Impact of Greenfield FDI versus M&As on Growth and Domestic Investment in Developing Asia

Sasidaran Gopalan*, Alice Ouyang and Ramkishen S. Rajan[1]

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Abstract

A large literature establishes the growth-enhancing benefits of foreign direct investment (FDI) flows into emerging market economies in general. Conventional wisdom holds that FDI is a preferable form of external financing compared to other types of capital flows because of its stabilizing properties. While this might hold true largely for FDI flows of the Greenfield variety, in reality, a greater share of FDI to emerging economies in general and Asian economies appears to be in the form of mergers and acquisitions (M&As). Do all types of FDI flows produce similar macroeconomic benefits? This paper empirically explores whether the type of FDI flow, i.e. Greenfield vs. M&A, matters in the way it impacts economic growth and domestic investment for a large panel of developing Asian economies over 1990-2013. We find Greenfield FDI contributes positively to economic growth while FDI in the form of M&A appears to have no significant growth influence. We also find that the effects of Greenfield FDI on domestic capital formation are stronger and larger relative to M&A flows.

Keywords: Asia; Foreign Direct Investment (FDI); Greenfield; Growth; Mergers and Acquisitions (M&As); Investments

JEL Classification: E22; F21; F23; O47

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[1] *** Corresponding Author**: Sasidaran Gopalan is a Research Fellow at the Asia Competitiveness Institute, Lee Kuan Yew School of Public Policy at National University of Singapore. Email: sppsdg@nus.edu.sg

Alice Ouyang is a Professor at the China Academy of Public Finance and Public Policy, Central University of Finance and Economics. Email: Alice.Ouyang@gmail.com.

Ramkishen S. Rajan is a Professor at the Lee Kuan Yew School of Public Policy, National University of Singapore. Email: spprsraj@nus.edu.sg.

1. Introduction

Developing Asian economies have embraced openness to international trade and financial flows as a means of sustained growth. While they have benefitted from such a growth strategy, they have also been faced with significant volatility, largely due to ebbs and flows in capital flows. In particular, sharp surges and sudden stops in capital flows have been associated with episodes of severe financial crisis most notably in 1997-98 (Asian financial crisis) as well as in 2007-2008 (global financial crisis) (Rajan et al., 2011). More recently, the post global financial crisis period has complicated macroeconomic management in developing Asian economies with the Fed's ultra-loose monetary policy (Quantitative Easing) as well as the subsequent "taper tantrum," when the Fed started a contemplating a gradual normalization of monetary policy (Sahay et al., 2014).

While some policymakers and observers have responded to these concerns regarding capital flows by suggesting the need to impose selective capital controls or macro prudential regulations to moderate capital flows in general, others have suggested the need to pay more attention to the composition of capital flows. As the argument goes, foreign portfolio investment (FPI) and bank lending are much more prone to sharp inflows and sudden withdrawals unlike foreign direct investment (FDI) which is seen as relatively stable (Bosworth and Collins, 1999; Dadush et al., 2000; and Loungani and Razin, 2001). This led to Hausmann and Fernández-Arias (2001) suggesting that FDI is viewed by several host countries as "good cholesterol," as opposed to other types of

capital flows like short-term debt that are "bad cholesterol" because of the unstable nature as it is motivated by speculative rather than long-term considerations.

A first glance at the data suggests that there appears to be some basis for advancing such an argument regarding the relative stability of FDI. As Figure 1 reveals, during the Asian Financial crisis bank flows were the primary drivers of the boom (in 1996) and the subsequent bust in 1997-99, followed by portfolio flows. Just prior to the global financial crisis as Asia experienced a resurgence in net capital flows, once again the pre-crisis boom was due mainly to portfolio flows followed by bank flows, while the subsequent reversal post Lehman Brothers was due to these two types (Rajan et al., 2011). These two types of flows are therefore commonly referred to as "mobile capital" or "hot money" in contrast to FDI which remained fairly stable during the entire period. Similarly, in the most recent period of temper tantrum, while FDI stayed fairly constant, the other two components of capital flows saw a sudden albeit short-lasting reversal.[2]

Other studies have also highlighted the stabilizing properties of FDI relative to other forms of external financing (Felices et al., 2008; BIS, 2009). This, along with the growth-enhancing benefits of FDI (employment, technology transfer, etc.) has led to a growing belief that the composition of capital flows matters more than its volume and policies should concomitantly focus on altering capital flows towards FDI. While this view has become conventional wisdom of sorts, it is not unambiguous. For instance, Fernández-

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[2] While not explicitly captured by the data, there has been a shift in portfolio flows – from predominantly portfolio equity flows per Asian financial crisis to both portfolio bond and equity flows in the global financial crisis.

Arias and Hausmann (2001) maintain that FDI tends to dominate capital inflows to countries with poor financial development, suggesting that FDI substitutes for foreign portfolio investments (FPI) and may be attracted because of a country's weakness rather than strength.

Another argument that could be made regarding this sharp distinction between mobile capital and FDI is that the type of FDI has changed over time. While it is often believed that FDI is of the Greenfield variety, a growing share of FDI globally appears to be in the form of mergers and acquisitions (M&As) (UNCTAD, 2011).[3] This is especially true of developing economies in Asia. In fact, if we consider the trends of different types of FDI flows into Asian economies (Table 1), we see that there has been a significant jump in the ratio of M&As to FDI in developing Asia up until 2009, relative to decade of the 1990s. The ratio doubled from about 11 to 22 percent on average from 1990-99 to 2000-09, respectively.[4]

[Insert Table 1 here]

It is useful to note that in some senses M&A flows are quite similar to FPI, with the only difference being proportion of share-holding. Particularly, both FPI and M&As involve foreign purchases of domestic equities. The only difference is that M&As in the form of FDI refers to a foreigner purchasing a stake of 10 percent and over while anything

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[3] While Greenfield and M&As are in the form of new investments, a non-negligible component of FDI is in the form of retained earnings. However, data on this component are not systematically available.

[4] While this ratio dipped a bit after the financial crisis, there appears to have been an uptick again since 2012 onwards.

else is treated as FPI. This being the case, would we expect FDI primarily in the form of M&As to act very differently from FPI?[5] In fact, as Hattari and Rajan (2011) empirically establish, distance has a near equal inhibiting impact on FDI in the form of M&As and FPI flows, consistent with the fact that both financial transactions are almost similar to each other with the only difference being the thresholds of ownership.

Thus, in many ways, this conventional wisdom regarding FDI being more stable than other forms of financing and using that as the rationale for encouraging FDI flows is rather curious. A potential concern is that policy measures designed to encourage FDI may involve not only a distortionary cost but also little gain in terms of enhanced financial stability if sufficient care is not taken to distinguish between the types of FDI, viz. Greenfield vs. M&A (Bird and Rajan, 2002).

Given this background, this paper aims to revisit the issue of FDI and its two components, viz. Greenfield and M&A and how they affect economic growth and domestic investment for a panel of developing Asian economies. We contribute to the literature in two important ways. First, we add to the growing interest and recognition in the literature on the potentially different macroeconomic effects of Greenfield and M&A flows on growth and investment in developing economies. Second, we specifically focus on the Asian region which has increasingly seen a rising share of FDI flows in the form of M&As. By empirically estimating the macroeconomic impacts of the types of FDI through

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[5] In view of the complex linkages between the various capital flows, Chuhan et al. (1996) and Claessens et al (1995) argue that it may be misleading to look at capital flows individually, with the latter maintaining that it is only meaningful to examine aggregate financial accounts. Also see Sarno and Taylor (1997).

a systematic breakdown of aggregate FDI into its components we aim to shed light on the policy choices governing the type of FDI that has to be attracted in developing economies in Asia.

The remainder of the paper is as follows. Section 2 begins with a brief examination of the relative trends in FDI inflows to developing Asia. Section 3 uses a simple analytical framework to explain the differential macroeconomic effects of Greenfield investments versus FDI in the form of M&A. Section 4 offers a discussion of the related empirical literature and highlights the gaps that exist on the related issue. Section 5 summarizes the data sources and definitions as well as furnishes the empirical specification to be estimated. Section 6 discusses the results including the robustness checks. Section 7 concludes the paper.

2.   Trends in FDI Inflows to Developing Asia[6]

At the outset, it is important to establish that global FDI inflows destined for the developing economies have been rising significantly over the last two decades. While it is true that till about 2000, the developed economies received about 70 percent of global FDI inflows on average, the shares have dipped since then to a low of 40 percent in 2014 before rebounding to 55 percent in 2015. On the other hand, the share of FDI inflows to developing and transition economies tripled from about 20 percent in 2000 to over 60 percent in 2014. As illustrated by Figure 1, global FDI inflows into the developing economies have caught up with the developed world and even surpassed it in 2014.

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[6] We follow UNCTAD's classification in defining developing Asian economies. The list of countries used for our empirics is discussed in Section 5 of the paper.

[Insert Figure 1 here]

Within the developing economies the Asian region has evolved steadily into a major destination for global FDI inflows. As Figure 2 illustrates, we can see that developing economies in Asia have constituted on average about 65 percent of global FDI inflows into the developing world. While FDI flows to other regions like Latin America and Caribbean as well as Africa have been on the rise in the decades of the 2000s, the flows to developing Asia still dwarf the inflows to other developing economies.

[Insert Figure 2 here]

In terms of the economic significance of FDI inflows into the developing world, we show FDI inflows as a proportion of gross domestic product (GDP) for the entire developing economies sample, as well as the constituent regions. Quite interestingly, we can see that developing Asian economies experienced a doubling of FDI as a share of GDP from about 1 percent in 1990 to a peak of 3.5 percent in 2007 before the GFC. On average, FDI inflows as a proportion of output has been around 2.5 percent for the developing Asian economies, which incidentally is in line with the average of the entire developing world. It is also notable that the importance of Asia in terms of its FDI inflows to GDP has exhibited greater stability than the other regions (Figure 3).

[Insert Figure 3 here]

Figure 4 reveals three important stylized facts. First, from about 11 percent in 1990, the share of FDI inflows into developing Asia as a proportion of world FDI inflows nearly tripled, peaking at 32 percent in 2012. Barring the periods following the Asian financial crisis and global financial crisis where this share of FDI inflows into the region

saw notable dips, by and large, the growth momentum of FDI inflows has been sustained through most of the last decade. Of importance is the fact the world has seen a sharp increase in FDI in the form of M&A over the years. As Figure 4 reveals, the M&A flows in Asia as a share of world M&A inflows touched almost 15 percent in 2008 just before the global financial crisis, from a low of 3 percent in 1995. After the brief slowdown post the global financial crisis, the share of Asian M&A inflows as a percentage of world M&A inflows have once again picked up and reached pre-crisis levels.

