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CONTENTS

ABSTRACT

A host of external (global and regional) and internal (country-specific) factors affect Multinational Enterprises' Foreign Direct Investment (FDI) decisions. Differentiating the two entry modes of FDI (mergers and acquisitions [M&A] and Greenfield investment), this paper aims to empirically assess whether or not being a part of global emerging market economies or any specific emerging regions affects investors' decisions of FDI flows to an emerging country in addition to various country-specific factors. For this purpose, this paper employs a system generalized method of moments estimator for the panel data consisting of 40 emerging countries for the period 1990–2009. The results suggest that there exist a strong and significant global and regional influence in both types of FDI flows to an emerging country. M&A appears to be more sensitive to external factors, both global and regional effects are about twice stronger for M&A than for Greenfield FDI. The results also suggest that country-specific factors matter a lot for FDI flows both in the form of M&A and Greenfield FDI, pointing to the importance of government roles in helping stabilize FDI flows to emerging countries. This paper also offers empirical evidence which is consistent with the phenomenon of a fire-sale FDI during the period of financial crisis. Additional evidence using extensive and intensive margins of M&A sales suggest that the fire-sale does not necessarily imply an increase in the number of deals, but it may reflect the sales of big firms during the crisis.

Keywords: foreign direct investment, mergers and acquisitions, Greenfield investment

JEL Classification: F21 (international investment); F23 (multinational firms), F36 (financial aspect of economic integration)

I. INTRODUCTION

The multinational enterprises (MNEs) and foreign direct investment (FDI) play a pivotal role in spurring economic growth and jobs—through integrating the economy to the world market, transferring new technology and innovation, and developing human resources. FDI has grown rapidly since 1990 in both flows and stocks, far exceeding the volume of world trade. While the positive role of MNEs and FDI in economic development and growth is supported by economic literature, MNEs' FDI decisions are little understood and until recently why they choose certain entry mode versus another has not been adequately explained in both theoretical and empirical sense.

Earlier studies on FDI have focused on capital movements, driven by different rates of return on capital across borders. This is a natural extension of the investment theory, predicting that FDI would flow from capital rich countries (where its return was low) to capital scarce countries (where its return was high). However, such simplistic view of FDI did not necessarily match the reality that a large share of FDI originated from and directed to developed, rather than developing countries, in early decades. Moreover, this approach overlooked the decisions by MNEs as major actors in FDI, unable to provide adequate explanation for incentives and determinants of FDI. In response, Hymer (1976) and Dunning (1977, 1979, 2000) incorporate the behaviors and activities of MNEs in the framework of FDI analysis by treating FDI as relocations of firms rather than simple movements of capital.

Given the potential benefits of FDI, many studies have investigated the determinants of FDI. Some have viewed FDI flows as a part of capital movements, focusing on the aggregate volume of FDI (Walsh and Yu, 2010; Lee, Park and Byun, 2012; Mercado and Park, 2011; Hayakawa, Kimura, and Lee., 2011; Arbatli, 2011). Others, however, have focused on MNEs' FDI decisions and examined how various factors, such as exchange rates, taxes and institutional quality, affect the firm-level decisions.[1]

MNEs' FDI decisions are critical to economic growth in developing countries. When a firm makes an FDI decision, it can do so by building new facilities (Greenfield FDI) or by acquiring existing firms (mergers and acquisitions [M&A]). Empirical studies suggest that greenfield investment and M&As are not perfect substitutes as a firm's FDI entry mode (Blonigen, 1997; Nocke and Yeaple, 2007 and 2008; and Norbäck and Persson, 2008; Bertrand, Hakkala, and Norbäck, 2012). The choice of entry modes influences FDI performance and the host country's welfare through research and development (R&D), localization of supplies and human resources, and technology transfers. In fact, a group of studies including Calderon, Loayza, and Servén (2004), Kim (2008), Wang and Wong (2009), Neto, Brandão, and Cerqueira (2010b) and Harms and Méon (2011) argue that Greenfield has bigger welfare impacts on the host countries via increasing capital formation and productivity.

From the host country's perspective, therefore, understanding why a firm chooses an entry mode versus another is important for designing a policy framework to attract FDI, and particularly orienting MNEs to invest in the country in a certain way. Earlier studies in this context have focused on the firm-specific, industry-specific, and/or country-specific determinants of different FDI modes [e.g., Andersson and Svensson (1994), Hennart and Reddy (1997), Barkema and Vermeulen (1998), Brouthers and Brouthers (2000), Harzing (2002), Larimo (2003), Globerman and Shapiro (2004), Kamaly (2007), Gassebner and Méon (2010), and Erel,

[1] Blonigen (2005) provides a good survey of economic literature on FDI decisions of MNEs and the resulting aggregate location of FDI across the world.

Liao, and Weisbach (2012)]. They find that the choice of a cross-border M&A is influenced by the firm-level factors such as multinational experience, local experience, product diversity, and international strategy. They also show that industry-level factors include technological intensity, advertising intensity and sales force intensity, while country-level factors include market size and growth in the host country, cultural differences between the home and host countries, and the specific culture of the acquiring firm's home country (namely in terms of uncertainty avoidance and risk propensity).

However, very few studies attempted to compare the location-specific determinants for different entry modes of FDI (i.e., M&A vs. Greenfield FDI). Kogut and Singh (1988) investigate how national characteristics influence the selection of entry modes such as acquisition, wholly-owned Greenfield, and joint ventures, using data on 228 entries into the United States (US). Similarly, Globerman and Shapiro (2004) attempt to find out how country-specific variables affect differently inflow and outflow of M&As, as compared with those of the overall FDI. Using the sample of 154 countries over the period 1995–2001, they find that, in general, the most important variables which influence inward and outward M&As are the same variables that are prominent in models of the overall inward and outward FDI flows. However, they find that the economic growth is an important determinant of aggregate FDI, but not of the M&A flows.

In addition, using the panel data of 53 countries for the period of 1996–2006, Neto, Brandão, and Cerqueira (2010a) find that there are a group of mode-encompassing variables which are common to all entry modes (such as economy's size, openness, governance and human development index) and a group of mode-specific variables. Specifically, they find that investor protection and cultural variables seem to play an important role in the explanation of M&A and Greenfield FDI, respectively.

