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Contents

Abstract

The paper examines the relationship between cross-border mergers and acquisitions (M&A) and financial development in emerging Asian economies. Bilateral data of cross-border M&A for nine emerging Asian economies during 2000–2009 are analyzed with a sample selection model and panel data model. Estimation results show that the banking sector plays a crucial role in facilitating cross-border M&A while the role of equity markets has increased in importance since, in addition to cash, the issuance of common stock and the exchange of stocks have become a popular form for payment for a deal. Because of the relatively thin market, the corporate bond market plays a limited role in supporting cross-border M&A, which is in contrast to the public bond market. The results also show that financial development in terms of stock and bond markets in the home countries tends to be more important when the target firms reside in more developed countries. In addition to financial development, the paper shows that most of the cross-border M&As are invested in the technology-related and resource-based industries while cheap labor industries are relatively less attractive.

I. Introduction

A substantial portion of foreign direct investment (FDI) takes place in the form of cross-border mergers and acquisitions (M&A) (Brakman et al. 2008) as opposed to greenfield investments. Moreover, M&A and FDI flows exhibit a close relationship despite the fact that increases in M&A activities may not necessarily be reflected as increases in FDI flows due to differences in aggregation components (UNCTAD 1996). Nonetheless, M&As share the primary virtues of FDI from the point of view of both host and home (source) countries, such as being an important means of transferring capital, improving technology and efficiency, and stimulating growth.

In 2008, M&A activity reached $707 billion, almost a tenfold increase from $77 billion in 1991–1996. It however declined to $250 billion in 2009 because of the global economic crisis. Most M&A purchases have originated from developed countries, but the growth of M&A purchases from developing countries has increased noticeably over the past decade. Most M&A from developing countries originated from Asian countries.

Meanwhile, the global outward FDI stock increased to $19 trillion in 2009, from $549 billion in 1980. The growth of outward FDI (OFDI) from developing countries has made a significant contribution to the world economy. Annual OFDI flows from developing countries have grown faster than those from developed countries over the past 15 years and they have contributed well to the world economy during the recent economic difficulties in developed markets. Among developing regions, Asia has been at the forefront of OFDI. The OFDI stock from developing Asia reached more than $2 trillion or 10.5% of the world total in 2009.[1]

Although there has been a rise of OFDI from developing Asian countries, particularly in the form of M&A purchases, most empirical studies of FDI and M&A still look at determinants and implications of capital inflows in these countries. Relatively little attention has been paid to the movements of outflows (i.e., OFDI and M&A purchases). Particularly, a rise in M&A purchases from developing countries after the 1997–1998 Asian crisis raises the key question of whether or not an improvement in financial development in Asian countries (home countries) can contribute to the rise of M&A purchases. In addition, whether different types of financial instruments in these countries

[1] Unless otherwise specified, OFDI data in this paper have been taken from the UNCTAD database. OFDI data are not always strictly comparable since not all include reinvested earnings, intracompany loans and nonfinancial and private sector transactions, earnings from exports, and loans raised in foreign markets.

provide equal contributions to spur cross-border M&A is another key issue that still receives little attention.

The objective of this paper is to examine the determinants of cross-border M&A from nine emerging Asian economies (acquirers) consisting of the People's Republic of China (PRC); Hong Kong, China; India; Indonesia; the Republic of Korea; Malaysia; the Philippines; Singapore; and Thailand during 2000–2010, with attention paid to the role of financial development. This study uses a gravity model framework to uncover determinants of the size and direction of M&A flows. In addition to dividing financial development into banking sector, stock market, and bond market development, the paper also examines whether destination countries (host countries), especially high-income and developing countries, matter in determining the nature of financial development in the Asian countries performing M&A purchases.

The rest of the paper is organized as follows. Section II shows trends and patterns of OFDI in general and M&A movements in particular. Section III discusses the analytical framework relating to key determinants of cross-border M&A activities, including the possible role of financial development in determining movements of M&A purchases. Section IV provides the empirical model while the data and econometric model are discussed in Section V. The results are shown in Section VI and the final section discusses some policy inferences.

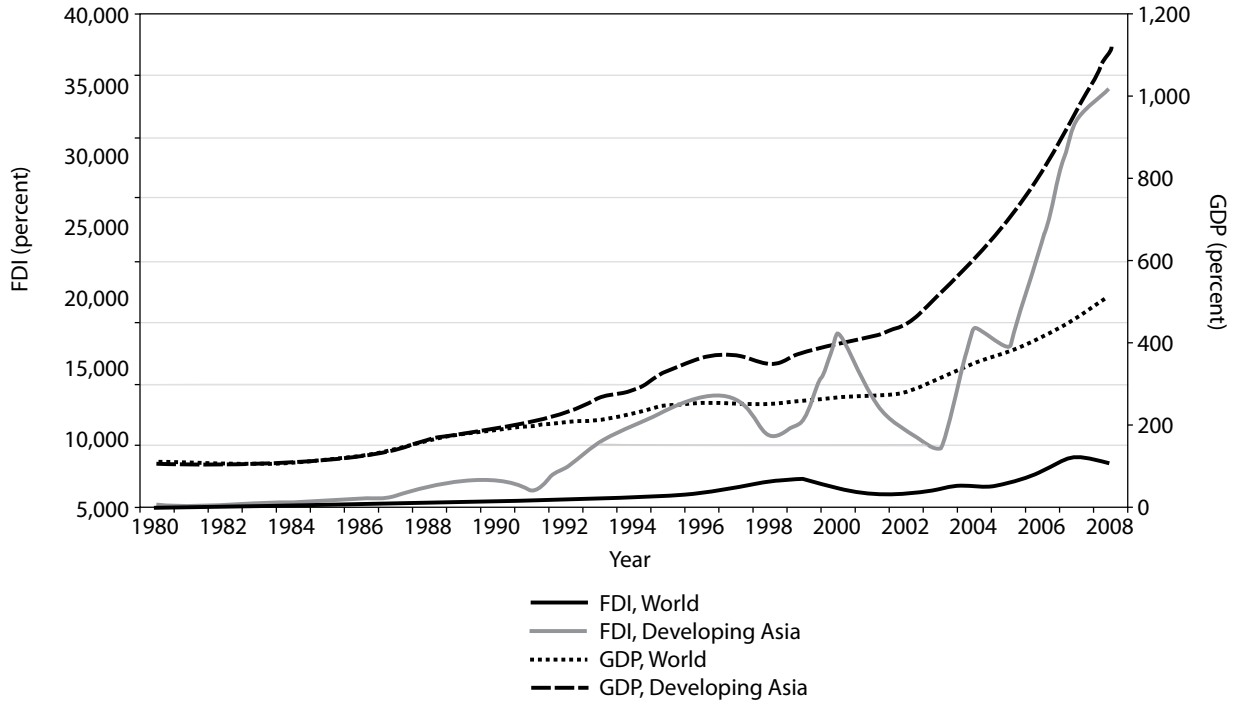
II. Trends and Patterns of OFDI and M&As in Developing Asia

Although developing Asia continues to be a major destination of inward FDI, outward FDI has grown substantially over the past decades (Figure 1). Despite the global recession, OFDI from developing Asia has remained strong, slowing down by just 1% in 2009. The bulk of that amount ($220 billion) originated from Hong Kong, China, but there were substantial outflows from other East Asian sources as well. Between 2000 and 2008, the PRC's annual FDI outflows averaged more than $14 billion per year. By 2009, the PRC's outward FDI stock was $230 billion (up from $4.5 billion in 1990) and already located in 160 countries,[2] but was still much less than its inward stock of $473 billion.

