Shareholders at the Gate? Institutional Investors and Cross-Border Mergers and Acquisitions

Miguel A. Ferreira
Universidade Nova de Lisboa

Massimo Massa
INSEAD

Pedro Matos
University of Southern California

We study the role of institutional investors in cross-border mergers and acquisitions (M&As). We find that foreign institutional ownership is positively associated with the intensity of cross-border M&A activity worldwide. Foreign institutional ownership increases the probability that a merger deal is cross-border, successful, and the bidder takes full control of the target firm. This relation is stronger in countries with weaker legal institutions and in less developed markets, suggesting some substitutability between local governance and foreign institutional investors. The results are consistent with the hypothesis that foreign institutional investors act as facilitators in the international market for corporate control; they build bridges between firms and reduce transaction costs and information asymmetry between bidder and target. We conclude that cross-border portfolio investments of institutional money managers and cross-border M&As are complements in promoting financial integration worldwide. (*JEL* G15, G23, G34)

International capital flows have reached peak levels in recent years. As countries have opened their capital markets to foreign investors, we have seen a boom in both foreign direct investment (FDI) and portfolio flows (Bekaert and

We thank Michael Weisbach (the editor), two anonymous referees, Martinj Cremers, Mariassunta Giannetti, Todd Gormley, John Griffin, Andrew Karolyi, Simi Kedia, Anzhela Knyazeva, Florencio Lopez-de-Silanes, Marina Martynova, Enrico Perrotti, Jose-Luis Peydro, Stefano Rossi, Stefan Ruenzi, Michael Schill, and Laura Starks; participants at the University of Texas–Austin Institutional Investors Conference, the 18th Financial Economics and Accounting Conference at New York University, the ninth Conference of the ECB-CFS Research Network, the 2007 European Finance Association meetings in Ljubljana, the Third McGill Conference on Global Asset Management Conference, the Korean Development Institute Conference on "Market for Corporate Control: Comparative Perspectives," and the Third Financial Intermediation Research Society Conference; and seminar participants at Barclays Global Investors, Bruegel, European Central Bank, European Union Commission, Stockholm School of Economics, University of Amsterdam, University of Cologne, and University of Southern California. This research is supported by a research grant from the Fundação para a Ciência e Tecnologia (FCT/POCI 2010). Send correspondence to P. Matos, USC Marshall School of Business, 3670 Troussale Parkway, BRI 308, Los Angeles, CA 90089-1427; telephone: (213) 740-6533; fax: (213) 740-6650. E-mail: pmatos@usc.edu.

doi:10.1093/rfs/hhp070 Advance Access publication September 12, 2009

Harvey 2000; Stulz 2005). More than half of the total FDI has taken the form of cross-border mergers and acquisitions (M&As; Organization for Economic Co-Operation and Development 2007). For the first time in recent history, in 2007, the value of cross-border deals equaled the value of intraborder M&As (*Economist* 2007a). At the same time, a more active international role of institutional money managers has taken cross-border portfolio investment to record levels, representing an unprecedented internationalization of the shareholder base of corporations worldwide.[1]

We investigate how these two forms of international capital flows (cross-border portfolio investment and M&As) interact. Anecdotal evidence suggests that the presence of foreign institutional investors is especially pivotal when control of assets is being transferred from local to foreign companies. In the largest takeover battle to date—the hostile bid by Vodafone (a UK company) for Mannesmann (a German company) in 1999—the success of Vodafone's offer has been attributed to the fact that Mannesmann had the most international ownership structure of any German firm; 68% of its shares were held by foreigners, mainly large institutional investors based in the UK and the US (Kedia 2001). Foreign shareholders were reported to clearly favor the Vodafone deal.[2] Another high-profile cross-border M&A was the 2007 takeover of ABN AMRO, a Dutch bank. In this case, a UK-based hedge fund, The Children's Investment Fund (TCIF), pressed ABN AMRO managers to search for a foreign bidder, which ended up being Barclays, a UK bank (*Economist* 2007b). Eventually, the takeover contest was won by a consortium led by the Royal Bank of Scotland, another UK bank. These two high-profile M&A deals are examples of the role that international institutional investors play in these cross-border transactions.

We entertain two hypotheses. The first hypothesis (substitution hypothesis) posits that the presence of foreign investors as shareholders of corporations makes takeovers by foreign bidders less necessary. One reason is that institutions may provide effective corporate monitoring. Institutional investors like TIAA CREF and CalPERS in the United States (Carleton, Nelson, and Weisbach 1998; Gillan and Starks 2007), Hermes in the UK (Becht et al. 2009) and, more recently, hedge funds (Brav et al. 2008; Greenwood and Schor 2009; Klein and Zur 2009) have been pioneers in shareholder activism, using the proxy process and other approaches to pressure corporate managers for a change. Foreign institutions potentially play more of a role in prompting changes in corporate governance practices than domestic institutions (Gillan and Starks 2003; Ferreira and Matos 2008). For example, Fidelity is reported

[1] Institutional money managers have become major players in world markets, holding over US$20 trillion in equities, or close to 50% of the world market capitalization, according to International Monetary Fund (2005).

[2] Prior to the Vodafone takeover, Mannesmann had itself acquired Orange (a UK mobile phone operator) in a shares swap. Thus, the ownership structure of Mannesmann had many more foreign institutions than was typical for a German firm. In fact, all shareholders with holdings above 0.1% were institutional money managers, and German funds had less control than UK and US funds (Hopner and Jackson 2004).

to be more aggressive on governance issues in Europe, but it is relatively acquiescent in the United States, where it manages several corporate pension accounts (*Business Week* 2006; Davis and Kim 2007). If foreign institutions act to implement better governance, their presence will reduce the need for corporate control transactions to resolve agency issues.

Another reason why the presence of foreign institutions may reduce the need for cross-border M&As is that, as capital markets open up and investors are able to invest abroad, we expect the "diversifying" role of cross-border M&As to become less important. Adler and Dumas (1975) and Errunza and Senbet (1984) advance theoretical arguments for corporations to diversify internationally based on the idea of capital market imperfections. If investment barriers prevent investors from purchasing foreign stocks directly, there is a role for corporations to diversify internationally through acquisitions.[3] In addition, as portfolio investors become more agile, there is a reduction in misvaluations across countries and therefore in the scope for cross-border arbitrage by multinational firms through M&As, as suggested by Baker, Foley, and Wurgler (2009).

The second hypothesis (facilitation hypothesis) posits that foreign portfolio investors build bridges between firms internationally and that their presence as shareholders of corporations actually facilitates cross-border M&As. This is due to several concurring reasons. First, foreign institutions can help to reduce the bargaining and transaction costs associated with the higher asymmetry of information between bidders and targets in international takeover bids. Foreign institutions that are already present in the target country can fill the informational gap between a foreign bidder and the target company. In contrast, local shareholders are less likely to entertain cross-border deals due to familiarity bias (e.g., distance, cultural, and language) or preference for local shares (Coval and Moskowitz 2001; Grinblatt and Keloharju 2001). The second reason is that a large foreign investor presence can be pivotal to alleviate the free-rider problem that occurs when the ownership is divided over many shareholders (Grossman and Hart 1980; Shleifer and Vishny 1986). The third reason is that domestic institutional investors have less of an arm's-length relation with local corporations. This implies that domestic institutional money managers are more likely to have business ties to local corporations, to share the benefits of control, and to be more sympathetic to incumbent management (Gillan and Starks 2003; Stulz 2005; Davis and Kim 2007). In contrast, foreign institutions, less encumbered by ties with management or by private benefits, can act as facilitators to foreign takeover bids. These arguments suggest that the presence of foreign institutions should make a transaction between firms located in two different countries more likely.

---

[3] The home-bias literature suggests that investors allocate too little of their portfolios to international stocks (French and Poterba 1991; Lewis 1999; Karolyi and Stulz 2003). Corporate internationalization could substitute for investors' international portfolio diversification. However, empirical evidence on the shareholder value benefits of international diversification at the corporate level is mixed (Agmon and Lessard 1977; Errunza and Senbet 1984; Fatemi 1984; Doukas and Travlos 1988; Morck and Yeung 1991; Denis, Denis, and Yost 2002).

To test these hypotheses, we use a comprehensive data set of international institutional equity holdings over the 2000–2005 period. This data set includes holdings at the investor-stock level of over 5300 institutions in 26 countries, with positions totaling US$18 trillion as of December 2005. The sample of M&As includes 3631 completed transactions, of which close to 22% are cross-border deals.

We find that cross-border M&As are more likely to occur in countries where foreign institutions hold a higher fraction of the local stock market. Previous studies on cross-border M&As focus on country-level governance aspects. Rossi and Volpin (2004) find that targets in cross-border M&A deals are more frequently from countries with weaker investor protection than their acquirers' country, suggesting a convergence in governance standards. Starks and Wei (2004) and Bris and Cabolis (2008) find a higher takeover premium when investor protection in the acquirer's country is stronger than in the target's country. Even when we take into account factors such as legal environment and economic development, which are major determinants of cross-border M&A patterns, we still find that foreign institutional ownership significantly increases the probability that a local firm will be targeted by a foreign bidder. This effect is economically significant; a 10 percentage point increase in foreign ownership would double the fraction of cross-border M&As (relative to the total number of M&As in a country).

We also use bilateral data on M&As and portfolio investment by forming pairs of bidder and target countries to test our hypotheses. We find that ownership by institutions from the bidder country in the target country facilitates bilateral M&A deals. This provides direct evidence of the facilitation role played by institutions when the nationality of the shareholders in the target coincides with the nationality of the bidders. The results are robust to the potential endogeneity of institutional ownership using instrumental variables methods. We also use a quasi-natural experiment—the revision of the MSCI World index country weights implemented in 2002—that gives an exogenous variation in institutional ownership not directly related with M&A activity.

Next, we investigate how country-level governance characteristics interact with foreign institutions in determining cross-border M&A patterns. We find that the effect of foreign institutional ownership in cross-border M&A activity is more pronounced in countries with weaker legal institutions, with lower shareholder protection, and in less developed markets. These findings suggest some substitutability between country-level governance and foreign institutional investors.

In the final section, we examine cross-border M&As at the deal level, focusing directly on the presence of foreign institutions in the target and acquirer firms. We find that a larger presence of foreign institutions in the target firm, as well as in the acquirer, is positively associated with the likelihood that a bid is cross-border. Domestic institutional ownership does not have a similar effect. We also find evidence that foreign institutions make it more likely

that a cross-border deal is successfully completed and that the bidder takes over all the shares of the target, thereby changing the nationality of the target. These results support the hypothesis that foreign institutional investors act as facilitators in cross-border M&As, effectively building bridges between firms internationally.

To complete our analysis, we investigate cross-border M&A announcement returns. We test whether foreign ownership induces value creation in international M&As by looking into the combined returns of target and acquirer firms, as well as the returns earned by different investor groups. International investors that hold stocks in both target and acquirer firms seem to be compensated with positive abnormal returns in cross-border deals. Moreover, the combined return is positively associated with foreign institutional ownership in the target and acquirer firms, and the split of the gain between acquirer and target is related to the differential stake of foreign institutions in the acquirer versus the target. Overall, we find that cross-border M&As with a higher presence of foreign institutions as shareholders generate more economic gains.

The importance of institutional investors around the world has not gone unnoticed in the academic literature. Gillan and Starks (2003) and Ferreira and Matos (2008) argue that foreign institutional investors play a special governance role in corporations worldwide, as they drive up firm valuation and performance and reduce capital expenditures. Their results show that foreign institutions are able to exert pressure because they have fewer business relations with the firm to jeopardize, unlike domestic institutions. Our findings offer more direct evidence of the foreign institutional investors' role in firm governance by facilitating cross-border M&A transactions. This complements a number of studies examining the role of institutions in M&As in the US takeover market (Stulz, Walkling, and Song 1990; Ambrose and Megginson 1992; Gaspar, Massa, and Matos 2005; Chen, Harford, and Li 2007). To our knowledge, our paper is the first to study the importance of corporate ownership structures in cross-border M&As, in particular the role of institutional investors.

The remainder of the paper is organized as follows. Section 1 presents the institutional holdings data set and the sample of M&A events. In Section 2, we conduct country-level tests of the relation between cross-border M&A activity and institutional ownership. Section 3 discusses country-pair tests using bilateral data on M&A transactions and institutional portfolio investment. In Section 4, deal-level tests are discussed. Section 5 concludes and discusses the implications of our findings.

1. Data

Table 1 provides variable definitions and data sources. Our sample starts with all firms in the Datastream/WorldScope database in the 2000–2005 period. The first two columns of Table 2 present the number and market capitalization

Table 1
Description of the variables

Variable	Description
	Panel A: Country-level M&A variables
Volume of M&A	Number of listed firms targeted in M&A as a percentage of the total number of listed firms (SDC).
Cross-border M&A ratio	Number of cross-border M&As (with a foreign acquirer) as a percentage of the number of deals that target a country's firms (SDC).
Cross-border M&A pair	Number of deals in which the target is from country i and the acquirer is from country j ($i \neq j$) as a percentage of the total number of deals with target firm from country i (SDC).
	Panel B: Country-level institutional ownership variables
Foreign institutional ownership	Stock holdings in country i by institutions domiciled in a country different from country i where the firm is incorporated as a percentage of the market capitalization of country i (FactSet).
Domestic institutional ownership	Stock holdings in country i by institutions domiciled in the same country i where the firm is incorporated as a percentage of the market capitalization of country i (FactSet).
Foreign institutional blockholders	Stock holdings in country i above 5% of a firm's market capitalization by institutions domiciled in a country different from country i where the firm is incorporated as a percentage of the market capitalization of country i (FactSet).
Foreign-to-domestic institutional ownership ratio	Holdings (end-of-year) by institutions domiciled in a different country from country i where the stock is issued relative to holdings by institutions domiciled in country i (FactSet).
Acquirer-to-other countries institutional ownership ratio	Holdings (end-of-year) by institutions domiciled in the same country where the acquirer firm is incorporated relative to holdings by institutions domiciled in countries different from that of the acquirer firm (FactSet).
Cross-country institutional ownership	Stock holdings in country i (country of target firm) by institutions from country j (country of acquirer firm) as a percentage of market capitalization of country i (FactSet).
	Panel C: Country-level control variables
GDP per capita	Gross domestic product per capita in US dollars (WDI).
GDP growth	Growth rate of gross domestic product in US dollars (WDI).
Market return	Stock market index return calculated in US dollars (Datastream).
Trade/GDP	Sum of exports and imports of goods and services as a percentage of gross domestic product (WDI).
Common law	Dummy variable that equals one when a country has common law legal origin, zero otherwise (La Porta et al. 1998).
Antidirector rights	Index of shareholder protection (La Porta et al. 1998).
Legal	Product of the antidirector rights index and the rule of law index (La Porta et al. 1998).
Securities law	Sum of the disclosure requirements, liability standards, and public enforcement measures (La Porta, Lopez-de-Silanes, and Shleifer (2006).
Accounting standards	Index of the quality of the accounting reporting (La Porta et al. 1998).
Quality of institutions	Sum of ICRG political risk subcomponents: corruption, law and order, and bureaucratic quality.
Enforcement of insider trading laws	Number of years since a country's first insider trading enforcement case, zero if there has been no enforcement case (Bhattacharya and Daouk 2002).
Insider ownership	Number of shares held by insiders as a proportion of the number of shares outstanding (average across firms) (WorldScope).
Takeover index	Index of the friendliness of takeover laws to investors (Nenova 2006).

