Outward FDI from Developing Countries

Jose Ramon Perea and Matthew Stephenson

Outward foreign direct investment (OFDI) by firms from developing countries has grown dramatically in recent years, accounting for nearly one-fifth of global foreign direct investment (FDI) flows in 2015, up from just 4 percent in 1995. While larger developing countries, especially the BRICS (Brazil, the Russian Federation, India, China, and South Africa), are driving this phenomenon, many developing countries are now engaged in OFDI, regardless of their size or level of development. The increasing importance of such OFDI calls for a better understanding of it and its implications. OFDI has economic effects not only in recipient economies, as research shows, but also in source economies (“home effects”). Growing OFDI may thus require that developing country governments adopt new investment policy reforms and investment promotion efforts to maximize the benefits for both the home economy and its firms.

This chapter describes the rise of OFDI by developing country firms, its development impact, and policy implications. It draws on several global data sources to assess changes over time in the investment decisions of developing country multinational corporations (MNCs). The chapter also looks at findings from a gravity model on FDI flows and qualitative evidence on developing country MNC investments across several industries—including pharmaceuticals, wind turbines, household appliances, and automobiles.

The analysis answers three questions, whose answers have important implications for policy makers, firms, and development practitioners:

1. What are the salient features of developing country OFDI, especially with respect to trends, destinations, sectors, and entry modes?
2. Does OFDI benefit the source economy, and if it does, what are the facilitating or mediating factors?
3. What role does OFDI-related policy play and what further research is needed to better understand and shape it?
Several key findings emerge:

**OFDI from developing countries has boomed in recent years**, leading to a greater relative share of total OFDI, across both flows and stocks. In absolute terms, BRICS investors are the key drivers of developing country OFDI, accounting for 62 percent of total developing country OFDI stock in 2015—with China alone accounting for 36 percent.

**Developing country governments have moved gradually from restricting to supporting OFDI**, although some form of restriction remains in half of all developing countries—especially lower-income countries. In some cases, developing country governments have even begun to provide incentives to target strategic sectors. One reason is the increasing evidence that OFDI can boost innovation and exports in the home economy. However, limited absorptive capacity in developing economies, vis-à-vis developed economies, is a key constraint on positive home effects from outward investment.

These findings suggest several policy considerations. Investment promotion agencies (IPAs) may wish to target not only traditional sources of FDI but also new sources such as developing country OFDI. At the same time, policy makers may wish to review their countries’ OFDI regulatory frameworks, given that restrictions may be undermining the positive effects on the home economy. Policy makers may also wish to consider measures that expand firm-level and economy-level absorptive capacity to realize the full positive effects of OFDI in home economies. More policy-oriented research is clearly needed to help developing country officials better tailor and target future policy interventions.

**The Rise of Developing Country OFDI**

The rise of developing country OFDI has occurred in three “waves” (Gammeltoft 2008). The first, during the 1960s and 1970s, saw import-substitution industrialization restrict the entry of FDI and the potential emergence of OFDI, as developing countries aimed to nurture domestic industries and keep capital at home (Cuervo-Cazurra 2008; Gammeltoft, Barnard, and Madhok 2010). Protectionist measures reduced incentives for domestic firms to become internationally competitive, limiting their ability to expand outside their home markets. The small amount of developing country OFDI that did take place generally went to other developing countries in the same region and was mostly a combination of natural resource-seeking (as developing countries sought primary inputs they lacked) and market-seeking (as a few developing countries sought to expand sales in culturally and geographically close neighbors) (Dunning, Kim, and Park 2008; Ramamurti 2009; Wells 2009).

The second wave, during the 1980s and 1990s, saw investment patterns shift significantly. Structural reforms and export-oriented industrialization opened developing countries to FDI, with countries seeking to attract the foreign capital, knowledge, and skills needed to make their exports competitive. With trade and investment liberalization progressing rapidly, developing country OFDI also began to grow. About two-thirds of OFDI flows went to developed economies, while the remaining third went to developing countries, mostly neighbors (Aykut and Ratha 2004). It became increasingly efficiency-seeking, as developing countries began to plug into global value chains (GVCs) by locating some manufacturing activities in lower-cost locations and integrating into international production networks (UNCTAD 2013).

The third wave, from the early 2000s to the present, is witnessing a fresh rise in developing country OFDI, across both flows and stocks. While OFDI from both developed and developing economies has been dynamic, the relative share of developing country OFDI flows in total FDI (figure 4.1) surged from 4 percent in 1995 to 27 percent in 2014, equivalent to $315 billion. Developing country OFDI stocks (figure 4.2) have also increased as a share of total FDI stocks, although at a slower pace. Between 1995 and
2015, developing countries tripled their share in global FDI stocks, increasing from 4 percent to 12 percent, equal to $2.8 trillion.

Both domestic policy choices in developing countries and global economic conditions helped shape these changes in the investment landscape. In terms of domestic policy, liberalization and deregulation reforms embraced in the second wave (the 1980s–90s) raised competitive pressures in many developing countries, eventually “pushing” firms out of their home markets (Sauvant 2008). At the same time, firms in Singapore and other high-growth economies embraced OFDI in the late 1990s as a development strategy to “achieve efficiency in resource allocation and diversify risks from economic shocks in any one region” (Lee, Lee, and Yeo 2016). Firms in other developing countries soon followed, with OFDI increasingly seen as a means to access markets, capital, technology, and knowledge in international markets—and thus boost national competitiveness (Luo, Xu, and Han 2010). Supportive policy measures, in the form of generous financing and incentives, helped.

