WORLD MARKETS FOR MERGERS AND ACQUISITIONS

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ABSTRACT

Despite the fact that one-third of worldwide mergers involve firms from different countries, the vast majority of the academic literature on mergers studies domestic mergers. What little has been written about cross-border mergers has focused on public firms, usually from the United States. Yet, the vast majority of cross-border mergers involve private firms that are not from the United States. We provide an analysis of a sample of 56,978 cross-border mergers occurring between 1990 and 2007. We first characterize the patterns of who buys whom: Geography matters, with firms being much more likely to purchase firms in nearby countries than in countries far away. Purchasers are usually but not always from developed countries and they tend to purchase firms in countries with lower investor protection and accounting standards. A significant factor in determining acquisition patterns is currency movements; firms tend to purchase firms from countries relative to which the acquirer's currency has appreciated. In addition economy-wide factors reflected in the country's stock market returns lead to acquisitions as well. Both the currency and stock market effect could reflect either misvaluation or wealth explanations. Our evidence is more consistent with the wealth explanation than the misvaluation explanation.

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1. Introduction.

The volume of cross-border acquisitions has been growing worldwide, from 30 percent of the total merger volume in 1998 to 45 percent in 2007. Some of these cross-border mergers occur for exactly the same reasons as domestic mergers, e.g., synergies, market power, and/or managerial preferences. Yet, in an international context, there are a number of additional factors, such as cross-country differences in macroeconomic conditions, legal regimes, political systems, culture, regulatory environments, and tax systems, that could affect cross-border mergers.[1] One particularly important factor in international merger decisions is valuation differences between acquiring and target firms. Differences in valuation between potential acquirers and targets have been documented to be one motive for domestic mergers.[2] These valuation differences are likely to be even more important in an international context since movements in country-level stock markets and currencies provide additional sources of valuation differences.

This paper considers the extent to which valuation differences and other international factors motivate cross-border mergers and acquisitions. Valuation differences between acquirers and targets can be broken into three components: Differences in country-level stock market movements, differences in firm-specific stock price movements relative to country-level indices, or appreciation or depreciation of the currencies in which acquirers' and targets' securities are traded. Each of these components potentially reflects an alternative source of valuation difference that could motivate

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[1] The extent to which a number of these factors explain cross-border mergers has been explored in previous work. In particular, Graham and Krugman (1995) summarize earlier literature on macroeconomic conditions; Dewenter (1995) and Froot and Stein (1991) examine relative wealth effects; Rossi and Volpin (2004) examine why corporate governance proxied by legal regimes can affect cross-border M&A patterns; Chakrabarti, Jayaraman and Gupta-Mukherjee (2005) find that culture disparity leads to better outcome in cross-border M&As; Desai, Foley and Hines (2004) find that US multinationals move capital toward low-tax locations.
[2] See Shleifer and Vishny (2003), Rhodes-Kropf and Viswanathan (2004), Dong, Hirshleifer, Richardson and Teoh (2006), and Harford (2005).

mergers. We estimate the effect of these factors on merger propensities using a sample of 56,978 cross-border mergers occurring between 1990 and 2007.

In contrast to most of the prior literature that focuses on mergers of public acquirers and targets involving U.S. firms, our sample better reflects the universe of cross-border mergers, the majority of which involve private firms, mostly from outside of the U.S. In our sample, 80% of completed cross-border deals between 1990 and 2007 targeted a non-US firm, while 75% did not involve a US firm as an acquirer. The majority of acquirers (90%) are from "developed" countries, while the other 10% being from "developing" countries. A surprisingly large number of cross-border transactions involve firms in Eastern Europe (2,115 deals), Asia (7,009 deals), South America (2,587 deals), Africa (853 deals), Central America (810 deals), and Middle East (617 deals). Furthermore, the vast majority of cross-border mergers involve private firms as either bidder or target: 96% of the deals involve a private target, 26% involve a private acquirer, and 97% have either private acquirers or targets. Hence, the inclusion of private firms in our analysis is important, especially since most other studies use samples of publicly-traded firms or lump private acquisitions in with other investments as foreign direct investment (FDI).

Our results suggest that valuation differences between acquirers and targets significantly affect the likelihood of a cross-border merger. The cross-border acquirer is more likely to be from a country whose currency has appreciated relative to the target's currency and whose country's stock market has outperformed the target firm's country's market. In addition, if the companies are public, the acquirer's firm-specific abnormal performance is likely to be better than the target's. The estimated effects are fairly large: Our estimates imply that a 100% difference in country-level stock returns between two countries leads to a 17.4% increase in the expected number of acquisitions of the worse performing country's firms by the better-performing country's firms. Similarly, a 75% appreciation of one country's currency relative to another's leads to a 50.4% increase in the number of acquisitions of firms in countries with relatively depreciated currency.

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Differences in valuation can affect merger propensities through two main channels. Froot and Stein (1991) argue that differences in wealth that occur because of exchange rate or other shocks provide a financing advantage, lowering the cost of a potential acquisition. A wealthier country effectively has a lower cost of capital, leading its firms to purchase assets outside the country, including other companies. More generally, international acquisitions provide a way in which newly wealthier shareholders can increase their exposure internationally without purchasing foreign stocks.

In addition, valuations can drive mergers if these valuations diverge from fundamentals (see Shleifer and Vishny (2003), Dong et al. (2006), Rhodes-Kropf and Viswanathan (2004), and Baker, Foley and Wurgler (2009)). Given misvaluation, managers of a relatively overvalued firm will have incentives to purchase relatively undervalued assets, especially if they can use their overvalued stocks as a means of payment. In an international context this divergence from fundamentals could occur for two reasons: First, overall investor sentiment could vary across countries, creating a wedge in firm values in the local-currency across countries. Second, the currencies in which the companies are valued can appreciate or depreciate more than is warranted by changes in underlying economic conditions, leading the companies to be relatively misvalued.

We focus on measures of relative valuation between bidders and targets at the country level, and, when possible, at the firm level. We consider the relative stock market performance of the countries of the acquiring and target firms prior to the mergers, broken up into local currency and exchange rate components. We also analyze a country-level 'market-to-book' measure, similar to that used by Baker et al. (2009). Further, we examine the relative firm-level stock performance as well as the market-to-book ratios of the subsample of mergers between public acquirers and targets.

Based on univariate comparisons of pre-merger performance between bidders and targets, acquirers outperform targets by all measures. The local-currency return of the acquirer is 0.3% higher during the 12 months, 0.92% the 24 months, and 2.12% during the 36 months before the deal occurs. Similarly, the exchange rate of the acquirer tends to appreciate relative to that of the target

before the deal, 1.12%, 2.13% and 3.43% in the 12, 24 and 36 months prior to the mergers, respectively. Given these results, not surprisingly, the market-to-book ratio of the acquirers' countries is 9.93% higher at the time of the deal. This pattern is true for both private and public acquirers and targets.

When we restrict ourselves to public acquirers and targets so that we can compare the firm-level returns, we again find that acquirers outperform targets prior to the acquisitions. The difference in local-currency returns is 10.38%, 19.34%, and 23.36% for 12, 24 and 36 months prior to the acquisition, respectively. In addition, the average market to book ratio is higher for acquirers than for targets, mirroring for what has previously been documented for U.S. domestic acquisitions (see Rhodes-Kropf and Viswanathan (2004)).

We next evaluate the possibility that valuation could motivate cross-border mergers in a multivariate context. We first estimate models predicting the number of deals in a particular country-pair as a function of relative market conditions in the two countries. We find that differences in local currency returns as well as exchange rate returns predict the volume of mergers between particular country pairs. In addition, differences in country-level market to book ratios predict cross-border merger volume as well. These findings are consistent with the view that the difference in valuation is an important driver of cross-border merger activity.

We consider the types of mergers for which stock-market and currency valuation differences appear to be the most important motives. Our results suggest that currency movements predict mergers mostly for within-region country-pairs and also appear to be most important when the acquiring country is wealthier than the target. This pattern is consistent with the view that firms in wealthier countries purchase firms in poorer nearby countries because they are relatively inexpensive following currency depreciation. We also find that valuation differences in country-level stock market predict mergers mostly when the acquiring country is wealthier than the target, consistent

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with the view that firms in wealthier countries purchase foreign firms following a decline in the poorer country's stock market.

There are two potential (though not mutually exclusive) explanations for the stock-return differences between acquirer and targets prior to the acquisitions. First, the returns can affect changes in the relative wealth of the two countries. Second, the returns can reflect differential divergence from fundamentals. We use an approach suggested by Baker et al. (2009) to differentiate the two explanations. In particular, we estimate an equation predicting a country's market to book ratio using future returns. Baker et al. (2009) suggest that the fitted values from such a regression should reflect overvaluation while the residuals reflect a wealth effect. We find evidence consistent with the wealth effect, which is strong in magnitude and persistent across different sub-samples, rather than the mispricing effect.

We then examine at the deal level whether valuation differences drive cross-border M&As controlling for firm-specific factors. We find that differences in US dollar firm returns predict higher likelihood of cross-border deals compared to domestic deals. Furthermore, when we decompose valuation differences between acquiring and target firms to three components, we find that acquiring firms in cross-border mergers outperform their domestic capital market.

The remainder of the paper proceeds as follows: Section 2 discusses the previous literature on cross-country mergers, including some relevant papers on FDI. Section 3 describes the data. Section 4 presents the results while Section 5 concludes.

2. Prior literature on Cross-Border Mergers and Acquisitions

Despite the fact that a large proportion of worldwide merger activity involves firms from different countries, the voluminous literature on mergers has focused almost exclusively on domestic

deals.[3] While this literature also helps to understand international mergers, it does not address a number of factors related to country-based differences between firms. Nonetheless, there has been some work on cross-border mergers, which tends to either lump together mergers with other international investments as FDI or to analyze only mergers between public firms.

Much of earlier work has focused on synergies, marketing ability, or technological advantages to explain why a foreign firm would value domestic assets more highly than would a domestic firm (see Graham and Krugman (1995) for a summary). Other factors including relative labor costs and tax incentives have been used to explain the general pattern that FDI flows from developed to less developed countries (e.g. Cushman (1987) and Swenson (1989)).

However, none of these studies provide theoretical justification for a relation between currency movements and cross-border mergers or other components of FDI. Froot and Stein (1991) suggest one such story, in which wealth effects matter because information problems in financial contracting cause external financing to be more costly than internal financing. When a firm's value increases, so does its access to capital relative to alternative bidders whose value did not increase by as much. Consequently, when a potential foreign acquirer's value increases, for example through unhedged exchange rate changes or stock market fluctuations, then the potential foreign acquirer can bid more aggressively for domestic assets than domestic rival bidders can do. In equilibrium, relative value changes lead to an increase in cross-border acquisitions by firms in the relatively wealthy country. The prediction that FDI increases following exchange rate movements has been tested by Klein and Rosengren (1994), Dewenter (1995), Klein, Peek and Rosengren (2002), and Desai, Foley and Forbes (2009), all of whom focus on FDI inflows and outflows from the United States.

A different reason for the relation between price levels and mergers is that cross-border mergers are caused by the mispricing of stocks. Shleifer and Vishny (2003) develop a model in

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[3] See Jensen and Ruback (1983), Jarrell, Brickley and Netter (1988) or Andrade, Mitchell and Stafford (2001) for surveys.

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which overvaluation can lead to mergers. In their model, managers of an overvalued acquirer issue shares at inflated prices to buy less-overpriced assets. This transaction transfers value to the shareholders of the acquiring firm by arbitraging the price difference between the acquiring firm's stock price and fundamentals. Their model seems particularly applicable in an international setting, since differences in valuation are likely to occur because of either exchange rate or stock price movements. Using a sample of U.S. domestic mergers, Rhodes-Kropf, Robinson and Viswanathan (2005) provide empirical support for the implications of this theory.

Baker et al. (2009) provide a direct test of the Froot and Stein (1991) wealth hypothesis and the Shleifer and Vishny (2003) mispricing hypothesis. These authors consider the way in which relative price levels affect FDI inflows and outflows to the United States. An important issue in this analysis is the fact that most FDI purchases are of real assets or private companies, which are not directly affected by stock price valuations. Baker et al. (2009) argue that the mispricing channel could nonetheless operate, even without new public equity issuances. If overvalued equity reduces the cost of debt by its effects on perceived collateral values and through widely-used credit-rating models, then an overpriced stock market could increase private firms' access to capital. Using data on U.S. FDI, Baker et al. (2009) find support for both the wealth and mispricing hypotheses.

