

Grote, Michael H.; Rücker, Fabian

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## Acquiring foreign firms far away might be hazardous to your share price: Evidence from Germany

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**Michael H. Grote / Fabian Rucker**

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**MICHAEL H. GROTE\* / FABIAN RÜCKER**

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TO YOUR SHARE PRICE: EVIDENCE FROM GERMANY**

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\* contact author: Johann Wolfgang Goethe-University, Department of Finance, P.O. Box 19 11 32, 60054 Frankfurt am Main, Germany, Phone +49 (0)69 798-23566, Fax +49 (0)69 798-23648, Email Grote: grote@finance.uni-frankfurt.de, Email Rücker: fabian\_ruecker@web.de

### Abstract

This paper examines shareholder wealth effects of cross-border acquisitions. In a sample of 155 large acquisitions by German corporations from 1985–2006 international transactions in total do not lead to significant announcement returns. Geography, however, makes a difference: Shareholders of acquiring firms gain 6.5% in cross-border transactions into countries that have a common border with Germany but lose 4.4% in other international transactions. We find proximity to be one of the most important success factors in cross-border mergers and acquisitions, even when we control for firm, deal and country characteristics.

## 1 Introduction

Cross-border acquisitions are en vogue. In 2006, four of the ten largest European deals have been cross-border (Thomson Financial 2007). Whether these transactions create value, however, is an open issue. This paper analyses a sample of 155 acquisitions of public German firms between 1985 and 2006 of which 115 are cross-border and 40 are domestic acquisitions. We do not find that international diversification increases shareholder value for German acquiring firms: In a [-20; +20] day window around announcement of the deal firms acquiring internationally face a share price reaction of -2.21% whereas shareholders of firms that acquire domestically get an increase of +0.66%. Due to large variations in the results between firms these figures are neither significantly different from zero nor from each other. We further analyse cross-border acquisitions separately using univariate and multivariate regressions. We find proximity to Germany to be a decisive variable for acquisition success. Acquisitions in countries that have a common border with Germany lead to an average abnormal return of +6.54% for the acquirer's share price (though not statistically different from zero) whereas acquisitions in all other countries lead to a significant decrease of -4.38%, again in a [-20; +20] day window. The returns of the two groups are statistically different and economically very relevant. When we control for a variety of deal, firm and country characteristics the common border effect remains positive and significant.

Scientific evidence on the reactions of European acquiring firms' share prices in the course of cross-border M&A transactions is still scarce. The few existing studies mostly focus on the UK, though some of them also include other European countries (e.g. Lowinski et al. 2004). To our knowledge this is the first study to analyse acquirer returns in international transactions with regard to different regions. We document that proximity between acquirer and target is an important driver for the success of international transactions. Better integration and monitoring possibilities of closer targets, as well as knowledge about 'soft facts', culture and language are possible reasons that might be responsible for this result. The paper proceeds as follows: section 2 provides an overview of theoretical considerations regarding cross-border M&A. Section 3 explains the selection of data and the methodology applied in order to analyse shareholder wealth effects of German international acquisitions. Section 4 presents the analysis, and section 5 concludes.

## 2 Theoretical considerations

Buying foreign firms instead of domestic ones theoretically yields benefits and costs. A positive cross-border effect should lead to a more favourable reaction of the acquirer's share price for international compared to domestic deals. Positive cross-border effects can be derived from several arguments, as can be negative effects. Our analysis basically sets up a horse race between the two classes of arguments.

Multinational companies can be viewed as portfolios of internationally diversified assets (Fatemi 1984). Portfolio theory argues that investors should hold well diversified portfolios to maximise their risk-adjusted returns. In perfectly integrated and competitive capital, goods and services markets, the announcement of a cross-border deal should not yield higher returns to shareholders than the announcement of a national transaction. When there are restrictions to international capital flows, however, the picture changes. Informal barriers on international capital markets, such as taxes, minimum holding periods or, most importantly, information gaps are still important hindrances for diversification (Markides and Ittner 1994; Coval and Moskowitz 1999; Hau 2001, Stulz 2005). Thus multinational corporations might offer a valuable service to investors by enabling them to diversify their holdings internationally. Dunning (1993) theorizes that operational benefits via the exploitation of firm- and country-specific advantages are major reasons for the existence of multinational firms. Firms must be able to employ their assets more economically abroad than in their home market because the target market provides the firm with advantages exclusive to that location, e.g. lower production costs, special infrastructure or an especially skilled workforce (the 'location' factor, see Teece 1986). Firms that operate on international scale are able to shift resources from one market to another within their network. Through cross-border acquisitions, they acquire important knowledge about how to produce, customize or market goods and services for foreign and their domestic market (Doukas and Travlos 1988). Harris and Ravenscraft (1991) find that cross-border acquisitions are more likely and more frequent than domestic acquisitions in R&D intensive industries. Morck and Yeung (1992) show that bidder gains in foreign acquisitions are positively associated with acquirers' spending on research and development. Finally, firms might just exploit lower costs and wages in other countries. In such scenarios we would on average expect higher valuations for internationally diversified firms. Empirical research about the long-term advantages of internationally diversified firms is mixed, though. Errunza and Senbet (1981) find a positive relation between international involvement and excess market value of US companies. Denis et al. (2002) report that international diversification leads to a diversification discount similar to that of industrial diversification.