A substantial portion of aggregate FDI inflows into developing Asia has been driven by a sharp increase in M&A inflows which is reflected in the growing share of FDI inflows in the form of M&As as a proportion of overall FDI flowing into the region. A considerable degree of volatility can be observed in the shares, with M&A inflows as share of FDI Inflows in Asia peaking at about 38 percent in 2001, falling to 13 percent in 2004, before hitting 30 percent in 2009.

[Insert Figure 4 here]

However, it must be noted that as a share of GDP, M&A inflows appear to be fairly modest, both for Asia and the developing economies in general. While on average, M&A inflows as a proportion of output has increased since 1990 from a negligible share of less than 0.1 percent to close to 1 percent by the turn of the millennium, the shares appeared to have averaged around 0.5 percent of GDP since then. The same appears to be true for trends in M&A inflows as a share of GDP for developing Asian economies (Figure 5).

[Insert Figure 5 here]

The distribution of FDI inflows in Asia is captured in Figure 6. It is clear that the bulk of FDI flowing into the region go to East and Southeast Asian countries, with West Asia and South Asia receiving relatively smaller amounts of FDI inflows.

[Insert Figure 6 here]

Interestingly, as Table 2 reveals, China and Hong Kong emerge as the top host countries for FDI inflows in the region, which can in part be attributed to the significant degree of round-tripping of FDI between the two countries. Barring these two countries, the composition of top host countries for FDI inflows on average over the last decades has broadly remained the same, with countries including Singapore, India, Indonesia, Japan, South Korea and Taiwan featuring as major recipients of FDI inflows in the region.

[Insert Table 2 here]

Having provided an overview of the rising importance of M&A inflows in overall FDI in developing Asian economies, we will proceed to outline a simple analytical framework to understand the macroeconomic implications of the two types of FDI inflows. This will form the basis for our empirical examination in the subsequent sections.

3. Macroeconomic Effects of Greenfield Versus M&As

Why does the distinction between M&A versus Greenfield investments matter from a policy perspective? [7] Analytically, it is important to recognize that the macroeconomic implications of M&A are quite distinct from Greenfield investments. While the conventional wisdom still remains that FDI is a preferred and stable source of

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[7] The discussion follows Gopalan and Rajan (2016).

financing compared to other types of capital flows, as alluded to earlier in Section 1, differentiating between Greenfield and M&A is important for various reasons.

For simplicity, ignoring the secondary effects of FDI on productivity or income growth, we know that the balance of payments identity tells us that the current account plus financial account must equal zero. National income accounting posits that the current account balance of any country equals its national savings minus investment.

Let us now consider what happens to an economy when FDI enters in the form of Greenfield investment. Assume everything is zero to begin with for simplicity. When $100 worth of Greenfield FDI comes in to a country, then its financial account goes up by $100. The current account, being the mirror image must -$100 in that country. This happens in the case of Greenfield FDI because when external financing comes in, the investor sets up a new firm and hence the domestic investment in that country rises by the same amount. So, for a given amount of national savings, when investment rises, the current account balance becomes -$100.

However, when considering the case of FDI in the form of M&A, the relationship is not so straightforward. To be sure, when FDI in the form of M&A flows into a country, the financial account shows a balance of +$100. However, there has been no new actual investment that has been made. In this scenario, it must be recognized that national savings, investment and the current account are affected differently than in the case of greenfield FDI. There are at least three distinct possibilities here that must be considered:

For illustration, consider a hypothetical example. For instance, Firm 1 from Country 1 buys a stake in Firm 2 in Country 2. When this happens, Firm 2 could undertake

an investment activity by reinvesting those funds in Country 2. If that is the case, then the domestic investment in country 2 rises, just like in the case of Greenfield investment. Note that it is a conscious decision that Firm 2 has taken to actually reinvest the funds in Country 2. A related possibility is that Firm 2 might place the proceeds in the bank or elsewhere in the domestic financial system which gets rechannelled into the economy in Country 2. This could result in in the lowering of cost of funds from increased supply of funds in Country 2 which eventually increases domestic investment in Country 2.

Another possibility is when owners of Firm 2 decide to consume all the proceeds that they get from the divestment, in which case, domestic consumption in Country 2 goes up. Since savings are defined as income not consumed, income in Country 2 has not increased because income is about value-added; in this case, the M&A acquisition is treated as a transfer payment. So, GDP in Country 2 remains the same, consumption rises implying a decrease in the country's national savings. As such, with M&A, while the financial account of +$100 is matched by a current account of -$100, unlike in the case of Greenfield investment, the current account balance of -$100 is not because investment rates have gone up in Country 2 but rather because the national savings in the country have fallen.

The third possibility relates to owners of Firm 2 investing their proceeds outside the country. If funds are transferred overseas then there will not be any change in national savings or domestic investment in Country 2, implying that there will be no change in the current account balance of Country 2. Consequently, this implies that there will be no change in the financial account balance in Country 2 either. What happens is

that the +$100 coming into the country in the form of M&A inflow goes out of the country as gross capital outflows worth -$100. In this possibility, it is important to note that FDI in the form of M&A may not just lead to increased domestic investments but may also not even be a net source of external financing for Country 2.

This simple illustration above shows that when FDI that comes into a country is in the form of M&A, it really depends on how the money is used in the country which will turn determine how it affects economic growth or domestic investments. The discussion above thus points out the need to appreciate that all FDI are not the same and policymakers must be cognizant of the differential effects before promoting a particular type of FDI inflow.

4. Literature Review

There is a well-established theoretical and empirical literature assessing the macroeconomic effects of FDI, in particular the effects of FDI on economic growth and domestic investment.[8]

In an influential paper, Borensztein et al. (1998) argued that FDI positively affects economic growth primarily through augmentation of human capital, especially in developing countries. They further find that FDI contributes relatively more to economic growth than to domestic investment, that too when the host country has a minimum threshold stock of human capital. The broader implication of this finding about having

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[8] Among the early works see Barro (1997); Borensztein et al. (1998); Mencinger (2003); Alfaro et al. (2004); Razin (2004); Carkovic and Levine (2005); Bosworth and Collins (1999); and Mody and Murshid (2005); For more recent assessments, see Herzer (2012) and Iamsiraroj (2016).

sufficient "absorptive capability" across different dimensions for the host economy to reap the desired benefits of FDI inflows has been a recurrent theme in the literature ever since. For example, papers including Alfaro et al. (2004) and Azman-Saini et al. (2010) posit that FDI inflows promote economic growth only when the host economies achieve a certain threshold level of financial market development.

While many papers have suggested that FDI has a positive impact on economic growth (see Blomstrom et al., 1994; Choe, 2003; Hansen and Rand, 2006), studies such as Carkovic and Levine (2005) have empirically shown that FDI does not produce any significant impact on economic growth in the host country, while other studies including Mencinger (2003) and Herzer (2012) have even found negative growth effects. Though the empirical literature on the precise nature of the relationship between FDI and economic growth is mixed, most studies until recently have not disaggregated FDI inflows into its two components, i.e. Greenfield and M&A and those that have done so are very few in number.[9]

There has also been a growing theoretical literature -- especially at the firm level -- identifying the heterogeneity in firms' capabilities as the key determinant of the type of FDI going into an economy. Andersson and Svensson (1994) for instance provide an analysis on the characteristics of firms that choose to undertake Greenfield versus M&A FDI in Sweden and find that that those firms with better organizational capacity prefer to engage in FDI through M&A, while those possessing higher technological skills will

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[9] As UNCTAD (2000) notes, FDI in the form of M&A is inferior to Greenfield FDI when the objective is to promote economic development through enhancing capital-stock.

instead take the Greenfield FDI route. In similar vein, Blonigen (1997) suggests that M&A and Greenfield FDI are different animals in the sense that firms view M&A as a conduit to acquire firm-specific assets in the host country. Other studies such as Miller (2007), Raff et al., (2009), Qiu and Wang (2011), Nagano (2013), Stepanok (2015) have also specifically addressed the issue of when different forms of FDI become the preferred mode of entry for firms entering into emerging and developing markets.[10]

As summed up nicely by Davies et al. (2015): "M&A...exhibits opportunistic behaviours as it is more sensitive to short-run changes, such as a currency crisis. On the other hand, Greenfield is relatively driven by long-run factors, such as origin country technological and institutional development or comparative advantage. These empirical facts are consistent with the conceptual distinction made between these two modes, i.e. M&A involves transfer of ownership for integration or arbitrage reasons while Greenfield relies on firms own capacities, which are linked to the origin countries attributes" (p.1).

In addition to the largely theoretical firm specific literature that focuses on the question of why and when firms choose a specific mode of foreign market access, there is a small but growing set of studies that has emphasized the differential macroeconomic implications that the two kinds of FDI flows can bring about, especially in emerging and developing economies.

Two recent papers are notable in this context. Wang and Wong (2009) use a sample of 84 countries from 1987 to 2001 to separately examine the effects of Greenfield FDI and

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[10] It is useful to note that the choice governing a multinational enterprise about the form of its entry mode is a significant area of research interest in the field of international business. See Slangen and Hennart (2007) for a review of this related empirical literature.

M&As on economic growth. In a related paper, focusing specifically on the 12 new Member States of the European Union, Eren and Zhuang (2015) also examine the impact of types of FDI on growth. Interestingly, both these studies find contrasting results. While Wang et al. (2009) find that Greenfield FDI promotes growth a nd M&As are negatively associated with it, Eren and Zhuang (2015) find that neither Greenfield FDI nor M&As on their own have any significant impact.[11]

It is also worth emphasizing here that although there is an empirical literature examining the relationship between different types of capital flows and domestic investments, the related studies have tended to focus on the impact of aggregate FDI inflows and whether it crowds-out domestic investment or not in host economies (for example, see Razin, 2004; Bosworth and Collins, 1999; Mody and Murshid, 2005; and Mileva, 2008).

However, the existing literature does not disaggregate FDI in terms of Greenfield and M&A flows and whether they produce differential impacts on domestic investments, especially in emerging market and developing economies which will be the focus of our paper. In particular, we undertake a systematic empirical examination of the macroeconomic consequences of aggregate FDI and its types focusing on both domestic investment and economic growth in the Asian context for the time period 1990 to 2013. This issue assumes more importance in the context of developing economies in Asia,

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[11] That being said, both the papers appear to emphasize the importance of a threshold level of human capital for FDI of both types to have an impact of growth.

especially considering that much of the rising FDI in the region has been on account of a rise in FDI in the form of M&A.

