRM = constant mean return model
Heteroscedasticity-consistent standard errors are reported in parenthesis, * p<0.1, ** p<0.05, *** p<0.01
The table shows the EM dummy for different combinations of models and market proxies for estimating normal returns. The shaded area represents numbers reported in our regression outputs. *Combined total returns (%)* is regression (3) in table Table 7.2.C, *combined total dollar returns per deal value* is regression (3) in Table 7.2.D, *difference in total dollar returns* is regression (2) in Table 7.3.A, and *target's share of total dollar gains* is regression (4) in Table 7.3.A.

8 CONCLUSION

In this thesis, we analyze a sample consisting of 542 initial takeover bids, announced between 01/01/2000 and 31/12/2015, originating from 21 emerging economies. As a basis for comparison, we include a sample consisting of 2 379 initial takeover bids from the US during the same period. In our analysis, we utilize established methods from the existing M&A literature to investigate the shareholder wealth effects of M&A in EMs. This is an issue of great importance to potential target- and bidder firms based in emerging economies. Further, our findings have implications for companies and investors based in advanced economies considering making acquisitions in EMs.

We first investigate the wealth effects of M&A within the EMs. In contrast to previous studies, we find only marginally-significant positive pre-announcement returns to bidders. Interestingly, we find that pre-announcement leakage has a positive and significant valuation effects on targets. On average, the runup constitutes more than 50 percent of the total target cumulative abnormal returns. Further, both when analyzing combined cumulative abnormal returns and combined dollar returns per deal value, we find that M&A on average creates value in EMs. 56.6 percent of deals have positive combined returns, indicating that the synergy hypothesis dominates in these markets.

Next, we analyze the differences between EMs and the US with regard to the premium received by targets, value creation, and value distribution. When analyzing premiums, we find significant differences between the two samples. When controlling for deal- and firm characteristics, the total premium received by targets is 11.6 percentage points lower in EMs than in the US. The difference is robust to the degree of competition in the market for corporate control.

Surprisingly, our analysis does not provide any evidence suggesting a difference between the two samples with regard to value creation. This is the case both when analyzing combined cumulative abnormal returns and combined dollar returns per deal value. As for the value distribution, our findings strongly indicate targets being worse off in EMs, receiving a smaller

share of the combined value creation than their US counterparts. When analyzing the difference in dollar returns, normalized by the combined market capitalization of the involved parties 43 trading days prior to the announcement, we find that relative dollar returns received by EM targets are 4.0 percent lower than for US targets. The difference is evident also when analyzing the target's share of combined dollar returns in a sub-sample of deals were both the target and bidder receive positive dollar returns. Overall, the analysis of value distribution strongly indicates that targets have lower bargaining power in EMs than in the US. Further, this could indicate that takeovers are motivated by hubris and agency problems to a lesser degree in EMs.

In addition to the findings above, we also present evidence for a positive relationship between the degree of corruption and the pre-announcement stock price runup. When controlling for deal- and firm characteristics, we find a significantly higher target runup in EMs relative to the US. As previous research has pointed to poor legal environment and weak enforcement of existing laws possibly causing higher runup, we assign each deal a corruption score based on the year and country of the deal. After including this control variable in the analysis, there is no significant difference between the target runup in the two samples. Further, the coefficient of the corruption variable is significant. Overall, this indicates that a higher degree of corruption is associated with higher runup, ceteris paribus.

9 SUGGESTIONS FOR FURTHER RESEARCH

Although this thesis provides a unified analysis of the shareholder wealth effects of M&A in EMs, there are still several questions that remain unanswered. In the following paragraphs, we present our suggestions for further research.

First, it is interesting to examine whether the differences between EMs and the US are robust to differences in the degree of competition in the market for corporate control. Unfortunately, due to the multicollinearity problem introduced by the competition proxy, it was not possible to incorporate such a control variable throughout our analysis. In our opinion, increasing the sample size, and thus the variation in the data, is a feasible solution to the multicollinearity problem. This can be accomplished by removing the requirement of targets being public, and thus only analyzing bidder returns. In addition to controlling for competition, other variables can be incorporated in the analysis. For example, legal investor protection can be proxied by the liability index introduced by La Porta et al. (2006).

As discussed in Section 6.2, we observe a reversal in the average cumulative abnormal returns to EM targets in the months following the bid announcement. Surprisingly, this reversal is evident also for the sub-sample of EM targets involved in successful deals. In the US, however, the cumulative abnormal returns for targets involved in successful deals gradually increase in the months following the bid announcement. This can be attributed to a gradual decrease in the uncertainty of deal completion. When analyzing the BRICKS-economies, Sehgal et al. (2012) show a significant reversal in the bidder cumulative abnormal returns following the initial stock market response, and suggests that this is due to overpayment. The descriptive statistics in this thesis, however, indicate that the overpayment-hypothesis proposed by Sehgal et al. (2012) is flawed, as the reversal in the cumulative abnormal returns is evident also for targets. In our opinion, it would be interesting to analyze and assess the differences in reversal between target- and bidder firms in EMs, and the potential difference in reversal between EMs and the US. This would involve employing an event window extending a longer period after the bid announcement than the one used in this thesis.

Due to the issues introduced by the offer prices in SDC, the premium received by targets is defined through stock market returns in our analysis (see Section 4.4). However, if each individual value retrieved from SDC is validated, the offer price can be used to calculate the bid premium. Due to time constraints, this was not feasible in this thesis. In future studies with fewer constraints with regard to time and resources, one could examine whether the difference in premium is similar when premiums are calculated using offer prices.

REFERENCES

Agrawal, A., & Jaffe, J. (2000). *The Post-merger Performance Puzzle: Advances in Mergers and Acquisitions.* Retrieved from Emerald Insight.

Ahern, K. R. (2012). Bargaining Power and Industry Dependence in Mergers. *Journal of Finance, 103*(3), 530-550.

Alexandridlis, G., Petmezas, D., & Travlos, N. (2010). Gains from Mergers and Acquisitions Around the World: New Evidence. *Financial Management, 39*(4), 1671-1695.

Asquit, P., & Kim, H. (1982). The Impact of Merger Bids on the Participating Firms' Security Holders. *The Journal of Finance, 37*(5), 1209-1228.

Asquith, P. (1983). Merger Bid, Uncertainty, and Stockholders Returns. *Journal of Financial Economics, 11*, 51-83.

Asquith, P., Bruner, R. F., & Mullins, D. W. (1990). *Merger Returns and the Form of Financing.* Harvard Unirversity, University of Virginia.

BBVA Research . (2015). *Emerging and Growth Leading Economies: Economic Outlook.* BBVA Research.

Benninga, S. (2014). *Financial Modelling.* Cambridge: The MIT Press.

Berkovitch, E., & Narayanan, M. P. (1993). Motives for Takeovers: An Empirical Investigation. *Journal of Finance and Quantitative Analysis, 28*(3), 347-362.

Betton, S., & Eckbo, B. E. (2000). Toeholds, Bid Jumps, and Expected Payoff in Takeovers. *Review of Financial Studies, 13*, 841-882.

Betton, S., Eckbo, E. B., Thompson, R., & Thorburn, K. S. (2014). Merger Negotiations with Stock Market Feedback. *The Journal of Finance, 69*(4), 1705-1745.

Bhagat, S., Dong, M., Hirshleifer, D., & Noah, R. (2005). Do Tender Offers Create Value? New Methods and Evidence. *Journal of Financial Economics, 76*, 3-60.

Boehmer, E., Masumeci, J., & Poulsen, A. (1991). Event-study Methodology Under Conditions of Event-induced Variance. *Journal of Financial Economics, 30*, 253-272.

Bradley, M., Desai, A., & Kim, H. E. (1988). Synergistic Gains from Corporate Acquisitions and their Division Between the Stockholders of Target and Acquiring Firms. *Journal of Financial Economics, 21*, 3-40.

Brown , S. J., & Warner, J. B. (1985). Using Daily Stock Returns: The Case of Event Studies. *Journal of Financial Economics, 14*, 3-31.

Brown, S. J., & Weinstein, M. I. (1985). Derived Factors in Event Studies. *Journal of Financial Economics, 14*(3), 491-495.

Brown, S., & Warner, J. (1980). Measuring Security Price Performance. *Journal of Financial Economics,* 205-258.

Campbell, C., & Wesley, C. (1993). Measuring Security Price Performance Using Daily NASDAQ Returns. *Journal of Financial Economics, 33,* 73-92.