Most OFDI outflows from developing Asia have been intraregional, taking place especially among the economies of East and Southeast Asia. They have been encouraged by regional integration efforts, the expansion of production networks, and the relocation of production to lower cost areas within the region. Intraregional FDI accounted for an estimated 62% of total flows to the region in 2005.

[2] See http://www.unctad.org/Templates/Page.asp?intItemID=5545&lang=1.

Figure 1: Index of FDI Outflows and GDP, 1980–2008 (1980 = 100)



FDI = foreign direct investment, GDP = gross domestic product.
Note: Developing Asia comprises the developing member countries of the Asian Development Bank.
Source: UNCTAD data.

Asian savings have become an important source for investment, not just domestically but globally. If FDI outflows are viewed in relation to gross fixed capital formation (Table 1), a number of developing Asian economies (Hong Kong, China; Malaysia; Singapore) rank with the largest developed economies (Germany, Japan, and the United States [US]). This suggests that, relatively speaking, a number of developing Asian economies are already among the world's top foreign investors. This is also the case when investment stock is taken as the basis (UNCTAD 2008). Singapore's OFDI stock was already over 95% of gross domestic product (GDP) by 2002, providing a strong boost to regional integration.

Table 1: FDI Outflows as a Percentage of Gross Fixed Capital Formation in Selected Developing Asian Economies, 1990–2007[a]

Economy	1990–1994	1995–1999	2000–2004	2005–2007
Hong Kong, China	32.57	46.78	70.62	114.63
Singapore	11.62	22.22	32.69	47.34
Marshall Islands	0.36	0.09	8.01	17.85
Malaysia	2.77	6.63	6.23	16.11
Azerbaijan	0.00	0.08	12.93	15.50
Taipei,China	6.38	6.06	9.43	10.27
India	0.03	0.12	1.12	3.14
China, People's Rep. of	1.42	0.72	0.67	1.37
Memorandum				
Sweden	13.02	36.22	43.24	39.60
United Kingdom	12.51	38.20	35.91	32.00
France	10.33	19.02	29.94	31.86
Germany	4.63	13.80	7.01	22.99
United States	4.72	7.70	8.23	8.21
Japan	2.33	2.00	3.19	5.47

[a]Annual average.
Source: UNCTAD website (www.unctad.org/sections/dite_dir/docs/wir2005_outflows_gfcf_en.xls).

OFDI flows originate from a wide range of developing Asian economies, but are dominated by a relative few (Table 2). The costs of acquiring quality data on foreign markets can be high, especially for developing country firms with relatively tight budget constraints. Hence, developing country-based businesses increasingly invest in neighboring developing countries—where they have trade, ethnic, and cultural links—at lower transaction costs, before expanding further.

Table 2: Top 10 Sources of FDI in Developing Asia, 1980–89, 1990–99, and 2000–08

Home Economy	1980–1989			1990–1999			2000–2008	
	US$, Mn	Rank		US$, Mn	Rank		US$, Mn	Rank
Taipei,China	1,214.6	1	Hong Kong, China	16,496.8	1	Hong Kong, China	36,954.1	1
Hong Kong, China	1,173.1	2	Singapore	4,641.5	2	China, People's Rep. of	14,079.1	2
China, People's Rep. of	453.1	3	Taipei,China	3,484.1	3	Singapore	11,067.6	3
Korea, Rep. of	398.0	4	Korea, Rep. of	2,911.2	4	Taipei,China	7,191.2	4
Malaysia	236.7	5	China, People's Rep.	2,322.8	5	India	6,659.0	5
Singapore	215.4	6	Malaysia	1,502.7	6	Korea, Rep. of	6,551.0	6
Philippines	38.3	7	Thailand	409.5	7	Malaysia	4,647.8	7
Thailand	25.7	8	Philippines	153.5	8	Indonesia	3,331.1	8
Pakistan	17.5	9	India	70.0	9	Thailand	827.0	9
India	4.4	10	Brunei Darussalam	47.4	10	Kazakhstan	604.2	10

FDI = foreign direct investment, Mn = million.
Source: UNCTAD data.

At the subregional level, significant intraregional FDI flows have taken place between East and Southeast Asia. In particular for 2000–2008, flows have been heavy from Hong Kong, China to the more developed Southeast Asian countries such as Singapore and Malaysia; from the Republic of Korea and Taipei,China to the less developed countries such as Kazakhstan and Thailand; and from Singapore to the PRC and Hong Kong, China. These flows are also important within East Asia—originating largely from Hong Kong, China; Taipei,China; and the Republic of Korea, and particularly target the PRC.[3] The emphasis in Taipei,China's OFDI started shifting from Southeast Asia to the PRC in 1992, when the National Economic Forum decided to lift the ban on cross-strait trade and investment (Chiu 2004). FDI flows within Southeast Asia are also significant, with Malaysia and Singapore as the main sources of intraregional investment in that subregion. In particular, data indicate that small- and medium-size enterprises (SMEs) from Singapore remain more interested in regional than global markets. Although intraregional and interregional FDI flows are much smaller in South Asia, India is emerging as a key investor from that subregion.

FDI outflows from Asia to other developing regions are also increasing. For instance, in 2004, Latin America became the largest destination for the PRC's investment, accounting for half of the total outflows from the PRC due to massive investments in natural resource sectors. In May 2004 alone, FDI projects of the PRC worth several billion dollars in alumina, steel, and coke were announced in Brazil. Today, the PRC has investments in the oil industry in at least 14 countries, including Indonesia, Kazakhstan, Myanmar, Sudan, and Yemen.

While greenfield investments remain important, M&As have been increasing in developing Asian economies, especially in information technology software services, natural resources, and pharmaceuticals (Table 3). The PRC and India demonstrate the growing role of M&As in their economies. The PRC's strategy is shifting from long-term contracts to acquiring foreign companies. Access to natural resources, brand recognition, and acquisition of strategic assets are the main driving forces. Technology acquisition is often in the form of establishing research and development (R&D) centers in developed countries. According to Alon, Hale, and Santos (2010), the PRC's total foreign holdings acquired through M&As reached over $87 billion by end of 2008, from virtually nothing 2 decades earlier.

On the other hand, the last decade has seen the Indian service sector, particularly the software industry, engaging in M&As directed at developed countries with international market access; access to technology and human resources; and operational synergies as primary motivations (Pradhan and Abraham 2005). Based on data from Dealogic, the *Economist* estimated that the value of Indian outbound M&A transactions grew from $2 billion in 2003 to $19 billion in 2008 (Goplan and Rajan 2010). Furthermore, the

[3] Roundtripping FDI flows from the PRC through Hong Kong, China and back to the PRC have been discussed extensively elsewhere (see, for example, Wang 2004) and are estimated to account for 25%–40% of Hong Kong, China's OFDI.

number of acquisitions in India rose substantially over the past decade and after 2004; foreign acquisitions by Indian firms increased at a much faster rate compared to the average developing country experience (Athukorala 2009). In 2007–2008, India ranked as the fourth largest overseas business acquirer among developing and transition economies after Singapore, United Arab Emirates, and Russia.

It can also be observed that most of the M&A increases in developing countries over the past decades were from developing Asia, and many of these M&As were intraregional. For example, about two thirds of the cross-border M&A purchases by Singaporean companies in 1995–2008 were within Asia. M&A contribution to outward FDI tends to be higher in middle-income countries, e.g., the PRC, India, and Southeast Asian countries, than high-income countries. In high-income Asian countries, greenfield investment tends to dominate the movements of outward FDI flows, especially in Taipei,China where the share of M&A in total outward FDI was less than 15% in 2000–2008, compared to more than 50% for middle-income countries.