Even fewer studies actually tried to develop a theoretical model to explain the differences between M&A and Greenfield FDI when firms decide to invest overseas. Nocke and Yeaple (2008) develop an assignment model with two asymmetric countries, which predicts that firms engaging in Greenfield FDI are on average more efficient than those engaging in cross-border M&A. Their model also yields a number of predictions concerning the characteristics of the host countries: (i) Narrower gaps in production costs between the source and the host countries would lead MNEs to choose more cross-border M&A than Greenfield FDI as a form of FDI. As MNEs are located usually in high-income countries, this suggests that the share of cross-border M&A in total inflows is increasing as the host country's level of development rises. (ii) Firms in the high-cost country tend to engage more in cross-border M&A compared to Greenfield FDI if there is relatively more supply of corporate assets in the low-cost country. This prediction also suggests that the share of cross-border M&A in total inflows would rise with the host country's level of development because the supply of attractive corporate assets would increase in the process of economic development. (iii) An increase in the cost of setting up a new production division leads to an increase in the share of cross-border M&A in total FDI from the high-cost to the low-cost country. As such costs tend to increase with the geographical distance between the source country and the host country, this prediction suggests that the share of M&A in total FDI is increasing in the distance between the two countries. Using data from the Bureau of Economic Analysis of the US, they provide empirical evidence that is consistent with their theoretical predictions.

Unlike Nocke and Yeaple (2008), Stepanok (2012) develops a model of two symmetric countries engaging in both international trade and FDI where FDI consists of Greenfield FDI and cross-border M&A. Working in a monopolistically competitive environment, the model generates two-way flows of both M&A and Greenfield FDI. This model predicts that greater transportation

costs lead to a greater share of M&A in total FDI. Thus, similar to Nocke and Yeaple (2008), this model predicts that the greater the distance to the foreign country, the greater share of M&A in total FDI.

Differentiating the two entry modes of FDI—M&A and Greenfield—this paper aims to assess empirically the effects of various host country-specific factors on the inflow of FDI to emerging countries. For this purpose, this paper employs the panel data set consisting of 40 emerging countries for the period 1990–2009. The present paper is similar to Nocke and Yeaple (2008) and Neto, Brandão, and Cerqueira (2010a) in the sense that it also focuses on how different macroeconomic characteristics of host countries relate to different modes of FDI. However, this paper differs from these earlier studies in the following:

First, we assess not only internal country-specific factors but also external factors such as global and regional influence. Inclusion of the external factors in the model is particularly important as FDI flows to emerging countries tend to be vulnerable to external shocks. Earlier literature shows that capital inflows to emerging countries are more volatile than capital inflows to developed countries (Broner and Rigobon, 2006). Kamaly (2007), using data on bilateral inflows of M&A to developing countries, finds that the average interest rate of G7 countries and S&P 500 play a critical role as external determinants for M&A. Arbatli (2011) suggests a similar approach to identify the determinants of FDI inflow to developing countries, incorporating the growth rates of G7 countries, the average real interest rate of G7 countries, and Chicago Board Options Exchange volatility index. Lee, Park, and Byun (2012) employ another simple approach to examine contagion effects in capital flows and their volatilities by including the average volatility of capital flows to other emerging countries. This paper focuses on the effects of regional consideration in the decisions of FDI flows. That is, the paper assesses whether or not a change in FDI flows to emerging countries, particularly the ones in the same region would have an impact on FDI flows to an individual host country. Unlike any of these previous studies, this paper differentiates the impact of external factors between M&A and Greenfield FDI in addition to the total FDI flows.

Second, we focus on country risks of host countries, among various internal and macroeconomic determinants of FDI inflows. This is of particular interest as when MNEs decide on the mode of FDI, they may respond differently to the country risks of host countries. Using bilateral M&A data over 1990–2001, Gassener and Méon (2010) present evidence that political risk decreases M&A inflows. On the other hand, Hayakawa, Kimura, and Lee (2011) include not only political risks but also financial risks to examine determinants of FDI inflow using the International Country Risk Guide (ICRG) provided by the Political Risk Service (PRS) Group. They find that while high political risk of the host countries deters FDI inflows, financial risk of the host countries does not deter FDI inflows. However, they do not distinguish M&A and Greenfield FDI. This paper will complete the country risk analysis by examining the effect of both political and financial risks on different entry modes of FDI.

Third, our analysis includes the number of deals and the average value of each deal as well as the total value of each different mode of FDI. This is to take stock of the recent theoretical and empirical literature on heterogeneous firms and trade (e.g., Melitz, 2003 and Bernard et al., 2011), which emphasized different effects of trade costs on the extensive margin (i.e., the number of trading firms or traded products) and intensive margin (the volume of trade per firm or product). It is also important to distinguish the extensive and intensive margins of FDI because when MNEs make a decision to enter into a foreign market in the form of FDI, they make a decision not only on the mode of FDI, but also on the value of each investment. Gassebner and Méon (2010), in their study on determinants of cross-border M&A flows,

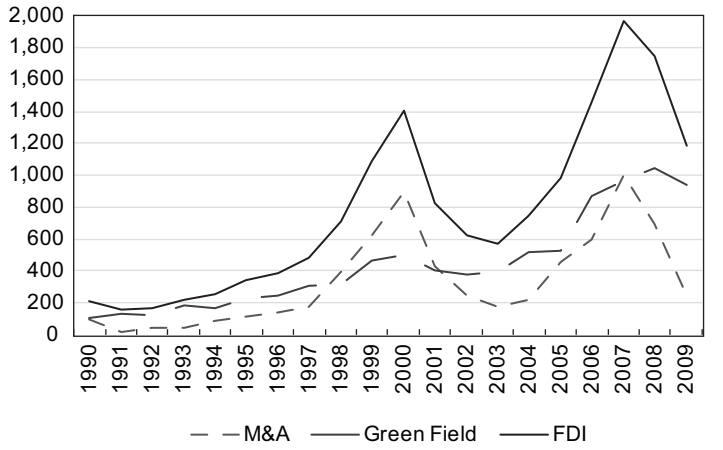
consider not only the total value but also the number of M&A flows. Building on the previous studies, this paper analyzes the impact of various factors on the number of deals and the average value of each deal in addition to the impact on the total value by different entry modes of FDI.

The remainder of this paper is organized as follows. In Section II, we describe the changing pattern of M&A and Greenfield FDI flows for the period 1990–2009. Section III explains the empirical framework and the key variables. In Section IV, we discuss our main results. Section V offers a summary and conclusion.