5. Data and Empirical Model

Our panel consists of data for a maximum of 42 developing Asian economies over the period 1990-2013. The sample economies are listed in Table 3.[12]

[Insert Table 3 here]

Following the related literature, we adopt a parsimonious model specification of economic growth as a function of its past values and FDI inflows controlling for a host of other country-specific characteristics. It is also useful to note that this model specification is based on the assumption that transitional dynamics of growth for developing economies are more important as countries are unlikely to be at their steady state equilibrium (Mankiw et al., 1992). Thus, the model will take the following form:

$$\Delta lny_{i,t} = \beta_0 + \beta_1 lny_{i,0} + \beta_2 ln\, FDI_{i,t} + \beta_3 Controls_{i,t} + \varepsilon_{i,t} \qquad (1)$$

We average data over non-overlapping, three-year periods so that there are eight observations per country at maximum (1990-1992; 1993-1995; etc.) depending on data availability. So the subscript "t" and "0" in model (1) designate one of these three-year averages and the initial value of one of these three-year periods, respectively. $\Delta lny_{i,t}$ is the real GDP per capita growth rate, while $y_{0,t}$ is the initial real GDP per capita in every sub-period.

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[12] It is useful to note that while our data includes 42 economies, in the regressions, the final count of countries drops to 24 and those countries are highlighted in Table 3.

Before we proceed, we would like to point out that the choice of three-year non-overlapping averages is not arbitrary. Rather, the most commonly used methodology in the related literature we have cited in the paper use either three-year averages or five-year averages depending on the length of the sample. Some have used standard yearly panel data. In our case, we prefer to stick to using three-year averages because it is neater with 24 years of panel data.

However, we undertake three additional exercises as robustness checks to check the sensitivity of our results. For the baseline specifications, we complement our results using five-year non-overlapping averages as is the standard practice in the literature noted above.[13] Second, we estimate fixed effects regressions for yearly panel data. Finally, we also present similar fixed effects estimation results for our sample with three-year averages.

$ln\,FDI_{i,t}$ is the natural log of 1 plus the ratio of FDI inflows over GDP since the share of FDI inflows could be negative. It is useful to recall that FDI includes the following three components: equity capital, reinvested earnings and intra-company loans. Hence, FDI flows with a negative sign indicate that at least one of the three components of FDI is negative and not offset by positive amounts of the remaining components. These are called reverse investments or disinvestments. As our prior, the literature points to several reasons as to why we should expect a positive sign between FDI and economic growth in general, although as we have discussed in Section 3, the macroeconomic

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[13] We also perform our empirics with two-year averages but do not report the results in the paper. They are available on request from the authors.

growth effects of FDI inflows could vary depending on whether the flow is of Greenfield variety or M&A.

To assess the differential impact of types of FDI inflows on economic growth we disaggregate FDI inflows into M&A and Greenfield investments and replace aggregate FDI with each of its sub-components to re-run our empirics. M&A inflows refer to the cross-border M&A sales, which are calculated on a net basis as well, i.e. sales of companies in the host economy to foreign transnational corporations (TNCs) minus sales of foreign affiliates in the host economy. The data cover only those deals that involved an acquisition of an equity stake of more than 10 percent. Greenfield FDI is calculated as the difference between aggregate FDI and M&A inflows.[14]

Following our discussion, we hypothesize that when FDI takes the form of Greenfield investments we would see it impact growth positively, while FDI inflows in the form of M&A could go in either direction.

We also estimate the nexus between the types of FDI inflows and domestic investment by replacing $\Delta lny_{i,t}$ with $\Delta lnI_{i,t}$ which is domestic investment in an economy given by gross capital formation expressed as a percentage of GDP. Once again, based on the discussion in the related literature, it is not clear a priori what to expect of

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[14] UNCTAD Statistics also report the value of Greenfield FDI projects, but it is not available until 2003. Also most of the UNCTAD Greenfield inflow values are much larger than FDI inflows as the reported figures are estimated value of Greenfield investments. Further, a caveat to bear in mind is that while a great deal of focus has tended to be on how to attract new equity investments, not enough attention is being paid to existing investors and how to make sure that they keep investing in the country they are already in. UNCTAD data suggests that about 40 per cent of global FDI is in the form of retained earnings. While important, there is a dearth of data on reinvested earnings, which prevents us from doing further analysis on this component.

the relationship between aggregate FDI and domestic investment as it might depend on whether it is of Greenfield variety or M&A.

The choice of control variables for both regressions follows from the literature (Borensztein et al., 1998; Alfaro et al., 2004; Bosworth and Collins, 1999; and Mody and Murshid, 2005). We include the standard set of variables encompassing macroeconomic, financial, institutional and social indicators. Variables include inflation rate, trade openness, share of agriculture sectors, human capital, government consumption, financial market development, infrastructure, and institutional quality. We use private credit by deposit money banks to GDP to proxy the development of financial sectors, and replace it with stock market total value traded to GDP for robustness check later on. Infrastructural variables include electric power consumption (KWh per capita), while we use the bureaucratic quality index from International Country Risk Guide (ICRG) to capture the institutional strength of the economy. A priori, we expect stable and better macroeconomic, financial and institutional environment to be positively associated with growth and investment. While the data definitions and sources are summarized in Table 4, the summary statistics are shown in Table 5.

[Insert Tables 4 and 5 here]

One of the standard econometric issues that have to be tackled while estimating (1) is that of endogeneity that arises from omitted variable bias in specifying an equation of growth determinants. The convention in the literature is to try and partially deal with this issue by resorting to a panel fixed effects estimation that allows us to control for unobserved country-specific fixed characteristics. However, as has been commonly noted

in the larger growth determinants literature, the dependent variable could exhibit state dependence, i.e. dependent on its own past values, which necessitates the estimation of a dynamic panel model. Further, including lagged dependent variables also help in controlling for serial autocorrelation. An additional point to bear in mind is that a fixed-effects approach is static and treats FDI in the form of Greenfield or M&A as exogenous.

To that end, we apply dynamic panel data estimation by using a system-GMM specification (Arellano and Bover, 1995; Blundell and Bond, 1998) as our preferred estimation procedure. However, as noted earlier in the paper, we do present out fixed effects results as well just for comparison, in addition to other robustness checks listed earlier.

The two-step system-GMM is our preferred choice here to handle endogeneity because it provides more efficient estimates than do other options such as differenced-GMM or fixed effect models. Specifically, it does not entirely eliminate the cross-country dimension of the data by first-differencing (such as differenced-GMM) or taking differences with respect to country means (such as fixed effects). Yet another reason for preferring a system-GMM instead of a (dynamic) fixed effects model is because of Nickell (1981) bias, which suggests that the correlation between the lagged dependent variable and the fixed effects may bias the coefficient on the lagged dependent variable toward zero. If the explanatory variables are correlated with the lagged dependent variable then the estimated coefficients of the explanatory variables may inherit this so-called Nickell bias. This bias is especially relevant for models with shorter time periods. In order to

handle all these econometric issues to a reasonable degree, we use system-GMM estimation for our empirics.[15]

6. Empirical Results

In this section, we will discuss our estimation results for the impact of aggregate FDI inflows as well as its two components on both economic growth and domestic investments in developing Asian economies. Subsequently, we also show the system-GMM estimates using five-year non-overlapping averages to complement our baseline results for both growth and investment. Following this, we present our fixed effects estimation of yearly panel data and three-year averages.

In the final part of our discussion of results, we show our estimates for differential impacts of FDI and its components on growth and domestic investment for the sample of countries that are commodity exporters. Given the possibility of threshold levels of financial sector development that are essential for FDI inflows to have a positive effect on economic growth (Alfaro et al., 2004) we control for non-linearities in financial development indicators and assess the relationship between FDI and economic growth as well as domestic investment. As a final robustness check, we use different measures in the regression to proxy the development level of financial markets.

5.1.　Baseline Results

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[15] The difference-in-Hansen tests cannot reject the null hypothesis, indicating that the instruments are exogenous.

First, we start with our system-GMM results examining the relationship between FDI and growth. Table 6a presents three columns, with the first column showing the relationship between overall FDI and economic growth and the second and third columns showing the results of the impact of M&A flows and Greenfield investments respectively on economic growth. These are the results pertaining to the sample using three-year averages.

[Insert Table 6a here]

The estimation results yield some interesting findings. Focusing on the key variables of interest, we see that aggregate FDI inflows have a positive and highly statistically significant impact on economic growth. The same result holds consistently when we replace aggregate FDI inflows with Greenfield investments, consistent with our prior that FDI of the Greenfield variety should positively contribute to productive capacity and growth of an economy. Interestingly, as the second column captures, we find the same regression showing an insignificant result when we use M&A inflows as the key explanatory variable. It is also notable that the coefficient, although statistically insignificant, carries a negative sign, providing indicative evidence that the macroeconomic impact of FDI in the form of M&A may not be desirable for economic growth.

Most control variables carry the expected signs, and the coefficients are in accordance with our priors. For instance, we find a tradeoff between higher inflation and economic growth consistently in all the three regressions, while greater trade openness and better infrastructure provision (proxied by electricity) seem to have a positive and

statistically significant impact on growth. Interestingly, human capital does not seem to be significant in any of the regressions, while financial development exerts a negative impact on economic growth for the countries in our sample, which is an important result to note.

Table 6b shows the estimation results using five-year non-overlapping averages. Clearly, we can see the drop in the number of observations from 160 to 102 owing to collapsing the dataset to five-year averages. However, the main results are strikingly similar to what we observed in Table 6a. Aggregate FDI inflows and Greenfield FDI have a strong statistically and economically significant impact in contributing to economic growth, while FDI in the form of M&A carries a negative sign (consistent as before) and is also statistically significant. This shows the robustness of our results obtained earlier.

[Insert Table 6b here]

In Table 7a, we show the results for the regression that test the relationship between FDI flows and domestic investment. Contrary to what we observed earlier in the case of overall economic growth we find that all the three variants of FDI flows carry a positive and statistically significant relationship with domestic investment. While the statistical significance of M&A flows is weak in how it affects domestic investments, as columns (1) and (3) show, aggregate FDI inflows as well as those of the Greenfield variety appear to strongly and positively contribute to increasing domestic investment. This positive estimated coefficient on Greenfield FDI also suggests that Greenfield FDI does not produce a crowding-out effect on domestic investments. This is consistent with the

case of Greenfield FDI that investors tend to set up a new company when external financing comes, and push up domestic investment (I).