Table 3: Cross-Border Mergers and Acquisitions (Purchases), 1991–2009 (billion US$)

	Purchases						
	1991–96	**1997–99**	**2000–05**	**2006**	**2007**	**2008**	**2009**
World	76.6	406.0	409.2	625.3	1022.7	706.5	249.7
Developed Economies	65.3	376.1	347.3	497.3	841.7	568.0	160.8
Europe	36.7	235.3	216.2	260.7	537.9	306.7	89.7
United States	18.7	84.4	68.4	117.7	179.9	70.2	23.8
Japan	1.2	1.4	5.3	17.0	30.3	56.4	17.4
Developing Economies	7.8	12.6	37.7	114.9	144.8	105.8	74.0
Africa	0.8	-0.8	3.5	15.9	9.9	8.2	2.7
Latin America and the Caribbean	2.3	4.1	6.6	28.1	40.2	2.5	3.7
Asia	4.7	9.3	27.6	70.8	94.5	94.4	67.3
East Asia	2.4	7.1	12.9	21.2	-0.7	39.9	35.9
China, People's Rep. of	0.5	1.1	1.2	12.1	-2.3	37.9	21.5
Hong Kong, China	1.2	5.3	11.0	8.0	-8.0	-1.0	7.5
Korea, Rep. of	0.7	0.1	0.2	1.1	8.6	3.9	7.0
Taipei,China	0.0	0.4	0.5	0.0	0.9	-1.0	0.6
South Asia	0.1	0.0	1.1	6.7	29.1	13.5	0.3
India	0.1	0.0	1.1	6.7	29.1	13.5	0.3
Southeast Asia	2.1	2.6	9.6	7.5	25.9	18.9	4.3
Indonesia	0.1	0.1	0.1	-0.1	0.8	0.9	-2.6
Malaysia	0.9	0.5	1.8	2.7	3.7	9.8	3.3
Philippines	0.0	0.0	0.4	0.2	-2.5	-0.2	0.0
Singapore	0.8	1.9	7.3	5.6	23.9	7.0	2.8
Thailand	0.0	0.1	0.0	0.1	0.1	1.4	0.9

Source: UNCTAD database, downloaded August 2010.

III. Analytical Framework: Determinants of Outward FDI

This section reviews the analytical framework of firm participation in performing cross-border M&A investment. The analytical framework discussed here is used as groundwork for the empirical model in the next section. It can, in fact, be applied to both greenfield and cross-border M&A investments. However, because of differences in the nature and objective of firms performing these two forms of investment, factors standing out as being particularly important for these two investments could be different. Shimizu et al. (2004) observed that M&As tend to be the preferred mode of investment among firms when the sought-after resources are intangible in nature such as technological capabilities and brand name; and when speed is paramount to gain access to a new market.

FDI generally originates from the decision of multinational enterprises (MNEs) to enter into international production and to relocate parts of their activities in selected host countries. There is still no single analytical framework to capture the whole range of motivations for an investment profile in a country. Dunning (1981) developed the investment development path model illustrating a positive relationship between the level of a country's development (particularly income level) and the country's investment profile.

This model, however, could not address the increased complexity in motives for FDI and M&A from developing and emerging economies. There is evidence that a number of developing economies such as the PRC, India, Southeast Asian countries, Brazil and Mexico, began to perform OFDI and M&A earlier than that would be predicted by the investment development path model. These economies invest not only in other developing economies, but also in developed economies. This implies that there are other crucial factors determining the investment profile of an economy.

Based on theoretical and empirical literature, motivations driving a foreign firm to invest overseas can be regrouped into five key factors.[4] The first factor is search for strategic natural resources. Some home-country firms undertake OFDI (M&A) to access immobile natural factor endowments in host countries such as oil and minerals to secure the supply of raw materials. Thus, a country that has an abundant natural resource endowment is likely to attract inflows of resource-seeking FDI. There is evidence that resource-rich countries such as Cambodia, Indonesia, the Lao People's Democratic Republic, and Malaysia have begun to attract "resource-seeking" investors from the PRC because of its limited resource endowment and rapid expansion of domestic demand for commodity

[4] Dunning (1993) provides two broad reasons why any firm would engage in FDI: the first is to exploit its existing assets or competitive capabilities (asset-exploiting FDI) and the second is to augment them (asset-augmenting FDI). The former is associated with an investing firm's making use of its existing ownership advantages while the latter is associated with an investing firm acquiring important ownership advantages that it currently lacks. Resource-seeking FDI, market-seeking FDI, and efficiency-seeking FDI can be classified in asset-exploiting FDI.

products. As mentioned earlier, the PRC recently has actively invested in the oil and other commodity industries in many countries, including in Latin America and Africa.

The second is market access opportunity or expansion. Some firms undertake market-seeking FDI to respond to opportunities in host countries, especially in terms of market size. This is done in order to strengthen existing markets and/or to develop and explore new markets. In addition, a limited home-country market in terms of sales and opportunity to expand pushes firms to invest in other countries. The impact of this on firms may be intensified by some factors in other markets such as trade barriers, and a lack of international linkages to customers in targeted markets.

The third is efficiency enhancement. Foreign investors seek lower cost locations and possible economies of scale opportunities for their production and operation activities, especially in relation to manufacturing, labor, communication, administrative, and distribution costs. Increases in production costs in the home economy, caused by rapid economic expansion and scarcity of resources and inputs, drive firms to invest in other countries. In particular, a rise in labor cost is a common factor in driving firms to invest overseas. Appreciation of the real exchange rate could also cause firms to reallocate their production plants to other countries where the real exchange rate is cheaper, to maintain their international competitiveness. This is particularly true for a firm that engages in export-oriented activities. The experience of MNEs in the newly industrialized economies (NIEs) following the Plaza Accord in the late 1980s provides supportive evidence for plant relocation from these countries mostly to Southeast Asian countries as a result of their appreciation of exchange rates.

While significant, Brooks and Hill (2004) argue that cost saving is not the most important factor in driving OFDI in the region, especially from Singapore. Most firms investing overseas are not labor-intensive manufacturers per se. Rather, they are high value-added manufacturers or service providers. Production or labor costs constitute only a relatively low proportion of their total operating costs. Some firms are, however, motivated to invest in East and Southeast Asia on the basis of personal relations with local partners and customers. In some host countries (e.g., the PRC and Malaysia), ethnicity and social connections played a role in motivating Singaporean investments there. This set of motivations (cost, personal relationship, and ethnicity and social connections) is particularly important for SMEs. As a consequence of this mixed set of motivations, SMEs from Singapore tend to invest regionally in nearby host countries that are both cheaper in terms of production costs and culturally closer in terms of ethnic relations (e.g., the PRC and Malaysia). Similarly, perhaps because of ethnic ties, companies from the Republic of Korea invest in Kazakhstan and ethnic PRC companies invest in East Asia.

The fourth is the opportunity to acquire or augment assets. Firms undertake FDI to create, sustain, or maintain their competitive position by acquiring the proprietary assets of another foreign company. Firms in a home country aim to tap into existing

technology, knowledge, managerial practices and expertise of foreign companies. Firms also aim to participate more fully in new product development and standard setting in order to maximize their competitive position. In contrast to the above three motivations, firms under strategic asset-seeking FDI tend to lack ownership advantage (outside of their domestic market) so that they need to invest in foreign companies to acquire such advantages. This motivation mostly leads to outward FDI from emerging-market economies to developed countries, instead of flows between developing economies.