There is also evidence that international diversification may lead to inefficiencies and thus impose considerable costs on the companies. Berger and Ofek (1995) state that especially in the case of industry diversification there may be value-destroying cross-subsidies within organisations. In the case of international diversification this is occasionally observed when operating profits derived from the home market are used to support ailing foreign operations that were recently acquired. Doukas and Travlos (1988) point out that international operations might be associated with higher monitoring and bonding costs than domestic activities. Grote and Ueber (2007) find that transaction success decreases significantly with increasing distance even for domestic acquisitions in the US. They show, however, a non-monotonic relationship between distance and success. The best deals are not those that take place in close proximity – the best deals occur when the targets are

about 500 kilometres away from the acquirers' headquarters and only after that the results get worse. Translated into an international setting we would expect deals in more distant countries to deliver worse results than transactions into closer countries. Additionally the integration of newly acquired foreign operations can be a substantial challenge for the acquirer: this refers to the 'clash of cultures' observed in some cross-border acquisitions where there is virtually no cooperation but in fact rivalry and entrenchment between the acquirer and the newly acquired business. Such problems can make cross-border acquisitions a threat for the functioning of the entire corporation. Whether the benefits or costs of international diversification prevail is essentially an empirical question that we address in this paper.

The literature about wealth effects of domestic mergers and acquisitions has established two major facts. First, returns to target firm shareholders are on average significantly positive; e.g., Mulherin and Boone (2000) and Schwert (1996) find an average cumulative abnormal return (CAR) for the targets' shares of more than 20%. Second, for bidding firm shareholders, announcement returns from mergers and acquisitions are often slightly negative and regularly not significantly different from zero (e.g., Franks et al. 1991; Andrade et al. 2001; Healy et al. 1992). The results obtained for domestic bidder returns do not necessarily have to be valid for cross-border deals if one or all of the benefits and costs explained in the paragraphs above are reflected in acquirer returns. Doukas and Travlos (1988) find no significant impact from cross-border acquisitions on acquirer returns for US-firms expanding abroad. They find, however, positive and significant returns for firms that are already multinational and enter a new foreign market for the first time. They also find acquirer returns to be highest when entering less developed and economically less correlated countries with respect to the USA. Eun et al. (1996) find that foreign bidders acquiring US targets experience negative and significant announcement returns on average. Their results, however, differ significantly between acquirer countries. Over the period 1979-1990, Japanese acquirers earn significantly positive returns whereas British acquirers earn significantly negative returns. Acquirer returns for French, German and Dutch firms are not statistically significant on conventional levels. Kang (1993) studies acquisitions of US companies by Japanese firms and finds significantly positive announcement returns for the acquirers. Eckbo and Thorburn (2000) find mostly negative but insignificant returns for US firms that acquire Canadian targets. Moeller and Schlingemann (2005) present results for US acquirers. They find a significantly negative cross-border effect, i.e. bidder firms that engage in cross-border deals experience significantly lower announcement results than firms acquiring domestic targets. This trend appears to be more stable in recent years, which may reflect a higher degree of sophistication and integration of international capital markets.

For continental Europe the available evidence is limited. Goergen and Renneboog (2004) analyse large European takeover bids and find a positive and significant announcement

returns for cross-border acquirers; the results turn insignificant for larger event windows. For German, Austrian and Swiss bidders, the announcement returns are negative and insignificant in most event windows. In contrast, Lowinski et al. (2004) study Swiss firms that expand abroad and find positive and significant CARs for acquirers. Bühner (1992) examines a sample of 39 cross-border acquisitions of German firms between 1973 and 1987. Based on the event window [-24; +24] months, his results indicate that CARs of cross-border acquisitions are higher than those of domestic deals in the mid term. The second study aiming explicitly at German firms by Gerke et al. (1995) finds no significant results for acquirers; the study, however, does not control for factors other than the target country. Altogether, the results suggest that the geographic scope of acquisitions can have significant impact on announcement returns for acquirers. However, many of the results are insignificant at conventional levels and even the signs of the abnormal returns differ between studies. Hence, there is no convincing general evidence about shareholder wealth effects in cross-border acquisitions so far.

