The impact of U.S. takeovers in foreign markets: their differential effects on emerging and developed markets

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Abstract

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Key words: Cross-border merger and acquisitions, rivals, emerging markets.
JEL: G14, G34

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1. Introduction

Many studies on cross-border mergers and acquisitions have researched their impact on both acquirers and targets, finding positive or no stock price effects for acquirers and positive effects for targets.[1] However, the question of whether these takeovers benefit the targets' domestic markets is an important one that has largely been overlooked. This is particularly striking because a concern for both developed and emerging countries is the impact of foreign acquisitions on their markets. This is especially true for policy makers of recently liberalized countries as evidenced by their historical restrictions imposed on foreign acquisitions.

The objective of this paper is to study the impact of foreign acquisitions on the target's industry rivals. We investigate whether emerging market rivals react differently to foreign acquisitions than developed market rivals. We expect cross-border takeovers to have a different impact on developed and emerging markets as these markets differ in their economic and legal environments, in addition to technology and skill. Further, we explore several factors that possibly explain cross-sectional differences of the effects of foreign acquisitions on individual rivals.

We use two competing hypothesis to explain the reaction of the target's rivals. The contagion effects hypothesis predicts that the announcement of a cross-border acquisition will have positive effects for the target's local rivals as a result of the takeover conveying industry-wide, positive information (Warner, 1977). For instance, foreign acquisitions can benefit local markets through indirect technology transfers and inefficiency reductions (Görg and Greenway, 2004) and by an increase in the probability of future acquisitions (Song and Walkling, 2000). In contrast, the competitive effects hypothesis predicts negative effects for the local firms as they

[1] See, for instance, Doukas and Travlos (1988), Morck and Yeung(2002), Harris and Ravenscraft (1991), Chari, Ouitmet, and Tesar (2010), Kuipers, Miller and Patel (2009), Bris and Cabolis (2008).

are unable to compete with the newly merged firm. We expect both contagion and competitive effects to be stronger in emerging countries than in developed countries because emerging economies are more likely to benefit from technology transfers and inefficiency reductions but are potentially at a greater disadvantage when having to compete with a firm from a more developed country. The question of whether rival firms in emerging and developed markets have an average positive or negative reaction is an empirical one and will depend on whether contagion effects or competitive effects are dominant.

We observe the stock price reaction of the target's industry rivals to 2,125 cross-border acquisitions by U.S. acquirers, and study rival, industry, acquisition, and country characteristics that possibly explain their reaction to the acquisition. We focus on acquisitions by U.S. firms to hold constant the economic development of the acquirers' country and because the U.S. is responsible for 40% to 50% of cross-border takeovers (Chari, Ouimet, Tesar, 2010; Erel, Liao, Weisbach, 2010). We include both public and private targets because private firms play an important role, particularly in emerging markets.

We find that the effect of foreign acquisitions on local markets depends on the difference between the economic development of the acquirer and the target's country. For developed markets, the average impact on rival firms is insignificant. Surprisingly, for emerging markets the acquisitions positively impact rivals consistent with contagion effects dominating competitive effects. This is in contrast to the common perception that firms in emerging markets will suffer from the entrance of a competitor from a developed country.

In developed markets, individual rival characteristics play a more important role in explaining the impact of the acquisition in the target market than country, acquisition, or industry characteristics. Abnormal returns are higher for rivals with low growth opportunities. This is

consistent with previous research in the U.S. market which suggests that firms with low growth opportunities are more likely to be acquired (Mitchell and Mulherin, 1996; Song and Walkling, 2000; Hasbrouck, 1985). Higher leverage, a proxy for firm quality, has a mitigating effect on competitive effects. Smaller rivals have a more difficult time competing with the newly merged firm, consistent with the realization of competitive effects. Finally, rivals that are delisted after the acquisition experience higher returns, possibly because they become targets themselves. Of the industry, acquisition, and country attributes, only the relatedness of the acquisition matters—when the target and acquirer are in the same industry the newly merged firm has stronger competitive effects on rivals.

In contrast to rivals in developed markets, the characteristics of the acquisition itself, along with industry and country characteristics are more important in determining the impact of the acquisition on emerging market rivals. Specifically, rival returns are greater the higher the shareholders' protection of the target country and in countries with lower GDP per capita. Firms in emerging markets with greater shareholder protection will be in a better position to grow and compete and, consequently, experience positive returns. Unlike the case among developed markets, the variation in GDP per capita in emerging markets is great enough that it is significant—those with less market development experience more contagion effects. We find that rivals of public targets and rivals of acquisitions in which a large percent of the target is acquired experience stronger competitive effects. We also find that rivals in technology-intensive industries benefit more, consistent with the takeovers providing benefits to rival firms through potential technology transfers. With respect to individual rival characteristics, efficiency is the only important factor—rivals that use their assets more efficiently experience more contagion effects.

Prior research provides limited evidence on the impact of cross-border acquisitions, despite the increase in their frequency. A few studies investigate the effects of all forms of FDI on the productivity of local markets in specific countries.[2] In general, studies of FDI in emerging countries document positive effects (for example, Kokko, 1994 and 1996; Blömstrom and Sjöholm, 1999). However, some studies have also found mixed evidence or negative effects (Germidis, 1977). While these studies provide insight on the effects of FDI, they focus on one country, do not distinguish between forms of FDI (greenfield investment, M&A, and joint ventures), and use productivity measures—such as labor productivity, total factor productivity or ratio of imports to GDP. In particular, these measures of productivity suffer from endogeneity concerns in that a firm may choose to acquire in industries in which productivity is increasing. In contrast, the stock price reaction does not suffer from endogeneity concerns. Because the stock price is forward-looking, such information would have already been incorporated into the stock price at the time of the acquisition. Therefore, any change in price on the announcement of an acquisition will reflect only new information conveyed by the acquisition and its impact on future cash flows.

Most similar to this paper is the work of Bris, Brisley, and Cabolis (2008) which examines the target's industry Q in the year after cross-border acquisitions, finding it is positively related to the percent of local firms acquired by foreign firms from countries with better investor protection. However, the industry Q measure reflects the valuation change of the target firms which may be a large fraction of the industry, particularly in emerging markets; thus the impact on rivals in not clear. Further, because the industry Q is measured one year after the acquisition, it is not clear if the acquisition is associated with value increases to local firms since the measurement of the effect is not immediate. In contrast, we examine individual competitor

[2] Görg and Greenaway (2004) provide an excellent summary of these studies.

reactions at the time of the acquisition; this also allows us to examine the combination of competitive and contagion effects within an industry and the firm, industry, acquisition, and country characteristics associated with these reactions.

The rest of the paper is organized as follows: Section 2 discusses the contagion and competitive effects of cross-border takeovers. We describe the sample and methodology in Section 3. Section 4 presents results and Section 5 concludes.

2. Industry effects of cross-border takeovers

2.1 Contagion and competitive effects

The stock price reaction of the target's rivals to a foreign acquisition can be explained by two competing hypotheses: contagion effects (or information signaling) and competitive effects. Contagion effects suggest that the target and its rivals should have a positive reaction to the acquisition. Rival firms will have a positive reaction to the acquisition announcement if the takeover signals that rivals are expected to benefit through technology transfers, increased efficiency, a change in governance, and/or an increase in the probability of being acquired. Acquirers may have technological advantages (modern technology, efficient production, and organizational processes, know-how, etc.) when they enter into a market and these advantages may "spillover" to the local industry. For example, Gorg and Greenway (2004) suggest that local firms may benefit by imitating production or organizational processes, acquiring human capital that has been trained by the foreign firm and learning to export from the multinationals.[3] However, even if local firms are not able to take advantage of the technology transfers, increased competition from the foreign acquisition may force them to use their existing technologies more

[3] Studies on individual countries show that targets do gain access to the foreign acquirers' technological advantage upon acquisition (Bresman, Birkinshaw, and Nobel, 2010; Hejazi and Safarian, 1999).

efficiently in order to survive the increased industry competition. A boost in the industry productivity should increase the expected future cash flows of the firms and be reflected in stock prices. Bris, Brisley and Cabolis (2008) argue that corporate governance transfers throughout an industry when acquirers from better investor protection countries acquire targets from poorer investor protection countries. Another argument for contagion effects is put forth by Song and Walkling (2000), suggesting that acquisitions might signal that firms in the industry are more likely to be acquired. This effect is likely stronger in developed markets which have a more active takeover market. We refer to this as the acquisition probability hypothesis (APH).

In contrast to contagion effects, competitive effects suggest that rival firms should have a negative reaction to the acquisition. Acquisitions may be detrimental to the target's rivals if the acquisition results in a firm with significant competitive advantages (Akhigbe and Martin, 2000). FDI theories suggest that foreign firms must have significant competitive advantages to overcome the difficulties of operating abroad, such as operating in a different business environment and culture, and managing operations in different geographic areas. Consequently, targets acquired by foreign firms become stronger competitors with greater access to capital, technology, know-how, etc, and this may be to the detriment of rival firms. For instance, Kelley and Woidtke (2006) find that U.S. firms use their access to financing as a comparative advantage to firms in less developed countries.

In summary, contagion effects can be offset by competitive effects. This will depend on the amount of market power and growth opportunities of rivals relative to the newly merged firm, and, further, their ability to respond using financial resources. Hence, the characteristics of individual firms will dictate the way in which rival firms will react to the foreign acquisitions.

2.2 Determinants of contagion and competitive effects

In this section we discuss the determinants of contagion and competitive effects of cross-border takeovers, and their proxies. Appendix A summarizes our hypotheses, while Appendix B lists the proxies and their descriptions. We consider country, acquisition, industry, and rival characteristics.

C*ountry characteristics.* The effects of the acquisitions on a target's rivals likely vary with the difference in the economic development of the acquirer's and target's market. In acquisitions by developed acquirers, emerging market rivals may benefit more from the technology transfers generated than developed market rivals; this is because emerging markets have more to learn from their more developed acquirers (Findlay, 1978). Therefore, the larger the difference between the acquirer's and target's level of economic development, the greater the technology transfers and the greater the contagion effects. However, as Glass and Saggi (1998) assert, emerging market rivals may not have the human capital, infrastructure and distribution networks to adopt the new technologies. As a consequence, the acquisitions will convey competitive effects to rivals because they are in a poor position to compete with the newly merged firm. We measure the economic development of the target market using various proxies: GDP per capita, International Institute for Management Development (IMD) competitiveness index, openness, and the Spamann (2010) shareholder protection index. The IMD index defines less competitive countries as those with lower economic performance, low government and business efficiency, and poor infrastructure. Higher competitiveness is associated with a lower number (ranking). For instance, in 2009 the United States had a competitiveness ranking of 1, while Argentina had a ranking of 55, with the largest ranking being 58. Country competitiveness is a more general measure of economic development than GDP while shareholder protection

measures the capital markets' level of development. The openness of the country is measured as the sum of exports and imports as a percentage of GDP. Rajan and Zingales (2003) find that openness is associated with financial development and foreign competition in a country.