Finally, financial development—our key variable of interest in this paper—in the home country could play an important role in affecting investors' decisions to invest overseas. A financially deep market provides firms access to capital necessary to undertake cross-border investment (Giovanni 2005). As argued by Froot and Stein (1991), under asymmetric information, internal finance is likely to be cheaper than external finance and this tends to induce firms to raise funds in the home country for investment abroad. Thus, financial deepening—both in terms of size and liquidity—within a country is crucial in aiding its firms to invest overseas. Although it is well recognized that the banking sector plays the primary role in providing funds for investors in developing countries, financial depth in terms of stock and bond markets has begun to play a role in financing cross-border transactions, especially when M&As have increased their importance in FDI flows. Giovanni (2005) argues that more vibrant equity markets could increase the viability of using equity to finance deals while a rebound in equity prices could boost confidence among CEOs to pursue cross-border investment, especially M&As.

In addition to the five key groups of factors mentioned above, there are other variables that exhibit influence on M&A and OFDI decisions. Bénassy-Quéré et al. (2005) explained that institutions are another crucial factor in affecting flows of FDI. Cultural proximity could be regarded as one institutional factor in determining movements of FDI. This leads to the development of international business and social networks that can help companies to transnationalize in world markets. This informal channel could help firms in the home country to reduce transaction costs, especially business opportunity search costs, and to mitigate risk perceptions of a host-country company. Ethnic and family networks can constitute a firm-specific advantage and compensate the company for its late entry into international markets, leading to a special ownership advantage (Li 2003).

The investment climate, especially in terms of liberalization policy, in a host country could be another crucial factor in encouraging cross-border investment. While a high degree of openness to international markets leads to well-established international links and distribution networks, MNEs, especially those engaged in export-oriented industries, are likely to invest in the country that has a high degree of openness. Government policy in the home country may also be important in affecting the decision of a firm in the home country. Although the rise in FDI from developing countries' firms initially took place largely in the context of government policies that paid little attention to outward investment or even tried to restrict it, this situation has changed in recent years. Many Asian countries introduced favorable policy measures with a view to encouraging OFDI (Brooks and Hill 2004).

The forms of policy support often directly reflect particular investment motivations. In October 2005, for instance, the National Development and Reform Commission and the Export-Import Bank of China jointly promulgated a circular to encourage overseas investment projects in four areas: (i) resource exploration projects that can mitigate the domestic shortage of natural resources; (ii) projects that can promote the export of domestic technologies, products, equipment, and labor; (iii) overseas R&D centers that can utilize internationally advanced technologies, managerial skills, and professionals; and (iv) M&As that can enhance the international competitiveness of PRC enterprises and accelerate their entry into foreign markets. A preferential credit policy encourages investment in these key projects supported by the state.

A sound macroeconomic environment in terms of monetary, fiscal, and exchange rate policy could help to decrease risks for foreign investment and exerts generally a positive effect on FDI flows. Good infrastructure could also facilitate the production process and the distribution of produced goods as well as reduce operating costs. MNEs are likely to invest in a host country where good infrastructure is well established. As mentioned earlier, factors influencing greenfield investment and cross-border M&A could be different. In particular, for the former, speed and access to proprietary assets tend to be more crucial than for the latter. Firms are likely to use M&A as an investment strategy when they want to reach certain desired goals, including expanding the market or catching up in a new field of technology rapidly. Enhanced competition and shorter product life cycles also accentuate the necessity for firms to respond quickly, through M&A investment, to opportunities in the economic environment (UNCTAD 2000).[5] Thus it is plausible to expect that investment climate, especially in terms of (hard) infrastructure, could affect greenfield investment more than cross-border M&A investment, while strategic asset-seeking FDI could play a more important role in cross-border M&A than greenfield investment.

IV. Empirical Model

Based on the analytical framework in Section III, this section builds an empirical model to examine the relationship between financial development and cross-border M&A in emerging Asian economies. The empirical model is an extended gravity model, in which bilateral cross-border M&A investment is set as a function of market size between home (M_i) and host (M_j) economies, proxied by real GDP per capita (constant 2000 US dollars) and distance ($Distance_{ij}$). Since a large market size of home country indicates greater aggregate income and ability to invest abroad (according to Dunning 1981), the positive

[5] For example, the Indian company Tata Tea acquired Tetley Ltd. in the United Kingdom in the late 1990s, instead of establishing greenfield investment, because it wanted to obtain access to a global brand name and distribution network. Reaching these two objectives would take a longer time through greenfield investment (see UNCTAD 2000).

relationship between cross-border M&A purchases and home market size is expected. However, it is possible that the limited market size in home countries may stimulate home country firms to seek other potential markets and expand their market share so that a negative relationship between cross-border M&A purchases and home market size is also plausible. According to the market-seeking FDI argument, a positive relationship between host-country market size and cross-border M&A purchases is expected.

Distance ($Distance_{ij}$) measures geographic distance between home and host countries using the capital city as a center point in each. The sign of $Distance_{ij}$ is expected to be negative since greater distance between countries makes a foreign operation more difficult and expensive to supervise, thereby discouraging FDI, including cross-border M&A. Giovanni (2005) argues that due to asymmetric information, the costs of investment may increase with distance. In addition, as geographical distance is also a proxy for cultural distance or barriers and information costs, a larger bilateral distance is expected to be a negative factor in performing cross-border M&A purchases.

The basic gravity equation model is extended to include other factors in determining bilateral FDI. For the variable of our interest—financial development—three measures are considered in the paper to reflect financial deepening in the home country. The first is a measure of the amount of credit provided by banks and other financial institutions relative to GDP ($Credit_i$). This measure is to proxy financial deepening in the banking sector. The second and third measures are to capture financial deepening in equity and bond markets. Testing the significance of these variables directly addresses the influence of growing equity and bond markets on cross-border investment flows. The former is proxied by stock market capitalization relative to GDP ($Stock_i$) while the latter is proxied by the total amount of local currency bonds outstanding relative to GDP ($Bond_i$). Note that we further disaggregate bond markets into public ($PuBond_i$) and private ($PriBond_i$) to see whether development in these two markets have the same implications for firms investing overseas. Since the size and maturity of these two markets are likely to be different, these could have different implications in facilitating cross-border M&A activity. In particular, it could be plausible that a public bond market that has a larger size and longer maturity (as in almost all emerging Asian countries) would facilitate cross-border M&As better than the private bond market.

Tables 4 and 5 provide the stage of financial development in selected emerging Asian economies. Over the past decade, equity and bond markets have increased their importance as sources of funds in these economies though the banking sector still dominates the development of financial markets. Hong Kong, China and Singapore are two exceptions, where the equity market has dominated the banking sector as a source of funds. The depth of equity markets in other emerging Asian economies has improved substantially, with the share of market capitalization over GDP exceeding 50%, except for Indonesia where the depth and development of the equity market still lagged behind other neighboring economies.

The depth of bond markets in the region has also improved but their development was far slower than equity markets. As a percentage of GDP, the financial depth indicator of bond markets (i.e., amount of local currency bonds outstanding) was lower than that of equity markets (measured by stock market capitalization). An exception was in the Republic of Korea where the bond market has improved substantially and its financial depth indicator has shown a greater improvement than the equity market. In these countries, except in the Republic of Korea and Hong Kong, China, the public bond market has dominated the private bond market, particularly in the PRC where the public bond market accounted by more than 80% of total local currency bonds outstanding (by value). In Hong Kong, China and the Republic of Korea, the private bond market has dominated the public bond market over the past decade, while in Malaysia and Singapore, the private bond market has improved noticeably and the depth of the market has neared that of the public bond market.