Cartwright, S., & Schoenberg, R. (2006). Thirty Years of Mergers and Acquisitions Research: Recent Advances and Future Opportunities. *British Journal of Management, 17,* S1-S5.

Comment, R., & Schwert, G. W. (1995). Poison or Placebo? Evidence on the Deterrence and Wealth Effects of Mordern Antitakeover Measures. *Journal of Financial Economics, 39*(1), 3-43.

DePamphilis, D. (2010). *Mergers, Acquisitions, and Other Restructuring Activities* (Vol. 5). Burlington: Academic Press, Elsevier.

Dodd, P. (1980). Merger Proposals, Management Discretion, and Stockholder Wealth. *Journal of Financial Economics, 8,* 105-138.

Dodd, P., & Ruback, R. (1977). Tender Offers and Stockholder Returns: An Empirical Analysis. *Journal of Financial Economics, 5*(3), 351-373.

Event Study Metrics. (2015). *Nine steps to follow when performing a short-term event study*. Retrieved from Event Study Metrics: http://eventstudymetrics.com/index.php/9-steps-to-follow-when-performing-a-short-time-study/

Fama, E. (1970). Efficient Capital Markets: A Review of Theory and Empirical Work. *The Journal of Finance, 25*(2), 383-417.

Fama, E. F., Fisher, L., Roll, R., & Jensen, M. C. (1969). The Adjustment of Stock Prices to New Information. *International Economic Review, 10*(1), 1-21.

Fama, E., & French, K. (1996). Multifactor Explanations of Asset Pricing Anomalies. *Journal of Finance, 51,* 55-84.

FTSE Russel. (2016). *FTSE Emerging Index.* FTSE Russel.

Grossman , S., & Hart, O. (1980). Takeover Bids, The Free-rider Problem and the Theory of Corporation. *Bell Journal of Economics, 11*(1), 42-64.

Hirshleifer , D., & Titman, S. (1990). Share Tendering Strategies and the Success of Hostile Takeover Bids. *Journal of Political Economy, 98*(2), 295-324.

Huang, Y. S., & Walking, R. A. (1987). Target Abnormal Returns Associated with Acquisition Announcements: Payment, Acquisition Form, and Managerial Resistance. *Journal of Financial Economics, 19*(2), 329-349.

Huber, P. (1967). The Behavior of Maximum Likelihood Estimates Under Nonstandard Conditions. *Fifth Berkeley Symposium: Huber, Swiss Federal Institute of Technology*, 221-233.

IMF. (2016, January 4). *Chief Economist Interview*. Retrieved from IMF: http://www.imf.org/en/News/Articles/2015/09/28/04/53/soint010416a

Isa, M., & Lee, S.-P. (2011). Method of Payment and Target Status: Announcement Returns to Acquiring Firms in the Malaysian Market. *International Journal of Economics and Finance, 3*(3), 177-189.

Jarrell, G. A., Brickley, J. A., & Netter, J. M. (1988). The Market for Corporate Control: The Empirical Evidence Since 1980. *Journal of Economic Perspectives, 2*(1), 49-68.

Jensen, M. C. (1986). Agency Costs of Free Cash Flow. *The American Economic Review, 76*(2), 323-329.

Jensen, M. C., & Ruback, R. S. (1983). The Market for Corporate Control: The Scientific Evidence. *Journal of Financial Economics, 11*, 5-50.

Keown, A. J., & Pinkerton, J. M. (1981). Merger Announcements and Insider Trading Activity: An Empirical Investigation. *The Journal of Finance, 36*(4), 855-869.

Khotari, S. P., & Warner, J. B. (2006). *Econometrics of Event Studies.* Hanover: Tuck School of Business at Dartmouth.

Kolari, J., & Pyönnen, S. (2010). Event Study Testing with Cross-sectional Correlation of Abnormal Returns. *The Review of Financial Studies, 23*, 3996-4025.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (1997). Legal Determinants of External Finance. *The Journal of Finance, 52*(3), 1131-1150.

Lintner, J. (1965). The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets. *The Review of Economics and Statistics, 47*(1), 13-37.

Ma, J., Pagán, J., & Chu, Y. (2009). Abnormal Returns to Mergers and Acquisitions in Ten Asian Stock Markets. *International Journal of Business, 14*(3), 235-250.

MacKinlay, A. C. (1997). Event Studies in Economics and Finance. *Journal of Economic Literature, 35*(1), 13-39.

Malatesta, P. H. (1983). The Wealth Effect of Merger Activity and The Objective Functions of Merging Firms. *Journal of Financial Economics, 11*, 155-181.

McWilliams, A., & Siegel, D. (1997). Event Studies in Management Research: Theoretical and Empirical Issues. *The Academy of Management Journal, 40*(3), 626-657.

Mikkelson, W., & Partch, M. (1988). Withdrawn Security Offerings. *Journal of Quantitative Analysis, 23*, 119-133.

Mitchell, M. L., & Mulherin, J. H. (1996). The Impact of Industry Shocks on Takeover and Restructuring Activity. *Journal of Financial Economics, 41*(2), 193-229.

Moeller, S. B., Schlingemann, F. P., & Stulz, R. M. (2004). Firm Size and the Gains From Acquisitions. *Journal of Financial Economics, 73*, 201-228.

Morck, R., Shleifer, A., & Vishny, R. W. (1990). Do Managerial Objectives Drive Bad Acquisitions? *The Journal of Finance, 45*(1), 31-48.

MSCI. (2016). *MSCI Global Market Accessibility Review.* MSCI Inc.

Mulherin, J., & Boone, A. L. (2000). Comparing Acquisitions and Divestitures. *Journal of Corporate Finance, 6*, 117-139.

Müller, S. (2015, Oct 15). *Significance Tests for Event Studies* . Retrieved from Event Study Tools: http://www.eventstudytools.com/significance-tests

Nenova, T. (2006). Takeover Laws and Financial Development. *World Bank Policy Research Working Paper No. 4029*, 1-52.

Patell, J. (1976). Corporate Forecasts of Earnings Per Share and Stock Price Behavior: Empirical Test. *Journal of Accounting Research, 14*, 246-276.

Patell, J. (1979). The API and the Design of Experiments. *Journal of Accounting Research, 17*, 528-549.

Rhodes-Kropf, M., & Viswanathan, S. (2004). Market Valuation and Merger Waves. *The Journal of Finance, 59*(6), 2685-2718.

Roll, R. (1986). The Hubris Hypothesis of Corporate Takeovers. *The Journal of Business, 59*(2), 197-216.

Ross, S. (1976). The Arbitrage Theory of Capital Asset Pricing. *Journal of Economic Theory, 13*, 341-360.

Rossi, S., & Volpin, P. F. (2004). Cross-Country Determinants of Mergers and Acquisitions. *Journal of Financial Economics, 74*, 277-304.

Ruback , R. S. (1988). Do Target Shareholders Lose in Unsuccessful Control Contests? In A. J. Auerbach, *Corporate Takeovers: Causes and Consequences* (pp. 137-156). Chicago: University of Chicago Press.

Schwert, W. G. (1996). Markup Pricing in Mergers and Acquisitions. *Journal of Financial Economics, 41*, 153-192.

Sehgal, S., Banerjee, S., & Deisting, F. (2012). The Impact of M&A Announcement and Financing Strategy on Stock Returns: Evidence from BRICKS Markets. *International Journal of Economics and Finance, 4*(11), 76-90.

Sharpe, W. (1964). Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk. *The Journal of Finance, 19*(3), 425-442.

Sherman, A. J., & Hart, M. A. (2006). *Mergers and Acquisitions From A to Z* (Vol. 2). New York: AMACOM.

Singh, H., & Montgomery, C. A. (1987). Corporate Acquisition Strategies and Economic Performance. *Strategic Management Journal, 8*(4), 377-386.

The World Bank. (2016). *The World Bank*. Retrieved from The World Bank WDI Database: http://data.worldbank.org/indicator/CM.MKT.LDOM.NO

Transparency International. (2000-2015). *Transparency International*. Retrieved from Corruption Perceptions Index 2000-2015: http://www.transparency.org/research/cpi/overview

Wong, A., & Cheung, K. Y. (2009). The Effects of Merger and Acquisition Announcements on the Security Prices of Bidding Firms and Target Firms in Asia. *International Journal of Economics and Finance, 1*(2), 274-283.