[Insert Table 7a here]

Interestingly, unlike the case of growth determinants, the performance of control variables in the investment regression does not seem to follow any consistent pattern in terms of its significance or signage. However, there are two exceptions. Inflation continues to have a negative and statistically significant impact on domestic capital formation across all the three regressions using different variants of FDI inflows. Further, we also find financial development carries a negative sign in the way it affects domestic investments. No other control variable appears to be consistently significant across the three regressions.

Like before, we next present our results for investment growth using five-year non-overlapping averages in Table 7b. Once again, the signs of all the three variables of interest remain positive, consistent with what we saw in Table 7a. However, in terms of statistical significance, only overall FDI inflows and Greenfield investments produce extremely high levels of significance. The results seem to be favorable for Greenfield FDI, consistent with our discussion and results obtained from our baseline estimates.

[Insert Table 7b here]

5.2. Robustness Checks

Our empirical results so far appear to provide evidence in favor of Greenfield FDI contributing positively to economic growth and investments. On the contrary, we find

that the coefficient of FDI in the form of M&A tends to be negative in the way it affects

economic growth and positive but weakly or statistically insignificant when it comes to

its relationship with domestic investments.

To ascertain that our results continue to remain robust to alternative

specifications, we undertake several robustness checks. First, departing from the use of

system-GMM, we apply a more conventional fixed effects estimation both using yearly

panel data as well as using the three-year average dataset.

The results for yearly panel data for both growth and investment equations are

presented in Tables 8a and 8b. Subsequently, the three-year average dataset estimated

using fixed effects for both growth and investment are shown in Tables 9a and 9b. The

results are strikingly similar to what we have obtained so far. To be sure, the direction

and statistical significance of coefficients of the main variables of interest continue to

remain intact as far as the impact of aggregate FDI and Greenfield FDI on economic

growth and investment are concerned. However, the results for all the regressions

pertaining to M&A flows is not as consistent as before, although the bottom line results

that FDI in the form of M&As are likely to either produce undesirable effects or negligible

effect of economic growth, while weakly positive or a modest effect on investment

remains undisturbed.

[Insert Tables 8a-8b and 9a-9b here]

In the next set of robustness checks, we introduce a quadratic version of the

financial development proxy to check if controlling for that non-linearity would in any

way alter the fundamental relationship we have observed between different types of FDI

flows and economic growth. As Alfaro et al. (2004) found, while FDI flows on its own have an ambiguous effect in contributing to economic growth they tend to have a positive impact on growth in countries with well-developed financial markets. Azman-Saini et al. (2010) econometrically identify this threshold of financial development beyond which FDI positively affects growth, and posit that the effects are "non-existent" below the identified threshold. Taking a cue from this strand of literature we explicitly introduce a quadratic credit-to-GDP variable – the most commonly used proxy capturing financial development - and test if the results alter. We also include a dummy variable for commodity exporters in our sample and check if and to what extent that changes the impact of types of FDI on economic growth and domestic investments. Second, we replace private credit by deposit money banks to GDP with stock market total value traded to GDP to proxy financial market development.

Table 10 and 11 first presents the results of the regression with both the quadratic term for credit-to-GDP ratio and commodity dummy. The baseline results remain unaffected in that we continue to find that aggregate FDI inflows as well as those of the Greenfield variety positively contribute to economic growth, while M&A inflows are negative and insignificant. While credit-to-GDP is statistically significant only in the last specification using Greenfield investments where it enters with a negative sign, neither credit-to-GDP nor its quadratic version carries any explanatory power across the regressions. However, controlling for financial market development and potential non-linearities aligns the empirical results with that of the baseline in that we find a strong positive and statistically significant relationship between aggregate FDI as well as

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Greenfield FDI inflows and economic growth. The same applies to the control variables as well, where the two specifications with aggregate FDI and Greenfield FDI observe strong statistical significance of variables such as inflation, trade openness and infrastructure carrying the expected signs. The dummy variable indicating commodity exporters by themselves does not seem to be significant in any of the three specifications in Table 7, while they carry a negative sign.[16]

[Insert Table 10 here]

In Table 11, we repeat the same exercise for investment growth, controlling for non-linearities in financial development and commodity exporters dummy. Once again, we find the results of this robustness exercise to align with the baseline results, with overall FDI inflows and Greenfield FDI exerting a positive and statistically significant relationship on domestic capital formation, while M&A FDI does not seem to be significant in the regressions. The performance of credit-to-GDP is marginally better compared to the rest, with two of the three specifications returning a negative but significant relationship between credit-to-GDP ratio and investment growth.

[Insert Table 11 here]

The last exercise involves use different measures to proxy financial market development to check the robustness of our baseline results. Tables 12 and 13 summarize the results. Replacing private credit with total stock market value does not alter the

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[16] We also tried interactions of commodity exporters with the key FDI variables but the results were insignificant. Results are available on request.

fundamental results we have found so far, adding another layer of robustness check for our empirics.

[Insert Tables 12 and 13 here]

Overall, the empirical results that we have performed suggest that the impact of aggregate FDI inflows on economic growth and domestic investment is generally positive. We find a positive relationship between Greenfield FDI inflows and economic growth as well as domestic investment, which is consistent with the priors. Finally, M&A inflows tend to remain insignificant through-out in terms of how they affect economic growth and investment, although carrying a negative sign specifically in the regressions on economic growth.

6. Conclusion

Openness to international capital flows has not only delivered sustained economic growth for several developing economies in the Asian region but has also resulted in significant volatility stemming from sudden stops and surges, leading policymakers to pay more attention to the composition of capital flows. Several studies in the literature have highlighted the stabilizing properties of foreign direct investment (FDI) flows relative to other forms of external financing, arguing for policies that explicitly focus on altering capital flows towards FDI in order to reap growth-enhancing benefits. While this might hold true largely for FDI flows of the Greenfield variety, in reality, a greater share of FDI appears to be in the form of M&As. In this light this paper has empirically estimated whether the type of FDI flow -- i.e. Greenfield vs. M&A -- matters in the way it impacts

economic growth and domestic investment for a panel of developing Asian economies over the period 1990-2013.

Our first set of empirical results suggest that aggregate FDI inflows produce a positive and highly statistically significant impact on economic growth for the sample of developing Asian economies, and this result remains robust to a number of alternative specifications. The positive relationship that we obtain for Greenfield FDI vis-à-vis economic growth seems to indicate that developing economies tend to benefit from FDI inflows of the Greenfield variety as they tend to contribute to long-run productive capacity and economic growth. In contrast, we find that FDI in the form of M&A inflows not only has no statistically and economically significant impact on economic growth but also carries a negative sign.

The second part of the paper empirically tested for the differential impacts of FDI and its types on augmenting domestic capital formation or investment capacity. Contrary to what was observed in the case of overall economic growth, the results suggest that both FDI flows in its aggregate form as well as its components -- Greenfield and M&A -- carry a positive, statistically and economically significant relationship with domestic investment, implying no evidence in support of crowding out effects. However, this result is qualified by the fact that the statistical and economic significance of M&A flows is relatively weak compared to that of Greenfield FDI. These findings for both growth and investment remain robust regardless of whether the sample controlled specifically for commodity exporters or potential non-linearities that could be present in countries with different degrees of financial market development.

In conclusion, one of the central policy conclusions that flow from the empirical findings of the paper is that policy makers should pay attention not only to the quantum of FDI but also to its types, as the macroeconomic and growth impacts can be quite different. If the objective is one of building long-term productive capacity and investments, the developing economies would do well to focus on attracting Greenfield FDI. However, an important caveat is in order. M&A flows can be more complex in the sense that while they may not necessarily result in any new investments they could still indirectly promote economic growth over time through the enhancement of productivity resulting from transmission of management or technical skills, market restructuring etc. (Bertrand, 2004).

In a recent paper, Ashraf et al. (2015) empirically estimate the effect of Greenfield FDI and M&As on Total Factor Productivity (TFP) in a large panel of 123 countries including both developed and developing host countries of FDI for the period 2003 to 2011. The results are mixed in the sense that they find that Greenfield FDI has no statistically significant effect on TFP, while M&As have a positive effect on TFP in the entire sample.[17] The growth impacts and channels via which M&As and Greenfield FDI in general and across regions and sectors is an important area in need for further research.

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[17] Although, for the developing economies sub-sample, they find that neither Greenfield FDI nor M&As have any significant relationship in increasing TFP.

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Figure 1: FDI Inflows by Category 1992-2015 (% Share in Global FDI Flows)
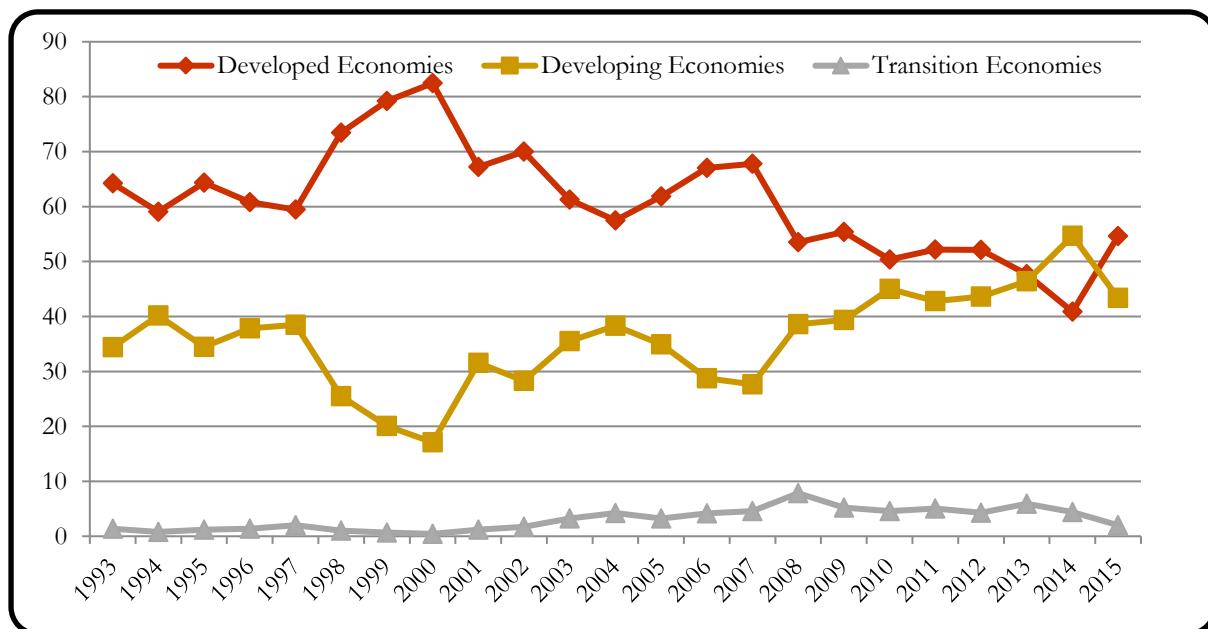
Source: Compiled from UNCTAD FDI Statistics