### **3 Data and methodology**

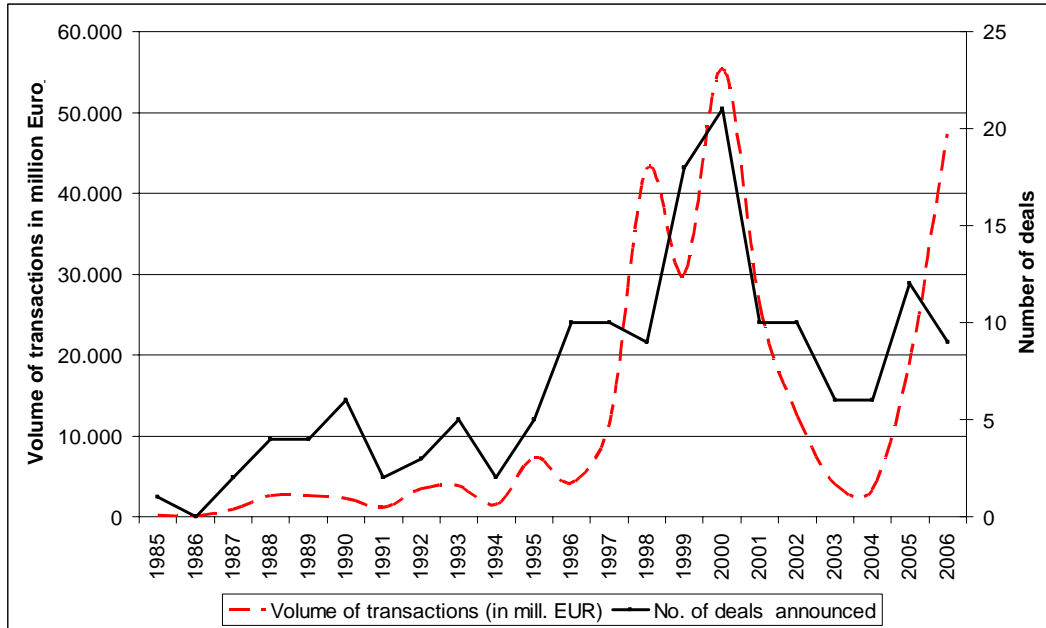
#### **3.1 Data**

The study is based on acquisitions by German firms between 1985 and 2006 that are reported in the Thomson Financial SDC database. We exclude non-completed deals; deals where the bidder is a private, government-owned or joint venture company and transactions involving less than 50% of the target's shares. We further eliminate deals with insufficient data availability and also – following Dewenter (1995) and Lowinski et al. (2004) – drop transactions where data for the estimation window of [-220; -21] is not available. In line with the literature we concentrate on non-financial acquirers and therefore exclude banks, private equity and real estate firms, and insurance companies from our sample. To ensure that the transactions have an impact on the acquirer's share prices we exclude all deals with an unknown value or where the deal value is lower than EUR 100 million. Our final sample for the event study includes 155 deals.

Graph 1 displays the frequency and volume distribution over time. M&A activity moves alongside the general stock market development: The correlation coefficient for the rebased C-DAX vs. the number of announced deals is 0.84 (0.85 for the volume of transactions).



Graph 1: Number and volume of German M&amp;A transactions per year



While the market and M&A volume development between 1985 and 1993 has no clear direction, the period 1994–2000 is characterized by steady increases in stock prices and in M&A activity. The transaction volume reaches a peak in 2000 with a total of EUR 55.38 billion (pushed by the EUR 30.78 billion acquisition of Voicestream Wireless by Deutsche Telekom). The stock market decline in 2000–2002 is accompanied by decreasing M&A volumes. From 2004–2006, stock market levels rise again and so do M&A deals and volumes. Lowinski et al. (2004) derive a similar pattern for Swiss firms.

Table 1 displays the distribution of the sample according to target countries. 35.5% of all acquisitions and 44.0% of deal value are derived from acquisitions of US companies, followed by 25.8% and 18.5%, respectively, for German targets. The UK ranks third and accounts for 13.5% of total deals and 23.9% of total deal value. It is remarkable that 34.2% of the deals involve targets from European countries other than Germany so that only 4.5% of all transactions (i.e., six deals) take place in regions outside the US and Europe.

Table 1: Target countries

Target country	No. of deals	% of total deals	Transaction value (in mill. EUR)	% of total value
USA	55	35,5%	123.283	44,0%
Germany	40	25,8%	51.946	18,5%
United Kingdom	21	13,5%	67.087	23,9%
Switzerland	8	5,2%	11.426	4,1%
France	8	5,2%	10.451	3,7%
Sweden	6	3,9%	7.459	2,7%
Denmark	2	1,3%	2.580	0,9%
Canada	2	1,3%	1.318	0,5%
Belgium	2	1,3%	1.107	0,4%
Italy	2	1,3%	273	0,1%
Slovak Republic	1	0,6%	1.000	0,4%
South Korea	1	0,6%	550	0,2%
Chile	1	0,6%	388	0,1%
Netherlands	1	0,6%	368	0,1%
Poland	1	0,6%	366	0,1%
Finland	1	0,6%	240	0,1%
India	1	0,6%	208	0,1%
Portugal	1	0,6%	182	0,1%
Australia	1	0,6%	115	0,0%
Sum	155	100%	280.348	100%

Due to the exclusion of deals with a value below EUR 100 million, EUR 101 million is the minimum transaction value. The largest deal in the sample is the acquisition of Chrysler by Daimler-Benz in 1998 with about EUR 36.3 billion. The average transaction has a volume of EUR 1,809 million with 94.4% of the target shares acquired. Industrials, materials, energy and power are the most active acquirer industries, accounting for 56.1% of all deals and 57.0% of deal value. Due to a few large deals the average deal value is by far the highest in the telecom sector followed by healthcare. We consider the ‘relatedness’ of acquisitions as a potential driver of acquisition success and therefore compare the standard industry classification (SIC) codes of target and acquirer. Following Doukas and Travlos (1988) and Eckbo and Thorburn (2000) we classify companies that share the first two digits of their primary SIC codes as ‘related’. To check for misspecifications in the Thomson Financial database we screen all deals’ primary SIC codes and macro industry codes, and verify those classifications on the companies’ web pages. After that we classify 71.6% of the deals as related, representing 85.3% of total deal value.

The 40 deals with German targets are classified as domestic deals and the remaining 115 as cross-border deals. The cross-border deals have an average volume of EUR 1,986 million

and are about EUR 700 million larger than domestic acquisitions with an average of EUR 1,298 million. Table 2 presents characteristics of the sample according to the type of acquisition, i.e. domestic or cross-border.

Table 2: Deal characteristics by type of acquisition

Deal criteria	Cross border deals (1)	Domestic deals (2)	(1) - (2)	Entire sample
Number of observations	115	40	75	155
Average bidder size (in mill. EUR)	19.798	15.114	4.684	18.589
Average deal size (in mill. EUR)	1.986	1.299	687	1.809
Average bidder profitability	13,76%	13,42%	0,34%	13,67%
Average bidder R&D / sales	3,82%	1,50%	2,32%	3,23%
Average bidder cash / total assets	11,51%	11,76%	-0,25%	11,57%
Related deals	73,04%	67,50%	5,54%	71,61%
Cash payments	74,78%	75,00%	-0,22%	74,84%
Hostile deals	2,61%	0,00%	2,61%	1,94%
Competed deals	2,61%	5,00%	-2,39%	3,23%
Public targets	35,65%	20,00%	15,65%	31,61%

Bidders in cross-border acquisitions are on average EUR 4,684 million larger than domestic bidders and the targets they acquire are EUR 687 million larger than those of domestic bidders. Although cross-border acquirers are only slightly more profitable than domestic bidders, they invest substantially more in R&D (3.82% of sales vs. 1.50% of sales), lending some support for the internalization hypothesis (Harris and Ravenscraft 1991). Moreover, cross-border acquirers make more related acquisitions and they more frequently acquire public targets. Note that there are only few hostile and competed deals in the sample, in line with Rossi and Volpin (2004).

