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World Markets for Mergers and Acquisitions

ISIL EREL
ROSE C. LIAO
MICHAEL S. WEISBACH
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Institute for
Financial Research

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Isil Erel
Ohio State University

Rose C. Liao
Rutgers University

Michael S. Weisbach
Ohio State University and NBER

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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 accounting standards. A significant factor in determining acquisition patterns is currency movements; firms tend to purchase firms from countries relative to which the currency of the acquirer's country 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 suggest either misvaluation or wealth explanations. Our evidence is more consistent with the wealth explanation than the misvaluation explanation.

1. Introduction.

The volume of cross-border acquisitions has been growing worldwide, from 23 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 potentially affect cross-border mergers. Differences in valuation between potential acquirers and targets have been documented to be one motive for domestic mergers.[1] 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, and appreciation or depreciation of the currencies in which acquirers' and targets' securities are traded. Each of these components reflects an alternative source of valuation difference that could potentially motivate 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 firms, usually involving U.S. acquirers or targets, our sample better reflects the universe of cross-border mergers, the majority of which involve private firms from outside the U.S. In our sample, 80% of completed cross-border deals between 1990 and 2007 targeted a non-US firm, while 75% of the acquirers are from outside the U.S. 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

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[1] See Shleifer and Vishny (2003), Rhodes-Kropf and Viswanathan (2004), Dong, Hirshleifer, Richardson and Teoh (2006), and Harford (2005).

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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).

Cross-sectionally, there are a number of patterns that characterize the distribution of acquirers and targets in cross-border merger. First, geography clearly matters; holding other things constant, the shorter the distance between two countries, the more likely there are acquirers from one country to the other. Second, purchasers are usually but not always from developed countries and they tend to purchase firms in countries with lower accounting standards. Third, acquirers are more likely to be from countries with higher corporate income taxes than the country where targets are located. Finally, mergers are more likely to occur between firms from countries that are trade partners.

In univariate comparisons of pre-merger performance between bidders and targets, acquirers outperform targets by all measures. The country-level stock return of the acquirer in local currency is 0.3% higher during the 12 months, 0.92% during 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 before the deal, 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 holds for both private and public acquirers and targets.

When we restrict the sample to public acquirers and targets to compare firm-level returns, we again find that acquirers outperform targets prior to the acquisitions. The difference in firm-level stock returns in local currency 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 prior findings for domestic mergers (see Rhodes-Kropf, Robinson and Viswanathan (2005)).

We estimate multivariate models predicting the number of cross-border deals for particular pairs of countries. Our results suggest that differences in country-level stock returns in local currency 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 affect cross-border merger volume as well.

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Quantitatively, our estimates imply that a two standard deviation increase in the real exchange rate return between acquirer and target countries over the prior 12-month period (34%) is associated with an increase of 22% in the expected number of acquisitions for a particular country pair. Similarly, a two standard deviation change in the country-level stock return difference over the prior 12-month period (54%) leads to an increase of 12% in the expected number of acquisitions by the better-performing country's firms of the worse performing country's firms. Finally, a two standard-deviation change in the country-level market-to-book difference for a given country pair (1.4) leads to an increase of 9.4% in the expected number of acquisitions by the higher market-to-book country's firms of the lower market-to-book country's firms.

We consider the types of mergers for which stock-market and currency valuation differences appear to be important as merger motives. Our results suggest that currency movements are significant factors affecting mergers mostly between country pairs that are in the same region, except for the public firm sample. Also currency movements appear to be particularly important when the acquiring firm's country is wealthier than the target firm's country. This pattern suggests that firms in wealthier countries purchase firms in poorer nearby countries when the targets 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 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 preacquisition stock return differences between acquirer and targets. First, returns can affect the relative wealth of the two countries. Froot and Stein (1991) argue that when differences in wealth occur because of exchange rate or other shocks, they can exacerbate or lessen information asymmetry problems, thus changing the cost of capital for acquisitions. 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.

Second, returns can reflect differential divergence from fundamentals (see Shleifer and Vishny (2003), Dong, Hirshleifer, Richardson and Teoh (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 that the companies are trading in can appreciate or depreciate more than is warranted by changes in underlying economic conditions, leading the companies to be relatively misvalued.

We use an approach suggested by Baker, Foley and Wurgler (2009) to differentiate the two explanations. In particular, we estimate an equation decomposing 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 firm-level stock returns (in a common currency) are associated with higher likelihood of cross-border deal compared to domestic deals. We further decompose valuation differences between acquiring and target firms into three components: the differences in local stock market indices, the difference in returns of the two countries' currencies, and the differences in firm-level excess returns relative to the market. All three of these factors lead to a higher likelihood of a particular merger being cross-border than domestic, although statistical significance varies depending on the specification used.

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 primarily on domestic deals.[2] While this literature is also relevant to understanding 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, much of which either lumps together mergers with other international investments as FDI or considers solely mergers between public firms.[3]

Much of the earlier work on cross-border mergers focuses 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 proposed include trade tariff-jumping (Neary, 2007), tax incentives (Scholes and Wolfson, 1988, Swenson, 1994, Desai, Foley and Hines, 2001), and macroeconomic conditions. Empirical work focuses on explaining the general pattern that FDI flows from developed to less developed countries (e.g. Cushman (1987) and Swenson (1994)).

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

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

[3] One recent study using a much more representative sample of mergers is Netter, Stegemoller, and Wintoki (2009), whose primary focus, unlike ours, is on domestic mergers. These authors present evidence suggesting that filters that researchers commonly use in obtaining M&A data lead to samples containing a small subset of the entire mergers universe, usually oversampling of larger transactions by publicly-held companies.

assets than domestic rival bidders. In equilibrium, relative value changes lead to an increase in cross-border acquisitions by firms in the relatively wealthy country. Because this explanation for a relation between currency movements and cross-border mergers is based on asymmetric information, it is likely to be particularly relevant in the case of private targets, for which asymmetric information tends to be high relative to otherwise similar public targets.[4]

An alternative explanation for the relation between price levels and cross-border mergers stems from differential mispricing of stocks between countries. Shleifer and Vishny (2003) develop a model in which managers of an overvalued acquirer issue shares at inflated prices to buy assets, ideally, an undervalued or at least a less overvalued target. This transaction transfers value to the shareholders of the acquiring firm by arbitraging the price difference between the firms' stock prices. This model seems particularly applicable in an international setting, since differences in valuation are likely to occur because of either movements in exchange rates or stock prices.[5]

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.

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[4] The prediction that FDI increases following exchange rate movements has been tested by Klein and Rosengren (1994), Dewenter (1995) and Klein, Peek and Rosengren (2002), all of whom focus on FDI inflows and outflows from the United States.
[5] A similar argument based on rational stock movements has been proposed by Rhodes-Kropf and Viswanathan (2004). Using a sample of U.S. domestic mergers, Rhodes-Kropf, Robinson and Viswanathan (2005) provide empirical support for these arguments.

There has been some recent work on cross-border mergers that has mostly studied publicly-traded firms, and has focused on reasons for mergers other than valuation, such as corporate governance, foreign institutional ownership and the formation of the European Union. Rossi and Volpin (2004), Bris and Cabolis (2008) and Bris, Brisley, and Cabolis (2008) all consider governance-related explanations: 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. Similarly, Bris and Cabolis (2008) find that the better the shareholder protection and accounting standards in the acquirer's country, the higher the merger premium in cross-border mergers relative to matching domestic acquisitions, while Bris, Brisley and Cabolis (2008) find that the Tobin's Q of an industry increases when firms within the industry are acquired by foreign firms coming from countries with better corporate governance.

Chari, Ouimet and Tesar (2009) find that acquirers from developed markets experience positive and significant abnormal returns when targeting firms in emerging markets. Developed-market acquirers benefit more with weaker contracting environments in emerging markets and in industries with high asset intangibility. Kumar and Ramchand (2008) find evidence suggesting that the international takeover market improves corporate governance standards across countries. Ferreira, Massa and Matos (2009) find that foreign institutional ownership is positively associated with the intensity of cross-border M&A activity worldwide, which could occur for a 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. Finally, Coeurdacier, DeSantis and Aviat (2009) use a database on bilateral cross-border M&As at the sector level (in manufacturing and services) over the period 1985-2004, and find that institutional and financial developments, especially the European Integration process, promote cross-border mergers and acquisitions.

3. Data

Our analysis relies 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.[6] After excluding these deals, we end up with a sample of 187,841 mergers covering 48 countries, with the total transaction value of $7.54 trillion, 56,978 of which are cross-border with total transaction value of $2.21 trillion.[7]

We use Datastream to acquire data on monthly firm-level and country-level stock returns as well as exchange rate returns.[8] We calculate real returns by deflating our return indices using 1990 constant consumer price index $(CPI_{i,t})$.[9] When calculating exchange rate returns for the Economic and Monetary Union (EMU) countries, we use Euro as their currency post 1999 and deflate it using corresponding CPI for EMU countries. Thus, all EMU countries after 1999 have the same exchange rate movement.

