



NATIONAL RESEARCH UNIVERSITY  
HIGHER SCHOOL OF ECONOMICS

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**THE PERFORMANCE OF  
MERGERS AND ACQUISITIONS IN  
EMERGING CAPITAL MARKETS:  
NEW EVIDENCE**

BASIC RESEARCH PROGRAM

WORKING PAPERS

SERIES: FINANCIAL ECONOMICS  
WP BRP 20/FE/2013

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## **THE PERFORMANCE OF MERGERS AND ACQUISITIONS IN EMERGING CAPITAL MARKETS: NEW EVIDENCE\***

Researchers have long tried to define the impact of corporate mergers and acquisitions on company performance. We contribute to the existing literature by examining the influence of M&A deals on company value in the short-run using the event study method and in the long-run based on economic profit concept. Examining a sample of 80 deals initiated by companies from emerging capital markets over 2002-2009, we find that M&As are value-destroying deals for the combined firms. Results from the long-run analysis prove the negative industry-adjusted differences between post-acquisition and pre-acquisition performance measures. The difference is equal to a significant -3.3% for the EBITDA/Sales ratio. The Economic Profit approach demonstrates a similar result. Our findings from the short-run analysis indicate that the announcements of M&A deals generate significant high returns for target shareholders, while the returns to bidder shareholders are not significant. We also analyze the determinants of M&A performance, such as method of payment, business similarity, and the target's country.

JEL: G34

Keywords: Mergers and Acquisitions, Value Creation, Economic Profit, Company Performance.

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\* This study was conducted as part of the Basic Research Program at the National Research University Higher School of Economics (HSE) in 2012.

## **1. Introduction**

The industrial development of emerging markets has been a powerful driver of mergers and acquisitions. Past decades show an increase in M&A activity, both in terms of the number of deals and the market value involved in these deals. The share of developing countries in the global volume of mergers and acquisitions increased from 5% to 20-25% during 2001-2012 (Figure 1).

The permanent increase in the number of M&A deals, both in developed and emerging markets, has led to an increase in research on the impact of M&As on company performance. For some time, many researchers have addressed the influence of corporate acquisitions on performance improvements. Unfortunately, there appears to still be no consensus as to whether acquisitions create improvements in company performance. Academic papers mainly concentrate on the effects of M&A strategies in developed countries, while such effects in countries with emerging capital markets are virtually unexplored.

In this study, we investigate M&A performance in emerging capital markets. We contribute to the existing literature by using economic profit to assess the impact of M&A on a company's value and also use traditional methods, such as event study and accounting study, in order to compare these results. There are only a few studies that examine the performance of M&A using the concept of economic profit and analysing such measures as economic value added (EVA) and the residual income valuation model (RIV) (Sirower, O'Byrne, 1998, Yook, 2000, Bild et al, 2010). These studies were conducted using a sample of M&As that occurred in developed countries. Our empirical analysis is based on a sample of 80 M&A deals in emerging markets over the period of 2000-2009, meaning that we examine the most recent period in contrast to existing studies.

The remainder of this paper is organized as follows: Section 2 provides a literature review on the performance of M&A in developed and emerging capital markets. Section 3 defines the methodology and suggests the hypotheses. Section 4 describes the sample selection procedure. Section 5 provides a discussion of the results, and Section 6 concludes the study.

## **2. Literature review**

Researchers commonly employ two approaches to assess the impact of M&A on company performance: event studies and accounting studies. The first one is based on analyzing the stock market's reaction to M&A announcements, while the second one examines the reported financial results of acquirers before and after acquisitions in order to understand how operating performance has changed due to the deal.

Stock market evidence strongly indicates that target shareholders gain significantly in M&A deals. Cumulative abnormal returns (CAR) vary between 7-42%, regardless of variations in the sample size, event window, and time period (Schwert, 1996; Maqueira et al, 1998; Eckbo, Thorburn, 2000; Goergen, Renneboog, 2004; Billett et al, 2003; Campa, Hernando, 2004; Kiyamaz, Baker, 2008). Returns to acquiring firms are sometimes positive, sometimes negative, and sometimes equal to zero (Loderer, Martin, 1990; Baker, Limmack, 2002; Walker, 2000; Moeller et al, 2005, 2007; Bradley, Sundaram, 2006; Betton et al, 2008; Hackbarth, Morrelec, 2008; Hamza, 2009, Krishnan et al, 2009; Chang, Tsai, 2013). We summarize the results of some of the latest major studies of short-run firm performance following the acquisition of target firms in Appendix A. It is important to note that, despite examining the same periods and using similar event windows, the researchers have come to contrary results. Such divergence in research outcomes can be explained mainly by differences in sample selection procedures. For example, some authors examine only the largest deals, whereas others do not set such criteria. The divergence is also due to the differences in methods that are used to generate normal returns for computing CARs. In Appendix B we summarize the results of the latest studies that examine the long-term performance of M&As. Most of the studies find long-term negative movement the stock prices of the acquiring firm. However, the implementation of long-term methods is a sophisticated and not straightforward task. The statistical reliability and limitations of these methods has been a topic for debate in the academic literature for some time now. As a result, many authors indicate that tests with a long horizon are highly susceptible to the joint-test problem, and have low power. As such, we should have more confidence in the results of short-horizon tests, than in the results of long-horizon tests. According to Kothari and Warner (2007), “short-horizon tests represent the ‘cleanest evidence we have on efficiency’ [Fama, 1991], but the interpretation of long-horizon results is problematic.”

The results of the latest empirical studies analysing changes in company operating performance following M&As are also inconsistent (Appendix C). Studies where authors used performance measures based on cash flow (such as operating cash flow to the total market value of a firm, or the book value of a firm, or sales) usually suggest improved company performance following acquisitions (Healy et al, 1992; Switzer, 1996; Manson et al, 1994; Powell, Stark, 2005; Devos et al, 2009), while studies that use profitability-based measures (return on assets or return on equity) indicate that mergers perform as well as relevant benchmarks, or merged companies experience a significant decline in margins (Yeh, Hoshino, 2001; Sharma, Ho, 2002; Tsung-Ming, Hoshino, 2000). This suggests that accounting rules may distort performance measurement and lead to a negative assessment of mergers. The differences in results are also

due to differences in national environments, accounting standards, sample size, sample period, and statistical methodology (Sudarsanam, 2003; Bruner, 2004).

Academic papers mainly concentrate on the effects of M&A strategies in developed countries, while these effects in emerging capital markets are virtually unexplored. There are only several papers that examine the influence of M&As on company performance in India, China, Malaysia, Slovenia, Poland, Romania, and Turkey (Pawaskar, 2001; Trojanowski, 2008; Beena, 2004; Rahman, Limmack, 2004; Changqi, Ningling 2010; Mantravadi, Reddy, 2008; Gregoric, Vespro, 2009; Wong et al, 2009, Ho-Mou Wu, 2009).

Based on a sample of 53 block transactions in Poland over 1996-2000, Trojanowski (2008) found that the cumulative average abnormal returns for block trades were about 1.16%, and this result was statistically significant at the 5% level. Examining 15 Slovenian deals over 2000-2001, Gregoric and Vespro (2009) also found positive abnormal stock returns following block transactions. In these two papers the authors analyzed block trades between 5-25% of voting rights, because according to the law “any acquisition of shares that, together with other shares, provides the buyer with 25% of the voting rights of a listed company is subject to a takeover bid” (Gregoric, Vespro, 2009). Therefore, these studies did not analyze M&As and examined only block transactions excluding mandatory bids. In contrast to results indicating that target shareholders gain from M&As in mature markets, Pop (2006) suggests that the cumulative abnormal returns for Romanian targets is 0%.