Table 4: Financial Development Indicators in Emerging Asian Economies (percent of GDP)

	2000			2005			2009		
	Credit	Bond	Equity	Credit	Bond	Equity	Credit	Bond	Equity
China, People's Rep. of	118.3	16.9	48.5	136.4	39.8	17.8	141.4	52.3	72.8
Hong Kong, China	135.9	35.8	368.6	143.2	48.2	593.5	153.6	68.4	1093.9
India	53.0	24.3	69.0	58.2	33.2	129.8	73.9	43.5	191.1
Indonesia	50.7	31.8	16.1	45.6	18.9	28.5	38.7	18.0	39.5
Korea, Rep. of	107.2	66.6	27.8	118.9	89.2	85.0	142.2	121.7	99.4
Malaysia	138.4	73.2	120.7	121.1	77.5	130.8	140.2	95.5	149.6
Philippines	62.3	27.6	33.3	46.0	42.6	40.3	32.0	39.1	53.5
Singapore	87.3	47.3	164.6	66.1	66.4	205.6	97.7	82.3	263.9
Thailand	124.0	25.3	23.8	118.4	44.9	70.3	113.3	65.2	65.1

GDP = gross domestic product.
Note: Credit is measured by the amount of credit provided by banks and other financial institution relative to GDP; equity is proxied by stock market capitalization relative to GDP; and bond is proxied by total amount of local bond outstanding relative to GDP.
Sources: IMF statistics and Asian Bond Online, ADB.

Table 5: Public and Private Bond Markets in Emerging Asian Economies (percent of GDP)

	2000		2005		2009	
	Government	Corporate	Government	Corporate	Government	Corporate
China, People's Rep. of	16.6	0.3	37.0	2.8	43.0	9.3
Hong Kong, China	8.2	27.6	9.2	39.0	33.0	35.3
India	23.9	0.4	32.8	0.5	42.2	1.3
Indonesia	30.6	1.2	16.9	2.1	16.3	1.7
Korea, Rep. of	22.9	43.6	46.5	42.7	53.2	68.5
Malaysia	38.0	35.2	44.5	33.1	52.2	43.4
Philippines	27.4	0.2	41.6	1.0	34.4	4.7
Singapore	26.5	20.8	37.5	28.9	48.3	34.0
Thailand	21.1	4.2	36.9	8.0	53.4	13.5

GDP = gross domestic product.
Sources: IMF statistics and Asian Bond Online, ADB.

To capture resource-seeking FDI, the share of crude materials (SITC2) and fuel (SITC3) exports of a host economy *j* in total world crude and fuel exports (Res_j) is used to proxy the abundance of resources in the host economy. According to the resource-seeking FDI argument, a positive relationship between Res_j and cross-border M&A in the home economy i is expected. The labor costs variable in the host economy (LC_j) is included in the model to capture efficiency-seeking FDI. Labor costs are proxied by wage (per month) in total and manufacturing sectors. Cheaper labor costs in the host economy *j* than the home economy *i* induce more outward FDI from the home economy *i* into the host economy *j*. However, as mentioned earlier, because of the nature of the flows, the effect could be greater for greenfield investment than M&A investment. Note also that adjusting wage rates for productivity differences could influence results.

Nominal (Ex_{ij}) and (bilateral) real exchange rates (RER_{ij}) are included to capture macroeconomic environment prospects as well as the costs of transferring capital between the two economies. An increase in these variables reflects the appreciation of the host economy's currency. The sign of the exchange rate is, however, inconclusive. Although exchange rate appreciation of a host economy's currency against the home economy *j* (i.e., an increase in these two variables) would reduce transferring costs of capital and could promote cross-border M&A, the appreciation of the currency could presage a decline in the investment return, discouraging a home economy's firm from exporting capital. The share prices of the host economy ($Sharepr_j$) are also included in the model to capture the prospects of investment returns that a home economy firm is likely to get from performing cross-border M&A. The higher the share prices, the greater the expected cross-border M&A.

Total (resident plus nonresident) annual patent registrations in the host economy *j* ($Patent_j$) are used to proxy asset-seeking FDI.[6] This measure is to reflect intensity of innovation in an economy as firms who invent new production technology are likely to apply for exclusive patent rights for an invention.

In this paper, financial restrictions between home (FO_i) and host (FO_j) economies are included separately in the model. In the home economy, financial liberalization in capital outflows matters in facilitating domestic firms to invest abroad while liberalization in capital inflows in the host economy influences the decision of a home-economy firm in choosing its investment location. A host economy that has a high level of financial openness is likely to attract more cross-border investment than an economy that has restrictions in capital and financial accounts. The capital restrictions' index introduced by Schindler (2009) is extended for emerging Asian countries to cover the years 2006–2008, as the original index was constructed for 1995–2005. The index is determined based on information contained in the Annual Report on Exchange Arrangements and Exchange

[6] A patent generally provides protection for the invention to the owner for a limited period, generally 20 years. Note that we also apply R&D expenditures relative to GDP in the host country *j* ($R\&D_j$) as another proxy for asset-seeking FDI. R&D here covers basic research, applied research, and experimental development. However, because of data limitations, the results based on this variable likely perform more poorly than those based on patent registrations.

Restrictions. The index is constructed separately not only in terms of direction of flows (i.e., inflows and outflows) but also in terms of asset classes (i.e., FDI, equity and debts). Thus, in addition to including the index of overall financial restrictions on outflows for home economies and the index of overall restrictions on inflows for host economies, restrictions on FDI inflows and outflows are put in the model separately, for host and home economies, respectively.

All in all, the empirical model for determinants of outward FDI (M&A) in emerging Asia is as follows:

$$MA_{ij} = \beta_0 + \beta_1 M_i + \beta_2 M_j + \beta_3 Distance_{ij} + \beta_4 Cridit_i + \beta_5 Stock_i + \beta_6 PUBond_i + \beta_7 PRIBond_i + \beta_8 Res_j + \beta_9 LC_j + \beta_{10} Ex_{ij} + \beta_{11} Sharepr_j + \beta_{12} Patent_j + \beta_{13} FO_i + \beta_{14} FO_j + v_{ij} \quad (1)$$

where

MA_{ij} is the real cross-border mergers and acquisitions flow from source economy i to host economy j.

M_i and M_j is the market size of home economy *i* and host economy *j* (real GDP per capita, constant 2000 US$), respectively.

$Distance_{ij}$ is the geographical distance between source economy *i* and host economy *j* (kilometers).

$Credit_i$ is the credit provided by banking sector and other financial institutions relative to GDP in the home economy *i* (percent).

$Stock_i$ is the market capitalization of equity market relative to GDP in the home economy *i* (percent).

$Bond_i$ is the amount of local bonds outstanding relative to GDP in the home economy *i* (percent). Bond market in the home economy is further disaggregated into public bond market ($PUBond_i$) and private bond market ($PRIBond_i$).

Res_j is the share of crude material (SITC2) and fuel (SITC3) exports of host country *j* in world total crude and fuel exports (percent).

LC_j is wage (US$ per month) in manufacturing sector in the host economy *j*.

Ex_{ij} is the nominal exchange rate between source economy *i* and host economy *j*. Alternatively, the bilateral real exchange rate between source economy *i* and host economy *j* (RER_{ij}) (index: 2000 = 100) is used as a proxy of costs of transferring

capital. An increase in these two variables reflects the nominal and real currency appreciation in the host economy *i*, respectively.

$Sharepr_j$ is the share price in host economy *j* (index 2005 = 100).

$Patent_j$ is the total (resident plus nonresident) annual patent registrations in the host economy *j*

FO_i is the financial restrictions on capital outflows in the home economy i (index 0–1, with higher values indicating greater financial restrictions [*de jure* measure]). Alternatively, the financial restriction index for outward foreign direct investment ($FOOFDI_i$) is used as a proxy for financial restrictions of capital outflows in the model.

FO_j is the financial restrictions on capital inflows in the home economy *j* (index 0–1, with higher values indicating greater financial restrictions [*de jure* measure]). The financial restriction index for inward foreign direct investment ($FOIFDI_i$) is also used as an alternative variable of capital restrictions in the model.