Global economic conditions also “pulled” developing market firms into OFDI. First, rapid and sustained growth in much of the developing world during this decade facilitated firms to grow and prosper and,
consequently, internationalize. Second, the boom in commodity prices during the same decade gave commodity exporters in the developing world large windfalls, creating substantial liquidity that they used in part to finance OFDI.

**Zooming In: Who, Where, What, and How**

This section looks at trends in OFDI by developing country firms as revealed by various global datasets (UNCTAD, fDi Markets, and Thomson Reuters) and identifies the main geographic origins and destinations of these flows, principal modes of entry (greenfield versus mergers and acquisitions [M&A]), and sectoral distribution, among other patterns.

**Who? Sources of Developing Country OFDI**

East Asia and Pacific has gradually become the major source of OFDI among developing regions (figure 4.3). It generated 22 percent of total OFDI from developing country firms during 2000–04, surging to 49 percent in 2010–15. In contrast, Europe and Central Asia, and Latin America and the Caribbean have reduced their relative shares over time. Latin America and the Caribbean held a share of 37 percent of developing country OFDI during the second half of the 1990s, falling to 15 percent during 2010–15. And Europe and Central Asia’s share fell to 25 percent in 2010–15 from a peak of 36 percent in 2000–04. Finally, outward flows from Sub-Saharan Africa, the Middle East and North Africa, and South Asia maintained more marginal shares across all periods.

As noted earlier, the BRICS are a key source of developing country OFDI (figure 4.4). These five countries generated 62 percent of such OFDI in 1995, a share that remained essentially unchanged in 2015. These numbers, however, largely align with other aspects of these countries’ participation in the global economy. Aside from the BRICS, other large or relatively higher-income developing countries (for example, Chile, Malaysia, and Mexico) are also top investors among developing countries. In fact, when classified across income thresholds (annex 4A), developing country OFDI is driven largely by higher-income developing countries. During 1995–99, 78.8 percent of FDI flows from the developing world originated in upper-middle-income countries, with 13.8 percent from developing high-income countries, 7.1 percent from lower-middle-income, and only 0.3 percent from low-income countries. Such relative shares did not change much during 2010–15 when
upper-middle-income countries accounted for 79.9 percent of total developing country OFDI stocks, high-income countries for 11 percent, lower-middle-income for 8.7 percent, and low-income countries for 0.3 percent. In this way, upper-middle-income and high-income countries have consistently accounted for the vast majority of developing country OFDI. China in particular has become the main driver of developing country OFDI, accounting for 36 percent of the total (figure 4.4). When measured across flows, Chinese OFDI sustained a steady upward trend since 2004—moving from 10 percent of total developing country OFDI flows to 49 percent in 2015. China is also the main reason for the rise of East Asia and Pacific as the leading region.

**FIGURE 4.4  Top Developing Country Outward Investors**

<table>
<thead>
<tr>
<th>Year</th>
<th>Country</th>
<th>Share of total developing country OFDI stock (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>China</td>
<td>36.0</td>
</tr>
<tr>
<td></td>
<td>Russian Federation</td>
<td>9.0</td>
</tr>
<tr>
<td></td>
<td>Brazil</td>
<td>6.5</td>
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<tr>
<td></td>
<td>South Africa</td>
<td>5.8</td>
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<tr>
<td></td>
<td>Mexico</td>
<td>5.4</td>
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<tr>
<td></td>
<td>India</td>
<td>4.9</td>
</tr>
<tr>
<td></td>
<td>Malaysia</td>
<td>3.1</td>
</tr>
<tr>
<td></td>
<td>Chile</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>Saudi Arabia</td>
<td>2.3</td>
</tr>
<tr>
<td></td>
<td>Colombia</td>
<td>1.7</td>
</tr>
<tr>
<td></td>
<td>Turkey</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td>Philippines</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>Hungary</td>
<td>1.4</td>
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<tr>
<td></td>
<td>Argentina</td>
<td>1.3</td>
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<tr>
<td></td>
<td>Indonesia</td>
<td>1.1</td>
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<tr>
<td></td>
<td>Poland</td>
<td>1.0</td>
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<tr>
<td></td>
<td>Greece</td>
<td>0.9</td>
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<tr>
<td></td>
<td>Venezuela, RB</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>Kazakhstan</td>
<td>0.8</td>
</tr>
<tr>
<td>1995</td>
<td>Brazil</td>
<td>30.7</td>
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<td></td>
<td>South Africa</td>
<td>16.1</td>
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<tr>
<td></td>
<td>China</td>
<td>12.3</td>
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<td></td>
<td>Argentina</td>
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<td>Venezuela, RB</td>
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<td>India</td>
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<td>Hungary</td>
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<td></td>
<td>Kazakhstan</td>
<td>0.0</td>
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Source: Computation based on UNCTAD.
Note: OFDI = outward foreign direct investment.
developing region generating OFDI (figure 4.3). The country has gone from accounting for 40 percent of East Asia and Pacific OFDI flows during 1995–99 to 75 percent in 2010–15. The dynamism of Chinese OFDI reflects a unique institutional and regulatory framework that supports firm internationalization (box 4.1).