Other country characteristics that might impact rivals' reaction are the country exchange rate strength and takeover activity. A weak local currency attracts more FDI (Froot and Stein, 1991; Erel, Liao, Wiesbach, 2010), and thus an acquisition announcement is more likely to signal the beginning of a merger wave when the currency is weak. Consistent with the APH, this would imply a negative relation between rival returns and the strength of the exchange rate. As in Harris and Ravenscraft (1991) we measure exchange rate strength as the deviation of the average exchange rate in the announcement year from the average exchange rate over the sample period. Finally, markets with less takeover activity—as is the case for emerging markets relative to developed markets—should be less likely to experience merger waves. We measure takeover activity as the number of takeovers of listed firms divided by the number of listed firms in the market.

Acquisition characteristics. Acquisition characteristics such as the method of payment may proxy for the competitive advantage of the newly merged firm. Prior literature (e.g. Bradley, Desai and Kim, 1988; Harris and Ravenscraft, 1991) shows that target gains are significantly higher in all-cash acquisitions. This may be due, in part, to cash acquisitions signaling the strength of the bidder. In addition, we use target size—and because public firms tend to be larger than private firms—public status as a proxy for market power. Acquisitions of larger and/or public targets should have more negative effects on the local industry to the extent that they have greater market power.

Other characteristics of the acquisition considered are: the percent of the target that is acquired, the prior presence of the acquirer, and the relatedness of the acquisitions. Acquirers should have more incentives to transfer technology to targets when they own a greater share of the target, thus increasing the potential for technology transfers. If the acquirer already has a presence in the market, then a positive reaction should be lessened because some technology transfers to rivals would likely have already occurred. At the same time, when an acquirer chooses to make a more significant entry into a market, it will have a greater advantage since it will have already overcome the disadvantages of entering a new market, resulting in stronger competitive effects to rivals. Finally, related acquisitions are driven by efficiency—more efficient production and organization might lead to more transfers of knowledge benefiting rivals or it may create a more competitive merged firm with which rivals have difficulty competing.

Industry characteristics. The type of industry and competition in an industry may impact how the acquisitions affect an industry. Transfers of technology or innovative production process and efficient organization of labor should be more likely to occur in technology-intensive or manufacturing industries. Therefore, we include indicator variables for these industries. Foreign acquisitions may benefit local firms by increasing industry competition, forcing local firms to reduce inefficiencies. We measure industry competition by its Herfindahl Index: the sum of squared market shares for the rivals in an industry.

Rival characteristics. In addition to the industry Herfindahl, we measure *Rival Herfindahl* contribution following Laux, Starks, and Yoon (1998) as the rivals' squared market share divided by the industry Herfindahl. Rivals with greater market power relative to the industry should be less negatively affected by the acquisition. Rivals with greater growth options are more likely to benefit from technology transfers and a more efficient production process as

they adopt them to realize their growth opportunities. Similarly, foreign acquisitions force local firms to reduce inefficiencies in order to defend themselves against increased competition. Therefore, less efficient firms may benefit more since they have more room to reduce inefficiencies. We measure growth options as the market value of equity plus liabilities divided by total assets, and efficiency as sales divided by total assets.

Rivals' access to financing will impact their ability to compete. Rivals with high leverage (long term debt divided by total assets) are at a disadvantage when competing with the newly-acquired firm since high leverage restricts the firm's flexibility to face the challenges imposed by the increased competition (Stulz, 1990; Ahkigbe and Martin, 2000). This effect is likely exacerbated in emerging markets due to their lower liquidity which makes it more difficult to finance projects with equity, and, therefore, makes debt a more binding constraint. It is not clear what effect leverage will have in developed markets as developed market firms have more flexibility in financing, and higher debt levels might be a signal of higher firm quality (Ross, 1977). Cross-listing status affects access to financing (Pagano, Roell, and Zechner, 2002; Doidge, Karolyi, and Stulz, 2004; Reese and Wiesbach, 2002). Cross-listed firms are, therefore, in a better position to face the competitive advantages of the acquired firm, and the cross-listing status is expected to be more important for emerging market firms due to their less liquid equity markets.

Rival size may impact the way in which the rival responds to the acquisition. Small rivals may benefit more from indirect technology transfers, allowing them to grow more. On the other hand, small rivals may be more negatively affected as they are at a disadvantage when competing against the presumably larger and stronger merged firm.

The acquisition probability hypothesis (APH) predicts a positive reaction for rivals that are more likely to be acquired. Rivals are more likely to be acquired if they have low growth opportunities (Hasbrouck, 1985; Song and Walkling, 2000); low leverage, if low leverage is viewed either as unused debt capacity (Hasbrouck, 1985) or as a signal of inefficient management (Palepu, 1986); or are smaller (Asquith, Brunner, and Mullins, 1983; Hasbrouck, 1985; Palepu, 1986; Mikkelson and Partch, 1989; Song and Walkling, 2000).

Finally, we use an indicator for rival firms that have been delisted after the acquisition. Strong firms that are able to survive the new competition should have less significant competitive effects. However, if the delisted firms were later acquired they should experience a positive reaction to the acquisition according to the APH.

3. Description of the data and methodology

3.1 Data

Our sample of acquisitions comes from the Securities Data Company's (SDC) Cross-Border Merger and Acquisitions Database. We consider all cross-border takeovers involving U.S. acquirers and foreign targets from 25 developed countries and 16 emerging countries, announced between January 1988 and December 2009. We focus on acquisitions by U.S. acquirers to keep constant the acquirer legal and economic environments, to maintain manageability of the data, and because the U.S. is, on average, responsible for 40-50% of cross-border acquisitions (Chari, Ouimet, Tesar, 2010; Erel, Liao, Weisbach, 2010). We include acquisitions by both publicly traded and private U.S. firms, and require that the transaction is complete, with the establishment of majority control. The acquisitions include not only publicly traded targets but also private targets as they comprise a significant portion of emerging market

economies. For example, during our sample period, the average market capitalization of publicly traded firms as a percentage of GDP is 81% in developed markets but only 52% in emerging markets.

For each of these targets, we identify rival firms. Rival firms are defined as all firms in the target's country and two-digit SIC industry, at the time of the acquisition. To avoid survivorship bias, our sample of rivals includes those that de-list subsequent to the acquisition announcement. As with many studies of rival firms, we are limited to studying the impact on public rivals since data on private firms is largely unavailable. Throughout the paper, references to "the sample" or "sample firms" refer to the rivals of the target.

Rivals' returns are obtained from Datastream, while the accounting data is from Worldscope. The sample is divided into emerging market and developed market acquisitions based on the target country's economic development as defined by the World Bank. Many emerging market firms do not trade daily. Therefore, we require that the firms trade 70% of the time in the year prior to the acquisition before including them and their associated acquisition in the sample.[4] This assures that information is more likely to be efficiently incorporated into the stock price. After restricting the sample based on availability of return data, we have a sample of 81,819 rival firms for 2,125 acquisitions. Our initial analysis of the impact on rivals is on this full sample. In subsequent analysis we consider the impact of rival characteristics on their reaction, requiring the use of accounting data from Worldscope. As a result, the sample is further restricted to 33,890 rival firms for 1,967 acquisitions. Given that the change in the sample due to requiring accounting data is substantial, we also show that the results of the impact on rivals holds with this restricted sample of rivals.

[4] We thank Rene Stulz for this suggestion.

3.2 Methodology

We study the effect of the acquisitions on the targets' local industry by measuring the stock price reaction of the rival firms to the acquisition announcement. Studies examining productivity, changes in GDP, or other economic measures of the impact of FDI suffer from endogeneity. The endogeneity problem occurs because a firm's choice to enter a market is positively influenced by that market's expected growth. By using stock prices, which are forward looking, we are able to overcome any endogeneity concerns. If the market a firm is entering is expected to grow, then that expected growth should already be incorporated into the stock price of the industry/market before the acquisition announcement. Since prices should only react to new information (Fama, 1971), then any price changes to the announcement should be due to the new information that the announcement provides to the market. Our method follows a number of studies using price reaction over a short window to analyze the average industry impact of different events.[5]

Rivals' stock price reaction is calculated as the cumulative abnormal returns (CARs) using standard event study methodology.[6] CARs are calculated from five days prior to acquisition to five days after the acquisition. We focus on this window to be consistent and comparable with prior literature (see Song and Walkling, 2000, and Lang and Stulz, 1992). In unreported results, we estimate the five day and three day windows around the announcement, which provide similar results. Z-statistics are measured as in Lang and Stulz (1992).

[5] For example, Song and Walkling (2000), Eckbo (1983), Fee and Thomas (2004), and Sharur (2005) use CAR to study the effect of U.S. domestic acquisitions on the targets' rivals. Akhigbe and Martin (2000) use CAR to study the effect of foreign acquisitions on the rival firms of U.S. targets. Lang and Stulz (1992) and Ferris, Jayaraman, Makhija (1997) implement this methodology to study the industry impact of bankruptcy announcements. Finally, Laux, Starks, and Yoon (1998) use CAR to study the intra-industry competition and contagion effects of dividend announcements.

[6] We use an estimation period from 260 days through 100 days prior to the announcement date, requiring at least 100 observations to be available for this estimation. Datastream provides 6 different country indices for each market based on the inclusion of different industries; we select the broadest index available. We also estimate CARs by subtracting target and rivals' returns from the market portfolio. This might be of importance to emerging markets in which target and rival firms represent a significant portion of the market. Results remain largely the same. We thank Rene Stulz for this suggestion.

4. Results

4.1 Description of the acquisitions

Acquisition activity increases over time for both emerging and developed markets, with almost 90% of the acquisition activity in emerging markets occurring after 1996 (Table 1, Panel A). Historically, emerging countries imposed restrictions on foreign direct investment (FDI), especially on acquisitions. However, after the Latin American debt crisis of the late 80's and the Asian crisis of the late 90's many countries were required to liberalize their capital markets to allow more FDI in exchange for international financial support from the IMF and the World Bank.[7] Görg and Greenway (2004) report that in 1998, 60 countries introduced 145 regulatory changes and 94% of them created more favorable conditions for FDI. As a result, acquisitions of targets in emerging markets by acquirers from developed markets became more frequent (Chari et al., 2010). This may explain why in our sample most of the acquisition activity in emerging market occurs after 1996.