It is important to note that while equity and bond markets are more advanced in NIEs than in middle-income countries, the binary dummy variables are introduced to separate middle-income emerging Asian economies from NIEs, i.e., 1 for NIEs and 0 otherwise. We hypothesize that in NIEs where equity and bond markets are relatively well developed, the banking sector may play a less important role in encouraging and facilitating M&A deals. This would be in contrast to middle-income emerging Asian economies where the banking sector plays a more pivotal role. In addition, the destination of M&A investment may be crucial for the role of financial development in the home economy. In particular, development in stock and bond markets may become more important for a firm to invest in cross-border M&A in high-income economies, where these two markets are developed, than in middle- and low-income economies. Thus, to test this hypothesis, we exclude high-income economies from total bilateral M&A observations and find the new coefficients attached to the financial development indicators. Then we test whether they are different from those that we find when the total M&A observations are used.

V. Data and Econometric Procedure

A. Data

The bilateral cross-border M&A data for nine emerging Asian economies during 2000–2009 come from Thomson One Reuter. The nine emerging Asian economies (acquirers)

consist of the PRC; Hong Kong, China; India; Indonesia; the Republic of Korea; Malaysia; the Philippines; Singapore; and Thailand. The information provided by Thomson One includes announcement date, date the deal is effective, target and acquiring firms' names, target and acquiring firms' countries of origin, target and acquiring parent firms' countries of origin, values of a deal in million US dollars, form of payments, as well as target and acquisition acquiring advisors. Most deals during 2000–2009 were dominated by acquisitions in which the control of assets and operations is transferred from a local to a foreign company and the former becomes an affiliate of the latter. Horizontal M&A (M&A between competing firms in the same industry) and conglomerate M&A (M&A between companies in unrelated activities) accounted for around 40% each during 2006–2009 while the rest were vertical M&As, in which M&A occurs between firms in client–supplier or buyer–seller relationships. Note that in our sample, M&A of less than 10% equity are excluded as by definition, these flows are included in portfolio investment. M&A data are deflated by the US consumer price index (2005 = 100) to get real M&A data.

Note also that one deficiency of this data set is that not all deals have value attached to them. This occurs since there is no regulation that firms have to announce the value of deals. In our sample, only 40% of the daily deals have values attached to the deals. Since we could not get any records of these missing values, the values of all deals in a particular year came simply from aggregating the values, which are reported by the Thomson One database. It seems however, that there is no pattern of which countries, industry sectors, or years have more missing values than others so that the number of deals with no value tends to appear randomly. Nevertheless, to ensure that problems that could emerge from this sample selection bias are limited, a sample selection model, discussed below, is implemented along with other models.

Real GDP per capita (constant 2000 US dollars) is obtained from the World Development Indicators database of the World Bank. The geographical distance between two countries is from Centre d'Etudes Prospectives et d'Informations Internationales database. The data on nominal exchange rate and consumer price index are from the International Financial Statistics of the International Monetary Fund (IMF). Credits, market capitalization in equity markets, and amount of local bonds outstanding are from the AsianBond Online of the Asian Development Bank. Data on the bond market for India are from the Bank for International Settlements. Trade data are from the United Nations Commodity Statistics Database. Wage (per month) data of manufacturing sector are from the International Labour Organization. Financial and capital restrictions are from Schindler (2009).

B. Econometric Procedure

The issue of data censoring emerging from a missing value of deal, as mentioned earlier, is redressed by applying the Heckman sample selection model in which the outcome variable Y is only observed when a variable Z is positive. There are two key equations

in the model. The first, equation (2), explains whether an observation is in the sample or not; the second, equation (3), determines the value of *Y*.

$$\left.\begin{aligned} Z_i^* &= w_i^*\alpha + e_i \\ Z_i &= 0 \quad if \quad Z_i^* \le 0 \\ Z_i &= 1 \quad if \quad Z_i^* > 0 \end{aligned}\right\} \tag{2}$$

$$\left.\begin{aligned} Y_i^* &= x_i'\beta + \mu_i \\ Y_i &= Y_i^* \quad if \quad Z_i = 1 \\ Y_i &\text{ not observed} \quad if \quad Z_i = 0 \end{aligned}\right\} \tag{3}$$

When equations (2) and (3) are solved together, the expected value of the variable *Y* is the conditional expectation of Y_i^* conditioned on it being observed (Z_i = 1).

$$\begin{aligned} E\left(Y_i / x_i, w_i\right) = E\left(Y_i^* / d_i = 1, x_i, w_i\right) &= x_i'\beta + \rho\sigma_\varepsilon \frac{\phi\left(w_i'\alpha\right)}{\Phi\left(w_i'\alpha\right)} \\ &= x_i'\beta + \rho\sigma_\varepsilon \lambda\left(w_i'\alpha\right) \end{aligned} \tag{4}$$

where $\lambda\left(w_i'\alpha\right) \equiv \phi\left(w_i'\alpha\right) / \Phi\left(w_i'\alpha\right)$ is the inverse Mills' ratio. It is important to note that $E\left(Y_i / x_i, w_i\right) = x_i'\beta$ if the two error terms are uncorrelated, i.e., $\rho = 0$. In other words, if two error terms are uncorrelated, the simple ordinary least squares (OLS) approach is efficient and unbiased to explain *Y*, and we can apply either maximum likelihood—simultaneously estimating equations (2) and (3)—or Heckman two-step estimation.[7] However, if we find that the two error terms are uncorrelated, i.e., $\rho = 0$, equation (1) is estimated by pooling the data (cross-sectional and time series characteristics of the data) and using the panel model to estimate parameters. Since a number of explanatory variables are time-invariant, a random effect model is applied. To ensure that estimation results are not affected by the business cycle, we also estimate the model using nonoverlapping 3-year periods during 2000–2009 for all variables in the model, instead of a yearly basis.

[7] The estimation procedure is as follows. First a probit is estimated for whether a deal is observed or not, conditional on the same right-hand side variable as in equation (1) of empirical model and the inverse Mills' ratio is constructed from the predicted values of the model. Second, a regression is run to estimate equation (1), including the inverse Mills' ratio as a regressor.

VI. Estimation Results

Table 6 reports the empirical results based on the Heckman sample selection model and the panel data model. The first column (Column A) reports the results from the Heckman model. However, since the error terms between selection and outcome equations—equations (2) and (3) in the previous section—are statistically uncorrelated,[8] a simple OLS approach yields the unbiased and efficient results. Nevertheless, to ensure the unbiasedness that may emerge from the unobserved individual effect as well as the variation across entities, the panel data model is applied instead of a simple OLS (cross-section) model. Columns B and C show the results from the panel data model, and in Column C, the real exchange rate (RER_{ij}) is used as an explanatory variable, replacing the nominal exchange rate (Ex_{ij}). Column D shows the results when the interaction dummy variables of NIE with three indicators of financial depth are included, while in Column E, the results when the model excludes high-income economies are provided.

As the key hypothesis of our paper, we first explore the implication of financial development on cross-border M&As. The estimation results (Column B) show a positive sign between the proxy of financial development and cross-border M&A. It is found that the banking sector still plays a crucial role in facilitating cross-border M&As as the coefficient corresponding to credits provided by the banking sector and other financial institutions relative to GDP ($Credit_i$) is higher than that corresponding to equity and bond markets. The result could imply that in the region, the form of payments for cross-border M&A deals is still dominated by cash so that bank loans play an important role in facilitating the deal. However, in addition to cash, the issuance of common stock and the exchange of stocks have become popular forms for payments. Thus, development in equity markets helps to boost/facilitate cross-border M&As as revealed by the positive sign of $Stock_i$ variables.