We obtain country-level controls from a number of sources. We use ratings on the quality of accounting disclosure from the 1990 annual report of the Center for International Financial Analysis and Research as well as a newly assembled anti-self dealing index from Djankov, La Porta, Lopez-de-Silanes, Shleifer (DLLS, 2008).[10] Our culture variables, language (English, Spanish or Others) and religion (Protestant, Catholic, Muslim, Buddhist or Others), are from Stulz and Williamson (2003). We control for

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

[7] About 55% of the transactions do not have a reported deal value on SDC. Consequently, the reported value of M&A activity substantially understates its true value (see Netter, Stegemoller and Wintoki, 2009.)

[8] The exchange rate quote is the national exchange rates from the WM/Reuters, which are based on 4:00pm London (Greenwich Mean Time) in U.K. Pound Sterling.

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

[10] Throughout the paper, we also use the shareholder protection index, computed as the product of rule of law and anti-director rights indices (DLLS, 2008), as an alternative proxy for legal protection.

the level of corruption and political risk using measures from Kaufmann, Kraay and Mastruzzi (2009).[11] We obtain annual Gross National Product (in U.S. dollars) normalized by population and annual real growth rate of the Gross Domestic Product from the World Development Indicator report. The data on tax rates are from OECD (average corporate income-tax rates) and Tax Analysts (whether there exists a tax treaty between a country pair) while the data on bilateral trade flows are from the United Nation Commodity Trade Statistics database (see Ferreira, Massa and Matos (2009)). Finally, we use a survey-based variable that measures the average level of trust that citizens from each country have toward citizens of other countries, constructed by Guiso, Sapienza, and Zingales (2009).

For the public firms in our M&A sample, we obtain accounting and ownership information from Worldscope/Datastream. In particular, we use 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. To calculate country-level market-to-book ratio, we follow Fama and French (1998) and sum the market value of all equity for all public firms in a country and divide it by the sum of their book values.

4. Results

4.1. Stylized Facts about Cross-Border Mergers

Mergers involving acquirers and targets from different countries are substantial, in terms of both absolute number, and as a fraction of worldwide M&A activity. Figure 1 plots the value of cross-border deals over our sample period. The volume of cross-border mergers increases throughout the 1990s peaking in 2000, declines after the stock market crash of 2000, and increases again from 2002 until 2007. As a fraction of the total value of worldwide mergers, cross-border mergers typically amount to between 20 and 40 percent (see the solid line). The fraction of cross-border deals follows the overall level of the

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[11] Fan, Morck, Xu and Yeung (2009), Smarzynska and Wei (2000), and Wheeler and Mody (1992) document that high corruption is associated with lower level of FDI inflows.

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 2004 and 2007.

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 of domestic mergers for a particular country and the off-diagonal entries are the number of deals involving firms from a particular pair of countries. The totals reported in the bottom row and rightmost column exclude domestic mergers. Hence, these totals 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 cross-border mergers. These numbers are substantial but do not represent the majority of the 56,978 cross-border mergers.

A casual glance at Table 1 indicates that geography clearly matters. For every country, domestic mergers outnumber deals with any other country. 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, over two-thirds, 145, were of 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 reports deal characteristics by target country (Panel A) and acquirer country (Panel B) respectively, documenting for each the number of deals involving public firms, firms in related industries, and firms in the same region. The percentage of public acquirers across target countries does not have a large variation, with the percentage of public acquirers ranging from 56% (Croatia) to 92% (Peru). However there is a large cross-sectional variation in the percentage of regional deals. In some countries, especially within Europe (Norway, Peru, Austria, Portugal, Luxembourg and Croatia), at least 80% of purchasers of firms from those countries are from the same region while in others (South Africa, Russia, Israel, and Japan), fewer than 10% are. In terms of acquirers, there is a large variation in the percentage of

public acquirers across countries. For example, the Czech Republic has no public firms acquiring foreign corporations while almost 90% of the Israeli firms acquiring foreign corporations are public.

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. Our goal is to measure the factors affecting the propensity of firms of one country to acquire firms of another. Following Rossi and Volpin (2004) and Ferreira, Massa and Matos (2009), we 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 for each (ordered) country pair. We normalize this variable by the total number of domestic acquisitions in the target country, implicitly controlling for factors that will influence the volume of both domestic deals and cross-border deals.[12]

We estimate equations explaining this variable as a function of the characteristics of the countries. Since each observation is a "country pair" and we have 37 countries, the total number of potential observations is 1332 (37×36).[13] We then break down the full sample into subsamples into one in which either the acquirer or target (or both) is private, and one in which the acquirer and target are each publicly traded. We include the average stock return difference of the country indices over the sample period for each country pair (measured in local currency), as well as the relative appreciation of the two countries' currencies over the sample period (the average annual real exchange rate return) because, as we have argued above, changes in relative valuation likely lead to acquisitions. Because regulatory and legal differences between countries are factors that potentially affect cross-border acquisitions (Rossi and Volpin (2004), we include as independent variables the difference in the index on the quality of their disclosure of accounting information, as well as the difference in a newly assembled anti-self dealing index taken from DLLS (2008).

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[12] 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.

[13] In addition, we impose the requirement that a country pair has at least one deal during the sample period, which reduces the total number of observations to 1036. We also estimate our equations without this requirement and also by imposing stricter requirements that each country-pair must have at least 5 or 10 cross-border deals during the sample period. The results from these alternative specifications are qualitatively similar to those presented here.

To capture the regional effect discussed above, we include Great Circle Distance between the capital cities of two countries in the equation.[14] Since a common culture potentially makes mergers more likely, we include a dummy variable set equal to one if the target and acquirer share a primary religion, and a second dummy variable set equal to one if they share a primary language. Each equation contains the difference in the log of gross national product in 1990 U.S. dollars divided by the population, as well as the average annual real growth rate of the gross domestic product from 1990 to 2007 to control for macroeconomic conditions. Since cross-border mergers in part occur because of synergies, the existence of which is likely correlated with the quantity of business done between the two countries, we include a measure of bilateral trade flow between these countries, calculated as the value of imports by the target firm's country from the acquirer firm's country as a fraction of total imports by the target firm's country. To consider the possibility of tax motives for mergers, we include average corporate income tax rates in 1990 and a dummy variable indicating whether there exists a tax treaty between a country pair in 2007. Because of the importance of relationships between the parties in a merger and the fact that cross-country relationships are depending on country-specific histories, the specification includes a variable constructed by Guiso et al. (2009) that supposedly measures the average level of trust that citizens from each country have toward citizens of country pair (see Ahearn et al. (2010) for more discussion on this point). Finally, each equation contains dummy variables for each acquirer country.

Table 3 contains estimates of this equation. Columns 1-5 include all deals, Columns 6-10 restrict the sample to deals involving either a private acquirer or target, while Columns 11-15 include only deals with both public acquirers and targets. These estimates indicate that there are a number of patterns characterizing the identity of acquirers and targets. First, the regional effect discussed above is evident; holding other things constant, the shorter the distance between two countries, the more likely there are

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[14] We obtain latitude and longitude of capital cities of each country from www.mapsofworld.com. 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.

acquisitions between firms in these countries.[15] Second, there is a currency effect; firms from countries whose currencies appreciated over the sample period are more likely to be purchasers of firms whose currency depreciated. Third, consistent with Rossi and Volpin (2004), having a higher quality accounting disclosure system increases the likelihood that firms from a country will be purchasers of firms from another country. Fourth, larger differences in corporate income taxes rates attract foreign investment. Finally, the existence of a tax treaty negatively affects the likelihood of a cross-border merger. There is no evidence that sharing a common language or religion, or the quantity of trust between nations (at least given the measure we use) has any impact on merger propensities.

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 ratios, differences in real exchange rate returns, and differences in real stock returns in local currency 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 for one, two and three year 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 (market-to-book ratio) and the recent change in valuation (local stock market returns as well as exchange rate appreciation), acquirers are more highly valued 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 year prior to the merger, 0.92% in the two-year period prior to the merger and by 2.12% in the three-year period 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 to the acquisition, by 2.13% in the two-year period and 3.43% in the three-year period prior to the acquisition. All of these

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[15] This result parallels those from a growing literature on the effect of geography in domestic acquisitions. For example, Kedia, Panchapagesan and Uysal (2009) find that in domestic acquisitions, acquirers experience higher returns when they are geographically closer to targets, potentially due to better information sharing between firms that are closer to one another.

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 is similar to what others have found for domestic acquisitions (see Rhodes-Kropf, Robinson and Viswanathan (2005), Dong, Hirshleifer, Richardson and Teoh (2006), and Harford (2005)).

This pattern can be clearly seen in Panel A of Figure 2. Prior the month of the acquisition, differences in both the local currency stock returns and exchange rate return are positive, meaning that the stock market of the acquirer's country outperformed the target country's and that the acquirer's currency appreciated relative to the target's during the three years prior to the acquisition. Subsequent to the acquisition, however, the stock return difference disappears, implying that the target country's stock market outperforms the acquirer's during the three 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. The post-acquisition appreciation of the acquirer's currency relative to the target's probably reflects the composition of acquirers and targets; acquirers are more likely than targets to be from developed economies and over the sample period, developed economies' currencies tended to appreciate relative to those of developing countries. This pattern emphasizes the importance of controlling for country-pair effects econometrically when estimating the determinants of cross-border merger propensities (as we do below).