II. DESCRIPTIVE STATISTICS

Figure 1A displays the global trend of the overall FDI along with M&A and Greenfield FDI. FDI has been increasing in terms of its value, but with great volatility. In particular, there was a drastic up and down in the late 1990s–early 2000s and again in the late 2000s, with a peak at $1,402 billion in 2000 and at $1,971 billion in 2007, respectively. Such a large fluctuation was accounted for more by M&A than by Greenfield FDI. For example, between 2007 and 2009, M&A decreased substantially from $969 billion to $247 billion, whereas Greenfield FDI decreased from $1,002 billion to $938 billion.

Figure 1A: The Pattern of FDI Inflow to World ($ billion)

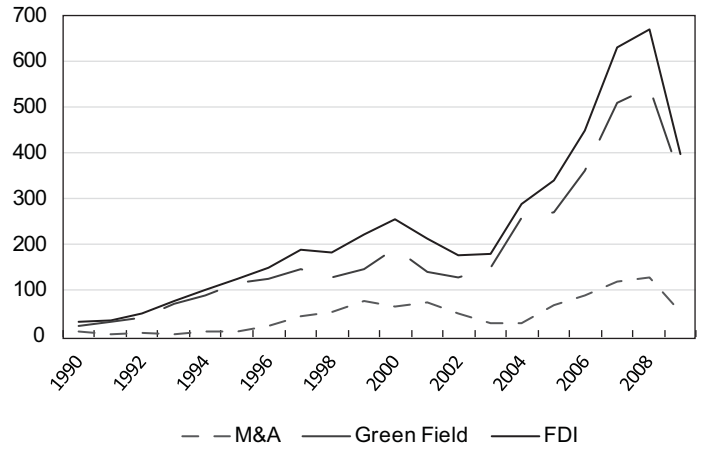


FDI = foreign direct investment, M&A = merger and acquisition.

Source: UNCTAD, World Investment Report 2010.

Displayed in Figure 1B is the trend of FDI only for emerging countries, which are included in our empirical analysis. The list of the emerging countries is shown in Appendix Table A1. The figure shows that the first peak was rather modest, while the recent, second, peak was quite substantial among emerging countries. The figure also shows that the majority of FDI inflows to emerging countries are Greenfield FDI than M&A. In 2007, for example, Greenfield FDI recorded US$ 511 billion, accounting for 81% of total FDI value of $631 billion.

Figure 1B: The Pattern of FDI to Emerging Countries ($ billion)



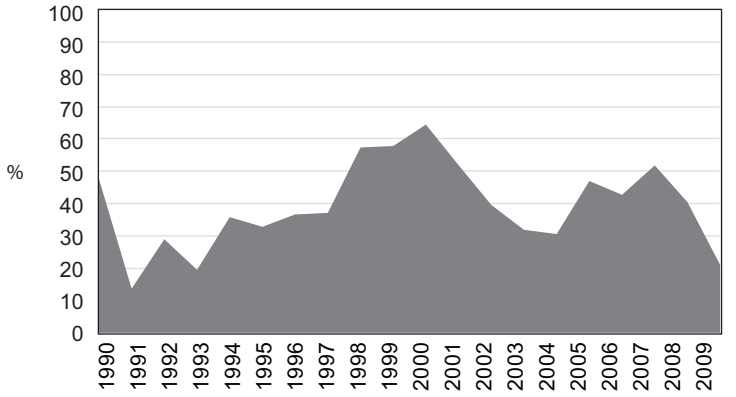
FDI = foreign direct investment, M&A = merger and acquisition.

Note: List of the emerging countries included in the sample is shown in Appendix Table A1.

Source: UNCTAD, World Investment Report 2010.

Figure 2A shows the share of cross-border M&A in total FDI flows in the world since 1990s. First, it is noted that the share of M&As in total FDI changes quite significantly over time. For example, during the peak years of 2000 and 2007, it reached about 60% and 50%, respectively, while the share was around 30% during the other years. It suggests that the earlier two peaks in FDI were largely driven by M&A. Displayed in Figure 2B is the share of M&A only for emerging countries. Apart from the first peak, M&A accounted for only about 20% of total FDI inflows to emerging countries.

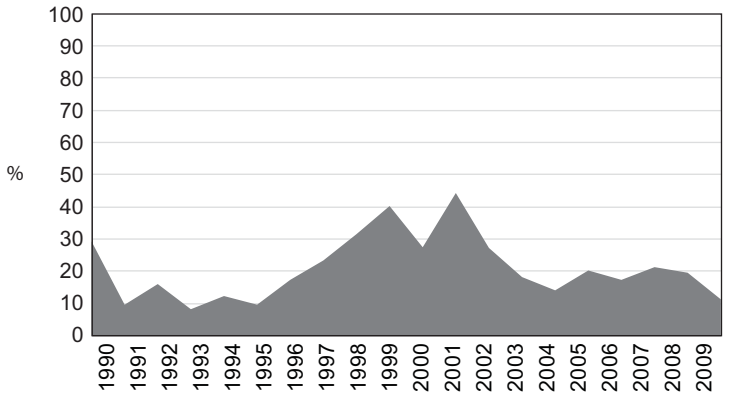
Figure 2A: Share of M&A Inflow Relative to FDI Inflow to World (%)



FDI = foreign direct investment, M&A = merger and acquisition.

Source: UNCTAD, World Investment Report 2010.

Figure 2B: The Share of M&A Inflow Relative to FDI Inflow to Emerging Countries (%)



FDI = foreign direct investment, M&A = merger and acquisition.

Note: List of the emerging countries included in the sample is in Appendix Table A1.

Source: UNCTAD, World Investment Report 2010.

Table 1A shows the extensive and intensive margins of M&A and Greenfield FDI in the world. We define the extensive margin as the number of cases and calculate the intensive margin by dividing the total value of inflow by the extensive margin (i.e. the number of cases). Thus, the intensive margin indicates the average value of case in our paper. During the peak years of 2000 and 2007, the intensive margin for M&A was US$ 0.14 billion and US$ 0.15 billion, respectively, about three times larger than the values for 1990 and 2009, suggesting that during the peak years bigger-sized firms were sold compared to the "non-peak" years. The extensive margin (i.e., the number of cases) was also about twice larger than the others. Thus, the two peaks were driven both by an increase in the number of cases and by an increase in the average value of M&A cases. Table 1A also reports both extensive and intensive margins of Greenfield FDI in the world for the years of 2007 and 2009. Compared to M&A, there were more cases of Greenfield FDI in both years, while the average value of each case was smaller in 2007 and similar in 2009. It is also noted that the number of cases increased between 2007 and 2009 while the average value of cases decreased slightly from US$ 0.08 billion to US$ 0.07 billion, resulting in a slight decrease in the total value of Greenfield FDI from US$ 948 billion to US$ 935 billion. This implies that the global financial crisis adversely slightly affected only the value of each case, but not the number of Greenfield FDIs.