Wooldridge, J. (2009). *Introductory Econometrics* (Vol. 4). Mason: South-Western Cengage Learning.

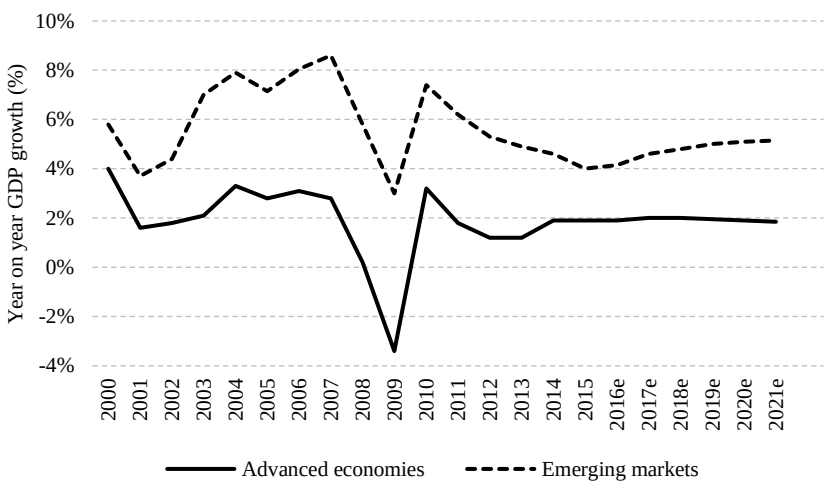
Zeckhauser, R., & Pound, J. (1990). Clearly Heard on the Street: The Effect of Takeover Rumors on Stock Prices. *The Journal of Business, 63*(3), 291-308.

APPENDIX

The Appendix is structured in the same manner as the thesis and contains the following: a figure complimentary to the introduction, comprehensive theory, additional information on the sample selection process, a description of all the variables used in the analysis, supplementary tables on summary statistics, comprehensive methodology, supplementary figures and tables used in the analysis, and scatter plots complimentary to the analysis.

A INTRODUCTION

Figure 1.A. Year on year GDP growth



Source: IMF World Economic Outlook 2016

B THEORETICAL ASPECTS

B.1 ADDITIONAL MOTIVES FOR M&A

DePamphilis (2010) suggests additional motives for takeovers, such as diversification, strategic realignment, the q-ratio, managerialism, tax considerations, market power, and misvaluation. Diversification involves acquiring firms outside of the bidder's primary line of business, which can create financial synergies and allow companies to shift from their core markets into markets that have higher growth prospects. Diversification is thus closely related to the synergy hypothesis. Strategic realignment theory suggests that firms use M&A to rapidly adjust to changes in the external regulatory environment and technological innovation. The q-ratio is the ratio of the market value of a firm to the replacements cost of its assets. The theory proposes that companies acquire undervalued assets ($q<1$) instead of investing in PP&E. The managerialism motive asserts that managers make acquisitions for selfish reasons, such as power and compensation, and is thus related to the agency hypothesis. Companies can also use M&A to benefit from tax shelters. The market power theory suggests that firms merge to improve their monopoly power. Stock misvaluation is a motive to merge if the markets are inefficient and the target's share price does not reflect its true economic value.

M&A activity has a tendency to cluster, and the literature points to merger waves as an indirect motive for takeovers. According to DePamphilis (2010), merger waves can be explained by two competing theories: the neoclassical hypothesis and the behavioral hypothesis. The neoclassical hypothesis argues that merger waves occur when firms react to shocks in their operating environment. Shocks could reflect such events as deregulation; the emergence of new technology, distribution channels, or substitute products; or a sustained rise in commodity prices. Mitchell & Mulherin (1996) find significant differences across industries with regard to both the rate and time-series clustering of takeover- and restructuring activities. The inter-industry patterns are directly related to the economic shocks experienced by the sample industries, which support the argument that takeover activity is driven by fundamental factors. The behavioral hypothesis is based on the misvaluation hypothesis and suggests that managers use overvalued stocks to buy the assets of lower-valued firms. This makes sense, as using overvalued stocks to buy undervalued assets

implicates that the acquiring firm needs to issue fewer shares, resulting in less earnings dilution. In their study of market valuation and merger waves, Rhodes-Kropf & Viswanathan (2004) find that periods of stock merger activity are correlated with high market valuations.

B.2 WEALTH EFFECTS OF M&A IN THE US

The shareholder wealth effects of M&A in the US market for corporate control have been subject to extensive research. In the following, we present some of the research we deem relevant to the hypotheses put forward in this thesis.

Regarding the pre-announcement returns, Dodd & Ruback (1977) investigate the impact of 386 successful- and unsuccessful tender offers on shareholder returns. They find that shareholders of both bidder- and target firms earn significant positive abnormal returns in the twelve months prior to the tender offer. In a study of 101 merger announcements from 1975 to 1978, Keown & Pinkerton (1981) provide evidence that target firms earn excess returns prior to the first public bid announcement. Further, they statistically confirm leakage of insider information up to twelve days prior to the bid announcement. In a study of 1 814 successful and unsuccessful takeovers from 1975 to 1991, Schwert (1996) shows that the target average cumulative abnormal returns starts to rise approximately two months prior to the first bid announcement.

Regarding the announcement returns, Asquit & Kim (1982) use a sample of 50 firms participating in successful mergers between 1960 and 1978 to investigate the impact of merger bids on the participating firms' bondholders and shareholders. They find that while the shareholders of target firms gain from a merger bid, no other security holders either gain or lose. Schwert (1996) shows that the sample average abnormal returns on the day of the bid announcement for targets are approximately 25 percent and 19 percent in successful- and unsuccessful offers, respectively. Jensen & Ruback (1983) review thirteen existing studies, with sample periods from 1956 to 1981. They find the average excess returns to target firms to be 30 percent and 20 percent for the successful tender offers and mergers respectively. On average, bidder firms gain 4 percent in successful tender offers, but have no abnormal returns surrounding successful mergers. Both target- and bidder firms have negative average

abnormal returns in unsuccessful tender offers and mergers. Jarrell, Brickley, & Netter (1988) analyze 440 successful tender offers from 1960 to 1985. They find that bidders realize small, but statistically significant, returns of approximately 1 percent to 2 percent in the immediate period surrounding the announcement. In their study, analyzing a sample of 326 acquisitions from 1975 to 1987, Morck et al. (1990) conclude that bidding firms have systematically lower and predominantly negative announcement returns. Mulherin & Boone (2000) use a sample of 1 305 firms from 59 industries to analyze the wealth effects of M&A announcement on both target- and bidder firms in the period from 1990 to 1999. They find that the median abnormal returns in the immediate window surrounding the announcement are a significant 18.4 percent for targets, and slightly negative, though insignificant, for bidders.

B.3 WEALTH EFFECTS OF M&A IN EMERGING MARKETS

There are four studies on the wealth effects of M&A in EMs that are relevant for the hypotheses we put forward in this thesis. In the following we present their main findings.

Ma et al. (2009) investigate abnormal returns to shareholders of bidder firms, surrounding M&A announcement, in ten emerging Asian economies from 2000 to 2005. Using a sample of 1 477 transactions, they find significantly positive abnormal returns in three different event windows. A two-day window (0, 1) yields an average CAR of 1.0 percent, a three-day window (-1, +1) yields an average CAR of 1.3 percent, and a five-day window (-2, +2) yields an average CAR of 1.7 percent. They also show that valuation effects of information leakage concerning M&A deals are statistically significant.

Wong & Cheung (2009) investigate the effect of M&A announcements on the stock price of bidder firms in six Asian economies from 2000 to 2007. They show significant positive average cumulative abnormal returns for bidder firms in four out of six sample countries in the pre-announcement period. Their findings show that the country average announcement returns are not significantly different from zero. Although not significant, they find a sample-average CAR of 2.7 percent and -0.4 percent for the pre-announcement and announcement period, respectively. They conclude that the terms and conditions of M&A are not in favor of the shareholders of target firms.

In a study examining the impact of 139 M&A announcements on bidder returns in the Malaysian market from 2000 to 2005, Isa & Lee (2011) find significantly positive cumulative abnormal returns to bidder firms in the event window (-1, 1) of 1.5 percent.