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.[16] The pre-acquisition local return differences are positive for each category, although they are substantially larger when a developed acquirer buys a developing target (12.79% difference in pre-acquisition returns) than when a developing acquirer buys a developed target (9.54% difference). 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 (-23.32% pre-acquisition exchange rate difference). On the other hand, when a developed acquirer buys a developing target, it generally follows a period of strong relative appreciation (24.22% difference). This pattern could reflect a general appreciation of currencies in developed countries relative to developing ones over our sample period and emphasizes the importance of controlling for these effects econometrically.

In Columns 6-9 of Table 4, we break down the pre-acquisition valuation differences by the legal regime prevailing in the acquiring and target countries. We classify a country as a weak-law country if the anti-self dealing index (DLLS, 2008) is below the median. In general, targets in weak-law countries are associated with higher pre-acquisition differences in market-to-book ratios, local currency stock 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 mergers are related or

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[16] It is not obvious how one should define countries as developing or developed. We also use (but do not report) an alternative definitions from Demirgüç-Kunt and Levine (2001): If both 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 below period mean, the country is flagged as "developing." The pattern of pre-acquisition returns remains similar.

diversifying mergers.[17] In general the valuation metrics are similar regardless of whether the acquirer and target are in the same region or not. However, the valuation differences tend to be somewhat larger for related mergers than for diversifying mergers for most of the valuation measures 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 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 public acquirers and public targets. As discussed above, the vast majority of cross-border acquisitions have either private 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 equations with deal-level data on the smaller sample of deals involving public acquirers and targets.

We rely on a specification in which the dependent variable is the number of deals between a particular country pair, normalized by the total number of domestic deals in the target country in a given year. Our sample consists of country pairs with one observation per year for each pair, for a total of 14,200 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.

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[17] If the target and acquirer's countries are from the same broadly-defined continent (Africa, America, Asia, and Europe), the deal is classified as 'same region' (Source: World Atlas 1995) and is considered to be 'related' if the target firm and the acquiring firm share a three-digit SIC code.

This specification allows us to exploit time-series variation in relative valuations while controlling for cross-country differences.

Panel of Table 5 A presents OLS estimates of this equation. The stock return and currency differences are measured over the 12 months prior to the year in question, so that "*(Currency R12)$_{j-i}$*" is the difference in the past 12-month real exchange rate return between the acquirer (indexed by *j*) and the target country (indexed by *i*), "*(Market R12)$_{j-i}$*" is the difference in the past 12-month real stock-market return in the local currency between the acquirer and the target country, and "*(Market MTB)$_{j-i}$*" is the difference in the value-weighted market-to-book equity ratio between the acquirer and the target country.[18] All equations also include differences in the log of GDP, the differences in GDP growth rates, the quantity of bilateral trade between the two countries, as well as year and country-pair dummies. Columns 1-6 present estimates including all deals, Columns 7-12 restrict the sample to deals involving either a private acquirer or target, while Columns 13-18 include only public acquirers and targets.[19]

Columns 1, 7 and 13 present the basic regression for each group of deals. The coefficients on the stock and currency return differences are positive and statistically significantly different from zero in each equation except those estimated on the public firms subsample. 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. The estimated coefficients reported in Column 1 imply that a two standard deviation increase in the real exchange rate change for a given country pair (34%) is associated with an increase of 22% in the expected number of acquisitions of firms in countries with relatively depreciated currency.[20] Similarly, they imply that a two standard deviation change in the country-level stock return difference for a given country pair (54%)

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[18] We have also estimated these equations using 24-month and 36-month 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.

[19] 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.

[20] The average ratio of cross-border merger to domestic mergers for a given country-pair in a given year is 0.0461. Given the coefficient of the country-level 12 month real exchange rate return between target and acquirer country from Column (1) of Table 5 (0.030), the percentage change in the ratio for an average country pair for a two standard deviation change in exchange rate returns equals (0.030*34%)/0.0461=22%.

leads to an increase of 12% in the expected number of acquisitions by the better-performing country's firms of the worse performing country's firms.[21]

Columns 2, 8 and 14 of Panel A 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 estimates reported in these columns indicate that both the stock and currency return differences have the largest impact on merger propensities when firms from wealthier countries are considering purchasing firms from poorer countries. Also, the regional decomposition indicates that the currency effect is the largest for country pairs in the same region, except for the public firms subsample. However, the stock market effect is positive and statistically significant for out-of-region deals and it is statistically indistinguishable from zero for mergers within a region.

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 for the public firm subsample. The estimates imply that a two standard deviation increase in the market-to-book difference for a given country pair (1.44) is associated with an increase of 9.4% in the expected volume of cross-border mergers.[22]

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 poorer countries. These results suggest that valuation effects in cross-border mergers are most important for firms from

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[21] The average ratio of cross-border merger to domestic mergers for a given country-pair in a given year is 0.0461. Given the coefficient of the country-level 12 month real stock return difference in Column (1) of Table 5 (0.011), the percentage change in the ratio for a two standard deviation change in stock return differences equals (0.011*54%)/0.0461=12%.

[22] The average ratio of cross-border merger to domestic mergers for a given country-pair in a given year is 0.0461. Given the coefficient of the country-level market-to-book difference between target and acquirer in Column (4) of Table 5 (0.003), the percentage change in the ratio for a two standard deviation change in the market to book ratio for an average country pair equals (0.003*1.44)/0.0461=9.4%.

wealthier countries, whose companies are likely to purchase firms from poorer countries following a decrease in their market-to-book ratio.

If some acquisitions are motivated by valuation differences, while others are motivated by synergies, then it seems plausible that the synergy-motivated acquisitions are more likely to be between two firms in the same industry, while the valuation-motivated mergers are more likely to be across industries. To evaluate this possibility, we separate our sample into across-industry and within-industry mergers and reestimate the equations in Panel A using the number of a particular type of merger, normalized by the number of domestic mergers of the same type, in a particular country-pair as the dependent variable. The results (not reported) are similar to those in Panel A of Table 5. The coefficients for the diversifying mergers are larger in absolute value, but both sets are significantly different from zero and are not significantly different from each other.[23]

A maintained assumption so far is that the only relevant factor determining valuation-based mergers is the *difference* in whichever valuation metric is being considered (currency movements, stock returns, or market-to-book ratios). It is possible that these mergers could reflect value changes of acquirers and targets differentially. For example, if value-driven mergers occur because of a stock market bubble in one country that does not occur to the same extent in others, then we should expect that the primary factor explaining the merger propensities would be the acquirer's valuation. Alternatively, if these mergers occur because of financial crises leading to large stock market and currency devaluations, then we expect the primary factor to be the target's valuation.

We consider these issues in Panel B of Table 5, which presents estimates of similar models to those in Panel A, except that the stock returns, exchange rate return, and market-to-book equity ratio of the target country and acquirer country are included into the equation separately. As in Panel A, all

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[23] Another possibility is that valuation-motivated mergers are more likely to be stock-financed and that synergy-motivate mergers are more likely to be cash-financed. Ideally, one could reestimate the Table 5 equations for each type of acquisition and compare the coefficients across types. However, information on the method of payment is missing for more than half the observations in the SDC sample, so we cannot perform this type of analysis on our sample.

equations include differences in the log of GDP, the differences in GDP growth rates, the quantity of bilateral trade between the two countries, as well as year and country-pair dummies. Columns 1-6 present estimates for the entire sample, while Columns 7-12 restrict the sample to deals involving either a private acquirer or target, while the estimates in Columns 13-18 include only public acquirers and targets.

The results presented in Panel B of Table 5 suggest that target countries experience declining and acquirer countries experience rising valuation in their stock market, especially for the full sample (Columns 1 and 4). When we further break up the stock market valuations based on the same-region dummy and the relative-wealth dummy, we find that the effect of the valuation is the most significant when the GDP per capita in the acquirer country is larger than that in the target country (Columns 2, 5, 8, 11, 14, and 17). However the impact of exchange rate return differences on merger volume is mainly driven by the currency depreciation of the target countries but not by the changes in the currency of the acquirer countries (Columns 1, 7, and 14). When we further break up the exchange rate returns based on the same-region dummy and the relative-wealth dummy, we find that acquirers engage in cross-border mergers when their currency appreciates only with target firms in the same region (Columns 3, 9, and 15).

4.5. 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, enhancing 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 would potentially apply to private acquirers as well if the overvalued equity market lowers the cost of capital in a country for 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, although it is possible that the future returns tests are not particularly powerful, as they only make use of the component of overvaluation that can be explained by future returns over a pre-specified interval.

To test this hypothesis formally, we follow an approach suggested 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 effects.

In the first-stage equation, where country-level market-to-book ratios are regressed on future returns, the coefficients on future returns are negative. This finding is consistent with the literature that there is a negative relation between country-level market-to-book ratios and 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 the ratio of cross-border mergers, 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. In the sample of deals involving public targets and acquirers, the coefficient on the difference in fitted components is actually negative and statistically significant, which is the opposite of what the overvaluation hypothesis predicts. In unreported

tables, we also separately examine the fitted and residual market-to-book components of target and acquirer to further test the overvaluation hypothesis against real wealth effects. We find that the predictable component of acquirers' market-to-book negatively relates to investment flows to the target country, opposite to what the overvaluation hypothesis predicts. Further, the residual component of acquirer's market-to-book positively and significantly relates to investment flows, therefore providing support to the real wealth hypothesis. Taken as a whole, 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).