Table 1A: The Extensive and the Intensive Margins of M&A and Greenfield to World

	M&A			Greenfield FDI		
Year	Total Value ($ billion)	Number of Cases	Average Value of Cases ($ billion)	Total Value ($ billion)	Number of Cases	Average Value of Cases ($ billion)
1990	98.9	2,072	0.05			
2000	905.2	6,280	0.14			
2007	1022.7	7,018	0.15	948.2	11,703	0.08
2009	249.7	4,239	0.06	935.3	14,192	0.07

Source: Authors' calculation using data from FDI Statistics and World Investment Report, UNCTAD.

Table 1B displays extensive and intensive margins of M&A and Greenfield FDI only for emerging countries. The changes in both the number of cases and its average value for M&A in emerging countries are rather modest, compared to those in the world. Interestingly, the average value of M&A deals in emerging countries fell low in 2000 after the Asian financial crisis, reflecting the significant declines in their local asset prices. Compared with M&A, both the number of cases and the average value of each case in Greenfield FDI are larger. On the other hand, the average value of a Greenfield FDI case declined rather drastically from $0.09 billion in 2007 to $0.05 billion in 2009, whereas the number of cases increased modestly from 6,274 to 6,972 during the same period. Similar to the global experience, the global financial crisis adversely affected only the value per case, but not the total number, of Greenfield FDIs.

Table 1B: The Extensive and the Intensive Margins of M&A and Greenfield to Emerging Countries

	M&A			Greenfield FDI		
Year	Total Value ($ billion)	Number of Cases	Average Value of Cases $ billion	Total Value ($ billion)	Number of Cases	Average Value of Cases ($ billion)
1990	9.4	139	0.07			
2000	64.4	1,527	0.04			
2007	119.8	1,820	0.07	538.3	6,274	0.09
2009	51.6	1,223	0.04	367.5	6,972	0.05

FDI = foreign direct investment, M&A = merger and acquisition.

Note: Authors' calculation using data from FDI Statistics and World Investment Report, UNCTAD.

III. EMPIRICAL SPECIFICATION

A. Model Specification

The main purpose of this paper is to identify the external (global and regional) and internal (country characteristics) factors driving the FDI inflow (M&A and Greenfield) to emerging countries. For this purpose, this paper constructs a panel data set of 40 emerging countries over the period of 1990–2009.

Explanatory variables are grouped in two categories: external variables and country-specific variables. The equation to be estimated is

$$\mathbf{FDI}_{it} = \beta_0 + \mathbf{EV}_{it}\boldsymbol{\beta}_1 + \mathbf{CV}_{it-1}\boldsymbol{\beta}_2 + \varepsilon_{it}. \quad (1)$$

Where FDI can be total, M&A or Greenfield FDI inflows to emerging countries, *EV* is a vector of external variables and *CV* is a vector of country-specific variables including political and financial risks of host countries. β is a vector of unknown coefficients and ε_{it} is an error term. Except for external variables, all country-specific variables are one-year lagged to avoid endogeneity.

One problem in estimating Equation (1) with the usual fixed effects model is that it may involve autocorrelation of the disturbances and hence the estimated coefficients are biased. The problem of autocorrelation can be significantly reduced by including the lagged dependent variable on the right hand side of the regression equation. This procedure is also theoretically plausible as the foreign investment in the previous period is often highly relevant for FDI

decisions in the current period because of the agglomeration or clustering effect in investment. That is, a larger FDI flow can be regarded as a signal for a benign business climate to foreign investors. Also, investors may be tempted to benefit from the scale of economy by making additional investments in the presence of past investment decisions by other investors. Evidence of these effects is quite clear (for instance, Walsh and Yu, 2010). Thus, we estimate Equation (2) as follows:

$$\mathbf{FDI}_{it} = \beta_0 + \mathbf{FDI}_{it-1}\boldsymbol{\beta}_1 + \mathbf{EV}_{it}\boldsymbol{\beta}_2 + \mathbf{CV}_{it-1}\boldsymbol{\beta}_3 + \varepsilon_{it}. \quad (2)$$

By construction, however, the unobserved panel-level effects are correlated with the lagged dependent variable, making standard estimators inconsistent. In order to account for the above mentioned problems, some authors (e.g., Walsh and Yu, 2010; Lee, Park, and Byun, 2012) employ the generalized method of moments (GMM) dynamic estimator of Arellano-Bond methodology. The usual Arellano-Bond estimator is to run the regression using the first differences of the lagged values of the left- and right-hand side variables as instruments. In a sample of few periods with some explanatory variables that are persistent, the usual Arellano-Bond estimator tends to perform poorly. Hence, Blundell and Bond (1998) developed a system GMM estimator that uses an additional moment condition. We employ this estimator as an alternative specification to the fixed effects model described in Equation (1). In the case of the GMM estimator, we do not include country dummies because the fixed effects are eliminated using the first differences and instead an instrumental variable estimation of the difference equation is performed.

B. More on Dependent Variable

The dependent variable employed for the model is total value of FDI inflow, M&A inflow and Greenfield FDI inflow, respectively, using data from FDI Statistics and World Investment Report of UNCTAD. Drawing upon Calderón, Loayza, and Servén (2004), Wang and Wong (2009), and Harms and Méon (2011), we define Greenfield inflows as the difference between total FDI inflows and M&A sales. According to Bertrand (2004), total FDI flows consist of M&A, Greenfield and extension of capacity. However, in the absence of appropriate statistics, Greenfield FDI is in general considered by analysts, for practical reasons, as direct investment that is not in the form of M&As.