### 3.2 Methodology

We apply an event study methodology to determine abnormal returns to acquirers' share prices in the trading days around announcement. We assume that capital markets are efficient in the semi-strong form, incorporating publicly available information into security prices more or less instantaneously. In a first step we determine whether abnormal returns of cross-border and domestic transactions are significantly different from zero. We then analyse whether returns of domestic acquirers are significantly different from those of companies that acquire in foreign countries. We measure abnormal returns as the difference between observed return and expected return (see Brown and Warner 1980). For the estimation of expected returns we use a market model with logarithmic returns and the German C-DAX as benchmark index. The C-DAX is a market value-weighted index that contains all German listed companies. Following Kang (1993) we estimate the market

model parameters using an ordinary least squares (OLS) regression from 220 trading days to 21 trading days before the announcement date. Although the market model is a relatively simple model for the estimation of expected returns, it has proved to be quite accurate in comparison with more sophisticated methods (see Conn and Connell 1990; Brown and Warner 1980).

We estimate cumulative abnormal returns (CARs) over different event windows. Positive average CARs indicate that the acquisitions create value for the acquiring firms' shareholders. We test the significance of the average CARs with a two-tailed t-test with the null hypothesis that  $\overline{CAR}_{[t_1:t_2]}$  is equal to zero. Since the t-test assumes a normal distribution we additionally perform non-parametric tests. We then use several multivariate regressions to determine and control for factors that influence abnormal returns. The cross sectional regressions follow a simple multiple OLS regression model as in, e.g., Franks and Harris (1989):

$$CAR_{[t_1:t_2]} = \alpha_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_n x_n + \varepsilon_i$$

where  $a_0$  is the intercept;  $\beta_1$  is the coefficient for the regression variable  $x_1$ , and  $\varepsilon_i$  is the error term. The results of the regressions are reported in the following section. In the multivariate analysis we control for a variety of firm and deal specific variables that are known to influence merger success (see table 3). Acquirer profitability and research and development spending is associated with higher acquisition returns in some studies whereas size and cash holdings have been found to influence abnormal returns negatively. Targets in the same industry as the acquirer and consideration payment in cash may lead to higher returns; deals that are either hostile or competed have been found to influence results in both ways. Relatively larger targets often yield better results, as do private targets.

We also control for 'economic freedom index' (EC Free) per country. This index measures the extent of property rights and the prevalence of markets (see Gwartney et al. 2006 for a detailed description). We also control for targets' countries relative growth rates (Growth) since expanding into markets with faster growth might signal higher future growth. We measure relative target market growth as the differential between the GDP growth of the target country and the German GDP growth in the year of the acquisition announcement. We finally control for relative currency strength (Currency). Kang (1993) finds significant influence of exchange rates to bidder returns of Japanese firms acquiring US-targets. A strong acquirer currency relative to the target country currency may provide advantages to bidder firms against rival bidders and reduce the relative cost of the bid. Other researchers, e.g. Eun et al. (1996), have found currency strength to be insignificant. We measure currency strength in the same way as Kang (1993), using nominal exchange rates obtained from the International Monetary Fund. The variable currency strength is equal to the difference between the average exchange rate in the year of the deal announcement and the

average exchange rate between 1985 and 2006 divided by the average exchange rate between 1985 and 2006. All exchange rates are measured as the ratio of foreign currency to Deutsche Mark (DM). A positive variable indicates a strong DM and a negative variable a weak DM with respect to the currency of the target country. To adjust for the introduction of the EUR in 1999, the DM values for the years 1999-2006 were calculated using the official conversion rates from the European Central Bank. Consequently, the exchange rates between Germany and the EUR member states after 1999 are constant. Furthermore we analyze whether different world regions (US, Western Europe, the ‘rest of world’) and a common border to Germany influence the results.

Table 3: Regression variables

Variable	Definition
<i>AC SIZE</i>	Acquirer size: measured as the natural logarithm of the bidder's enterprise value in the business year prior to the announcement.
<i>AC PROF</i>	Acquirer profitability: measured as bidder EBITDA divided by bidder sales in the business year prior to the announcement.
<i>AC CASH</i>	Acquirer cash: measured as bidder cash and cash equivalents divided by bidder total assets in the business year prior to the announcement.
<i>AC R&amp;D</i>	Acquirer R&D spending: measured as the acquirer's R&D expenses divided by sales in the business year prior to the announcement.
<i>RELATED</i>	Relatedness: a dummy variable that is one if the acquisition is related and zero otherwise. An acquisitions is labelled "related" if the acquirer and the target share the first two digits of their primary SIC code and if manual screening does not lead to different results.
<i>CASH</i>	Cash payment: a dummy variable that is one if the acquirer pays cash and zero otherwise.
<i>HOSTILE</i>	Hostile acquisition: a dummy variable that is one if the acquisition is hostile and zero otherwise.
<i>COMPETED</i>	Competing bidders: a dummy variable that is one if a bidding contest emerged and zero otherwise.
<i>REL SIZE</i>	Relative size: measured as deal size / enterprise value of the acquirer one business year before the announcement.
<i>PUBLIC</i>	A dummy variable that is one if the target is public and zero otherwise.
<i>EC FREE</i>	Economic freedom of the target country: measured with the Economic Freedom of the World Index of the Fraser Institute.
<i>BORDER</i>	Direct border target country: a dummy variable that is one if the target country has a direct border with Germany and zero otherwise.
<i>USA</i>	US-target: a dummy variable that is one if the target is a US-American firm and zero otherwise.
<i>EUROPE</i>	European target: a dummy variable that is one if the target is a Western European (except Germany) company and zero otherwise.
<i>ROW</i>	Rest of world target: a dummy variable that is one if the target is not a US-American or a European target and zero otherwise.
<i>GROWTH</i>	Relative target market growth: measured as the difference between the target market GDP growth and the German GDP growth in the year of the announcement.
<i>CURRENCY</i>	Currency strength: adjusted for EUR conversion and measured as (exchange rate in the year of announcement - average exchange rate 1985-2006) / average exchange rate 1985-2006.