4.6. Differences in 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. The difference in valuation between acquirers and targets appears to occur due to both stock market and currency effects. Yet, the results presented so far utilize country-level data. 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 1,178 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 1,178 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 nonetheless not representative of cross-border mergers in general.

To estimate the factors that affect the likelihood of a merger, 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, each of which allows us to draw inferences about the factors leading one firm to buy another.

4.6.1. 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 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 for understanding 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 firm-level 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 a related industry 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 difference in returns of the two countries' currencies, and the differences in firm-level excess returns relative to the market.[24] The coefficients on all three variables are positive, but often statistically insignificantly different from zero. The positive coefficients on the difference in currency returns and the difference in local market returns are consistent with the valuation arguments and suggest that differences in currency and stock-market returns are determinants of cross-border mergers.

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[24] For the domestic deals, the differences in the local market returns and the currency returns equal zero by construction.

4.6.2. Identity of the Target and the Acquirer

Another approach to evaluating the reasons for cross-border mergers is to consider the differences in the characteristics of targets and acquirers. 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-to-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 a logit model 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 Columns 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 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 three components, reflecting the local stock market index (in local currency), the currency return (relative to U.S. dollars), and the firm-specific residual in local currency. 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 consistent with what we found at the country level using only public firms sample and similar to the deal-level regressions in Table 7 using the domestic/cross-border specification. The difference between the public firm subsample and the overall sample consisting mostly of private firms is consistent with the relative wealth story suggested by Froot and Stein (1991). The underlying cause of frictions in the Froot and Stein model is asymmentric information, which is likely to be higher in private firms than in public ones. Consequently, if this channel leads to wealth effects in mergers, then it should be stronger in mergers involving private firms than in mergers of public firms, consistent with the findings reported in Table 8.

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, 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

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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 wealth effect due to a lower cost of capital (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.

References

Ahern, Kenneth, Daniele Daminelli, and Cesare Fracassi, 2010, Lost in Translation? The Effect of Cultural Values on Mergers Around the World, *University of Michigan Working Paper*

Andrade, Gregor, Mark Mitchell, and Erik Stafford, 2001, New evidence and perspectives on mergers, *The Journal of Economic Perspectives* 15, 103-120.

Baker, Malcolm, C. F. Foley, and Jeffrey Wurgler, 2009, Multinationals as abitrageurs: The effect of stock market valuations on foreign direct investment, *Review of Financial Studies 22,* 337-369.

Blonigen, Bruce A., and Ronald B. Davies, 2009, Do bilateral tax treaties promote foreign direct investment?, in *The effect of treaties on foreign direct investment* (Oxford Scholarship Online Monographs).

Bris, Arturo, Neil Brisley, and Christos Cabolis, 2008, Adopting better corporate governance: Evidence from cross-border mergers, *Journal of Corporate Finance* 14, 224-240.

Bris, Arturo, and Christos Cabolis, 2008, The value of investor protection: Evidence from cross-border mergers, *Review of Financial Studies* 21*,* 605-648.

Chari, Anusha , Paige Ouimet, and Linda Tesar, 2009, The value of control in emerging markets, *Review of Financial Studies, forthcoming*.

Coeurdacier, Nicolas , Roberto A. DeSantis, and Antonin Aviat, 2009, Cross-border mergers and acquisitions and european integration, *Economic Policy* January, 55-106.

Cushman, David O., 1987, The effect of real wages and labor productivity on foreign direct investment, *Southern Economic Journal* July, 174-185.

Demirgüç-Kunt, A., and R. Levine, 2001. *Financial structure and economic growth* (MIT press).

Desai, Mihir, C. Fritz Foley and James R. Hines Jr., 2001, Repatriation Taxes and Dividend Distortions, *National Tax Journal* 54, 829-851.

Dewenter, Kathryn L., 1995, Do exchange rate changes drive foreign direct investment?, *The Journal of Business* 68, 405-433.

Djankov, S., R. La Porta, F. Lopez-de-Silanes, and A. Shleifer (DLLS), 2008. The Law and Economics of Self-Dealing. *Journal of Financial Economics* 88, 430-465.

Dong, Ming , David Hirshleifer, Scott Richardson, and Siew Hong Teoh, 2006, Does investor misvaluation drive the takeover market?, *The Journal of Finance* 61, 725-762.

Fama, E. , and K. French, 1998, Value versus growth: The international evidence, *Journal of Finance* 53, 1975-99.

Fan, Joseph P.H., Randall Morck, Lixin Colin Xu, and Bernard Yeung, 2009, Does 'good government' draw foreign capital? Explaining china's exceptional fdi inflow., *World Development (Special Issue on Law, Finance and Economic Growth in China) forthcoming*.

Ferreira, Miguel A., Massimo Massa, and Pedro Matos, 2009, Shareholders at the gate? Institutional investors and cross-border mergers and acquisitions, *Review of Financial Studies* 23, 601-644.

Froot, K. A., and J. C. Stein, 1991, Exchange rates and foreign direct-investment - an imperfect capital-markets approach, *Quarterly Journal of Economics* 106, 1191-1217.

Graham, Edward M., and Paul R. Krugman, 1995. *Foreign direct investment in the united states* (Institute for International Economics, Washington, D.C.).

Guiso, L., P. Sapienza, and L. Zingales, 2009. Cultural Biases in Economic Exchange. *Quarterly Journal of Economics*. 124, 1095-1131.

Harford, Jarrad, 2005, What drives merger waves?, *Journal of Financial Economics* 77, 529-560.

Jarrell, Gregg A., James A. Brickley, and Jeffrey M. Netter, 1988, The market for corporate control: The empirical evidence since 1980, *Journal of Economic Perspectives* 2, 49-68.

Jensen, Michael, and Richard S. Ruback, 1983, The market for corporate control: The scientific evidence *Journal of Financial Economics* 11, 5-50.

Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi, 2009, Governance matters viii: Governance indicators for 1996-2008, *World Bank Policy Research* June.

Kedia, Simi, Venkatesh Panchapagesan, and Vahap Uysal, 2009, Geography and acquirer returns, *Journal of Financial Intermediation, forthcoming*.

Klein, Michael W., and Eric S. Rosengren, 1994, The real exchange rate and foreign direct investment in the united states: Relative wealth vs. Relative wage effects, *Journal of International Economics* 36, 373-90.

Klein, Michael W., Joe Peek, and Eric S. Rosengren, 2002, Troubled banks, impaired foreign direct investment: The role of relative access to credit, *The American Economic Review* 92, 664-682.

Kumar, Praveen, and Latha Ramchand, 2008, Takeovers, market monitoring, and international corporate governance, *The RAND Journal of Economics* 39, 850-874.

Neary, J. Peter, 2009, Trade costs and foreign direct investment, *International Review of Economics & Finance* 18, 207-218.

Netter, Jeffry M., Mike Stegemoller, and Babajide M. Wintoki, 2009, Are Small Mergers Important?: A study of over 250,000 (or less) mergers and acquisitions from 1992-2009, University of Georgia *Working Paper*

Rhodes-Kropf, Matthew, David T. Robinson, and S. Viswanathan, 2005, Valuation waves and merger activity: The empirical evidence, *Journal of Financial Economics* 77, 561-603.

Rhodes-Kropf, Matthew, and S. Viswanathan, 2004, Market valuation and merger waves, *Journal of Finance* 59, 2685-2718.

Rossi, Stefano, and Paolo F. Volpin, 2004, Cross-country determinants of mergers and acquisitions, *Journal of Financial Economics* 74, 277-304.

Shleifer, A., and R. W. Vishny, 2003, Stock market driven acquisitions, *Journal of Financial Economics* 70, 295-311.

Scholes, Myron S. , and Mark A. Wolfson, 1990, The effects of changes in tax laws on corporate reorganization activity, *The Journal of Business* 63, S141-S164

Smarzynska, Beata K., and Shang-Jin Wei, 2000, Corruption and composition of foreign direct investment: Firm-level evidence, NBER Working Paper No. 7969 *Working Paper*

Stulz, René M., and Rohan Williamson, 2003, Culture, openness, and finance, *Journal of Financial Economics* 70, 313-349.

Swenson, Deborah L., 1994 The impact of U.S. Tax reform on foreign direct investment in the united states, *Journal of Public Economics* 54, 243-266.