Analyzing the operating performance of 118 acquiring firms in different industries in India during 1991-2003, Mantravadi and Reddy (2008) find that mergers have a slightly positive impact on the profitability of firms in the banking and finance industry, while the pharmaceutical, textile, and electrical equipment sectors saw a marginal negative impact on operating performance (in terms of profitability and returns on investment). For the chemicals and agro-product sectors, mergers had caused a significant decline both in terms of profitability margins and returns on investment and assets. These results are consistent with Kumar (2009): Based on the sample of 30 mergers occurring during 1999-2002, the author finds that post-merger profitability (ROCE), assets turnover, and debt-equity ratio of acquiring companies show no improvement. In contrast to Mantravadi, Reddy, and Kumar, Pawaskar (2001) reveals that firms performed better than the industry average in terms of profitability, based on a sample of 36 acquiring firms during 1992-1995. His results go along with Ramakrishnan’s (2008) findings, based on 87 M&A deals during 1996-2002.

Chari et al (2004) show that during the period of 1988-2002 cross-border acquisitions are associated with higher bidder returns (5.8-7.8%) when the targets are from emerging markets.

All papers that we have discussed are concentrated on analyzing stock returns in the short-run or the long-run surrounding the announcements of a M&A transaction or on examining the accounting data of acquiring firms. As we have seen, the interpretation of results based on long-horizon event studies is not straightforward. Accounting studies are criticized for their shortcomings in guiding shareholder wealth maximization (Yook, 2000). Changes in commonly used book value measures (ROA, ROE, EBITDA margins, OCF to market value of assets, among others) do not allow us to assess the impact of mergers and acquisitions on company value. These measures ignore the cost of capital (Penman, 2003). So, a company can earn a high accounting rate of return, but it may reduce shareholder value because its return on equity may be lower than a shareholder's required rate of return or opportunity costs. Another problem with accounting measures is the ability to manipulate them (Yook, 2000). These shortcomings require another measure to assess value creation in M&A deals in the long-run. Many authors view the approach based on the concept of economic profit as an alternative approach that can effectively solve the deficiencies of traditional accounting measures (Yook, 2000; Bild et al, 2002; Sirower, O'Byrne, 1998).

Based on a sample of 75 acquisitions in the United States over 1989-1993, Yook (2000) finds that acquisitions destroy company value. The median raw EVA during the five years before the deal is -\$3 million, while the median EVA in the five years following the acquisition is -\$27 million. When Yook takes into account industry dynamics, the difference becomes almost indiscernible. At the second stage of analysis, the author excludes the premium from a bidder's capital and reveals that industry-adjusted EVA shows an insignificant improvement.

In contrast to Yook, Bild et al (2010) use the residual income valuation model (RIV), along with event study analysis and accounting studies, to assess the performance of 303 M&A deals in the United Kingdom over 1985-1996. Based on the traditional accounting method, the authors conclude that M&A deals result in a significant improvement in profitability (ROE). The estimate of  $\alpha$  is +2.61%, and this value is significantly different from zero at the 1% level. However, the results from the event study and residual income analysis suggest a negative impact of M&A deals on company performance. The authors find that over the month of announcement, the acquirer's abnormal return is -1.72%, and over the 36-month post-acquisition period, the buy-and-hold abnormal return is -15.61%. These results are statistically significant at the 1% level. The residual income approach reveals that the impact of M&A on fundamental value is slightly negative, but statistically insignificant.

Sirower and O'Byrne (1998) in their paper suggest a methodology for forecasting and evaluating post-acquisition operating performance. This methodology is based on the logic of Economic Value Added (EVA) and takes into account the market value of both companies in the

few days before the deal and an acquisition premium. Based on the suggested methodology and also using event study analysis on a sample of the 41 largest US deals during 1979-1990, the authors find (1) a high correlation between the short-term returns and long-term returns, (2) a negative correlation between acquisition premium and both measures of shareholder returns, and (3) a high correlation between EVA and short-term returns (0.68), and EVA and long-term returns (0.7). So, the authors conclude that the stock market's reactions to acquisitions carry important information that can be observed by boards of directors before the effective date of these acquisitions.

A review of studies that are based on the concept of economic profit reveals the destruction of company value due to M&As and also proves the importance of analyzing market reactions to the announcements of M&As. However, there are only a few studies that examine the impact of M&A deals on shareholder value using economic profit measure in the long-run, and all of these studies were conducted based on a sample of companies from developed capital markets. In this study, we examine the performance of M&As initiated by companies from emerging capital markets, based on the economic profit approach and other widely used approaches.

### **3. Methodology and Hypotheses**

This study involves a several-step procedure. We first use pre- and post-merger accounting data to directly test for changes in operating performance. Second, we assess the impact of M&A deals on shareholder value based on economic profit measures. In the third step we analyze the effects of M&A deals initiated by companies from emerging capital markets by using the event study method. We also try to reveal the main determinants of M&A performance.

#### ***Accounting-based and value-based performance measures***

Following Martynova et al (2007), we employ four operating measures to compare pre- and post-acquisition performance: EBITDA/BVassets, EBITDA/Sales, (EBITDA- $\Delta$ WC)/BVassets, and (EBITDA- $\Delta$ WC)/Sales.

As Healy et al (1992) have indicated, change in net income is inadequate because it may be affected by both the accounting method used for the acquisition and by the choice of financing. This study employs EBITDA as a proxy for operating cash flow<sup>1</sup> used in several previous papers (Healy et al, 1992; Switzer, 1996; Ghosh, 2001). To even better reflect the cash flows of a company, EBITDA is also corrected for changes in working capital.

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<sup>1</sup> Operating cash flow is defined as sales, minus cost of goods sold and administrative expenses, plus depreciation and goodwill expenses.

We use the book values of assets as a denominator rather than market values<sup>2</sup>, since the market value might already incorporate operating efficiencies at the date of the announcement (at least partially). EBITDA is also deflated by sales, as noted by Ghosh (2001), and Powell and Stark (2005). The benefit of using sales is that it is a current measure, like the total market value of assets that is used as a deflator in above-mentioned researches.

A time period of two years before the acquisition and two years after the acquisition is chosen. According to multiple studies, we think that two years is a sufficient time period for a merging company to realize all synergies.

Comparing the two-year post-merger performance with the two-year pre-merger performance provides a measure for the change in performance. But the difference between pre-merger and post-merger performance could also be in part due to economy-wide and industry factors, or to a continuation of firm-specific performance before the merger (Healy et al, 1992). In the study of Healy et al, acquisition changes in performance measures are estimated as the intercept ( $\alpha$ ) of the cross-sectional regression of post-acquisition industry-adjusted performance measures on pre-acquisition industry adjusted performance measures. Followed by Healy et al, the estimated equation in this study is as follows (with the sample of EBITDA/Sales ratio, the formula changes due to the employed operating measure):

$$\frac{EBITDA_{post,i}^{ind}}{Sales_{post,i}} = a + b \frac{EBITDA_{pre,i}^{ind}}{Sales_{pre,i}} + e_i \quad (1)$$

where  $\frac{EBITDA_{post,i}^{ind}}{Sales_{post,i}}$  and  $\frac{EBITDA_{pre,i}^{ind}}{Sales_{pre,i}}$  are the industry-adjusted EBITDA/Sales ratio for company  $i$  from the post-merger and pre-merger years. Industry adjusted EBITDA/Sales of a firm in any given year is the difference between a firm's EBITDA/Sales measure for that year and the median EBITDA/Sales measures of other firms in that industry. The slope coefficient  $\beta$  captures any correlation in performance measures between pre-merger and post-merger years. The intercept  $\alpha$  captures acquisition-induced improvements in EBITDA/Sales or abnormal EBITDA/Sales.