Until recently, few studies use deal-level analysis to examine factors that affect the intensity and pattern of cross-border M&As. Rossi and Volpin (2004) construct country-pair samples based on deals involving public firms and find that differences in investor protection affect the incidence of cross-border deals. Firms in countries with weaker protection tend to be targets of firms from countries with stronger protection, presumably because the better investor protection provides an incremental source of value.[4]   Ferreira, Massa and Matos (2009) also focus on public firms involved in cross-border M&A deals. These authors find that foreign institutional ownership is positively associated with the intensity of cross-border M&A activity worldwide, which could occur for a

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[4] See also Bris and Cabolis (2008) and Martynova and Renneboog (2008) for related findings.

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number of reasons, including foreign ownership facilitating the transfer, foreign ownership being correlated with more professionally managed companies, or foreign owners being more likely to sell to foreign buyers than local owners.

3. Data

Our analysis is based on Security Data Corporation's (SDC) Mergers and Corporate Transactions database for data on mergers and acquisitions announced between 1990 and 2007 and completed by the end of 2007. We exclude LBOs, spin-offs, recapitalizations, self-tender offers, exchange offers, repurchases, partial equity stake purchases, acquisitions of remaining interest, and privatizations, as well as deals in which the target or the acquirer is a government agency, or in the financial or utilities industry.[5] We end up with 187,841 mergers with the total transaction value equal to $7.54 trillion, 56,978 of which are cross-border with total transaction value equal to $2.21 trillion.

We obtain data on monthly firm-level and country-level stock returns, as well as exchange rate quotes from Datastream.[6] We then deflate these return indices using the 1990 constant consumer price index (CPI) and calculate real returns for stocks in both local currency and U.S. dollars.[7] When calculating real returns for E.U. countries, we use the Euro as the currency (for the E.U. firms adopting it) after 1999 and deflate it using corresponding E.U. CPI. For country-level market-equity-to-book-equity ratio, we follow Fama and French (1998) and sum the market value of all firms within a country, normalized by the sum of book values for the same firms.

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[5] We only include countries which have consistent stock market data during 1990 and 2007. The number (value) of deals dropped due to lack of information on stock market return is 4,061 ($145 billion), approximately 2% (1.9%) of the sample.

[6] Since U.K. has the widest Datastream coverage for the quoted exchange rates, we use National Exchange Rates for the U.K. and manually convert these currency quotes to get the quotes for the U.S.

[7] For Australia and New Zealand, we only have quarterly price level. When extrapolating to monthly level information using Natural (or simple) Spline Fitting method (to smooth out the prices), we assume that the price level represents the end of month/quarter.

We use various data sources for country-level controls. We obtain each country's legal origin as well as proxies for the level of investor protection (the "Rule of Law" and "Anti-director Rights" variables) from La Porta et al. (LLSV, 1998), ratings on the disclosure of accounting information reported by the Center for International Financial Analysis and Research, and a newly assembled anti-self dealing index from Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2007). We also include culture variables: language (English, Spanish or others) and religion (Protestant, Catholic, Muslim, Buddhist or Others) from Stulz and Williamson (2003). We obtain annual Gross National Product (in US Dollars) normalized by population and annual real growth rate of the Gross Domestic Product from the World Development Indicator report.

For the public firms in our M&A sample, we obtain accounting and ownership information from Worldscope. In particular, Worldscope provides firm-level data on firm size (book value of total assets), book leverage (long-term debt divided by total assets), cash ratio (cash holdings divided by total assets), two-year geometric sales growth, and return on equity as well as the market-to-book ratio of the equity.

4. Results

4.1. Stylized Facts about Cross-Border Mergers.

Mergers involving acquirers and targets from different countries are substantial, both in terms of absolute number, and the value of deals as a fraction of worldwide M&A activity. Panel A of Figure 1 plots the quantity of cross-border deals over our sample period. As with domestic deals, the volume of cross-border mergers increases throughout the 1990s, declines after the stock market crash of 2000, and increases again between 2003 and 2007. Panel B plots the quantity and value of cross-border deals as a fraction of total deals. Cross-border mergers are typically between 20 and 40 percent of worldwide merger volume. The fraction of cross-border deals also follows the overall

level of the stock market; the fraction drops in the early 1990s, increases in the later 1990s to a peak in 2000, and then increases again with the stock market between 2003 and 2007.

One fact that is clearly evident is that most cross-border mergers do *not* involve U.S. firms. Figure 2 graphs the fraction of U.S. acquirers and targets over time, both weighting each deal equally and by deal size. In most years, between 12 and 28 percent of acquirers are from the U.S. and between 20 and 37 percent of the targets are from the U.S. When we weigh by deal size, the fraction of U.S. deals grows somewhat but still the overwhelming majority of deals do not involve U.S. firms.

Table 1 characterizes the pattern of cross-country acquisitions in our sample. The columns represent the countries of the acquiring companies while the rows represent those of the target companies. The diagonal entries of the matrix are therefore the number domestic mergers for a particular country and the off-diagonal entries are the number of deals in a particular country pair. The totals exclude domestic mergers and hence represent the number of cross-border mergers to and from a particular country. The country with the largest number of acquisitions is the U.S.; U.S. firms were acquirers in 15,034 cross-border mergers and were targets in 11,886 mergers, which is substantial but certainly do not represent the majority of the 56,978 cross-border mergers.

A casual glance at Table 1 indicates that geography clearly matters. Domestic mergers are by far the largest in number for all countries. Of the cross-border mergers, there is a large tendency to purchase companies in nearby countries. For example, of the 226 cross-border acquisitions by New Zealand companies, about two-thirds, 145, were Australian companies. By far the largest target of Hong Kong based companies were Chinese companies (214 of 633 cross-border acquisitions of Hong Kong companies), and aside from the U.S., the vast majority of German cross-border acquisitions were from other European companies.

Table 2 characterizes the target firms by country, documenting the numbers that are bought by domestic firms, foreign firms, and the industry breakdown of these firms. This table indicates that the domestic/cross-border breakdown varies substantially across countries. In large countries there

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tends to be many more domestic targets than cross-border ones; for example in the U.S., the number of U.S. firms that are targets of cross-border acquisitions is only about 15% of the targets of the domestic ones. In contrast, in a number of smaller countries there are actually more cross-border targets than domestic ones. This pattern is not surprising since there are more potential domestic acquirers in large countries than in small ones.

4.2. Cross-Sectional Determinants of Cross-Border Mergers

To analyze the cross-sectional patterns among acquirers and targets formally, we use a multivariate regression framework. We consider all (ordered) country pairs, and construct a variable that equals the number of acquisitions by firms in one country of firms in the second at any point during the sample period, normalized by the total number of domestic acquisitions in the target country. This variable provides a measure of the propensity of firms of one country to acquire firms of another one. In a similar fashion, we construct the intensities of cross-border deals separately using only public target and acquirers and private target and acquirers.

We then estimate equations predicting this variable as a function of the characteristics of the countries. Since each observation is a "country pair", the total number of observations is the square of the number of observations minus the number of observations ($37 \times 36 = 1332$). We include the stock return difference of the country indices (average annual local real stock market return) and the relative appreciation of the two countries' currencies (the average annual real exchange rate return) over the entire sample period because, as we have argued above, changes in relative valuation are likely to lead to acquisitions. Regulatory and legal differences between countries are potential causes of cross-border acquisitions (Rossi and Volpin (2004)), so we include the difference in the LLSV measures of accounting quality (an index created by the Center for International Financial Analysis and Research to rate the quality of 1990 annual reports on their disclosure of accounting information) and legal protection (the product of the "Rule of Law" and "Anti-director Rights" variables). To capture the regional effect discussed above, we include the distance between the capital cities of a

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country pair.[8] To evaluate if a common culture makes mergers more likely, we include variables indicating whether the target and acquirer's primary religion, are the same and whether their primary language (English, Spanish or others) are the same (Stulz and Williamson (2003)). To reflect the differences in wealth between any pair of countries as well as the change in this difference, we include the difference in the log of gross national product in 1990 (in US dollars) divided by the population and the average annual real growth rate of the gross domestic product from 1990 to 2007 (source: WDI report). Finally, each equation contains dummies for each country (so that each observation has two dummy variables, one of the acquirer and one for the target country).[9]

Table 3 contains estimates of this equation. There are a number of patterns among acquirers and targets. First, the regional effect discussed above is evident; holding other things constant, being closer to one another substantially increases the likelihood that there are acquisitions between two countries. Second, there is a currency effect. Firms from countries whose currencies appreciated over the sample period tended to be purchasers of firms whose currency tended to depreciate. Third, consistent with Rossi and Volpin (2004), having a better legal protection of minority shareholders' rights and having higher quality accounting disclosure system each increase the likelihood that firms from a country will be purchasers of firms from another country. Finally the likelihood that a firm from one country purchases a firm from another increases when the two countries share a common language. There is no evidence that sharing a common religion has any impact on merger propensities.

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[8] We obtain latitude and longitude of capital cities of each country from http://www.mapsofworld.com/utilities/world-latitude-longitude.htm. We then apply the standard formula: 3963.0 * arcos [sin(lat1) * sin(lat2) + cos (lat1) * cos (lat2) * cos (lon2 - lon1)], where lon and lat are the longitudes and latitudes of the acquirer and the target country locations, respectively.
[9] We have also estimated equations similar to those in Table 3 including bilateral trade flow calculated as the value of imports by destination country from origin country as a percentage of total imports by destination country (source: United Nation Commodity Trade database). The idea of including this variable is that trade flow is likely to be related to the amount of business done between two countries and consequently the synergistic motives for mergers. The results from this specification are similar to those reported below except that the coefficient on the trade variable is positive and statistically significant. We do not include this variable because it is not available for roughly 15% of the country pairs in our sample.

4.3. Differences in Valuation Using Country-Level Panel Data: Univariate Evidence

Table 4 summarizes the valuation differences between acquirers and targets. As measures of valuation, we report differences in market to book, differences in exchange rate returns, and differences in local-currency stock returns prior to the acquisition, both at the country and firm levels. We report the country-level stock returns, the firm-level stock returns, and currency returns each for 1, 2 and 3 years intervals prior to the acquisition.

The first column presents these return differences for the entire sample of cross-border mergers. For both the level of valuation (the market to book ratio) and the recent change in valuation (both through local stock market returns and by change in the exchange rate), acquirers are valued higher than targets. The market-to-book ratio averages almost 10% higher for acquiring countries than for target countries. In addition, the average local stock market returns are higher for acquiring firm countries than target firm countries, by 0.3% in the first year before the merger, 0.92% in the two years prior to the merger and by 2.12% over the three years prior to the merger. Finally, the exchange rate of acquiring companies appreciates relative to that of the target companies, by 1.12% in the year prior the acquisition, by 2.13% in the two years and 3.43% of the three years prior to the acquisition. All these results are consistent with the view that firms purchase firms when they are relatively highly valued, either because of a wealth effect or to take advantage of overvaluation.

For the subsample of mergers for which the acquirers and targets are both publicly traded and hence have observable stock returns, acquirers substantially outperform targets prior to the acquisitions. The differences are much larger than the country-level differences, about 10% in the year prior to the acquisition, 19% in the two-year period prior to the acquisition and 23% in the three-year period prior to the acquisition. This relation is again consistent with the valuation arguments and similar to what others have found for domestic acquisitions (see Rhodes-Kropf and Viswanathan (2004), Dong et al. (2006), and Harford (2005)).

This pattern can be clearly seen in Panel A of Figure 3. Prior to month 0, the month of the acquisition, both the local currency return and exchange rate return differences are positive, meaning that the acquirer's country's stock market outperformed the target's and that the acquirer's currency appreciated relative to the targets during the 3 years prior to the acquisition. Subsequent to the acquisition, however, the local currency return difference disappears, meaning that the target country outperforms the acquirer's during the 3 years subsequent to the acquisition. However, the acquirer's currency continues to appreciate, leaving the common-currency returns in the two countries' stock markets approximately the same following the acquisitions.

We break down the pre-acquisition returns by characteristics of the deals in the remaining columns of Table 4. The second through fifth columns consider deals by whether the acquirer and target are from developing or developed countries, using the World Bank definition of "high income" economies.[10] The pre-acquisition local return differences are positive for each category although they are substantially larger when a developed acquirer buys a developed target and when a developing acquirer buys a developed target (12.79% and 9.54% differences for the two categories for the three years prior to the acquisition). However the currency movements prior to the deal go in opposite directions for these two categories. When a developing acquirer buys a developed target the acquirer's currency actually depreciates prior to the acquisition. On the other hand, when a developed acquirer buys a developing target, it generally follows a period of strong relative appreciation. This pattern could reflect a general appreciation of developed currencies relative to developing ones over our sample period and suggests that we should control for these effects econometrically (as we do below).