A different set of countries emerges if OFDI activity is assessed relative to the size of the national economy. The ratio of OFDI stock to gross domestic product (GDP) (map 4.1) reveals the extent to which countries are internationalized through OFDI. This ratio shows that developing country OFDI is a relatively recent phenomenon: in 1995, 87 out of 135 developing countries had a positive OFDI stock. Yet virtually all developing countries had very low ratios of OFDI to GDP with only three economies (Botswana, Nigeria, and South Africa, all in Sub-Saharan Africa) having stocks above 10 percent of GDP. A more diverse picture emerges in 2015, with 109 developing countries having positive OFDI stocks and,

**BOX 4.1**

**The Evolving Role of OFDI in China’s Economy**

OFDI from China accounts for more than a third of all developing country OFDI stock, and the country has been at the vanguard of OFDI policy reform. Trends in Chinese OFDI are remarkable. From 2000 to 2015, its OFDI flows on average more than doubled each year (UNCTADstat) so that, by 2016, it had attained two milestones: OFDI overtook inward FDI for the first time, and Chinese OFDI flows were the second highest in the world after the United States. This meant that China generated the sixth-largest OFDI stock (UNCTAD 2017). Nevertheless, in terms of the ratio of OFDI to GDP, China’s OFDI exposure is still below some of the most outwardly invested developing economies in the world (map 4.1 and figure 4.5).

What accounts for this dramatic growth? Chinese OFDI has been driven by both push and pull forces. On the one hand, macroeconomic conditions pushed firms out of the domestic market—initially balance-of-payment surpluses and later domestic overcapacity—making investment abroad a policy priority. On the other hand, key inputs to sustain domestic growth pulled firms abroad—initially securing essential commodities and later procuring knowledge and technology—as China’s development strategy sought to move the country from a manufacturing-driven to an innovation-driven economy.

The sector breakdown of Chinese OFDI has, as a result, undergone major transformation. During 2003–05, 65 percent of Chinese OFDI flows targeted the primary sector while 18 percent targeted the services sector. A decade later, these distributions flipped: during 2013–15, 26 percent of Chinese OFDI flows targeted the primary sector while 47 percent targeted the service sector. This reversal can partly be explained by the evolution in Chinese OFDI motivations, moving from initially natural resource-seeking to increasingly market-seeking, efficiency-seeking, and finally strategic asset-seeking. Chinese firms increasingly see OFDI as a means for opening new markets for excess domestic capacity and for acquiring hard-to-develop capabilities faster and more cheaply than developing these indigenously. The goal is to continue domestic upgrading and increase international competitiveness.

This change in OFDI distribution can also be explained partly by differences in OFDI behavior between state-owned enterprises (SOEs) and privately owned enterprises (POEs), and the increasingly important role of POEs in OFDI. Evidence shows Chinese SOEs are willing to invest in politically risky host economies to acquire assets in line with national priorities (for example, securing natural resources) (Amighini, Rabellotti, and Sanfilippo 2013). In contrast, Chinese POEs behave as private firms do in other countries—seeking to maximize profits and minimize risk—and avoid risky investment climates. Reflecting a growing domestic private sector in China, POEs are becoming increasingly important as drivers of OFDI, contributing to growing market and strategic asset-seeking OFDI in developed economies (Dollar 2016; Lardy 2014).

*box continues next page*
2006, SOEs held 81 percent of China’s OFDI stock, while POEs held only 19 percent; 10 years later, China’s OFDI stock was almost evenly divided between SOEs (50.4 percent of nonfinancial assets) and POEs (49.6 percent) (Wang 2017). Looking specifically at Chinese OFDI into the United States (the largest destination market for Chinese OFDI), POEs accounted for nearly 80 percent of OFDI in both 2015 and 2016, even as Chinese OFDI into the United States tripled in this single year (Rosen and Hanemann 2017).

These patterns of Chinese OFDI should be understood in the context of an evolving and increasingly sophisticated OFDI regulatory framework. Between 2001 and 2014, China gradually liberalized OFDI regulations, moving from a restrictive to a supportive framework (Sauvant and Chen 2014). In 2014, the regulatory framework matured to embrace corporate social responsibility when investing abroad, such as the environmental and social impact on host economies. Then, at the end of 2016, the government announced plans to tighten the inspection and supervision of Chinese OFDI, especially when not related to the core business of the investing firms, or in areas with limited economic value for the home economy (for example, OFDI in film studios or sports clubs). This also includes plans for identifying industries in which Chinese SOEs cannot invest (a “negative list”), such as heavily polluting industries (China Daily 2017a). Similar to the changes in 2014, which added a quality dimension to the way that Chinese OFDI was carried out, Chinese policy has recently added a quality dimension to the sectors to which OFDI is targeted.

This recent regulatory tightening has had a large effect on Chinese OFDI. Chinese mergers and acquisitions (M&A) transactions fell by 20 percent in the first six months of 2017 relative to the same period a year earlier (Hanemann, Lysenko, and Gao 2017). By the middle of 2017, the number of transactions had returned to almost the same level as in the pre-tightening period, yet the average deal size had fallen dramatically owing to greater scrutiny of large transactions. The value of announced OFDI acquisitions averaged more than US$15 billion a month during 2016 but averaged less than US$8 billion a month during January–June 2017 (Hanemann, Lysenko, and Gao 2017). While POE OFDI had been rising as a share of total OFDI, the tightening in regulations seems to favor SOEs, perhaps because they are better able to navigate the changing political context: in the first half of 2017, there were virtually no large private sector M&A deals, and state-related companies accounted for 60 percent of total deals by value, a reversal of the 2016 pattern (Hanemann, Lysenko, and Gao 2017). While M&A OFDI has fallen in most sectors, OFDI into the primary sector, high-tech industries, and modern services (telecom, media, and computing) has proven most resilient, reflecting the strategic importance of these three areas in China’s development strategy.