As discussed in the previous section, the economic profit (EP) approach can give us more insight into the performance of M&A deals, since it better captures value creation. We use the following equation to calculate economic profit for acquirers and targets:

$$EP = (ROCE_t - WACC_t) CE_{t-1} \quad (2)$$

where  $ROCE_t$  is the Return on Capital Employed at period  $t$ ;  
 $WACC_t$  is Weighted Average Cost of Capital at period  $t$ ;

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<sup>2</sup> The total market value of assets is the sum of the market value of equity and book values of debt and preferred stock.



$CE_{t-1}$  is Capital Employed at period  $t-1$ .

Industry-adjusted economic profit (EP) is measured by comparing both acquiring and target firms with other firms that operate in the same industry:

$$EP_{i,t}^{ind} = EP_{i,t} - \frac{\text{Industry}EP_t}{\text{Industry}CE_{t-1}} \cdot CE_{i,t-1} \quad (3)$$

where,  $EP_{i,t}$  is firm  $i$ 's EP in year  $t$ ;

$CE_{i,t-1}$  is firm  $i$ 's Capital Employed at the end of year  $t-1$ ;

$\text{Industry}EP_t$  is the industry average EP in year  $t$ ;

$\text{Industry}CE_{t-1}$  is the industry average Capital Employed at the end of year  $t-1$ ;

$\frac{\text{Industry}EP_t}{\text{Industry}CE_{t-1}}$  is the average EP created per dollar of capital in a particular industry during year  $t$ ;

$\frac{\text{Industry}EP_t}{\text{Industry}CE_{t-1}} \cdot CE_{i,t-1}$  is the industry's average EP for a firm of the same size (Yook, 2000).

#### ***Announcement-period abnormal stock return***

To test for stock-price reaction to M&A announcements, we applied the standard event study method to calculate abnormal returns. Normal (predicted) returns are generated using the market model:

$$R_{jt} = \alpha_j + \beta_j R_{mt} + \varepsilon_{jt} \quad (4)$$

where  $R_m$  is the return on a market index on day  $t$ ;  $\beta_j$  measures the sensitivity of firm  $j$  to the market;  $\alpha_j$  measures the mean return over the period that is not explained by the market;

$t \in (t_1; t_n)$  is the estimation period,  $\varepsilon_{jt}$  is the statistical error;  $E(\varepsilon_{jt}) = 0$ ,  $\text{var}(\varepsilon_{jt}) = \sigma^2$

The abnormal return here is  $AR_{j\tau} = R_{j\tau} - \hat{\alpha}_j + \hat{\beta}_j R_{m\tau}$ , where,  $R_{j\tau}$  is the actual return,  $\tau \in (T_1; T_m)$  is the event window.

The corresponding market index to each country is used to measure market returns.

We employ a 37-day event window, comprised of 18 pre-event days, the event day, and 18 post-event days, and also vary it by decreasing the number of days. We take 200 trading days (from -240 to -40) prior to the event window as the estimation period to calculate the predicted return to each firm. We leave 22 days before the announcement date of a M&A to incorporate insider trading, which is typical to emerging capital markets.

The general test used for all hypotheses is the following (Weston et al, 2002; Kothari, Warner, 2007):

$$H_0 : CAR = 0$$

Test statistics are defined as follows:

$$t = \frac{CAR(T_1; T_m)}{\sqrt{m\sigma^2(t_1; t_n)}}, \text{ where } \sigma^2(t_1; t_n) = \sum_{t=t_1}^{t_n} \sigma^2(AR_t) \quad (5)$$

where  $m$  is the length of the event window.

### ***Hypotheses***

The key objective of this empirical paper is to examine the performance of M&A in emerging capital markets. In the previous section we observed mixed results about the combined company performance after M&A deals. Acquirers in our sample are from emerging capital markets, while targets are from both emerging and developed countries. This make us doubt in the ability of companies operating in an imperfect informational and institutional environment to realize synergies in the post-acquisition period. So, we suggest testing the following hypothesis:

*H1: M&A deals negatively affect the combined company performance in emerging capital markets* ( $a < 0; EP_{post} < EP_{pre}; CAR < 0$ )

This study also controls for several factors that could potentially influence the post-acquisition performance: (1) cross-border/domestic acquisitions, (2) business similarity between the acquiring firm and the target firm, (3) method of payment, and (4) the crisis of 2008.

#### (1) Cross-border / domestic acquisitions

On the one hand cross-border acquisitions should lead to significant value creation because of the high potential for synergies due to geographic diversification. Bidding and target firms in cross-border deals can also potentially benefit from the imperfections of the international markets of capital, factors, and products. On the other hand, a greater informational asymmetry between the participating companies, as well as cultural and regulatory differences, can deter operating improvements. The results of the existing research are mixed. Moeller and Schlingemann (2005), for example, show that cross-border deals lead to lower improvements in comparison with domestic ones. Gugler et al (2003) do not find any significant difference between the performance of cross-border and domestic deals. Following Moeller and Schlingemann (2005), we expect that the potential costs of cross-border M&A deals would offset the benefits in emerging capital markets.

*H2: Local M&A deals show better performance than cross-border transactions.*

#### (2) Business similarity.

Focusing deals can potentially bring more operational synergies, while diversifying deals might lead to financial synergies. At the same time, when a company is involved in a diversifying deal, it faces a higher level of informational asymmetry, since it does not understand

the business as much as in a focusing deal. The academic evidence is highly inconsistent. While some studies confirm the deterioration of corporate value following a diversifying acquisition (Powell, Stark, 2005; Linn, Switzer, 2001), others found that diversifying acquisitions significantly outperform their peers (Ghosh, 2001). The empirical results based on data from emerging capital markets are also mixed (Lins, Sevaes, 2002; Claessens, et al, 2001). These markets are as a rule characterized by a dominance of diversified companies. The specific features of emerging markets, to some extent, can affect the performance of an integration strategy. In developed countries, well-organized capital markets, competitive product markets, and labour markets, as well a high level of contract enforcement, guarantee similar rules of play both for diversified and focused firms. In these conditions, the benefits of integration may be reduced. On the contrary, in an imperfect institutional environment and with a weak enforcement of contracts, diversified firms may be of value. They can mimic the beneficial functions of various institutions that are present in developed markets, and thereby create a potential source of value growth for integrated firms (Khanna, Palepu, 1997). But, on the other hand, severe market imperfections that increase the potential agency costs resulting from higher information asymmetry, can lead to value destruction in firms that undertake such strategies. Thus, we hypothesize:

*H3: Diversifying M&A deals destroy company value more than focused transactions.*

(3) Method of payment.

Managers always tend to pay with equity when they believe that shares are overvalued. Therefore, announcing a deal that is paid in stock should have a more negative effect on the acquiring company's returns than cash deals (Martynova et al, 2007). Another justification for the lower created value in stock transactions lies in the fact that a company does not always have the stock in hand and is obliged to issue new shares to finance acquisition, which means a dilution of shares for current shareholders. On the other hand, when deciding on the method of financing, a potential acquirer takes into consideration other investment opportunities. If a company has a sufficient number of lucrative investment opportunities, it will be more prone to use stock, which will save cash and avoid a debt increase ("Theory of investment opportunities", Martin, 1996; Dong et al, 1996). Based on the theory of investment opportunities, we hypothesize:

*H4: M&A deals paid for by stock show better performance than deals paid for by cash.*

(4) The impact of the crisis of 2008.

The sample for this study consists of M&A deals occurring during a period covers the crisis of 2008. We anticipate that post-crisis deals perform better than pre-crisis deals. There are several arguments supporting this hypothesis. First of all, following crises, acquiring companies

usually have less cash to finance M&A activities, meaning that each opportunity for acquisitions faces more scrutiny and, as a result, decisions on transactions are more balanced. Moreover, during the crisis, prices fell considerably, meaning that it is possible to buy good companies on the cheap.