As noted in the Introduction, our analysis includes the number of deals and the average value of each deal as well as the total value of each different mode of FDI, taking note of the recent theoretical and empirical literature on heterogeneous firms and trade (e.g., Melitz, 2003 and Bernard et al., 2011). It is also important to distinguish the extensive and intensive margins of FDI because when MNEs make a decision to enter into a foreign market in the form of FDI, they make a decision not only on the mode of FDI, but also on the value of each investment. We include the number of M&A deals (i.e., the extensive margins) and the average value of each deal (i.e., the intensive margin) as dependent variables. Greenfield FDI is not included in this particular analysis since these data for Greenfield FDI are available only from 2003.

C. More on Explanatory Variables

1. Global and Regional FDI Flows (externality effects)

We include the total inflow of FDI, M&A or Greenfield FDI into all emerging countries,[2] as one of the explanatory variables to assess effects of externality. The hypothesis is that an increase in total FDI flows to emerging countries will lead to an increase in FDI flows to an individual emerging country. This effect can also be analyzed for both global and regional levels depending on the use of total FDI flows to all extraregional emerging countries and total FDI flows to all intraregional emerging countries, respectively. As such, our findings would suggest externalities in FDI decisions, by capturing the co-movement of capital flows between other emerging countries (either global or regional) and each individual emerging country.

Many studies noted the spillover or contagion effect in capital flows (See Lee, Park, and Byun, 2011, for survey). In practice, the episodes of crisis, such as the Tequila crisis in mid-1990s and the Asian financial crisis in late 1990s, add support to the spillover effects. Along this line of argument, Lee, Park, and Byun (2012) also offer empirical evidence suggesting that there is spillover in the volatility of FDI inflows to emerging countries.

In this paper, we explore intra- and extraregional influence by including the analysis of FDI inflows (total, M&A and Greenfield) to other regional and non-regional countries. For example, the Republic of Korea belongs to East Asia as per regional groups we used in the paper. Then, we analyze the regional influence by regressing FDI inflows to the Republic of Korea against the sum of FDI inflows (total, M&A, and Greenfield, respectively) to all other neighboring countries in East Asia. The same methodology will apply to examine extra-regional influence, which will allow us to capture the effect of the FDI inflows to all other emerging countries outside of the individual country's regional group.

2. Country-Specific Variables

Based on the theoretical predictions of Nocke and Yeaple (2008), we include two variables: GDP per capita and the relative geographic distance.

GDP per capita (log): this is to capture the level of economic development. Nocke and Yeaple (2008) predict: (i) as production-cost differences between the source and the host countries become small, FDI tends to take the form of cross-border M&As; and (ii) firms in the high-cost country tend to engage more in cross-border M&As rather than in Greenfield FDI if there is relatively more supply of corporate assets in the low-cost country. Thus, the GDP per capita is expected to have a stronger association with M&A than with Greenfield FDI.

Remoteness (log): this is to capture the cost for firms investing on the host country. Nocke and Yeaple (2008) suggest an increase in the cost of setting up a new production division result in an increase in the share of cross-border M&As in total FDI from the high-cost to the low-cost country. As such costs would be decreasing with the geographical proximity of the host country, the share of M&As in total FDI may be increasing in the distance between the two countries. Because we do not use bilateral data, we include the GDP weighted distance from all other countries defined as following:

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[2] There are 40 countries included in the sample.

$LnREMOTE_{it}$ = log of remoteness of country *j* at time *t*
= $\log(1/\sum_{kt}(GDP_{kt}/GDP_{wt})/ DISTANCE_{ikt})$

where GDP_{wt} = world GDP at time *t*, GDP_{kt} = GDP of country *k*, and $DISTANCE_{jkt}$= geographic distance between capitals of countries *j* and *k*.

When the values of M&A and Greenfield FDI flows are dependant variables, we expect this variable will enter with a positive coefficient for M&A. We also expect that this variable will enter with a positive coefficient for Greenfield FDI, as many studies with the gravity model have suggested. In terms of size of coefficients, however, we expect that the size of coefficient for M&A equation would be larger than that for Greenfield FDI, as per predictions of Nocke and Yeaple (2008).

We also include a number of other control variables following the earlier literature.

Total population (log): this is to capture the market size of the host country. This variable is expected to correlate positively with both M&A and Greenfield FDI inflows, because, firstly, the high level of population indicates the attractiveness of a specific location for the investment when a foreign firm aims to produce for the local market (horizontal or market-seeking FDI), and secondly, it also means that labor-abundance which might influence positively on vertical FDI.

Growth rate of GDP per capita: this is to capture the economic conditions of the host country in terms of business cycle. This variable is expected to have a positive correlation with Greenfield FDI, but a negative correlation with M&A, as will be discussed in the next section on empirical results.

Inflation rate: this is to capture the macroeconomic stability and is approximated by consumer price index (CPI). It is expected to be negatively correlated with both M&A and Greenfield FDI.

Trade openness: this is to capture the trade restrictiveness of the host country. It is measured by the amount of exports and imports relative to GDP of the host country. This measure is particularly important as growing literature notes that exporting firms may utilize FDI to minimize the production and trade cost. Trade frictions (due to trade barrier, policy, and transaction cost) may encourage foreign firms to “jump” trade barriers by building similar plants in local markets—horizontal FDI. Or wide gaps in production costs may encourage firms to disintegrate the production process, allocating capital intensive production in industrialized countries and labor intensive production in low wage countries—vertical FDI. As such, horizontal FDI tends to substitute trade while vertical FDI creates trade. Hence, horizontal FDI may be attracted by higher trade barriers, which can protect the output of the foreign investor in the local market against imports of competitors (tariff-jumping hypothesis) (Ali, Fless, and MacDonald, 2010). By contrast, foreign firms engaged in export-oriented investment or vertical FDI may favor investing in a country with greater trade openness. As cross-border M&A and Greenfield FDI can be either vertical or horizontal FDI, the trade openness variable is expected to have an ambiguous association with M&A and Greenfield FDI flows.

Political stability and financial stability: As noted earlier, information on political and financial stability is drawn from the ICRG provided by the PRS Group. One advantage of using the ICRG ratings is that they are widely used by multinational corporations, institutional investors, banks, importers, exporters, foreign exchange traders, and others. The ICRG rating comprises 22 variables in three categories of risk: political, financial, and economic. A separate index is created for each of the subcategories.

It is expected that political stability is positively associated with both M&A and Greenfield FDI. In contrast, financial stability is expected to be negatively associated with M&A sales, while is positively associated with Greenfield FDI inflows to emerging countries, as will be discussed in the next section on empirical results.