Wheeler, David, and Ashoka Mody, 1992, International investment location decisions : The case of u.S. Firms, *Journal of International Economics* 33, 57-76.
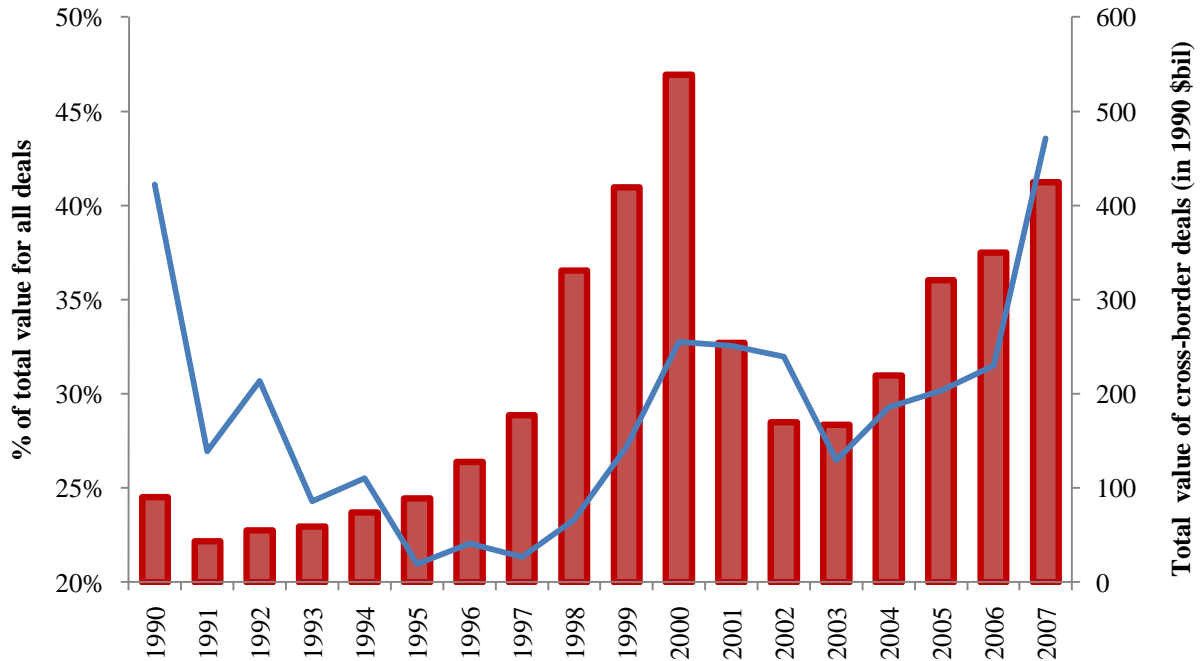
Figure 1. **Total value of cross-border mergers and acquisitions.**
This figure plots the value (ratio) of cross-border deals with deal value larger than $1 million between 1990 and 2007. Bars represent values while the solid line represents the ratio of cross-border mergers in terms of deal value. All values are in 1990 dollars.
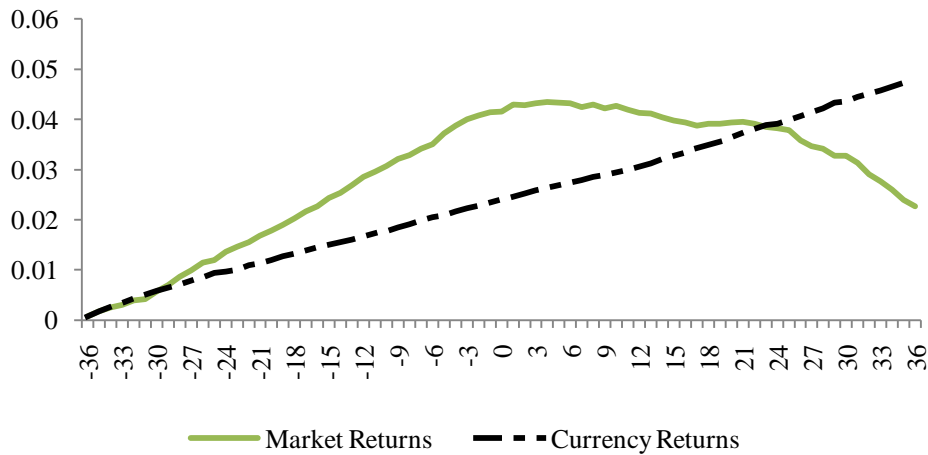
Panel A.1 World Sample (# of obs: 51,488)
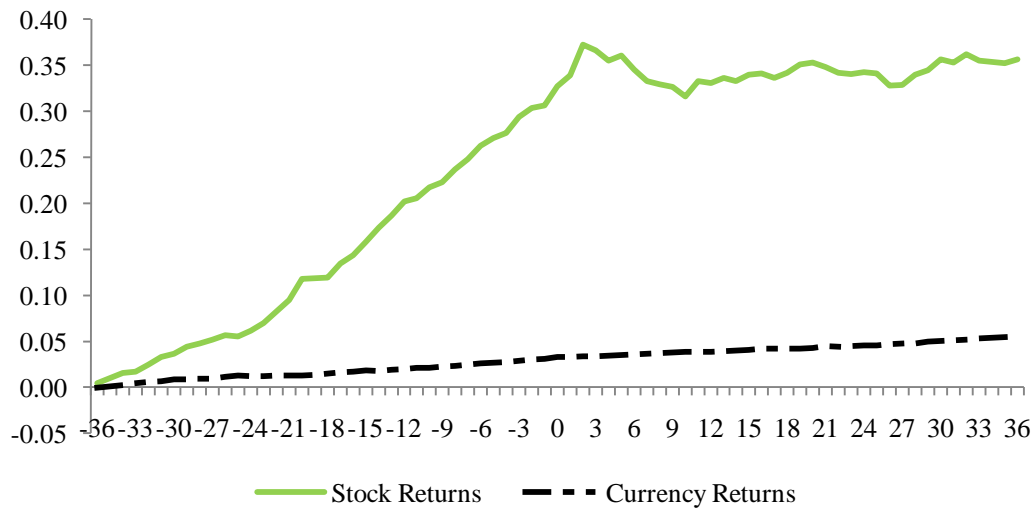
Panel A.2 World Sample of Public Firms Only (# of obs: 1,304)

Figure 2. Cumulative geometric differences in the real stock return in local currency and real exchange rate return between the target and the acquirer.
The horizontal axis denotes the months relative to the acquisition month (month 0). Panel A.1 depicts the world sample; Panel A.2 depicts the world sample with public firms only. Panel B uses world subsamples; Panel B.1 uses acquirers and targets from developing countries; Panel B.2 uses the sample of developing targets and developed acquirers; Panel B.3 uses the sample of developed targets and developing acquirers; Panel B.4 uses the sample of acquirers and targets from developed countries.

Panel B.1 Developing Targets, Developing Acquirers. (# of obs: 311)

Panel B.2 Developing Targets, Developed Acquirers. (# of obs: 3,853)

Panel B.3. Developed Targets, Developing Acquirers. (1,056)

Panel B.4 Developed Targets, Developed Acquirers. (46,288)

Table 1. Number of mergers and acquisitions across country pairs.

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 of 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. Our sample period is from 1990 to 2007.

Acquirer Country

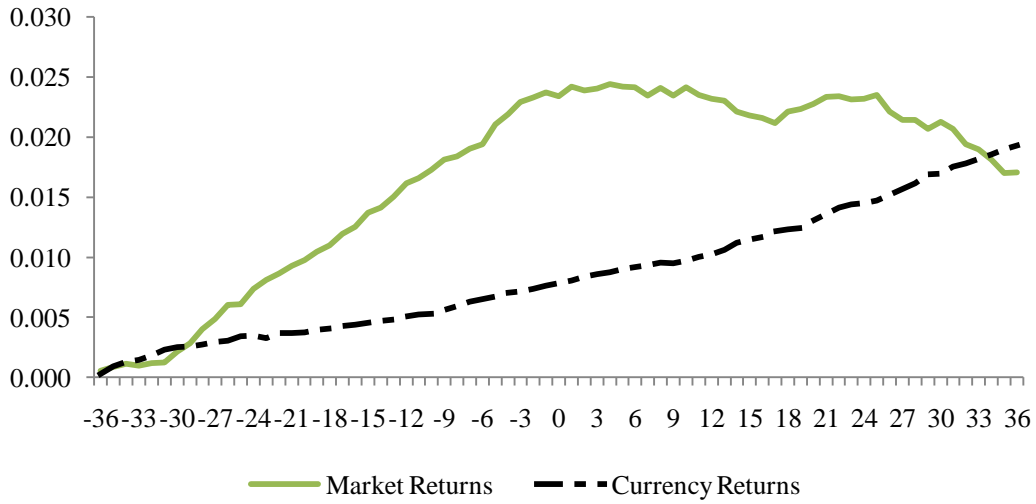| Destination	AR	AS	AU	BL	BR	CA	CC	CE	CH	CO	CT	CY	DN	FN	FR	GR	HK	HU	ID	IN	IR	IS	IT	JP	LX	MA	MX	NO	NT	NZ	PE	PH	PL	PO	RU	SA	SG	SK	SP	SW	SZ	TH	TK	TW	UK	US	VE	WG	Total
Argentina(AR)	201	1	4	4	30	42		13		1			5		57	1	1			2	6		17	4			16	1	28	3		1					2		54	5	14	1			58	243	4	22	640
Austria(AS)		341	4	8		19	1						19	7	35	3	1	2		2	7	1	25	7	8		1	7	25				2	1			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			1	8				1					4	2		10		1	1	2				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	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								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	4	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	1	160	2	1				3					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		4				4				2	31	3	12		2	1	1	3	1	5,698		1		16		1		1	1	2	12	2	11	8	1	9	46	259		42	488
Luxembourg(LX)		1		16									8	2									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	2		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				2	3		2	39		2		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	13		246		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		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		2	1	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		2	1,558	31			2	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		4	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	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	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			8	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

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Table 2 Descriptive statistics of cross-border M&As.