*H5: Post-crisis deals perform better than the pre-crisis deals.*

#### **4. Data and sample characteristics**

This study is based on a sample of companies from developing countries. The definition of for developing countries was taken from the IMF, which allowed us to include the following countries into the sample: Argentina, Brazil, Bulgaria, Chile, China, Estonia, Hungary, India, Indonesia, Latvia, Lithuania, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Russia, South Africa, Thailand, Turkey, Ukraine, and Venezuela. We used the Bloomberg database to identify an initial sample of publicly traded deals that fit into the category of completed transactions during the period of 2002-2009. We further require that (1) the acquirer is from one of the countries listed above, while the target is from any other country, (2) there is one acquirer and one target participating in a deal, (3) both the bidder and the target are public companies, so that the accounting data and share price performance are both available, (4) the acquiring firm controls less than 25% of the shares of the target firm before the announcement (we check that financial accounts are consolidated after the deal on a case-by-case basis), and (5) both the acquirers and targets are not financial companies.

The listed above criteria allowed us to gather a sample of 549 transactions.

At the next step, we eliminate deals in which acquiring firms had experienced several instances of M&A during the analysed period in order to avoid the problem of compounding events. This criterion, along with excluding deals with insufficient financial data, gives us a sample of 80 transactions.

Out of these deals, more than half – 48 deals (60.0%) – was announced in 2007-2009. Target companies are mostly from the Consumer (31 deals – 38.8%) and Basic materials (16 deals – 20.0%) industries. Acquirers were mainly from the Consumer (33 deals – 28.8%), Basic Materials (17 deals – 21.3%), and Industrial (17 deals – 21.3%) industries. Thirty-two deals (40.0%) were cross-border, while the rest were local. Fifty-two deals (65.0%) were focused deals, which means that the target and acquirer were attributed to one and the same industry, while 45 deals (56.25%) were paid for in cash and 18 deals (22.5%) were equity-financed. The rest of the deals either did not disclose the method of payment or paid with mixture of stock and cash.

#### **5. Empirical findings and results**

### *Operating performance*

To test our hypothesis that M&A deals negatively affect combined company performance in developing countries, we start by calculating the differences between pre-acquisition and post-acquisition values of chosen performance measures. We report our results in Table 1.

The differences between the median raw (without adjusting for industry) pre-acquisition and median raw post-acquisition performance measures are negative and statistically significant for almost all points in time. According to Table 1, EBITDA/BVassets, (EBITDA- $\Delta$ WC)/BVassets, (EBITDA- $\Delta$ WC)/Sales ratios deteriorate in post-merger periods relative to pre-merger periods (-1.8%, -2.5%, and -0.9%, respectively). According to the Wilcoxon rank sum test, the differences are statistically significant at the 10% level. The EBITDA/Sales ratio also decreases after the deals, but the difference is not statistically significant.

The deterioration become more exacerbated for EBITDA/Sales and EBITDA/BV assets when we adjust for industry performance (-3.3% and -3.4% respectively). The results are statistically significant at the 10% level. These outcomes indicate that the declines in raw performance measures cannot be explained by industry moves. So, sample companies on average are not able to realize synergies from transaction.

For further testing, we split our initial sample into subsamples according to the factors reviewed above . We tested the difference by calculating z-scores.

Table 2 shows the results for all performance measures classified by the method of payment. Raw EBITDA/Sales and EBITDA/BVassets ratios are -3.4% and -0.4% for stock-financed deals, and -0.8% and -0.9% for acquisitions paid for in cash, but the results are not statistically significant. Industry-adjusted EBITDA/Sales and EBITDA/BVassets are -3.0% and 0.7% for stock-financed transactions, versus -4.2% and -4.3% for cash-financed acquisitions. The difference for only EBITDA/BVassets ratio is statistically significant at the 5% level. Thus, the results are in line with our hypothesis that stock-financed transactions perform better than cash-financed deals, which supports the theory of investment opportunities.

Table 3 checks the comparison of subsamples split by business similarity. Raw EBITDA/Sales and EBITDA/BVassets are -0.1% and -1.1% for a low level of business similarity (diversifying transactions), versus -1.9% and -2.9% for high extent of similarity (focused transactions). Industry adjustments shift the results to -3.3% and -3.0% for diversifying transactions, and to -3.4% and -3.5% for focused transactions. However, the differences are small and insignificant, which does not allow us to prove or reject the initial hypothesis for the superior performance of focused transactions.

Table 4 demonstrates the results for subsamples of cross-border versus non-cross-border deals. Raw EBITDA/Sales and EBITDA/BVassets are -3.7% and -4.4 % for cross-border

transactions and -0.7% and -0.9% for local ones. Industry adjustments provide results of -4.8% and -6.6% for cross-border subsample and -1.0% and -1.4% for non-cross-border deals (the differences are significant at the 5% level for EBITDA/BVassets ratios). Thus, it supports our initial hypothesis that local M&A deals show better performance than cross-border transactions.

We do not single out the subsamples of pre- and post-crisis M&A deals, because there are too few deals in the post-crisis period.

According to our results, the decrease in performance becomes greater as time after the acquisition passes: In a majority of subsamples, the longer window (-2 +2) shows a more significant fall in performance than the shorter window (-1 +1).

To test the robustness of the results, we use the regression analysis suggested by Healy et al, (1992)<sup>3</sup>:

$$\frac{EBITDA_{post,i}^{ind}}{Sales_{post,i}} = a + b_1 \frac{EBITDA_{pre,i}^{ind}}{Sales_{pre,i}} + b_2 CBR_i + b_3 DIV_i + b_4 PAY_i + b_5 CRISIS_i + e_i \quad (6)$$

where CBR is a dummy variable that equals 1 for cross-border deals and 0 otherwise;

DIV is a dummy variable that equals 1 for diversifying deals and 0 otherwise;

PAY is a dummy variable that equals 1 for stock transaction, 2 for cash-and-stock transaction, and 3 for purely stock deals;

CRISIS is a dummy variable that equals 1 for deals that occur during the crisis and 0 otherwise.

The results are presented in Table 5.

As we have hypothesized, operating measures demonstrate that combined company performance deteriorates after the acquisition. The alpha is negative and statistically significant in all regression models.

The results also show that post-acquisition performance is significantly dependent on pre-acquisition performance. The median post-acquisition EBITDA/Sales ratio is by 72% determined by the pre-acquisition measure, while post-transaction EBITDA/BVassets is by 49.5% dependent on the corresponding measure before the transaction. The coefficient for variable CBR is significant only in a limited number of regressions. Therefore, we do not have any additional arguments or counterarguments to change our initial result, which demonstrated that local deals perform better than cross-border ones. The coefficient for DIV variable is positive in all regressions and significant in more than half of the regressions. Thus, we can conclude that, in line with our hypothesis, focused transactions show on average better performance than diversifying ones. The payment type is positive, however, yet insignificant in almost all regressions. Therefore, we do not have grounds to change our initial outcome that

<sup>3</sup> For the sample of EBITDA/Sales ratio, the formula changes due to the employed operating indicator

equity financed transactions perform better than cash-financed deals. The dummy variable coefficient CRISIS is positive and significant, showing that during the crisis acquisitions are more efficient than in other periods. The result is again consistent with our hypothesis H5.

#### *Value performance*

As stated above, we believe that accounting measures are far from perfect, since they do not account for the cost of capital. Therefore, at the second stage of our analysis we test whether M&A deals in developing countries lead to an increase in economic profit after the deal. Following Yook (2004), we calculate economic profit for 2 years before and 2 years after the transaction, as shown in equations (3) and (4), and look at the difference between the figures. The Wilcoxon rank sum test is applied to determine whether the difference is significant. Table 6 reveals the outcomes. The raw median economic profit difference is negative (-\$16.9 million) and statistically significant at the 10% level. The difference is also negative (-\$4.0 million) and statistically significant at the 10% level for industry-adjusted economic profit, demonstrating that the decline in economic profit is partially accounted for by industry effects. The results allow us to not reject the proposed hypothesis that M&A deals negatively affect the performance of the combined company in developing countries. This conclusion is consistent with the outcome that we have found based on an analysis of accounting operating measures at the previous stage of our study.