For both developed and emerging markets, the majority of acquisitions involve private targets. Of the 1,839 (286) acquisitions of developed (emerging) market targets, 19% (17%) are public. A considerable number of acquisitions occur in Germany, France, Australia and, especially, the UK in which 36% of the developed market acquisitions occur; the rest are fairly evenly distributed (Panel B). Among emerging countries, the greatest representations are China, India, Brazil, and Mexico. Acquisitions of developed and emerging targets are mainly concentrated in the industries of Manufacturing and Services, though Transportation & Public Utilities and Wholesale Trade are also well represented in emerging markets (Panel C).

[Insert Table 1 about here]

[7] Latin American Market Report, March 2000, Published by InfoAmericas.

For the overall sample, method of payment does not differ significantly between developed and emerging targets, although for public targets it does (Panel D). Stock-only deals occur more often in acquisitions of developed country targets than in emerging, with a mixture of cash and equity used more often in emerging markets. The average size of the acquisition, reported by SDC as the sum of the target's market value of equity and liabilities, is slightly larger in developed countries, though the difference is not significant. The average size of public acquisitions in developed (emerging) countries is $634M ($630M). While the difference between the averages is not significant, the medians are, reflecting that the distribution is skewed by a few large emerging market acquisitions. In both emerging and developed markets, public targets are significantly larger than private targets.

Emerging market targets represent a large share of their home market industry with an average (median) of 37% (17%), while in developed markets targets represent an average (median) of 21% (0.9%) of their market; the difference is significant at the 1% level. The target's size relative to its industry (Relative Acquisition Size) is the target's size divided by the market value of all firms in the same industry and country as the target including the target firm. The share of the market that targets represent in emerging markets is significantly larger than that in developed markets and may, in part, drive concerns over takeovers in emerging markets. Finally, on average, 96% and 86% of the target is acquired in developed and emerging markets, respectively.

4.2 The industry impact of the acquisitions

We begin by estimating the reaction of rivals to the cross-border takeovers for the full sample of firms. Rival returns are not independent because they are measured within the same

industry and over the same period of time. To give each acquisition equal weight and to account for any contemporaneous cross-correlation among returns in the industry we create market value-weighted (VW) portfolios of rivals for each of the 2,125 targets. The portfolios are created by combining the rival returns of each target into an index as if they were a single observation (see Eckbo, 1983; Lang and Stulz, 1992; Song and Walkling, 2000; Lee, 2004).

In Table 2 we present the impact of the acquisitions on the target's industry for the full sample of 81,819 rivals for which we can obtain return data. In Panel A, we first present the mean, median, and percent positive CARs of rival firms in developed and emerging markets. Rivals in developed markets, on average (at the median), experience insignificant returns around the announcement of the acquisition. The reaction is similar whether the acquisition is public or private. In contrast, rivals of emerging market targets have an average (median) gain of 1.19% (0.57%), significant at the 1% level, with 56% of them having a positive return. The reaction is positive for both public and private acquisitions. Given the concern on the part of emerging market policy makers regarding the effect of the acquisitions on their market, the fact that the reaction is positive is surprising. The difference in the average (median) market reaction between emerging and developed markets is significant at the 1% (1%) level.[8]

In emerging markets, it may especially be of concern that some markets have few competitors and that the reaction for these rivals will differ. Panel B displays the results for industries with at least 2 rivals. The results largely mirror those in Panel A.

[Insert Table 2 here]

[8] We identify rivals as firms in the same two-digit SIC code as the target. If this identifies rivals too broadly, we are less likely to find significant results. The fact that the results are significant for emerging markets indicates we have adequately defined rivals. However, in developed markets we do not find significance which leaves open the possibility that we have defined rivals too broadly. Therefore, we use four-digit SIC for a robustness check. Our results remain largely unchanged. The average rivals' reaction in developed markets is still insignificant and the average reaction of emerging markets is positive and significant at the 10% level. Furthermore, the average reaction in emerging markets is statistically greater than the average reaction in developed market.

Because many emerging markets are opening their economy to foreign investment, some of these acquisitions are likely the first to occur. We expect these acquisitions to have a greater impact on the local economy since they not only impact the local industry, but also serve as an indicator that the political climate is stable enough to merit the investment and, moreover, that the local government is committed to the liberalization. We identify 29 first acquisitions to occur in emerging markets according to our sample and present the average rival reaction in Panel C of Table 2. For the first acquisitions in an emerging market the rival CARs are positive but are not statistically significant, most likely because the number of observations is small. More importantly, for subsequent acquisitions, local firms experience positive and significant gains (Panel D). These results indicate that the average positive rivals' reaction we find in emerging markets is not driven only by the first acquisitions in each country but that it is also pervasive among subsequent acquisitions. In developed markets, rivals have an insignificant reaction to first and subsequent acquisitions. We recognize that these results should be interpreted with caution in that what we identify as the first acquisition may not truly be the first, especially in developed markets.[9]

Finally, China represents a significant portion of the emerging sample. For robustness, we exclude China from our sample and re-calculate the portfolio CARs. These results are presented in Panel E of Table 2. The results for emerging markets do not change. In fact, the mean CARs are even more positive and significant in emerging markets when China is excluded.

[9] Netter, Stegmoller, and Wintoki (2010) note that SDC data on M&A is incomplete before 1992. However, the impact of first acquisitions versus others is not the focus of our study.

4.3 Description of the rivals

Table 3 presents the descriptive statistics for the subsample of target's rivals for which we are able to obtain accounting data. Again, the sample is reduced to 33,890 rivals associated with 1,967 acquisitions. In developed markets there are 28,588 rivals for 1,718 acquisitions, and in emerging markets there are 5,302 rivals for 249 acquisitions (Panel A).

[Insert Table 3 here]

Panel B presents rival characteristics. The size (market value of equity plus total liabilities) of the average (median) rival in developed markets is significantly larger than the average emerging rival ($2,505M (196M) vs. $438M (130M)). Growth opportunities, measured as market-to-book, are greater for developed market rivals than for emerging, and the difference is statistically significant at the 1% level. Likewise, developed markets have significantly higher investments in R&D than emerging market firms. The mean (median) efficiency (sales-to-assets ratio) of developed market rivals is also significantly higher in developed markets. Finally, emerging market firms are significantly more dependent on debt financing, consistent with their equity markets being less liquid.

To check that the results of the impact of acquisitions on rivals described in Section 4.2 holds in this subsample, we repeat the prior analysis of average rival returns and report the results in Panel C of Table 3. Despite the large change in sample size, the results are similar to those of the full sample of rivals, with emerging market rivals responding positively to the acquisitions, regardless of whether the target is public or private. On average emerging markets experience a CAR of 0.97%, whereas developed market rivals have an insignificant reaction. This difference is significant at the 5% level.

4.4 Developed vs. emerging markets portfolio analysis

We use VW portfolio CARs as the dependent variable in multivariate regressions to test whether the differential between emerging and developed markets found in the univariate analysis can be explained by country, acquisition, and/or industry characteristics. These characteristics differ across the markets and may be responsible for the univariate results. Table 4 presents regressions in which the dependent variable is the VW portfolio CAR described in the univariate results. There are a total of up to 1,967 portfolios included in each regression analysis with some portfolios dropped due to missing data for the independent variables. Our objective in this section is to see if the difference between emerging and developed market rivals' reaction exists even after controlling for industry and acquisitions characteristics and is robust to other measures of economic development.

[Insert Table 4 here]

Regression (1) presents basic results with an indicator for developed versus emerging markets. After controlling for other characteristics that might impact the overall market reaction, emerging markets react more positively to the acquisitions as evidenced by the positive and significant sign on the indicator variable for emerging markets, confirming the univariate results. The coefficient is significant at the 5% level. Regression (2) adds shareholder protection which is also positive and significant, suggesting that rivals benefit more when a country's shareholder protection is greater. Regressions (3) through (5) replace the Emerging Target dummy for other measures of market development—GDP per capita, IMD competitiveness ranking, and Openness. Higher competitiveness is associated with a lower value.[10] While the IMD competitiveness ranking and Openness are insignificant, GDP per capita, a closer measure to the emerging markets indicator, is negative and significant. Countries with lower GDP per capital

[10] Some observations are lost for lack of data on the competiveness index for some countries.

have higher returns—these are the countries that are more likely to benefit from the acquisition in terms of technology and knowledge transfer, or increases in competitiveness.

Next, we present the results for developed and emerging markets separately to gain insight into the factors explaining the reaction of individual rivals in each of these two markets. We begin with developed markets in section 4.5 and explore emerging markets in section 4.6.

4.5 Developed market acquisitions

Within developed markets, we are also interested in understanding the impact of country characteristics on rivals' reactions, while controlling for industry and acquisition characteristics. Since we are studying multiple takeovers in different countries and industries, these characteristics vary at the acquisition level so we begin by repeating the portfolio regression (2) from Table 4, but for developed markets only. Again, the dependent variable is the portfolio return for each of the acquisitions. The results are presented as regression (1) in Table 5. We find that GDP per capita is not significant in explaining the impact of acquisitions on industry rivals in developed markets. This is in contrast to the results which include both emerging and developed markets which show that less developed countries benefit more from the acquisitions. Once a market achieves a certain level of market development, differential levels of development do not seem to matter for the impact of foreign acquisitions on these markets.

[Insert Table 5 here]

We are also interested in understanding how the rivals' reactions differ based on rival characteristics. Therefore, in regressions (2) through (5), we regress individual rival CARs on characteristics of rivals, in addition to the acquisition, industry, and country characteristics of the portfolio regressions. Rival characteristics include rival Herfindahl contribution, rival size, an

indicator if it is cross-listed, rival efficiency, market-to-book, and leverage described previously. We also include an indicator equal to one if the rival de-lists after the acquisition. Returns to rival firms are likely to be correlated because they are measured for the same industry and for the same event. To overcome this potential problem in the multivariate regressions, we adjust the standard errors for clustering at the event level. In addition, we use White's (1980) correction for hetersokedasticity of standard errors in all regressions.