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[10] It is not obvious how one should define countries as developing or developed. We have used alternative definitions of developing and developed and the pattern of preacquistion returns is similar to what report here. Besides world bank definition of "high income" countries, we also use the "developed" definition in Demirgüç-Kunt and Levine (2001). If claims on private sector by deposit money banks as a share of GDP and the total value traded on the stock market as a share of GDP in a given country are both below period mean, the country is flagged as "developing".

In Columns 6-9 of Table 4, we report pre-acquisition valuation differences for different legal regimes in the acquiring and target countries.[11] In general, weak law target countries are associated with higher pre-acquisition differences, in terms of market to book ratios, local currency returns and exchange rate returns, especially when the acquirer is from a strong law country. This pattern suggests that governance-driven cross-border acquisitions characterized by Rossi and Volpin (2004) tend to occur during times when the target company's country is doing relatively poorly. The potential governance improvements from the stronger legal protection appear to be supplemented by a valuation effect.

In the final four columns of Table 4, we break down the valuation differences by whether the acquirer and target are from the same region of the world, and also by whether they are related or diversifying mergers.[12] In general the valuation metrics are similar regardless of whether the acquirer and target are in the same or different regions. However, the valuation differences tend to be somewhat larger for related than for diversifying mergers for most of the measures of valuation we use.

4.4. Differences in Valuation Using Country-Level Panel Data: Multivariate Evidence

To formally evaluate the hypothesis that relative valuation can affect merger propensities, we rely on a multivariate framework that controls for other potentially relevant factors. It is not obvious, however, what the most natural approach is to address this question. One possibility is to use deal level data on the acquirer's and target's market valuations. This approach has the advantage of utilizing the most accurate measure of firm values in the comparison. However, it has the disadvantage of only being usable for the subsample of deals having both public acquirers and public targets. As discussed above, the vast majority of cross-border acquisitions have either private

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[11] If the Shareholder Protection Index (the product of "Rule of Law" and "Antidirector Rights" variables from La Porta et al. (1998)) is below median, we categorize the country as "Weak Law".
[12] If target and acquirer's countries are from the same broadly-defined continent (Africa, America, Asia, and Europe), we call the deal "same region" (Source: World Atlas 1995). We define deals as "related" if the target firm and the acquiring firm have the same 3-digit SIC code.

acquirers or targets (or both), so using deal level data necessitates discarding the vast majority of the sample. An alternative approach relies on country-level data. This approach has the disadvantage of ignoring firm-level information (where available) but has the advantage of being able to utilize the entire sample of deals. In addition, a number of hypotheses of interest, in particular those concerning currency movements and country-level stock market movements, are testable using country level data. Since each approach has both advantages and disadvantages, we use both: We first estimate equations using the entire sample of deals using country-level data on market indices, valuation levels, and exchange rates. We then estimate similar equations with deal-level data on the smaller sample of deals involving public acquirers and targets.

We estimate an econometric specification in which the dependent variable is the number of deals for a particular country pair in a specified year, normalized by the total number of deals for that target country in that year.[13] Our sample consists of country pairs with one observation per year for each pair, for a total of 16,524 observations. To control for the cross-sectional factors discussed above as well as long-term trends in currency movements that affect merger propensities (Table 3), we include country-pair fixed effects.[14] This specification allows us to exploit time-series variation in relative valuations while controlling for cross-country differences. We estimate the equation using OLS and report heteroskedastic-consistent estimates of the standard errors.

Table 5 presents estimates of this equation. The stock return and currency differences are measured over the 12 months prior to the year in question.[15] "$\Delta Currency\ R12$" is the difference in the past 12-month real exchange-rate return between acquirer and target country currencies. "$\Delta Market\ R12$" is the difference in the past 12-month local real stock-market return between acquirer and target

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[13] We have also estimated all equations reported below using a dependent variable equal to the log of one plus the normalized number of deals from a particular country pair. The results using this alternative dependent variable are similar to those reported below.

[14] Note that the pairs are ordered, so that, for example, there would be a U.S.-Canada dummy variable as well as a Canada-U.S. dummy variable in each equation.

[15] We have also estimated these equations using 24 and 36 month windows for measuring stock and currency returns prior to the acquisition with similar results. In addition, we have estimated these equations on U.S. and non-U.S. subsamples, again with results similar to those reported in Table 5.

country market indices, while "Δ*Market MTB*" is the difference in the value-weighted market-to-book equity ratio between acquirer and target country. All equations also include differences in the log of GDP and the differences in GDP growth rates as well as year and country-pair dummies. Columns 1-6 include all deals, columns 7-12 restrict the sample to deals involving private acquirers and targets, while columns 13-18 include only public acquirers and targets.[16]

Columns 1, 7 and 13 present the basic regression for each group of deals. Except in the public-firms subsample, the coefficients on the return and currency differences, as well as the GDP and growth differences, are positive and statistically significantly different from zero. These positive coefficients on the valuation differences imply that when valuations are higher in one country than another, the expected number of acquisitions by the first country's firms of the second country's firms increases. To interpret the magnitudes of these coefficients, it is convenient to calculate the percentage increase in expected acquisitions for a country pair implied by a given return differential. Interpreted this way, the coefficients in Panel A of Table 5 imply that for 100% difference in local currency returns leads to a 17.4% increase in the expected number of acquisitions for a particular country pair.[17] Similarly, a 75% difference in exchange rate returns implies a 50.4% increase in acquisitions.[18] These effects appear to be fairly large, implying that the effects of valuation on merger probabilities are substantial.[19]

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[16] We restrict the sample to those country-pairs with at least one merger at some point during the sample period. We have estimated these equations using samples including all country pairs, as well as only those country pairs with at least 10 mergers over the entire sample. In each case the results are similar to those reported in Table 5.

[17] The average ratio of cross-border merger to domestic mergers for a given country-pair in a given year is 0.0461. Using the coefficient of the country-level 12 month real stock returns in column (1) of Table 5, we can calculate the percentage change in the ratio for an average country pair: (0.008*100%)/0.0461=17.4%. We emphasize that 100% country-level 12 month stock return difference between target and acquirer is not a rare event. In our sample, 55 country-pairs had a return difference at least this large.

[18] Similar to our calculation for country-level stock market returns, the percentage change in the number of cross-border merger when there is a 75% difference in exchange rate returns, is (0.031*75%)/0.0461=50.4%. Note also that 75% difference between target and acquirer in currency movement is not a rare event. 95 country-pairs had such experience in the past 15 years, mostly due to currency depreciation in target countries, e.g. Turkey and Brazil (1994), and Argentina and Peru (1990).

[19] The linear specification is convenient, but it is possible that there are important nonlinearities it does not capture. We intend to investigate this possibility in future drafts of this paper. In particular, we intend to explore the extent

Columns 2, 8 and 14 of Table 5, break up the local market and currency returns by a dummy variable which equals 1 if the GDP per capita in the acquirer country is larger than that in the target country, while Columns 3, 9 and 15 perform a similar decomposition for regional differences. The findings in these columns indicate that both the stock return and currency differences have the largest impact on merger propensities when firms from wealthier countries are considering purchasing firms from poorer countries. The regional decomposition indicates that the currency effect is largest for country-pairs in the same region. However, for the whole sample, the stock market effect is positive and statistically significantly different from zero for out-of-region deals and equals zero for mergers within a region.[20]

Columns 4, 10 and 16 consider how country-level differences in market-to-book ratios affect merger likelihoods. The coefficients on the market to book differences are again positive and statistically significantly different from zero, except in the last panel, where the coefficient is positive but not significant. To interpret the magnitude of the coefficient on market to book ratios from the equation in Column 4, keeping all other variables constant, the model implies that a difference of one in market-to-book ratios leads to an expected increase of 7% increase in the volume of cross-border mergers.[21]

We break down the impact of country-level market to book ratio differences on mergers by the relative wealth of the countries and by the regional differences in the remaining columns of Table 5, Panel A. These results suggest that, consistent with the results using returns and currencies, valuation differences are most important when firms from wealthier countries purchase firms from nearby poorer countries. This pattern is consistent with some cross-border mergers occurring when

to which all market and currency movements affect merger propensities, or if the effect is only important for extreme movements.

[20] For deals within region, the effect is the sum of the coefficient on $\Delta Market\ R12$ plus the coefficient on this variable interacted with the "Same Region" dummy variable. Since the sum of these coefficients equals zero, the net effect of stock market returns for within region mergers is zero.

[21] A difference of one (or larger) in country-level market-to-book ratios is not uncommon. For example market-to-book ratios for the U.K. and Belgium in 1997 are respectively 2.7 and 1.7 for a difference of one, while market-to-book ratios for the U.S. and South Korea in 1998 are respectively 2.6 and 0.6,which is a difference of two.

firms in richer countries purchasing firms from nearby poorer countries when they are relatively inexpensive following a currency depreciation or a decline in the poorer country's stock market.

4.4.1. Interpreting the Relation between Valuation and Merger Propensities.

There are two possible explanations for the relation between valuation and merger propensities. Increases in relative valuation, either through stock price increases or currency appreciation, could reflect real increases in wealth, leading to improved firms' abilities to finance acquisitions (Froot and Stein (1991)). Alternatively, the changes in relative valuation could reflect errors in valuation, in which case firms should rationally take advantage of this misvaluation to purchase relatively cheap assets, i.e., firms in another country that are not as overvalued (Shleifer and Vishny (2003)). The *overvaluation* argument applies mainly to public acquirers who can either issue equity or make stock acquisitions to take advantage of the high valuation, but as Baker et al. (2009) argue, it could potentially apply to private acquirers as well if the overvalued equity market lowers the cost of capital in a country for private firms. Of course, the Shleifer and Vishny argument applied to *undervaluation* following a currency crisis or large stock market decline would apply equally for public and private firms.

A prediction of the incorrect relative valuation argument is that subsequent to acquisitions by relatively overvalued firms, there should be a price reversal and acquirers should underperform relative to targets. In particular, the overvaluation argument implies that if an acquirer purchases a target to arbitrage differences in the price levels across countries, these differences should narrow subsequent to the acquisition. To evaluate this possibility, we include future return differences in Panel A of Table 6. The results are somewhat ambiguous, but seem to indicate that, if anything, the difference in currency returns tends to persist following the acquisition. This pattern is inconsistent with the notion that overvaluation explains the impact of valuation on merger decisions.

To test this hypothesis formally, we follow an approach developed by Baker et al. (2009). These authors argue that the market to book ratio can be broken into two components: the component

due to real expected wealth and the component due to over or under reaction by the market to news. To estimate the magnitude of each component, Baker et al. (2009) estimate equations where the market to book ratio is a function of future stock returns. To the extent that the market to book ratio reflects overvaluation at the time of acquisitions, periods of high acquisitions should be followed by periods of poor returns. The "fitted" component of market to book should represent that component arising from overvaluation while the "residual" component comes from real wealth effect.

In the first-stage equation, where country-level market-to-book ratios are predicted using future returns, the coefficients on future returns are negative. This finding is consistent with the literature and suggests that higher country-level market-to-book ratios do lead to lower future stock returns in that country. However, when we break down the market to book differences between countries into "fitted" and "residual" components (see Panel B of Table 6), for most specifications only the residual is positively related to acquisitions, as predicted by the wealth-effect hypothesis. Only in the sample of acquisitions of private firms, for which stock market misvaluation is least likely to affect acquisitions, is the difference of the fitted values statistically significant.[22] In the sample of deals involving public targets and acquirers, the coefficient on the difference in fitted components is actually negative, which is the opposite of what the overvaluation hypothesis predicts. Consequently, this evidence suggests that the valuation effect occurs because of the wealth effect described by Froot and Stein (1991) rather than the mispricing effect discussed by Shleifer and Vishny (2003).

4.5. Valuation Using Deal-Level Panel Data

We have documented that valuation appears to play an important role in determining which firms are likely to merge. Acquirers tend to be valued relatively highly compared to targets, using prior returns or market to book ratios as measures of valuation. This difference in valuation between

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[22] The "private sample" includes all acquisitions with either a private acquirer or target, so that the "public sample" includes just the deals for which both acquirer and target are public.

acquirers and targets appears to occur due to both stock market and currency effects. Yet, the results presented so far are all done at the country level. Consequently, they do not control for firm-level factors that potentially affect the decision to merge, including the firm's own valuation.