Analysing equity-financed versus cash-financed transactions, we find that the stock transactions perform worse than those paid in cash (Table 7). But the difference is not statistically significant. Table 8 reports economic profits classified by the M&A type (diversifying versus focused transactions). The results suggest that focused transactions perform on average better than diversifying transactions. Industry-adjusted economic profit is -\$21.3 million in transactions with low similarity (diversifying) and -\$19.2 million in focused deals. Splitting the initial sample into cross-border and non-cross-border deals allows us to make a conclusion that local deals show better performance than cross-border ones. It is consistent with our initial hypothesis and proves that lower control over overseas targets and institutional, cultural, and judicial differences between companies encumber the realization of synergies. Industry-adjusted economic profit is -\$48.8 million for cross-border transactions versus -\$5.1 million for local deals. But the differences are not statistically significant (see Table 9).

#### *Market reaction to the announcement of M&A deals*

Table 10 shows the results from the event-study analysis. The mean 37-day announcement-period abnormal returns for targets are positive (+18.8%) and statistically significant at the 5% level; the 21-day, 11-day, and 3-day abnormal returns are also positive and

statistically significant at the 5% level. These results indicate that target shareholders of sample firms experience significant wealth gains from mergers and acquisitions. This evidence is consistent with the findings of many empirical studies (Schwert, 1996; Maquieira et al, 1998; Eckbo, Thorburn, 2000; Goergen, Renneboog, 2004, and others). The results for acquiring companies are inconsistent and not significant. So, it does not allow us to make any conclusions.

The CARs for the 37-day event window are graphed in Figure 2. The plot shows that the market learns about deals a few days before the announcement, which to some extent may indicate the occurrence of insider trading on emerging markets.

## **6. Conclusion**

The purpose of this article is to test whether mergers and acquisitions create value to shareholders in developing countries and reveal the main determinants of M&A performance. Such research will help managers to justify a company's expansion via M&A and create value after the deal.

In contrast to other studies in emerging capital markets, we use economic profit to assess the impact of M&A on company performance and also use traditional accounting performance measures in order to compare the results.

Based on a sample of 80 M&A deals over 2002-2009, we obtained consistent results on the performance of M&A. Operating performance analysis demonstrates that median industry-adjusted EBITDA/Sales ratio decline by -3.3% after deals,  $(EBITDA-\Delta WC)/Sales$ ,  $EBITDA/BV_{assets}$  and  $(EBITDA-\Delta WC)/BV_{assets}$  show a -1.2%, -3.4%, and -1.5% deterioration in performance respectively. These results are consistent with the outcomes of Mantravadi and Reddy (2008), who found a negative impact of M&A on company performance in some Indian industries. And are inconsistent with Martynova et al (2007), Powel and Stark (2005), and Switzer (1996), who examined the effects of M&A on company performance in developed European and US markets respectively.

Our analysis based on the economic profit concept show similar tendencies in company performance. Median industry-adjusted economic profit declines by \$4.0 million in the post-acquisition period. The same approach to examine the impact of M&A on company value was applied by Yook (2004) who also found a decline in EVA after M&A deals.

So, our results from an analysis of accounting-based and value-based performance measures indicate that accounting performance measures work as well as economic profit in assessing the effects of M&A on company performance. But the analyzed sample is small, so further research is required to test the benefits of economic profit measure.



In this study, we also examine the determinants of M&A performance. Based on accounting performance measures, we have obtained mixed results on stock- versus equity-financed transactions. However, we believe that there are more arguments in support of our initial hypothesis regarding the superior performance of stock-financed transactions, than against it. Industry adjusted EBITDA/Sales and EBITDA/BVassets are -3.0% and 0.7% for stock-financed transactions versus -4.2% and -4.3% for cash-financed acquisitions. Our analysis of diversified and focused transactions allows us to support the hypothesis that focused transactions on average perform better than diversifying deals. Splitting the initial sample into cross-border and non-cross-border deals allowed us to conclude that local deals show better performance than cross-border ones. The significance of our results differs in change and intercept models, so it does not allow us to make any ultimate conclusions about our hypotheses. This study also fails to find any significant differences in cash/stock, cross-border/local, and focused/diversified acquisitions when using economic profit as a measure of M&A performance after the deals. Our results are in line with Yook (2000), who also did not find any significant factors that influence the performance of M&A.

Based on the event-study analysis, we find that target shareholders gain significantly in M&A deals, while returns for acquiring firms are positive in some event windows and negative in the others.

The observed negative impact of M&A on company performance means that managers should focus more on the post-merger integration process to realize potential synergies and create value for shareholders.

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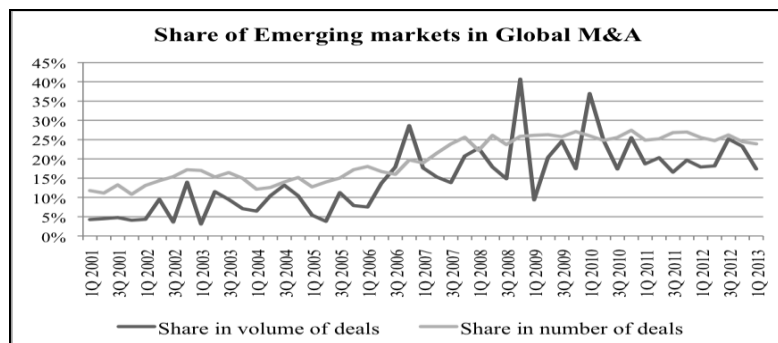
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## Tables and Figures

**Figure 1. Share of emerging markets in Global M&A**



Source: Bloomberg

**Table 1. The impact of M&A on company operating performance in emerging markets**

All indicators are calculated in each year of -2, -1, +1, and +2 relative to the year of acquisition completion. Raw indicators are based on financial indicators reported by the company, while industry-adjusted coefficients account for industry moves. After differences are calculated, they are tested for significance by the Wilcoxon rank sum test

	EBITDA/Sales	(EBITDA- $\Delta$ WC)/Sales	EBITDA/BVassets	(EBITDA- $\Delta$ WC)/BVassets
Raw medians				
-2	19.6%	13.8%	14.0%	11.0%
-1	18.7%	15.9%	14.2%	11.8%
+1	17.2%	9.9%	12.0%	8.4%
+2	17.2%	15.4%	10.9%	12.5%
Industry – adjusted medians				
-2	5.4%	1.9%	5.7%	3.4%
-1	6.5%	6.0%	4.5%	3.7%
+1	5.2%	1.3%	1.0%	0.3%
+2	5.0%	5.0%	1.7%	3.5%
Differences – Raw medians				
-2+2	-2.1% **	2.3%	-2.6%	-1.2% **
-1+1	-1.8% **	-5.7% **	-1.9% **	-3.7% **
Median [+1; +2]	-1.8%	-2.5% **	-1.8% **	-0.9% **
Median [-1; -2]				
Differences – Industry – adjusted medians				
-2+2	-3.9% **	0.8%	-2.8% **	-1.2%
-1+1	-2.1% **	-4.2% **	-2.7%	-5.3% **
Median [+1; +2]	-3.3% **	-1.2% **	-3.4% **	-1.5%
Median [-1; -2]				

\*\*\* significant at the 5% level \*\* significant at the 10% level \* significant at the 15% level