In general, firm-specific characteristics do a better job of explaining individual rival returns in developed markets than do country, industry, and acquisition characteristics. Rivals with low growth opportunities experience higher returns. Firms with low market-to-book ratios may be considered "cheap buys" (Palepu, 1986) and thus have a higher probability of being acquired, consistent with the APH. Interestingly, delisted rivals experience a more positive market reaction; perhaps these were subsequently taken over consistent with the APH.[11] The coefficient on leverage is positive; in the context of developed markets, higher leverage may indicate higher firm quality, making firms less vulnerable to competitive effects. The significant positive coefficient on rival size suggests that smaller rivals may have a more difficult time competing with the newly merged firm. Although significant in only one specification, Rival Herfindahl contribution corroborates this interpretation, suggesting that rivals that make a smaller contribution to their industry experience lower returns. Finally, in two specifications, rival efficiency is positive and significant at the 10 percent level. This conveys that more efficient rivals are better able to compete.

One acquisition characteristic is significant—related acquisitions. Rivals have lower returns when acquirers take over firms in the same industry. This is consistent with competitive

[11] To further explore this possibility, in unreported results, we include a dummy if the rival firm is delisted due to an acquisition by firms from any country, using the Datastream's M&A database. The coefficient is insignificant. Datastream recognizes that its M&A database is incomplete, however.

effects occurring as a result of a stronger merged firm. Other characteristics considered at the country, industry, and acquisition levels are not significant in explaining rival reaction to the acquisition.

Regression (5) adds M&A activity and exchange rate strength to the basic regression (model 2) to test whether rivals in countries with more M&A activity or those that experience a weak currency are more likely to be acquired and, therefore, experience positive returns consistent with the APH. However, neither of these is significant in explaining individual rival reactions in developed markets.

In summary, the results show that in developed markets, both competitive and contagion effects are at work based on rival firm-specific characteristics, while on average, the takeovers have near-zero impact on the industry. The rival characteristics that matter most are market-to-book, leverage, and size, while country, industry, and acquisition characteristics do not play a significant role.

4.6 Emerging market acquisitions

Table 6 presents the results for emerging markets only. As in the analysis for developed markets, we begin by regressing portfolio CARs on country, acquisition, and industry characteristics in regression (1). Within the emerging markets, GDP is negative and significant indicating that less developed markets benefit more from the acquisitions. Shareholder protection also plays a more important role in emerging markets than developed with higher levels of shareholder protection associated with higher returns to rivals. Firms in emerging markets with greater shareholder protection will be in a better position to grow and compete, and consequently experience positive returns.

[Insert Table 6 here]

Regressions (2) through (5) add in the individual rival characteristics and use the individual rival's CAR as the dependent variable. As for industry and acquisition characteristics, rivals of public targets have lower returns than rivals of private targets. We expected public targets to generate more information flow to the rest of the industry in terms of technology and knowledge transfers. However, the competitive effects generated by public targets may offset any potential contagion effects as public firms are usually larger and more visible, and thus may have greater competitive advantages and market power. The percent of the target acquired is significantly negative—acquisitions in which a larger investment in a target is made are more competitive; therefore rivals experience more competitive effects. The positive and significant coefficient for the technology industry indicator supports the idea that in emerging markets, technology-intensive industries benefit from technology spillovers.

Turning our attention to the individual rival characteristics, we examine proxies for the rival's financial flexibility such as cross-listing status and leverage. Lack of financial flexibility may restrict a firm's ability to realize its growth opportunities. Cross-listing might have greater relevance in emerging markets than in developed markets given the lower liquidity of their equity markets. However, cross-listing status is insignificant. Interestingly, leverage is negative and significant, in two specifications, in contrast to the result in developed markets in which leverage is positive and significant. In emerging markets, rivals with high leverage are at a disadvantage when competing with the newly-acquired firm since high leverage restricts the firm's financial flexibility and the markets are more dependent on debt financing. The coefficient on rival sales divided by assets is positive and significant indicating that rivals that use their assets more efficiently are better able to compete.

Finally, while M&A activity in not significant, exchange rate strength is negatively associated with rivals' reaction. When the local currency is weak rivals experience higher returns consistent with the acquisition probability hypothesis. Given the lower M&A activity market in emerging markets, it is not surprising that it does not have a significant impact.

In summary, in emerging markets, country, acquisition, and industry characteristics play a stronger role in determining rivals reaction than in developed markets. In contrast to developed markets, economic development, shareholder protections, and exchange rate strength have explanatory power for rival reaction within emerging markets. Rivals experience more competitive effects when a larger fraction of the target is acquired, when the target is public, and for rivals with high leverage, while those that use their assets more efficiently and that are in technology industries experience more contagion effects.[12]

4.7 Analysis of long-term performance

The analysis using price reaction assumes that the stock market is efficient and that the price reaction, therefore, incorporates the market's assessment of the value of the acquisition. To the extent that the market is inefficient and therefore sometimes over-reacts or under-reacts to new information, we would not expect to find on average, a statistically significant reaction to the acquisition. Nonetheless, for robustness we also measure changes in average industry profitability over a longer time period. However, the change in profitability remains a noisy measure since the effects are not measured contemporaneous to the acquisition.

[Insert Table 7 here]

[12] As an additional robustness test, we replicate the main regression (2) clustering by industry or calendar year of the acquisition for both developed and emerging countries. Our results are robust.

The results are presented in Table 7. We measure changes in profitability as the change in earnings before interest and taxes divided by total assets following Chari, Ouimet, and Tesar (2010);[13] the changes are measured from one year prior to two years after the acquisitions and from the year of the acquisition to two years after. The results are largely consistent with the CARs presented earlier. Emerging market rivals experience greater increases in profitability than do rivals in developed markets, although the results are not statistically significant. Like Chari, Ouimet, and Tesar (2010) we attribute the lack of statistical significance to accounting data unavailability.

5. Conclusion

Over the last decade, many emerging countries have liberalized their capital markets to allow more foreign direct investment. As a result, there has been a significant increase in all forms of FDI. In particular, cross-border acquisitions of emerging market targets by developed market acquirers are becoming more common. Recent research suggests that these acquisitions are beneficial for the firms directly involved, namely the target and the acquirer. However, the impact of these acquisitions on targets' local markets has not been closely studied.

In this paper, we study the impact of these acquisitions on local markets by observing the reaction of the targets' rivals. Foreign acquisitions may have a negative impact on rival firms due to the increased competitiveness of the newly acquired firm. By contrast, foreign acquisitions may also have positive effects on rival firms; rivals may benefit from indirect technology transfer to the local market, inefficiency reductions due to increased competition, and increased probability of becoming targets.

[13] Using net income divided by total assets, a more common measure of profitability, results in a loss of many observations due to lack of data availability.

We find that rival firms in emerging markets have, on average, a positive reaction to acquisitions by US firms. While prior literature shows that the benefits of these acquisitions accrue to both acquirers and targets, this paper concludes that the benefits also accrue to the targets' rivals. The positive average rival reaction in emerging markets indicates that the benefits of these acquisitions outweigh the competitive effects. In developed markets, rivals have an insignificant reaction to these acquisitions. We examine country, acquisition, industry, and rival characteristics through which these effects might be channeled. In emerging markets, country, industry, and acquisition level factors explain returns: economic development, shareholder protection, the percent of the target acquired, target public status, and technology industry. The rival characteristics of leverage and efficiency also matter. In contrast, in developed markets, rival size, efficiency, growth opportunities, and rival leverage explain rival returns; the only market or acquisition level factor that matters is the relatedness of the acquisition. Thus, individual rival characteristics matter more in developed markets, while country, industry, and acquisition characteristics play a more important role in emerging markets.

Our research concludes that, on average, U.S. acquisitions have a positive impact on emerging market firms and little effect on developed markets. While we show that shareholders of publicly traded rivals benefit from these acquisitions, we are unable to answer the question of whether private firms benefit as well, so our results must be interpreted with that caveat in mind. However, our methodology is not plagued by the endogeneity problems endemic to measures of productivity used in other studies exploring the role of FDI. We focus on intra-industry effects and do not explore the effect of these acquisitions on other firms' stakeholders such as employees, suppliers, and customers. This research provides useful knowledge to policy makers

responsible for restrictions on FDI in the form of acquisitions—this is especially true for emerging countries that have imposed historical restrictions on foreign acquisitions.

References

Akhigbe, A., Martin, A.D., 2000. Information-signaling and competitive effects of foreign acquisitions in the US. Journal of Banking & Finance 24, 1307-1321.

Asquith, P., Bruner, R.F., Mullins, D.W., 1983. The gains to bidding firms from merger. Journal of Financial Economics 11, 121-139.

Blomström, M., Sjöholm, F., 1999. Technology transfer and spillovers: Does local participation with multinationals matter? European Economic Review 43, 915-923.

Bradley, M., Desai, A., Kim, E.H., 1988. Synergistic gains from corporate acquisitions and their division between the stockholders of target and acquiring firms. Journal of Financial Economics 21, 3-40.

Bresman, H., Birkinshaw, J., Nobel, R., 2010. Knowledge Transfer in International Acquisitions. Journal of International Business Studies 41, 5-20.

Bris, A., Brisley, N., Cabolis, C., 2008. Adopting better corporate governance: Evidence from cross-border mergers. Journal of Corporate Finance 14, 224-240.

Bris, A., Cabolis, C., 2008. The Value of Investor Protection: Firm Evidence from Cross-Border Mergers. Review of Financial Studies 21, 605-648.

Chari, A., Ouimet, P.P., Tesar, L.L., 2010. The Value of Control in Emerging Markets. Review of Financial Studies 23, 1741-1770.

Doidge, C., Karolyi, G.A., Stulz, R.M., 2004. Why are foreign firms listed in the U.S. worth more? Journal of Financial Economics 71, 205-238.

Doukas, J., Travlos, N.G., 1988. The Effect of Corporate Multinationalism on Shareholders' Wealth: Evidence from International Acquisitions. The Journal of Finance 43, 1161-1175.

Eckbo, B.E., 1983. Horizontal mergers, collusion, and stockholder wealth. Journal of Financial Economics 11, 241-273.

Erel, I., Liao, R.C., Weisbach, M.S., 2010. World Markets for Mergers and Acquisitions. Working paper.

Fama, E.F., 1971. Risk, Return, and Equilibrium. Journal of Political Economy 79, 30-55.

Fee, C., Thomas, S., 2004. Sources of gains in horizontal mergers: evidence from customer, supplier, and rival firms. Journal of Financial Economics 74, 423-460.