To control for firm-level factors, we consider the subsample of firms for which we have public data on both acquirers and targets. Unfortunately, this subsample is both relatively small and unrepresentative of the overall sample of mergers, because firms in this subsample are much more likely to be from developed rather than developing countries. Of the 56,978 cross-border mergers in our sample, only 911 have both public acquirers and targets, and also have data available on firm level variables we use to control for other factors that potentially affect mergers. Of these 911 mergers, 877 have acquirers from developed countries and 780 targets are from developed countries. While these mergers are interesting in their own right, they are not representative of cross-border mergers in general.

To estimate the factors that affect mergers, one would ideally like to consider every possible pair of firms that could conceivably merge and estimate the likelihood that any two of them actually do merge. Unfortunately, this approach would be infeasible as the number of possible combinations would be extremely large relative to the number of actual mergers. Instead, we adopt two alternative approaches designed to infer the factors leading one firm to buy another.

4.5.1. Cross-Border vs. Domestic Mergers.

We first consider the sample of all mergers of publicly traded firms (including domestic ones), and estimate the characteristics of the firms involved with the merger that are associated with it being a cross-border that lead a particular merger to be either cross-border or domestic. We estimate logit models that predict whether an observed merger is domestic or cross-border as a function of deal characteristics. Intuitively, this approach presumes that domestic mergers can provide a benchmark through which we can understand the nature of cross-border mergers.

We present estimates of these equations in Table 7. The first two columns include the difference in the acquirer and target returns, converted to U.S. dollars, as an explanatory variable. Both coefficients are positive and in the second column, which controls for whether the two firms are in the related industries and the sizes of the targets and acquirers, the coefficient is statistically significantly different from zero. The positive coefficient indicates that cross-border acquisitions tend to have larger return differences between acquirers and targets.

In Columns 3 and 4 we break up the return differences into three components, the differences in local stock market indices, the currency return between the two countries' currencies, and the differences in firm-level excess returns relative to the market.[23] The coefficients on all three variables are positive, but often insignificant. The positive coefficients on currency differences and differences in local market returns are consistent with the valuation arguments and suggest that differences in these variables are determinants of cross-border mergers.

4.5.2. Predicting the identity of target and acquirers

Another way to evaluate the motives for cross-border mergers is to characterize the attributes of the firms involved as targets and acquirers relative to each other. If the underlying reason for the merger is to take advantage of valuation differences, then one ought to be able to predict which firms will be acquirers or targets using measures of valuation. Consequently, we consider the sample consisting of all firms involved in a public/public cross-border merger and estimate equations predicting whether a particular firm is a target or acquirer. Because the dependent variable is dichotomous, we estimate the equations by logit and present the results in Table 8. We estimate these equations for both domestic and cross-border mergers; the domestic mergers are in Columns 1-4 while the cross-border ones are in 5-8.

The results in Table 8 indicate that for both domestic and cross-border mergers, acquirers outperform targets prior to the acquisition. This finding is consistent with prior literature on

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[23] For the domestic deals, the differences in the local market returns and the currency returns will be identically zero.

domestic mergers suggesting that acquirers typically have higher valuations than targets. In Columns 7 and 8, we break down each return for the cross-border sample into 3 components, reflecting the local stock market index (in local currency), the currency return (relative to U.S. dollars), and the local firm-specific residual. The results indicate that only the firm specific component of returns is related to whether a firm is an acquirer or a target, not the local stock-market return or the currency return. These results are somewhat different from what we found at the country level but similar to the deal-level regressions in Table 7 using the domestic/cross-border specification. This difference between country-level results and deal-level results is somewhat puzzling and could potentially reflect the fact the sample of public cross-border deals is relatively small and concentrated in developed countries, for which pre-acquisition currency differences are very small (see Table 4).

5. Conclusion

About one-third of worldwide mergers combine firms from two different countries. As the world's economy becomes increasingly integrated, cross-border mergers are likely to become even more important in the future. Yet, in the voluminous academic literature on mergers, the vast majority of research has studied domestic deals. Moreover, what little work that has been done on cross-border mergers has focused on public and/or U.S. based firms. Understanding the patterns and motivations for cross-border mergers is consequently an important and understudied research topic.

In contrast to the presumptions of the academic literature, most cross-border mergers *do not* involve U.S. firms and *do* involve privately-held firms. In our sample of 56,978 cross-border mergers that occurred between 1990 and 2007, 97% involved a private firm as either acquirer or target, while 53% did not involve a U.S. firm. Geography matters; the odds of acquiring a firm in a nearby country are substantially higher than the odds of acquiring a firm in a country far away. In addition, higher economic development, better legal protection and better accounting quality are all associated with the likelihood of being an acquirer rather than a target.

A major factor determining the pattern of cross-border mergers is currency movements. Over the entire sample period, countries whose currencies have appreciated are more likely to have acquiring firms while countries whose currencies have depreciated are more likely to have targeted firms. Controlling for these overall time trends econometrically, short-term movements between two countries' currencies increase the likelihood that firms in the country with the appreciating currency purchase firms in the country with the depreciating currency.

In addition, the relative stock market performance between two countries affects the propensity of firms in these countries to merge. Our estimates indicate that the greater the difference in stock market performance between the countries, the more likely that firms in the superior-performing country purchase firms in the worse-performing country.

The impacts of currency movements and of stock market performance on merger propensities are likely symptomatic of a more general valuation effect, in which more highly valued firms tend to purchase lower-valued firms. This effect has been documented for domestic acquisitions of U.S. firms in a number of studies, and has been generally attributed to misvaluation arguments (Shleifer and Vishny (2003), Rhodes-Kropf and Viswanathan (2004)). Yet in an international context, there is an additional reason why higher-valued firms would purchase lower-valued firms; firms from wealthier countries will have a tendency to purchase firms from poorer countries because of a cost of capital effect described by Froot and Stein (1991). We evaluate both the mispricing and wealth explanations econometrically and find support for the wealth explanation rather than the mispricing explanation.

With the increasing integration of the world economy, it is likely that more mergers will involve firms from different countries. We have provided a preliminary analysis of the patterns and reasons for cross-border mergers. Some of these mergers undoubtedly occur for the same synergistic reasons as domestic mergers. Yet others appear to reflect country-level factors such as currency appreciation and macroeconomic performance. The extent to which each type of factor affects the

likelihood of firms to purchase one another is an important topic for future research.