IV. EMPIRICAL RESULTS

A. Global Influence

Table 2 reports the estimated results when dependent variable is one of total FDI, M&A, Greenfield FDI flows to each individual emerging country and one of the key explanatory variables is the corresponding FDI inflows to all other emerging countries in the world. Columns (1) to (3) report the results for total FDI, M&A, and Greenfield FDI, respectively. All equations pass the Arellano-Bond test, indicating the consistency of the model. Moreover, the Sargan test of over-identifying restriction also suggests that the instruments are applicable in general. While the lagged dependent variable for Greenfield FDI enters with a statistically significant positive coefficient, that for M&A is found to be insignificant, implying that unlike Greenfield FDI, M&A inflows are not persistent.

Table 2: Determinants of the Value of Total, M&A, and Greenfield FDI Inflows

	Total FDI (1) coef/se	M&A (2) coef/se	Greenfield FDI (3) coef/se
Lag of Dep Variable	0.301***	0.046	0.398***
	(0.036)	(0.033)	(0.026)
All (world)	0.709***	0.981***	0.498***
	(0.054)	(0.079)	(0.043)
GDP PC	0.114	1.384***	0.314***
	(0.122)	(0.328)	(0.096)
Population	0.167	0.459**	0.242***
	(0.142)	(0.195)	(0.092)
GDP PC_Growth	0.016***	–0.039***	0.009**
	(0.005)	(0.006)	(0.005)
Inflation Rate	–0.000**	–0.004***	–0.000***
	(0.000)	(0.000)	(0.000)
Trade Openess	0.002	0.001	0.002
	(0.002)	(0.003)	(0.002)
Remoteness	0.697***	0.999	0.273*
	(0.229)	(0.671)	(0.156)
Political Stability	0.005**	0.025***	0.010**
	(0.002)	(0.006)	(0.005)
Finacial Stability	0.003	–0.070***	0.024***
	(0.003)	(0.010)	(0.004)
_cons	–13.421***	–31.415***	–12.103***
	(2.927)	(6.163)	(1.904)
Obs	586	478	537
Arellano-Bond test			
AR(1)	–3.870	–3.388	–4.445
P-value	0.000	0.001	0.000
AR(2)	1.476	0.165	0.983
P-value	0.140	0.869	0.326
Sargan test			
Chi-squared	33.737	26.334	34.484
P-value	0.529	0.854	0.493

FDI = foreign direct investment, GDP = gross domestic product, M&A = merger and acquisitions.

Note: *** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' calculation.

In all three equations, we find significant externality of global FDI flows to emerging market economies for FDI flows to an individual emerging economy. That is, both M&A and Greenfield FDI inflows to an emerging country tend to move in tandem with the corresponding FDI inflows to all other emerging countries in the world. In particular, M&A appears to show the stronger global influence, compared to Greenfield FDI. More precisely, global effect for M&A is twice stronger than for Greenfield FDI.

In terms of country-specific variables, GDP per capita is found to be positive and significant for both M&A and Greenfield FDI (columns 2 and 3). However, GDP per capita has much stronger association with M&A than Greenfield FDI. More precisely, a 10% increase in GDP per capita of an emerging country would result in 13.8% increase in M&A-type FDI inflows to the country, while it would increase 3.1% increase in Greenfield FDI inflows to the country. This is consistent with Nocke and Yeaple (2008) whose model predicts that the share of cross-border M&A in total FDI flows is increasing in the host country's level of development.

In contrast, the remoteness (i.e., the GDP weighted distance from the rest of the world) has a significant positive coefficient only for Greenfield FDI. Its coefficient in the M&A equation is positive and greater in size than that for Greenfield FDI, but statistically significant only at the 12% level of significance. Thus, our result is partly consistent with Nocke and Yeaple (2008) whose model predicts that the share of cross-border M&A in total FDI is increasing with the geographic distance from the source country to host country.

Population which proxies the market size of the host country also appears to be positively and significantly associated with both M&A and Greenfield FDI flows. As in the case of GDP per capita, the size of the coefficient for M&A is greater than Greenfield FDI. More precisely, a 10% increase in the population of an emerging country is associated with 4.6% and 2.4% increase in flows of M&A and Greenfield FDI, respectively.

High inflation rates appear to deter inflows of both types of FDI, but its effect is stronger on M&A. The coefficient for political stability is found to be positive and significant for both M&A and Greenfield FDI. That is, countries with greater macroeconomic and political stability (i.e., smaller political risk) tend to attract more FDI, irrespective of the types of FDI. Nevertheless, M&A appears to be 2.5 times more sensitive to political risk than Greenfield FDI.

Interestingly, however, the financial stability of host emerging countries appears to have a negative association with M&A, while it has a positive association with Greenfield FDI. Thus, countries with greater financial risks tend to have greater amount of M&A sales. It is also noted that growth rate of GDP per capita also has a negative association with M&A while it has a positive association with Greenfield FDI. This finding is consistent with the phenomenon of fire-sale FDI during the period of financial crisis, as Krugman (2000) noted in that "the Asian financial crisis, although marked by massive flight of short-term capital and large-scale sell-offs of foreign equity holdings, has at the same time a wave of inward direct investment." There are indeed plenty of examples of crisis (e.g., Asian financial crisis of 1997-1998 and Brazilian crisis of 1980 in which M&A type of FDI inflows surged, as the companies in crisis-hit countries became suddenly cheap through a sharp depreciation in exchange rate and a sharp decline in firm value. Aguiar and Gopinath (2005) find that foreign acquisitions increased by 91% in East Asia between 1996 and 1998.

Lastly, trade openness is found to be insignificant in general. There is no knowing whether FDI is vertical or horizontal, and therefore the sign of the trade openness effect on FDI. In practice, one would expect hybrid (both vertical and horizontal) patterns of FDI to emerging

countries. This finding also suggests that cross-border M&A and Greenfield FDI can be either vertical or horizontal FDI.

B. Intra-regional and Extra-regional Influence

We divided the effect of externality into intra-regional and extra-regional. Table 3 reports these externalities for the two different types of FDI flows to East Asia, Latin America, and Eastern Europe. The empirical results suggest there are significant and positive intra-regional effects in the decision of both M&A and Greenfield FDI flows to all three regions of East Asia, Latin America, and Eastern Europe. Intra-regional effects are stronger for M&A than for Greenfield FDI among countries in East Asia and Latin America, while their magnitudes between M&A and Greenfield FDI are similar in Eastern Europe.