China’s increasing use of OFDI to source advanced knowledge and technology has also generated growing political economy tensions with some developed economies, notably the United States and European Union. To give a sense of these growing pressures, in only the first half of 2016, China invested more in Europe than in the previous three years combined and often targeted cutting-edge technology. This sparked European concerns over the long-term impact on host economies. The lack of market-access reciprocity for investment—with developed economies much more open to Chinese OFDI than vice versa—has prompted calls for a more level playing field. In February 2017, Germany, France, and Italy presented the European Commission with a common position on screening foreign investments, implicitly targeting Chinese OFDI and drawing on practices in Australia, Canada, Japan, and the United States (Grieger 2017). In early 2017 China decided to open more sectors to FDI (for example, automation, digitization, financial services, transportation, and renewable energy) (China Daily 2017b). Then, in August 2017, China started requiring that state groups assess political risks to OFDI before proceeding with any deal (FT 2017). It is too soon to tell whether these measures, coupled with implementation of any potential new screening mechanisms, will alleviate political economy tensions.
Source: Computation based on UNCTAD and World Development Indicators, World Bank.
Note: The five color thresholds correspond to shares of OFDI stock over GDP that are 0–5 percent, 5–10 percent, 10–15 percent, 15–20 percent, and greater than 20 percent. GDP = gross domestic product; OFDI = outward foreign direct investment.
more important, with 26 of these countries
having an OFDI-to-GDP ratio of 10 percent
or greater. The list of countries with the high-
est values of this ratio (figure 4.5) includes
low-, lower-middle-, and upper-middle-income
economies, suggesting greater heterogeneity
across countries’ economic size or develop-
ment levels. In all, this relative measure
reveals a set of economies actively engaged in
outward investment that are generally absent
from the debate on OFDI, owing to their
marginal role in aggregate FDI.

Where? Source–Host FDI Relationships

The rise of OFDI by developing country
MNCs has also expanded the number of
countries increasingly dependent on this
source of external capital. The share of
inward FDI stock from developing coun-
tries held by other developing countries (map 4.2) has risen for many economies. In
2001, only 11 developing countries (5 in Sub-
Saharan Africa, 5 in Europe and Central Asia,
1 in Latin America and the Caribbean) had
half or more of their inward FDI stock owned
by other developing countries. In 2012, that
number reached 55 countries. Developing
countries are a particularly key source of FDI
for countries in Sub-Saharan Africa, Europe
and Central Asia, and South Asia. With many
of these host economies characterized by low
economic development, these trends seem to
conform with the literature that finds devel-
oping country OFDI to be less discouraged by
weak institutional and economic environ-
ments in host countries (Cuervo-Cazurra
2008; Ma and Van Assche 2011).
MAP 4.2  Exposure to Developing Country OFDI Rises for Many Developing Host Economies

Source: Computation based on UNCTAD.
Note: The five-color thresholds correspond to ratios of inward FDI from developing countries over total inward FDI stocks that are less than 20 percent, 20–40 percent, 40–60 percent, 60–80 percent, and 80–100 percent. OFDI = outward foreign direct investment.
The geographical distribution of developing country OFDI across regions (figure 4.6) suggests the trade-off that developing country multinationals face when deciding where to locate their investments. For example, OFDI from South Asia, Europe and Central Asia, and Latin America and the Caribbean is relatively concentrated in developed economies. For South Asia, developed economies account for 75 percent of its total 2012 outward stock; for Europe and Central Asia, 69 percent; and for Latin America and the Caribbean, 65 percent. The importance of developed economies as destinations for developing country MNC investments can be attributed to the size and strength of these host markets, a key FDI location determinant (Assunção, Forte, and Teixeira 2011). For Europe and Central Asia and Latin America and the Caribbean, the share of OFDI remaining in the same region is also relevant. This “regional bias” owes to the preference of such regional MNCs for the lower transaction costs of operating in markets characterized by cultural ties, geographical proximity, or prior trade relations (Aykut and Goldstein 2006). In all, the geographical distribution of developing country OFDI suggests the trade-off that developing country multinationals face when deciding on a location for their subsidiaries—that is, weighing the benefits of investing in close, familiar markets against the cost of weak consumer demand or an inefficient institutional environment.

Is OFDI by developing country firms influenced by this trade-off between market size?
and strength, and physical and cultural distance? Our econometric analysis (annex 4B) extends the analysis in Gómez-Mera and others (2015), a study that explains the OFDI patterns of four emerging economies (Brazil, India, the Republic of Korea, and South Africa), to a sample of 133 developing countries. Our results show that OFDI by developing country MNCs seeks to balance market attractiveness with the transaction costs associated with distant and unfamiliar markets. On the one hand, measures of host country market size (population, per capita GDP) are significant predictors for the location of OFDI. On the other hand, transaction costs associated with geographical distance and the lack of a shared language or colonial experience between source and host economy limit the prospects of cross-border investments by developing country MNCs.