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Figure 1. Number (Value) of cross-border mergers and acquisitions. This figure plots the number (value) of cross-border deals between 1990 and 2007. Deals in which acquirer's ultimate ownership is less than 50% or the total deal value less than $1 million are excluded.
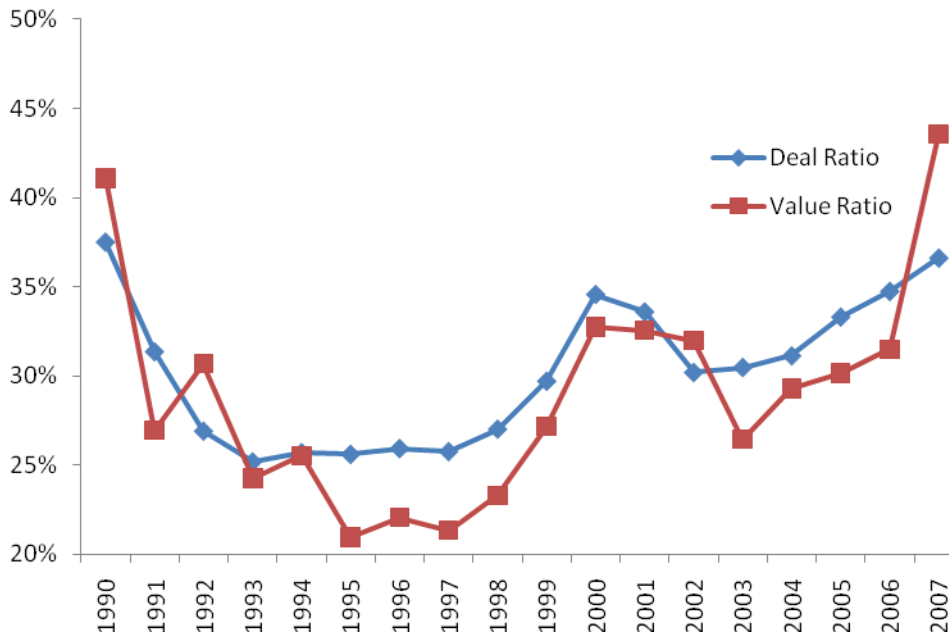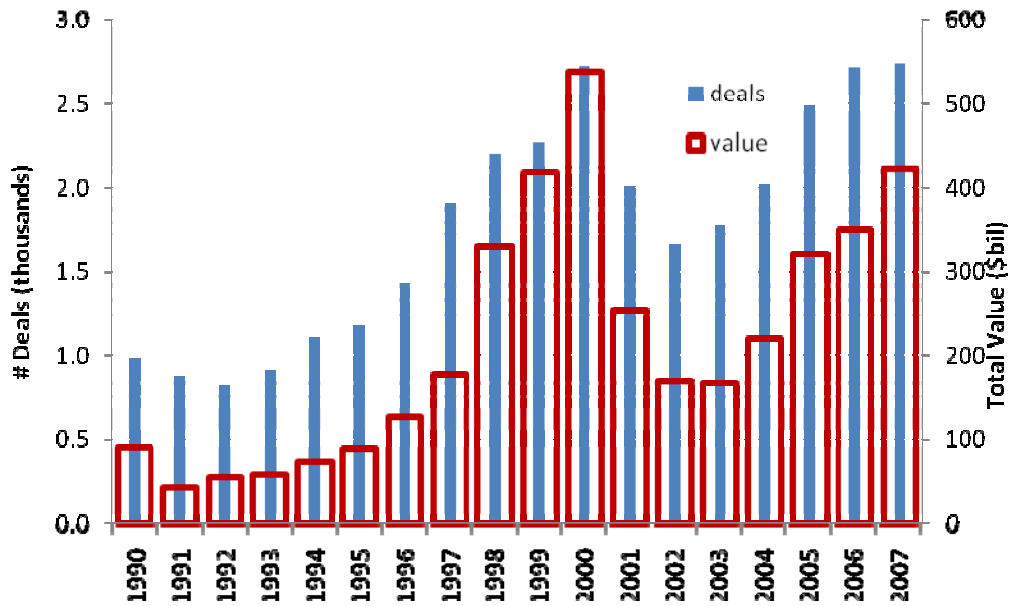
Figure 2. Percentage of U.S. targets (acquirers) in cross-border M&As.
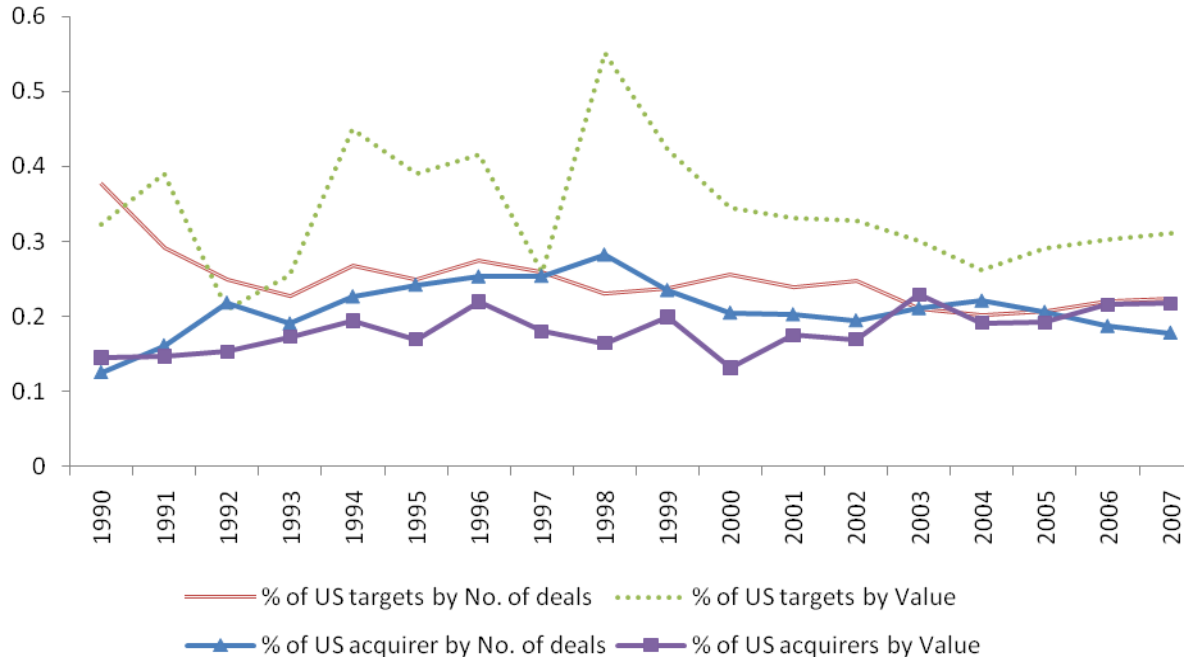
Figure 3. Geometric Return Differences between Target and Acquirer. The graph on the left is the mean and on the right in the median.
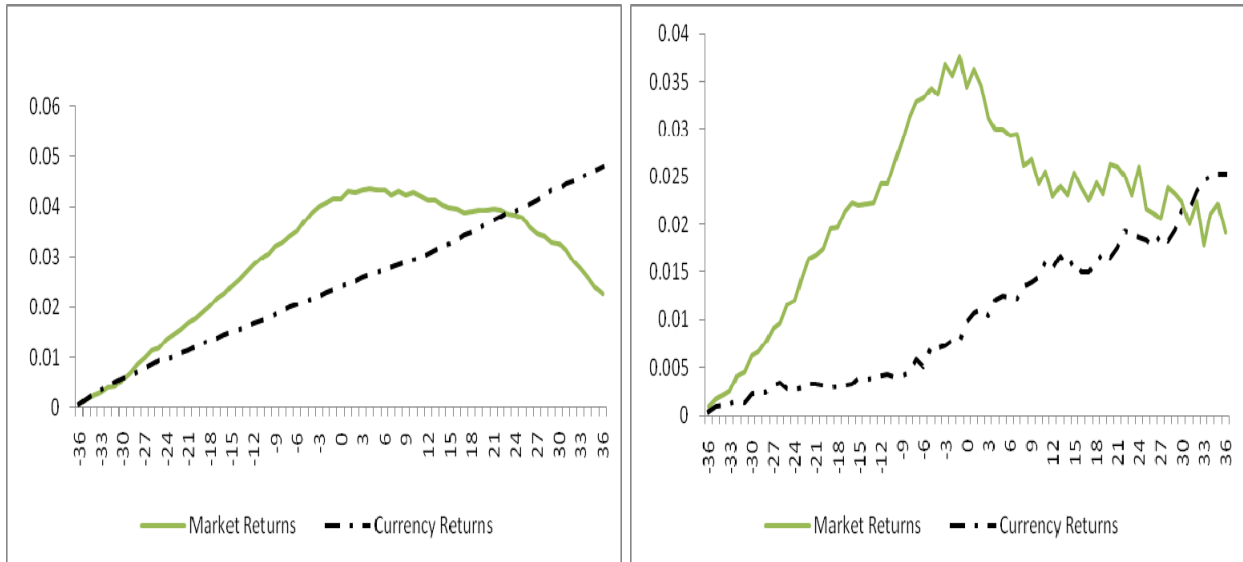
World Sample
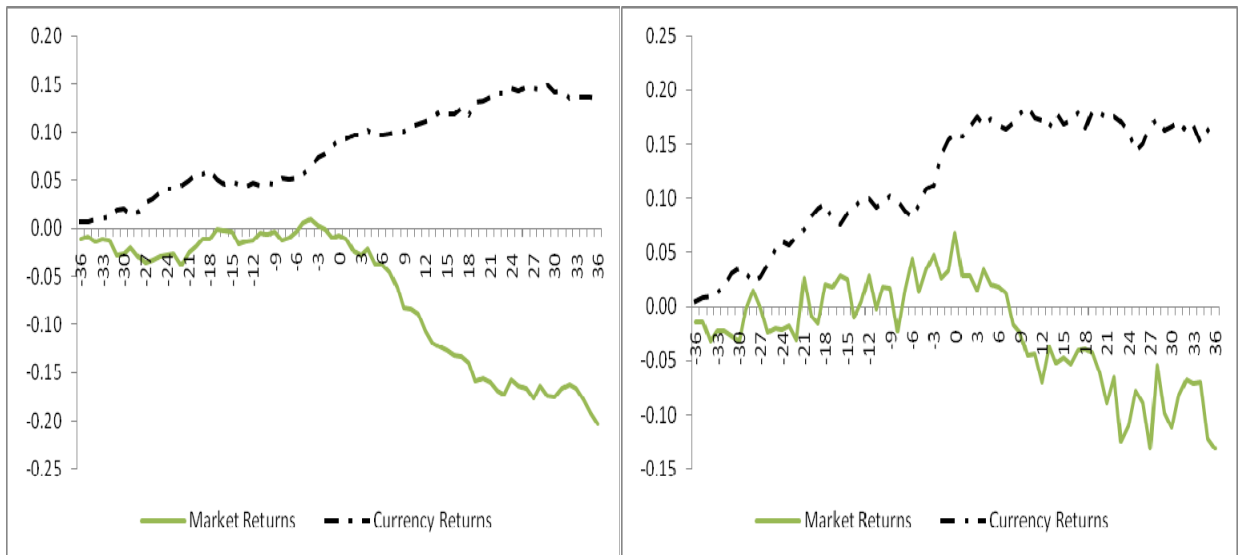
Developing Acquirer, developing target
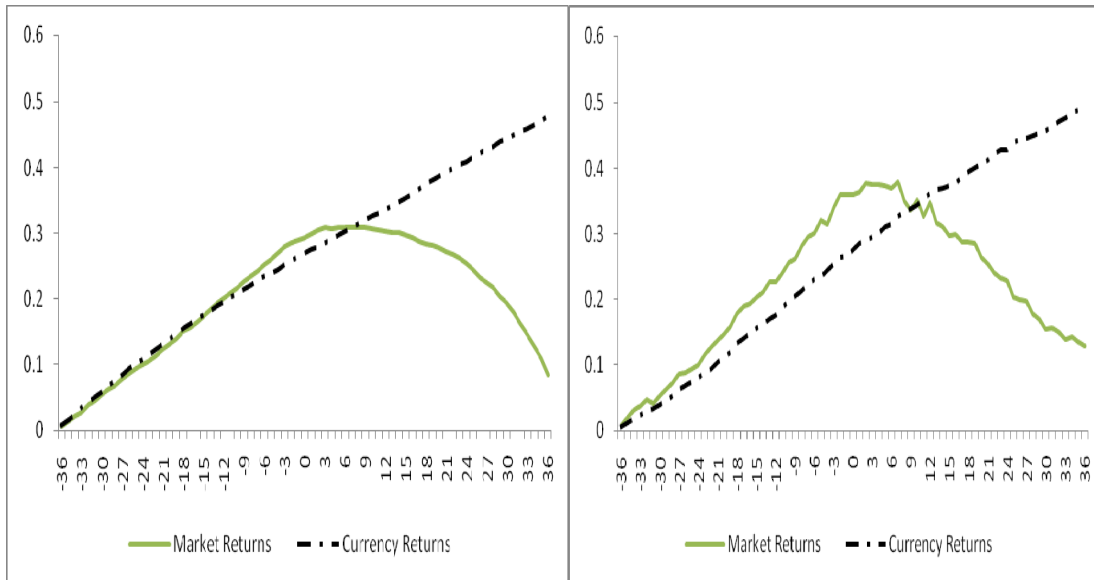
Developed Acquirer, developing target

Developing Acquirer, Developed Target
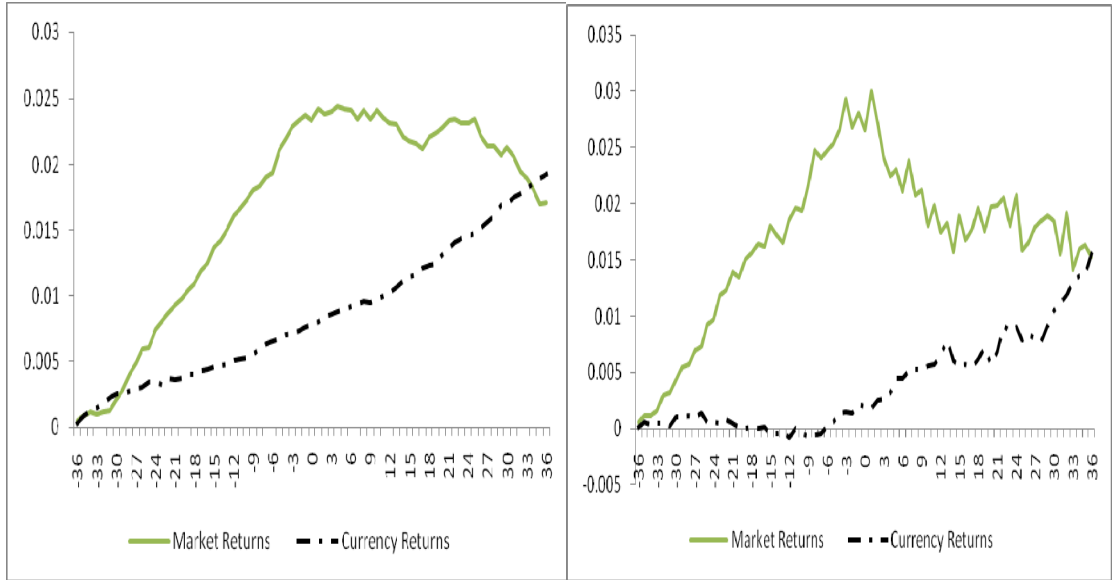
Developed Acquirer, Developed Target
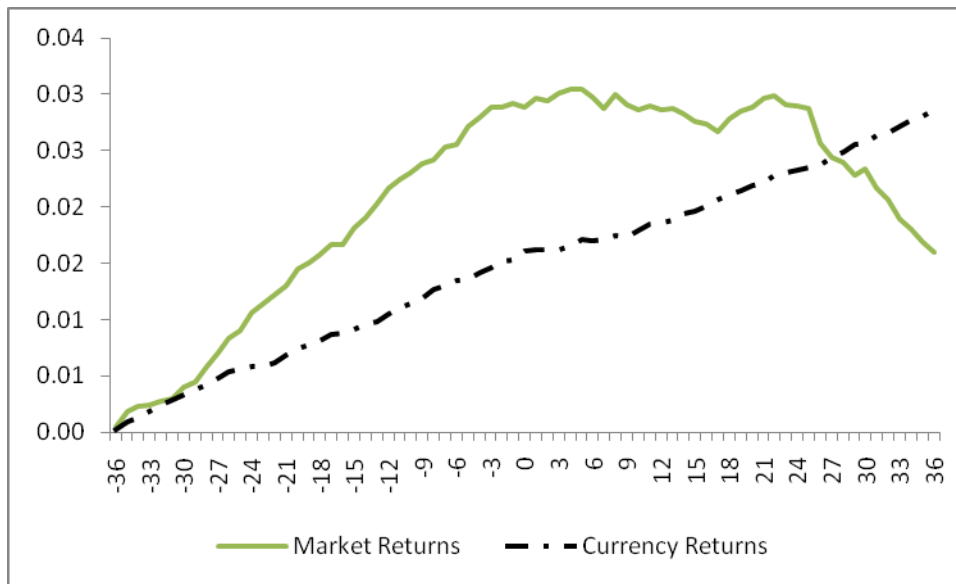
World sample mean excluding deals involving U.S. firms.
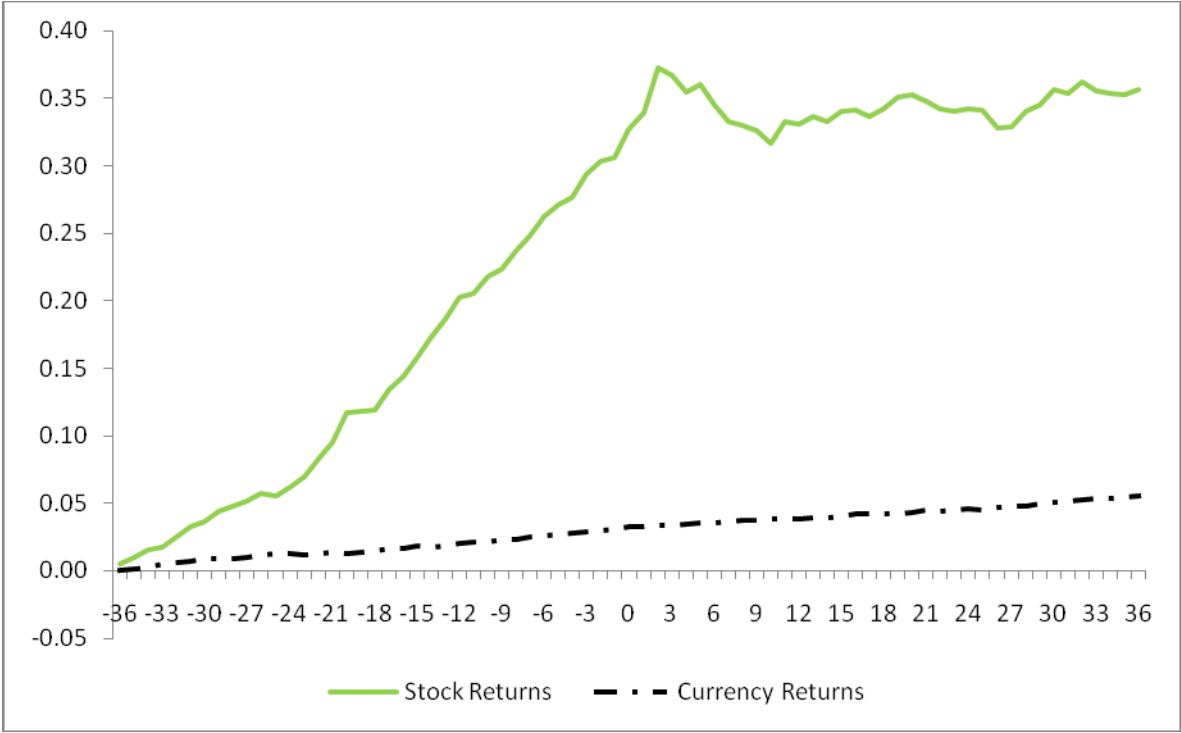
World sample of public firms.