Market capitalization/GDP	Stock market capitalization as a percentage of gross domestic product (World Bank).
Stock market turnover	Stock market trading volume as a percentage of market capitalization (Datastream).
Firm-specific return variation	Median relative firm-specific stock return variation estimated using an international two-factor model for US dollar weekly excess.
Same language	Dummy variable that equals one when target and acquirer countries share the same official language, zero otherwise (World Factbook).
Same region	Dummy variable that equals one when target and acquirer countries are from the same region, zero otherwise (World Factbook).
Bilateral trade	Value of imports by target country i from acquirer country j as a percentage of total imports by target country i (Comstat).
Industry structure	Measure of industrial structure overlap between target and acquirer countries, defined as the sum of the squared differences in industry (stock market) weights between country pairs (Datastream).
	Panel D: Country-level instrumental variables for institutional ownership
MSCI stocks/Number of stocks	Number of firms with shares included in the MSCI World index as a percentage of the total number of stocks (MSCI).
US cross-listings/Number of stocks	Number of firms with shares cross-listed on US exchanges via ordinary listings and level 2 and 3 ADRs as a percentage of the total number of stocks (Depositary institutions and stock exchanges).
Dividend yield	Dividend yield (value-weighted average across stocks) (Datastream).
Dividend tax rate	Statutory dividend tax rate (OECD).
Tax treaty dummy	Dummy variable that equals one if there is a tax treaty between country i and country j (Tax Analysts).
Stock market liberalization	Number of years since a country's official stock market liberalization (Bekaert and Harvey 2000).
Short selling	Dummy variable that equals one if short selling is practiced (Bris, Goetzmann, and Zhu 2007).
MSCI rebalancing	Change in MSCI weight due to the adoption of free float weights, rather than market capitalization weights, effective in 2002 and thereafter, and zero before 2002 (Hau, Massa, Peress 2006).
	Panel E: M&A deal-level variables
Cross-border target dummy variable	Dummy variable that equals one if a M&A deal is cross-border, and zero otherwise (SDC).
Cross-border target–acquirer pairs	Dummy variable that equals one if a there is a M&A cross-border deal between a target from country i and an acquirer from country j, and zero for other countries different from j (SDC).
Success dummy variable	Dummy variable that equals one if a M&A bid is successful (status is completed), and zero otherwise (SDC).
Full control dummy variable	Dummy variable that equals one if a M&A bid is for 100% of shares (percentage sought), and zero otherwise (SDC).
Cumulative abnormal return	Cumulative abnormal return in US dollars in a event window around the deal announcement day measured relative to a two-factor international market model estimated using a year of prior daily data (Datastream).
Combined cumulative abnormal return	Combined (market value weighted) target and acquirer cumulative abnormal return in US dollars.
Cumulative abnormal return difference (acquirer–target)	Difference between acquirer cumulative abnormal dollar return and target cumulative abnormal dollar return; dollar returns are given by the product of market capitalization by cumulative abnormal return.
Cumulative abnormal return ratio (acquirer/(target+acquirer))	Ratio of acquirer cumulative abnormal dollar return to target plus acquirer cumulative abnormal dollar return (only defined when both target and acquirer cumulative abnormal returns are positive).

(*continued overleaf*)

Table 1
(Continued)

Variable	Description
Intraindustry M&A	Dummy variable that equals one if acquirer and target firms are in the same one-digit SIC industry (Datastream).
Cash-only dummy variable	Dummy variable that equals one if the method of payment used in a M&A transaction is only cash (SDC).
	Panel F: Firm-level institutional ownership variables
Foreign institutional ownership	Stock holdings by institutions domiciled in a country different from country *i* where the firm is incorporated as a percentage of the market capitalization (FactSet).
Domestic institutional ownership	Stock holdings by institutions domiciled in the same country *i* where the firm is incorporated as a percentage of the market capitalization (FactSet).
Foreign institutional ownership blockholders	Stock holdings above 5% of a firm's market capitalization by institutions domiciled in a country different from country *i* where the firm is incorporated as a percentage of the market capitalization (FactSet).
Foreign-to-domestic institutional ownership ratio	Holdings (end-of-year) by institutions domiciled in a country different from country *i* where the stock is issued relative to holdings by institutions domiciled in country *i* (FactSet).
Acquirer-to-other countries institutional ownership ratio	Holdings (end-of-year) by institutions domiciled in the same country where the acquirer firm is incorporated relative to holdings by institutions domiciled in countries different from that of the acquirer firm (FactSet).
Other countries-to-total institutional ownership ratio	Holdings (end-of-year) by institutions domiciled in other countries different from where acquirer or target firms are incorporated relative to holdings by all institutions (FactSet).
Cross-country institutional ownership (i, j) target	Holdings (end-of-year) by institutions from country j (country of acquirer firm) in the target firm as a percentage of the target market capitalization (FactSet).
Cross-country institutional ownership (i, j) acquirer	Holdings (end-of-year) by institutions from country i (country of target firm) in the acquirer firm as a percentage of the acquirer market capitalization (FactSet).
Foreign institutional ownership difference (acquirer–target)	Difference between acquirer foreign institutional dollar ownership and target foreign institutional dollar ownership (FactSet).
Foreign institutional ownership ratio (acquirer/(target+acquirer))	Ratio of acquirer foreign institutional dollar ownership to acquirer plus target institutional dollar ownership (FactSet).
	Panel G: Firm-level control variables
Size (log)	Market capitalization in US dollars (WorldScope item 08001).
Book-to-market (log)	Book-to-market equity ratio defined as market value of equity (WorldScope 08001) divided by book value of equity (WorldScope item 03501).
Investment opportunities	Two-year geometric average of annual growth rate in net sales in US dollars (WorldScope 01001).
Stock return	Stock return (Datastream item RI).
Return-on-equity	Return-on-equity (WorldScope item 08301).
Leverage	Ratio of total debt (WorldScope item 03255) to total assets (WorldScope item 02999).
Cash	Ratio of cash and short term investments (WorldScope item 02001) to total assets (WorldScope item 02999).
Share turnover	Stock market trading volume defined as number of shares traded (Datastream item UVO) divided by number of shares outstanding (Datastream item NOSH).

Foreign sales	Foreign net sales (WorldScope item 07101) as a proportion of total net sales (WorldScope 01001).
Insider ownership	Number of shares held by insiders as a proportion of the number of shares outstanding (WorldScope item 08021).
Governance score	Corporate governance score (ISS).
	Panel H: Firm-level instrumental variables for institutional ownership
MSCI	Dummy variable that equals one if a firm's shares are included in the MSCI World index (MSCI).
US cross-listing	Dummy variable that equals one if a firm's shares are cross-listed on US exchanges via ordinary listings and level 2 and 3 ADRs (Depositary institutions and stock exchanges).
Dividend yield	Dividend yield (WorldScope item 09404).
Dividend tax rate	Statutory dividend tax rate of a firm's country (OECD).
Number of tax treaties	Number of dividend tax treaties of a firm's country with all other countries (Tax Analysts).
Stock market liberalization	Number of years since a firm's country's official stock market liberalization (Bekaert and Harvey 2000).
Short selling	Dummy variable that equals one if short selling is practiced in a firm's country (Bris, Goetzmann, and Zhu 2007).

Country-level data items are measured at the annual frequency. Firm-level items are measured at the year-end (or quarter-end for ownership) prior to the deal announcement.

Table 2
Institutional ownership and mergers and acquisitions by target country

	Sample of firms		Institutional ownership (%)			All M&A deals				Cross-border M&A deals			
						Number of deals		Value of deals		Number of deals		Value of deals	
	Number of firms	Market cap.	Total	Domestic	Foreign	Number	% firms	Value	% market cap.	Number	% deals	Value	% deals value
Australia (AU)	1,753	584,469	6.4	0.9	5.5	195	11.1	77,389	13.2	35	17.9	18,484	23.9
Austria (AT)	180	62,072	8.7	0.7	8.0	6	3.3	8,821	14.2	3	50.0	8,309	94.2
Belgium (BE)	259	219,469	10.5	3.3	7.2	13	5.0	30,959	14.1	4	30.8	1,027	3.3
Canada (CA)	1,746	888,813	38.4	20.6	17.8	425	24.3	188,967	21.3	115	27.1	107,353	56.8
Denmark (DK)	314	109,511	18.7	7.4	11.3	17	5.4	16,930	15.5	4	23.5	2,977	17.6
Finland (FI)	223	202,065	35.5	3.3	32.2	12	5.4	13,788	6.8	5	41.7	10,390	75.4
France (FR)	1,491	1,556,741	18.3	5.8	12.5	85	5.7	125,561	8.1	31	36.5	30,113	24.0
Germany (DE)	1,308	1,122,865	17.5	7.0	10.5	73	5.6	57,110	5.1	42	57.5	28,666	50.2
Greece (GR)	371	108,190	5.5	0.3	5.3	15	4.0	2,742	2.5	3	20.0	842	30.7
Hong Kong (HK)	1,074	519,263	8.7	1.5	7.3	24	2.2	45,111	8.7	6	25.0	6,356	14.1
India (IN)	393	218,769	10.3	1.6	8.7	39	9.9	2,861	1.3	8	20.5	770	26.9
Ireland (IE)	127	89,732	30.4	0.6	29.8	4	3.1	1,858	2.1	4	100.0	1,858	100.0
Italy (IT)	456	676,377	12.2	2.5	9.8	20	4.4	19,685	2.9	6	30.0	1,241	6.3
Japan (JP)	4,070	3,414,759	7.7	1.5	6.2	251	6.2	148,564	4.4	9	3.6	1,259	0.8
Luxembourg (LU)	54	47,110	16.9	0.7	16.2	3	5.6	4,723	10.0	3	100.0	4,723	100.0
Netherlands (NL)	372	748,685	22.4	1.2	21.2	28	7.5	38,176	5.1	20	71.4	30,864	80.8
Norway (NO)	330	111,425	18.2	6.6	11.6	27	8.2	8,829	7.9	18	66.7	4,750	53.8
Poland (PL)	104	40,035	12.4	2.2	10.1	14	13.5	1,189	3.0	11	78.6	1,111	93.4
Portugal (PT)	137	66,648	9.3	1.2	8.1	7	5.1	828	1.2	5	71.4	349	42.2
Singapore (SG)	617	168,734	8.8	1.0	7.7	25	4.1	16,773	9.9	6	24.0	3,904	23.3
South Africa (ZA)	772	220,671	9.5	2.3	7.1	34	4.4	9,603	4.4	7	20.6	5,999	62.5
Spain (ES)	278	493,337	15.0	1.9	13.2	18	6.5	15,070	3.1	6	33.3	5,067	33.6
Sweden (SE)	550	295,888	29.2	16.3	12.8	35	6.4	10,436	3.5	17	48.6	4,816	46.1
Switzerland (CH)	392	781,184	17.8	3.0	14.8	17	4.3	9,556	1.2	9	52.9	6,572	68.8
UK	3,592	3,047,705	18.8	7.5	11.3	228	6.3	433,782	14.2	82	36.0	250,091	57.7
US	11,753	13,992,086	73.3	67.9	5.4	1,714	14.6	2,311,874	16.5	224	13.1	314,021	13.6
All countries	32,716	29,786,605	43.0	34.6	8.4	3,329	10.2	3,601,183	12.1	683	20.5	851,910	23.7
All countries (ex-US)	20,963	15,794,519	16.1	5.0	11.1	1,615	7.7	1,289,310	8.2	459	28.4	537,889	41.7
Other countries	7,340	2,333,791	17.0	0.1	16.9	302	4.1	140,430	6.0	106	35.1	97,973	69.8
All countries (w/other)	40,056	32,120,396	41.1	32.1	9.0	3,631	9.1	3,741,613	11.6	789	21.7	949,883	25.4

This table presents summary statistics of our sample by target country: average number of firms and market capitalization (in millions US dollars); total, domestic, and foreign institutional ownership (average) as a percentage of market capitalization; number of completed M&A deals, percentage of listed firms targeted in deals, value of transactions of deals (in millions US dollars), and value of transactions of deals as a percentage of market capitalization; and number of completed cross-border deals, number of cross-border deals as a percentage of the total number of deals, value of transactions of cross-border deals (in millions US dollars), and value of transactions of cross-border deals as a percentage of total value of transactions. The sample period is from 2000 to 2005.

of firms by country. There are 40,056 firms overall with an aggregate market capitalization of US$32 trillion (sample period averages).