Finally, we also insert a ‘bubble years’- dummy that is one in the years 1999-2001 and zero otherwise to control for special circumstances – i.e., especially bad returns – during the bubble without the results changing qualitatively (not reported).

## 4 Results and discussion

### 4.1 Univariate analysis

To evaluate the magnitude and significance of abnormal returns to acquirers in domestic and international acquisitions we use different event windows. Panel A of table 4 displays the results of two tailed t-tests for the entire sample of N=155 acquisitions. Acquirer returns are insignificant in most event windows, except for the event window [-1; +20], where acquirer returns are negatively significant on a 10% level. These results suggest that there is no clear direction for announcement returns in a mixed sample including both cross-border and domestic acquisitions.

Table 4: Significance tests

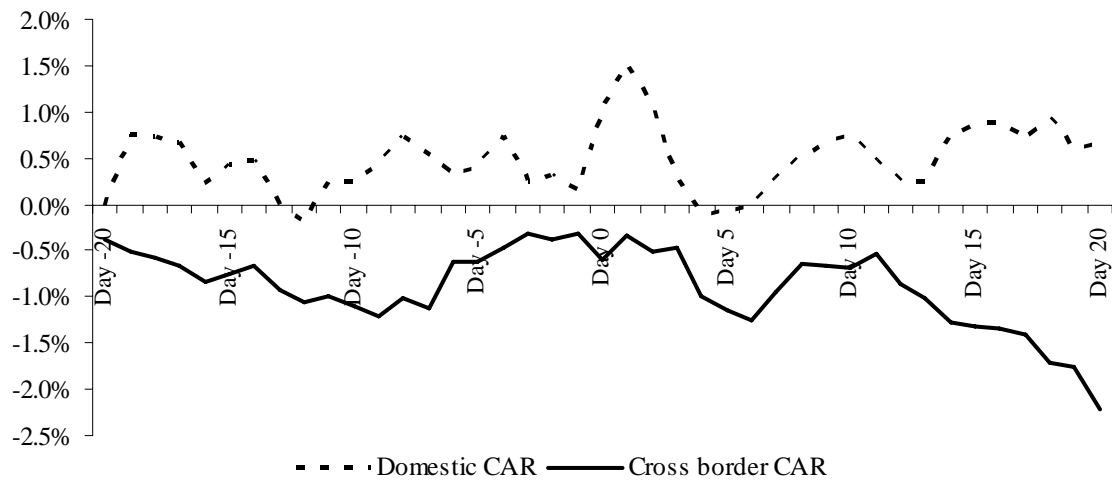
Event window (days)	Average CAR	T-value	Positive CARs	Negative CARs
A. Full sample (n = 155)				
[-20;20]	-1,469%	-1.208	66	89
[-5;5]	-0,481%	-0.718	73	82
[-1;1]	0,344%	0.896	80	75
[-1;20]	-1,273% **	-1.685	71	84
B. Domestic acquisitions (n = 40)				
[-20;20]	0,658%	0.352	21	19
[-5;5]	-0,382%	-0.400	17	23
[-1;1]	1,198% *	1.574	24	16
[-1;20]	0,340%	0.251	19	21
C. Cross-border acquisitions (n = 115)				
[-20;20]	-2,208% *	-1.471	45	70
[-5;5]	-0,516%	-0.613	56	59
[-1;1]	0,047%	0.107	56	59
[-1;20]	-1,834% ***	-2.036	52	63

\*\*\*, \*\*, \* denote significance on a 5%, 10%, 15% level, respectively

The results for the domestic and the cross-border sub-samples vary considerably. Panel B of table 4 reports the results for the domestic sample and Panel C for the cross-border sample. The abnormal returns for domestic acquisitions are generally insignificant or positively significant on a 15% level over the various event windows, which is in line with the literature. The only event window with a negative (but insignificant) CAR for the domestic sample is [-5; +5] with a relatively small negative return. Together, these results provide evidence that domestic acquisitions do not destroy value for acquiring firms' shareholders. In contrast, abnormal returns for cross-border acquisitions shown in panel C are either negatively significant or insignificant. The event window [-1; +20] leads to an average CAR of -1.8% for cross-border acquirers, which is significant on a 5% level. This result is supported by an average CAR of -2.2% in the largest event window [-20; +20], significant on a 15% level. The event windows whose average CARs are positive are in no case close to conventional significance levels. This is in contrast to Moeller and Schlingemann (2005) who find positive though insignificant returns within a [-1; +1] window for cross-border acquisitions in the US. Our results, however, do indicate that there are systematic differences between domestic and cross-border acquisitions, now similar to Moeller and Schlingemann (2005).