The table reports the total number of cross-border deals, deals involving public acquirers, deals that are in related industries, and finally deals that are in the same region, by target countries (in Panel A) and acquirer countries (in Panel B). A deal is in the related industry if the 3-digit SIC codes of a target and its acquirer overlap. A deal is in the same region if the target and acquirer's countries are located in the same broadly defined continent (Africa, America, Asia, and Europe).

Country	Panel A: Target Country				Panel B: Acquirer Country			
	Cross-border Deals	Public Acquirers	Related Deals	Same Region	Cross-border Deals	Public Acquirers	Related Deals	Same Region
Argentina	640	457	481	349	66	13	45	62
Austria	637	415	453	515	557	286	366	489
Australia	2,238	1,699	1,526	426	1,360	1,153	904	472
Belgium	1,022	693	699	755	919	504	618	715
Brazil	1,038	782	743	514	133	62	91	92
Canada	3,500	2,588	2,311	2,530	4,236	3,428	2,873	3,090
Czech Republic	442	300	309	336	19	0	17	15
Chile	246	198	159	142	60	30	43	50
China	1,091	841	756	527	112	56	76	53
Colombia	121	97	92	72	16	1	12	14
Croatia	59	33	44	52	12	10	9	11
Cyprus	14	11	7	11	23	12	18	14
Denmark	890	612	604	680	1,199	791	790	940
Finland	874	632	528	660	866	691	530	650
France	3,610	2,460	2,365	2,329	3,634	2,754	2,441	2,297
Greece	90	71	69	64	150	97	102	99
Hong Kong	614	491	404	277	633	411	416	374
Hungary	334	219	239	246	40	30	32	35
Indonesia	199	157	140	95	45	12	26	27
India	637	468	448	94	473	364	354	69
Ireland-Rep	555	409	386	347	1,044	798	660	656
Israel	256	213	177	8	324	281	223	25
Italy	1,585	1,185	969	1,033	1,027	423	731	725
Japan	488	383	326	49	1,874	1,585	1,068	341
Luxembourg	83	57	62	68	242	143	168	176
Malaysia	321	259	190	195	416	358	254	336
Mexico	650	508	476	452	160	129	107	134
Norway	739	544	501	581	758	512	493	586
Netherlands	1,826	1,346	1,160	1,221	2,588	1,761	1,700	1,784
New Zealand	680	519	466	363	226	135	155	156
Peru	123	113	92	98	7	4	6	7
Philippines	119	94	85	49	51	28	25	20
Poland	497	358	352	390	41	21	30	31
Portugal	320	225	243	260	142	73	107	97
Russian Fed	382	288	301	8	90	42	64	7
South Africa	520	428	333	0	333	278	218	0
Singapore	492	389	298	240	729	570	450	524
South Korea	294	245	202	55	171	147	104	87
Spain	1,659	1,155	1,149	1,272	675	294	491	360
Sweden	1,463	1,034	939	1,095	2,127	1,673	1,397	1,547
Switzerland	1,180	789	770	826	1,686	1,162	1,028	1,040
Thailand	232	191	154	128	54	34	39	31
Turkey	170	132	120	121	29	10	20	16
Taiwan	181	162	122	59	145	107	90	51
United Kingdom	6,753	4,840	4,459	2,612	8,468	7,087	5,468	3,688
United States	11,886	9,410	7,558	2,889	15,034	11,508	10,153	3,663
Venezuela	122	101	87	79	15	5	6	13
Germany	5,106	3,686	3,122	3,108	3,969	2,414	2,458	2,611
Total	56,978	42,287	37,476	28,280	56,978	42,287	37,476	28,280

Table 3. Cross-sectional analysis of the intensity of cross-border M&As.

The 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. (Currency R12)j-i is the difference in the average annual real exchange rate return in U.S. dollars from 1990 to 2007 between acquirer (j) and target country (i). (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. (Account)j-i is the difference in the index created on the disclosure quality of accounting information. (Legal)j=i is the difference in the anti-self dealing index. Same Language is equal to 1 if target and acquirer's primary language are the same. Same Religion is equal to 1 if target and acquirer's primary religion are the same. 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 U.S. dollars. (Income Tax)j-i is the difference in corporate income tax in 1990. Tax treaty is equal to 1 if there exists a tax treaty between target country and acquirer country in 2007. Bilateral trade flow is the value of annual imports by the target firm's country from the acquirer firm's country as a fraction of total annual imports by the target firm's country. Trust is a survey-based measure of the average level of trust that citizens from each country have toward citizens of the country pair. Heteroskedasticity-robust t-statistics are in parentheses.

	All Target - All Acquirer					Private Target - Private Acquirer					Public Target - Public Acquirer				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(Currency R12)j-i	0.161***				0.145***	0.088***				0.082***	0.306***				0.244**
	(6.36)				(5.11)	(4.49)				(3.73)	(3.39)				(2.39)
(Market R12)j-i	-0.055				-0.074	-0.053				-0.055	-0.020				-0.142
	(-1.00)				(-1.25)	(-1.39)				(-1.22)	(-0.20)				(-1.22)
(Account)j-i		0.015***			0.012***		0.005**			0.003*		0.033***			0.029***
		(6.32)			(5.33)		(2.46)			(1.65)		(4.34)			(3.59)
(Legal)j-i		-0.035			-0.148*		0.012			-0.050		-0.248			-0.424**
		(-0.45)			(-1.78)		(0.18)			(-0.65)		(-1.36)			(-2.14)
Same Language			0.007		0.006			0.002		0.004			0.030		0.027
			(0.67)		(0.61)			(0.35)		(0.53)			(1.20)		(0.94)
Same Religion			-0.012***		-0.003			-0.009***		-0.006**			-0.007		0.004
			(-3.08)		(-0.96)			(-3.43)		(-2.29)			(-0.85)		(0.48)
Geographic Proximity			0.002***		0.002***			0.001		0.001			0.004**		0.004**
			(3.05)		(3.13)			(1.53)		(1.61)			(2.15)		(2.22)
(Income Tax)j-i				0.001**					0.000***					0.003***	
				(2.49)					(2.69)					(3.14)	
Tax Treaty				-0.034***					-0.017**					0.059	
				(-2.95)					(-2.31)					(1.36)	
Trust				0.001					0.004					0.050	
				(0.21)					(1.10)					(1.60)	
(log GDP per capita)j-i	-0.006**	0.002	0.004*	0.013**	-0.004*	-0.002	0.003**	0.003	0.002	-0.000	-0.005	0.002	0.012**	0.100**	-0.008
	(-2.21)	(1.28)	(1.67)	(2.17)	(-1.84)	(-1.27)	(2.09)	(1.63)	(0.46)	(-0.11)	(-0.88)	(0.67)	(2.35)	(2.36)	(-1.60)
(GDP growth)j-i	-0.003**	-0.000	-0.002	-0.000	0.001	-0.002**	-0.001	-0.002	-0.001	-0.001	-0.001	0.001	0.001	0.012*	0.001
	(-2.07)	(-0.08)	(-1.23)	(-0.31)	(0.49)	(-2.31)	(-1.11)	(-1.55)	(-0.80)	(-0.52)	(-0.29)	(0.29)	(0.44)	(1.73)	(0.49)
Bilateral Trade	0.788***	0.666***	0.739***	1.083***	0.616***	0.587***	0.511***	0.575***	0.869***	0.496***	0.868***	0.740***	0.771***	1.565***	0.633***
	(6.13)	(6.80)	(5.39)	(11.24)	(5.92)	(6.63)	(6.98)	(6.00)	(12.82)	(6.29)	(3.91)	(4.18)	(3.24)	(3.47)	(3.27)
Constant	0.017***	0.016***	0.033***	0.034	0.027***	0.007***	0.008***	0.014***	-0.004	0.014***	0.017***	0.017***	0.038***	-0.215*	0.032***
	(4.86)	(6.11)	(4.87)	(1.36)	(5.13)	(3.12)	(3.84)	(3.13)	(-0.29)	(3.14)	(2.77)	(3.27)	(2.92)	(-1.76)	(2.78)
Acquirer Country Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1036	893	1036	174	893	1036	893	1036	174	893	1008	881	1008	174	881
R-squared	0.55	0.64	0.54	0.89	0.66	0.50	0.52	0.49	0.87	0.54	0.28	0.32	0.26	0.60	0.34

Table 4. Summary statistics on valuation differences between target and acquirer.

R12, R24, R36 represent real stock returns over the past 12 months, 24 months, 36 months, respectively. MTB is the market-to-book 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 this sum by the sum of their book value. All stock returns (both market and firm-level 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 anti-self dealing index.

		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	Diversified	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.