Table 1. Number of Mergers and Acquisitions across country-pair. Initial sample of block acquisitions from Thomson Financial's Security Data Corporation (SDC) Platinum Mergers and Acquisitions (M&A) database. We exclude deals that are LBOs, spin-offs, recapitalizations, self-tender, exchange offers, repurchases, acquisitions of remaining interest, minority stake purchases and privatizations as well as deals in which the target or the acquirer is a government agency, or in the financial or utilities industry.

Origin Country

| Destination	AR	AS	AU	BL	BR	CA	CC	CE	CH	CO	CT	CY	DN	FN	FR	GR	HK	HU	ID	IN	IR	IS	IT	JP	LX	MA	MX	NO	NT	NZ	PE	PH	PL	PO	RU	SA	SG	SK	SP	SW	SZ	TH	TK	TW	UK	US	VE	WG	Total
Argentina(AR)	201	1	4	4	30	42		13	1				5		57	1	1			2	6		17	4			16	1	28	3		1				2			54	5	14	1			58	243	4	22	640
Austria(AS)		341	4	8		19	1						19	7	35	3	1		2	2	7	1	25	7	8		1	7	25								2	1	5	19	33		1		52	84		255	637
Australia(AU)		3	4,875	7	2	145		1					20	7	62		43		5	16	24	6	8	69	2	51	1	10	64	145	5	1	1			58	75	5	5	40	47	2	1	2	430	812		63	2,238
Belgium(BL)		7	13	494		12							21	12	169	4	1			9	16	2	17	24	5		9		206	1	1	3	1	6	1				9	30	18	1			148	197		79	1,022
Brazil(BR)	40	3	14	9	565	48		15	4				14	6	94	3				6	8	8	41	18	6		19	9	28	3				35		4	5		52	16	22		1	1	58	388		60	1,038
Canada(CA)	1	10	59	14	7	6,220	1		8				12	11	112	2	16		3	11	13	9	19	58	11	4	4	13	54	5	1	3	1	9	1	3	6		34	56				4	328	2,516	1	80	3,500
Czech Republic(CC)		31	1	9	1	10	143		1				14	6	38	1	1		8	5	6	1	7	3	3		9		25				8				6	1	8	16	23				47	77		76	442
Chile(CE)	6		14	1	4	39		101					1	1	8	1				1	1		4	1			7	6	10	5	3		1	2					21	3	1			1	13	82	1	8	246
China(CH)	1	2	36	14	1	43			513				9	10	31	2	214		3	9	1	2	13	53	1	27	1	6	19	3	3					2	120	34	6	11	10	4		19	58	301		22	1,091
Colombia(CO)	1	2	3			17		3		37					8	1					4		2	10					1		1				2				13	3	4				6	35	1	1	121
Croatia(CT)		12									26		3		7	1			5	1			1	4			1		2										1	1	2				8	4		6	59
Cyprus(CY)						1						37			1	7																	1	1											2	1			14
Denmark(DN)		5	4	10		9		1	1			1	889	39	39	1	2			3	11	3	11	8	2	1		94	38				1	1	1	4			4	198	28				117	173		80	890
Finland(FN)		9	7	7		16							69	1,614	34		2		1	2		22	2	11		23	4		53	24			7	1	5	11			11	281	31	1	2	1	60	147		41	874
France(FR)	1	20	28	236	7	116		4					68	38	4,837	8	13	2		12	27	13	164	97	28	1	1	22	209					8	2	6	5	2	87	116	154	2		1	708	970		434	3,610
Greece(GR)		1	3			4			6						6	339							6	7	1		2		1					6	1				2	3	5				15	18		9	90
Hong Kong(HK)		28	1			22			42				10	4	20	3	348	2	1		4	2	30			73	6		2							4	80	8	2	4	7	3	1	4	67	170		14	614
Hungary(HU)		28		4		3	2		2				2	5	28	3		136	2	2	4		11	5		2		4	42			5	2		2	2			11	14		1	1		26	69		52	334
Indonesia(ID)			10	1		15							1	2	1		9		98	4			1			16		19	2			1				2	24	8	2	7	4	1			26	32		7	199
India(IN)		5	24	3		15		1					5	2	39	8		1		764	1	2	12	16		17	5		19		1	1	3	6	11	7	6		19	28	3				101	233		43	637
Ireland-Rep(IR)	1	5	4			8							6	1	18	2	2			4	354	1	3	5	1	1	1	6	10				1	1	3	3	2		2	5	5	1	1		265	172		15	555
Israel(IS)			2	2		10							3		8	1				1		160	1						3				1		1				3	3	1		1		26	171		12	256
Italy(IT)	24	17	23	6		24	3						24	19	236	13	10	1	1	10	9	9	1,633	29	16		2	7	98	1			2		5	5	2		38	60	65			1	233	428		164	1,585
Japan(JP)		1	5			6			4				4	2	31	3	12			2	1	1	3	5,698	1		16		1			1	2	1		12	2		11	8	1			9	46	259		42	488
Luxembourg(LX)	1		16										8		2		17	2	2			3	3		8				5	1			1				1		4		2				12	13		14	83
Malaysia(MA)			17			6							6	2	7		17	2	2		1	1	19			1,711	1	2	7	4		4	1		2		123	1	2	2	8			4	28	43		9	321
Mexico(MX)	2	4	3	6		116	4	1	2				8	2	24	3	4		4	6			7	1			188	1	18	3	1	1	2		1				35	10	8			1	33	320	1	18	650
Norway(NO)		3	4	5	2	8	1						102	55	27	1	1			2	2		5	3	4	2	1	688	30			1	1	1		2	1		2	193	21				103	130		26	739
Netherlands(NT)		16	26	95	5	44		2	1			1	36	27	122	3	9	1	9	60	9		29	39	9	4	2	18	1,512	2			2	2	1	9	3		16	66	47	1	2	3	441	436		228	1,826
New Zealand(NZ)		2	302	1		41			2				4	3	8	5		1		2	7		19			13	2		14	570	1		6		13	2			5	7	3				71	140		6	680
Peru(PE)	1		2	1	3	54	6		1						1	1				11			2	3			2		39						5				3						7	30	1		123
Philippines(PH)			10			9							6			5							11			10	2		1			115				12	1		1	2	2				13	32		2	119
Poland(PL)		9	1	11		12	4		2				26	16	45	3	5		6	12	3		19	2	13		16		39				227	4	2	2	1	2	13	23	10				57	76		63	497
Portugal(PO)	1	3	5	5		5	1						8	1	44	1	1		2	2	2		11	2			1	1	4					246	13				72	12	12				51	40		20	320
Russian Fed(RU)		4	2	7		24	2					8	9	23	10	5	3		2	2	11		3	9			14		18	1			1	6	526	4			25	15			3		59	83		30	382
South Africa(SA)			36	2		35							4	4	23	2	3			7	3	1	7	11		4	5	2	11	2		1	2	1	2	790	3	1	15	15			1		170	113		36	520
Singapore(SG)		28	1			7		1	1				7	4	16		35		10	22	2	5	25	98			10	8	1	1		3					614	2	1	9	7	9	6		42	116		15	492
South Korea(SK)		2	3	4		10		1					4	1	27	4			2			4		30		2	1	2	10			1	1		6	631	2		3	8			2		27	107		30	294
Spain(SP)	2	6	8	32	4	27	5	2	1				44	8	296	8	3		7	10	4		121	29	2	6	15		133	1			60	1	1	1			1,896	60	35				271	287		169	1,659
Sweden(SW)		9	10	14		24							176	198	67	3	5			4	10	4	11	23	9	1		182	65				1	1	2	3			218	1,558	31				218	288	1	99	1,463
Switzerland(SZ)	43	9	31	20			1	1					38	15	122	5	1		7	10	15		36	16	6	3	8		49	1			2	5	4	6			45		794		2		103	261		311	1,180
Thailand(TH)			5	2		2		1					2	1	9	10			1	7	1		36	1		23	1		6		2	1			2		37	1		3	2	194	4		22	40		9	232
Turkey(TK)	1	1	6			4				1			2	3	16	5				1	2	2	10	2			1		9				1	4	1				3	4	2		72		27	33		27	170
Taiwan(TW)			4			5							2	1	5	11	1						13				2		2								21	5	4	1	2			130	10	82		10	181
United Kingdom(UK)	29	177	91	2		305	3		1		2	4	158	66	485	17	60	2	2	82	410	20	92	173	21	21	2	89	313	14	1	2	8	10	86	42	9	43	206	126	7	2		5	15,196	3,122		443	6,753
United States(US)	10	36	392	121	35	2,752	1	8	34	6	1		128	130	719	28	95	1	10	179	316	169	146	827	28	24	73	86	453	28	13	1	5	21	75	104	54	91	351	358	9	5		68	3,073	66,948	5	817	11,886
Venezuela(VE)	1		1	4		22				1			2		11								5	1					2				2				7			5					49	16	1		122
Germany(WG)	234	42	105	6		80	5	2	5			1	124	134	454	13	20	3	2	29	38	16	128	111	40	8	5	42	443	1	10	6	3	5	18	11	11		37	194	375	1	5	3	724	1,611	1	5,771	5,106
Total	66	557	1,360	919	133	4,236	19	60	112	16	12	23	1,199	866	3,634	150	633	40	45	473	1,044	324	1,027	1,874	242	416	160	758	2,588	226	7	51	41	142	90	333	729	171	675	2,127	1,686	54	29	145	8,468	15,034	15	3,969	56,978

Table 2 Descriptive statistics of cross-border M&As by target country. The industry classification is by target firm. Agriculture (001~999), Mining and Construction (1000~1999), Manufacturing (2000~3999), Transportation excluding Utilities (4000~4999), Trade (5000~5999), and Services (7000~8999).