1.1 Institutional investor holdings data

The institutional investor holdings data are drawn from the FactSet LionShares Global Ownership database, a leading information source for global institutional ownership. FactSet compiles institutional ownership from public filings by investors (such as 13-F filings in the United States), company annual reports, stock exchanges, and regulatory agencies around the world. Institutions are defined as professional money managers, including mutual fund companies, pension funds, bank trusts, and insurance companies.[4]

We use the historical filings of the FactSet LionShares Global Ownership database over 2000–2005. We consider all types of stock holdings (common shares, preferred shares, ADR, GDR, and dual listings). We handle the issue of different reporting frequency by institutions from different countries by getting the latest holdings update at each year-end. The data cover institutions in 26 different countries (K) and stock holdings in 48 destination country stock markets (J).[5] This data set offers a unique worldwide $K \times J$ panel data (when aggregated at the country level) for the 2000–2005 period. FactSet provides holdings data by over 5000 institutions on over 35,000 stocks worldwide for a total market value of US$18 trillion as of December 2005.

Table 2 reports the average fraction of each country's stock market capitalization that is held by institutions. Institutional investors are the most prominent in the United States, where over 70% of the US market capitalization is in the hands of institutional money managers.[6] Global institutional portfolio managers also hold high proportions of stock market capitalization in countries such as Canada (38%) and Sweden (29%). Overall, institutional ownership represents over 40% of the total world stock market capitalization in our sample period.[7]

In many countries, holdings of foreign institutional investors exceed holdings of local money managers. The extreme case is Finland, where the market is

---

[4] US-based institutions are by far the largest group of professional managers of equity assets. Leading institutions are fund families (Barclays Global Investors, Capital Research and Management, and Vanguard in the United States), divisions of banks (Dresdner Bank Investment Management in Germany, Credit Agricole in France, and UBS in Switzerland), insurance companies (AXA in France), and pension funds (Canada Pension Plan or the Norway's State Petroleum Fund). The top five institutions by country and a more detailed description of the data can be found in Ferreira and Matos (2008).

[5] For a group of 21 other countries (e.g., Argentina, Brazil, China, and Czech Republic), FactSet does not have domestic institutional holdings coverage but rather only holdings by foreign institutions on local stocks. We do not include these countries in our main tests, although we include them in some robustness tests.

[6] Gillan and Starks (2007) report that institutional ownership of US stocks has grown from 10% in the 1950s to over 70% in recent years. For a consistency check, we compare the domestic ownership by US institutions as reported by Thomson Financial Services (TFS, formerly CDA/Spectrum) 13-F filings used in Gompers and Metrick (2001) with the FactSet holdings. The two databases yield consistent holdings.

[7] It is important to note that not all shares are held by institutions, as a significant fraction is closely held by other types of blockholders (such as families and banks) in some countries. Correcting for the aggregate percentage of closely held shares, institutional ownership represents roughly 50% of the world market float in our sample period.

dominated by a very large-cap, Nokia, that attracts many foreign institutions. Domestic institutions are prevalent in the United States, Canada, and Sweden.[8]

We use two measures of institutional ownership in our tests:

- Foreign institutional ownership: The percentage of shares held by all institutions domiciled in a country different from the one in which the company is incorporated.
- Domestic institutional ownership: The percentage of shares held by all institutions domiciled in the same country in which the company is incorporated.

Panel A of Table 3 reports average institutional holdings in the 2000–2005 period by stock market destination country (rows) and country of origin of the institution (columns). US institutions hold the largest pool of assets, but in non-US stock market destinations, domestic and non-US foreign institutions also matter.

Ferreira and Matos (2008) analyze the comprehensiveness and the limitations of FactSet's data coverage. While the coverage is somewhat lower than in the IMF country-level statistics, it is well above the holdings of the mutual funds segment as used in recent papers (e.g., Chan, Covrig, and Ng 2005; Khorana, Servaes, and Tufano 2005). There are exceptions, however, as in the case of Asian and Latin American countries where coverage seems to be better for mutual funds than for other institutions such as pension funds. In terms of cross-border equity holdings, the aggregate values from FactSet LionShares Global Ownership database (in Panel A of Table 3) are comparable (albeit slightly lower) with the equivalent values in the Coordinated Portfolio Investment Survey (CPIS) conducted by the IMF.[9]

1.2 Mergers and acquisitions data

Our sample includes all M&As announced between 2000 and 2005, as recorded in the Securities Data Corporation (SDC) Platinum database. We select only acquisitions where both target and acquirer firms are publicly listed. Following Rossi and Volpin (2004) and Bris and Cabolis (2008), we select M&A deals that meet the following criteria: (1) the transaction is for the majority of the shares of the target firm (the ownership percentage sought after the deal is above 50%); and (2) the deal is completed by the end of our sample period. We exclude leveraged buyouts, spin-offs, recapitalizations, self-tender offers,

[8] Patterns of domestic and foreign institutional ownership may be explained in part by regulatory constraints. Pension funds, for example, are often subject to "prudent man" rules, which include limits on exposure to equities and foreign investments. A report by the World Bank (2000) finds fewer restrictions on asset allocation in English-speaking countries such as the US and the UK. Restrictions to overseas investments vary considerably across countries, from an outright ban (France in the case of insured funds), to limits of 10% (Sweden and Canada) and 30% (Japan and Switzerland), and to no limit (Italy and Netherlands).

[9] The slightly lower values can be explained by the fact that FactSet only covers the institutional segment, while CPIS covers all types of investors.

Table 3
Cross-country institutional stock holdings and number of mergers and acquisitions

Destination country	Origin country																								
	AU	AT	BE	CA	DK	FI	FR	DE	GR	HK	IN	IE	IT	JP	LU	NL	NO	PL	PT	SG	ZA	ES	SE	CH	UK	US	Total
Panel A: Institutional stock holdings																											
AU	5			1				1		1			1				1			2				1	5	17	37
AT								1																	1	2	5
BE			7				2	3								1								1	3	4	23
CA				183			2	1								1	1							1	7	141	34
DK					8			1									1						1		3	5	20
FI			1	1		7	4	8					1			1	1					1	3	1	6	35	71
FR			5	4	1	1	91	42				3	6		1	4	3					3	3	7	35	72	283
DE			3	2	1	1	11	79				2	4		1	3	2					2	2	6	23	50	194
GR								1																	2	2	6
HK				1				1		8				1		1				3					6	18	42
IN										1	3									1					2	13	22
IE				1			1	2				1													5	16	27
IT			1	1	1		6	13				4	17		1	1	1					1	1	2	13	19	82
JP			1	7	1		4	12		2		2	5	52	1	3	4			3		1	3	6	33	114	256
LU							1																		1	4	8
NL			3	3	1	1	9	25				1	4		1	9	2					2	2	5	27	70	165
NO								1									7						1		3	7	20
PL																		1							1	1	5
PT								1											1						1	2	6
SG								1		1										2					2	6	14
ZA																					5				3	10	20
ES			1	1			5	13				1	2			1	1					9	1	2	12	21	72
SE			1	1	1	1	1	3					1			1	2						48	1	7	17	85
CH			2	3	1	1	4	16				1	3		1	3	2					1	3	23	20	51	136
UK		1	5	11	3	2	11	35		1		4	8	1	2	7	8				1	2	9	8	229	217	564
US	2	1	8	84	7	1	241	52				18	16	32	4	35	16			1		4	19	21	178	9,502	10,246
Total	8	5	40	306	28	17	395	313	1	16	3	39	70	88	16	74	54	1	2	12	7	25	96	88	628	10,417	12,750

(*continued overleaf*)

Table 3
(Continued)

Target country	Acquirer country																									
	AU	AT	BE	CA	DK	FI	FR	DE	GR	HK	IN	IE	IT	JP	LU	NL	NO	PL	PT	SG	ZA	ES	SE	CH	UK	US	Other	Total
Panel B: Number of mergers and acquisitions (M&A)																												
AU	160			7				1					1							1	5			2	5	9	4	195
AT		3						1																	2			6
BE			9								1					1							1			1		13
CA	3			310	1	1	4	2							1		1				2	1		2	16	75	6	425
DK	1				13																		2			1		17
FI						7		1															2		1	1		12
FR			2	1	1		54	5					3	2	1	2						2	1	3	2	6		85
DE		3	1	1		1	2	31					3		1	2	1						1	3	6	16	1	73
GR							1		12																1	1		15
HK										18				1						1						1	3	24
IN		1									31					1				1			1			2	2	39
IE																									2		2	4
IT								2					14													3	1	20
JP			2				1			1				242											3	2		251
LU							1																			2		3
NL		1	4		2		1						1			8						3	1	2	1	4		28
NO				1			2	1								1	9						5		1	2	5	27
PL		1	1				2	1										3					3			3		14
PT							1												2			4						7
SG				1						1	1			1				1		19						1		25
ZA				1									2								27				4			34
ES							1						1			1						12		1	2			18
SE				2	1	1								1		1							18	1	2	7	1	35
CH			1					2		1						1							1	8	1	2		17
UK	6		1	3	3		7	9					2	1		3				3	2	2	1	4	146	32	3	228
US	9		3	52	2	6	13	18		3	3		6	4		14	2			1	1	3	6	6	44	1,490	28	1,714
Other	8	1	2	6	3	1	11	4	3		1		4	1	1	2	3	1	2	4	2	6	4	2	11	23	196	302
Total	187	10	26	385	26	17	101	78	15	24	37	0	37	253	4	37	16	5	4	30	39	33	47	34	250	1,684	252	3,631

Panel A reports the distribution of the market value of stock holdings (average over the sample period in billions US dollars) by stock market destination country (rows) and institution origin country (columns). Panel B reports the distribution of the total number of M&A deals between the target firm country (rows) and acquirer firm country (columns) over the sample period. The sample period is from 2000 to 2005. Refer to Table 2 for full country names.

exchange offers, repurchases, minority stake purchases, and privatizations from the sample.

Table 2 shows the level of M&A activity by country of nationality of the target firm. The total sample includes 3631 M&A deals. The aggregate volume of M&A transactions adds up to US$3.7 trillion. M&A volume, defined as the percentage of the publicly traded firms targeted, is highest in Canada (with 24% of firms targeted) and lowest in Hong Kong (with 2% of firms targeted).

Our sample of M&A is fairly diversified geographically. Following Rossi and Volpin (2004), we define the cross-border ratio as the percentage of completed deals in a country where the acquirer is foreign. Cross-border ratios by target country are presented in Table 2. Firms in Japan and the United States are among the least targeted by foreign acquirers, with cross-border ratios of 4% and 13%. The last row in Table 2 shows that 789 deals are cross-border (i.e., 22% of the total number of completed deals). In terms of the value of deals, cross-border M&As represent nearly 25% of the total value. Panel B of Table 3 presents the number of completed deals for each pair of target country (rows) and acquirer country (columns).

2. Country-Level Analysis

We first present the main results on whether the presence of institutional shareholders in a country is related to local firms being targeted in cross-border deals. We next investigate how country-level governance interacts with foreign institutions in explaining cross-border M&As. Finally, we correct for the potential endogeneity of institutional ownership.

2.1 Main results

Figure 1 presents preliminary evidence that cross-border M&As occur more frequently in countries where foreigners hold a higher fraction of the stock market capitalization. This unconditional analysis, however, does not control for other factors that may affect cross-border M&A activity, such as local legal institutions. To discriminate between the alternative hypotheses, we directly test the link between foreign institutional ownership and cross-border M&A volume in multivariate regressions as follows:

$$\begin{aligned}(\text{M\&A Cross-border Ratio})_{i,t} &= \alpha + \beta(\text{Institutional Ownership})_{i,t} \\ &\quad + \delta X_{i,t} + \varepsilon_{i,t}, \end{aligned} \tag{1}$$

where the dependent variable is the cross-border ratio, i.e., the percentage of completed M&A deals of country i in year t that involve a foreign acquirer relative to all deals targeting firms of country i in year t. Following Petersen (2009), we adopt a specification that allows for heteroscedasticity, cross-correlation, and autocorrelation in the error term. We adjust the t-statistics for heteroscedasticity using White standard errors and for within-country correlation using

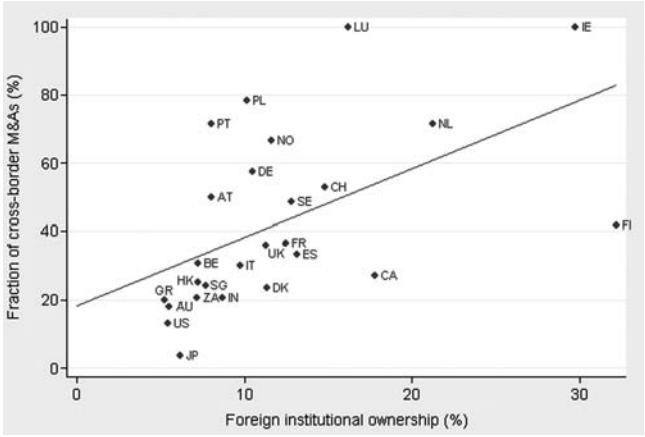

Figure 1
Foreign institutional ownership and the incidence of cross-border mergers and acquisitions
This figure plots the number of cross-border M&A deals as a percentage of the total number of deals versus the foreign institutional ownership from 26 countries in the 2000–2005 period. Refer to Table 2 for full country names.

clustered standard errors. Additionally, we include year fixed effects to account for cross-sectional dependence. We later consider alternative adjustment methods that explicitly model dependence in the cross-sectional and serial correlation structure of the error terms.

We include several other explanatory variables (X) in the regressions. First, we control for the level of economic development as proxied by gross domestic product (GDP) per capita and GDP average annual real growth rate. We also control for the local stock market return, as foreign acquisitions can be driven by local market valuation waves (Shleifer and Vishny 2003). Second, we control for the level of openness of the economy, using trade openness, defined as the ratio of exports plus imports to GDP.