In their event study of stock market reactions to 214 M&A announcements in the BRICKS-economies from 2005 to 2009, Sehgal et al. (2012) find significantly positive pre-event abnormal returns for bidders in 5 out of 6 sample countries in the (-20,0) window. On post-event basis (1, 20), they observe a significant reversal in signs of abnormal returns. The sample-average CAR is 2.1 percent in the runup period and 2.0 percent in the three days surrounding the announcement. They suggest that the significant pre-event abnormal returns can be explained by information leakage.

C DATA

C.1 SAMPLE SELECTION

Table 4.2.A. Country selection sources

Nation	MSCI Emerging Markets Index*	FTSE Emerging Index**	BBVA Eagles and Nest***
Algeria			+
Argentina			+
Bangladesh			+
Brazil	+	+	+
Chile	+	+	+
China	+	+	+
Colombia	+	+	+
Czech Republic	+	+	
Egypt	+	+	+
Greece	+	+	
Hungary	+	+	
India	+	+	+
Indonesia	+	+	+
Iran			+
Iraq			+
Kazakhstan			+
Malaysia	+	+	+
Mexico	+	+	+
Myanmar			+
Nigeria			+
Pakistan		+	+
Peru	+	+	+
Philippines	+	+	+
Poland	+	+	+
Qatar	+	+	+
Russia	+	+	+
Saudi Arabia			+
South Africa	+	+	+
South Korea	+		
Sri Lanka			+
Taiwan	+	+	
Thailand	+	+	+
Turkey	+	+	+
United Arab Emirates	+	+	+
Vietnam			+

Sources: *MSCI (2016), **FTSE Russel (2016), ***BBVA Research (2015)
"+" indicates that the country is included in the list. All tree lists are combined to form the initial country selection of 35 EMs.

Table 4.3.B. Stock exchange- and MSCI indices extracted from Datastream

Stock Exchange Index	MSCI Country Index
ALTERNEXT ALLSHARE	MSCI Brazil
ATHEX COMPOSITE	MSCI Chile
BANGKOK S.E.T.	MSCI China
BIST NATIONAL 30	MSCI Colombia
BRAZIL BOVESPA	MSCI Greece
CHILE SANTIAGO SE GENERAL (IGPA)	MSCI India
COLOMBIA IGBC INDEX	MSCI Indonesia
COLOMBO SE ALL SHARE	MSCI Korea
FTSE ALL SHARE	MSCI Malaysia
FTSE BURSA MALAYSIA KLCI	MSCI Mexico
FTSE ST ALL SHARE L	MSCI Pakistan
FTSE/JSE ALL SHARE	MSCI Peru
HANG SENG	MSCI Philippines
HOCHIMINH SE VIETNAM INDEX	MSCI Poland
IDX COMPOSITE	MSCI Russia
INDIA CALCUTTA SE 40	MSCI South Africa
KARACHI SE 100	MSCI Sri Lanka
KOREA SE COMPOSITE (KOSPI)	MSCI Taiwan
KOSDAQ COMPOSITE	MSCI Thailand
KUALA LUMPUR COMP. DS-CALC.	MSCI Turkey
KUWAIT SE MARKET IXP	MSCI USA
MDAX FRANKFURT	MSCI Vietnam
MEXICO IPC (BOLSA)	
NASDAQ COMPOSITE	
NYSE COMPOSITE	
OMX TALLINN (OMXT)	
PHILIPPINE SE I(PSEi)	
RUSSIAN MICEX INDEX	
S&P BSE (100) NATIONAL	
S&P/ASX 300	
S&P/BVL GENERAL(IGBVL)	
S&P/TSX COMPOSITE INDEX	
SHANGHAI SE A SHARE	
SHENZHEN SE A SHARE	
SWISS MARKET (SMI)	
TAIWAN SE WEIGHED TAIEX	
TEL AVIV SE GENERAL	
THAILAND MAI	
WARSAW GENERAL INDEX 20	
WARSAW NEW CONNECT NCINDEX	

The stock exchange indices in the column to the left cover the indices of all the stock exchanges on which the target- and bidder firms in the sample are listed. In the right column, the MSCI country indices covering all the countries in the sample are listed. Daily data on all the indices above were retrieved from 01/01/1998 to 31/12/2015 in order to calculate the cumulative abnormal returns for all the firms in the sample.

Table 4.3.C. Selection criteria, US sample

Selection Criteria	Source	Number of Exclusions	Sample Size
All initial control bids in SDC (FORMC = M, AM) for US targets from 01/01/2000 to 31/12/2015	SDC*		36002
Public target and bidder, and domestic deals only	SDC	32337	3665
Target and bidder have Datastream codes	SDC	278	3387
Deal value > $5 million	SDC	455	2932
Bidder seeking to own > 50 percent of target firm	SDC	18	2914
Bidder own < 50 percent of target firm at bid announcement	SDC	1	2913
Available market capitalization 43 trading days prior to bid announcement (target and bidder)	DS**	0	2913
Target and bidder firm have zero trading volume in less than 90 percent of the days in both the estimation- and event window	DS	477	2436
Bidder firm is not involved in multiple bids in the period from 50 days before to 50 days after bid announcement	SDC	37	2399
Stock prices are available from at least 168 days prior to 1 day post bid announcement	DS	20	2379
Final sample			2379

*SDC = Thomson Reuters SDC Platinum Mergers and Acquisitions database, **DS = Thomson Reuters Datastream.
The table displays the criteria applied in order to arrive at a final sample of 2 379 US takeover bids.

C.2 VARIABLE DESCRIPTION

Table 4.4.A. Country characteristics

Variable	Description
CPI score	Corruption Perceptions Index score of the country from which the deal originates, the year of the bid announcement
Competition (%)	Proportion of public companies acquired in the country from which the deal originates, the year of the transaction

Sources: CPI is retrieved from Transparency International (2000-2015), Competition (%) is calculated using yearly observations on the number of listed firms in each country obtained from World Bank's WDI database (The World Bank, 2016) and yearly information regarding the number of public firms acquired in each country gathered from SDC platinum using the criteria shown in Table 4.5.C.

Table 4.4.B. Firm- and deal characteristics

Variable	Description
Target mcap ($m)	Target's market capitalization 43 trading days prior to the bid announcement.
Bidder mcap ($m)	Bidder's market capitalization 43 trading days prior to the bid announcement.
Deal value ($m)	Total value of consideration paid by acquirer, excluding fees and expenses
$\widehat{CAR}_i(T_1,T_2)$*	Cumulative abnormal returns for firm *i* over the event window (T_1,T_2)
$\overline{\widehat{CAR}_i(T_1,T_2)}$ *	Average of $\widehat{CAR}_i(T_1,T_2)$ for group γ: $\frac{1}{N_\gamma}\sum_{i=1}^{N_\gamma}\widehat{CAR}_i(T_1,T_2)$
Runup (%)*	Cumulative abnormal returns over the event window (-42, -2)
Announcement returns (%)*	Cumulative abnormal returns over the event window (-1, 1)
Total returns (%)*	Cumulative abnormal returns over the event window (-42, 1)
Combined returns (%)**	Capitalization-weighted average of target- and bidder cumulative abnormal returns: $\widehat{CAR}(T_1,T_2)_{\text{Combined}} = \frac{\widehat{CAR}(T_1,T_2)_{\text{Target}} * \text{Mcap}_{\text{Target,8wp}}}{\text{Mcap}_{\text{Target,8wp}} + \text{Mcap}_{\text{Bidder,8wp}}} + \frac{\widehat{CAR}(T_1,T_2)_{\text{Bidder}} * \text{Mcap}_{\text{Bidder,8wp}}}{\text{Mcap}_{\text{Target,8wp}} + \text{Mcap}_{\text{Bidder,8wp}}}$
Dollar returns ($m)**	Cumulative abnormal returns for firm *i* over the event window (T_1,T_2) multiplied by firm *i*'s market capitalization 43 trading days prior to the bid announcement: $\widehat{\$CAR}(T_1,T_2)_i = \widehat{CAR}(T_1,T_2)_i * Mcap_{i,8wp}$
Combined dollar returns ($m)**	Sum of target- and bidder dollar returns over the event window (T_1,T_2): $\widehat{\$CAR}(T_1,T_2)_{Combined} = \widehat{\$CAR}(T_1,T_2)_{Target} + \widehat{\$CAR}(T_1,T_2)_{Bidder}$

Sources: data on deal- and firm features is retrieved from SDC, Datastream is used to extract daily market capitalization, turnover by volume, stock price data, and corresponding index data. Sources also apply to the variables below.
*See Section 5, **See Section 6.1