Ferris, S., Jayaraman, N., Makhija, A., 1997. The response of competitors to announcements of bankruptcy: An empirical examination of contagion and competitive effects. Journal of Corporate Finance 3, 367-395.

Findlay, R., 1978. Relative Backwardness, Direct Foreign Investment, and the Transfer of Technology: A Simple Dynamic Model. The Quarterly Journal of Economics 92, 1-16.

Froot, K., Jeremy C. , 1991. Exchange Rates and Foreign Direct Investment: An Imperfect Capital Markets Approach The Quarterly Journal of Economics 106, 1191-1217.

Germidis, D., 1977. Transfer of technology by multinational corporations. Paris: Development Centre of the Organization for Economic Cooperation and Development.

Glass, A.J., Saggi, K., 1998. International technology transfer and the technology gap. Journal of Development Economics 55, 369-398.

Görg, H., Greenaway, D., 2004. Much Ado about Nothing? Do Domestic Firms Really Benefit from Foreign Direct Investment? The World Bank Research Observer 19, 171-197.

Harris, R.S., Ravenscraft, D., 1991. The role of acquisitions in foreign direct investment: Evidence from the US stock market. Journal of Finance 46, 825-844.

Hasbrouck, J., 1985. The characteristics of takeover targets and other measures. Journal of Banking & Finance 9, 351-362.

Hejazi, W., Safarian, A.E., 1999. Trade, Foreign Direct Investment, and R&D Spillovers. Journal of International Business Studies 30, 491-511.

Kelley, E., Woidtke, T., 2006. Investor Protection and Real Investment by U.S. Multinationals. Journal of Financial and Quantitative Analysis 41, 541-572.

Kokko, A., 1994. Technology, market characteristics, and spillovers. Journal of Development Economics 43, 279-293.

Kokko, A., 1996. Productivity spillovers from competition between local firms and foreign affiliates. Journal of International Development 8, 517-530.

Kuipers, D., Miller, D., Patel, A., 2009. The legal environment and corporate valuation: Evidence from cross-border takeovers. International Review of Economics & Finance 18, 552-567.

Lang, L., Stulz, R., 1992. Contagion and competitive intra-industry effects of bankruptcy announcements : An empirical analysis. Journal of Financial Economics 32, 45-60.

Laux, P., Starks, L., Yoon, P., 1998. The Relative Importance of Competition and Contagion in Intra-Industry Information Transfers: An Investigation of Dividend Announcements. Financial Management 27, 5-16

Lee, D.W., 2004. Why Does Shareholder Wealth Increase When Non-U.S. Firms Announce Their Listing in the U.S.? Working paper.

Mikkelson, W., Partch, M., 1989. Managers' voting rights and corporate control. Journal of Financial Economics 25, 263-290.

Mitchell, M., Mulherin, J., 1996. The impact of industry shocks on takeover and restructuring activity. Journal of Financial Economics 41, 193-229.

Morck, R., Yeung, B., 1992. Internalization: An event study test. Journal of International Economics 33, 41-56.

Netter, J., Stegemoller, M., Wintoki, B., 2010. Are Small Mergers Important?: A study of over 250,000 (or less) mergers and acquisitions from 1992-2009. Working Paper.

Pagano, M., Röell, A., Zechner, J., 2002. The Geography of Equity Listing: Why Do Companies List Abroad? The Journal of Finance 57, 2651-2694.

Palepu, K., 1986. Predicting takeover targets : A methodological and empirical analysis. Journal of Accounting and Economics 8, 3-35.

Rajan, R., Zingales, L., 2003. The great reversals: the politics of financial development in the twentieth century. Journal of Financial Economics 69, 5-50.

Reese, W., Weisbach, M., 2002. Protection of minority shareholder interests, cross-listings in the United States, and subsequent equity offerings. Journal of Financial Economics 66, 65-104.

Ross, S., 1977. The Determination of Financial Structure: The Incentive-Signalling Approach. The Bell Journal of Economics 8, 23-40.

Shahrur, H., 2005. Industry structure and horizontal takeovers: Analysis of wealth effects on rivals, suppliers, and corporate customers. Journal of Financial Economics 76, 61-98.

Song, M., Walkling, R., 2000. Abnormal returns to rivals of acquisition targets: A test of the "acquisition probability hypothesis". Journal of Financial Economics 55, 143-171.

Spamann, H., 2010. The "Antidirector Rights Index" Revisited. Review of Financial Studies 23, 467-486.

Stulz, R., 1990. Managerial discretion and optimal financing policies. Journal of Financial Economics 26, 3-27.

Warner, J., 1977. Bankruptcy, absolute priority, and the pricing of risky debt claims. Journal of Financial Economics 4, 239-276.

White, H., 1980. A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity. Econometrica 48, 817-838.

Table 1: Description of the Acquisitions

Table 1 describes the sample obtained from the Securities Data Corporation (SDC). The sample includes 2,125 acquisitions of developed and emerging market targets by U.S. acquirers between January 1988 and December 2009. The transaction needs to be completed, the acquirer must gain majority control of the target as a result of the acquisition, and the acquirer and target can be either a public or a private firm. Panel A describes the yearly distribution of the acquisitions in our sample.

Panel A: Acquisitions by Year

	Developed Targets				Emerging Targets				
	Public	Private	% Public	Total Developed	Public	Private	% Public	Total Emerging	Total Acquisitions
1988	5	9	35.7%	14	0	0	0.0%	0	14
1989	16	15	51.6%	31	0	0	0.0%	0	31
1990	5	25	16.7%	30	1	0	100.0%	1	31
1991	5	25	16.7%	30	0	0	0.0%	0	30
1992	8	39	17.0%	47	0	0	0.0%	0	47
1993	6	24	20.0%	30	0	2	0.0%	2	32
1994	12	47	20.3%	59	3	4	42.9%	7	66
1995	16	57	21.9%	73	3	4	42.9%	7	80
1996	14	71	16.5%	85	5	8	38.5%	13	98
1997	28	124	18.4%	152	5	11	31.3%	16	168
1998	39	166	19.0%	205	2	8	20.0%	10	215
1999	33	101	24.6%	134	3	16	15.8%	19	153
2000	21	129	14.0%	150	4	11	26.7%	15	165
2001	17	79	17.7%	96	3	8	27.3%	11	107
2002	20	60	25.0%	80	5	2	71.4%	7	87
2003	23	53	30.3%	76	0	24	0.0%	24	100
2004	13	98	11.7%	111	3	20	13.0%	23	134
2005	5	25	16.7%	30	0	5	0.0%	5	35
2006	20	120	14.3%	140	5	23	17.9%	28	168
2007	16	106	13.1%	122	2	37	5.1%	39	161
2008	13	86	13.1%	99	3	31	8.8%	34	133
2009	10	35	22.2%	45	2	23	8.0%	25	70
Total	**345**	**1,494**	18.8%	**1,839**	**49**	**237**	17.1%	**286**	**2,125**

Table 1 continued: Description of the Acquisitions

Panel B of Table 1 lists the acquisitions in the sample by the target's home country. There are 1,839 acquisitions of developed market targets of which 1,494 are private firms and 345 are public firms. There are 286 acquisitions of emerging market targets, of which 237 are private firms and 49 are public firms.

Panel B: Acquisitions by Country

	Developed Targets					Emerging Targets			
	Public	Private	Total	% Total		Public	Private	Total	% Total
Australia	37	118	155	8.4%	Argentina	3	20	23	8.0%
Austria	2	8	10	0.5%	Brazil	8	24	32	11.2%
Belgium	2	24	26	1.4%	Chile	3	4	7	2.4%
Denmark	4	19	23	1.3%	China	4	86	90	31.5%
Finland	2	9	11	0.6%	Colombia	0	4	4	1.4%
France	34	160	194	10.5%	Czech Republic	0	1	1	0.3%
Germany	27	176	203	11.0%	India	11	25	36	12.6%
Hong Kong	9	45	54	2.9%	Indonesia	1	1	2	0.7%
Hungary	0	1	1	0.1%	Malaysia	3	8	11	3.8%
Ireland-Rep	2	24	26	1.4%	Mexico	5	24	29	10.1%
Israel	16	57	73	4.0%	Peru	2	6	8	2.8%
Italy	5	53	58	3.2%	Philippines	1	3	4	1.4%
Japan	9	22	31	1.7%	Poland	1	16	17	5.9%
Luxembourg	1	0	1	0.1%	Russia	0	7	7	2.4%
Netherlands	11	50	61	3.3%	South Africa	4	6	10	3.5%
New Zealand	4	9	13	0.7%	Thailand	3	2	5	1.7%
Norway	9	14	23	1.3%					
Portugal	1	1	2	0.1%					
Singapore	4	13	17	0.9%					
South Korea	9	22	31	1.7%					
Spain	3	29	32	1.7%					
Sweden	17	37	54	2.9%					
Switzerland	8	46	54	2.9%					
Taiwan	7	16	23	1.3%					
United Kingdom	122	541	663	36.1%					
Total	**345**	**1,494**	**1,839**	**100%**	**Total**	**49**	**237**	**286**	**100%**

Table 1 continued: Description of the Acquisitions

Panel C of Table 1 describes the distribution of the 286 emerging market targets and the 1,839 developed market targets in our sample across main industry groups, defined at the two-digit SIC level.

Panel C: Industry Distribution of Targets (2-digit SIC code)			
		Developed Targets	Emerging Targets
01-09	Agriculture, Forestry, Fishing	0.1%	0.0%
10-14	Mining	2.0%	7.7%
15-17	Construction	0.8%	1.0%
20-39	Manufacturing	38.9%	34.3%
40-49	Transportation & Public Utilities	5.8%	15.4%
50-51	Wholesale Trade	5.6%	9.8%
52-59	Retail Trade	1.4%	1.4%
60-67	Finance, Insurance, Real Estate	6.7%	9.1%
70-89	Services	38.9%	21.3%
91-99	Public Administration	0.0%	0.0%
	Total	**100.0%**	**100.0%**

Table 1 continued: Description of the Acquisitions

Panel D of Table 1 reports other statistics. Method of payment is reported by SDC. Acquisition size is deal value as reported by SDC (in millions of dollars). Relative acquisition size is equal to acquisition size divided by the market value of all firms in the same industry and country as the target with available data, including the target firm. Percent of Target Acquired is also reported by SDC. Significance of the difference in means is determined using standard t-tests. Significance of the difference in medians is determined using Wilcoxon Rank Sum Tests. [a,b,c] denote acquisitions of developed market targets are significantly different from acquisitions of emerging market targets at the 1%, 5%, and 10% level, respectively. [d,e,f] denote acquisitions of public targets are significantly different from acquisitions of private targets at the 1%, 5%, and 10% level, respectively.