The 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 in a particular year. (Currency R12)j-i is the difference in the prior 12-month real exchange rate return between acquirer and target country. (Market R12)j-i is the difference in the prior 12-month real stock market return in local currency between the acquirer and the target country. (Market MTB)j-i is the difference in the value-weighted market-to-book ratio of the equity between the acquirer and the target country. I_GDP capita is equal to 1 if the acquirer country's GDP per capita is larger than or equal to that of the target country. 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 U.S. dollars. Bilateral trade flow is the value of annual imports by the target firm's country from the acquirer firm's country as a fraction of total annual imports by the target firm's country. A deal is in the same region if the target and acquirer's countries are located in the same broadly defined continent (Africa, America, Asia, and Europe). Panel A reports regression results including valuation differences between the target and the acquirer country. Panel B reports regression results including valuation for the target and the acquirer separately. Heteroskedasticity-robust t-statistics are in parentheses.

Panel A

	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)
(Market R12)j-i	0.011***	0.003	0.015***				0.010***	0.001	0.007**				0.006	-0.003	-0.001			
	(3.51)	(1.42)	(3.92)				(3.07)	(0.53)	(2.12)				(0.94)	(-0.52)	(-0.10)			
(Currency R12)j-i	0.030***	-0.000	0.006				0.029***	0.002	0.012				0.028*	-0.001	0.014			
	(3.25)	(-0.06)	(0.64)				(2.85)	(0.48)	(1.23)				(1.93)	(-0.10)	(0.93)			
(Market MTB)j-i				0.003***	-0.000	0.003***				0.004***	-0.001	0.003***				0.003	0.001	0.000
				(3.79)	(-0.69)	(2.72)				(4.21)	(-0.78)	(3.11)				(1.30)	(0.38)	(0.08)
(Market R12)j-i × I_GDP capita		0.013**						0.016***						0.019*				
		(2.57)						(2.88)						(1.72)				
(Currency R12)j-i × I_GDP capita		0.053***						0.049***						0.066**				
		(3.25)						(2.75)						(2.08)				
(Market R12)j-i × Same Region			-0.012*						0.005						0.015			
			(-1.80)						(0.70)						(1.33)			
(Currency R12)j-i × Same Region			0.082***						0.057**						0.050			
			(3.32)						(2.13)						(1.35)			
(Market MTB)j-i × I_GDP capita					0.007***						0.009***						0.005	
					(4.34)						(4.60)						(1.05)	
(Market MTB)j-i × Same Region						0.001						0.002						0.009*
						(0.67)						(0.79)						(1.77)
(log GDP per capita)j-i	0.031***	0.030***	0.030***	0.009	0.010	0.009	0.010	0.010	0.010	-0.001	-0.000	-0.001	0.047*	0.048*	0.046*	0.034	0.035	0.034
	(3.03)	(2.99)	(2.97)	(1.00)	(1.08)	(1.00)	(1.10)	(1.08)	(1.04)	(-0.08)	(-0.03)	(-0.07)	(1.86)	(1.90)	(1.84)	(1.29)	(1.32)	(1.30)
(GDP growth)j-i	0.000	-0.000	-0.005	0.044	0.043	0.046*	0.007	0.006	0.009	0.033	0.030	0.035	-0.018	-0.023	-0.008	-0.001	-0.003	0.007
	(0.01)	(-0.01)	(-0.18)	(1.60)	(1.54)	(1.65)	(0.25)	(0.20)	(0.33)	(1.20)	(1.10)	(1.26)	(-0.33)	(-0.42)	(-0.15)	(-0.01)	(-0.06)	(0.14)
Bilateral Trade	0.642***	0.638***	0.628***	0.593***	0.575***	0.591***	0.235	0.229	0.221	0.248	0.227	0.246	-0.229	-0.249	-0.238	-0.113	-0.129	-0.120
	(4.37)	(4.34)	(4.27)	(4.21)	(4.20)	(4.20)	(1.43)	(1.40)	(1.34)	(1.54)	(1.41)	(1.53)	(-0.51)	(-0.56)	(-0.54)	(-0.25)	(-0.29)	(-0.27)
Constant	0.082***	0.082***	0.083***	0.022***	0.022***	0.022***	0.057***	0.057***	0.057***	0.021***	0.021***	0.021***	0.055**	0.056**	0.054**	0.040*	0.040*	0.040*
	(6.34)	(6.35)	(6.38)	(3.63)	(3.70)	(3.63)	(4.57)	(4.59)	(4.59)	(2.98)	(3.03)	(2.97)	(2.30)	(2.34)	(2.29)	(1.67)	(1.68)	(1.68)
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	14200	14200	14200	14050	14050	14050	13699	13699	13699	13558	13558	13558	7726	7726	7726	7669	7669	7669
R-squared	0.50	0.50	0.50	0.51	0.51	0.51	0.34	0.34	0.34	0.34	0.34	0.34	0.35	0.35	0.35	0.35	0.35	0.35

Panel B

	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)
(Market R12)j	0.011***	0.003	0.018***				0.005	-0.000	0.004				0.014*	0.007	0.008			
	(3.33)	(0.98)	(4.33)				(1.57)	(-0.16)	(1.02)				(1.88)	(0.93)	(1.03)			
(Market R12)i	-0.011**	-0.004	-0.011**				-0.015***	-0.004	-0.010**				0.002	0.021**	0.009			
	(-2.19)	(-0.77)	(-1.99)				(-3.01)	(-1.02)	(-2.03)				(0.22)	(2.03)	(0.71)			
(Currency R12)j	0.002	-0.001	-0.030***				-0.001	-0.004	-0.026***				-0.013	-0.024*	-0.040**			
	(0.28)	(-0.23)	(-3.05)				(-0.14)	(-0.61)	(-2.62)				(-0.82)	(-1.72)	(-2.24)			
(Currency R12)i	-0.054***	-0.004	-0.036**				-0.057***	-0.013	-0.046**				-0.076***	-0.042	-0.076***			
	(-3.56)	(-0.29)	(-2.37)				(-3.28)	(-1.09)	(-2.53)				(-2.78)	(-1.43)	(-2.67)			
(Market MTB)j				0.002**	0.001	0.003**				0.002	-0.000	0.002				0.002	0.002	-0.002
				(2.16)	(1.11)	(2.57)				(1.52)	(-0.38)	(1.63)				(0.81)	(0.80)	(-0.59)
(Market MTB)i				-0.005***	0.003*	-0.003				-0.007***	0.001	-0.005**				-0.005	0.002	-0.002
				(-3.07)	(1.90)	(-1.26)				(-4.10)	(0.38)	(-2.33)				(-1.03)	(0.55)	(-0.38)
(Market R12)j × I_ GDP capita		0.019***						0.012**						0.022*				
		(3.27)						(2.08)						(1.75)				
(Market R12)i × I_ GDP capita		-0.008						-0.014**						-0.028**				
		(-1.36)						(-2.21)						(-2.02)				
(Currency R12)j × I_ GDP capita		0.014						0.008						0.043				
		(0.83)						(0.45)						(1.27)				
(Currency R12)i × I_ GDP capita		-0.071***						-0.062***						-0.050				
		(-3.86)						(-3.18)						(-1.22)				
(Market R12)j × Same Region			-0.016***						0.002						0.014			
			(-2.68)						(0.34)						(1.12)			
(Market R12)i × Same Region			0.006						-0.010						-0.016			
			(0.76)						(-1.05)						(-1.03)			
(Currency R12)j × Same Region			0.093***						0.070***						0.075**			
			(4.01)						(2.92)						(2.08)			
(Currency R12)i × Same Region			-0.076***						-0.054*						-0.034			
			(-2.68)						(-1.68)						(-0.70)			
(Market MTB)j × I_ GDP capita					0.004**						0.005**						0.000	
					(2.04)						(2.50)						(0.08)	
(Market MTB)i × I_ GDP capita					-0.010***						-0.011***						-0.011**	
					(-5.78)						(-5.11)						(-1.98)	
(Market MTB)j × Same Region						-0.001						-0.000						0.011*
						(-0.68)						(-0.15)						(1.74)
(Market MTB)i × Same Region						-0.004						-0.004						-0.008
						(-1.46)						(-1.37)						(-1.07)
Bilateral Trade	0.668***	0.642***	0.654***	0.599***	0.581***	0.595***	0.266	0.244	0.252	0.262	0.241	0.257	-0.189	-0.212	-0.198	-0.106	-0.121	-0.110
	(4.55)	(4.37)	(4.44)	(4.27)	(4.13)	(4.23)	(1.61)	(1.48)	(1.51)	(1.62)	(1.48)	(1.58)	(-0.43)	(-0.48)	(-0.45)	(-0.24)	(-0.27)	(-0.25)
(log GDP per capita)j-i	0.030***	0.028***	0.029***	0.009	0.016*	0.009	0.009	0.007	0.009	-0.001	0.005	-0.001	0.046*	0.046*	0.045*	0.034	0.046*	0.033
	(2.96)	(2.79)	(2.90)	(0.99)	(1.67)	(1.01)	(1.01)	(0.80)	(0.94)	(-0.13)	(0.49)	(-0.11)	(1.82)	(1.83)	(1.80)	(1.26)	(1.66)	(1.24)
(GDP growth)j-i	-0.002	-0.013	-0.007	0.044	0.045	0.046	0.003	-0.008	0.005	0.030	0.030	0.033	-0.020	-0.022	-0.013	-0.002	-0.003	0.006
	(-0.06)	(-0.46)	(-0.23)	(1.57)	(1.62)	(1.64)	(0.09)	(-0.27)	(0.19)	(1.11)	(1.11)	(1.19)	(-0.38)	(-0.41)	(-0.24)	(-0.03)	(-0.06)	(0.12)
Constant	0.078***	0.079***	0.078***	0.026***	0.021***	0.025***	0.054***	0.055***	0.054***	0.029***	0.025***	0.028***	0.042*	0.043*	0.041*	0.044*	0.042*	0.044*
	(6.03)	(6.12)	(6.00)	(3.92)	(3.18)	(3.72)	(4.35)	(4.43)	(4.32)	(3.84)	(3.24)	(3.74)	(1.75)	(1.77)	(1.69)	(1.75)	(1.68)	(1.80)
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	14200	14200	14200	14050	14050	14050	13699	13699	13699	13558	13558	13558	7726	7726	7726	7669	7669	7669
R-squared	0.50	0.50	0.50	0.51	0.51	0.51	0.34	0.34	0.34	0.34	0.34	0.34	0.35	0.35	0.35	0.35	0.35	0.35

Table 6. Mispricing vs fundamental: Interpreting the relation between valuation and cross-border mergers.