Table 3: Regional Effects on the Value of Total, M&A, and Greenfield FDI Inflows

	Intra			Extra		
	FDI (1) coef/se	**MA (2) coef/se**	**GF (3) coef/se**	**FDI (4) coef/se**	**MA (5) coef/se**	**GF (6) coef/se**
Lag of Dep Variable	0.165**	0.073	0.395***	0.500***	0.125***	0.545***
	(0.083)	(0.057)	(0.099)	(0.048)	(0.037)	(0.043)
East Asia	0.371***	0.545***	0.269***	0.025	0.376***	–0.001
	(0.070)	(0.211)	(0.093)	(0.048)	(0.127)	(0.107)
Eastern Europe	0.512***	0.588***	0.606***	0.089**	0.312**	0.057
	(0.064)	(0.074)	(0.090)	(0.040)	(0.141)	(0.109)
Latin America	0.479***	0.459**	0.227***	0.161*	0.233***	0.016
	(0.066)	(0.182)	(0.085)	(0.082)	(0.073)	(0.053)
GDP PC	0.235	0.374	0.438	0.127	1.344**	0.258
	(0.347)	(0.490)	(0.422)	(0.175)	(0.535)	(0.292)
Population	0.790	1.077*	0.420**	0.789***	0.611	0.520***
	(0.718)	(0.592)	(0.204)	(0.251)	(0.477)	(0.118)
GDP PC_Growth	0.004	–0.034	–0.001	0.013***	-0.044***	0.012**
	(0.005)	(0.027)	(0.007)	(0.004)	(0.013)	(0.005)
Inflation Rate	–0.000***	–0.002***	–0.000***	–0.000***	–0.003***	–0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Trade Openess	0.008***	0.011***	–0.003	0.010***	0.003	0.007**
	(0.003)	(0.004)	(0.004)	(0.002)	(0.004)	(0.003)
Remoteness	0.395	0.701	3.192***	1.044*	0.276	0.711
	(0.767)	(1.327)	(1.182)	(0.545)	(1.704)	(1.065)
Political Stability	0.015***	0.033**	0.022**	0.020***	0.045***	0.023***
	(0.005)	(0.016)	(0.010)	(0.004)	(0.009)	(0.006)
Finacial Stability	0.012***	–0.024	0.032***	0.041***	-0.047**	0.043***
	(0.003)	(0.024)	(0.008)	(0.005)	(0.019)	(0.009)
_cons	–19.183**	–28.907***	–39.359***	–24.100***	–22.358	–17.559
	(8.591)	(10.910)	(12.162)	(4.554)	(15.262)	(11.680)
Obs	446	365	406	586	478	537
Arellano-Bond test						
AR(1)	–2.753	–3.158	–3.170	–3.599	–3.916	–4.742
P-value	0.006	0.002	0.002	0.000	0.000	0.000
AR(2)	0.658	–0.138	0.482	1.569	0.739	1.182
P-value	0.511	0.890	0.630	0.117	0.460	0.237
Sargan test						
Chi-squared	19.532	20.743	22.334	28.461	28.392	33.608
P-value	0.984	0.973	0.952	0.775	0.778	0.535

FDI = foreign direct investment, GDP = gross domestic product, GF = Greenfield FDI M&A = merger and acquisitions.

Note: *** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' calculation.

On the other hand, extra-regional effects are observed only for M&A flows to all three regions, confirming that M&A is subject to stronger external influence, compared to Greenfield FDI. Also interestingly, the size of estimated coefficient for intra-regional effect for M&A is roughly twice larger than that for extra-regional effect in all three regions.

Strong intra-regional effects may reflect the investor perceptions of the economic similarities among countries in the same region, and hence their herding behaviors. This suggests that attracting FDI especially in the form of M&A require strong regional policy coordination.

C. Extensive and Intensive Margins

Table 4 shows the empirical results when the dependent variable is either extensive (i.e., the number of deals) or intensive margin (i.e., the average value of each deals) of M&A sales. As noted earlier, Greenfield FDI is not considered here because of the data constraint.

Table 4: Determinants of the Number of M&A Deals and the Average Value of Each Deal

	Total Value(a) coef/se	Case (b) coef/se	Value of Case (a/b) coef/se
Lag of Dep Variable	0.009	0.306***	–0.003
	(0.028)	(0.060)	(0.031)
All (world)	1.047***	0.757***	0.797***
	(0.083)	(0.056)	(0.137)
GDP PC	1.575***	–0.073	1.097***
	(0.370)	(0.082)	(0.353)
Population	0.579***	0.269	1.062***
	(0.169)	(0.208)	(0.230)
GDP PC_Growth	–0.041***	0.011*	–0.045***
	(0.008)	(0.006)	(0.010)
Inflation Rate	–0.003***	0.000	–0.003***
	(0.000)	(0.000)	(0.000)
Trade Openess	–0.004	–0.003***	–0.000
	(0.004)	(0.001)	(0.002)
Remoteness	1.069*	-0.372	–0.331
	(0.555)	(0.334)	(0.487)
Political Stability	0.014**	–0.007*	–0.000
	(0.007)	(0.004)	(0.008)
Financial Stability	–0.074***	–0.004	–0.059***
	(0.011)	(0.008)	(0.015)
_cons	–34.622***	–3.145	–21.873***
	(6.671)	(2.606)	(6.016)
Obs	466	466	466
Arellano-Bond test			
AR(1)	–3.176	–2.909	–3.681
P-value	0.002	0.004	0.000
AR(2)	0.066	–0.025	0.431
P-value	0.948	0.980	0.667
Sargan test			
Chi-squared	28.690	29.103	27.252
P-value	0.765	0.748	0.822

GDP = gross domestic product, M&A = merger and acquisitions.

Note: *** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' calculations.

First, the external effect appears to be significant for both extensive and intensive margins of M&A and its size is similar for both margins. That is, there is a significant and positive spillover effect in M&A flows to emerging countries even when measured in terms of the number of M&A deals and the average value of the deal.