Third, we control for laws and institutions as they are major determinants of the overall level of capital markets development (La Porta et al. 1998) and cross-border M&A patterns in particular. Rossi and Volpin (2004) find that firms in countries with weaker investor protection are more frequently targeted in cross-border M&As, suggesting a convergence in governance standards. As indicators of the level of minority shareholder protection, we use several indexes developed by La Porta et al. (1998): a common law origin dummy variable, a legal index that combines the antidirector rights index (shareholder protection) and the quality of law enforcement (rule of law), and an index of the quality of accounting standards. As an alternative, we use the quality of institutions as measured by the International Country Risk Guide (ICRG). This variable has been shown to be an important determinant of international financial integration (Bekaert, Harvey, and Lundblad 2005). An additional

important aspect of a legal system is the existence and enforcement of insider trading laws. Enforcement of insider trading laws can make an emerging market more attractive to international investors, as it reduces the risk that local insiders will trade against them. We use the number of years since a country has first enforced its insider trading laws taken from Bhattacharya and Daouk (2002). The authors provide evidence of a significant reduction in the cost of equity capital following the first enforcement of insider trading laws in a country.

Fourth, we control for the importance of insider ownership in a country. Local controlling shareholders may have private benefits of control that would make them less willing to give up their shares and deter takeovers (Stulz 2005). We also control for the friendliness of takeover laws to investors in the target country using the takeover index constructed by Nenova (2006). Finally, we control for specific aspects of financial development in the target country: the importance of the stock market in the economy (market capitalization/GDP), the level of stock market trading activity and liquidity (stock market turnover), and the extent of informational efficiency of a country's stock markets proxied by the firm-specific return variation measure introduced by Morck, Yeung, and Yu (2000).

The results are reported in Table 4. Column (1) shows that foreign institutional ownership is positively related to the cross-border M&A ratio, while Column (2) shows that domestic institutional ownership is negatively related to the cross-border M&A ratio. The coefficient on foreign institutional ownership is both statistically significant and economically relevant. A 10 percentage point increase in foreign institutional ownership translates into an increase in the cross-border ratio of 22 percentage points. This is a sizable effect, equivalent to doubling the average ratio of cross-border deals for the countries in our sample (20.5%; see Table 2). A strong presence by domestic institutions, however, is actually associated with a lower likelihood that local firms will be targeted by foreign bidders.

Column (3) of Table 4 includes both foreign and domestic institutional ownership as explanatory variables. The estimates here confirm the findings of Columns (1) and (2); coefficients are barely affected. Results of a Wald test for the equality of the foreign and domestic institutional ownership coefficients in Column (3) strongly reject the null hypothesis of equal coefficients.

In Columns (4)–(12) of Table 4, we check the effect of foreign institutional ownership on cross-border M&A activity, controlling for economic development and growth, trade openness, legal origin and investor protection, quality of legal institutions and law enforcement, insider ownership, takeover laws, and financial development. The foreign institutional ownership coefficient is positive and significant in every case. Overall, our findings are consistent with the facilitation hypothesis and suggest that foreign-based institutions seem to build bridges between firms of different countries.

Consistent with Rossi and Volpin (2004), we find significant evidence that countries with civil legal origin and lower investor protection see more

Table 4
Country-level analysis of the incidence of cross-border mergers and acquisitions: Country-level analysis

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Foreign institutional ownership	2.231		2.028	2.264	2.269	1.941	2.037	1.814	2.452	1.735	2.172	1.929
	(3.55)		(3.26)	(3.54)	(3.85)	(3.10)	(4.10)	(2.84)	(3.46)	(2.40)	(3.48)	(3.56)
Domestic institutional ownership		−0.642	−0.522									
		(−4.62)	(−2.76)									
GDP per capita (log)				0.003	−0.018	−0.016	0.076	0.043	0.010	0.010	−0.047	−0.021
				(0.06)	(−0.37)	(−0.39)	(2.65)	(0.76)	(0.27)	(0.14)	(−1.29)	(−0.52)
GDP growth				−1.536	−2.979	1.725	0.579	−0.481	0.758	0.652	0.620	0.052
				(−0.81)	(−1.45)	(1.10)	(0.49)	(−0.26)	(0.49)	(0.57)	(0.42)	(0.04)
Market return				0.236	0.291	0.157	0.065	−0.038	0.090	0.194	−0.013	−0.055
				(0.88)	(1.17)	(0.73)	(0.29)	(−0.18)	(0.39)	(0.81)	(−0.06)	(−0.26)
Trade/GDP					0.071							0.037
					(1.18)							(1.00)
Common law						−0.286			−0.218	−0.120	−0.264	−0.204
						(−3.65)			(−2.59)	(−0.52)	(−2.81)	(−2.66)
Legal							−0.007					
							(−2.13)					
Accounting standards							−0.008					
							(−1.59)					
Quality of institutions								0.006				
								(0.19)				
Enforcement of insider trading laws								−0.014				−0.007
								(−4.03)				(−1.85)
Insider ownership									0.005			
									(2.13)			
Takeover index										−0.430		
										(−0.80)		
Market capitalization/GDP											0.018	
											(0.36)	
Stock market turnover											−0.195	−0.130
											(−3.51)	(−2.23)
Firm-specific return variation											−0.234	
											(−0.42)	
Wald test: Foreign IO = Domestic IO			26.100									
P-value			0.000									
Observations	114	114	114	114	114	114	104	114	114	95	114	114
R-squared	0.21	0.13	0.27	0.22	0.25	0.36	0.36	0.40	0.39	0.37	0.45	0.49

This table presents estimates of the panel regressions of the ratio of cross-border of M&A by country and year, defined as the number of completed cross-border M&A deals (with a foreign acquirer) in percentage of the number of deals that target a country's firms. Refer to Table 1 for definitions of variables. The sample period is from 2000 to 2005. Robust *t*-statistics adjusted for country clustering are in parentheses.

cross-border deals targeting local firms (Columns (6) and (7)). Furthermore, cross-border M&As occur more often in countries with weak enforcement of insider trading laws (see Columns (8) and (12)).

As a robustness check, we study how the size of foreign institutions' stakes affects their impact on the international market for corporate control. The results are reported in Panel A of Table 5. The specifications in Table 5 use the same set of control variables as in Column (12) of Table 4.

First, we test for nonlinear effects in the relation between foreign ownership and cross-border M&As. Foreign institutional ownership is broken into three variables: low, medium, and high ownership. Low ownership takes the value of the foreign ownership if it is in the lowest ownership quartile (i.e., below 6%), and zero otherwise. Medium ownership takes the value of the foreign ownership if it is in the second and third ownership quartiles, and zero otherwise. High ownership takes the value of the foreign ownership if it is in the highest ownership quartile (i.e., above 14%), and zero otherwise. We find that medium and high foreign institutional ownership are positively associated with cross-border M&As. This supports the idea that foreign institutions need to have a sizable stake to facilitate cross-border deals even though moderate positions seem to be enough to have an influence.

Second, we test for the role of foreign institutional blockholdings. We focus on foreign institutional investors holding more than 5% of the shares outstanding (La Porta et al. 1999; Li et al. 2006). The results are reported in the second column in Panel A of Table 5. There is a positive and significant relation between foreign institutions and cross-border M&As. The effect is stronger when we consider only these blockholders instead of all foreign institutional investors. This finding is consistent with the importance of blockholders to help alleviate the free-rider problem (Shleifer and Vishny 1986).

Third, we check the sensitivity of our findings to the definition of the sample of countries under examination. We want to address the concern that the results are potentially driven by US firms and institutions, which are large players worldwide. We therefore exclude M&As where the target firm is from either the United States or Canada. Additionally, we exclude M&As where the acquirer is a US firm and exclude US institutions from the construction of the foreign institutional ownership variable. We also extend the sample to include 21 other countries where data coverage is limited to foreign institutional holdings. Panel B of Table 5 presents the results. The results are consistent with the findings reported so far.[10]

We then conduct some econometric robustness checks in Panel C of Table 5. We use seemingly unrelated regression (SUR) standard errors to adjust for heteroscedasticity, autocorrelation, and cross-sectional correlation (Bekaert, Harvey, and Lundblad 2005). We also estimate a Tobit model that takes into

[10] In untabulated regressions, we obtain consistent results when we exclude US acquirers and US institutions one at a time.

Table 5
Country-level analysis of the incidence of cross-border mergers and acquisitions: Additional tests and robustness

	Panel A: Institution type		Panel B: Sample				Panel C: Estimation methods		
	Non-linear inst.	Blocks inst.	Exclude US	Exclude US and Canada	Exclude US inst. and acquirers	Extended sample of countries	SUR standard errors	Tobit model	Value of deals
Foreign institutional ownership			2.291	2.421	3.168	1.026	1.938	1.929	2.315
			(4.78)	(4.73)	(2.34)	(3.17)	(5.56)	(5.09)	(4.40)
Foreign institutional ownership low (Q1)	−0.307								
	(−0.12)								
Foreign institutional ownership medium (Q2–Q3)	1.920								
	(1.58)								
Foreign institutional ownership high (Q4)	1.691								
	(2.72)								
Foreign institutional blockholders		3.001							
		(3.82)							
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Observations	114	114	108	102	108	159	114	114	109
R-squared	0.50	0.51	0.51	0.49	0.29	0.42			0.35

Panel D: Interactions with country characteristics

Country characteristics	Foreign institutional ownership	Country characteristic	Foreign institutional ownership × Country characteristic	Observations	*R*-squared
Common law	1.562	−0.379	0.856	114	0.37
	(2.05)	(−2.35)	(0.67)		
Antidirector rights	2.301	−0.108	−1.653	114	0.32
	(3.87)	(−0.71)	(−1.98)		
Legal	2.429	−0.008	−0.425	114	0.35
	(3.42)	(−2.77)	(−0.65)		
Securities law	3.860	−0.109	−1.591	114	0.29
	(4.48)	(−0.66)	(−1.65)		
Quality of institutions	3.182	0.025	−1.410	114	0.26
	(5.14)	(0.74)	(−1.97)		
Enforcement of insider trading laws	2.087	−0.009	−1.147	114	0.42
	(3.63)	(−2.44)	(−2.08)		
Insider ownership	2.698	0.002	2.385	114	0.38
	(5.32)	(0.49)	(2.59)		
Takeover index	2.468	−0.501	−0.863	95	0.37
	(3.19)	(−2.41)	(−1.74)		
Market capitalization/GDP	3.674	−0.003	−1.480	114	0.27
	(4.69)	(−0.04)	(−2.15)		
Stock market turnover	3.394	−0.139	−1.253	114	0.35
	(4.60)	(−2.10)	(−2.04)		
Firm-specific return variation	3.099	−0.940	−1.314	114	0.32
	(6.53)	(−1.40)	(−1.98)		

This table presents estimates of the panel regressions of the ratio of cross-border M&As by country and year, defined as the number of completed cross-border M&A deals (with a foreign acquirer) in percentage of the number of deals that target a country's firms. Panel A uses alternative foreign institutional ownership variables: nonlinear specification using low (takes the value of the foreign ownership if it is in the lowest ownership quartile, and zero otherwise), medium (takes the value of the foreign ownership if it is in the second and third ownership quartiles, and zero otherwise), and high (takes the value of the foreign ownership if it is in the highest ownership quartile, and zero otherwise) foreign institutional ownership; and foreign blockholders ownership (holdings above 5% of a firm's market capitalization). Panel B uses alternative samples: exclude M&A deals that involve target firms from the United States; exclude M&A deals that involve target firms from the United States and Canada; exclude M&A deals that involve acquirer firms from the United States and foreign ownership by US institutions; and extend the sample to include 21 other countries where data coverage is limited to foreign institutional holdings. Panel C uses alternative estimation methods: seemingly unrelated regression (SUR) standard errors, Tobit model, and value of transactions of cross-border deals (relative to total value of transactions) as dependent variable. Panel D presents specifications with interaction of foreign institutional ownership with country characteristics using dummy variables that equal one for values above the median. Regressions include the control variables (coefficients not shown) used in Column (12) of Table 4 and year dummies. Refer to Table 1 for definitions of variables. The sample period is from 2000 to 2005. Robust *t*-statistics adjusted for country clustering are in parentheses (with exception of SUR standard errors and Tobit model).

account that the dependent variable is bounded between zero and one. Finally, we reestimate our main specifications using the value of transactions of cross-border M&As (as a percentage of the total value of transactions) as the dependent variable, rather than the number of cross-border deals. These results are consistent with the findings reported so far.

2.2 Effect of country-specific characteristics

In this section, we investigate under which conditions foreign institutions are more effective in facilitating cross-border M&As. Our hypotheses offer testable predictions as to which country characteristics make institutions more pivotal in the working of the international market for corporate control.

We expect to find that foreign institutions play a stronger role in countries with both weaker legal environments and less developed equity markets, where investors face higher transaction costs and information asymmetry. To investigate this issue, we interact foreign institutional ownership with legal origin, minority shareholder protection (antidirector rights), securities law (La Porta, Lopez-de-Silanes, and Shleifer 2006), quality of institutions, and law enforcement. The results are reported in Panel D of Table 5. Foreign investors are more effective facilitators in countries with lower shareholder protections, lower quality of institutions and securities law, and less stringent law enforcement. However, legal origin per se does not seem to be a key factor. Overall, the evidence suggests that country-level governance and foreign investors are substitute mechanisms in facilitating changes of corporate control across borders.

We also consider interactions of foreign institutional ownership with insider ownership and takeover regulations. Foreign institutions facilitate international takeovers more when there are large local controlling shareholders and in countries with less investor-friendly takeover regulations. All these findings are consistent with the facilitation hypothesis.

Finally, we consider the interaction of foreign institutional ownership with measures of stock market development and informational efficiency. The coefficient on the interactions with stock market turnover and firm-specific return variation is negative and significant. This suggests that foreign institutions facilitate more cross-border M&As in countries with less developed stock markets, where trading activity and informational efficiency are lower. These findings are consistent with the hypothesis that foreign institutions are more effective in facilitating cross-border M&As in environments with higher transaction and liquidity costs.