The 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 in a particular year. Δ Currency FR12 is the difference in the subsequent 12-month real exchange rate return between the acquirer and the target country. Δ Market FR12 is the difference in the future 12-month real stock market return in the local currency between the acquirer and the target country. Δ (Fitted MTB) is the difference in the predicted value-weighted market-to-book equity ratio between the acquirer and the target country, using future 12-, 24-, 36-month real stock market return and real exchange rate return. Δ (Residual MTB) is the difference in the residuals of value-weighted market-to-book equity ratio between acquirer and target country, using future 12-, 24-, 36-month real stock market return and real exchange rate return. Fitted MTB = 2.017 - 0.033 FR12 - 0.137 FR24 - 0.299 FR36 - 0.255 EXFR12 - 0.247 EXFR24 + 0.487 EXFR36 (N=642, R^2=0.094). I_GDP capita is equal to 1 if the acquirer country's GDP per capita is larger than or equal to that of the target country. Bilateral trade flow is the value of annual imports by the target firm's country from the acquirer firm's country as a fraction of total annual imports by the target firm's country. A deal is in the same region if the target and acquirer's countries are located in the same broadly defined continent (Africa, America, Asia, and Europe). Panel A reports regressions using future12-month stock market and exchange rate returns. Panel B reports regressions using decomposed market-to-book ratio. Heteroskedasticity-robust t-statistics are in parentheses.

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)
(Market FR12)j-i	-0.002	0.002	-0.002	-0.001	0.003	0.001	0.007	0.009	0.009
	(-0.66)	(1.05)	(-0.51)	(-0.25)	(1.47)	(0.27)	(1.06)	(1.40)	(1.15)
(Currency FR12)j-i	0.016***	0.006*	0.013*	0.015**	0.004	0.018***	0.013	0.009	-0.000
	(2.70)	(1.71)	(1.92)	(2.14)	(1.00)	(2.65)	(0.85)	(0.78)	(-0.01)
(Market FR12)j-i × I_GDP capita		-0.008			-0.006			-0.004	
		(-1.23)			(-1.10)			(-0.30)	
(Currency FR12)j-i × I_GDP capita		0.017			0.019			0.009	
		(1.53)			(1.44)			(0.27)	
(Market FR12)j-i × Same Region			-0.001			-0.005			-0.006
			(-0.12)			(-0.67)			(-0.45)
(Currency FR12)j-i × Same Region			0.012			-0.011			0.051
			(0.81)			(-0.61)			(1.27)
(log GDP per capita)j-i	0.032***	0.032***	0.032***	0.016	0.016	0.017	0.034	0.034	0.034
	(2.87)	(2.86)	(2.87)	(1.53)	(1.53)	(1.56)	(1.29)	(1.29)	(1.27)
(GDP growth)j-i	0.040	0.040	0.039	0.056*	0.055*	0.058**	0.041	0.041	0.040
	(1.40)	(1.40)	(1.38)	(1.94)	(1.91)	(2.00)	(0.85)	(0.83)	(0.80)
Bilateral Trade	0.626***	0.627***	0.624***	0.414**	0.414**	0.416**	-0.428	-0.429	-0.454
	(4.02)	(4.03)	(4.01)	(2.42)	(2.43)	(2.44)	(-0.87)	(-0.87)	(-0.92)
Constant	0.077***	0.076***	0.077***	0.046***	0.046***	0.046***	0.060**	0.060**	0.061***
	(6.52)	(6.45)	(6.52)	(4.05)	(3.98)	(4.03)	(2.57)	(2.56)	(2.60)
Year dummies	yes	yes	yes	yes	Yes	Yes	yes	Yes	Yes
Country pair dummies	yes	yes	yes	yes	Yes	Yes	yes	Yes	Yes
Observations	13512	13512	13512	12972	12972	12972	7465	7465	7465
R-squared	0.49	0.49	0.49	0.33	0.33	0.33	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)
(Fitted MTB)$_{j-i}$	0.001	-0.005**	0.001	0.006**	-0.003	0.004	-0.005	-0.004	-0.011
	(0.25)	(-2.27)	(0.36)	(2.11)	(-1.27)	(1.27)	(-0.74)	(-0.57)	(-1.36)
(Residual MTB)$_{j-i}$	0.005***	-0.000	0.004***	0.005***	-0.001	0.004***	0.007**	0.003	0.003
	(4.47)	(-0.51)	(3.33)	(4.37)	(-1.01)	(3.58)	(2.15)	(1.16)	(0.79)
(Fitted MTB)$_{j-i}$ × I_ GDP capita		0.009*			0.016***			-0.004	
		(1.70)			(2.94)			(-0.27)	
(Residual MTB)$_{j-i}$ × I_GDP capita		0.009***			0.010***			0.008	
		(5.10)			(5.01)			(1.27)	
(Fitted MTB)$_{j-i}$ × Same Region			-0.001			0.006			0.017
			(-0.21)			(0.81)			(1.06)
(Residual MTB)$_{j-i}$ × Same Region			0.001			0.001			0.011*
			(0.63)			(0.51)			(1.82)
(log GDP per capita)j-i	0.006	0.007	0.006	-0.005	-0.005	-0.005	0.027	0.027	0.027
	(0.60)	(0.69)	(0.59)	(-0.48)	(-0.44)	(-0.46)	(0.88)	(0.88)	(0.87)
(GDP growth)j-i	0.075***	0.072**	0.076***	0.063**	0.059**	0.065**	-0.025	-0.027	-0.015
	(2.62)	(2.54)	(2.66)	(2.24)	(2.11)	(2.25)	(-0.50)	(-0.54)	(-0.30)
Bilateral Trade	0.506***	0.480***	0.505***	0.446**	0.417**	0.444**	-0.385	-0.414	-0.389
	(3.26)	(3.10)	(3.26)	(2.47)	(2.31)	(2.46)	(-0.86)	(-0.92)	(-0.87)
Constant	0.022***	0.023***	0.022***	0.013*	0.013*	0.013*	0.053***	0.053***	0.053***
	(3.66)	(3.72)	(3.65)	(1.76)	(1.79)	(1.76)	(2.87)	(2.89)	(2.88)
Year dummies	yes	yes	yes	Yes	yes	yes	yes	Yes	Yes
Country pair dummies	yes	yes	yes	Yes	yes	yes	yes	Yes	Yes
Observations	11986	11986	11986	11522	11522	11522	6731	6731	6731
R-squared	0.52	0.52	0.52	0.34	0.34	0.34	0.38	0.38	0.38

Table 7. Deal-level analysis of the intensity of cross-border M&As.

The dependent variable is equal to 1 if the merger is a cross-border deal. The sample includes deals in which both target and acquirer are public. Columns (1) and (2) use the difference in the previous year's firm-level stock returns in U.S. dollars between the acquirer and the target (Firm USR12). Columns (3) and (4) decompose the difference in firm-level stock returns in U.S. dollars into three components: market returns in local currency (Market R12) $_{j-i}$, currency returns (Currency R12) $_{j-i}$, and firm residual stock returns in local currency (Firm USR12-Market R12-Currency R12) $_{j-i}$. A deal is in the related industry if the 3-digit SIC codes of a target and its acquirer overlap. Marginal effects are reported. Heteroskedasticity-robust t-statistics are in parentheses.

	(1)	(2)	(3)	(4)
(Firm USR12)$_{j-i}$	0.012	0.030*		
	(0.85)	(1.83)		
(Market R12) $_{j-i}$			0.321**	0.188
			(2.11)	(1.21)
(Currency R12) $_{j-i}$			0.395	0.449
			(1.28)	(1.39)
(Firm USR12-Market R12-Currency R12) $_{j-i}$			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)
Related 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. Targets vs acquirers in domestic and cross-border M&As.

The dependent variable is equal to one if the merging firm is the acquirer and to zero if the firm is the target. The sample contains deals in which both target and acquirer are public. Panel A presents domestic mergers while Panel B presents cross-border mergers. The first two columns in each panel use the firm-level stock returns in U.S. dollars (Firm USR12). The last two columns of each panel decompose firm-level stock returns in U.S. dollars into three components: 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. Heteroskedasticity-robust t-statistics are in parentheses.

	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

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