We plot the abnormal returns of domestic and cross-border transactions in Graph 2: whereas the domestic acquirers build up a small positive cumulated abnormal return of 0.7% over the event window [-20; +20], the cross-border acquisitions accumulate a negative abnormal return of -2.2% over the same period. Moreover, the cross-border CAR stays negative throughout the entire period whereas the domestic CAR remains mostly positive. The shareholders of domestic acquirers experience the biggest gains in a short period around the announcement. After a downward correction in the succeeding days, the CAR rises again. In contrast, the shareholders of cross-border acquirers experience losses previous to the announcement and a slight recovery around the announcement date.

Graph 2: Cumulated abnormal returns for acquirers in domestic and cross-border deals



A two-tailed, two sample t-test rejects the null hypothesis that the means of the domestic and the cross-border sample are significantly different from each other on up to an error probability of 0.191 (see table 5). We run some non-parametric tests to test the robustness of the results. The Kolmogorov-Smirnov test examines whether the domestic and the cross-border samples follow the same distribution. The Mann-Whitney test (also called Wilcoxon-Mann-Whitney or Wilcoxon Rank-Sum test) detects location differences between the two samples based on their mean. The results of these tests do not differ from the results of the parametric tests and are not reported here.

Table 5: Two sample t-tests, domestic vs. cross border acquisitions, two-tailed

Event window (days)	Number of observations	Domestic average CAR	Cross border average CAR	T-value	P-value
[-20;20]	155	0,658%	-2,208%	1,195	0,235
[-20;10]	155	0,761%	-0,682%	0,680	0,498
[-10;20]	155	0,433%	-1,221%	0,842	0,402
[-5;5]	155	-0,382%	-0,516%	0,105	0,916
[-1;20]	155	0,340%	-1,834%	1,261	0,209
[-20;1]	155	1,517%	-0,327%	1,016	0,312
[-10;1]	155	1,292%	0,660%	0,489	0,625
[-5;1]	155	1,206%	0,297%	0,875	0,384
[-1;1]	155	1,198%	0,047%	1,313	0,191

The difference between the two samples is not large enough to conclude that there are systematic differences between the announcement returns of domestic and cross-border acquirers. The sample also contains only little evidence indicating that domestic acquirers perform better than cross-border acquirers. Using a one-tailed t-test leads to significant



results on a 15% level for the [-20; +20] window and on a 10% level for the [-1; +1] window (the respective P-values are just divided by two to receive the results). This supports the view that domestic deals lead to larger gains for shareholders and that the costs of international diversification may actually outweigh its advantages.

Summarizing the findings in this section so far, domestic acquisitions seem to perform better for shareholders than cross-border acquisitions. This difference, however, is statistically insignificant on conventional levels except for the one-tailed tests. The comparatively small sample of German domestic and international transactions might be one reason for that. Other than Moeller and Schlingemann (2005) for US firms we do not find unambiguously negative cross-border effects for German acquirers. We check whether the abnormal announcement returns differ between target regions (table 6). Therefore we distinguish between target countries that have a common border with Germany (Border), Western European countries (Europe), US-targets (USA) and the rest of the world (ROW).

Table 6: Average CARs of cross-border acquisitions

	event window				n
	[-20; +20]	[-5; +5]	[-1; +1]	[-1; +20]	
Europe	1.09%	1.61%	0.18%	0.06%	52
thereof: Border	6.54%	3.71%*	1.23%	1.19%	22
Non-bordering	-4.38%****	-1.52%**	-0.23%	-2.72%****	93
USA	-4.42%***	-2.40%**	-0.15%	-2.77%***	55
ROW	-8.42%*	-1.38%	0.54%	-7.71%**	8

\*\*\*\*, \*\*\*, \*\*, \* denote significance on a 1%, 5%, 10% and 15% level, respectively

Acquisitions in countries that share a border with Germany (Border) deliver the best though insignificant results with an average abnormal return of +6.54% in the largest window. Targets in all Western European countries, including those that have a common border with Germany, do not deliver results that are distinguishable from zero on average. When we group together all target countries that do not share a common border with Germany (Non-border) the average abnormal return reaches a highly significant -4.38%. Bordering and non-bordering target nations deliver significantly different results from each other on a 1% level (t-value of 2.92), and also the median values of the two groups are significantly different from each other (not reported). Distance from Germany clearly seems to matter for acquisition success. Surprisingly, even acquisitions in the US yield a significantly negative average abnormal return up to -4.4% in the largest window; within a [-1; +20] day window the figure is -2.7%, significant on a 5% level. Deals with the ‘rest of

the world' are negative and significant on a 10% level in the [-1; +20] window. These findings are in line with Grote and Ueber (2007) who show that within the US domestic transactions with targets that are far away deliver the worst results, targets at a medium range (about 500 kilometres) the best and deals with targets located closer to the acquirer's headquarter deliver mediocre results.