**Table 2. The impact of M&A on company operating performance in emerging markets.  
Stock vs. Cash transactions**

Year relative to acquisition	Raw EBITDA/Sales			Industry – adjusted EBITDA/Sales			Raw EBITDA/BVassets			Industry-adjusted EBITDA/BVassets		
	Stock	Cash	Difference Z value	Stock	Cash	Difference Z-value	Stock	Cash	Difference Z value	Stock	Cash	Difference Z-value
Panel 1: Pre-acquisition performance												
-2	26.0%	17.8%	1.947	9.9%	4.9%	1.758	16.0%	15.2%	0.226	7.6%	6.5%	0.332
-1	26.8%	14.8%	3.019	6.7%	6.4%	0.021	15.6%	14.1%	0.613	4.3%	6.0%	-0.839
Medians	26.3%	17.7%	2.369	8.3%	6.7%	0.606	16.1%	13.7%	1.139	6.4%	5.7%	0.277
Panel 2: Post-acquisition performance												
+1	28.3%	14.4%	2.063	7.3%	3.4%	0.595	18.3%	11.5%	3.015	2.4%	1.5%	0.398
+2	22.3%	15.7%	1.498	8.2%	4.5%	0.848	13.8%	9.8%	1.583	1.5%	2.2%	-0.355
Medians	24.6%	15.2%	1.684	11.1%	3.7%	1.401	13.7%	10.1%	1.564	2.4%	1.5%	0.451
Panel 3: Difference between pre-acquisition and post-acquisition indicator												
-1+1	-2.1%	-1.8%	-0.154	-1.3%	-2.6%	0.090	-0.6%	-2.3%	0.848	1.3%	-3.8%	2.653***
-2+2	-5.3%	-1.1%	-0.622	-1.4%	-4.6%	0.691	-2.6%	-3.9%	0.322	-2.5%	-3.8%	0.357
Medians	-3.4%	-0.8%	-0.475	-3.0%	-4.2%	0.260	-0.4%	-1.9%	0.712	0.7%	-4.3%	2.555***

\*\*\* significant at the 5% level

\*\*significant at the 10% level

\*significant at the 15% level



**Table 3. The impact of M&A on company operating performance in emerging markets  
Diversifying vs. focused transactions**

Year relative to acquisition	Raw EBITDA/Sales			Industry – adjusted EBITDA/Sales			Raw EBITDA/BVassets			Industry-adjusted EBITDA/BVassets		
	Low (divers)	High	Difference Z-value	Low	High	Difference Z-value	Low	High	Difference Z-value	Low	High	Difference Z-value
Panel 1: Pre-acquisition performance												
-2	20.4%	19.2%	-0.386	8.9%	5.2%	-1.424	12.1%	15.2%	1.509**	4.5%	5.7%	0.497
-1	16.5%	20.8%	1.161	3.8%	6.6%	0.494	13.9%	14.2%	0.151	3.9%	4.5%	0.275
Medians	18.2%	18.8%	0.158	5.8%	7.0%	0.460	13.4%	14.1%	0.367	5.1%	5.4%	0.173
Panel 2: Post-acquisition performance												
+1	18.5%	16.3%	-0.207	6.3%	4.5%	-0.191	10.0%	12.5%	1.189	-0.1%	1.3%	0.738
+2	17.1%	17.2%	0.028	4.4%	5.1%	0.122	9.0%	13.2%	2.268**	0.2%	2.7%	1.353*
Medians	17.9%	16.9%	-0.116	5.6%	4.8%	-0.114	9.6%	12.1%	1.315	0.9%	1.9%	0.532
Panel 3: Difference between pre-acquisition and post-acquisition indicator												
-1+1	-1.7%	-2.1%	-0.035	-2.2%	-2.0%	0.027	-1.4%	-2.1%	-0.335	-3.3%	-1.8%	0.862
-2+2	-0.5%	-2.6%	-0.375	-3.5%	-3.9%	-0.070	-1.9%	-3.0%	-0.466	-3.6%	-2.4%	0.487
Medians	-0.1%	-2.9%	-0.355	-3.3%	-3.4%	-0.005	-1.1%	-1.9%	-0.450	-3.0%	-3.5%	-0.293

\*\*\* significant at the 5% level

\*\*significant at the 10% level

\*significant at the 15% level

**Table 4. The impact of M&A on company operating performance in emerging markets  
Cross-border vs. non-cross-border transactions**

Year relative to acquisition	Raw EBITDA/Sales			Industry – adjusted EBITDA/Sales			Raw EBITDA/Total Assets			Industry-adjusted EBITDA/Total Assets		
	Cross	Non-Cross	Difference Z-value	Cross	Non-cross	Difference Z-value	Cross	Non-cross	Difference Z-value	Cross	Non-cross	Difference Z-value
Panel 1: Pre-acquisition performance												
-2	21.2%	16.7%	-1.295	11.3%	3.3%	-2.955	14.2%	13.1%	-0.474	4.5%	5.7%	0.446
-1	20.5%	18.0%	-0.687	7.9%	5.8%	-0.379	13.8%	14.2%	0.173	5.6%	4.2%	-0.709
Medians	22.3%	17.9%	-1.372	9.9%	5.1%	-1.943	14.3%	13.8%	-0.280	6.3%	4.8%	-0.703
Panel 2: Post-acquisition performance												
+1	18.8%	16.0%	-0.430	7.0%	3.3%	-0.606	12.1%	12.0%	-0.069	0.4%	1.2%	0.434
+2	16.7%	17.8%	0.268	5.2%	5.0%	-0.047	9.0%	11.5%	1.447	1.8%	1.6%	-0.096
Medians (+1; +2)	16.8%	17.8%	0.182	5.9%	4.8%	-0.235	8.8%	12.2%	1.974	1.3%	1.4%	0.033
Panel 3: Difference between pre-acquisition and post-acquisition indicator												
-1+1	-2.7%	-1.6%	0.177	-3.8%	-1.6%	0.299	-2.5%	-1.5%	0.632	-6.4%	-1.3%	2.741***
-2+2	-3.1%	-1.4%	0.376	-5.7%	-2.6%	0.800	-3.5%	-1.9%	0.648	-5.1%	-1.4%	1.533**
Medians	-3.7%	-0.7%	0.748	-4.8%	-1.0%	0.810	-4.4%	-0.9%	2.661***	-6.6%	-1.4%	3.174***

\*\*\* significant at the 5% level

\*\*significant at the 10% level

\*significant at the 15% level

**Table 5. Regression of post-merger performance measures on pre-merger performance measures in emerging markets**

(1) The regression of corresponding operating measure in the +2 period on the same operating measure in the -2 period; (2) The regression of corresponding operating measures in the +1 period on the same operating measure in the -1 period; (3) The regression of median corresponding operating measures for the [+1; +2] period on the median of the same operating measure in the [-2; -1] period

Dependent variable	EBITDA/Sales			(EBITDA-ΔWC)/Sales			EBITDA/BVassets			(EBITDA-ΔWC)/BVassets		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Intercept estimate	-0.252***	-0.577***	-0.427***	-0.175	-1.450***	-0.719***	-0.053**	-0.083***	-0.073***	-0.093*	-0.104**	-0.069**
Slope estimate	0.262	0.207**	0.727***	0.063	-0.001	0.689***	0.225***	0.570***	0.495***	0.109	0.277***	0.360***
Cross-border/non-cross-border	0.062	0.148*	0.074	0.219***	0.407*	0.211	-0.024	0.003	-0.018	0.033	0.039	0.018
Diversifying/Focusing	0.073	0.179***	0.115*	0.131**	0.538***	0.306***	0.046***	0.013	0.027*	0.053*	0.022	0.030
Payment type	0.060**	0.108**	0.066*	0.051	0.177	0.052	0.001	0.025***	0.012	0.024	0.027	0.014
Crisis/non-crisis	0.128***	0.292***	0.226***	0.026	0.711***	0.428***	0.049***	0.034*	0.046***	0.057	0.017	0.038*
<b>R<sup>2</sup></b>	<b>0.198</b>	<b>0.247</b>	<b>0.282</b>	<b>0.174</b>	<b>0.186</b>	<b>0.300</b>	<b>0.302</b>	<b>0.390</b>	<b>0.456</b>	<b>0.175</b>	<b>0.158</b>	<b>0.416</b>