2.3 Endogeneity

A major concern with our findings is that institutional ownership is endogenously determined. Indeed, a market that has a more active market for corporate control may attract foreign institutional investors. To address the potential endogeneity bias, we use a two-stage least squares (2SLS) estimation, as well as

a quasi-natural experiment that gives an exogenous variation in foreign institutional ownership (not directly related to cross-border M&As) and a regression in changes.

The instrumental variables method allows us to address omitted variables and reverse causality issues simultaneously. The caveat is that it requires stronger assumptions that are usually not possible to test. Under standard identification assumptions, we apply 2SLS methods to isolate the effect of institutional ownership on cross-border M&As activity. To this end, we need instruments for the level of institutional ownership in a country: a variable that is correlated with institutional ownership (this assumption can be tested), but uncorrelated with M&A except indirectly through other independent variables. That is, the instrument should be a variable that can be "excluded" from the original list of control variables without affecting the results. This last requirement cannot be tested by statistical methods; it is, in the end, an act of faith.

We use several instrumental variables for institutional ownership. First, we use the percentage of firms in the target country whose shares are included in the Morgan Stanley Capital International (MSCI) World index. Ferreira and Matos (2008) show that a greater representation in the index drives investment by foreigners. Second, we use the percentage of firms in the target country that have shares cross-listed in a US exchange (via ordinary listings or level 2 and 3 ADRs). Cross-listing has been shown to increase holdings by foreign investors. Third, we use the average (value-weighted across stocks in the country) dividend yield of the firms in the target country. Dividend yield has been shown to be negatively related to the interest of foreigners in holding shares because of the disadvantages associated with dividend tax withholding. Along the same line, we also use the statutory dividend tax rate of the target country. Fourth, we use the time (number of years) since the official liberalization of a country's stock market. Bekaert and Harvey (2000) show that stock market liberalization is an important determinant of foreign portfolio flows. Finally, we use a dummy variable equal to one if short selling is allowed in the target country and zero otherwise (Bris, Goetzmann, and Zhu 2007).

The results are reported in Panel A of Table 6. The first-stage regression provides evidence on the quality of the instruments. As expected, foreign institutional investors are attracted to countries with more stocks represented in MSCI indices and cross-listed on US exchanges, countries with low dividend yields, and countries with financially integrated stock markets. These findings suggest that our instruments meet the first condition to be an appropriate instrument (i.e., they are related to the potentially endogenous explanatory variable). Still, they may also be correlated with the dependent variable in the main regression. To test for this possibility, Table 6 also reports the results of a Hansen overidentification test. This test shows that these variables do not directly impact the volume of M&As through a channel different from their impact on institutional ownership. Overall, the findings of the second-stage regression confirm that there is a positive relation between the incidence of

Table 6
Country-level analysis of the incidence of cross-border mergers and acquisitions: Endogeneity

	Panel A: 2SLS		Panel B: MSCI rebalacing	Panel C: Changes
	First stage	Second stage		
Dependent variable	Foreign inst. ownership	Cross-border ratio	Cross-border ratio changes	Cross-border ratio changes
Foreign institutional ownership		1.835		
		(3.46)		
MSCI rebalancing			0.540	
			(2.36)	
Change in foreign institutional ownership				4.585
				(2.10)
Change in domestic institutional ownership				−2.445
				(−1.42)
GDP per capita (log)	−0.007	−0.052	0.011	−0.013
	(−0.20)	(−0.34)	(0.34)	(−0.53)
GDP growth	−0.573	−1.035	1.892	0.281
	(−1.20)	(−0.53)	(1.06)	(0.09)
Market return	−0.027	−0.201	0.068	−0.162
	(−0.38)	(−0.89)	(0.67)	(−1.11)
Trade/GDP	0.024	0.180	0.053	−0.005
	(1.17)	(1.79)	(1.57)	(−0.11)
Common law	0.008	−0.123	−0.077	−0.046
	(0.53)	(−1.80)	(−1.06)	(−0.65)
Enforcement of insider trading laws	0.002	−0.007	−0.002	0.000
	(2.13)	(−2.02)	(−0.80)	(−0.07)
Stock market turnover	−0.040	−0.048	0.050	−0.141
	(−2.08)	(−0.66)	(0.62)	(−1.44)
MSCI stocks/Number of stocks	1.096			
	(3.65)			
US cross-listings/Number of stocks	0.810			
	(6.29)			
Dividend yield	−2.651			
	(−2.54)			
Dividend tax rate	0.124			
	(2.20)			
Stock market liberalization	0.005			
	(2.17)			
Short selling	−0.120			
	(−2.40)			
Hansen J-statistic		2.804		
P-value		0.730		
Year dummies	Yes	Yes	Yes	Yes
Observations	93	93	67	67
R-squared	0.74		0.12	0.17

Panel A presents 2SLS estimates of the regression of the ratio of cross-border M&As by country and year, defined as the number of completed cross-border M&A deals (with a foreign acquirer) in percentage of the number of deals that target a country's firms. The instruments for institutional ownership are the percentage of firms with shares included in the MSCI World index, the percentage of firms with shares cross-listed on US exchanges, dividend yield (value-weighted average), the statutory dividend tax rate, the time since the official liberalization of a country's stock market, and a dummy variable equal to one if short selling is practiced. Panel B presents estimates of the regression of the annual changes in the cross-border ratio on the MSCI rebalancing variable, defined as the change in a country's MSCI weight due to the adoption of free-float weights effective in 2002 and thereafter, and zero before 2002. Panel C presents estimates of the regression of the annual changes in the cross-border ratio on the annual changes in institutional ownership. Refer to Table 1 for definitions of variables. The sample period is from 2000 to 2005. Robust t-statistics adjusted for country clustering are in parentheses.

cross-border M&As and foreign institutional ownership, even after we control for the potential endogeneity of institutional ownership.

As a further check, we consider a quasi-natural experiment: the revision of the MSCI World index country weights implemented in 2001–2002; see Hau, Massa, and Peress (2006) for details. MSCI is a leading provider of the international equity benchmarks that are widely used by institutional investors.[11] In 2001, MSCI reviewed its weighting policy by moving from market capitalization weights to free-float weights. This rebalancing affected a total of 2566 stocks in 50 countries. Such a weight revision represents an index change of unprecedented scope, and provides cross-sectional power to identify an exogenous change in foreign institutional ownership not likely to directly affect cross-border M&A activity, except through the channel of foreign institutional ownership.

To run this experiment, we construct a variable (MSCI rebalancing) that takes a value of zero before the implementation year (2002) and then takes the value of the specific change in each country's MSCI weight in the implementation year and thereafter. This MSCI rebalancing variable proxies for the exogenous change in foreign institutional ownership due to a country-specific MSCI weight revision. We then regress changes in the cross-border ratio on the MSCI rebalancing variable, as well as other control variables. The results are reported in Panel B of Table 6. The change in the cross-border M&A ratio is positively related to the change in the MSCI weight affecting each country, as predicted if foreign institutions drive cross-border M&As. This natural experiment gives further support to our primary findings.

A further potential concern with our results is that the estimated positive relation between the cross-border ratio and foreign institutional ownership may be spurious due to a common positive trend in both series. This is potentially an issue, given that our sample period is characterized by a spurt in financial globalization that could be driving both portfolio investment and cross-border M&A transactions. To address this issue, we estimate a specification based on (annual) changes rather than levels as in Table 4. Panel C of Table 6 reports the results of regressing annual changes in the cross-border ratio on annual changes in foreign institutional ownership. The results confirm our previous findings, reducing the concerns of spurious correlation. Indeed, there is a positive relation between the annual changes in the cross-border ratio and the annual changes in foreign institutional ownership. No similar effect is found for changes in domestic institutional ownership.

3. Country-Pairs Analysis

The richness of our data set allows us to directly test our hypotheses using bilateral (cross-border) M&A activity and portfolio investment. For example,

[11] According to several surveys (e.g., Thomson Extel Pan-European survey and Global Equities Study), 90% of international institutional equity assets are benchmarked to MSCI indices.

in the case of the Mannesmann takeover, 18% of Mannesmann shares were held by institutions from the UK (Kedia 2001). Do UK firms (like Vodafone) find it easier to target German firms (like Mannesmann) if UK investors are already shareholders in that foreign market?

To test this hypothesis, we exploit the power of our data and combine the (26×26) matrix of cross-border M&A with the corresponding (26×26) pairs of bilateral portfolio investment by institutions. We focus exclusively on cross-border M&As and do not include the main diagonal (intraborder M&A) in the tests. The country-pair regression equation is

$$\begin{aligned}(\text{Cross-border M\&A})_{i,j,t} = \alpha + \beta(\text{Cross-country institutional ownership})_{i,j,t} \\ + \delta X_{i,j,t} + \varepsilon_{i,j,t}, \end{aligned} \tag{2}$$

where the dependent variable is the number of deals in which the target is from country i and the acquirer is from country j as a percentage of the total number of deals with a target in country i (sum of row) in year t, with $i \neq j$. $(\text{Cross-country institutional ownership})_{i,j,t}$ is the percentage of the market capitalization of the country of the target firm i (destination stock market) that is held by institutions based in the same country as the acquirer firm j (institution origin country) in year t. The facilitation hypothesis posits that the effect of institutional ownership (the β coefficient) will be positive. We include other regressors (X) such as the difference in economic development and stock market returns between country j and country i (Rossi and Volpin 2004). We add two dummy variables to control for proximity and familiarity motives in cross-border deals (common language and same geographic region). We control for the degree of economic integration by using the level of bilateral trade and the difference in industry structures between countries. Finally, we take into account differences in investor protection, legal environment, and financial development.

Table 7 presents the results. The country-pair institutional ownership coefficient is positive and significant. A one-percentage-point increase in institutional ownership between a country-pair is associated with an increase in the frequency of cross-border deals between a country-pair of roughly 1.3 percentage points (Column (1)). This evidence supports the hypothesis that there are more cross-border corporate transactions if there is already portfolio investment between a country-pair. This is direct evidence of a link between the nationality of the bidder and the country of origin of the institution that is a shareholder in the target firm.

Specifications in Columns (2)–(9) of Table 7 control for the other factors that may explain the volume of M&A activity between two countries. There is some evidence of greater M&A activity between countries in the same geographic region, with similar industrial structures, and more economically integrated (as proxied by bilateral trade). There is also greater bilateral M&A activity when the target country has a weaker legal environment than the acquirer

Table 7
Country-pairs analysis of the incidence of cross-border mergers and acquisitions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Cross-country institutional ownership$_{i,j}$	1.314	1.290	0.941	1.286	1.257	1.465	1.203	1.246	0.866	1.372	0.966	0.101
	(3.71)	(3.63)	(2.15)	(3.62)	(3.58)	(5.73)	(3.32)	(3.55)	(1.99)	(4.15)	(1.83)	(0.19)
GDP per capita$_j$ − GDP per capita$_i$ (log)		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
		(1.37)	(1.16)	(1.42)	(1.25)	(0.95)	(0.80)	(1.66)	(1.23)	(0.75)	(0.96)	(1.17)
Market return$_j$ − Market return$_i$		0.003	0.004	0.002	0.003	0.007	0.004	0.010	0.009	0.010	0.009	0.009
		(0.37)	(0.63)	(0.29)	(0.36)	(0.95)	(0.50)	(1.17)	(1.07)	(1.17)	(1.10)	(1.14)
Same language		0.004	0.001	0.004	0.005	0.003	0.005	0.005	0.002	0.007	0.001	0.003
		(0.93)	(0.33)	(0.91)	(1.06)	(0.76)	(1.08)	(0.98)	(0.48)	(2.13)	(0.36)	(0.66)
Same region		0.005	0.000	0.006	0.005	0.005	0.005	0.006	0.000	0.000	0.001	0.000
		(1.79)	(0.14)	(1.84)	(1.63)	(1.49)	(1.70)	(1.92)	(0.11)	(0.01)	(0.37)	(0.06)
Bilateral trade$_{i,j}$			0.170						0.173	0.208	0.246	0.284
			(1.60)						(1.64)	(2.25)	(2.91)	(2.40)
Industry structure$_{i,j}$				−0.001					−0.001	−0.001	−0.001	−0.001
				(−3.11)					(−2.63)	(−1.81)	(−2.54)	(−2.16)
Legal$_j$ − Legal$_i$					0.000	0.000			0.000	0.000	0.000	0.000
					(1.78)	(0.98)			(1.74)	(1.50)	(1.67)	(0.18)
Accounting standards$_j$ − Accounting standards$_i$						0.000						
						(0.59)						
Quality of institutions$_j$ − Quality of institutions$_i$							0.000					
							(−0.09)					
Enforcement ins. trad. laws$_j$ − Enforcement ins. trad. laws$_i$							0.000					
							(−1.74)					
Market capitalization/GDP$_j$ − Market capitalization/GDP$_i$								0.000				
								(−0.16)				
Stock market turnover$_j$ − Stock market turnover$_i$								−0.003	−0.002	−0.002	−0.002	−0.002
								(−2.58)	(−1.98)	(−1.70)	(−1.95)	(−1.84)
Cross-country inst. ownership$_{i,j}$ × Same language										−0.968		
										(−2.29)		
Cross-country inst. ownership$_{i,j}$ × Same region											−0.633	
											(−1.70)	
Cross-country inst. ownership$_{i,j}$ × (Legal$_j$ − Legal$_i$)												0.040
												(2.26)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,236	2,150	2,150	2,150	2,150	1,826	2,150	2,150	2,150	2,150	2,150	2,150
R-squared	0.10	0.10	0.11	0.10	0.10	0.12	0.10	0.10	0.11	0.12	0.11	0.12

This table presents estimates of panel regressions of cross-border M&A country-pairs in each year, defined as the number of cross-border deals between target firms from country i and acquirer firms from country j as a percentage of the number of deals with target firms from country i. Refer to Table 1 for definitions of variables. The sample period is from 2000 to 2005. Robust t-statistics adjusted for country-pair clustering (with exception of Tobit model) are in parentheses.

country. The difference in stock market turnover is negative and significant, which suggests that countries with less developed stock markets attract more cross-border deals.