Table 4.4.B. Firm- and deal characteristics, continued

Variable	Description
Dollar returns/ deal value**	Dollar returns scaled by deal value (for successful deals), represents dollar returns per dollar spent on takeovers for firm *i*: $\frac{\widehat{\$CAR}(T_1,T_2)_i}{Deal\ value}$
Difference in dollar returns (%)**	The difference between target- and bidder dollar returns over the event window (T_1, T_2), divided by the total of both firms' market capitalization 43 trading days prior to the bid announcement: $\Delta\widehat{\$CAR}(T_1,T_2) = \frac{\widehat{\$CAR}(T_1,T_2)_{Target} - \widehat{\$CAR}(T_1,T_2)_{Bidder}}{Mcap_{Target,8wp} + Mcap_{Bidder,8wp}} * 100$
Target's share of combined dollar returns (%)**	Target's percentage share of event window (T_1, T_2) combined dollar returns (for transactions where both target and bidder receive positive dollar returns): $\%\widehat{\$CAR}(T_1,T_2)_{Target} = \frac{\widehat{\$CAR}(T_1,T_2)_{Target}}{\widehat{\$CAR}(T_1,T_2)_{Bidder} + \widehat{\$CAR}(T_1,T_2)_{Target}} * 100$
ln target mcap	Natural logarithm of target's market capitalization 43 trading days prior to the bid announcement.
ln relative size	Natural logarithm of target's market capitalization divided by bidder's market capitalization, both measured 43 trading days prior to the bid announcement.
$P(\widehat{Success})$	The fitted values from a logistic regression of Success (D) on all firm- and deal characteristics. Represents the estimated success probability of each deal.
Liquidity (%)	Estimation window (-292, -43)-average of firm *i*'s daily liquidity (measured as daily trading volume ($V_{i,t}$) multiplied by price ($P_{i,t}$) of firm *i*'s stock divided by market capitalization of firm *i* 43 trading days prior to the bid announcement): $Liquidity_i = \frac{1}{250} \sum_{t=-292}^{-43} \frac{V_{i,t} * P_{i,t}}{Mcap_{i,t}} * 100$
Toehold size (%)	Percentage of target shares owned by bidder at bid announcement.
EM (D)	Equals one if the deal is located in an emerging market, and zero otherwise.
EM (D) * Competition (%)	Interaction term between the emerging market-dummy and the competition proxy, capturing variation in competition in the market for corporate control within the EMs.
Success (D)	Equals one if the bid results in a change in control, and zero otherwise.
Stock only (D)	Equals one if the consideration is stock only, and zero otherwise.
Cash only (D)	Equals one if the consideration is cash only, and zero otherwise.
Rumor (D)	Equals one if the deal began as a rumor, and zero otherwise.
Hostile (D)	Equals one if the bid is flagged as hostile, and zero otherwise.
Several bidders (D)	Equals one if there was a challenging offer for the target, and zero otherwise.
Defense (D)	Equals one if the bid triggered a takeover defense mechanism, and zero otherwise.
Tender offer (D)	Equals one if the deal is structured as a tender offer, and zero otherwise.
Relatedness (D)	Equals one if target and bidder are in the same industry (see below), and zero otherwise.
Industry	All firms in the sample are assigned an industry based on their two-digit SIC code: 01-09 agriculture, forestry and fishing; 10-14 mining; 15-17 construction; 20-39 manufacturing; 40-49; transportation and public utilities; 50-51 wholesale trade; 52-59 retail trade; 60-67 finance, insurance and real estate; 70-89 services.

C.3 SUCCESS PROBABILITY, CPI SCORES AND COMPETITION

Table 4.5.A. Success probability, regression output

	Success (D)
Independent Variables:	**(1)**
EM (D)	-1.311***
	(0.159)
Liquidity target (%)	0.0414
	(0.0691)
Liquidity bidder (%)	0.000973
	(0.0669)
Ln relative size	-0.205***
	(0.0416)
Relatedness (D)	0.273
	(0.158)
Toehold size (%)	0.00847
	(0.00624)
Stock Only (D)	-0.422**
	(0.151)
Cash Only (D)	-0.173
	(0.162)
Rumor (D)	0.319
	(0.259)
Hostile (D)	-2.769***
	(0.213)
Several bidders (D)	-1.612***
	(0.233)
Defense (D)	-0.388
	(0.259)
Tender offer (D)	1.051***
	(0.281)
Constant	1.699
	(1.314)
Observations	2 921
Pseudo R2	0.2142

Standard errors in parentheses, * p<0.05. ** p<0.01. *** p<0.001
The dependent variable is a dummy taking the value of one if the deal is successful, according to our definition in Section 2.1.1, and zero otherwise. The regression includes unreported year-, target industry- and bidder industry dummies and are estimated using OLS. All observations from both samples are included in the analysis. All variables are described in detail in Appendix C.2.

Table 4.5.B. Country CPI score by year

Nation	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Brazil	39	40	39	39	39	37	33	35	35	37	37	38	43	42	43	38
Chile	74	75	74	74	74	73	73	70	69	67	72	72	72	71	73	70
China	31	35	34	34	34	32	33	35	36	36	35	36	39	40	36	37
Colombia	32	38	37	37	38	40	39	38	38	37	35	34	36	36	37	37
Greece	49	42	43	43	43	43	44	46	47	38	35	34	36	40	43	46
India	28	27	28	28	28	29	33	35	34	34	33	31	36	36	38	38
Indonesia	17	19	19	19	20	22	24	23	26	28	28	30	32	32	34	36
Malaysia	48	50	52	52	50	51	50	51	51	45	44	43	49	50	52	50
Mexico	33	37	36	36	36	35	33	35	36	33	31	30	34	34	35	35
Pakistan	n.a.	23	26	25	21	21	22	24	25	24	23	25	17	17	17	18
Peru	44	41	40	37	35	35	33	35	36	37	35	34	38	38	38	36
Philippines	28	29	25	25	26	25	25	25	23	24	24	26	34	36	38	35
Poland	41	41	36	36	35	34	37	42	46	50	53	55	58	60	61	62
Russia	21	23	27	27	28	24	25	23	21	22	21	24	28	28	27	29
South Africa	50	48	44	44	46	45	46	51	49	47	45	41	43	42	44	44
South Korea	40	42	43	43	45	50	51	51	56	55	54	54	56	55	55	56
Sri Lanka	n.a.	n.a.	37	34	35	32	31	32	32	31	32	33	40	37	38	37
Taiwan	55	59	57	57	56	59	59	57	57	56	58	61	61	61	61	62
Thailand	32	32	33	33	36	38	36	33	35	34	35	34	37	35	38	38
Turkey	38	36	31	31	32	35	38	41	46	44	44	42	49	50	45	42
USA	78	76	75	75	75	76	73	72	73	75	71	71	73	73	74	76
Vietnam	25	26	24	24	26	26	26	26	27	27	27	29	31	31	31	31

Source: Transparency International (2000-2015)

Based on 13 different surveys and assessments from 12 different institutions, the Corruption Perception Index ranks most of the countries in the world by their perceived level of corruption on a yearly basis. The scores ranges from 0 (high perceived corruption) to 100 (low perceived corruption).