## 4.2 Multivariate regressions

We perform several multivariate OLS regression analyses to test whether the different abnormal returns per region hold when we control for firm and deal characteristics. The dependent variable in each of the regressions is the CAR for the event window [-20; +20] days around the announcement date. Table 6 above shows that the average abnormal returns get larger the longer the time covered by the event windows; at the same time the results actually become more significant. There are several possible reasons for this: The announcement dates recorded in the database might not adequately reflect the date when capital market participants first learn about the deals. International deals usually involve more people than domestic ones so the probability of leakages is higher. Other deal-related news such as competition in bids or reactions to hostile offers might occur close to the announcement date and influence the acquirers' share prices. Finally, European regulations on insider trading and announcements have not been as strict as in the US until recently. The increasing statistical significance signals that it is not unrelated firm events that distort the findings. We run the regression also on other CAR windows; the results do not change qualitatively but lose significance. All regressions reported below are statistically significant on a 1% level; the adjusted  $R^2$  of the cross-border regressions runs up to 15% which is about the same as in other studies (e.g., Morck and Yeung 1992; Harris and Ravenscraft 1991; and Markides and Ittner 1994). We analyse the residuals to check whether any conditions for the OLS regressions are violated. A White (1980) test shows that there are no problems arising from heteroskedasticity. The Shapiro-Wilk, Anderson-Darling, Lilliefors and Jarque-Bera tests all accept the null hypothesis that the residuals are normally distributed (not reported).

We start by regressing variables reported in the literature to influence abnormal returns on our full sample with both, domestic and cross-border deals (column 1 in table 7). With an adjusted  $R^2$  of 9.7% the model is reasonably well specified. As expected, acquirer size (AC Size) is negatively significant and acquirer profitability (AC Prof) is positively significant – the latter in contrast to Lang et al. (1991). On average, smaller and better managed firms yield higher abnormal returns in acquisitions. Somewhat surprising, not many of the 'usual suspects' yield significant coefficients: acquirer's cash (AC Cash) and R&D spending (AC R&D), the target's relative size to the acquirer (Rel Size), whether the transaction is paid for in cash or not (Cash), whether the target is in related business (Related) or the deal is

hostile (Hostile) – none of these firm and deal characteristics are significant in the full sample. When the target is a listed firm (Public), the results get worse, in line with the literature. Competed deals yield significantly better results than others. This is in contrast to Bradley et al. (1988); we should, however, interpret this finding carefully given that there are only five competed deals in the sample. Cash holdings of the acquirer become negatively significant when we run the regression on other event windows, supporting the free cash flow hypothesis of Jensen and Meckling (1976) and Jensen (1986). In some windows we find the relative size of the target with respect to the acquirer getting significantly positive, as found by Jarrell and Poulsen (1989), Asquith et al. (1983), and others.

Next we introduce two dummy variables, Domestic and Border, to test for border effects. Domestic is one in domestic deals and zero otherwise, and Border is one when the target is in a country that has a common border with Germany and zero otherwise (table 7, column II). The dummy for domestic deals is insignificant, confirming the results from the univariate analyses that abnormal returns are not significantly different in domestic and international deals. We repeat this analysis for all event windows, with the domestic dummy never getting significant. The border dummy is significant at the 1%-level: Buying firms in neighbouring countries delivers significantly positive results also when we control for a wealth of firm and deal characteristics. This is remarkable: Neither domestic deals nor international deals far away deliver superior results – but deals in nearby countries do.

Table 7: Multivariate regression results on average CARs of German bidders, [-20; +20] event window

	Model I	Model II	Model III	Model IV	Model V
Intercept	0.381*** (2,43)	0.358*** (2,31)	0.402*** (2,56)	0.391*** (2,53)	0.382 (1,23)
AC SIZE	-0.028**** (-2,85)	-0.028**** (-2,89)	-0.029**** (-2,95)	-0.029**** (-2,96)	-0.02* (-1,64)
AC PROF	0.251**** (2,64)	0.245**** (2,62)	0.246*** (2,59)	0.246**** (2,63)	0.286**** (2,79)
AC CASH	0.048 (0,37)	0.043 (0,33)	0.018 (0,13)	0.035 (0,27)	0.094 (0,60)
AC R&D	0.074 (0,25)	0.18 (0,61)	0.134 (0,44)	0.12 (0,40)	0.052 (0,15)
RELATED	0.016 (0,59)	0.017 (0,64)	0.017 (0,64)	0.016 (0,63)	0.001 (0,02)
CASH	-0.001 (-0,05)	-0.005 (-0,19)	0.004 (0,15)	-0.001 (-0,05)	-0.006 (-0,18)
HOSTILE	0.107 (1,23)	0.121 (1,40)	0.107 (1,23)	0.114 (1,32)	0.079 (0,84)
COMPETED	0.118** (1,75)	0.089 (1,33)	0.107* (1,60)	0.091 (1,37)	0.16** (1,70)
RELSIZE	-0.001 (-0,07)	-0.008 (-0,41)	-0.005 (-0,25)	-0.007 (-0,39)	-0.003 (-0,13)
PUBLIC	-0.051** (-1,86)	-0.041* (-1,49)	-0.05** (-1,79)	-0.048** (-1,76)	-0.042 (-1,28)
DOMESTIC		0.034 (1,17)			
BORDER		0.091**** (2,63)		0.073*** (2,10)	0.071* (1,58)
EUROPE			0.013 (0,41)		
USA			-0.024 (-0,75)	-0.015 (-0,55)	0.019 (0,47)
ROW			-0.089* (-1,60)	-0.089** (-1,69)	-0.119** (-1,80)
ECFREE					-0.018 (-0,52)
GROWTH					-0.376 (-0,59)
CURRENCY					0.224*** (2,05)
n	155	155	155	155	115
R <sup>2</sup>	0,155	0,195	0,180	0,204	0,272
adj. R <sup>2</sup>	0,097	0,127	0,105	0,131	0,153
Prob (F-Stat)	0,005	0,001	0,006	0,001	0,007

\*\*\*\*, \*\*\*, \*\*, \* denote significance on a 1%, 5%, 10% and 15% level, respectively.