Panel D: Other Statistics

Method of payment	Developed Targets			Emerging Targets		
	Public	Private	All Developed	Public	Private	All Emerging
Percent of Cash-only Acquisitions	55% [e]	47%	49%	49%	43%	44%
Percent of Stock-only Acquisitions	14% [a]	14%	14%	4% [e]	13%	12%
Percent of Mixed Acquisitions	32% [a,e]	39%	37% [b]	47%	44%	45%
Total	100%	100%	100%	100%	100%	100%

Acquisition Size	Developed Targets			Emerging Targets		
	Public	Private	All Developed	Public	Private	All Emerging
Mean	633.62 [d]	80.73	178.26	630.24 [f]	61.42	152.19
Median	154.1 [c,d]	15.77 [b]	21.00 [a]	92.70 [d]	11.00	14.31

Relative Acquisition Size	Developed Targets			Emerging Targets		
	Public	Private	All Developed	Public	Private	All Emerging
Mean	34.0% [d]	17.7% [a]	20.5% [a]	44.4%	35.4%	36.8%
Median	8.7% [b,d]	0.5% [a]	0.9% [a]	18.0% [f]	17.2%	17.2%

Percent of Target Acquired	Developed Targets			Emerging Targets		
	Public	Private	All Developed	Public	Private	All Emerging
Mean	89% [a,d]	97% [a]	96% [a]	68% [d]	90%	86%
Median	100% [a]	100%	100%	63% [d]	100%	100%
N	345	1,494	1,839	49	237	286

Table 2: CAR for VW Portfolios of Rival Firms

This table reports mean cumulative abnormal returns (CAR) for value-weighted (VW) portfolios of rival firms measured during the window (-5, 5) around the acquisition announcement. CAR is calculated using a standard market model. Significance of mean CAR is based on the z-statistic suggested by Lang and Stulz (1992). Significance of median CAR and % positive are determined using a signed rank test and a binomial exact test, respectively. Significance of the difference in means and % positive are determined using a standard t-test. Significance of the difference in medians is based on a Mann-Whitney-Wilcoxon test. ***, **, * denote statistical significance at the 1%, 5%, and 10%, respectively.

Panel A: All acquisitions

	Developed Targets			Emerging Targets			
	Mean CAR	z-stat	N	Mean CAR	z-stat	N	Difference
Public & Private	-0.13%	0.09	1,839	1.19%	4.27 ***	286	0.010 ***
Public	0.12%	0.97	345	2.47%	3.14 ***	49	0.099 *
Private	-0.19%	-0.36	1,494	0.92%	3.27 ***	237	0.027 **

	Developed Targets			Emerging Targets			
	Median CAR	P-value	N	Median CAR	P-value	N	Difference
Public & Private	0.04%	0.758	1,839	0.57%	0.007 ***	286	0.006 ***
Public	0.22%	0.390	345	1.23%	0.045 **	49	0.078 *
Private	0.01%	0.945	1,494	0.37%	0.035 **	237	0.023 **

	Developed Targets			Emerging Targets			
	% CAR > 0	P-value	N	% CAR > 0	P-value	N	Difference
Public & Private	50.63%	0.608	1,839	56.29%	0.038 **	286	0.074 *
Public	52.75%	0.333	345	65.31%	0.044 **	49	0.099 *
Private	50.13%	0.938	1,494	54.43%	0.097 *	237	0.219

Panel B: Acquisitions with at least 2 rivals

	Developed Targets			Emerging Targets			
	Mean CAR	z-stat	N	Mean CAR	z-stat	N	Difference
Public & Private	-0.05%	0.51	1,693	1.56%	4.53 ***	228	0.001 ***
Public	0.31%	1.57	317	3.23%	3.86 ***	38	0.094 *
Private	-0.14%	-0.19	1,376	1.23%	3.24 ***	190	0.010 **

Table 2 continued: CAR for VW Portfolios of Rival Firms

This table reports mean cumulative abnormal returns (CAR) for value-weighted (VW) portfolios of rival firms measured during the window (-5, 5) around the acquisition announcement. CAR is calculated using a standard market model. Significance of mean CAR is based on the z-statistic suggested by Lang and Stulz (1992). Significance of median CAR and % positive are determined using a signed rank test and a binomial exact test, respectively. Significance of the difference in means and % positive are determined using a standard t-test. Significance of the difference in medians is based on a Mann-Whitney-Wilcoxon test. ***, **, * denote statistical significance at the 1%, 5%, and 10%, respectively.

Panel C: First acquisitions

	Developed Targets			Emerging Targets			
	Mean CAR	z-stat	N	Mean CAR	z-stat	N	Difference
Public & Private	0.31%	0.25	48	1.95%	1.21	29	0.521
Public	0.67%	0.65	24	4.04%	1.40	13	0.479
Private	-0.05%	-0.30	24	0.25%	0.37	16	0.909

Panel D: Subsequent acquisitions

	Developed Targets			Emerging Targets			
	Mean CAR	z-stat	N	Mean CAR	z-stat	N	Difference
Public & Private	-0.15%	0.05	1,791	1.10%	4.10 ***	257	0.009 ***
Public	0.08%	0.82	321	1.90%	2.82 ***	36	0.114
Private	-0.19%	-0.32	1,470	0.97%	3.29 ***	221	0.025 **

Panel E: All acquisitions excluding China

	Developed Targets			Emerging Targets			
	Mean CAR	z-stat	N	Mean CAR	z-stat	N	Difference
Public & Private	-0.13%	0.09	1,839	1.81%	5.40 ***	196	0.002 ***
Public	0.12%	0.97	345	2.45%	2.95 ***	45	0.117
Private	-0.19%	-0.36	1,494	1.62%	4.54 ***	151	0.010 **

Table 3: Description of the Rivals

This table describes the financial characteristics of the 33,890 rivals in our sample associated with 1,967 acquisitions of developed/emerging market and public/private targets by U.S. acquirers. Rivals operate in the same country and industry (defined at the 2-digit SIC level) as the target firm at the time of the acquisition. Size (in thousands of dollars) is market value of equity plus total liabilities and market value of equity is calculated as the stock price multiplied by the number of common shares outstanding. Market-to-book is equal to the ratio of market value of equity plus total liabilities to total assets. All financials correspond to the year prior to the acquisition and have been converted to US dollars using Worldscope exchange rates. Significance of mean CAR is based on the z-statistic suggested by Lang and Stulz (1992). Significance of the difference in means is determined using standard t-tests. Significance of the difference in medians is determined using Mann-Whitney-Wilcoxon Tests. [a,b,c] Acquisitions of developed market targets are significantly different from acquisitions of emerging market targets at the 1%, 5%, and 10% level, respectively. [***, **, *] denote statistical significance at the 1%, 5%, and 10%, respectively.

Panel A: Number of Rivals

	Developed Targets			Emerging Targets		
	Public	Private	All	Public	Private	All
Rivals per Acquisition:						
Mean	15.8	16.8	16.6	15.7	22.4	21.3
Median	8.0	8.0	8.0	3.0	5.0	4.0
Number of Acquisitions	297	1,421	1,718	40	209	249
Number of Rivals	4,693	23,895	28,588	629	4,673	5,302

Panel B: Rival Characteristics

	Developed Targets						Emerging Targets					
	Public		Private		All		Public		Private		All	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Size	3,576,274	228,539	2,294,776	190,326	2,505,147 [a]	195,759 [a]	474,761	83,398	432,724	135,464	437,711	129,524
R&D/Assets	0.07	0.03	0.10	0.05	0.09 [a]	0.04 [a]	0.02	0.00	0.02	0.01	0.02	0.01
Market-to-book	2.89	0.73	3.43	0.76	3.34 [a]	0.75 [a]	0.74	0.51	1.30	0.61	1.23	0.59
Total Debt/Assets	0.33	0.26	0.33	0.26	0.33 [a]	0.26 [a]	0.39	0.38	0.48	0.38	0.47	0.38
Sales/Assets	1.00	0.87	1.18	0.96	1.15 [a]	0.94 [a]	0.85	0.76	0.74	0.59	0.76	0.60

Panel C: CARs for VW Portfolios of Rivals - Restricted Sample

	Developed Targets			Emerging Targets			
	Mean CAR	z-stat	N	Mean CAR	z-stat	N	Difference
Public & Private	-0.15%	-0.04	1,718	0.97%	3.42 ***	249	0.043 **
Public	0.20%	1.81	297	2.63%	2.74 ***	40	0.050 *
Private	-0.23%	-0.87	1,421	0.65%	2.54 **	209	0.093 *

Table 4: Emerging vs. Developed Markets - Portfolio Analysis

OLS regressions relating the VW portfolio CAR to characteristics of the country, acquisition, and industry. The dependent variable is the VW portfolio CAR over the window (-5, 5) around the announcement date. T-statistics are reported in brackets. Standard errors are robust to heteroskedasticity. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively. The independent variables are described in Appendix B.