Table 4.5.D. Yearly competition in the market for corporate control

Nation	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Brazil	2.63 %	1.41 %	1.52 %	1.36 %	1.40 %	1.46 %	3.46 %	2.28 %	3.39 %	2.92 %	1.61 %	1.91 %	1.42 %	1.14 %	0.57 %	1.45 %
Chile	0.77 %	2.41 %	1.63 %	0.84 %	0.42 %	0.41 %	0.82 %	2.52 %	0.85 %	1.72 %	1.76 %	3.06 %	1.78 %	1.32 %	1.74 %	0.90 %
China	0.28 %	0.17 %	0.98 %	1.09 %	0.29 %	0.51 %	0.77 %	0.65 %	0.56 %	0.71 %	0.29 %	0.43 %	0.52 %	0.64 %	0.57 %	0.67 %
Colombia	4.11 %	1.67 %	0.00 %	0.91 %	2.83 %	4.08 %	0.00 %	2.22 %	1.12 %	1.15 %	4.76 %	5.06 %	1.32 %	4.17 %	0.00 %	0.00 %
Greece	0.97 %	2.24 %	1.92 %	0.88 %	0.94 %	2.32 %	1.39 %	1.38 %	1.38 %	0.70 %	1.08 %	0.74 %	1.15 %	0.40 %	0.00 %	0.00 %
India	0.32 %	0.33 %	0.21 %	0.18 %	0.47 %	0.80 %	0.65 %	0.45 %	0.71 %	0.65 %	0.66 %	0.39 %	0.37 %	0.30 %	0.34 %	0.17 %
Indonesia	0.35 %	2.54 %	1.82 %	1.50 %	2.42 %	1.49 %	1.16 %	1.04 %	1.52 %	2.26 %	2.86 %	1.14 %	0.87 %	0.21 %	0.20 %	0.19 %
Malaysia	0.51 %	1.00 %	0.35 %	1.11 %	0.31 %	0.30 %	1.57 %	1.53 %	0.41 %	0.53 %	1.37 %	0.97 %	0.33 %	0.78 %	0.34 %	0.34 %
Mexico	2.86 %	2.99 %	1.84 %	1.90 %	0.66 %	1.33 %	3.79 %	3.20 %	0.00 %	0.00 %	2.31 %	0.78 %	0.00 %	1.45 %	0.00 %	0.74 %
Pakistan	0.14 %	0.00 %	0.28 %	0.00 %	0.16 %	0.16 %	0.64 %	0.32 %	0.64 %	0.95 %	0.16 %	0.00 %	0.36 %	0.36 %	0.36 %	0.18 %
Peru	0.96 %	0.98 %	1.01 %	1.54 %	1.56 %	1.04 %	1.06 %	1.60 %	1.00 %	1.03 %	2.51 %	1.49 %	5.61 %	2.36 %	1.90 %	0.94 %
Philippines	2.19 %	1.74 %	0.43 %	1.28 %	0.43 %	1.70 %	1.68 %	1.65 %	1.64 %	1.63 %	1.20 %	1.59 %	1.59 %	2.76 %	0.38 %	1.15 %
Poland	2.67 %	3.48 %	1.98 %	0.53 %	1.90 %	0.43 %	2.77 %	1.99 %	1.16 %	1.91 %	2.28 %	1.19 %	0.95 %	1.15 %	2.41 %	6.31 %
Russia	0.75 %	0.38 %	6.39 %	0.75 %	1.70 %	0.48 %	2.41 %	6.08 %	6.60 %	9.82 %	7.19 %	4.16 %	4.63 %	3.63 %	3.88 %	3.38 %
South Africa	2.81 %	1.96 %	0.70 %	2.56 %	1.63 %	1.44 %	2.79 %	2.67 %	1.09 %	1.98 %	1.99 %	0.86 %	1.48 %	1.55 %	0.93 %	2.22 %
South Korea	0.56 %	0.50 %	0.66 %	0.39 %	0.51 %	0.68 %	1.01 %	0.63 %	0.84 %	1.12 %	1.40 %	1.11 %	1.30 %	1.00 %	1.57 %	1.69 %
Sri Lanka	1.02 %	0.00 %	0.34 %	0.34 %	0.00 %	0.00 %	0.00 %	0.34 %	0.34 %	0.34 %	2.37 %	0.68 %	0.34 %	1.02 %	1.69 %	0.00 %
Taiwan	0.38 %	1.71 %	2.04 %	0.60 %	0.57 %	1.88 %	1.31 %	1.29 %	0.42 %	0.54 %	0.92 %	0.38 %	0.74 %	0.48 %	0.59 %	1.03 %
Thailand	0.52 %	0.52 %	0.75 %	1.19 %	1.51 %	1.19 %	0.39 %	0.96 %	0.57 %	1.12 %	1.11 %	1.47 %	0.18 %	0.51 %	0.33 %	0.47 %
Turkey	0.95 %	0.97 %	0.69 %	0.41 %	0.00 %	3.89 %	1.54 %	2.70 %	3.60 %	2.02 %	0.38 %	1.14 %	4.55 %	2.13 %	3.54 %	1.02 %
USA	9.08 %	7.92 %	6.47 %	7.71 %	6.56 %	7.62 %	8.59 %	9.02 %	6.54 %	7.75 %	7.85 %	6.19 %	5.95 %	5.38 %	5.70 %	6.03 %
Vietnam	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.62 %	2.66 %	1.12 %	1.36 %	1.00 %	0.66 %	2.62 %	1.63 %

Source: Yearly data on the number of listed firms in each country is obtained from World Bank's WDI database (The World Bank, 2016); yearly data on the number of public firms acquired in each country is gathered from SDC platinum using the criteria in Table 4.5.E.

C.4 SUMMARY STATISTICS

Table 4.6.C. Sample characteristics by year

Year	Number of Deals		Deal Success Rate (%)		Median Deal Value ($m)		Median Relative Size (%)	
	EM	US	EM	US	EM	US	EM	US
2000	26	294	57.7	83.0	53	213	28.0	11.7
2001	37	245	64.9	90.2	64	125	32.5	10.2
2002	24	146	66.7	87.7	219	97	24.8	7.0
2003	23	155	65.2	92.3	75	147	23.4	12.5
2004	21	166	66.7	89.8	25	181	20.1	16.2
2005	34	154	76.5	90.9	152	214	33.5	8.7
2006	33	150	75.8	88.0	157	367	22.5	13.7
2007	37	174	75.7	86.2	99	354	25.4	12.9
2008	38	125	60.5	78.4	113	198	15.5	14.6
2009	39	100	76.9	79.0	121	214	26.0	14.5
2010	43	116	74.4	85.3	113	340	24.1	8.8
2011	41	81	73.2	77.8	100	441	11.4	16.7
2012	30	98	76.7	91.8	87	380	30.7	13.7
2013	31	107	64.5	90.7	50	274	19.3	17.4
2014	41	118	82.9	86.4	108	370	20.4	15.3
2015	44	150	68.2	84.0	116	642	32.4	20.5

Success rate is calculated by dividing all successful deals by all initial takeover bids. All other variables are described in detail in Appendix C.2.

Table 4.6.D. Sample characteristics by nation

Nation	Number of Deals	Deal Success Rate (%)	Median Deal Value ($m)	Median Relative Size (%)	Average Competition (%)	Average CPI Score
Brazil	21	76.2	489	32.4	2.5	37
Chile	4	25.0	437	27.1	1.3	71
China	14	71.4	562	20.1	0.6	36
Colombia	3	100.0	357	41.6	4.1	40
Greece	22	86.4	170	25.1	1.6	42
India	54	72.2	40	16.9	0.5	33
Indonesia	8	50.0	107	27.0	1.5	26
Malaysia	43	72.1	64	29.0	0.8	50
Mexico	6	83.3	569	13.7	1.8	33
Pakistan	2	50.0	47	12.4	0.7	21
Peru	2	50.0	256	30.1	3.3	40
Philippines	13	61.5	117	12.1	1.4	29
Poland	27	63.0	23	28.1	2.4	53
Russia	10	80.0	948	16.5	5.8	22
South Africa	68	63.2	119	22.2	2.1	46
South Korea	105	81.0	55	34.7	1.1	53
Sri Lanka	8	100.0	11	14.8	1.5	34
Taiwan	85	60.0	182	28.2	1.2	59
Thailand	28	64.3	105	18.6	1.0	35
Turkey	12	91.7	72	27.9	2.6	43
USA	2 379	86.6	242	12.7	7.4	75
Vietnam	7	85.7	19	63.8	1.9	31

All variables are described in detail in Appendix C.2.