In Columns (10)–(12) of Table 7, we examine whether cross-country institutional investment bridges cultural, geographical, and legal differences between countries. We find that ownership by institutions from the acquirer country is more important in promoting cross-border M&A activity when there are geographical or language barriers and significant differences in the quality of the legal environment. We conclude that foreign institutions facilitate deals that involve negotiation processes between parties with different regulatory and culture environments.

Table 8 presents several robustness checks of the country-pair tests, similar in spirit to those for the country-level tests. All the regressions include the same set of control variables used in Column (9) of Table 7. In Panel A, we show that results are robust to the use of an instrumental variables estimation (2SLS) to address endogeneity concerns. We consider the same set of instruments for the target country used in Panel A of Table 6, augmented by a new instrument that is specific to the country-pair analysis: a dummy variable that takes the value of one if there is a tax treaty between countries i and j. A Hansen overidentification test confirms that these variables do not directly impact the volume of M&As through a channel different than their impact on institutional ownership.[12]

Panel A of Table 8 reports only the results of the second-stage regression. There is evidence of a positive relation between cross-country institutional ownership and the volume of M&A deals between a country pair when we correct for the endogeneity bias. We also find consistent evidence using the revision of the MSCI weights as a quasi-natural experiment (Panel B) and a regression on annual changes (Panel C). In Panels D and E of Table 8, we check the results for alternative samples of countries and estimation methods (Tobit model and value of deals). In all cases, we find consistent evidence of a positive and significant relation between cross-country institutional ownership and cross-border M&As.

4. Deal-Level Analysis

In this section, we use individual M&A transactions (deal-level data) to investigate whether the presence of foreign institutions as shareholders in the target and acquirer is an important factor in cross-border M&As. To do this, we merge the sample of M&A deals from SDC with the FactSet LionShares Global Ownership database to obtain firm-level institutional ownership as of the quarter-end prior to the deal announcement. The resulting sample consists of 2588 M&As with target institutional ownership data (and 22% of

[12] We obtain similar results using the difference in instrumental variables between countries i and j.

Table 8
Country-pairs analysis of the incidence of cross-border mergers and acquisitions: Robustness

Dependent variable	Panel A: 2SLS second stage Cross-border pair	Panel B: MSCI rebalacing Cross-border pair changes	Panel C: Changes Cross-border pair changes	Panel D: Sample				Panel E: Estimation	
				Exclude US	Exclude US and Canada	Exclude US inst. and acquirers	Extended sample of countries	Tobit model	Value of deals
				Cross-border pair				Cross-border pair	
Cross-country institutional ownership$_{i,j}$	0.866			0.852	0.973	2.074	0.934	2.151	0.973
	(2.09)			(2.12)	(2.08)	(2.17)	(2.33)	(3.55)	(2.25)
MSCI rebalancing$_i$		0.016							
		(2.04)							
Change in institutional ownership$_{i,j}$			3.973						
			(2.00)						
Hansen J-statistic	7.757								
P-value	0.260								
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,150	1,725	1,725	2,000	1,850	1,920	3,440	2,150	2,125
R-squared		0.12	0.52	0.11	0.10	0.06	0.12		0.07

This table presents estimates of panel regressions of cross-border M&A country-pairs in each year, defined as the number of cross-border deals between target firms from country i and acquirer firms from country j as a percentage of the number of deals with target firms from country i. Panel A presents 2SLS estimates with the percentage of country i firms with shares included in the MSCI World index, the percentage of country i firms with shares cross-listed on US exchanges, the country i dividend yield (value-weighted average), the country i statutory dividend tax rate, a dummy variable equal to one if there is a tax treaty between countries i and j, and the time since the official liberalization stock market of country i used as instruments for institutional ownership. Panel B presents estimates of the regression of the annual changes in the cross-border M&A country-pairs on the MSCI rebalancing variable, defined as the change in country i MSCI weight due to the adoption of free float weights effective in 2002 and thereafter, and zero before 2002. Panel C presents estimates of the regression of the annual changes in the cross-border M&A country-pairs on the annual changes in cross-country institutional ownership. Panel D uses alternative samples: exclude M&A deals that involve target firms from the United States; exclude M&A deals that involve target firms from the United States and Canada; exclude M&A deals that involve acquirer firms from the United States and foreign ownership by US institutions; and extend the sample to include 21 other countries where data coverage is limited to foreign institutional holdings. Panel E uses alternative estimation methods: Tobit model and value of transactions of cross-border deals (relative to total value of transactions) as dependent variable. Regressions include the control variables (coefficients not shown) used in Column (9) of Table 7. Refer to Table 1 for definitions of variables. The sample period is from 2000 to 2005. Robust t-statistics adjusted for country-pair clustering (with exception of Tobit model) are in parentheses.

these M&As are cross-border deals), and 1432 M&As with both target and acquirer institutional ownership data. Firm-level accounting and financial variables (as of the year-end prior to the deal announcement) are drawn from the Datastream/WorldScope database. Panels E–H of Table 1 offer details on the definitions of variables and data sources.

4.1 Probability of cross-border M&As

We use a probit regression to examine whether the presence of foreign institutions makes it more likely that an M&A deal will be cross-border:

$$\text{Prob(Deal is Cross-border)}_{i,t} = \alpha + \beta(\text{Institutional Ownership})_{i,t} + \delta X_{i,t} + \varepsilon_{i,t}, \quad (3)$$

where the dependent variable is a dummy that takes a value of one if the M&A is cross-border, and zero if it is domestic (intraborder).

We first estimate regression equation (3) using only target firm explanatory variables. Our main interest lies in the sign of the percentage of shares held by institutions in the target firm as of the quarter-end prior to the deal announcement. We consider both the percentage of shares held by money managers based in countries different from that of the target (foreign institutional ownership) and the percentage of shares held by money managers domiciled in the same country as the target (domestic institutional ownership).[13] We control for other characteristics of the target firm, such as firm size, growth and investment opportunities, annual stock returns, profitability, leverage, cash holdings, foreign sales, insider ownership, and firm-level governance scores (from Institutional Shareholder Services). Following Kang and Kim (2008), we also control for the potential level of economic synergies by using a dummy variable equal to one if the target firm and acquirer firm are in the same one-digit SIC industry.

Table 9 presents the results of the probit regression. In Column (1), we start by controlling just for target firm size and intraindustry M&A dummy, which gives us the greatest number of observations. We find that the fraction held by foreign investors positively and significantly affects the probability that a cross-border bid is made. The presence of domestic investors, however, seems to reduce the chances of a foreign bid (Column (2)). In Column (3), we include both foreign and domestic institutional ownership and run a Wald test of the null hypothesis that the coefficients are equal to each other, which is strongly rejected. The effect of foreign institutional ownership is economically sizable: a 10 percentage point increase in foreign institutional ownership is associated with nearly a 10% higher chance that the bidder is a foreign firm (see Column (4)).

[13] It is important to note that we obtain similar results when we use the target's foreign institutional ownership defined at any of the four quarter-ends prior to the deal announcement. However, we find no evidence of a significant relation when we use the target's foreign institutional ownership one quarter after the deal announcement. This provides some additional evidence of a causal relationship from ownership to M&A. These additional results are available upon request.

Table 9
Deal-level analysis of the probability of being targeted in a cross-border merger and acquisition

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Foreign institutional ownership target	1.153		1.223	2.533	2.457	4.016	1.526		1.471	4.478
	(3.67)		(3.85)	(5.05)	(4.40)	(4.77)	(3.57)		(3.55)	(3.99)
Domestic institutional ownership target		−0.294	−0.365					0.142	0.051	
		(−2.11)	(−2.88)					(1.09)	(0.38)	
Foreign institutional ownership acquirer							1.706		1.751	1.768
							(4.84)		(4.71)	(1.58)
Domestic institutional ownership acquirer								−0.674	−0.677	
								(−4.24)	(−4.55)	
Size target	0.094	0.108	0.098	0.082	0.026	0.078	−0.047	−0.019	−0.046	−0.105
	(4.58)	(4.75)	(5.20)	(2.79)	(0.87)	(2.16)	(−2.26)	(−0.96)	(−2.07)	(−2.82)
Book-to-market target				−0.058	−0.073	−0.067				−0.094
				(−1.46)	(−1.86)	(−1.37)				(−1.19)
Investment opportunities target				0.045	0.038	−0.444				0.441
				(0.40)	(0.23)	(−3.44)				(4.42)
Stock return target				0.034	0.170	0.267				0.203
				(0.42)	(2.38)	(2.00)				(1.14)
Return-on-equity target				−0.123	−0.117	−0.262				−0.081
				(−1.15)	(−1.24)	(−3.30)				(−0.41)
Leverage target				−0.017	0.083	−0.761				0.095
				(−0.08)	(0.35)	(−2.93)				(0.25)
Cash target				0.406	0.473	−0.893				0.507
				(0.65)	(0.82)	(−4.65)				(0.84)
Share turnover target				−0.105	−0.100	−0.056				−0.198
				(−4.57)	(−3.00)	(−1.65)				(−4.47)
Foreign sales target					0.866					
					(3.07)					
Insider ownership target					−0.192					
					(−0.88)					
Governance score target						0.002				
						(0.43)				

(*continued overleaf*)

Table 9
(Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Intraindustry M&A	−0.048	−0.045	−0.052	−0.015	0.072	−0.076	0.056	0.098	0.048	0.504
	(−0.55)	(−0.53)	(−0.60)	(−0.08)	(0.40)	(−0.51)	(0.80)	(1.53)	(0.66)	(5.33)
Wald test: Foreign IO target = Domestic IO target			23.470						9.120	
P-value			0.000						0.003	
Wald test: Foreign IO acquirer = Domestic IO acquirer									23.210	
P-value									0.000	
Acquirer control variables	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,588	2,588	2,588	1,399	1,139	470	1,432	1,432	1,432	612

This table presents the estimates of a deal-level probit model of the likelihood of being targeted in a cross-border M&A where the dependent variable is a dummy variable that equals one if the M&A deal is cross-border. Columns (7)–(10) include acquirer control variables (coefficients not shown). Refer to Table 1 for definitions of variables. The sample period is from 2000 to 2005. Robust *t*-statistics adjusted for country clustering are in parentheses.

Overall, the findings are consistent with the facilitation hypothesis and confirm the country-level evidence.

When we look at the control variable coefficient estimates, we find that larger firms with strong stock market performance and firms with operations abroad (as proxied by foreign sales) attract more attention from foreign bidders. In general, the other firm-specific characteristics do not seem to play a significant role in affecting the probability that a bid will be cross-border.

As an extension, we consider the nationality of the institutional investors holding a stake in the acquirer firm. The idea is that a firm that already has foreign shareholders is more likely to bid for a foreign firm.[14] We therefore reestimate the probit regression including both target and acquirer characteristics (we report coefficients only for target firm control variables, but regressions include similar controls for the acquirer). The results are reported in Columns (7)–(10) of Table 9. The presence of foreign institutional ownership in both target and acquirer increases the likelihood of a cross-border deal, consistent with the hypothesis that these investors build bridges between firms internationally. There is no similar evidence for domestic institutional ownership.

Again, we address the concern of endogeneity, using instrumental variables estimation (2SLS). Here, we can use firm-level (target and acquirer) characteristics as instruments: (1) a dummy variable for whether a firm's shares are included in the MSCI World index; (2) a dummy variable for whether a firm's stock is cross-listed on US exchanges (via ordinary listings or level 2 and 3 ADRs); (3) the firm's dividend yield; (4) the statutory dividend tax rate in the firm's country; (5) the number of tax treaties linking a firm's country with other countries; (6) the time (number of years) since the official liberalization of a firm's country's stock market; and (7) a dummy variable on whether short selling is practiced in a firm's country. Panel A of Table 10 reports the results of the second-stage probit model. For brevity, only the coefficients for the ownership variables are reported. The Hansen overidentification tests confirm the quality of our instruments.[15] The results show that the likelihood of a foreign bid does, indeed, increase with the level of target and acquirer foreign institutional ownership.

Panels B–D of Table 10 offer further robustness checks. We find that the likelihood of attracting a foreign bid is positively related to the presence of medium to large foreign institutional shareholders, and to the ownership by foreign blockholders. This finding is consistent with the role played by blockholders in alleviating the free-rider problem.

---

[14] One example of this is the 2005 acquisition of HVB—Bayerische Hypo Vereinsbank (a German bank)—by Unicredito (an Italian bank) that allowed the expansion of Unicredito to Central and Eastern Europe where HVB had a significant presence. Foreign institutions had a significant presence in Unicredito (19% at the time of bid, which was higher than the ownership by domestic institutions) and favored the bank's geographic expansion. HVB had previously bought Bank Austria Creditanstalt (in 2000), which also had operations in Central Europe.

[15] The first-stage regression results are available upon request. We obtain similar results when we run the two-stage procedure using only target firm explanatory variables and instruments.