	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.008 [0.55]	-0.015 [-0.88]	0.071 [3.27] ***	-0.001 [-0.07]	0.026 [1.19]	-0.017 [-1.01]
Emerging Target (Y/N)	**0.013 [2.57] ** **	**0.020 [3.41] *** **				**0.020 [3.28] *** **
GDP per capita			**-0.009 [-4.03] *** **			
IMD Competitiveness Ranking				0.004 [1.36]		
Openness					-0.004 [-1.13]	
Shareholder Protection Index		0.005 [2.43] **	0.005 [2.50] **	0.002 [0.78]	0.001 [0.70]	0.005 [2.46] **
Public Target (Y/N)	0.009 [1.87] *	0.009 [1.75] *	0.008 [1.72] *	0.010 [1.95] *	0.008 [1.72] *	0.008 [1.69] *
Target Size	-0.002 [-1.69] *	-0.001 [-1.68] *	-0.001 [-1.57]	-0.002 [-1.95] *	-0.002 [-1.72] *	-0.001 [-1.65] *
Related Acquisition (Y/N)	0.002 [0.69]	0.002 [0.61]	0.002 [0.70]	0.003 [0.76]	0.002 [0.58]	0.002 [0.54]
Cash Acquisition (Y/N)	0.001 [0.30]	0.001 [0.27]	0.001 [0.32]	0.000 [-0.06]	0.000 [0.07]	0.001 [0.32]
Percent of Target Acquired	0.003 [0.22]	0.004 [0.37]	0.008 [0.64]	0.001 [0.07]	-0.001 [-0.09]	0.004 [0.38]
Prior Presence (Y/N)	0.001 [0.25]	0.001 [0.27]	0.002 [0.50]	0.002 [0.45]	0.002 [0.50]	0.002 [0.48]
Technology Industry (Y/N)	-0.001 [-0.17]	0.000 [-0.13]	-0.001 [-0.20]	-0.001 [-0.24]	0.000 [-0.11]	0.000 [-0.11]
Manufacturing Industry (Y/N)	0.006 [1.14]	0.005 [0.97]	0.006 [1.11]	0.006 [1.00]	0.008 [1.39]	0.005 [0.90]
Herfindahl Index	-0.009 [-1.47]	-0.010 [-1.57]	-0.009 [-1.34]	-0.010 [-1.55]	-0.009 [-1.45]	-0.011 [-1.67] *
M&A activity						0.057 [0.59]
Exchange Rate Strength						-0.009 [-1.42]
UK dummy	0.007 [1.77] *	0.003 [0.60]	0.004 [0.84]	0.003 [0.58]	0.003 [0.61]	0.003 [0.74]
F-Statistic	1.85 **	2.19 **	2.58 ***	1.28	1.24	2.1 ***
R-square	0.010	0.013	0.016	0.008	0.008	0.015
Number of Observations (Acquisitions)	1,967	1,967	1,967	1,889	1,957	1,964

Table 5: Explaining the Reaction of Developed Markets

OLS regressions relating VW portfolio CAR (regression 1) or individual rival CAR (regressions 2-5) to characteristics of the country, acquisition, industry, and rivals in developed markets. T-statistics are reported in [ ]. Standard errors are robust to heteroskedasticity and clustering. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively. The independent variables are described in Appendix B.

Dependent Variable:	Portfolio CAR	Individual Rival CAR			
	(1)	(2)	(3)	(4)	(5)
Intercept	0.048 [0.48]	-0.107 [-0.95]	-0.048 [-1.75] *	-0.012 [-0.31]	-0.126 [-1.15]
GDP per capita	-0.004 [-0.48]	0.005 [0.48]			0.007 [0.65]
IMD Competitiveness Ranking			-0.001 [-0.20]		
Openness				-0.008 [-1.60]	
Shareholder Protection Index	0.001 [0.26]	0.003 [0.78]	0.003 [0.66]	0.001 [0.12]	0.004 [0.86]
Public Target (Y/N)	0.006 [1.15]	0.006 [0.99]	0.008 [1.35]	0.005 [0.83]	0.006 [0.99]
Target Size	-0.001 [-1.21]	-0.001 [-1.13]	-0.001 [-1.37]	-0.001 [-1.07]	-0.001 [-1.16]
Related Acquisition (Y/N)	0.002 [0.51]	-0.007 [-1.92] *	-0.007 [-1.80] *	-0.007 [-1.92] *	-0.007 [-1.89] *
Cash Acquisition (Y/N)	0.003 [0.80]	0.000 [-0.01]	0.000 [-0.08]	-0.001 [-0.13]	0.000 [-0.01]
Percent of Target Acquired	0.000 [0.00]	0.009 [0.54]	0.003 [0.17]	0.009 [0.59]	0.008 [0.52]
Prior Presence (Y/N)	0.002 [0.47]	-0.003 [-0.65]	-0.002 [-0.49]	-0.002 [-0.57]	-0.003 [-0.60]
Technology Industry (Y/N)	-0.001 [-0.36]	-0.001 [-0.22]	-0.002 [-0.40]	-0.001 [-0.16]	-0.001 [-0.19]
Manufacturing Industry (Y/N)	0.008 [1.20]	0.004 [0.46]	0.003 [0.37]	0.002 [0.26]	0.004 [0.48]
Herfindahl Index	-0.010 [-1.36]				
Rival Herfindahl Contribution		-0.006 [-1.35]	-0.007 [-1.66] *	-0.005 [-1.16]	-0.006 [-1.43]
Rival Size		0.003 [4.12] ***	0.003 [4.14] ***	0.003 [3.86] ***	0.003 [4.21] ***
De-listed Rival (Y/N)		0.006 [2.12] **	0.006 [2.36] **	0.005 [1.99] **	0.006 [2.10] **
Rival ADR (Y/N)		0.008 [1.07]	0.009 [1.20]	0.009 [1.17]	0.008 [1.07]
Rival (Sales/Assets)		0.000 [1.65] *	0.000 [1.59]	0.000 [1.69] *	0.000 [1.68] *
Rival Market-to-book		-0.008 [-4.16] ***	-0.009 [-4.30] ***	-0.008 [-4.20] ***	-0.009 [-4.25] ***
Rival Leverage		0.010 [2.11] **	0.012 [2.49] **	0.011 [2.33] **	0.010 [2.15] **
M&A activity					0.044 [0.34]
Exchange Rate Strength					-0.003 [-0.32]
UK dummy	0.006 [1.39]	0.002 [0.38]	0.002 [0.38]	0.003 [0.64]	0.002 [0.41]
F-Statistic	1.16	2.65 ***	2.95 ***	2.60 ***	2.44 ***
R-square	0.008	0.008	0.009	0.008	0.008
# Rivals		28,588	27,879	28,523	28,585
# Acquisitions (clusters)	1,718	1,718	1,645	1,709	1,715

Table 6: Explaining the Reaction of Emerging Markets

OLS regressions relating VW portfolio CAR (regression 1) or individual rival CAR (regressions 2-5) to characteristics of the country, acquisition, industry, and rivals in emerging markets. T-statistics are reported in [ ]. Standard errors are robust to heteroskedasticity and clustering. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively. The independent variables are described in Appendix B.

Dependent Variable:	Portfolio CAR	Individual Rival CAR			
	(1)	(2)	(3)	(4)	(5)
Intercept	0.109 [1.91] *	0.023 [0.35]	0.006 [0.07]	0.065 [0.93]	0.005 [0.07]
GDP per capita	**-0.016 [-2.15] ** **	0.008 [1.05]			0.010 [1.12]
IMD Competitiveness Ranking			0.022 [0.90]		
Openness				0.003 [0.22]	
Shareholder Protection Index	0.010 [2.63] ***	0.010 [2.55] **	0.006 [1.00]	0.009 [1.99] **	0.009 [2.26] **
Public Target (Y/N)	0.018 [1.07]	-0.074 [-2.40] **	-0.073 [-2.47] **	-0.073 [-2.41] **	-0.072 [-2.65] ***
Target Size	-0.003 [-1.02]	-0.005 [-1.44]	-0.005 [-1.41]	-0.005 [-1.44]	-0.005 [-1.50]
Related Acquisition (Y/N)	0.006 [0.53]	0.014 [0.90]	0.015 [0.98]	0.014 [0.93]	0.013 [0.85]
Cash Acquisition (Y/N)	-0.013 [-1.15]	-0.015 [-0.96]	-0.015 [-0.96]	-0.015 [-0.95]	-0.014 [-0.90]
Percent of Target Acquired	0.026 [0.98]	-0.097 [-2.22] **	-0.093 [-2.18] **	-0.095 [-2.18] **	-0.096 [-2.32] **
Prior Presence (Y/N)	-0.004 [-0.39]	-0.005 [-0.34]	0.003 [0.19]	-0.004 [-0.24]	-0.001 [-0.06]
Technology Industry (Y/N)	0.008 [0.56]	0.051 [3.14] ***	0.051 [3.14] ***	0.050 [3.11] ***	0.052 [3.25] ***
Manufacturing Industry (Y/N)	0.002 [0.13]	0.002 [0.07]	0.006 [0.31]	0.003 [0.16]	0.000 [-0.02]
Herfindahl Index	-0.003 [-0.17]				
Rival Herfindahl Contribution		0.000 [0.01]	0.001 [0.09]	0.008 [0.54]	-0.003 [-0.18]
Rival Size		0.001 [0.79]	0.002 [1.06]	0.002 [1.00]	0.002 [0.94]
De-listed Rival (Y/N)		0.001 [0.13]	0.004 [0.44]	0.004 [0.51]	0.000 [-0.01]
Rival ADR (Y/N)		0.013 [0.56]	0.012 [0.51]	0.012 [0.53]	0.015 [0.68]
Rival (Sales/Assets)		0.001 [2.01] **	0.001 [1.74] *	0.001 [2.05] **	0.001 [1.99] **
Rival Market-to-book		-0.002 [-0.49]	-0.004 [-1.04]	-0.003 [-0.78]	-0.002 [-0.59]
Rival Leverage		0.000 [-1.84] *	0.000 [-1.51]	0.000 [-1.42]	0.000 [-1.72] *
M&A activity					0.210 [1.16]
Exchange Rate Strength					-0.043 [-2.47] **
F-Statistic	1.60 *	2.13 ***	2.26 ***	2.17 ***	2.06 ***
R-square	0.069	0.096	0.096	0.095	0.101
# Rivals		5,302	5,286	5,289	5,302
# Acquisitions (clusters)	249	249	244	248	249

Table 7: Long-term Profitability

This table reports the average profitability of VW portfolios of rivals. First, we calculate the VW portfolio ROA for each acquisition and then the average is calculated across all acquisitions. ROA is measured as EBIT (earnings before interest and taxes) divided by total assets. Profitability (-1, 2) is measured from one year prior to the acquisition to two years after the acquisition. Profitability (0, 2) is measured from the year of the acquisition to two years after the acquisition. EBIT and total assets figures are obtained from Worldscope in US dollars. Significance of means and difference in means are determined using standard t-tests. ***, **, * denote statistical significance at the 1%, 5%, and 10%, respectively.