In addition to that with the equity market, a positive relationship between the bond market and cross-border M&A is found. Interestingly, the positive relationship is found only for the government bond market while in the corporate bond market, a negative sign is revealed. The differences in size and maturity of these two markets could be the key reason explaining such results. As shown in Table 5, the government bond market in the region is relatively well developed compared to corporate bond markets, while the maturity for government bond issues is, on average, longer than for corporate bonds. In addition, state-owned enterprises, especially in the PRC and Singapore, play an active role in outward FDI, including cross-border M&A. Thus, it is plausible to see the positive effect of government bond markets in facilitating cross-border M&A.

The maturity of a source of funds seems to be crucial since our results show that the return of share prices ($Sharepr_i$) in the host economies is positive but statistically

[8] Likelihood ratio test for the null hypothesis of rho = 0 is chi2 (1) = 0.11, prob > chi2 = 0.74. Thus, we accept the null hypothesis that rho = ρ = 0.

insignificant. This implies that cross-border M&As, classified as a part of FDI, still behave differently from portfolio capital flows, which are mostly classified as a short-term capital flows. Thus, longer maturity of funds is likely to be preferred by the investors over shorter ones. The statistical insignificance of both nominal and real exchange rate also provides additional support for the differences in the cross-border M&A part of FDI, and portfolio investment. The insignificance of these two variables suggests that costs of capital transfer are not key determinants of a firm's undertaking cross-border M&A.

Interestingly, the dummy variable for NIEs in Column D shows that the banking sector is still crucial in facilitating cross-border M&A in these economies, though the stage of development in equity and bond markets in NIEs is higher than in middle-income emerging Asian economies. The importance of the banking sector in these economies supported the continuous growth of credits provided by both banking and financial institutions while credits in many middle-income economies such as Indonesia and Thailand have declined over the past decade. Even in the Republic of Korea, which was hit hard by the Asian financial crisis, credits continued to expand after the 1997–1998 crisis. While capital inflows in all crisis economies have shifted toward FDI and equity flows, bank inflows are still a dominant component in capital inflows.

Our results also show that the destination of cross-border M&A investment matters in determining the role of financial development in the home economies. When high-income economies are excluded from the total sample size, only the coefficient attached to credit is statistically significant while stock and bond markets become less important (Column E). This could imply that in addition to cash, the issuance of common stock and the exchange of stocks have become popular forms of payment, mostly in investing in high-income economies, while to invest in middle and low-income economies, the banking sector is still crucial in encouraging such M&A activity.

In addition to financial development, capital and financial restriction policies directly affecting foreign direct investment flows play a role in influencing cross-border M&A. However, financial restrictions from the host economy side tend to be more effective, as measured in terms of strong t-statistics, in controlling cross-border capital inflows into the (host) economies. Capital outflow restrictions in home economies also have a negative sign but only mild statistical significance. Thus, tightening capital outflow restrictions could result in disincentives for firms to undertake cross-border M&A purchases.

Market size as proxied by GDP per capita in both home and host economies is another factor contributing to a rise in cross-border M&A. However, the coefficients and t-statistics corresponding to these two variables are relatively low and weak. This suggests that other variables tend to be more important in explaining the movements of cross-border M&A. This evidence also supports our argument made in Section II that the level of economies' development (particularly income level) per se could not explain well the investment profile in developing economies.

Table 6: Estimation Results

	Column A		Column B		Column C		Column D		Column E	
	Coefficients	**t-statistics**	**Coefficients**	**t-statistics**	**Coefficients**	**t-statistics**	**Coefficients**	**t-statistics**	**Coefficients**	**t-statistics**
Intercept	-5.75	-1.90*	-6.22	-2.08*	-5.90	-2.13*	-3.59	-0.68	-11.60	-1.98**
Market size of home economy i (M_i)	0.36	1.35***	0.34	1.30***	0.29	1.22***	0.32	0.54	1.52	3.06*
Market size of host economy j (M_j)	0.08	1.44**	0.08	1.46**	0.07	1.35***	0.05	0.80	-0.04	-0.26
Distance (Distance$_{ij}$)	-0.39	-1.95*	-0.34	-2.75*	-0.33	-2.75*	-0.35	-2.83*	-0.09	-0.41
Credits over GDP in home economy i (Credit$_i$)	1.01	2.93*	1.00	2.87*	1.02	2.90*	1.11	3.08*	0.85	1.22***
Market cap (equity) over GDP in home economy i (Stock$_i$)	0.37	1.70*	0.32	1.93*	0.30	1.92*	0.29	1.32***	-0.19	-0.53
Public bonds outstanding over GDP in home economy i (PUBond$_i$)	0.57	2.09*	0.53	2.09*	0.53	2.09*	0.04	0.06	-0.03	-0.07
Private bonds outstanding over GDP in home economy i (PRIBond$_i$)	-0.43	-2.99*	-0.43	-2.92*	-0.41	-2.97*	-0.34	-1.24***	0.94	-3.44*
Nominal exchange rate (Exi$_j$)	-0.02	-0.47	-0.02	-0.42			-0.06	-1.19		
Real exchange rate (RERi$_j$)					-0.31	-0.43			-1.69	-1.00
Wage in host economy j (LC_j)	-0.001	-0.31	-0.001	-0.25	-0.004	-0.21	-0.001	-0.53	-0.16	-1.05
Share prices of host economy j (Sharepr$_j$)	0.25	0.94	0.25	0.92	0.29	1.03	0.23	0.83	0.17	0.47
Total annual patent registrations of host economy (Patent$_j$)	0.12	1.67**	0.11	1.79*	0.10	1.71*	0.12	2.01*	0.26	2.08*
Share of crude material and fuels exports in host economy j (Res_j)	0.20	2.78*	0.19	3.06*	0.20	3.38*	0.18	2.85*	0.28	1.23***
Financial restrictions of capital outflows (FOOFDI$_i$)	-0.72	-1.47**	-0.70	-1.42**	-0.83	-1.83*	-0.50	-0.85	0.52	0.52
Financial restrictions of capital inflows (FOIFDI$_i$)	-0.45	-2.13*	-0.44	-2.07*	-0.45	-2.16*	-0.46	-2.18*	0.64	1.05
(Credit$_i$)*dummyNIEs							1.36	1.71*		
(Stock$_i$)* dummyNIEs							-0.02	-0.06		
(PUBond$_i$)* dummyNIEs							0.80	1.18		
(PRIBond$_i$)*dummyNIEs							-2.50	-2.43*		
Number of observations	1680		728		728		728		215	
Censored observations	952									
Rho =0 (for Heckman model)	Chi2 = 0.11 (prob = 0.74)									
Wald chi2	86.33		127.3		127.3		134.83		81.96	
R-sq: Within			0.12		0.12		0.13		0.22	
Between			0.59		0.59		0.60		0.75	
Overall			0.15		0.15		0.16		0.30	

* = 1% significance, ** = 5% significance, *** = 10% significance (one tail).

Note: All variables are in logarithm, except financial openness (FOOFDI and FOIFDI) and Res_j.

Source: Authors' estimates

Another two variables that we found to have strong statistical significance in explaining movements of cross-border M&A from emerging Asian countries are patent registrations in the host economy ($Patent_j$) and resource availability in the host economy (Res_j). This evidence supports our hypothesis that investors tend to use M&A for investment, mostly because they want to acquire proprietary assets, including R&D, technological advances, or brand name, as well as distribution channel, much faster. Tables 7 and 8 also show that the home economy destinations of M&A acquired by emerging Asian economies are mostly in developed economies, including the United Kingdom and the US; and the share of M&A investment in high technology, telecommunication, and industrials are relatively high, compared to other sectors. This could be the reason why we find statistical insignificance of labor costs in explaining the movements of cross-border M&A from these economies. The PRC and India are important destinations for M&A in the region also but the share of these two countries was still less than 10% of total value deals.