D METHODOLOGY

D.1 THE CROSS SECTIONAL TEST

The t-distributed test statistic for testing H_0: $\overline{CAR}_\gamma(T_1, T_2) = 0$ using a cross sectional test is given by:

$$t_{\overline{CAR}_{\gamma(T_1,T_2)}} = \sqrt{N_\gamma}\,\frac{\overline{CAR}_\gamma(T_1, T_2)}{S_{\overline{CAR}_\gamma(T_1,T_2)}} \tag{1}$$

Were $S_{\overline{CAR}_\gamma(T_1,T_2)}$ is the standard deviation of the average cumulative abnormal returns of group γ over the given time period (T_1, T_2):

$$S^2_{\overline{CAR}_\gamma(T_1,T_2)} = \frac{1}{N-1}\sum_{i=1}^{N_\gamma}(\widehat{CAR}_i(T_1, T_2) - \overline{CAR}_\gamma(T_1, T_2))^2 \tag{2}$$

D.2 THE BMP TEST

Using the BMP test, we can test H_0 through the following test statistic:

$$z_{BMP,\gamma} = \sqrt{N_\gamma}\frac{\overline{SCAR}_\gamma}{S_{\overline{SCAR}_\gamma}} \sim N(0,1) \tag{1}$$

were $\overline{SCAR}_\gamma$ is the averaged standardized cumulative abnormal returns, across the N_γ securities included in group γ, with a standard deviation of $S_{\overline{SCAR}_\gamma}$:

$$\overline{SCAR}_\gamma = \frac{1}{N_\gamma}\sum_{i=i}^{N_\gamma} SCAR_i \tag{2}$$

$$S^2_{\overline{SCAR}_\gamma} = \frac{1}{N_\gamma - 1}\sum_{i=1}^{N_\gamma}(SCAR_i - \overline{SCAR}_\gamma)^2 \tag{3}$$

and $SCAR_i$ is the standardized cumulative abnormal returns for security *i*:

$$SCAR_i = \frac{CAR_i}{S_{CAR_i}} \tag{4}$$

S_{CAR_i} is the forecast error corrected standard deviation proposed by Mikkelson & Partch (1988), which adjusts the test statistic for serial correlation. When using the market model to estimate normal returns, the forecast error corrected variance can be expressed as follows:

$$S^2_{CAR_i} = S^2_{AR_i}(L_i + \frac{L_i^2}{M_i} + \frac{(\sum_{T=T_1+1}^{T_2}(R_{m,t} - \bar{R}_m))^2}{\sum_{T=T_0}^{T_1}(R_{m,t} - \bar{R}_m)^2}) \quad (5)$$

were L_i and M_i is the number of non-missing abnormal returns in the event window and estimation window respectively for firm *i*, and $S^2_{AR_i}$ is the variance of the abnormal returns in the estimation window. The variance of the abnormal returns in the estimation window is equivalent to the variance of the error term in the market model regression of stock *i*, $\hat{\sigma}^2_{\varepsilon_i}$:

$$S^2_{AR_i} = \hat{\sigma}^2_{\varepsilon_i} = \frac{1}{M_i - 2}\sum_{t=T_0}^{T_1}(AR_{i,t})^2 = \frac{SSR}{M_i - 2} \quad (6)$$

were *SSR* is the sum of squared residuals from the market regression.

D.3 Regression analysis

To test the hypotheses presented in Section 3, several models are formulated and estimated using standard OLS regression analysis. Important pitfalls of regression analysis relevant to our analysis are briefly discussed in the following.

OLS is one of the most common techniques used in multivariate analysis (Wooldridge, 2009). By definition, the estimated parameters in an OLS regression minimizes the sum of squared residuals. We point to Woolridge (2009) for additional reading on the properties of the OLS estimator. As the OLS estimators are only unbiased under a set of assumptions, there are several econometric pitfalls to be aware of when estimating OLS models. Specifically, we focus on avoiding and checking for heteroscedasticity and multicollinearity throughout the analysis.

Heteroscedasticity, meaning that the variance of the error term changes across different segments of the population, causes the estimated parameters to be biased. Huber (1967) first introduced heteroscedasticity-consistent standard errors, which allow the fitting of a model

that contains heteroscedastic residuals. As heteroscedasticity-consistent standard errors are valid more often than the usual OLS standard errors, Woolridge (2009) makes a case for always reporting only the heteroscedasticity-consistent standard errors in cross sectional applications, given a reasonable sample size. This practice is being adopted by a growing number of researchers (Wooldridge, 2009). All regressions within this thesis are reported with heteroscedasticity-consistent standard errors and the corresponding significance level.

Multicollinearity describes a situation where two or more explanatory variables are highly correlated. Perfect collinearity between two variables is a violation of the OLS-assumptions, and is resolved by omitting variables. If an explanatory variable has a strong, but not perfect, linear relationship to the other independent variables, the variance of its estimated parameter will be inflated. Although not a violation of the OLS-assumptions, such multicollinearity problems can make it difficult to estimate the effect of any of the correlated variables on the explanatory variable. According to Wooldridge (2009), such problems can indicate that the questions asked are too subtle for the available data to answer with any precision. One should thus consider narrowing the scope of the research. We employ the variance inflation factor (VIF) to check for multicollinearity in our models (Wooldridge, 2009). It is important to note that one should only consider the VIF of the coefficients of interest, as multicollinearity within the group of control variables does not necessarily pose a problem.

D.4 LOGISTIC REGRESSION

When estimating the success probability of each deal in our sample, we use a logistic regression. Using OLS to estimate a model with a binary dependent variable has some obvious drawbacks. First, the fitted probabilities can be greater than one and less than zero, which does not make economic sense. Further, the partial effect of any explanatory variable appearing in level form is constant. The logistic regression measures the relationship between the binary dependent variable and the independent variables by estimating probabilities using a logistic function, which is the cumulative logistic distribution. We point to Woolridge (2009) for additional reading on binary response models.

E MEASURES OF WEALTH EFFECTS

E.1 TEST OUTPUT

Table 6.2.A. Cross sectional test output

Variable	EM		US		EM=US	
	t-value	p-value	t-value	p-value	t-value	p-value
Runup (%)						
Target	6.15	0.000***	9.15	0.000***	0.973	0.331
Bidder	1.37	0.172	1.76	0.077*	0.54	0.589
Combined	2.01	0.045**	2.62	0.009***	0.803	0.422
Announcement returns (%)						
Target	10.40	0.000***	44.44	0.000***	-14.73	0.000***
Bidder	4.73	0.000***	-7.34	0.000***	6.74	0.000***
Combined	5.99	0.000***	8.86	0.000***	0.74	0.46
Total returns (%)						
Target	10.16	0.000***	37.46	0.000***	-8.92	0.000***
Bidder	2.97	0.003***	-1.81	0.071*	3.488	0.001***
Combined	4.06	0.000***	6.18	0.000***	1.03	0.305

*p<0.1 **p<0.05 ***p<0.01
The first and third column shows the t-statistics from a test with H_0: mean=0 for the EM- and US sample, while column two and four shows the corresponding p-values. The fifth column shows the t-statistics from a test with H_0: EM mean=US, while column six shows the corresponding p-values.

Table 6.2.B. BMP test output

Variable	EM		US	
	z-value	p-value	z-value	p-value
Runup (%)				
Target	6.43	0.000***	10.94	0.000***
Bidder	1.81	0.070*	0.28	0.779*
Announcement returns (%)				
Target	10.76	0.000***	41.18	0.000***
Bidder	4.34	0.000***	-8.99	0.000***
Total returns (%)				
Target	11.21	0.000***	41.62	0.000***
Bidder	3.20	0.001***	-4.10	0.000***

*p<0.1 **p<0.05 ***p<0.01
The first and third column shows the z-statistics from a test with H_0: mean=0 for the EM- and US sample, while column two and four shows the corresponding p-values.

E.2 DISTRIBUTIONS

Figure 6.2.A. Value creating and value destroying deals by sample

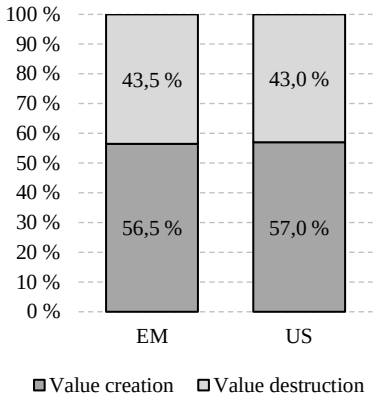


Figure 6.2.D. Distribution of target-, bidder-, and combined dollar returns per deal value