Panel A: Profitability (-1,2)

	Developed Targets			Emerging Targets			Difference
	ROA	P-value	N	ROA	P-value	N	
Public & Private	-0.006	0.788	502	0.035	0.522	106	0.488
Public	0.031	0.378	104	0.124	0.435	15	0.566
Private	-0.015	0.536	398	0.020	0.731	91	0.547

Panel B: Profitability (0,2)

	Developed Targets			Emerging Targets			Difference
	ROA	P-value	N	ROA	P-value	N	
Public & Private	-0.008	0.611	512	0.035	0.462	111	0.389
Public	-0.032	0.326	106	0.152	0.340	17	0.261
Private	-0.002	0.913	406	0.013	0.782	94	0.766

Appendix A: Hypotheses and Predictions

Variable	Contagion effects	Competitive effects
A. Country		
Emerging Target	(+/-) Emerging markets benefit more from potential technology transfers because they have more to learn from their more developed acquirers. However, emerging market rivals may also have more difficulties in adopting new technologies.	(-) Firms in emerging markets are in a worse position to compete with the newly merged firm than those in developed markets. Emerging market rivals are expected to be more negatively affected by foreign acquisitions.
GDP per Capita	(-) Firms in markets with lower GDP per capita benefit more from potential technology transfers becausee they have more to learn from their more developed acquirers.	(+) Firms in less developed markets are in a worse position to compete with the newly merged firm than those in developed markets.
IMD Competitiveness Ran	(+) Firms in less competitive countries (high IMD ranking) are more likely to benefit from technology transfers and learn from foreign acquirers because there is a greater gap between their level of competitiveness and that of the foreign country. Thus, technology transfers are expected to be greater in less competitive countries.	
Shareholder Protection Ind	(-) Firms in countries with lower shareholder protection are more likely to benefit from acquisitions because there is a greater gap between their level of protection and that of the foreign country, and thus a greater potential for technology transfers.	
M&A activity	(+) If a country's high M&A activity indicates a high frequency of industry restructuring and openness to foreign acquisitions, then rival firms in countries with high M&A activity should have a higher probability of being acquired and higher abnormal returns.	
Exchange Rate Strength	(-) A weak local currency attracts more FDI, and thus an acquisition announcement is more likely to signal the beginning of a merger wave when the currency is weak. Therefore, we expect a negative relation between rival returns and the exchange rate strength.	
B. Acquisition		
Public Target	(+) Information or technology transfers of a public target may be more quickly dessiminated, positively impacting rivals.	(-) Public targets tend to be larger than private targets and therefore may have greater market power.
Target Size		(-) Acquisitions of larger targets should have a more negative impact on the local industry to the extent that they have greater market power.
Related Acquisition	(+) Related acquisitions are driven by efficiency reasons. More efficient production and organizational processes are likely to be generated and transfered to the local industry when the acquisition occurs in a related industry.	(-) Firms involved in related acquisitions are more likely to become more efficient or competitive. Thus, industry competitors are expected to be more negatively affected by related acquisitions.
Cash Acquisition		(-) Cash acquisitions are more beneficial to targets and thus they should have a more detrimental impact on industry rivals.
Percentage of Target Acquired	(+) Acquirers should have more incentives to transfer technology to targets when they own a greater share of the target. Thus, the greater the percentage of the target acquired, the greater the potential for technology transfers to the local industry.	
Prior Presence	(-) The spillover of technology transfers should be more significant when acquirers enter a new market for the first time. We predict that rival returns should be lower when the acquirer has already presence in the target's country because the technology transfers will be residual.	(-) A foreign entry is more harmful to the local industry when the acquirer has already entered the target's country, since it has already overcome the disadvantages of entering a new market. We expect rival returns to be lower for acquirers with prior presence in the target's country.

Appendix A continued: Hypotheses and Predictions

Variable	Contagion effects	Competitive effects
C. Industry		
Technology Industry	(+) Technology transfers from the merged firm to the local competitors are more likely to occur in technology-intensive industries.	
Manufacturing Industry	(+) Imitation of innovative production processes or efficient organization of labor should also be more important in manufacturing-oriented industries.	
Herfindahl Index	(+) The increased competition introduced by foreign acqiuisitions, may benefit local firms if it forces them to reduce inefficinecies. The effects of increased competition on local firms are expected to be less important in industries that are already highly competitive (low H).	(+) If a target firm becomes relatively advantaged in a highly competitive (low H) industry, other firms in the industry will incur in more negative effects.
D. Rival		
Rival Herfindahl Contribution		(-) Rivals with greater market power relative to their industry should be less negatively affected by the acquisition.
Rival Size	(-) Small rivals may benefirt more from indirect technology transfers.	(+) Small rivals may have more difficulty competing against the presumably larger and stronger merged firm.
De-listed Rival	(+) If delisted firms are later acquired, they may have positive returns according to the APH	(-) Strong firms that are able to survive the new competition should have less significant negative effects.
Rival ADR		(+) Cross-listed rivals are in a better position to face the competitive advantages of the merged firm as they have greater access to external financing.
Rival (Sales/Assets)	(-) Foreign acquisitions force local firms to reduce inefficiencies in order to defend themselves against increased competition. Less efficient firms are expected to benefit more as they have more room to reduce inefficiencies, relative to firms that are already operating in an efficient way.	
Rival Market-to-book	(+/-) Firms with high growth opportunities are more likely to benefit from technology transfers as they can use them to realize their growth opportunities. On the other hand, firms with low growth opportunities should have higher returns because they are more likely to be acquired.	
Rival Leverage	(-) Low leverage is considered attractive because it can be interpreted as greater debt capacity or managerial incompetence. Thus firms with low leverage are more likely to be acquired.	(-) Highly levered firms are at a disadvantage when competing against the newly merged firm. Firms with high leverage should suffer more negative effects, especially in emerging markets where debt financing is crucial.

Appendix B: Variable Descriptions and Sources

Characteristics of the:	Variable Name	Variable Description	Source
A. Country	Emerging	Dummy variable equal to one if the target's country of origin is an emerging country and zero if it is a developed country. We use the World Bank's classification of emerging and developed countries, based on GDP per capita.	World Bank
	GDP per capita	Log of GDP per capita. We obtain GDP per capita from the World Bank's Development Indicators.	World Bank
	IMD Competitiveness Ranking	This ranking is obtained from the World Competitiveness Yearbook (WCY) published by the IMD (International Institute for Management Development, Switzerland). The methodology of the WCY divides the national environment into four main competitiveness factors: economic performance, government efficiency, business efficiency and infrastructure. The WCY ranks 60 economies with the lowest ranking being the most competitive economy.	WCY
	Openness	The openness of a country is measured as the sum of exports and imports as a percentage of GDP.	World Bank
	Shareholder Protection Index	Shareholder protection refers to the protection provided by the corresponding Corporate Law or the Commercial code to the shareholders of a company. We use the corrected antidirector rights index developed by Spamann (2010). A higher index indicates higher shareholder protection.	Spamann (2010)
	M&A Activity	This variable measures the cross-border M&A activity in the target's home country. Defined as the number of public targets acquired by foreign firms each year, divided by the total number of listed companies in the target's home country. We obtain the number of acquisitions from SDC and the number of listed companies from the World Bank Development Indicators.	SDC/World Bank
	Exchange Rate Strength	Strength of the target's home currency relative to the U.S. dollar. Defined as the proportionate deviation from the average exchange rate for the sample period (see Harris and Ravenscraft (1991)). The exchange rates are in units of local currency per U.S. dollar and they are obtained from Worldscope. Specifically, we take the difference between the average exchange rate over the sample period (1988-2009) and the exchange rate for the year of the acquisition announcement. We divide this difference by the average exchange rate. Positive (negative) values indicate the local currency is strong (weak) relative to the U.S. dollar.	Worldscope
B. Acquisition	Public Target	Dummy variable equal to one if the target is a publicly traded firm and zero if it is a private firm.	SDC
	Target size	Log of the deal value reported by SDC. Deal value is the value the acquirer paid for the target; it includes liabilities assumed but excludes fees and expenses.	SDC
	Related Acquisition	Dummy variable equal to one for related acquisitions and zero otherwise. In a related or horizontal acquisition, the acquirer and the target operate in the same two-digit SIC code.	SDC
	Cash Acquisition	Dummy variable equal to one if the acquisition is made entirely with cash and zero if it was paid with either stock or a combination of cash and stock.	SDC
	Percent of Target Acquired	Percentage of the target acquired during the acquisition.	SDC
	Prior Presence	Dummy variable equal to one if the acquirer has already presence in the target's country at the time of the acquisition announcement. To determine whether an acquirer has prior presence in the target's home country we look at all cross-border acquisitions by U.S. acquirers reported by SDC (back to 1962).	SDC

Appendix B continued: Variable Descriptions and Sources

Characteristics of the:	Variable Name	Variable Description	Source
C. Industry	Technology Industry	Dummy variable equal to one if the target operates in a technology-intensive industry as classified by Akhigbe and Martin (2000) - two-digit SIC codes 28 (chemicals), 33 and 34 (metals), 35 (machinery), 36 (electrical), and 38 (scientific instruments).	SDC
	Manufacturing Industry	Dummy variable equal to one if the target operates in a manufacturing-oriented industry as classified by Akhigbe and Martin (2000) - two-digit SIC codes 10 (mining), 13 (oil/gas), 14 (non-metallic minerals), 20 and 39 (manufacturing), 22 (textile mills), 26 (paper), 27 (printing/publishing), 29 (petroleum/coal), 30 (rubber/plastics), 32 (stone/clay/glass), and 37 (transportation equipment). The effects of the service-oriented industries (two-digit SIC codes 47, 73, 80, 82, and 87 (services), 48 (communication), 50 and 51 (wholesale), 53, and 54 (retail), 60, 62, 63, and 64 (Finance/insurance/real estate), 67 (holding cos.), 70 (hotels), and 78 (motion pictures)) are captured by the intercept.	SDC
	Herfindahl Index	Industry concentration index based on rivals' annual sales obtained from Worldscope. It is equal to the sum of squared market shares for all rivals in an industry. A higher index indicates a more concentrated and/or less competitive industry.	Worldscope
D. Rival	Rival Herfindahl Contribution	Index of the market power of a firm relative to its industry rivals as in Laux, Starks, and Yoon (1998). It is a rival's squared market share divided by its industry Herfindahl Index.	Worldscope
	Rival Size	Log of the sum of the rival's market value of equity and total liabilities. Rival market values are calculated as the share price multiplied by the number of common shares outstanding.	Worldscope
	De-listed Rival	Dummy variable equal to one if the rival was de-listed after the acquisition, either because it was acquired or it went bankrupt and zero if the rival is still active.	Datastream
	Rival ADR	Dummy variable that takes on the value of one if the rival is cross-listed in the U.S. at the time of the acquisition and zero otherwise.	CRSP
	Rival (Sales/Assets)	Rival's ratio of sales to total assets is a proxy for rival efficiency. More efficient rivals generate more sales for each dollar of assets.	Worldscope
	Rival Market-to-book	Log of the ratio of market value of equity plus total liabilities to total assets.	Datastream/Worldscope
	Rival Leverage	Rival's ratio of total debt to total assets.	Worldscope