Figure 2: Breakdown of FDI Inflows into Developing Economies by Region (% Share of FDI into Developing Economies)
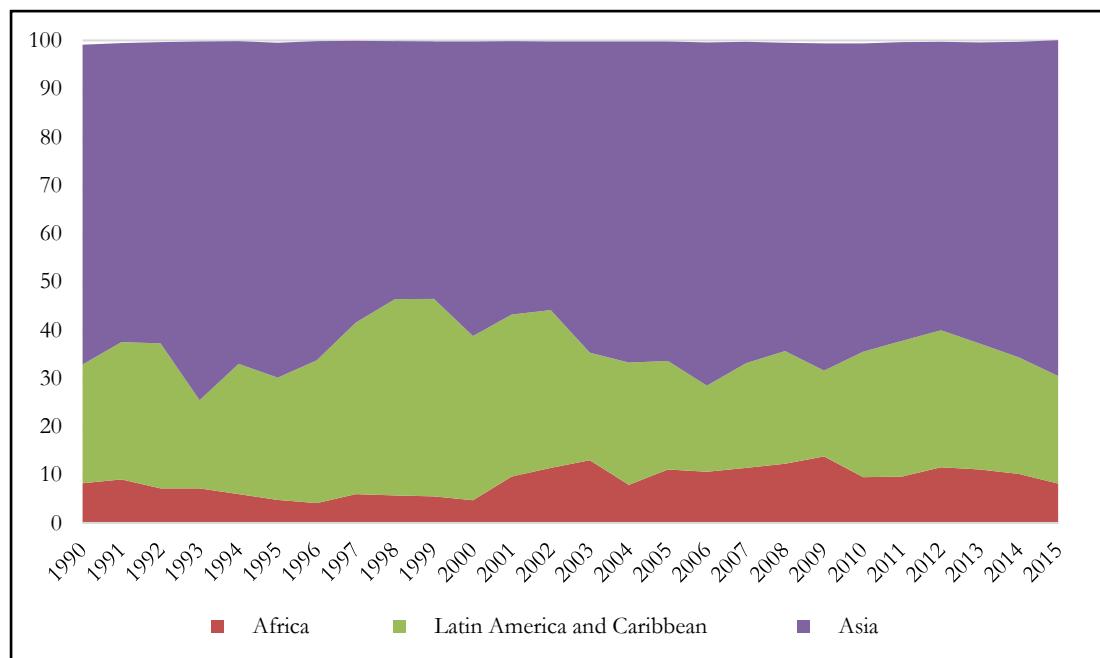
Figure 3: FDI Inflows as a % Share of GDP
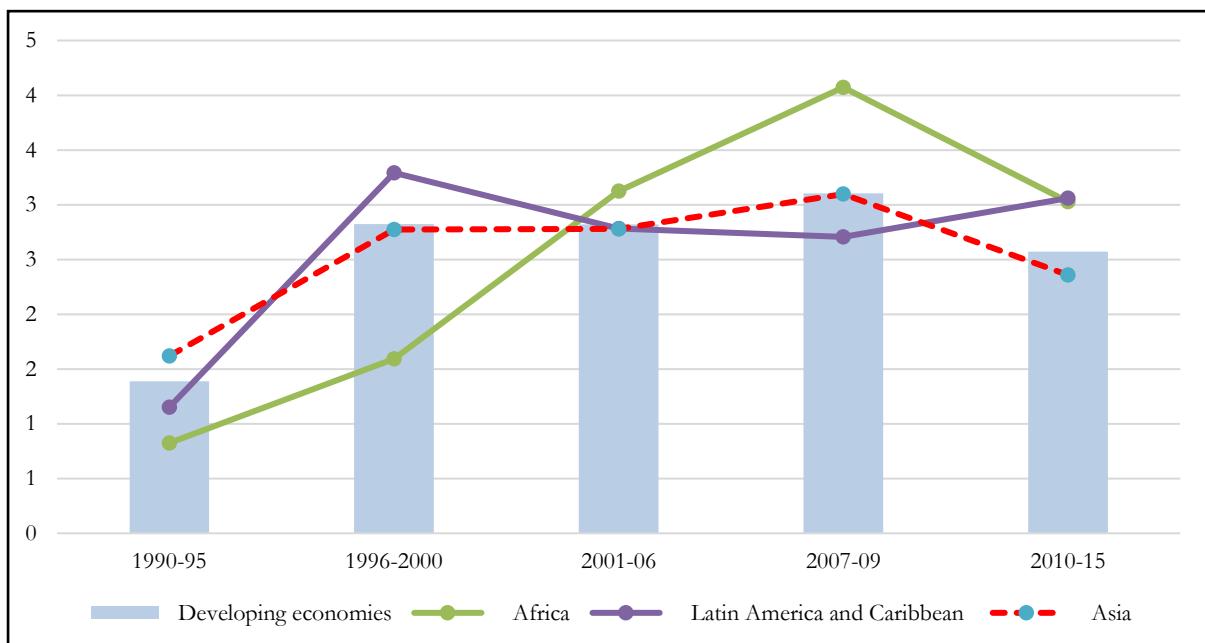
Figure 4: Shares of FDI and MA Inflows
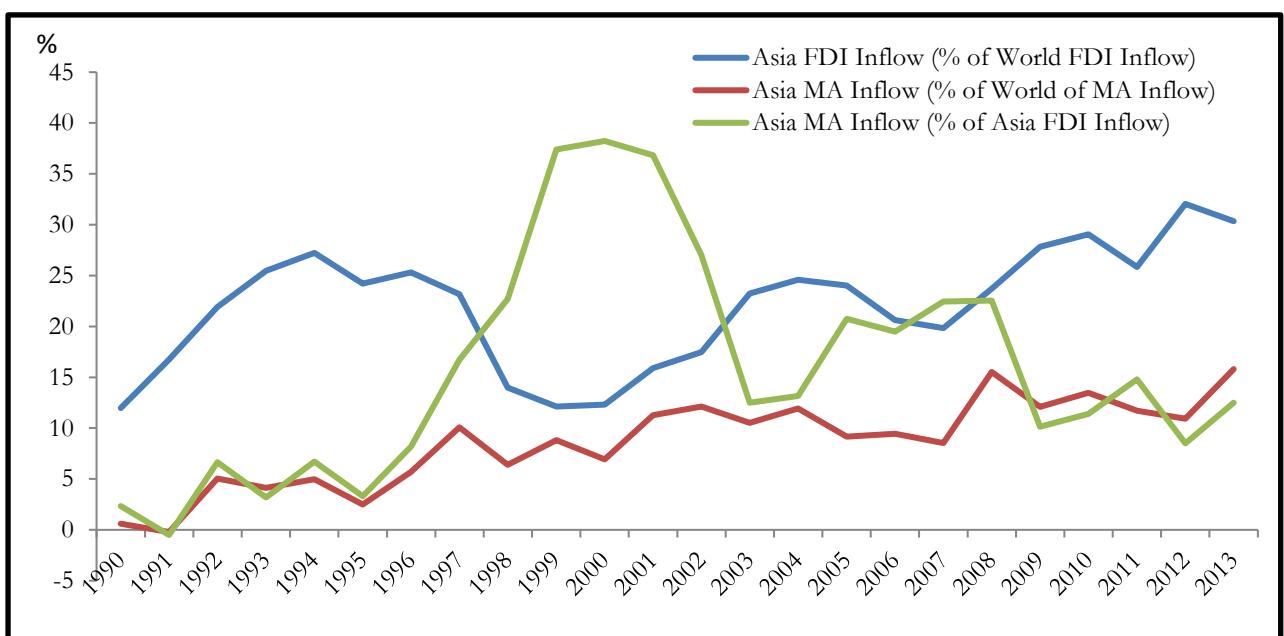
Figure 5: M&A Inflows into Developing Economies (% of GDP)
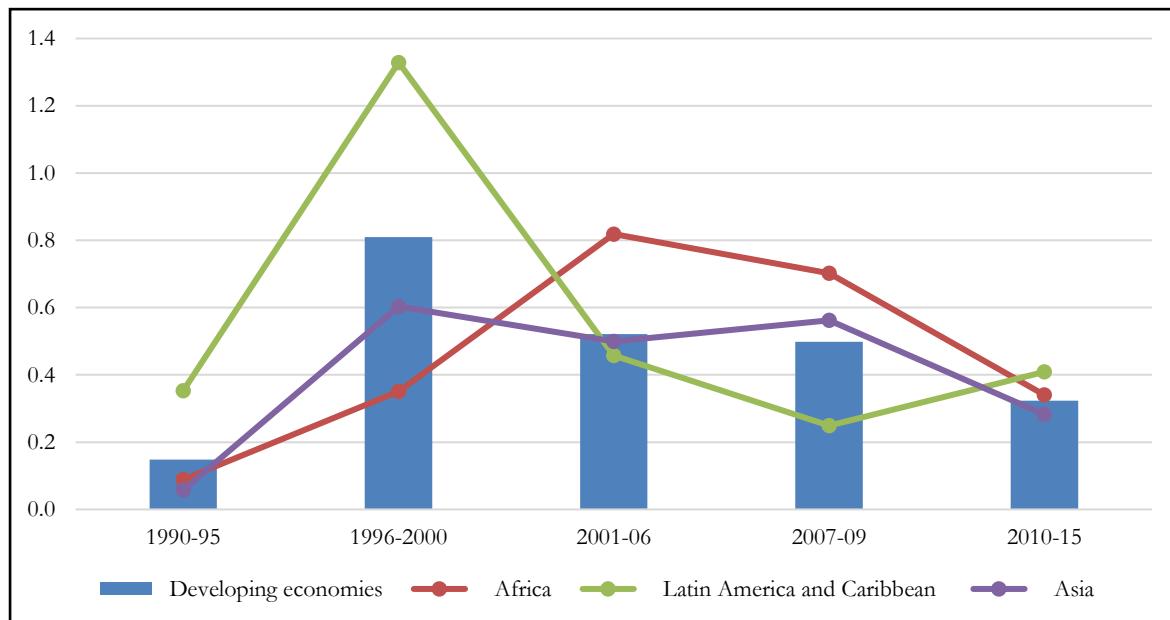
Source: Compiled from UNCTAD FDI Statistics