It is important to note that the highest share of M&A investment from these economies is found in resource-based industries, including energy and power as well as materials. This evidence supports our quantitative analysis of a strong statistical significance in the Res_i coefficient. Interestingly, when we put the interaction term between Res_i and an economy's dummy variable (Appendix, Column A), it shows that the PRC, India, and Indonesia invested significantly in the resource-based industry. For other economies where the interaction term is negative, this implies that resource-seeking FDI is relatively less important, particularly in the Philippines, where there is a strong statistical significance and high value of the interaction term.

Finally, the negative and statistical significance of distance supports our argument that information costs could increase with distance, especially under asymmetric information. In addition, as geographic distance tends to have a negative relationship with culture but a positive relationship with barriers to entry and information costs, a larger bilateral distance is found to discourage investors in emerging Asian economies from cross-border purchases.

Table 7: Home Economy Destinations of Emerging Asia's Cross-Border M&A Purchases (percent of total value deals)

Economy	2001–2005	2006–2009
United States	8.4	14.4
Hong Kong, China	13.8	14.1
United Kingdom	8.6	11.4
Australia	14.9	7.8
China, People's Rep. of	5.9	6.9
Singapore	3.7	5.1
Switzerland	1.3	4.6
Canada	0.7	4.2
India	1.0	1.9
South Africa	0.1	1.9
Indonesia	5.7	1.8
Kazakhstan	0.3	1.6
Norway	0.2	1.5
Thailand	1.3	1.4
Turkey	0.1	1.4
Nigeria	0.0	1.4
Japan	0.4	1.2
Belgium	1.3	1.2
Malaysia	0.8	1.1
Russian Federation	5.9	1.1
Intraregional M&A	54.7	47.7
Intraregional M&A excluding Australia, Japan, and New Zealand	39.3	38.1

M&A = mergers and acquisitions.
Source: Thomson One Reuter Database.

Table 8: Cross-Border M&A Purchases by Emerging Asian Economies, by Industry Breakdown (percent of total value deals)

Industry	2001	2005	2006	2007	2008	2009	2001–05	2006–09
Consumer Products and Services	3.8	2.7	2.9	2.5	1.6	1.4	1.8	2.1
Consumer Staples	8.0	12.4	4.1	9.3	1.6	2.8	7.8	4.4
Energy and Power	16.5	17.7	32.2	10.0	11.6	38.9	16.6	23.2
Financials	11.3	17.4	10.3	23.4	25.7	16.8	17.3	19.1
Government and Agencies	0.6	0.0	0.4	0.0	0.0	0.0	0.1	0.1
Health Care	1.9	2.4	4.2	1.8	1.2	1.0	1.6	2.1
High Technology	8.0	8.6	5.4	3.5	2.2	8.7	15.1	4.9
Industrials	14.3	10.4	11.9	13.3	10.7	5.3	10.3	10.3
Materials	2.3	6.3	8.2	25.3	20.2	13.0	7.3	16.7
Media and Entertainment	1.4	4.3	4.6	4.8	1.0	6.1	3.9	4.1
Real Estate	2.8	4.4	6.8	3.6	2.2	4.6	5.3	4.3
Retail	1.4	8.4	1.2	0.5	1.0	0.9	3.5	0.9
Telecommunications	27.7	5.0	7.9	2.0	21.0	0.5	9.2	7.8

M&A = mergers and acquisitions.
Source: Thomson One Reuter Database.

VII. Conclusions and Policy Implications

The combination of reasons for OFDI and M&A by developing economy firms is much the same as that of those from more developed areas, e.g., expanding growth opportunities or developing new markets, being near clients, accessing technology and knowledge to move up the value chain (including by setting up R&D centers), securing natural resources, etc.

The strong negative relationship between distance and M&A FDI conforms to expectations but the weak relationship of market size variables indicates that other factors may be more important for M&As. In this study, in addition to accessing technology and knowledge and securing natural resources, financial sector development in a home country is found to be important for encouraging cross-border M&A. In particular, the financing requirements and modalities for M&A tend to be more complex than for greenfield investment, particularly when the target firms reside in more developed economies.

Bank credit remains the dominant factor in external financing, but the analysis shows that equity financing is also significant. Equity markets remain relatively underdeveloped in much of the region, suggesting a role for policy to support both development of equity markets, and indirectly, cross-border investment. Policies to develop benchmark yield curves and independent ratings for private sector bond markets may help to strengthen their competitive advantage and promote investors to use this channel for financing M&A activity.

Appendix: Estimation Results

	Column A	
	Coefficients	**t-statistics**
Market size of home economy *i* (M_i)	0.79	2.42*
Market size of host economy *j* (M_j)	0.05	0.93
Distance ($Distance_{ij}$)	-0.36	-2.94*
Credits over GDP in home economy *i* ($Credit_i$)	0.43	0.95
Market cap (equity) over GDP in home economy *i* ($Stock_i$)	0.31	1.47**
Public bonds outstanding over GDP in home economy *i* ($PUBond_i$)	0.22	0.74
Private bonds outstanding over GDP in home economy *i* ($PRIBond_i$)	-0.42	-2.46*
Nominal exchange rate (Exi_j)	-0.09	-1.77*
Wage in host economy *j* (LC_j)	-0.001	-0.62
Share prices of host economy *j* ($Sharepr_j$)	0.20	0.73
Total annual patent registrations of host economy ($Patent_j$)	0.13	2.20*
Share of crude material and fuels exports in host economy *j* (Res_j)	0.37	1.68**
Financial restrictions of capital outflows ($FOOFDI_i$)	0.42	0.71
Financial restrictions of capital inflows ($FOIFDI_i$)	-0.44	-2.12*
(Res_j)*dummyPRC	-0.01	-0.05
(Res_j)*dummyIndia	-0.11	-0.49
(Res_j)*dummyMalaysia	-0.24	-0.92
(Res_j)*dummySingapore	-0.11	-0.46
(Res_j)*dummyKorea	-0.33	-1.40**
(Res_j)*dummyPhilippines	-0.56	-2.34*
(Res_j)*dummyHKG	-0.36	-1.50**
(Res_j)*dummyThailand	-0.39	-1.44**
Number of observations	728	
Wald chi2	153.98	
R-sq: Within	0.13	
Between	0.84	
Overall	0.18	

* = 1% significance, ** = 5% significance, *** = 10% significance (one tail).
PRC = People's Republic of China, HKG = Hong Kong, China; GDP = gross domestic product.
Note: All variables are in logarithm, except financial openness (FOOFDI and FOIFDI) and Res_j.
Source: Authors' estimates.

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About the Paper

Douglas H. Brooks and Juthathip Jongwanich examine the relationship between cross-border mergers and acquisitions (M&A) and financial development in emerging Asian economies. Bilateral data of cross-border M&A for nine emerging Asian economies during 2000–2009 are analyzed with a sample selection model and panel data model. Estimation results show that the banking sector plays a crucial role in facilitating cross-border M&A while the role of equity markets has increased in importance since, in addition to cash, the issuance of common stock and the exchange of stocks have become a popular form for payment for a deal. The results also show that financial development in terms of stock and bond markets in the home countries tends to be more important when the target firms reside in more developed countries. In addition to financial development, the paper shows that most of the cross-border M&As are invested in the technology-related and resource-based industries while cheap labor industries are relatively less attractive.

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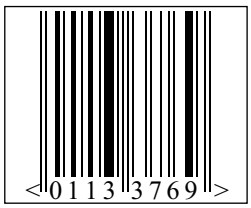

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