Table 10
Deal-level analysis of the probability of being targeted in a cross-border merger and acquisition: Additional tests and robustness

		Panel B: Institution type					
	Panel A: 2SLS	Non-linear inst.	Blocks inst.	Foreign-to-domestic inst. ratio	Acquirer-to-other countries inst. ratio	Other countries-to-total inst. ratio	Cross-border target-acquirer pairs
Foreign institutional ownership target	13.902				3.427	5.553	
	(6.44)				(3.02)	(4.67)	
Foreign institutional ownership target (0%–5%)		2.651					
		(0.48)					
Foreign institutional ownership target (5%–25%)		4.260					
		(2.78)					
Foreign institutional ownership target (25%–100%)		4.283					
		(3.31)					
Foreign institutional blockholders target			5.455				
			(2.84)				
Foreign-to-domestic institutional ownership ratio target				0.009			
				(1.99)			
Foreign institutional ownership acquirer	4.222				1.637	1.884	
	(2.77)				(1.50)	(1.49)	
Foreign institutional ownership acquirer (0%–5%)		4.283					
		(1.08)					
Foreign institutional ownership acquirer (5%–25%)		3.639					
		(2.22)					
Foreign institutional ownership acquirer (25%–100%)		1.856					
		(1.70)					
Foreign institutional blockholders acquirer			1.005				
			(1.56)				
Foreign-to-domestic institutional ownership ratio acquirer				−0.008			
				(−0.75)			
Acquirer-to-other countries institutional ownership ratio					0.001		
					(3.26)		
Other countries-to-total institutional ownership ratio						−0.473	
						(−1.86)	
Cross-country institutional ownership (i, j) target							1.038
							(2.15)
Cross-country institutional ownership (i, j) acquirer							7.148
							(2.15)
Target control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Acquirer control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	612	612	590	502	450	562	5,486

	Panel C: Sample		Panel D: Interactions			
	Exclude US	Extended sample of countries	Size target	Investment opportunities target	Share turnover target	Insider ownership target
Foreign institutional ownership target	15.701	5.078	25.585	3.958	7.621	4.143
	(5.07)	(3.02)	(4.77)	(3.56)	(2.98)	(1.99)
Characteristic target			−0.057	−0.090	−0.175	−0.383
			(−1.70)	(−1.11)	(−3.82)	(−1.26)
Foreign institutional ownership target × Characteristic target			−1.540	2.984	−3.872	5.978
			(−4.29)	(2.01)	(−2.03)	(2.23)
Foreign institutional ownership acquirer	−7.278	1.807				
	(−4.07)	(2.36)				
Target control variables	Yes	Yes	Yes	Yes	Yes	Yes
Acquirer control variables	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	264	669	612	612	612	490

This table presents the estimates of a deal-level probit model where the dependent variable is a dummy variable that equals one if the M&A deal is cross-border. Panel A presents estimates of a two-step probit model with a dummy variable that takes the value of one if a firm's shares are included in the MSCI World index, a dummy variable that takes the value of one if a firm's shares are cross-listed on US exchanges, dividend yield, statutory dividend tax rate of a firm's country, number of tax treaties linking a firm's country with other countries, time since the official liberalization of a firm's country's stock market, and a dummy variable equal to one if short selling is practiced in a firm's country used as instruments for target and acquirer institutional ownership. Panel B uses alternative foreign ownership variables: nonlinear specification using low (foreign ownership below 5%), medium (foreign ownership between 5% and 25%), and high (foreign ownership above 25%) foreign ownership variables; foreign blockholders ownership (holdings above 5%); foreign ownership relative to domestic ownership; foreign ownership by institutions from the acquirer country relative to ownership by foreign institutions based in third countries; and foreign ownership by institutions from third countries relative to total institutional ownership. The last column of Panel B tests whether the likelihood of a cross-border deal involving an acquirer from country j (target from country i) is associated with the pairwise institutional ownership from country j (acquirer firm institutional ownership from country i) in the target firm from country i. Panel C uses alternative samples: excludes M&A deals that involve the target firms from the United States and extends the sample to include 21 other countries. Panel D presents estimates of interactions of the target foreign institutional ownership with the target firm's characteristics. Regressions include target and acquirer control variables (coefficients not shown) used in Column (10) of Table 9. Refer to Table 1 for definitions of variables. The sample period is from 2000 to 2005. Robust t-statistics adjusted for country clustering are in parentheses.

Tests so far measure foreign institutional ownership as a percentage of market capitalization. An alternative is to measure foreign holdings relative to domestic holdings ("Foreign-to-domestic inst. ratio"). This better controls for biases in the overall representation of institutional investors in the institutional holdings data set. The results with this measure are consistent with the findings reported so far. We also consider the importance of foreign institutions from the acquirer country that hold shares in the target relative to foreign institutional ownership from other countries ("Acquirer-to-other countries inst."). Ownership by institutions from the acquirer country in the target firm has a positive and significant effect on the likelihood that a firm is targeted in a cross-border deal. This finding further supports the facilitation hypothesis. It provides a direct link between the nationality of the acquirer firm and the nationality of the institutional investors in the target firm shares prior to the M&A deal. In contrast, we do not find evidence that the presence of institutions domiciled in other countries, i.e., neither the country of the target nor the country of the acquirer, affects the likelihood that an M&A deal is cross-border ("Other countries-to-total institutional ownership"). Overall, this supports the hypothesis that institutions build "bridges" between firms from different countries.

In the last column of Panel B of Table 10, we test whether the likelihood of a cross-border deal involving an acquirer from country j is associated with the percentage of shares in the target firm that are owned by institutions domiciled in country j. To address this question, for each target firm from country i, we measure ownership by all other 26 possible countries. We then regress the likelihood of each effective cross-border deal pair on the pairwise institutional ownership, as well as the other control variables. There is evidence of a positive relationship between the pairwise target firm institutional ownership from country j and the likelihood that a cross-border deal takes place with an acquirer from country j. The Vodafone–Mannesmann case can be used to illustrate these test results: a bid by a UK company was more likely due to the disproportional presence of UK-based institutions in Mannesmann (Kedia 2001). This is consistent with the facilitation hypothesis. Likewise, the fraction of institutional ownership from country i in the acquirer is positively associated with the likelihood that a cross-border deal takes place with a target from country i. This is also consistent with the facilitation hypothesis but applied to the bidder firm. The interpretation here is that foreign institutions from the target firm country that are already present in the bidder country can fill the informational gap between the bidder and the target. Additionally, investors from the target country are likely to be less prone to any familiarity or home bias. These tests are the deal-level equivalent of the country-pairs tests in Section 3.

Panel C of Table 10 shows that the results are robust across different country samples. Specifically, we exclude M&A deals that involve target firms from the United States and extend the sample to include 21 other countries. Panel D examines how firm-level characteristics influence the role played by foreign institutions in cross-border M&As. We include interaction variables ("Foreign

institutional ownership target × Characteristic target") between foreign institutional ownership and measures of information asymmetry (size and investment opportunities), trading activity (share turnover), and private benefits of control (insider ownership). We find that the effect of foreign institutional ownership is stronger in companies with higher information asymmetry (small and growth firms), with less liquid shares, and with large controlling shareholders. This is consistent with the hypothesis that foreigners are better able to reduce the information gap in international takeovers and less prone to yield to target firm management efforts to block deals.

4.2 Success and full control in cross-border M&As

To see whether foreign institutions make it more likely that a cross-border deal is successfully completed, we estimate the probit regression:

$$\text{Prob(Deal is Completed)}_{i,t} = \alpha + \beta(\text{Institutional Ownership})_{i,t} + \delta X_{i,t} + \varepsilon_{i,t}, \quad (4)$$

where the dependent variable is a dummy that takes a value of one if the cross-border M&A deal is completed, and zero otherwise. The main variable of interest is the percentage of shares held by foreign institutions in the target and acquirer. The control variables are the same as those used in Column (10) of Table 9.

Panel A of Table 11 shows that the geography of institutions matters. Holdings by foreign institutional investors in both target and acquirer firms are positively associated with the probability that a cross-border deal will be completed (Column (1)). In Column (2), we find the opposite effect for domestic institutional ownership. A Wald test rejects the null that foreign and domestic institutional ownership coefficients are equal (Column (3)).

We then examine whether the decision of the bidder to take full control in a cross-border deal is related to institutional ownership. A transaction aiming at full control is more likely to effectively change the nationality of the target firm, with a potential relocation of corporate headquarters. We estimate the probit regression:

$$\text{Prob(Full Control)}_{i,t} = \alpha + \beta(\text{Institutional Ownership})_{i,t} + \delta X_{i,t} + \varepsilon_{i,t}, \quad (5)$$

where the dependent variable is a dummy that takes a value of one if the bid is for 100% of the target firm shares, and zero otherwise.

Panel B of Table 11 shows that foreign institutional ownership in both target and acquirer firms is positively related to the probability of full control (Column (4)). This is consistent with the hypothesis that foreigners reduce transaction costs in cross-border M&As that involve a change in firm nationality. Domestic institutional ownership is not related to the probability that a bidder will take full control of a target's shares (Column (5)). Kim (2007) finds that targets in countries with weak investor protection are more likely to be acquired through control stake acquisitions, rather than full control acquisitions. Our

Table 11
Deal-level analysis of the probability of success and full control in a cross-border merger and acquisition

	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A: Probit of success			Panel B: Probit full control		
Foreign institutional ownership target	4.237		9.871	5.020		4.725
	(3.70)		(3.86)	(2.23)		(2.24)
Domestic institutional ownership target		−1.349	−8.675		0.889	0.340
		(−1.14)	(−3.87)		(1.33)	(0.56)
Foreign institutional ownership acquirer	5.661		10.516	3.822		3.760
	(2.36)		(2.80)	(2.16)		(2.09)
Domestic institutional ownership acquirer		−1.519	−3.595		0.920	0.610
		(−1.87)	(−2.32)		(1.43)	(0.89)
Wald test: Foreign IO target = Domestic IO target			16.86			5.56
P-value			0.000			0.018
Wald test: Foreign IO acquirer = Domestic IO acquirer			9.17			2.73
P-value			0.003			0.098
Target control variables	Yes	Yes	Yes	Yes	Yes	Yes
Acquirer control variables	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	150	150	150	159	159	159

Panel A presents estimates of a deal-level probit model of the likelihood of success of a cross-border deal where the dependent variable is a dummy variable that equals one if a cross-border M&A bid is successful (or completed). Panel B presents estimates of a deal-level probit model of the likelihood of the acquirer taking full control of the target shares where the dependent variable is a dummy that equals one if the percentage sought in a cross-border M&A bid is 100%. Regressions include the control variables (coefficients not shown) used in Column (10) of Table 9. Refer to Table 1 for definitions of variables. The sample period is from 2000 to 2005. Robust *t*-statistics adjusted for country clustering are in parentheses.

findings suggest that foreign institutions are effective in encouraging full control acquisitions in international takeovers by reducing the extent of extraction of private benefits.

4.3 Cross-border M&A announcement returns: Is bridge-building profitable?

In this section, we examine whether the international institutional investors that link firms in different countries stand to gain from these cross-border corporate transactions. Our hypotheses suggest that foreign institutions are more likely to favor cross-border deals and not oppose them for some "patriotic" motivations, but this should be the case only if these deals earn them positive abnormal returns on average.

We examine the returns experienced by institutions that hold firms involved in cross-border deals, particularly the foreign institutions that hold both target and bidder firm shares. In the Mannesmann takeover, for example, 40% of Mannesmann's shareholders were also shareholders of Vodafone.[16] Harford, Jenter, and Li (2007) and Matvos and Ostrovsky (2008) examine the importance

[16] In the ABN AMRO takeover contest in 2007, the *Financial Times* (2007) reported that some of the largest institutional shareholders simultaneously held positions in the target bank and in the two bidder banks (Barclays and Royal Bank of Scotland).

Table 12
Deal-level analysis of the combined premium around M&A announcements

Panel A: Summary statistics of CAR

	Panel A.1: CAR (−1, +1)			Panel A.2: CAR (−10, +10)			
	Mean	Std error	Median	Mean	Std error	Median	Obs.
Target return	0.1181	0.0101	0.0929	0.1976	0.0164	0.1417	176
Acquirer return	−0.0078	0.0047	−0.0036	−0.0088	0.0083	−0.0085	176
Combined return	0.0106	0.0041	0.0059	0.0188	0.0074	0.0190	176
Combined return of foreign institutions	0.0104	0.0049	0.0073	0.0227	0.0087	0.0156	176
Combined return of common institutions	0.0162	0.0063	0.0097	0.0302	0.0102	0.0168	125

Panel B: Regressions of CAR

	Panel B.1: CAR (−1, +1)			Panel B.2: CAR (−10, +10)		
Dependent variable	Combined CAR	CAR difference	CAR ratio	Combined CAR	CAR difference	CAR ratio
Foreign institutional ownership target	0.027			0.072		
	(2.09)			(2.43)		
Foreign institutional ownership acquirer	0.069			0.049		
	(2.10)			(1.74)		
Foreign institutional ownership difference (acquirer–target)		0.071			0.088	
		(3.00)			(2.10)	
Foreign institutional ownership ratio (acquirer/(target+acquirer)			0.350			0.346
			(1.98)			(2.67)
Target control variables	Yes	Yes	Yes	Yes	Yes	Yes
Acquirer control variables	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	176	176	66	176	176	66
R-squared	0.31	0.45	0.80	0.31	0.40	0.54

This table reports cumulative abnormal returns (CAR) around cross-border M&A deal announcements using (−1, +1) and (−10, +10) event windows. Daily abnormal returns in US dollars are measured relative to the two-factor international market model estimated using a year of prior daily data. Panel A presents mean, standard error, and median of CAR for target and acquirer. Combined return is the value-weighted average CAR of the target and acquirer, where the weights are the market capitalization of the target and the acquirer (prior to the deal). Combined return of foreign institutions is the value-weighted average CAR of the target and acquirer, where the weights are given by the holdings of foreign institutions. Combined return of common institutions is the value-weighted average CAR of the target and acquirer, where the weights are given by the holdings of institutions that hold shares in both the target and acquirer (cross-owners). Panel B presents estimates of regressions of the combined CAR, and CAR difference and CAR ratio between the acquirer and the target. CAR difference is the difference between the acquirer dollar CAR and the target dollar CAR (dollar CARs are given by the product of the market capitalization by the CAR). CAR ratio is the ratio of the acquirer dollar CAR by the target dollar CAR plus the acquirer dollar CAR (only defined when both target and acquirer returns are positive). Regressions include the control variables (coefficients not shown) used in Column (10) of Table 9 and a dummy variable that equals one when the deal is cash only. Refer to Table 1 for definitions of variables. The sample period is from 2000 to 2005. Robust *t*-statistics adjusted for country clustering are in parentheses.

of institutional cross-ownership in the US takeover market. These factors seem even more important in an international setting, given the transaction costs and barriers to cross-border deals.