Target Country	# of Domestic deals	# of Cross-border Deals	Agriculture	Mining & Construction	Manufacturing	Transportation	Trade	Services
					Industries			
Argentina	201	640	9	93	275	63	72	127
Austria	341	637	2	17	305	61	93	159
Australia	4,875	2,238	22	247	740	195	261	768
Belgium	494	1,022	4	28	388	103	152	346
Brazil	565	1,038	28	71	556	90	102	190
Canada	6,220	3,500	27	397	1,313	224	385	1,151
Czech Republic	143	442	4	24	211	39	58	104
Chile	101	246	8	60	79	37	23	39
China	513	1,091	9	62	656	80	64	212
Colombia	37	121		32	48	15	10	16
Croatia	26	59	2	4	32	4	6	11
Cyprus	37	14	1	1	5		4	3
Denmark	889	890		33	390	87	143	237
Finland	1,614	874	6	52	334	92	124	264
France	4,837	3,610	28	74	1,841	213	471	979
Greece	339	90		7	41	14	11	17
Hong Kong	348	614		32	201	83	97	201
Hungary	136	334	3	19	169	42	31	70
Indonesia	98	199	11	55	94	12	7	18
India	764	637	5	27	326	41	29	204
Ireland-Rep	354	555	2	22	201	60	82	185
Israel	160	256	2	3	117	14	15	105
Italy	1,633	1,585	4	26	998	106	187	262
Japan	5,698	488	1	4	240	42	75	126
Luxembourg	8	83		3	22	14	10	34
Malaysia	1,711	321	7	15	153	24	62	59
Mexico	188	650	7	126	312	43	66	96
Norway	688	739	6	61	215	104	117	236
Netherlands	1,512	1,826	19	60	769	216	276	486
New Zealand	570	680	10	29	223	70	112	233
Peru	39	123		69	31	10	8	5
Philippines	115	119	2	23	54	8	7	25
Poland	227	497	9	25	287	34	69	68
Portugal	246	320	1	11	144	36	43	84
Russian Fed	526	382	1	95	161	53	21	49
South Africa	790	520	6	114	213	27	52	107
Singapore	614	492	1	27	180	69	61	153
South Korea	631	294	1	1	190	20	28	52
Spain	1,896	1,659	13	53	725	133	254	479
Sweden	1,558	1,463	5	45	632	131	190	460
Switzerland	794	1,180	6	21	597	73	133	348
Thailand	194	232	2	18	127	19	29	37
Turkey	72	170	2	20	88	10	18	32
Taiwan	130	181		1	97	13	26	43
United Kingdom	15,196	6,753	42	306	2,825	490	844	2,231
United States	66,948	11,886	74	874	5,365	655	1,209	3,693
Venezuela	16	122	1	32	59	13	5	12
Germany	5,771	5,106	12	141	2,753	329	663	1,196

Table 3 Cross-sectional analysis of the intensity of cross-border M&As. Dependent variable is the ratio of the number of deals in which the target is from country i and the acquirer is from country j (where i ≠ j) to the total number of domestic deals in target country i. Δ (Currency R12)$_{j-i}$ is the difference in the average annual real exchange rate return in US$ from 1990 to 2007 between acquirer and target country. Δ (Market R12)$_{j-i}$ is the difference in the average annual local real stock market return from 1990 to 2007 between acquirer and target country. Δ (Account)$_{j-i}$ is the difference in the index created by the Center for International Financial Analysis and Research to rate the quality of 1990 annual reports on their disclosure of accounting information. Δ (Legal)$_{j=i}$ is the difference in the shareholder protection index computed as the product of rule of law and antidirector rights (LLSV(1998)). Same Language is equal to 1 if target and acquirer's primary language (English, Spanish or others) are the same. Same Religion is equal to 1 if target and acquirer's primary religion (Protestant, Catholic, Muslim, Buddhist or Others) are the same (Stulz and Williamson (2003)). Geographic proximity is minus the great circle distance calculated using the longitudes and latitudes of the capital cities of target and acquirer countries. Average annual real growth rate of the gross domestic product is from 1990 to 2007 and Gross national product divided by the population is in 1990 (in US$), both from the WDI report. We calculate Huber–White standard errors.

	All Target - All Acquirer				Private Target - Private Acquirer				Public Target - Public Acquirer			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Δ (Currency R12)j-i	0.157***			0.168***	0.086***			0.102***	0.304***			0.268***
	(5.36)			(5.03)	(3.72)			(3.79)	(3.30)			(2.62)
Δ (Market R12)j-i	-0.056			0.026	-0.054			0.013	-0.017			0.010
	(-0.85)			(0.39)	(-1.14)			(0.25)	(-0.15)			(0.09)
Δ (Account)j-i		0.013***		0.009***		0.004*		0.001		0.031***		0.024***
		(4.97)		(3.37)		(1.79)		(0.63)		(4.17)		(3.21)
Δ (Legal)j-i		0.003*		0.000		0.003**		0.001		-0.001		-0.004
		(1.81)		(0.07)		(2.26)		(0.81)		(-0.18)		(-1.06)
Same Language			0.026**	0.020*			0.018**	0.015*			0.051**	0.042
			(2.34)	(1.81)			(2.35)	(1.92)			(2.02)	(1.40)
Same Religion			-0.007	0.003			-0.005	-0.001			-0.002	0.009
			(-1.51)	(0.70)			(-1.64)	(-0.26)			(-0.23)	(1.08)
Geographic Proximity			0.007***	0.006***			0.004***	0.004***			0.008***	0.008***
			(8.55)	(8.08)			(7.42)	(6.94)			(5.22)	(4.86)
Δ (log GDP per capita)j-i	-0.006**	0.000	0.005*	-0.003	-0.003	0.002	0.004*	-0.000	-0.006	0.002	0.013**	-0.006
	(-2.17)	(0.21)	(1.83)	(-1.35)	(-1.40)	(0.97)	(1.81)	(-0.14)	(-0.99)	(0.50)	(2.48)	(-1.01)
Δ (GDP growth)j-i	-0.003*	-0.001	-0.002	-0.001	-0.003**	-0.001	-0.002	-0.002	-0.001	-0.001	0.001	-0.002
	(-1.81)	(-0.48)	(-1.35)	(-1.00)	(-1.96)	(-1.26)	(-1.61)	(-1.61)	(-0.30)	(-0.27)	(0.27)	(-0.81)
Constant	0.040***	0.036***	0.071***	0.060***	0.025***	0.023***	0.044***	0.040***	0.042***	0.039***	0.077***	0.067***
	(18.01)	(21.77)	(12.50)	(13.45)	(15.89)	(17.89)	(10.55)	(10.98)	(11.08)	(12.85)	(7.34)	(7.36)
Country Dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	1036	893	1036	893	1036	893	1036	893	1008	881	1008	881
R-squared	0.39	0.49	0.42	0.56	0.30	0.36	0.33	0.41	0.21	0.27	0.21	0.31

Table 4 Summary statistics on valuation differences between target and acquirer. R12, R24, R36 represent past 12 months, 24 months, 36 months real returns, respectively. MTB is the market-equity-to-book-equity ratio of equity. For market MTB, we follow Fama and French (1998) and sum the market value of all firms within a country and divide it by the sum of their book value. Both market-level and firm-level stock returns are in local currency. Definition of developed countries is based on World Bank high-income economies. Definition of strong law countries is based on the index of shareholder protection provided by LLSV. Same region is equal to 1 if target and acquirer's countries are from the same broadly defined continent (Africa, America, Asia, and Europe). Related industry is equal to 1 if target and acquirer's 3-digit SIC overlaps.

		Developing Target		Developed Target		Weak Law Target		Strong Law Target					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Total	Developing Acquirer	Developed Acquirer	Developing Acquirer	Developed Acquirer	Weak Law Acquirer	Strong Law Acquirer	Weak Law Acquirer	Strong Law Acquirer	Different Region	Same Region	Diversifying Merger	Related Industry
Nobs	51488	311	3853	1056	46268	4300	10591	7565	29032	26000	25488	17734	33754
Market MTB$_j$ – Market MTB$_i$	9.93%*** [7.25%]***	20.58%*** [31.19%]***	64.74%*** [64.45%]***	(2.90%) [(5.31%)]**	5.59%*** [5.98%]***	16.37%*** [10.43%]***	26.42%*** [13.75%]***	0.13% [1.37%]***	5.52%*** [7.14%]***	11.86%*** [8.39%]***	7.97%*** [6.81%]***	8.50%*** [6.66%]***	10.68%*** [7.46%]***
Market R12$_j$ – Market R12$_i$	0.30%*** [0.33%]***	1.44% [(0.40%)]	0.05% [(3.86%)]**	6.03%*** [8.68%]***	0.20%** [0.44%]***	0.65%** [0.77%]***	(0.18%) [(0.23%)]	0.81%*** [0.60%]**	0.29%*** [0.45%]***	0.21%* [0.29%]***	0.40%*** [0.35%]***	0.13% [0.16%]	0.39%*** [0.45%]***
Market R24$_j$ – Market R24$_i$	0.92%*** [1.10%]***	1.57% [4.88%]	2.13%*** [(1.90%)]	11.09%*** [15.24%]***	0.64%*** [1.08%]***	2.35%*** [2.49%]***	1.75%*** [1.30%]***	0.50% [0.56%]*	0.49%*** [0.93%]***	0.88%*** [0.95%]***	0.96%*** [1.31%]***	0.58%*** [0.83%]***	1.10%*** [1.28%]***
Market R36$_j$ – Market R36$_i$	2.12%*** [2.45%]***	1.44% [3.61%]	12.79%*** [17.06%]***	9.54%*** [18.42%]***	1.22%*** [2.03%]***	5.01%*** [4.67%]***	5.74%*** [4.08%]***	0.20% [0.33%]*	0.81%*** [1.63%]***	2.43%*** [2.40%]***	1.79%*** [2.46%]***	1.36%*** [2.14%]***	2.55%*** [2.59%]***
Currency R12$_j$ – Currency R12$_i$	1.12%*** [0.26%]***	4.57%*** [1.24%]	10.32%*** [6.18%]***	(5.96%)*** [(3.68%)]**	0.46%*** [0.11%]***	2.55%*** [0.06%]	2.80%*** [1.27%]***	0.25% [0.02%]	0.58%*** [0.15%]***	0.88%*** [0.32%]***	1.42%*** [0.22%]***	0.88%*** [0.14%]**	1.25%*** [0.33%]***
Currency R24$_j$ – Currency R24$_i$	2.13%*** [0.47%]***	5.72%** [6.23%]**	21.76%*** [18.28%]***	(13.40%)*** [(8.69%)]**	0.79%*** [0.08%]	5.89%*** [0.22%]***	6.04%*** [2.26%]***	(0.23%) [(0.52%)]**	0.88%*** [0.24%]***	1.65%*** [0.59%]***	2.71%*** [0.36%]***	1.68%*** [0.25%]***	2.38%*** [0.57%]***
Currency R36$_j$ – Currency R36$_i$	3.43%*** [0.91%]***	10.11%*** [16.79%]***	34.22%*** [31.37%]***	(23.32%)*** [(18.75%)]*	1.38%*** [0.14%]	9.45%*** [0.72%]***	10.39%*** [4.76%]***	(1.72%)*** [(1.95%)]**	1.45%*** [0.77%]***	2.77%*** [1.34%]***	4.23%*** [0.71%]***	2.89%*** [0.60%]***	3.73%*** [1.14%]***
Firm MTB$_j$ – Firm MTB$_i$	28.95%*** [26.23%]***	76.90% [125.7%]**	47.03%** [32.60%]**	17.27% [(20.42%)]	27.50%*** [25.91%]***	(11.37%) [9.39%]	77.40%*** [50.00%]***	(28.68%)* [(6.41%)]	32.49%*** [30.16%]***	44.27%*** [30.52%]***	7.67% [18.87%]***	10.20% [18.84%]***	38.94%*** [30.27%]***
Firm R12$_j$ – Firm R12$_i$	10.38%*** [6.01%]***	25.82%* [27.80%]**	6.59%** [0.25%]	22.36%** [16.88%]***	10.50%*** [5.98%]***	8.07%** [7.73%]**	8.63%*** [4.15%]**	11.40%*** [6.91%]***	11.04%*** [6.00%]***	10.13%*** [5.57%]***	10.75%*** [6.70%]***	9.07%*** [3.09%]*	11.14%*** [7.22%]***
Firm R24$_j$ – Firm R24$_i$	19.34%*** [12.15%]***	35.75% [49.51%]	11.96%** [1.70%]	41.81%** [46.96%]	19.61%*** [12.62%]***	11.45%** [12.06%]*	17.04%*** [10.12%]***	18.44%*** [12.56%]***	21.50%*** [13.12%]***	20.89%*** [11.86%]***	17.11%*** [12.71%]***	16.50%*** [8.69%]***	21.01%*** [15.01%]***
Firm R36$_j$ – Firm R36$_i$	23.36%*** [17.02%]***	115.8%* [116.2%]	20.37%*** [8.98%]*	63.13%*** [52.34%]***	23.02%*** [16.96%]***	19.30%*** [7.78%]*	21.83%*** [15.04%]***	17.79%*** [11.16%]***	26.44%*** [22.33%]***	23.46%*** [18.28%]***	23.20%*** [15.38%]***	18.69%*** [14.33%]***	26.18%*** [20.76%]***

Table 5 Analysis of the intensity of cross-border M&As using panel data on country pairs. Dependent variable is the ratio of the number of deals in which the target is from country i and the acquirer is from country j (where i ≠ j) to the total number of domestic deals in country i. Δ Currency R12 is the difference in the past12-month real exchange rate return between acquirer and target country. Δ Market R12 is the difference in the past 12-month local real stock market return between acquirer and target country. ΔMarket MTB is the difference in the value-weighted market equity to book equity ratio between acquirer and target country. Higher GDP per capital is equal to 1 if acquirer country's GDP per capita is larger than or equal to that of target country. Standard errors are robust.