We introduce dummies for different target regions in column III. International deals can take place either in the US (USA), in Western Europe (Europe) or in the rest of the world (ROW). Since neighbouring countries overlap to a great extent with Western European countries we cannot test both groups in one regression. Neither targets in Western Europe nor in the US deliver significant abnormal returns for acquirers. Our results for the US are in line with the findings of Eun et al. (1996) who get insignificant acquirer CARs for French, German and Dutch firms that buy US-targets. The coefficient for ROW is negative but only on a 15% level. When we exchange the Europe-dummy with the Border-dummy

in column IV, the ROW-dummy gets significant on a 10% level. Again, Border is significant at a 5% level.

In Model V we introduce foreign country variables which reduce our sample to international deals only ( $n=115$ ). We find the economic freedom index to be insignificant – given that most of the targets are located in highly developed countries this is no surprise. Growth rate differentials between Germany and the target countries are negative but insignificant; the coefficient gets significant for other event windows, though: The market does at least not seem to welcome the entry in high growth areas. The currency variable is significantly positive; supporting the hypothesis that acquirers have advantages in times of relative currency strength (Kang 1993): With a highly valued DM (Euro) transactions deliver significantly better returns. The country-specific variables bear some explanatory power for the abnormal returns of acquiring firms; their introduction increases the adjusted  $R^2$  to more than 15%. The coefficient for the border-variable loses some of its significance – it is now significant at an 11.6% level – but remains a fairly constant positive influence on acquirer returns.

Of interests here are also the research and development expenses of the acquirer (AC R&D) – these are insignificant throughout the different specifications. This result casts some doubt on the internalization hypothesis discussed in section 2. If internalization was the motive for international diversification and companies tried to employ their firm-specific resources and comparative advantages on larger and international scale, the variable would have to be positive and significant at least on lower levels. Although companies that acquire abroad clearly spend more of their resources on research and development (see Table 2) and consequently rely more on intangible assets than their competitors with lower R&D intensity, there is no correlation with their announcement returns. In general, our results contradict the theoretical explanation for corporate international diversification presented in section 2. If companies provided geographical diversification opportunities to investors which those cannot achieve on their own, this service should be especially valuable for areas where information asymmetries are high and direct investment by individuals is therefore limited, i.e., the countries that are included in the ROW group. This is clearly not the case. Moreover, the results are not compatible with the framework of multinational networks, which implies that the market value of companies increases with their degree of international diversification. If this was the case abnormal returns of the acquiring companies would, on average, have to be positive for the entire sample of cross-border acquisitions. Acquisitions in countries with a common border, i.e. at low geographic and presumably cultural differences consistently deliver the best results.

## 5 Conclusion

The paper examines shareholder wealth effects of international acquisitions. We use a sample of 155 acquisitions by German corporations in the period from 1985-2006 and focus on short term abnormal announcement returns to acquiring firms. We find that, for different event windows, announcement returns for domestic acquisitions are either positively significant or insignificant. In contrast, announcement returns for international acquisitions are either negatively significant or insignificant. Two sample tests, however, find the difference between the two groups not statistically significant. Nevertheless, international acquisitions at least do not perform better than domestic acquisitions and on average destroy shareholder value. We then divide our sample of cross-border transactions into regions to analyse whether geography makes a difference. We find that acquisitions within Western Europe also do not deliver results that are distinguishable from zero on average. Surprisingly, transactions in countries with a common border to Germany deliver the best results with positive – though insignificantly different from zero – abnormal returns of +6.5% for the acquiring firms in a [-20; +20] day window. In contrast, acquisitions of targets in countries that have no common border with Germany result in highly significant -4.4% abnormal returns; the two results are significantly different from each other. Acquisitions in the US yield significantly negative average abnormal returns of -4.4% and deals with the ‘rest of the world’ also deliver negative average returns of -8.4% of the acquirers’ stock. Whereas the results for the US get insignificant when we control for a variety of firm and deal characteristics, acquisitions in neighbouring countries continue to produce significantly positive and deals with the rest of the world significantly negative abnormal returns. Our results are not driven by specific circumstances during the ‘bubble-years’ 1999–2001.

We find that acquirer profitability has a positive impact and acquirer size has a negative impact on announcement returns. In most specifications, acquiring a listed target instead of a private one lowers the abnormal returns. A strong currency significantly improves the results in our sample. Overall, not many of the ‘usual suspects’ from the literature drive the abnormal returns of German acquirers. The acquirers’ cash holdings, whether the deal is paid for in cash or not and the acquirers’ research and development expenditures are insignificant in most event windows for our sample. Thus, results derived from observations in the US should not unequivocally be transferred to other regions. Considering our results it is not surprising that different studies on cross-border acquisitions – focussing on different acquirer and target countries – lead to different results. Especially the studies that do not differentiate between target countries ignore the possibility that returns to acquirer firms may differ systematically according to targets’ regions or geographic distances to the acquirer.

Our results do not provide support for any prevailing theories about the benefits of corporate international diversification; the insignificance of the R&D variable in the

regressions shows that internalization might not be a consistent motivation for international acquisitions. Rather, our analysis provides evidence that announcement returns differ systematically according to the geographical location of the target firm. Proximity is one of the most important success factors in cross-border mergers and acquisitions. This might have several causes: The integration of targets and the realisation of synergies are arguably more difficult with larger distances between two firms. Knowledge of each other's language and culture might be an advantage; also more 'soft' information is available for closer targets. Lastly, firms closer by can be monitored more easily. The question then arises, why not the closest firms, i.e., the domestic targets, lead to the most successful deals. More research on the differences between domestic and cross-border deals that incorporates geographical variables is needed. Notwithstanding, our core findings – cross-border acquisitions in neighbouring countries yield significantly, consistently and economically relevantly better results than acquisitions farther away – could be a valuable guideline for management teams and investors alike.

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