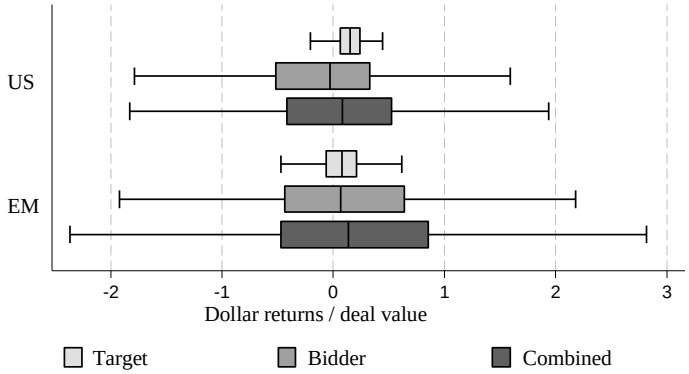


Figure 6.2.E. Difference in total dollar returns (%), EM sample

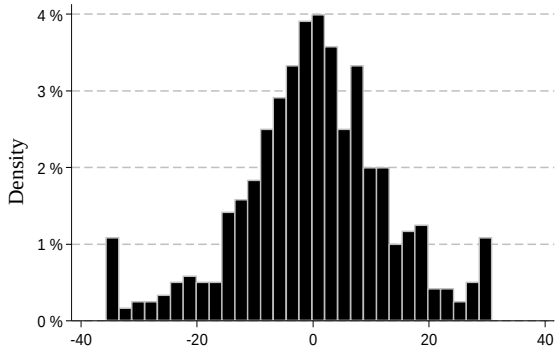


Figure 6.2.F. Difference in total dollar returns (%), US sample

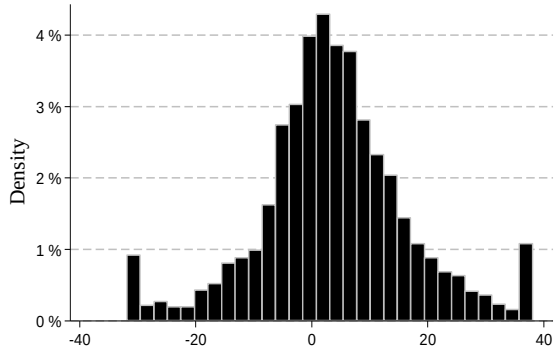


Figure 6.2.G. Target's share of total dollar returns, EM sample

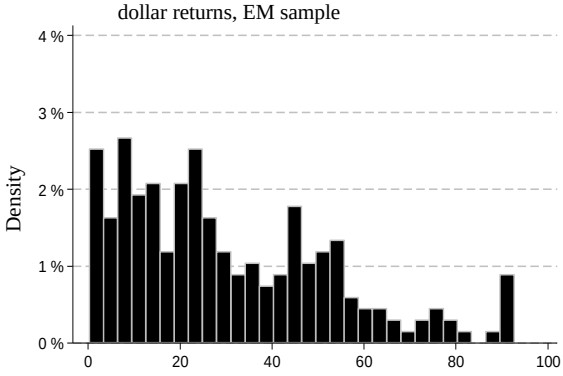
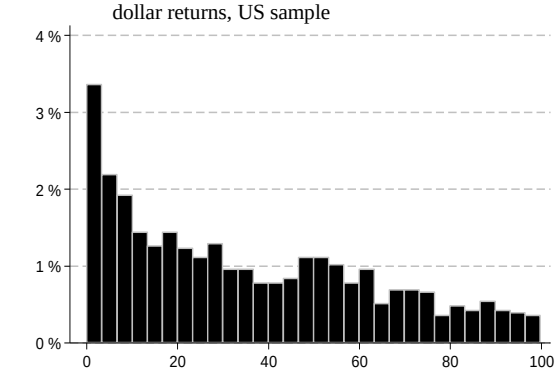


Figure 6.2.H. Target's share of total dollar returns, US sample



E.3 BOX PLOTS OF DOLLAR RETURNS BY YEAR

Figure 6.2.I. Boxplot of target total dollar returns ($m) in the EM sample

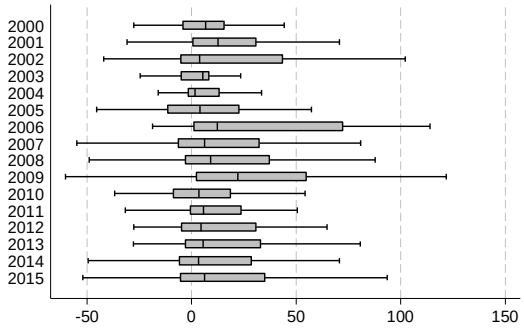


Figure 6.2.J. Boxplot of target total dollar returns ($m) in the US sample

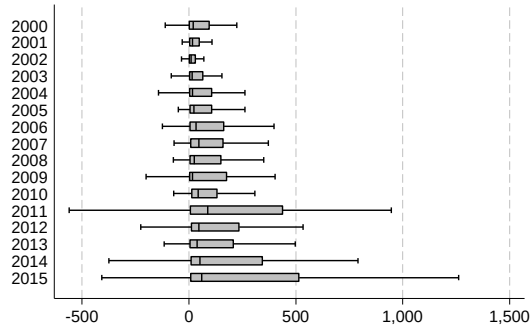


Figure 6.2.K. Boxplot of bidder total dollar returns ($m) in the EM sample

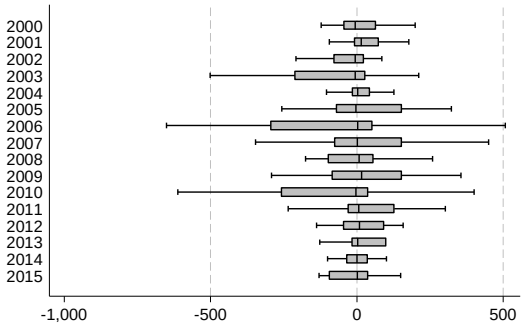


Figure 6.2.L. Boxplot of bidder total dollar returns ($m) in the US sample

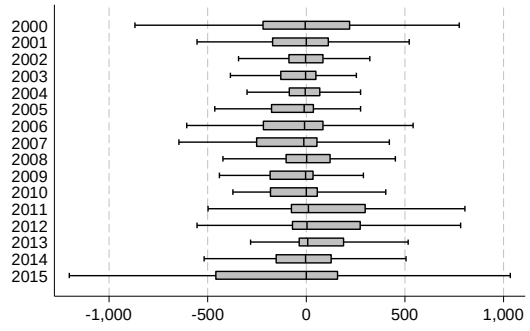


Figure 6.2.M. Boxplot of combined total dollar returns ($m) in the EM sample

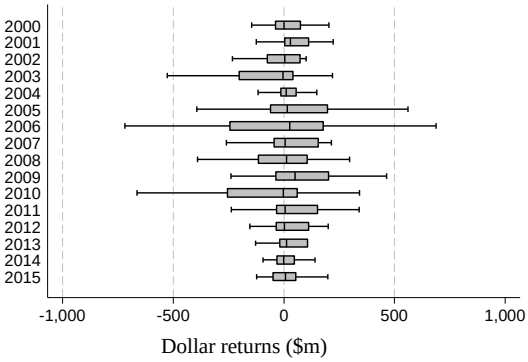
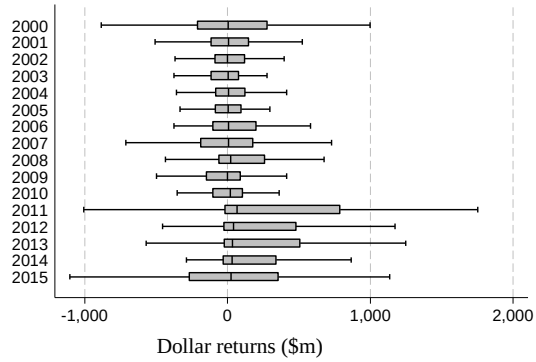


Figure 6.2.N. Boxplot of combined total dollar returns ($m) in the US sample



F EMPIRICAL ANALYSIS AND RESULTS

F.1 SCATTER PLOTS

Figure 7.1.A. Scatter plot of target total returns (%) vs. competition (%), EM sample

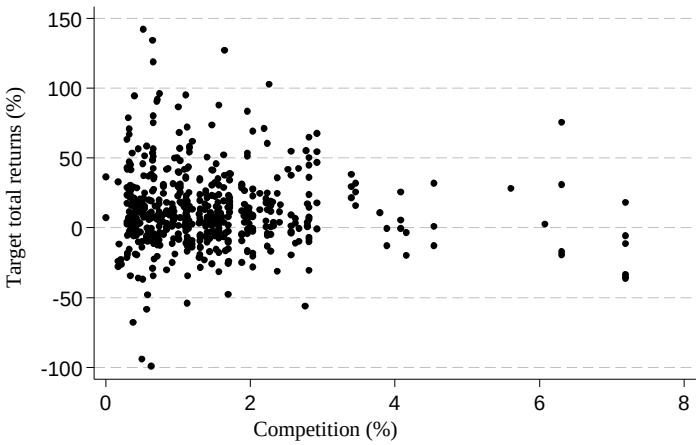


Figure 7.1.B. Scatter plot of target total returns (%) vs. competition (%), US sample