Table 12 presents the average target and acquirer announcement cumulative abnormal stock returns (CAR) in our sample of cross-border M&A. In Panel A.1, we use target and acquirer CARs over the three-day event window (−1, +1) around the deal announcement (e.g., Bris and Cabolis 2008; Moeller, Schlingemann, and Stulz 2007). In Panel A.2, we use a longer event window

(−10, +10) as a robustness check. We estimate abnormal stock returns using as a benchmark model the two-factor international market model (Griffin 2002). The factors are the local market return and the world market return. The model is estimated using daily return data in US dollars from the 260 business days prior to the deal announcement.

The average three-day CARs for the target and acquirer are 11.81% and −0.78%. We also present the value-weighted average CAR of the target and acquirer (combined return), where the weights are the market capitalizations of the target and acquirer firms (prior to the deal). The combined return measures the overall economic gains (synergy) of the transaction. Panel A.1 shows that the average combined return for cross-border deals is 1.06% using a (−1, +1) window and 1.88% using a (−10, +10) window. We next present the combined returns to foreign institutions (combined return of foreign institutions) depending on their holdings in the target and acquirer (prior to the deal). The average return is positive and significant for foreign investors in cross-border deals at 1.04% for the (−1, +1) window and 2.27% for the (−10, +10) window. Finally, we present the combined return to institutional investors common to target and acquirer; these are called cross-owners in Matvos and Ostrovsky (2008) and Harford, Jenter, and Li (2007). The average return to common institutional investors (combined return of common institutions) in cross-border deals is 1.62% for the (−1, +1) window and 3.02% for the (−10, +10) window. These findings suggest that common institutional investors make positive returns in cross-border M&A deals from their holdings in the targets' and acquirers' stocks. The returns to foreign and common investors are higher than the returns to all investors. Institutions seem to gain from the deal as the profits on their target holdings exceed, on average, the losses on their acquirer holdings.

We then test whether there is a link between the overall value creation and international institutional ownership by looking at the combined return. We then regress the combined return on foreign institutional ownership in the target and acquirer, as well as other determinants of the M&A announcement return. We use the same list of control variables as used in Column (10) of Table 9 for both target and acquirer and a dummy that equals one when the deal is cash only. Panel B of Table 12 reports the results. We find that foreign institutional ownership in both target and acquirer firms is associated with higher combined returns in cross-border deals. This is consistent with the "facilitation hypothesis" that foreign institutions promote deals that offer greater value creation (synergy).

We also examine whether the presence of foreign institutions affects the division of the merger gain between the target and acquirer. We use the measures of merger gain split proposed by Ahern (2008). The first measure is the "CAR difference." This is defined as the difference between the acquirer dollar CAR and the target dollar CAR. Dollar CARs are constructed as the product of the market capitalization of the firm and its CAR. We then regress the CAR difference on the foreign institutional ownership dollar

difference (acquirer–target) that captures the differential dollar stake that foreign institutions have in the acquirer versus the target. The results are reported in Panel B of Table 12. We find that a greater presence of foreign institutions in the acquirer affects the bargaining outcome of the M&A deal in favor of the acquirer. The results hold regardless of the way this difference is defined (i.e., target–acquirer, as opposed to acquirer–target).

The second measure is the acquirer's share of the merger gain (CAR ratio). This measure corresponds to the slice of the pie accruing to each party in the deal. Following Ahern (2008), we analyze the subsample of deals where both target and acquirer returns are positive. We find that the slice of the pie accruing to the acquirer is positively associated with a greater presence of foreign institutions in the acquirer relative to the target. For both measures of the division of the merger gain, we use CARs estimated over the $(-1, +1)$ and $(-10, +10)$ event windows.

5. Conclusion

Our study examines the role played by institutional investors in the international market for corporate control. Cross-border portfolio investment by institutional money managers facilitates cross-border M&As and helps to reduce the bargaining and transaction costs associated with these deals. The effect of foreign investors on cross-border M&As is stronger when legal institutions are weaker, capital markets are less developed, and information asymmetry and private benefits of control are higher. This finding suggests that country-level governance and foreign investors are substitutes in facilitating cross-border M&A transactions.

Results for target and acquirer returns confirm the unique role of foreign institutions in cross-border deals, as firms with more foreign institutional ownership experience significantly lower announcement abnormal stock returns. We also observe that institutions holding both target and acquirer stocks are compensated by higher returns. Thus, the evidence supports the special role played by foreign institutions as facilitators in cross-border deals by reducing the transaction costs and the information asymmetry associated with cross-border takeover bids.

We conclude that overseas portfolio investments and cross-border M&As are complementary mechanisms in promoting financial integration worldwide. Overall, our findings establish a link between the market for corporate control and the ownership structure of firms worldwide. Companies with more international institutional investors benefit from shareholders at the "gates" that act as Trojan horses facilitating changes of control.

References

Adler, M., and B. Dumas. 1975. Optimal International Acquisitions. *Journal of Finance* 30:1–19.

Agmon, T., and D. Lessard. 1977. Investor Recognition of Corporate International Diversification. *Journal of Finance* 32:1049–55.

Ahern, K. 2008. Bargaining Power and Industry Dependence in Mergers. Working Paper, University of Michigan.

Ambrose, B., and W. Megginson. 1992. The Role of Asset Structure, Ownership Structure and Takeover Defenses in Determining Acquisition Likelihood. *Journal of Financial and Quantitative Analysis* 27:575–89.

Baker, M., C. F. Foley, and J. Wurgler. 2009. Multinationals as Arbitrageurs: The Effect of Stock Market Valuations on Foreign Direct Investment. *Review of Financial Studies* 22:337–69.

Becht, M., J. Franks, C. Mayer, and S. Rossi. 2009. Returns to Shareholder Activism: Evidence from a Clinical Study of the Hermes UK Focus Fund. *Review of Financial Studies* 22:3093–129.

Bekaert, G., and C. Harvey. 2000. Foreign Speculators and Emerging Equity Markets. *Journal of Finance* 55:565–613.

Bekaert, G., C. Harvey, and C. Lundblad. 2005. Does Financial Liberalization Spur Growth? *Journal of Financial Economics* 77:3–55.

Bhattacharya, U., and H. Daouk. 2002. The World Price of Insider Trading. *Journal of Finance* 573:75–108.

Brav, A., W. Jiang, F. Partnoy, and R. Thomas. 2008. Hedge Fund Activism, Corporate Governance, and Firm Performance. *Journal of Finance* 63:1729–75.

Bris, A., and C. Cabolis. 2008. The Value of Investor Protection: Firm Evidence from Cross-Border Mergers. *Review of Financial Studies* 21:605–48.

Bris, A., W. Goetzmann, and N. Zhu. 2007. Efficiency and the Bear: Short Sales and Markets around the World. *Journal of Finance* 62:1029–79.

Business Week. 2006. Special Report: Fidelity's Divided Loyalties.

Carleton, W., J. Nelson, and M. Weisbach. 1998. The Influence of Institutions on Corporate Governance through Private Negotiations: Evidence from TIAA–CREF. *Journal of Finance* 53:1335–62.

Chan, K., V. Covrig, and L. Ng. 2005. What Determines the Domestic Bias and Foreign Bias? Evidence from Mutual Fund Equity Allocations Worldwide. *Journal of Finance* 60:1495–534.

Chen, X., J. Harford, and K. Li. 2007. Monitoring: Which Institutions Matter? *Journal of Financial Economics* 86:279–305.

Coval, J., and T. Moskowitz. 2001. The Geography of Investment: Informed Trading and Asset Prices. *Journal of Political Economy* 109:811–41.

Davis, G., and E. H. Kim. 2007. Business Ties and Proxy Voting by Mutual Funds. *Journal of Financial Economics* 85:552–70.

Denis, D., D. Denis, and K. Yost. 2002. Global Diversification, Industrial Diversification, and Firm Value. *Journal of Finance* 57:1951–79.

Doukas, J., and N. Travlos. 1988. The Effect of Corporate Multinationalism on Shareholders' Wealth: Evidence from International Acquisitions. *Journal of Finance* 43:1161–75.

Errunza, V., and L. Senbet. 1984. International Corporate Diversification, Market Valuation, and Size-Adjusted Evidence. *Journal of Finance* 39:727–45.

Economist. 2007a. The Global Merger Boom: The Beat Goes On.

Economist. 2007b. Leader of the Swarm.

Fatemi, A. 1984. Shareholder Benefits from Corporate International Diversification. *Journal of Finance* 39:1325–44.

Ferreira, M., and P. Matos. 2008. The Colors of Investors' Money: The Role of Institutional Investors around the World? *Journal of Financial Economics* 88:499–533.

French, K., and J. Poterba. 1991. Investor Diversification and International Equity. *American Economic Review* 81:222–26.

Financial Times. 2007. Tangled Relationships Make Choices Tough.

Gaspar, J.-M., M. Massa, and P. Matos. 2005. Shareholder Investment Horizons and the Market for Corporate Control. *Journal of Financial Economics* 76:135–65.

Gillan, S., and L. Starks. 2003. Corporate Governance, Corporate Ownership, and the Role of Institutional Investors: A Global Perspective. *Journal of Applied Finance* 13:4–22.

Gillan, S., and L. Starks. 2007. The Evolution of Shareholder Activism in the United States. *Journal of Applied Corporate Finance* 19:55–73.

Gompers, P., and A. Metrick. 2001. Institutional Investors and Equity Prices. *Quarterly Journal of Economics* 116:229–59.

Greenwood, R., and M. Schor. 2009. Investor Activism and Takeovers. *Journal of Financial Economics* 92:362–75.

Griffin, J. 2002. Are the Fama and French Factors Global or Country Specific? *Review of Financial Studies* 15:783–803.

Grinblatt, M., and M. Keloharju. 2001. What Makes Investors Trade? *Journal of Finance* 56:589–616.

Grossman, S., and O. Hart. 1980. Takeover Bids, the Free-Rider Problem, and the Theory of the Corporation. *Bell Journal of Economics* 11:42–64.

Harford, J., D. Jenter, and K. Li. 2007. Conflicts of Interests among Shareholders: The Case of Corporate Acquisitions. Working Paper, University of Washington.

Hau, H., M. Massa, and J. Peress. 2006. Do Demand Curves for Currencies Slope Down? Evidence from the MSCI Global Index Change. Working Paper, INSEAD.

Hopner, M., and G. Jackson. 2004. An Emerging Market for Corporate Control? The Mannesmann Takeover and German Corporate Governance. Working Paper, Max-Planck Institute.

International Monetary Fund. 2005. Global Financial Stability Report: Market Developments and Issues.

Kang, J. K., and J.-M. Kim. 2008. The Geography of Block Acquisitions. *Journal of Finance* 62:2817–58.

Karolyi, G. A., and R. Stulz. 2003. Are Financial Assets Priced Locally or Globally? In George Constantinides, Milton Harris, and René Stulz (eds.), *The Handbook of the Economics of Finance*, pp. 975–1020. New York: North-Holland.

Kedia, S. 2001. Vodafone AirTouch's Bid for Mannesmann. Harvard Business School Case Study No. 9-201-096.

Khorana, A., H. Servaes, and P. Tufano. 2005. Explaining the Size of the Mutual Fund Industry around the World. *Journal of Financial Economics* 78:145–85.

Kim, W. 2007. Investor Protection and the Mode of Acquisition: An Implication for the Formation of Pyramids. Working Paper, Korea University Business School.

Klein, A., and E. Zur. 2009. Entrepreneurial Shareholder Activism: Hedge Funds and Other Private Investors. *Journal of Finance* 64:187–229.

La Porta, R., F. Lopez-de-Silanes, and A. Shleifer. 2006. What Works in Securities Laws? *Journal of Finance* 61:1–32.

La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. Vishny. 1998. Law and Finance. *Journal of Political Economy* 106:1113–55.

La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. Vishny. 1999. Corporate Ownership around the World. *Journal of Finance* 54:471–517.

Lewis, K. 1999. Trying to Explain the Home Bias in Equities and Consumption. *Journal of Economic Literature* 37:571–608.

Li, D., F. Moshirian, P. Pham, and J. Zein. 2006. When Financial Institutions Are Large Shareholders: The Role of Macro Corporate Governance Environments. *Journal of Finance* 61:2975–3007.

Matvos, G., and M. Ostrovsky. 2008. Cross-Ownership, Returns, and Voting in Mergers. *Journal of Financial Economics* 89:391–403.

Moeller, S., F. Schlingemann, and R. Stulz. 2007. How Do Diversity of Opinion and Information Asymmetry Affect Acquirer Returns? *Review of Financial Studies* 20:2047–78.

Morck, R., and B. Yeung. 1991. Why Investors Value Multinationality. *Journal of Business* 64:165–87.

Morck, R., B. Yeung, and W. Yu. 2000. The Information Content of Stock Markets: Why Do Emerging Markets Have Synchronous Stock Price Movements? *Journal of Financial Economics* 58:215–60.

Nenova, T. 2006. Takeover Laws and Financial Development. Working Paper, World Bank.

Organization for Economic Co-Operation and Development. 2007. International Investment Perspectives: Freedom of Investment in a Changing World.

Petersen, M. 2009. Estimating Standard Errors in Finance Panel Data Sets: Comparing Approaches. *Review of Financial Studies* 22:435–80.

Rossi, S., and P. Volpin. 2004. Cross-Country Determinants of Mergers and Acquisitions. *Journal of Financial Economics* 74:277–304.

Shleifer, A., and R. Vishny. 1986. Large Shareholders and Corporate Control. *Journal of Political Economy* 94:461–88.

Shleifer, A., and R. Vishny. 2003. Stock Market Driven Acquisitions. *Journal of Financial Economics* 70:295–311.

Starks, L., and K. Wei. 2004. Cross-Border Mergers and Differences in Corporate Governance. Working Paper, University of Texas at Austin.

Stulz, R. 2005. The Limits of Financial Globalization. *Journal of Finance* 60:1595–638.

Stulz, R., R. Walkling, and M. Song. 1990. The Distribution of Target Ownership and the Division of Gains in Successful Takeovers. *Journal of Finance* 45:817–33.

World Bank. 2000. Pension Reform Primer: Portfolio Limits.