Figure 6: FDI Inflows to Different Areas of Asia (% of FDI Inflows to Asia)
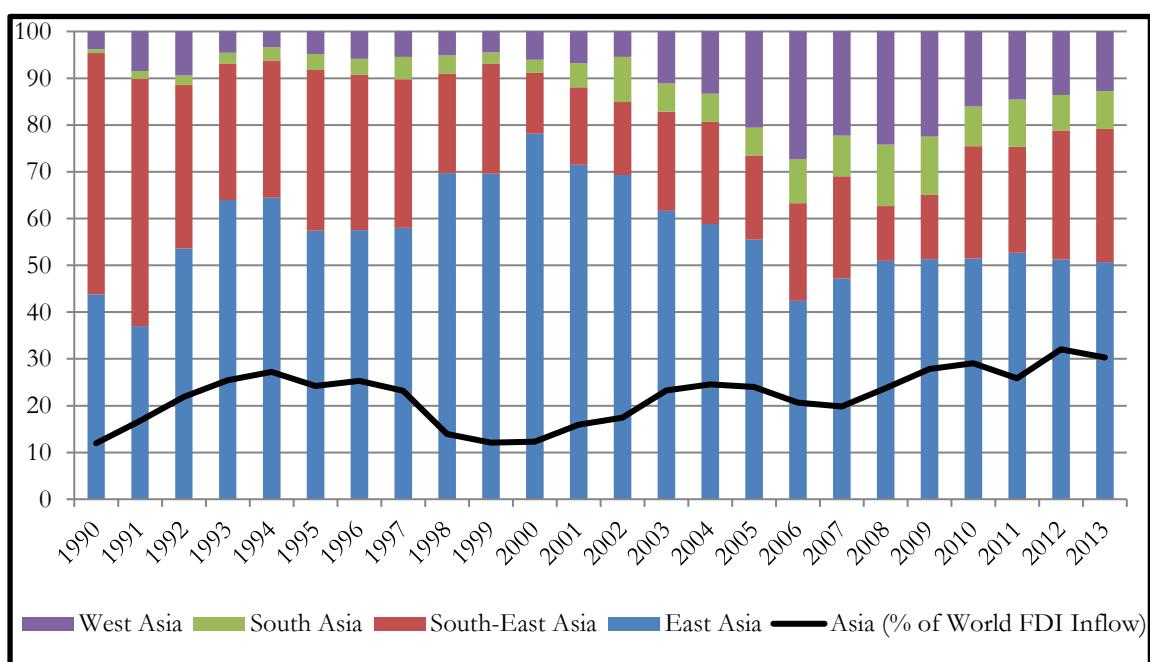
Source: Compiled from UNCTAD FDI Statistics

Tables

Table 1: MA Inflows (% of FDI Inflows) in Different Areas of Asia

	East Asia	South-East Asia	South Asia	West Asia	Asia
1990-1999	11.02	9.41	13.44	17.40	10.67
2000-2009	22.26	20.51	16.14	23.81	22.31
2010-2013	10.26	11.66	16.93	14.55	11.80
1990-2013	15.58	14.41	15.15	19.59	15.71

Note: The values are calculated based on all 42 Asian economies listed in Table 2.

Source: UNCTAD Statistics

Table 2: Asia Economies Ranking Based on the Amount of FDI Inflows (Millions US$)

Economies	1990-1999 Average	Economies	2000-2009 Average	Economies	2010-2013 Average
China	29042.70	China	68642.40	China	120927.50
HK	9027.73	HK	41865.46	HK	82588.41
Singapore	8979.12	Singapore	21889.07	Singapore	57593.81
Malaysia	4815.83	India	16088.96	India	29004.21
Thailand	3183.94	Saudi Arabia	13448.30	Indonesia	17648.46
South Korea	3075.76	South Korea	9565.26	Saudi Arabia	16755.18
Japan	2637.28	Japan	9312.53	Turkey	12829.75
Indonesia	2191.50	Turkey	9055.70	Malaysia	10909.31
India	1516.57	UAE	7065.10	South Korea	10246.75
Taiwan	1459.10	Thailand	6515.60	Israel	9390.07
Viet Nam	1337.84	Israel	6097.59	Thailand	9126.82
Israel	1277.52	Malaysia	4198.75	UAE	8317.22
Philippines	1193.80	Taiwan	3788.80	Viet Nam	8196.75
Turkey	771.70	Viet Nam	3556.30	Iran	3909.34
Pakistan	477.99	Indonesia	2829.04	Lebanon	3567.86
Bahrain	422.51	Lebanon	2806.08	Mongolia	3226.14
Lebanon	397.77	Qatar	2559.83	Kuwait	2706.00
Myanmar	360.08	Pakistan	2300.70	Philippines	2538.19
Brunei	329.21	Iran	2222.38	Macao	2331.26
Saudi Arabia	251.30	Jordan	1629.89	Iraq	2176.70
Bangladesh	181.83	Philippines	1585.08	Myanmar	2087.15
Qatar	160.22	Oman	1125.04	Taiwan	1857.50
Sri Lanka	157.59	Macao	1016.02	Jordan	1605.04
Cambodia	124.36	Bahrain	981.37	Oman	1502.60
Oman	91.26	Syria	741.11	Pakistan	1378.50
Jordan	89.19	Brunei	730.04	Bangladesh	1235.35
Palestine	86.96	Iraq	661.29	Cambodia	1109.90
Syria	86.00	Bangladesh	616.26	Qatar	1017.51
Yemen	84.51	Myanmar	418.98	Brunei	898.44
UAE	70.87	Yemen	375.03	Sri Lanka	828.85
Kuwait	56.01	Cambodia	374.44	Bahrain	704.19
Laos	54.79	Sri Lanka	351.46	Syria	568.34
North Korea	40.77	Mongolia	269.31	Laos	292.48
Mongolia	12.77	Kuwait	143.96	Maldives	270.54

Maldives	8.61	Afghanistan	116.34	Japan	256.28
Nepal	6.68	Laos	105.45	Palestine	203.85
Iraq	0.58	Maldives	79.22	Afghanistan	114.44
Afghanistan	0.52	Palestine	60.29	North Korea	110.16
Bhutan	0.40	North Korea	39.64	Nepal	86.96
Iran	0.25	Bhutan	18.76	Timor-Leste	28.41
Timor-Leste	0.00	Timor-Leste	11.32	Bhutan	24.96
Macao	-0.65	Nepal	7.00	Yemen	-248.60
East Asia	45295.47	**East Asia**	134499.41	**East Asia**	221544.00
South-East Asia	22570.46	**South-East Asia**	42214.06	**South-East Asia**	110429.72
South Asia	2350.43	**South Asia**	21801.08	**South Asia**	36853.15
West Asia	3846.42	**West Asia**	46750.58	**West Asia**	61095.71
Asia	74062.78	**Asia**	245265.13	**Asia**	429922.58

Source: Compiled by Authors based on UNCTAD Statistics

Table 3: Sample Countries

Asia:	Economies
East Asia	**China**, **HK**, **Japan**, Macao, **Mongolia**, North Korea, **South Korea**, Taiwan
South-East Asia	**Brunei**, **Cambodia** **Indonesia**, Laos, **Malaysia**, Myanmar **Philippines**, **Singapore**, **Thailand**, Timor-Leste, Viet Nam,
South Asia	Afghanistan, **Bangladesh**, Bhutan, **India**, Iran, Maldives, **Nepal**, **Pakistan**, **Sri Lanka**
West Asia	**Bahrain**, Iraq, Israel, **Jordan**, **Kuwait**, Lebanon, Oman, **Qatar**, **Saudi Arabia**, Palestine, Syria, **Turkey**, **United Arab Emirates (U.A.E)**, Yemen

Note: The sample economies highlighted are the ones that remain in the empirics. The rest drop due to limited observations.

Table 4: Variable Definition and Sources

Variables	**Definition**	**Source**
$y_{i,t}$	GDP per capita, PPP (constant 2011 international $)	WDI
$I_{i,t}$	Gross capital formation (% of GDP)	WDI
School	Average year of secondary schooling in total population	Barro and Lee (2013)
Inflation	CPI growth rate	WDI
Trade	Trade (% of GDP)	WDI
Agriculture	Agriculture, value added (% of GDP)	WDI
Govt	General government final consumption expenditure (% of GDP)	WDI
Electricity	Electric power consumption (kWh per capita)	Word Bank Infrastructure Data
FDI Inflow	FDI inflow	UNCTAD

MA Inflow	Cross-border M&A sales	UNCTAD	
Greenfield Inflow	FDI inflow minus MA inflows	Authors' calculation	
Credit	Private credit by deposit money banks to GDP (%)	Global Financial Development Database (GFDD)	
Stock	Stock market total value traded to GDP	GFDD	

Note: WDI stands for World Development Indicators; UNCTAD stands for United Nations Conference on Trade and Development; ICRG stands for International Country Risk Guide.

Table 5: Summary Statistics

Variables	No. of Obs.	No. of Countries	Mean	Std. Dev
Real GDP Per Capita Growth	797	37	0.028	0.064
Ln (Real GDP Per Capita)	834	37	9.278	1.294
ln(School)	816	34	0.681	0.619
Ln (Inflation)	824	39	.0831	0.143
Ln (Trade)	852	39	-0.258	0.825
Ln (Agriculture)	769	37	0.137	0.117
Ln (Govt)	816	38	-2.016	0.516
Ln (Credit)	675	39	-1.150	1.063
Ln (Electricity)	681	31	24.167	1.829
Lm (FDI)	866	38	0.033	0.052
Ln (M&A)	816	35	0.003	0.012
Ln (Greenfield)	816	35	0.031	0.051

Table 6a: The Impacts of FDI on Economic Growth (3 Year Moving Average)

System GMM 2SLS	$\Delta lny_{i,t}$		
Constant	0.125	0.123**	0.108
	(0.0867)	(0.0526)	(0.0709)
$lny_{i,0}$	-0.0207***	-0.0196***	-0.0223***
	(0.00517)	(0.00338)	(0.00407)
ln(School)	0.00208	0.00379	0.00414
	(0.00415)	(0.00315)	(0.00434)
ln(1+Inflation)	-0.0414***	-0.0392***	-0.0372**
	(0.0152)	(0.0128)	(0.0153)
ln(Trade)	0.00708**	0.0163***	0.00932**