	All Targets-All Acquirers						Private Targets-Private Acquirers						Public Targets-Public Acquirers					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
ΔMarket R12	0.008***	0.001	0.012***				0.007**	0.000	0.005				0.005	-0.003	-0.001			
	(2.59)	(0.41)	(3.38)				(2.23)	(0.09)	(1.57)				(0.92)	(-0.58)	(-0.24)			
ΔCurrency R12	0.031***	0.001	0.006				0.025***	0.003	0.012				0.026**	-0.001	0.012			
	(3.54)	(0.35)	(0.76)				(2.84)	(0.81)	(1.36)				(2.07)	(-0.16)	(0.97)			
ΔMarket MTB				0.004***	0.000	0.003***				0.004***	0.000	0.003**				0.003	0.001	0.000
				(5.08)	(0.83)	(3.04)				(4.12)	(0.17)	(2.23)				(1.52)	(0.52)	(0.17)
ΔMarket R12 × I_ GDP capita		0.012**						0.012**						0.017*				
		(2.26)						(2.30)						(1.68)				
ΔCurrency R12 × I_GDP capita		0.051***						0.041***						0.063**				
		(3.35)						(2.58)						(2.22)				
ΔMarket R12 × Same Region			-0.012*						0.003						0.016			
			(-1.89)						(0.52)						(1.49)			
ΔCurrency R12× Same Region			0.084***						0.047**						0.054			
			(3.57)						(1.97)						(1.51)			
ΔMarket MTB × I_ GDP capita					0.007***						0.007***						0.005	
					(4.62)						(4.00)						(1.13)	
ΔMarket MTB × Same Region						0.003*						0.004*						0.009*
						(1.85)						(1.69)						(1.91)
Δ (log GDP per capita)j-i	0.042***	0.041***	0.041***	0.026***	0.026***	0.026***	0.021***	0.021***	0.021***	0.012	0.012	0.012*	0.031*	0.032*	0.031*	0.034	0.034	0.035*
	(5.05)	(4.98)	(4.93)	(3.40)	(3.42)	(3.41)	(3.00)	(2.95)	(2.94)	(1.64)	(1.60)	(1.66)	(1.69)	(1.72)	(1.67)	(1.64)	(1.61)	(1.67)
Δ (GDP growth)j-i	-0.017	-0.017	-0.022	0.039	0.037	0.043*	-0.008	-0.009	-0.006	0.019	0.017	0.024	0.014	0.010	0.023	0.003	0.002	0.010
	(-0.65)	(-0.66)	(-0.84)	(1.60)	(1.53)	(1.75)	(-0.33)	(-0.36)	(-0.26)	(0.83)	(0.73)	(1.00)	(0.32)	(0.23)	(0.52)	(0.08)	(0.06)	(0.23)
Constant	0.084***	0.083***	0.084***	0.050***	0.040***	0.050***	0.047***	0.047***	0.047***	0.027***	0.028***	0.027***	0.019***	0.019***	0.019***	0.054***	0.054***	0.054***
	(12.15)	(12.09)	(12.16)	(13.76)	(12.45)	(13.77)	(8.22)	(8.16)	(8.21)	(8.28)	(7.64)	(8.30)	(2.67)	(2.62)	(2.65)	(5.51)	(5.56)	(5.53)
Year dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Country pair dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	16524	16524	16524	16318	16318	16318	15930	15930	15930	15717	15717	15717	8942	8942	8942	8775	8775	8775
R-squared	0.49	0.49	0.49	0.52	0.52	0.52	0.34	0.34	0.34	0.36	0.36	0.36	0.34	0.34	0.34	0.35	0.35	0.35

Table 6 Mispricing vs fundamental: Interpreting the relation between valuation and cross-border mergers. Dependent variable is the ratio of the number of deals in which the target is from country i and the acquirer is from country j (where i ≠ j) to the total number of domestic deals in country i. Δ Currency FR12 is the difference in the next12-month real exchange rate return between acquirer and target country. Δ Market FR12 is the difference in the future 12-month local real stock market return between acquirer and target country. Δ (Fitted MTB) is the difference in the predicted value-weighted market-equity-to-book-equity ratio between acquirer and target country, using future 12-, 24-, 36-month local real stock market return and real exchange rate return. Δ (Residual MTB) is the difference in the residuals of value-weighted market equity to book equity ratio between acquirer and target country, using future 12-, 24-, 36-month local real stock market return and real exchange rate return. Fitted MTB=2.017-0.033FR12-0.137FR24-0.299FR36-0.255EXFR12-0.247EXFR24+0.487EXFR36 (N=642, R^2=0.094). Higher GDP per capita is equal to 1 if acquirer country's GDP per capita is larger than or equal to that of target country. Panel A reports regressions using future12-month stock market and exchange rate returns. Panel B reports regressions using decomposed market to book ratio. Standard errors are robust.

Panel A - Direct tests using future returns.

	All Targets-All Acquirers			Private Targets-Private Acquirers			Public Targets-Public Acquirers		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
ΔMarket FR12	-0.004	-0.001	-0.004	-0.001	-0.000	0.002	0.000	0.007	-0.000
	(-1.32)	(-0.30)	(-1.18)	(-0.30)	(-0.02)	(0.52)	(0.02)	(1.18)	(-0.03)
ΔCurrency FR12	0.019***	0.011***	0.015**	0.015**	0.006	0.015**	0.008	0.003	-0.004
	(3.34)	(2.78)	(2.34)	(2.42)	(1.53)	(2.56)	(0.58)	(0.30)	(-0.26)
ΔMarket FR12 × I_ GDP capita		-0.006			-0.002			-0.014	
		(-0.99)			(-0.29)			(-1.24)	
ΔCurrency FR12 × I_GDP capita		0.014			0.016			0.011	
		(1.30)			(1.40)			(0.34)	
ΔMarket FR12 × Same Region			0.000			-0.007			-0.000
			(0.00)			(-1.12)			(-0.02)
ΔCurrency FR12× Same Region			0.014			-0.002			0.047
			(1.04)			(-0.10)			(1.28)
Δ (log GDP per capita)j-i	0.044***	0.044***	0.044***	0.029***	0.029***	0.030***	0.021	0.021	0.020
	(4.88)	(4.86)	(4.87)	(3.73)	(3.72)	(3.75)	(1.04)	(1.04)	(1.01)
Δ (GDP growth)j-i	0.023	0.023	0.022	0.031	0.031	0.033	0.046	0.045	0.044
	(0.89)	(0.90)	(0.85)	(1.28)	(1.28)	(1.33)	(1.14)	(1.10)	(1.07)
Constant	0.079***	0.078***	0.079***	0.044***	0.043***	0.044***	0.020***	0.020***	0.021***
	(13.01)	(12.79)	(13.00)	(8.44)	(8.27)	(8.42)	(3.06)	(2.97)	(3.10)
Year dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Country pair dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	16112	16112	16112	15455	15455	15455	8766	8766	8766
R-squared	0.49	0.49	0.49	0.35	0.35	0.35	0.34	0.34	0.34

Panel B - Decomposing Market-to-book

	All Targets-All Acquirers			Private Targets-Private Acquirers			Public Targets-Public Acquirers		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Δ (Fitted MTB)$_{j-i}$	0.001	-0.003	0.003	0.006**	-0.003	0.004	-0.003	-0.003	-0.007
	(0.51)	(-1.46)	(0.94)	(2.23)	(-1.45)	(1.47)	(-0.45)	(-0.43)	(-1.05)
Δ (Residual MTB)$_{j-i}$	0.005***	0.000	0.004***	0.004***	-0.000	0.003**	0.006**	0.003	0.003
	(5.24)	(0.71)	(3.34)	(3.78)	(-0.72)	(2.33)	(2.38)	(1.25)	(0.90)
Δ (Fitted MTB)$_{j-i}$ × I_ GDP capita		0.009			0.015***			-0.001	
		(1.62)			(3.19)			(-0.10)	
Δ (Residual MTB)$_{j-i}$ × I_GDP		0.008***			0.009***			0.007	
		(5.09)			(4.38)			(1.39)	
Δ (Fitted MTB)$_{j-i}$ × Same Region			-0.005			0.005			0.014
			(-0.74)			(0.74)			(0.97)
Δ (Residual MTB)$_{j-i}$ × Same			0.004*			0.003			0.011*
			(1.70)			(1.19)			(1.95)
Δ (log GDP per capita)j-i	0.016*	0.016*	0.016*	0.006	0.006	0.007	0.017	0.016	0.018
	(1.88)	(1.88)	(1.85)	(0.76)	(0.70)	(0.79)	(0.75)	(0.69)	(0.80)
Δ (GDP growth)j-i	0.058**	0.057**	0.062**	0.045*	0.042*	0.049*	-0.001	-0.003	0.007
	(2.27)	(2.23)	(2.44)	(1.86)	(1.75)	(1.94)	(-0.03)	(-0.06)	(0.17)
Constant	0.038***	0.049***	0.038***	0.022***	0.021***	0.022***	0.053***	0.053***	0.053***
	(10.57)	(14.07)	(10.58)	(6.88)	(6.71)	(6.89)	(5.44)	(5.48)	(5.48)
Year dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Country pair dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	14099	14099	14099	13548	13548	13548	7811	7811	7811
R-squared	0.52	0.52	0.52	0.35	0.35	0.35	0.38	0.38	0.38

Table 7 Deal-level analysis of the intensity of cross-border M&As. Dependent variable is equal to 1 if the M&A deal is cross-border. The sample include deals in which both target and acquirer are public. Columns (1) and (2) use the difference in previous year's firm-level stock returns in $US between the acquirer and the target. Columns (3) and (4) decompose the difference in firm-level stock returns in $US into 3 parts: market returns in local currency (ΔMarket R12), currency returns (ΔCurrency R12), and firm residual stock returns in local currency (ΔFirm USR12-ΔMarket R12-ΔCurrency R12). Marginal effects are reported. Standard errors are robust.

	(1)	(2)	(3)	(4)
ΔFirm USR12	0.012	0.030*		
	(0.85)	(1.83)		
ΔMarket R12			0.321**	0.188
			(2.11)	(1.21)
ΔCurrency R12			0.395	0.449
			(1.28)	(1.39)
ΔFirm USR12-ΔMarket R12-ΔCurrency R12			0.010	0.028*
			(0.75)	(1.82)
Log Firm Size (Target)		-0.011		-0.009
		(-1.62)		(-1.42)
Log Firm Size (Acquirer)		0.056***		0.055***
		(8.23)		(8.13)
Same Industry		-0.009		-0.011
		(-0.33)		(-0.42)
Year Dummies	yes	yes	yes	yes
Country Dummies	yes	yes	yes	yes
Observations	2332	1530	2331	1529
Pseudo R-square	0.339	0.379	0.343	0.381

Table 8 Target vs acquirer in domestic and cross-border M&As. Dependent variable is equal to one if the merging firm is the acquirer and to zero if the firm is the target. The sample include deals in which both target and acquirer are public. Panel A contains domestic mergers only while Panel B examines cross-border mergers. First two columns in each panel use the firm-level stock returns in $US (Firm USR12). Last two columns of each panel decompose firm-level stock returns in $US into 3 parts: market returns in local currency (Market R12), currency returns (Currency R12), and firm residual stock returns in local currency (Firm USR12-Market R12-Currency R12). Marginal effects are reported. Standard errors are robust.

	Domestic Deals				Cross-border Deals			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Firm USR12	0.049***	0.055***			0.062***	0.064**		
	(3.96)	(3.95)			(2.72)	(2.38)		
Market R12							0.098	0.099
							(1.16)	(1.09)
Currency R12							0.108	-0.192
							(0.48)	(-0.80)
Firm USR12-Market R12-Currency R12			0.050***	0.056***			0.059**	0.064**
			(3.91)	(3.90)			(2.48)	(2.35)
Log Firm Size	0.122***	0.136***	0.121***	0.136***	0.132***	0.140***	0.132***	0.141***
	(22.37)	(20.91)	(22.38)	(20.91)	(14.67)	(12.46)	(14.60)	(12.48)
Long-term Debt/Asset		0.027		0.027		0.180		0.181
		(0.36)		(0.36)		(1.08)		(1.09)
Cash/Asset		0.225***		0.222***		0.318***		0.316***
		(3.59)		(3.54)		(2.81)		(2.79)
Sales growth (2-year)		0.004		0.004		0.019		0.020
		(0.93)		(0.92)		(1.42)		(1.45)
Return on Equity		0.126***		0.124***		0.334***		0.335***
		(2.99)		(2.95)		(3.92)		(3.99)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3625	3262	3625	3262	1304	1178	1302	1176
Pseudo R-square	0.145	0.171	0.145	0.171	0.271	0.320	0.271	0.321