What and How? Sector and Mode of Entry

The sector distribution suggests an increasingly rich set of investment motivations guiding OFDI patterns. The cumulative OFDI value between 2003 and 2015 (annex 4C) is relatively evenly distributed across broad sectors (primary, manufacturing, and services). But service sectors account for a large share of OFDI stock in almost all regions, ranging from 36 percent (Europe and Central Asia) to 41 percent (East Asia and Pacific). Europe and Central Asia and Sub-Saharan Africa also strongly favor extractive industries, which account for about 40 percent of outward stocks. Thus, manufacturing industries tend to be under-represented in these two regions.

The relatively balanced sectoral distribution suggests that developing country OFDI is increasingly complex. Previous attempts to disentangle OFDI’s sector patterns (Gammeltoft 2008) found a particularly high preference for service sectors over manufacturing or natural resources. Such a bias toward services was partly attributed to the wave of privatization of public services embraced by much of the developing world in previous decades, which attracted FDI into these sectors (Sader 1993). More recently, OFDI into knowledge-intensive industries, both in manufacturing and services (for example, pharmaceuticals, software, and information technology [IT] services) has gained traction (Gammeltoft 2008). OFDI is thus a tool to acquire superior technology and contribute to firms’ international competitiveness. All things considered, the rich sectoral distribution of developing country OFDI suggests an equally rich set of investment motivations, with all developing regions participating to some degree in outward natural resource-seeking, efficiency-seeking, market-seeking, and strategic asset-seeking investments.

Based on the number of FDI projects during 2003–15, companies from most developing regions show a slight preference for greenfield FDI rather than for acquisitions. This confirms the same bias found in previous studies (Davies, Desbordes, and Ray 2015; UNCTAD 2015). Yet the pro-greenfield bias is stronger for OFDI from developed economies (figure 4.7): out of 39 industries, OFDI from developed countries accounts for a majority share of greenfield operations in 25 of them, with a median share of 58 percent. On the other hand, developing country OFDI is biased toward greenfield in only 20 industries, with a median share of 50 percent.

The relative preference for M&A in developing country OFDI—when compared to that of advanced economies—is more evident in knowledge-intensive manufacturing industries (figure 4.7): of the nine industries where developing country OFDI shows a pro-M&A difference of 15 percentage points or more (relative to OFDI from developed economies), seven are technology- and knowledge-intensive (automotive components, business machines and equipment, engines, transportation original equipment manufacturer, space and defense, and semiconductors).

The previous trends suggest the importance of OFDI as a mechanism for upgrading in manufacturing by developing country MNCs. A crucial aspect of
knowledge-intensive industries is their reliance on intangible assets, involving largely tacit and experiential knowledge in such areas as research and development (R&D), branding, or organizational software. These features make intangible assets difficult to replicate (OECD 2013). M&A is therefore the only means of acquiring the type of knowledge or intangible asset that is inherent to the target firm (Slangen and Hennart 2007).

In sum, our data analysis reveals the following main trends:

- OFDI by developing country firms is an increasingly important source of global investment flows and stocks.
- The main source of developing country OFDI across developing regions is East Asia and Pacific. In absolute terms, BRICS investors are the key drivers of
developing country OFDI, accounting for 62 percent of total developing country OFDI stock in 2015—with China alone accounting for 36 percent.

- The countries with a high OFDI-to-GDP ratio are far more heterogeneous, both across countries’ economic sizes and development levels.
- As for regional differences in the geographical location of developing country OFDI: South Asia and Europe and Central Asia channel more than two-thirds of their OFDI stock to developed economies, while the Middle East and North Africa and Sub-Saharan Africa concentrate, respectively, 76 percent and 65 percent of outward stock in developing countries. In general, the geographical distribution of developing country OFDI suggests that developing country MNCs balance the importance of market size with physical and cultural proximity.

- Relative to OFDI from developed countries, developing country OFDI shows greater reliance on M&A when targeting manufacturing industries. This is especially true for knowledge-intensive industries, as developing country MNCs resort increasingly to OFDI to augment capabilities and competitiveness.
- Finally, developing country OFDI is distributed across a rich set of industries, including manufacturing, extractives, and services. It thus covers the full range of investment types (natural resource-seeking, efficiency-seeking, market-seeking, and strategic asset-seeking).

As more developing countries continue to internationalize through OFDI, a pertinent question is the role that OFDI can play in supporting domestic development. Developing countries may be able to leverage OFDI to source technology, increase domestic capacity, upgrade production processes, boost competitiveness, augment managerial skills, and access distribution networks (Ahammad and Virmani 2014; Driffield and Love 2003, 2007).

The rest of this chapter will address these possibilities by reviewing the literature on OFDI home effects.

**Does Development Level Affect OFDI Behavior?**

Both the investor survey and the gravity model estimation (annex 4B) suggest that OFDI by developing country MNCs reacts to standard host economy location determinants (for example, market size, income level, distance, common language, colonial links) in much the same way as developed country OFDI: both are attracted to large and growing economies that are geographically close and culturally similar. However, evidence suggests that developing country investors are relatively more willing to target smaller and closer economies (Arita 2013) in a “stepping-stone” strategy. Some of these firms find it difficult to compete in larger, more competitive markets farther away, lacking the networks and experience of developed country firms. Studies of Asia and Latin America find that investors usually expand into large and complex markets only after first successfully expanding in smaller, lower-income economies in the same region (Cuervo-Cazurra 2008; Gao 2005; Hiratsuka 2006).