Second, GDP per capita influences positively the average value of each deal, but it does not necessarily affect the number of deals. The previous analysis shows that an increase in GDP per capita has a strong and positive impact on M&A flows to emerging countries. That is, as the host country progresses in its economic development, it would likely see an increase in M&A flows. The current analysis adds that such an increase in M&A is driven largely by an increase in the average value of the M&A deal, rather than an increase in the number of the deals.

Third, income growth has a significant negative association with the average value of each deal although it has a significant positive association with the number of deals. Similarly, financial stability has a negative association only with the average value of each deal. Such findings suggest that the empirical evidence for fire-sales of firms in the crisis-hit emerging countries (i.e., a surge in the value of M&A sales in the years of financial crisis) is largely due to an increase in the value of each M&A, rather than an increase in the number of total M&A cases. In other words, when the growth rate plummets and the financial risk increases in emerging countries, the economy will likely see big deals made, rather than experiencing many small deals.

Fourth, and in general, we have similar results for the average value of each M&A deal as the dependent variable, compared to the previous results for the total value of M&A flows. However, the results for the number of M&A deals are quite different from the previous results. This suggests that characteristics of host countries are more important for the value of deals than for the number of deals.

V. SUMMARY AND CONCLUSION

Despite increasing importance of the role of MNEs in FDI, the investment decisions of MNEs have not been well understood. In particular, very few studies in economic literature have distinguished between the two entry modes of FDI in understanding the determinants of FDI and, consequently, there has been no concrete answers to why MNEs choose one entry mode versus another.

Using the dataset of FDI, M&A, and Greenfield FDI with a comprehensive set of external and internal factors to estimate a dynamic panel model, this paper offers new findings which may have implications for designing a policy framework to attract FDI, particularly in a type that is more conducive to economic development to emerging countries.

First, country-specific factors (such as GDP per capita, macroeconomic factors and political stability, etc.) matter a lot for FDI flows both in the form of M&A and Greenfield FDI. This suggests that the role of governments may play an important role in helping stabilize FDI flows to emerging countries. The policy focus should be on strengthening economic fundamentals and maintaining macroeconomic and political stability in order to sustain high FDI flows.

Second, the results suggest that investors' decisions of FDI flows to an emerging country may be influenced by the fact that the country belongs to global emerging market economies or any specific emerging regions and such effects are stronger on M&A than on Greenfield FDI. In other words, if there is an increase in FDI to all emerging countries, it is likely that FDI to any individual emerging country increases as well, and this phenomenon is more visible when we consider M&As. Moreover, the effect seems to be stronger in all types of FDI flows if it is originated from within the region than if it comes from outside the region. Therefore, there may be a merit in considering policy coordination at the regional level when designing a policy framework to manage FDI flows (particularly M&As) to emerging countries. For example, instituting a sound macroeconomic management framework in an emerging country can generate positive externalities on FDI flows to other regional economies. Hence, promoting good institutions at regional policy forums and dialogues shall help increase the region's attractiveness as an investment destination.

Third, we find that financial stability of emerging countries has a negative association with M&A sales, although its effect on Greenfield FDI is positive. In other words, countries with greater financial risks tend to have greater M&A sales. It is also found that income growth has a negative association with M&A sales, but it has a positive association with Greenfield FDI. These findings are consistent with the phenomenon of a fire-sale FDI during the period of financial crisis, as many companies in crisis-hit countries are sold off at low prices through sharp exchange rate depreciation and a sharp decline in firm value.

Last, but not least, when the total value of M&A sales is split into the number of deals (i.e., extensive margin) and the average value of each deal (intensive margin), it is found that both financial stability and income growth have a statistically significant negative association with the average value of each deal, while they have a significant positive association with the number of deals. These findings suggest that fire-sale of firms in the crisis-hit emerging countries is driven largely by an increase in the average value of each M&A case, rather than an increase in the number of M&A cases. That is, the fire sales are not necessarily because there are more deals, but because the size of the deals has increased in general.

APPENDIX

Table A1: List of Countries in the Sample

Latin America	East Asia	Eastern Europe	Others
Argentina	PRC	Bulgaria	Egypt
Brazil	Hong Kong, China	Croatia	India
Chile	Indonesia	Czech Republic	Israel
Colombia	Korea, Rep. of	Estonia	Kazakhstan
Mexico	Malaysia	Hungary	Morocco
Panama	Philippines	Latvia	Russian Federation
Peru	Singapore	Lithuania	South Africa
Venezuela	Taipei,China	Poland	Sri Lanka
	Thailand	Romania	Turkey
	Viet Nam	Slovak Republic	United Arab Emirates
		Slovenia	
		Ukraine	

PRC = People's Republic of China.

Source: Authors' classification.

Table A2: List of Variables

Dependent Variables	
Natural logarithm of flow and number of cases (FDI, M&A and Greenfield)	UNCTAD Statistic database & WIR 2010, UNCTAD
Independent Variables	
External Variables	
Natural logarithm of flow in the world	Author's Caculations
Natural logarithm of flow toward other neighboring countries in East Asia	
Natural logarithm of flow toward other neighboring countries in Latin America	
Natural logarithm of flow toward other neighboring countries in Eastern Europe	
Country-Specific Variables	
Natural logarithm of GDP per capita (GDP PC)	World Economic Outlook Database October 2010, IMF
Natural logarithm of Total population (Population)	World Development Indicators, World Bank
Annual growth rate of GDP per capita (GDP PC_Growth)	World Development Indicators, World Bank
Inflation rate based on CPI (Inflation Rate)	World Economic Outlook Database October 2010, IMF
Percentage of exports and imports relative to GDP (Trade Openness)	World Development Indicators, World Bank
Natural logarithm of remoteness (Remoteness)	Author's Caculations
Inverse of ICRG political risk index (Political Stability)	International Country Risk Guide, The PRS Group, Inc.
Inverse of ICRG finacial risk index (Financial Stability)	

Source: Authors' list.

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Assessing Factors Affecting M&As versus Greenfield FDI in Emerging Countries
The paper examines external and internal factors shaping multinational firms' foreign direct investment decisions to emerging economies, via mergers and acquisitions (M&A), and Greenfield investment. The results show the importance of country-specific factors while evidence suggests that investors' decisions of FDI flows to an emerging country may be influenced by the fact that the country belongs to global emerging market economies or any specific emerging regions and that such effects are stronger on M&A than on Greenfield FDI. Another interesting result is that "fire-sale" FDI does not necessarily imply an increase in the number of deals; instead it could reflect the sale of big firms during crises.

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