\*\*\* significant at the 5% level

\*\*significant at the 10% level

\*significant at the 15% level

**Table 6. Raw and Industry-adjusted Economic Profit for Acquiring Firms**

All EPs are in millions of dollars

Year relative to completion	N	Raw EP	N	Industry-adjusted EP
Panel 1: Pre-acquisition performance				
-2	70	9.4	69	39.6
-1	69	8.2	69	28.6
Medians	67	8.0	67	34.1
Panel 2: Post-acquisition performance				
+1	73	-10.1	73	18.4
+2	73	-11.7	70	2.0
Medians	72	-21.1	70	0.3
Panel 3: Difference between pre-acquisition economic profit and post-acquisition Economic Profit				
-2, +2	69	-21.8	65	-5.3**
-1, +1	67	-11.9**	67	-3.0
Medians	65	-16.9**	63	-4.0**

**Table 7. Raw and Industry-adjusted Economic Profit for Acquiring Firms. Stock vs. Cash**

All EPs are in millions of dollars

Year relative to acquisition	Raw EP			Industry – adjusted EP		
	Stock	Cash	Difference Z-value	Stock	Cash	Difference Z-value
Panel 1: Pre-acquisition performance						
-2	14.9	8.5	0.106	44.0	59.1	-0.178
-1	7.6	10.7	-0.030	22.7	39.4	-0.125
Medians	9.0	8.8	0.002	40.4	34.8	0.054
Panel 2: Post-acquisition performance						
+1	-0.7	-11.1	0.149	5.3	36.4	-0.318
+2	-30.3	-16.7	-0.077	-0.3	3.6	-0.023
Medians	-17.8	-24.8	0.059	-2.5	0.8	-0.030
Panel 3: Difference between pre-acquisition economic profit and post-acquisition economic profit						
-1, +1	-7.2	-15.6	0.135	-7.0	0.0	0.012
-2, +2	-54.9	-15.5	-0.092	-54.8	-11.2	-0.149
Medians	-49.2	-17.9	-0.054	-30.8	-0.6	-0.048

**Table 8. Raw and Industry-adjusted Economic Profit for the Acquiring Firms. Diversifying vs. Focused**

All EPs are in millions of dollars

Year relative to acquisition	Raw EP			Industry – adjusted EP		
	Low	High	Difference Z value	Low	High	Difference Z value
Panel 1: Pre-acquisition performance						
-2	7.5	11.6	-0.074	27.2	49.0	-0.307
-1	7.1	7.6	-0.004	17.2	38.2	-0.211
Medians	5.9	8.6	-0.032	17.8	34.6	-0.200
Panel 2: Post-acquisition performance						
+1	-11.7	-2.3	-0.139	1.6	23.8	-0.193
+2	-34.4	-2.3	-0.259	-10.7	5.8	-0.110
Medians	-30.4	-8.4	-0.274	-14.0	5.6	-0.168
Panel 3: Difference between pre-acquisition economic profit and post-acquisition economic profit						
-1, +1	-20.4	-16.7	0.003	-19.9	-5.0	-0.094
-2, +2	-49.3	-9.2	-0.275	-27.1	-11.2	-0.102
Medians	-34.1	-13.4	-0.181	-21.3	-19.2	-0.015

\*\*\* significant at the 5% level

\*\*significant at the 10% level

\*significant at the 15% level

**Table 9. Raw and Industry-adjusted Economic Profit for Acquiring Firms. Cross-border vs. non-cross-border**

All EPs are in millions of dollars

Year relative to acquisition	Raw EP			Industry – adjusted EP		
	Cross	Non-cross	Difference Z value	Cross	Non-cross	Difference Z value
Panel 1: Pre-acquisition performance						
-2	19.5	6.6	0.262	66.7	20.0	0.003
-1	17.6	5.1	0.191	59.8	15.0	0.003
Medians	12.1	5.0	0.123	50.2	19.1	0.005
Panel 2: Post-acquisition performance						
+1	-30.3	-2.4	-0.556	14.8	19.7	0.000
+2	-32.6	-8.5	-0.279	-10.7	3.6	0.000
Medians	-32.0	-5.5	-0.441	-9.2	3.5	-0.215
Panel 3: Difference between pre-acquisition economic profit and post-acquisition economic profit						
-1, +1	-32.2	-10.5	-0.389	-16.7	-6.6	0.000
-2, +2	-36.8	-24.5	-0.156	-32.7	-5.3	0.000
Medians	-38.2	-20.4	-0.342	-48.8	-5.1	-0.670

\*\*\* significant at the 5% level

\*\*significant at the 10% level

\*significant at the 15% level

**Table 10. CAR surrounding the announcement of M&A in emerging capital markets**

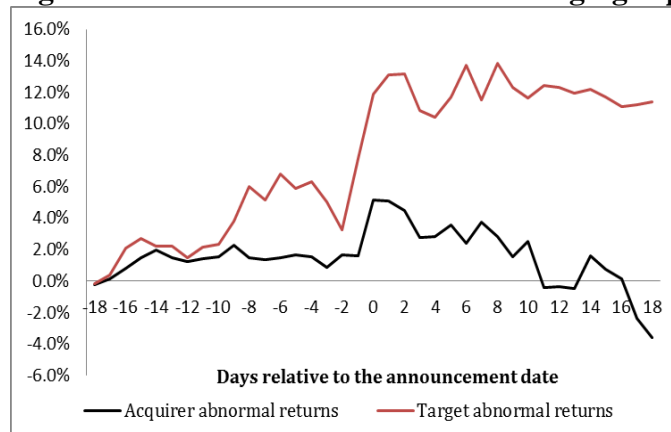
	Acquirers			
	CAR (-1; +1)	CAR (-5; +5)	CAR (-10; +10)	CAR (-18; +18)
Average	0.72%*	-0.14%	0.45%	-1.42%
Median	1.08%*	0.80%	-0.01%	-2.74%
Test statistics	1.86	-0.19	0.44	-1.04
	Targets			
	CAR (-1; +1)	CAR (-5; +5)	CAR (-10; +10)	CAR (-18; +18)
Average	5.05%***	5.32%***	11.57%***	18.80%***
Median	2.97%***	4.97%***	7.75%***	12.66%***
Test statistics	6.08	3.35	5.26	6.45