Differences between developed and developing country outward investment behavior also arise with regard to the role of technology. Developed countries generally exploit existing technological assets in undertaking OFDI. But some developing country MNCs use OFDI to acquire new technological assets. Case studies of leading BRICS firms provide examples (Holbrugge and Kreppel 2012; Rodriguez-Arango and Gonzalez-Perez 2016; UNCTAD 2005). The reason is that most BRICS multinationals face disadvantages in terms of patents, management know-how, or cutting-edge processes, and thus seek to acquire these abroad as part of a strategy of late-comer catch-up. Looking at the econometric evidence, however, this seems to apply
mostly to China. Across many studies, a consensus has emerged that Chinese MNCs use OFDI to acquire the knowledge, skills, and technology they lack (Dong and Guo 2013; Huang and Wang 2011; Kang and Jiang 2012; Ramasamy, Yeung, and Laforet 2012; Zhang and Roelfsema 2014).

Developing country investors may also be relatively more willing to target host economies with weaker institutional quality,17 in view of the “institutional advantage” argument (Cuervo-Cazurra and Genc 2008). This theory suggests that managers of developing country MNCs are more used to uncertainty and may be more flexible in dealing with unpredictable regulatory agencies and corrupt government officials. Several studies support this argument, finding that developing country MNCs are relatively more present in least developed countries (Cuervo-Cazurra and Genc 2008) or by demonstrating an inverse relationship between host political risk and, specifically, Chinese OFDI (Buckley and others 2007; Cui and Jiang 2009; Duanmu and Guney 2009; Kang and Jiang 2012; Quer, Claver, and Rienda 2012).

Does OFDI Matter for Development? Identifying OFDI Home Effects

Developing country OFDI can affect the home economy of investors through different transmission channels. This section first considers these channels and then presents evidence of these effects across two variables: innovation and exports.

A developing country can use OFDI as a catch-up strategy to source technology, increase domestic capacity, upgrade production processes, boost competitiveness, augment managerial skills and access distribution networks (Amann and Virmani 2014; Driffield and Love 2003, 2007). As a result, OFDI can play a major role in a developing country’s developmental strategy.18 The effects of OFDI on the home economy can show up at three different levels. Initially, only the MNC will directly experience the impact of investing abroad (first-order effect). Later, the firm’s enhanced knowledge, capacity, and behavior may affect other domestic firms that are not themselves foreign investors (second-order effect). Finally, the impact may be spread throughout the home economy over time.

OFDI can impact the home economy in at least three ways:

1. Scale effects: OFDI allows a firm to grow larger than it would have if limited to operating in its home market. This growth may yield traditional gains based on economies of scale and scope,19 lowering costs of production and operation.

2. Competition effects: Competition with firms in foreign markets where developing country firms invest may force them to improve efficiency and upgrade production processes. Competition in host markets can thus bring efficiencies and expansion of developing country firm activities at home.

3. Knowledge effects: OFDI enables firms to acquire knowledge directly, as through M&A, joint ventures, or other forms of partnership. Knowledge can take the form of technology, production techniques, or management skills. Such knowledge transfer initially benefits only the foreign subsidiary. For it to benefit the home economy, it needs to be transferred back to the parent firm—so-called reverse knowledge transfer (for example, through personnel exchanges, production shifting, or management rotation). At the same time, indirect knowledge transfer may occur through knowledge spillovers to other firms in the home economy.

These transmission channels can, however, lead to diverse effects on developing countries’ MNCs, as well as on local firms in home markets. Scale and competition effects may push less competitive firms to exit the home market. Knowledge effects may only
accrue to those firms with the capacity to integrate such knowledge, causing outward investment to contribute to skills-based inequalities. Rigid factor markets for labor and capital may exacerbate adjustment costs, while undeveloped factor markets may limit the potential benefits of outward investment for the home economy (for example, unskilled labor unable to integrate OFDI-generated knowledge and innovation or capital market imperfections causing OFDI to crowd out domestic investment in the home economy). Appropriate policies are needed to maximize the benefits of outward investment while minimizing its costs.

**OFDI Impact on Innovation and Exports**

The following review focuses on two key economic benefits where the existing literature provides the most evidence of OFDI impact on the home economy: driving innovation and expanding exports.

**OFDI by Developing Country MNCs Can Spur Innovation at Home**

OFDI’s ability to increase innovation in the home economy is well-documented. The key transmission channels are competition effects that encourage innovation and direct and indirect knowledge effects. Knowledge can take the form of technology, production techniques, or management skills. Disaggregating outward investment by type is especially important, as one particular type of OFDI—knowledge-seeking, which is part of strategic asset-seeking investment—is likely to have the greatest positive effect on home innovation.

Developing country MNCs seem to be using outward investment in innovation-intensive economies to spur home innovation. One study examines OFDI from 20 developing countries into developed countries from 2000 to 2008 (Chen, Li, and Shapiro 2012). It finds that both R&D employment and R&D expenditure in host economies increase R&D spending by developing country parent companies. Host market R&D intensity therefore seems to be a key element in determining the potential for overseas investment by developing country MNCs to generate innovation spillovers in the home economy (box 4.2).