	(0.00361)	(0.00226)	(0.00450)
ln(1+ Agriculture)	-0.112*	-0.0986**	-0.112**
	(0.0629)	(0.0430)	(0.0533)
ln(Govt)	0.00303	0.00291	0.00437
	(0.00680)	(0.00443)	(0.00693)
ln(Credit)	-0.00787**	-0.00526*	-0.00987***
	(0.00353)	(0.00287)	(0.00323)
ln(Electricity)	0.00428**	0.00438***	0.00567***
	(0.00167)	(0.00111)	(0.00140)
ln(1+FDI Inflow)	**0.170***	—	—
	(0.0397)		
ln(1+MA Inflow)	—	-0.232	—
		(0.245)	
ln(1+Greenfield Inflow)	—	—	**0.187***
			(0.0708)
Observations	160	160	160
No. of Countries	24	24	24
R-squared#	0.314	0.256	0.327
Hansen J test	18.17	18.32	18.61
[p-value]	[0.998]	[0.998]	[0.998]

Note: Standard errors in parentheses. *, **, and *** stands for significance at 10 percent, 5 percent, and 1 percent, respectively. To avoid outlier issue, we drop the observations with inflation that is greater than 100%. But only one observation is dropped due to this reason. This applies through-out for all our empirics. # 1-RSS/TSS reported for system GMM

Table 6b: The Impacts of FDI on Economic Growth (5 Year Moving Average)

System GMM 2SLS	$\Delta lny_{i,t}$		
Constant	0.188***	0.237***	0.184***
	(0.0518)	(0.0346)	(0.0403)
$lny_{i,0}$	-0.0273***	-0.0294***	-0.0287***
	(0.00289)	(0.00324)	(0.00238)
ln(School)	0.00419	0.00616**	0.00463
	(0.00341)	(0.00248)	(0.00332)
ln(1+Inflation)	-0.0109	0.000263	-0.00932
	(0.0220)	(0.0178)	(0.0187)
ln(Trade)	0.0123***	0.0205***	0.0121***
	(0.00311)	(0.00210)	(0.00258)
ln(1+ Agriculture)	-0.141***	-0.170***	-0.150***
	(0.0338)	(0.0309)	(0.0349)
ln(Govt)	0.0105**	0.00904**	0.00984**
	(0.00503)	(0.00358)	(0.00496)
ln(Credit)	-0.00600**	-0.00159	-0.00616**
	(0.00275)	(0.00146)	(0.00245)
ln(Electricity)	0.00500***	0.00433***	0.00567***
	(0.000878)	(0.000735)	(0.000864)
ln(1+FDI Inflow)	**0.163***		
	(0.0393)		

ln(1+MA Inflow)		**-0.367****	
		(0.168)	
ln(1+Greenfield Inflow)			**0.187***
			(0.0385)
Observations	102	102	102
Number of Countries	24	24	24
R-squared#	0.402	0.334	0.415
Hansen J test [p-value]	15.40 [0.802]	15.69 [0.787]	16.89 [0.718]

Note: Standard errors in parentheses. *, **, and *** stands for significance at 10 percent, 5 percent, and 1 percent, respectively. To avoid outlier issue, we drop the observations with inflation that is greater than 100%. But only one observation is dropped due to this reason. This applies through-out for all our empirics. # 1-RSS/TSS reported for system GMM

Table 7a: The Impacts of FDI on Investment Growth (3 Year Moving Average)

System GMM 2SLS	$\Delta lnI_{i,t}$		
	(1)	(2)	(3)
Constant	0.0485	0.0225	0.0768
	(0.0693)	(0.0800)	(0.0710)
$lny_{i,0}$	-0.0195***	-0.0142***	-0.0205***
	(0.00471)	(0.00467)	(0.00536)
ln(School)	0.00641	0.00891*	0.00625
	(0.00481)	(0.00488)	(0.00556)
ln(1+Inflation)	-0.110***	-0.0966***	-0.0954***
	(0.0305)	(0.0244)	(0.0328)
ln(Trade)	-0.0126	0.00345	-0.0120
	(0.0105)	(0.00499)	(0.0119)
ln(1+ Agriculture)	-0.125	-0.0407	-0.133
	(0.0875)	(0.0730)	(0.0966)
ln(Govt)	-0.000283	-0.000956	-0.00240
	(0.00632)	(0.00341)	(0.00595)
ln(Credit)	-0.0251***	-0.0204***	-0.0209**
	(0.00768)	(0.00707)	(0.00939)
ln(Electricity)	0.00419*	0.00350	0.00348
	(0.00219)	(0.00225)	(0.00256)
ln(1+FDI Inflow)	**0.510***	—	—
	(0.185)		
ln(1+MA Inflow)	—	**1.255***	—
		(0.675)	
ln(1+Greenfield Inflow)	—	—	**0.504**
			(0.225)
Observations	160	160	160
Number of Countries	24	24	24
R-squared#	0.073	0.090	0.068
Hansen J test [p-value]	18.46 [0.998]	17.44 [0.999]	18.65 [0.998]

Note: Standard errors in parentheses. *, **, and *** stands for significance at 10 percent, 5 percent, and 1

percent, respectively.
1-RSS/TSS reported for system GMM

Table 7b: The Impacts of FDI on Investment Growth (5 Year Moving Average)

System GMM 2SLS	$\Delta lnI_{i,t}$		
Constant	-0.159***	-0.0599	-0.167***
	(0.0457)	(0.0501)	(0.0459)
$lny_{i,0}$	-0.00133	-0.00342	-0.00238
	(0.00355)	(0.00308)	(0.00352)
ln(School)	0.0193***	0.0219***	0.0202***
	(0.00731)	(0.00583)	(0.00678)
ln(1+Inflation)	-0.111***	-0.0523	-0.101**
	(0.0381)	(0.0394)	(0.0421)
ln(Trade)	-0.00832	0.00412	-0.00778
	(0.00627)	(0.00644)	(0.00603)
ln(1+ Agriculture)	0.144**	0.111***	0.135**
	(0.0579)	(0.0409)	(0.0570)
ln(Govt)	-0.000439	-0.00709	-0.000899
	(0.00606)	(0.00612)	(0.00601)
ln(Credit)	-0.0253***	-0.0151**	-0.0253***
	(0.00577)	(0.00690)	(0.00588)
ln(Electricity)	0.00454**	0.00150	0.00517**
	(0.00211)	(0.00231)	(0.00216)
ln(1+FDI Inflow)	**0.294***		
	(0.113)		
ln(1+MA Inflow)		0.486	
		(0.430)	
ln(1+Greenfield Inflow)			**0.341***
			(0.0983)
Observations	102	102	102
Number of Countries	24	24	24
R-squared#	0.125	0.093	0.125
Hansen J test [p-value]	16.61 [0.735]	16.37 [0.749]	17.45 [0.683]

Note: Standard errors in parentheses. *, **, and *** stands for significance at 10 percent, 5 percent, and 1 percent, respectively.
1-RSS/TSS reported for system GMM

Table 8a: Impact of FDI on Economic Growth (Yearly Panel)

	(1)	(2)	(3)
	FDI/GDP	**MA/GDP**	**GF/GDP**
$lny_{i,0}$	-0.0891***	-0.0856***	-0.0885***
	(0.0235)	(0.0223)	(0.0234)
Ln (School)	0.0237*	0.0255**	0.0234*
	(0.0120)	(0.0120)	(0.0119)
Ln (1+Inflation)	-0.0729**	-0.0713**	-0.0738***
	(0.0273)	(0.0270)	(0.0262)
Ln (Trade)	0.0114	0.0121	0.0111
	(0.0101)	(0.00999)	(0.0101)
Ln (1+ Agriculture)	-0.421***	-0.423***	-0.412***
	(0.105)	(0.0980)	(0.107)
Ln (Govt)	-0.0145	-0.0189	-0.0139
	(0.0127)	(0.0141)	(0.0125)
Ln (Credit)	-0.00975	-0.00329	-0.00974
	(0.00611)	(0.00648)	(0.00614)
Ln (Electricity)	0.0341***	0.0223**	0.0343***
	(0.00843)	(0.00971)	(0.00817)
Ln (1+FDI Inflow)	**0.153***		
	(0.0369)		
Ln (1+MA Inflow)		**-0.223**	
		(0.167)	
Ln (1+Greenfield Inflow)			**0.170***
			(0.0409)
Constant	0.0232	0.274	0.0114
	(0.265)	(0.254)	(0.261)
Observations	412	412	412
R-squared	0.429	0.406	0.435
Number of Countries	24	24	24
Country Fixed Effects	YES	YES	YES
Year Fixed Effects	YES	YES	YES

Notes: Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 8b: Impact of FDI on Investment Growth (Yearly Panel)

	(1)	(3)	(4)
	FDI/GDP	**MA/GDP**	**GF/GDP**
$lny_{i,0}$	0.141**	0.160**	0.138*

	(0.0716)	(0.0714)	(0.0714)
Ln (School)	-0.00135	0.0189	-0.00229
	(0.0589)	(0.0588)	(0.0587)
Ln (1+Inflation)	-0.328***	-0.335***	-0.331***
	(0.0763)	(0.0767)	(0.0761)
Ln (Trade)	0.0155	0.0202	0.0160
	(0.0437)	(0.0439)	(0.0436)
Ln (1+ Agriculture)	-0.387	-0.406	-0.368
	(0.412)	(0.414)	(0.411)
Ln (Govt)	0.0477	0.0351	0.0496
	(0.0541)	(0.0541)	(0.0540)
Ln (Credit)	-0.0834***	-0.0684***	-0.0841***
	(0.0252)	(0.0248)	(0.0250)
Ln (Electricity)	-0.0769*	-0.0936**	-0.0728*
	(0.0436)	(0.0430)	(0.0435)
Ln (1+FDI Inflow)	**0.407****		
	(0.180)		
Ln (1+MA Inflow)		-0.950	
		(0.669)	
Ln (1+Greenfield Inflow)			**0.478****
			(0.181)
Constant	0.688	0.914	0.622
	(0.878)	(0.874)	(0.877)
Observations	412	412	412
R-squared	0.089	0.082	0.094
Number of Countries	24	24	24
Country Fixed Effects	YES	YES	YES
Year Fixed Effects	YES	YES	YES

Notes: Robust Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 9a: Impact of FDI on Economic Growth (3 Year Moving Average Panel Fixed Effects)

	(1)	(2)	(3)
	FDI/GDP	**MA/GDP**	**GF/GDP**
$lny_{i,0}$	-0.0682***	-0.0619***	-0.0673***
	(0.0193)	(0.0192)	(0.0190)
ln(School)	0.0238*	0.0256*	0.0241*
	(0.0134)	(0.0141)	(0.0132)
ln(1+Inflation)	-0.0204	-0.00985	-0.0236