\*\*\* significant at the 5% level

\*\*significant at the 10% level

\*significant at the 15% level

**Figure 2. Plot of CARs for M&A in emerging capital markets for 36-day event window**



**Appendix A. Abnormal returns to shareholders in developed countries in short run.**

<b>Study</b>	<b>Sample period, sample size, country</b>	<b>Event window</b>	<b>Target abnormal return</b>	<b>Acquirer abnormal return</b>
Loderer, Martin, 1990	1996-1984; 11,35 US mergers 274 US tender offers	(-5,0)		1%***
Schwert, 1996	1971-1991; 959 US mergers 564 US tender offers;	(-42,126)	26.30%*	5;12%* 16;20%*
Maquieira, Megginson and Nail, 1998	1963-1996; 55 non conglomerate US acquisitions; 47 conglomerate US acquisitions 102 US targets	(-60,60)	41.65%**	6.14%** for non conglomerate; -4.79% for conglomerate
Eckbo, Thorburn, 2000	1964-1983; 345 Canadian targets 1,261 Canadian and US bidders	(-40,0)	7.45%**	1.71%** for Canadian -0.3% - for US
Mulherin, 2000	1962-1997; 202 US targets 161 US bidders	(-1,0)	10.4%**	0.85%
Walker, 2000	1980-1996; 278 US acquisitions	(-2,2)		-0.84%**
Baker, Limmack, 2002	1977-1990; 519 UK acquisitions	(-15,15)		0%
Fuller, Netter, Stegemoller, 2002	1990-2000; 3,135 US takeovers	(-2,2)		1.8%*** for total sample of bidders; -1.0%*** when target is public; 2.1%*** when target is private; 2.8%*** when target is a subsidiary
Sudarsanam, Mahate, 2003	1983-1995; 519 UK acquisitions	(-1,40)		[-1%; -2%]
Goergen, Renneboog, 2004	1993-2000; 158 European M&A	(-1,0)	9%*	0.7%*
Campa and Hernando, 2004	1998-2000; 262 EU M&A	(-15,15)	9%**	0%
Moeller, Schlingemann, Stulz, 2005	1980-2001; 12,023 US acquisitions	(-1,1)		1.1%*** for total sample; 2.3%*** for small acquirers; 0.1% for large acquirers
Bradley, Sundaram, 2006	1990-2000; 12,476 US acquisitions	(-2,2)		1.4% for total sample; -0.7% for public targets; 1.9% for private targets
Moeller, Schlingemann, Stulz, 2007	1980-2002; 43,22 US acquisitions	(-1,1)		0.8% for total sample; -2.3% for public targets in stock deals, 0.7% - in cash deals; 3.4% for private targets in stock deals
Bris, Cabolis, 2008	1989-2002; 506 acquisitions from 39 countries	(-2,2)		Average acquisition where the acquirer originates from an above-median shareholder protection

				country, and the target is from a below-median shareholder protection country, results in abnormal returns of 5.78%**
Betton, Eckbo, Thornburn, 2008	1980-2005; 13,985 mergers 1,468 tender offers	(-1,1)		0.69% for mergers; 0.76% for tender offers
Hackbarth, Morrelec, 2008	1985-2002; 1,086 takeovers	(-1,1)		-0.5%***
Kiyamaz H., Baker H., 2008	1989-2003; 100 largest US M&A	(-1,0), (-10,10), (-30,-1), (1,30)	13.38%*	-1.65%*
Hamza, 2009	1997-2005; 58 French takeover bids	(-20, -6), (-5,5), (+6,20), (-20,20)		+7.33% *for the bidder with prebid blockholder position in the target (toehold); +0.40%* for bidders without toehold
Krishnan, Krishnan, Lefanowicz, 2009	1992-1996; 50 US related acquisitions	(-1,1), (-2,2), (-5,5)		-2%; market reaction reflects the potential synergies
Chang, Tsai, 2013	1990-2007; 4,288 US M&As of privately held targets	from day 0 to 1, 2, 3, 5, 30, 60, 126 and 252 trading days from the announcement		Positive in short-run periods (+1.9%*) and negative in long-run periods (10.9%*)

\*Significant at the 1% level. \*\*\*Significant at the 10% level

\*\*Significant at the 5% level

## Appendix B. Returns to shareholders in developed countries in long run.

Study	Sample period, sample size, country	Event window	Results
Limmack, 1991	1977-1986; 520 UK bids	24 months	-14.96% to -7.43% for completed bids, depending on the used model; -24.2% to -7.38% for abandoned bids
Franks et al, 1991	1975-1984; 399 NYSE/AMEX acquisitions	36 months	Insignificant abnormal return
Agrawal et al, 1992	1955-1987; 937 mergers, 227 tender offers (NYSE/AMEX companies)	60 months	-10.26% significant abnormal returns
Gregory, 1997	1984-1992; 452 UK acquisitions	24 months	-11.8% to -18% statistically significant abnormal return depending on the approach used
Loughran, Vijh, 1997	947 NYSE/AMEX/NASDAQ companies	60 months	-15.9% significant abnormal return
Rau, Vermaelen, 1998	1961-1993; 2,823 mergers and 316 tender bids	36 months	-4% significant abnormal return for mergers; +8.56% abnormal return for tender offers
Mitchel, Stafford,	1961-1993;	36	No significant abnormal return

2000	2,767 acquisitions	months	
Moeller et al, 2003	1980-2001 12,023 US acquisitions	36 months	BHAR: -16.02% significant abnormal return over three years
Andre, Kooli, L'Her, 2004	1980-2000; 267 Canadian acquisitions	36 month	Calendar time: no significant abnormal return No significant abnormal return for all cases. Negative abnormal return for non-overlapping cases (143 cases)
Dube, Glascock, 2006	975-1996; 255 US acquisitions	12 months and 36 months	No risk-adjusted abnormal performance in the stock returns of acquiring firms following acquisitions
Dutta, Jog, 2009	1993-2002, 1,300 Canadian M&A that involved a TSX-listed bidding company	36 months	No significant negative long-term abnormal returns for acquirers

### Appendix C. Operating performance improvement of acquirers in post-acquisition period.

Study	Sample period, sample size, country	Performance measure	Performance measure adjusted for effect of	Major findings
Healy, Palepu, Ruback, 1992	1979-mid 1984; 50 largest US mergers	Pre-tax operating cash flow to TMV	Industry median performance; controls for accounting method	Significant abnormal improvements in asset productivity (asset turnover), but no significant abnormal increases in operating cash flow margins
Manson, Stark, Thomas, 1994	1985-1987, 38 UK acquisitions	Operating cash flow to total market value of firm	Industry but allow for profitability erosion due to competition	Improved performance and related to shareholder returns during bid
Switzer, 1996	1967-1987; 324 US acquisitions	Pre-tax operating cash flow to TMV	Industry median performance	Significant improvements in the operating performance of merged firms
Tsung-Ming, Hoshino, 2000	1987-1992; 20 Taiwanese acquisitions	ROA, ROE, financial leverage, liquidity ratios, sales growth, operating expenses ratio	Industry median performance	Positive and significant stock market reaction to the announcements of M&A; downward change in a acquiring firm's operating performance; no significant correlation between stock returns and change in operating performance
Ghosh, 2001	1981-1995; 315 US mergers	Pre-tax operating cash flow to TMV	Pre-bid performance, industry and size	No evidence of significant improvements
Yeh, Hoshino, 2001	1970-1994; 86 Japan acquisitions	Net income (operating income) to BV equity or BV assets	Industry median performance	M&As that involve keiretsu are followed by a significant decline in ROE and ROA; M&As involving independent firms do not.
Heron, Lie,	1985-1997;	Operating	Industry median	Significant improvements in



2002	859 US acquisitions	income to sales	performance, controls for possible mean reversion resulting from abnormal pre-event performance	operating performance, no evidence that the method of payment conveys information about the acquirer's future operating performance
Sharma, Ho, 2002	1986-1991; 36 Australian mergers	ROA, ROE, PM, EPS	Industry median performance, size	Buyers showed significantly lower ROA, ROE, EPS, PM
Powell, Stark, 2005	1985-1993; 191 UK takeovers	Operating cash flow to TMV or TMV adjusted for market reaction to the takeover or BV assets or Sales	Industry median performance; pre-bid performance, industry and size	Significant improvements in operating performance
Martynova, Oosting, Renneboog, 2007	1997-2001; 155 European acquisitions	(EBITDA -WC) to BVassets , (EBITDA -WC) to Sales, EBITDA to BVassets, EBITDA to Sales.	Industry median performance	Acquiring and target companies significantly outperformed the median peers in their industry prior to the takeovers, but the profitability of the combined firm decreased significantly following a takeover. The decrease became insignificant after controlling for the performance of the control sample of peer companies
Devos, Kadapakkam, Krishnamurthy, 2008	1980-1996; 264 US acquisitions	Discounted capital cash flows		Average gains from mergers are 10.03%

TMV = total market value of assets.  
 BV assets = book value of assets.  
 BV equity = book value of equity.  
 ROE = return on equity.

ROA = return on assets.  
 PM = profit margin.  
 EPS = earnings per share.  
 WC = working capital.

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