The evidence also suggests that the effect of outward investment on home innovation is more pronounced in knowledge-intensive sectors. In the auto and chemical and pharmaceuticals industries, evidence reveals that OFDI firms generate reverse technology spillovers to domestic firms that did not invest abroad. The positive effect of OFDI on home R&D is apparent for investments in both developed and developing host countries, although it is stronger for developed countries.

South–South OFDI is also showing signs of increasingly becoming a source for home innovation. Whereas previous paradigms considered developed countries as the repository of knowledge and technology, and thus focused on North–North or North–South investment flows, a multipolar global technology network is emerging, with growing South–South innovation-oriented interactions and collaboration. Part of the reason is that knowledge created in developing countries may be more adapted to the needs of other developing countries, and that the level of complexity of that knowledge may be more easily absorbed by other economies at similar levels of development. Evidence from Africa shows that, when the knowledge gap between firms is too great, interactions between firms are less likely to lead to knowledge transfer or spillovers because firms are unable to absorb the knowledge (Boly and others 2014 in Moran, Gorg, and Seric 2016; Deng 2010; Farole and Winkler 2014). Using outward investment to target highly sophisticated knowledge so as to leapfrog to the knowledge frontier may therefore not be an effective strategy until a firm has first increased its absorptive capacity. Different levels of development may thus call for different OFDI knowledge acquisition and innovation strategies depending on
Outward FDI from Developing Countries

Empirical evidence confirms that outward investment increases home country exports. The key transmission channels are scale effects and knowledge effects: outward investment may open new markets, creating opportunities for increased export-oriented production of either intermediate or finished goods. Outward investment may also bring back to the home economy knowledge and technology that boost export competitiveness. OFDI may also be used to plug into GVCs through backward and forward supply-chain integration, stimulating exports of intermediate inputs. Yet negative effects may arise if relocating production abroad lowers exports of final goods and services since foreign markets are now being served by local production.

Overseas Investment by Developing Country MNCs Can Expand Home Exports

Empirical evidence confirms that outward investment increases home country exports. The key transmission channels are scale effects and knowledge effects: outward investment may open new markets, creating opportunities for increased export-oriented production of either intermediate or finished goods. Outward investment may also bring back to the home economy knowledge and technology that boost export competitiveness. OFDI may also be used to plug into GVCs through backward and forward supply-chain integration, stimulating exports of intermediate inputs. Yet negative effects may arise if relocating production abroad lowers exports of final goods and services since foreign markets are now being served by local production.

Box 4.2: Developing Country MNCs Use OFDI to Boost Innovation and Exports

Across the developing world, firms are using outward investment to improve their capabilities and performance. Particularly noteworthy is the breadth of different industries involved. Three industries in three different countries illustrate how outward investment can boost home-firm innovation, exports, and firm growth.

In Turkey, two of the leading household appliance firms have used outward investment to locate R&D activities in foreign markets to increase parent-firm innovation. The leading firm, Arcelik, has seven R&D centers around the world. This emphasis on R&D means that in 2015 the firm had by far the most World Intellectual Property Organization (WIPO) patent applications among all Turkish firms—a staggering eight times more than the second highest Turkish firm—placing Arcelik in the 78th position globally. Another of the top Turkish firms, Vestel, is also using outward investment to tap into foreign technology and boost innovation. It devotes 2 percent of sales revenue to R&D spending, with foreign R&D centers in the United Kingdom and China. As a result, Vestel has also been listed as one of the three Turkish companies among the top 1,000 companies in the world by R&D spending.

Jordan’s pharmaceutical sector provides an excellent example of how a relatively smaller developing country can use outward investment to develop a domestic industry’s capacity and competitiveness. Al Hikma Pharmaceuticals, Jordan’s largest pharmaceutical firm, has led a series of M&A and greenfield investments across the world, in both developed and developing countries, to access technology and markets. Hikma now has manufacturing facilities approved by the U.S. Food and Drug Administration in Germany, Italy, Jordan, Portugal, Saudi Arabia, and the United States; it also has R&D centers in Algeria, the Arab Republic of Egypt, Jordan, Saudi Arabia, Tunisia, and the United States. Hikma has thus become the third largest generic injectable supplier to the U.S. market. According to the Jordanian Association of Pharmaceutical Manufacturers, about 80 percent of Jordanian production is destined for export to more than sixty countries, with most exports heading to other Arab countries.

China’s wind turbine industry illustrates how outward investment can drive innovation in the home market and the key role that supportive policies can play. China’s wind power capacity in 2005 was 1,260 megawatts; by the end of 2016, it had grown more than 100-fold to 168,690 megawatts (Global Wind Energy Council 2016). The International Energy Agency estimates that China builds two wind turbines every hour. As a result, China now has more installed wind power capacity than all of the European Union combined, and more than double the capacity of the United States. OFDI has played a key role in facilitating this remarkable growth by helping to access technology. From 2009 to 2014 China made 44 outward investments in the wind energy industry. The Chinese state guided and facilitated this process through policy instruments such as subsidies, tax incentives, R&D spending, technical partnership, and outward investment financial incentives and support. This represents a dramatic example of a developing country using policy measures to leapfrog developed economies.
The net effect is therefore theoretically ambiguous, depending on the relative strength of these different effects.