	(0.0202)	(0.0208)	(0.0198)
ln(Trade)	0.0146*	0.0138	0.0140*
	(0.00816)	(0.00811)	(0.00808)
ln(1+ Agriculture)	-0.512***	-0.523***	-0.504***
	(0.0834)	(0.0872)	(0.0853)
ln(Govt)	-0.00406	-0.00910	-0.00478
	(0.0114)	(0.0139)	(0.0112)
ln(Credit)	-0.0116**	-0.00443	-0.0113**
	(0.00520)	(0.00535)	(0.00526)
ln(Electricity)	0.0141	0.00101	0.0135
	(0.00961)	(0.00995)	(0.00937)
ln(1+FDI Inflow)	0.177***		
	(0.0406)		
ln(1+MA Inflow)		0.183	
		(0.246)	
ln(1+Greenfield Inflow)			0.181***
			(0.0426)
Constant	0.352	0.610***	0.356
	(0.226)	(0.209)	(0.221)
Observations	160	160	160
R-squared	0.460	0.414	0.459
Number of Countries	24	24	24
Country FE	YES	YES	YES
Year FE	YES	YES	YES

Notes:Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 9b: Impact of FDI on Investment Growth (3 Year Moving Average Panel Fixed Effects)

	(1)	(2)	(3)
	FDI/GDP	**MA/GDP**	**GF/GDP**
$lny_{i,0}$	-0.0272	-0.0375	-0.0265
	(0.0420)	(0.0558)	(0.0424)
ln(School)	0.0221	-0.00300	0.0257
	(0.0291)	(0.0276)	(0.0276)
ln(1+Inflation)	-0.131**	-0.0777	-0.139**
	(0.0583)	(0.0653)	(0.0583)
ln(Trade)	0.0334	0.0467	0.0327
	(0.0307)	(0.0362)	(0.0306)
ln(1+ Agriculture)	-0.579**	-0.389	-0.577**

	(0.269)	(0.318)	(0.270)
ln(Govt)	0.0466	0.0277	0.0440
	(0.0644)	(0.0557)	(0.0635)
ln(Credit)	-0.0829***	-0.0530**	-0.0816***
	(0.0258)	(0.0255)	(0.0263)
ln(Electricity)	-0.00661	-0.0267	-0.00742
	(0.0264)	(0.0442)	(0.0265)
ln(1+FDI Inflow)	**0.455****		
	(0.202)		
ln(1+MA Inflow)		**1.562****	
		(0.690)	
ln(1+Greenfield Inflow)			**0.437***
			(0.218)
Constant	0.495	1.095	0.503
	(0.486)	(0.819)	(0.480)
Observations	160	160	160
R-squared	0.135	0.249	0.130
Number of Countries	24	24	24
Country FE	YES	YES	YES
Year FE	YES	YES	YES

Notes: Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 10: The Impacts of FDI on Economic Growth—With Commodity Dummy and Quadratic Financial Development

System GMM 2SLS	$\Delta ln y_{i,t}$		
Constant	0.0280	0.144**	0.111
	(0.0903)	(0.0662)	(0.0769)
$ln y_{i,0}$	-0.0180***	-0.0230***	-0.0226***
	(0.00454)	(0.00410)	(0.00552)
ln(School)	0.00436	0.00471	0.00483
	(0.00560)	(0.00418)	(0.00516)
ln(1+Inflation)	-0.0409*	-0.0322**	-0.0355**
	(0.0219)	(0.0145)	(0.0181)
ln(Trade)	0.00724	0.0164***	0.00731
	(0.00487)	(0.00365)	(0.00478)
ln(1+ Agriculture)	-0.0485	-0.140***	-0.127**
	(0.0623)	(0.0534)	(0.0642)
ln(Govt)	0.00231	0.00105	0.00123
	(0.00668)	(0.00557)	(0.00543)
ln(Credit)	-0.0140***	-0.00997***	-0.0147***
	(0.00408)	(0.00350)	(0.00338)
ln(Credit) squared	-0.00201**	-0.000711	-0.00195
	(0.000920)	(0.00133)	(0.00163)

ln(Electricity)	0.00671***	0.00482***	0.00542***
	(0.00201)	(0.00159)	(0.00185)
Commodity	-0.00298	-0.00893	-0.00633
	(0.00633)	(0.00688)	(0.00824)
ln(1+FDI Inflow)	**0.223****	—	—
	(0.0920)		
ln(1+MA Inflow)	—	-0.163	—
		(0.347)	
ln(1+Greenfield Inflow)	—	—	**0.197*****
			(0.0720)
Observations	160	160	160
Number of Countries	24	24	24
R-squared#	0.316	0.279	0.332
Hansen J test	18.65	17.81	17.83
[p-value]	[0.998]	[0.999]	[0.999]

Note: Standard errors in parentheses. *, **, and *** stands for significance at 10 percent, 5 percent, and 1 percent, respectively.

1-RSS/TSS reported for system GMM

Table 11: The Impacts of FDI on Investment Growth—With Commodity Dummy and Quadratic Financial Development

System GMM 2SLS	$\Delta lnI_{i,t}$		
Constant	0.0640	0.0370	0.0664
	(0.0891)	(0.0809)	(0.0873)
$lny_{i,0}$	-0.0215***	-0.0166***	-0.0203***
	(0.00590)	(0.00615)	(0.00559)
ln(School)	0.00838	0.0133***	0.00561
	(0.00678)	(0.00512)	(0.00734)
ln(1+Inflation)	-0.0904***	-0.0821*	-0.0961***
	(0.0347)	(0.0423)	(0.0365)
ln(Trade)	-0.00970	0.00216	-0.0185
	(0.0110)	(0.00968)	(0.0140)
ln(1+ Agriculture)	-0.130	-0.0417	-0.142
	(0.0950)	(0.0878)	(0.0900)
ln(Govt)	-0.00335	-0.00460	0.00155
	(0.00901)	(0.00760)	(0.00969)
ln(Credit)	-0.0327***	-0.0187*	-0.0288**
	(0.0118)	(0.0109)	(0.0120)
ln(Credit) squared	-0.00371	0.000801	-0.00170
	(0.00418)	(0.00387)	(0.00434)
ln(Electricity)	0.00414	0.00362*	0.00387
	(0.00269)	(0.00211)	(0.00279)
Commodity	-0.00902	-0.0156***	-0.00321
	(0.00618)	(0.00428)	(0.00705)
ln(1+FDI Inflow)	**0.438*****	—	—
	(0.160)		
ln(1+MA Inflow)	—	0.958	—
		(1.381)	
ln(1+Greenfield Inflow)	—	—	**0.626*****
			(0.236)
Observations	160	160	160
Number of Countries	24	24	24
R-squared #	0.085	0.099	0.062
Hansen J test	18.84	17.39	17.41

[p-value]	[0.997]	[0.999]	[0.999]

Note: Standard errors in parentheses. *, **, and *** stands for significance at 10 percent, 5 percent, and 1 percent, respectively.

1-RSS/TSS reported for system GMM

Table 12: The Impacts of FDI on Economic Growth—With Different Proxy for Financial Development

System GMM 2SLS	$\Delta lny_{i,t}$		
Constant	0.0268	0.158*	0.0620
	(0.0878)	(0.0914)	(0.0877)
$lny_{i,0}$	-0.0135***	-0.0219***	-0.0161***
	(0.00464)	(0.00642)	(0.00499)
ln(School)	0.00241	0.00757**	-0.00243
	(0.00409)	(0.00374)	(0.00703)
ln(1+Inflation)	-0.0261*	-0.0157	-0.0305*
	(0.0150)	(0.0154)	(0.0160)
ln(Trade)	0.00536	0.0157***	-0.00176
	(0.00463)	(0.00465)	(0.01000)
ln(1+ Agriculture)	-0.0151	-0.0969	-0.0549
	(0.0585)	(0.0730)	(0.0676)
ln(Govt)	0.00555	0.00758	0.0111
	(0.00667)	(0.00591)	(0.00993)
ln(Stock)	-0.00233	0.000202	-0.00406
	(0.00209)	(0.00218)	(0.00334)
ln(Electricity)	0.00532**	0.00420**	0.00530***
	(0.00206)	(0.00165)	(0.00198)
ln(1+FDI Inflow)	**0.214***	—	—
	(0.0494)		
ln(1+MA Inflow)	—	-0.486	—
		(0.348)	
ln(1+Greenfield Inflow)	—	—	**0.449***
			(0.273)
Observations	145	145	145
Number of Countries	21	21	21
R-squared#	0.292	0.232	0.257
Hansen J test	13.16	15.16	12.49
[p-value]	[1.00]	[1.00]	[1.00]

Note: Standard errors in parentheses. *, **, and *** stands for significance at 10 percent, 5 percent, and 1 percent, respectively.

1-RSS/TSS reported for system GMM

Table 13: The Impacts of FDI on Investment Growth—With Different Proxy for Financial Development

System GMM 2SLS	$\Delta lnI_{i,t}$		
Constant	0.261***	0.206***	0.267***
	(0.0801)	(0.0732)	(0.0848)
$lny_{i,0}$	-0.0151***	-0.00979	-0.0159***
	(0.00528)	(0.00617)	(0.00617)
ln(School)	-0.00198	0.00128	-6.68e-05
	(0.00550)	(0.00539)	(0.00486)

ln(1+Inflation)	-0.0383	-0.0404	-0.0335
	(0.0365)	(0.0341)	(0.0371)
ln(Trade)	-0.0212**	-0.00880	-0.0177**
	(0.0100)	(0.0118)	(0.00904)
ln(1+ Agriculture)	-0.0739	0.0210	-0.0768
	(0.0783)	(0.0865)	(0.0964)
ln(Govt)	0.0151*	0.0112	0.0125
	(0.00899)	(0.00942)	(0.00823)
ln(Stock)	0.000256	0.00344	0.00140
	(0.00524)	(0.00358)	(0.00553)
ln(Electricity)	-0.00399**	-0.00386**	-0.00397**
	(0.00157)	(0.00191)	(0.00157)
ln(1+FDI Inflow)	**0.472**	—	—
	(0.206)		
ln(1+MA Inflow)	—	1.204	—
		(1.482)	
ln(1+Greenfield Inflow)	—	—	**0.437**
			(0.208)
Observations	145	145	145
Number of Countries	21	21	21
R-squared #	0.046	0.038	0.047
Hansen J test [p-value]	15.13 [1.00]	13.57 [1.00]	15.60 [1.00]

Note: Standard errors in parentheses. *, **, and *** stands for significance at 10 percent, 5 percent, and 1 percent, respectively.

1-RSS/TSS reported for system GMM