In practice, however, empirical evidence overwhelmingly confirms that outward investment and home exports are complements and not substitutes, and that OFDI increases home exports (box 4.2). For example, looking at Malaysia, the Philippines, Singapore, and Thailand from 1981 to 2013, a recent study finds that in all cases OFDI increases rather than substitutes home country exports. In this study, a 1 percent increase in OFDI leads to a $750 million rise in exports for the Philippines, $72 million for Singapore, $41 million for Thailand, and $31 million for Malaysia.

Absorptive Capacity is Key

While OFDI can generate benefits for home economies, limitations on firm-level and economy-wide absorptive capacity in developing countries may limit OFDI home effects (box 4.3).

Absorptive capacity can affect the home effects of OFDI in two divergent ways. One view is that firms farthest from the technology frontier may benefit most from spillovers as they are starting from a low base. Another view suggests that these firms may not have the capacity to make the best use of new technologies. Rather, it argues that firms closest to the technology frontier are best placed to adopt cutting-edge technologies available through OFDI. Empirical evidence supports both views, indicating a U-shape function in the relationship between absorptive capacity and OFDI home effects, with simple knowledge at the low range and complex knowledge at the high range being more likely to facilitate these effects (Girma 2005; Girma and Gorg 2007).

The key to positive home effects is a match between the firm’s level of absorptive capacity and the absorptive capacity of the firm. At the economy level, absorptive capacity depends on whether frameworks and mechanisms exist to help firms integrate knowledge resources and develop linkages and learning between firms. Measures to boost economy-wide absorptive capacity can include establishing institutional partnerships, helping to diffuse information, promoting firm linkages, and designing school curricula. These measures will largely depend on decisions by policy makers.

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**BOX 4.3**

**Absorptive Capacity Matters at Both Firm and Economy Levels**

Absorptive capacity is defined as the “ability to identify, assimilate, and exploit knowledge from the environment” (Cohen and Levinthal 1989). It applies at both the level of the individual firm and the level of the overall economy. At the firm level, absorptive capacity is a function of how effectively a firm can productively integrate knowledge resources. Measures to boost firm-level absorptive capacity can include instituting training programs, increasing R&D spending, and/or developing knowledge management tools. These measures will largely depend on decisions by individual firms.

At the economy level, absorptive capacity depends on whether frameworks and mechanisms exist to help firms integrate knowledge resources and develop linkages and learning between firms. Measures to boost economy-wide absorptive capacity can include establishing institutional partnerships, helping to diffuse information, promoting firm linkages, and designing school curricula. These measures will largely depend on decisions by policy makers.
and the knowledge it seeks to target through OFDI. Firms starting from a more basic level of knowledge can benefit most from exposure to simpler knowledge, giving them potentially a bigger boost to their innovation than if they were to target knowledge at the frontier and not be able to absorb it. In contrast, firms already enjoying more sophisticated knowledge can benefit most from exposure to more complex knowledge at the frontier, giving them a bigger boost to innovation than if they were to target knowledge they already have. In both cases, the ability of the home firm to absorb knowledge and the kind of knowledge being targeted must match. This match will change over time as knowledge is gained and absorptive capacity increases. At some point, the developing country firm should have sufficient absorptive capacity to invest in acquiring knowledge at the frontier. Governments may therefore wish to ensure that their efforts to boost absorptive capacity take into account different needs at both ends of the spectrum of the private sector.

Absorptive capacity may be measured at both the level of the firm and of the economy. When undertaking OFDI decisions, the firm’s absorptive capacity is key to determining the appropriate match with target knowledge and technology. But policy interventions to boost absorptive capacity should be considered at the economy level. Officials can adopt measures that boost the absorptive capacity of whole sectors—such as training programs, infrastructure provision, and network creation—rather than try and boost the absorptive capacity of individual firms through subsidies or protectionist measures in order to create national champions. Absorptive capacity may be measured at both the level of the firm and of the economy. When undertaking OFDI decisions, the firm’s absorptive capacity is key to determining the appropriate match with target knowledge and technology. But policy interventions to boost absorptive capacity should be considered at the economy level. 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Economies Are Gradually Liberalizing OFDI Regulations

In many developing countries, OFDI policy has shifted gradually from restrictive to more supportive, although restrictions persist (figure 4.8). In 2015, almost half of developing countries (49 percent, or 77 out of 156 countries) had some OFDI restrictions in place. Low-income developing countries were more likely to restrict OFDI than other developing countries. In 2015, 60 percent of low-income developing countries had OFDI restrictions (36 of 60 countries); in contrast, only 43 percent of non-low-income developing countries had OFDI restrictions (41 of 96). This original finding that OFDI restrictions vary with development level accords with earlier work on foreign exchange restrictions to FDI across economies, which found that all high-income countries maintain unrestricted foreign exchange regimes for FDI. Therefore as countries raise their development level, restrictions on outward investment seem to fall, although the direction of this relationship requires further study.

Restrictive regulatory frameworks regarding OFDI stem from concern that capital outflows can worsen the balance of payments and capital availability in the home economy. Measures to restrict OFDI can take the form of approval requirements, reporting requirements, foreign exchange controls, ceilings on investment amounts, or limits on destination sectors or destination economies (Kuzmińska-Haberla 2012). A snapshot of OFDI restrictions in 2011 in 84 developing countries reveals great variation in OFDI restrictiveness, even for countries at similar levels of development (Sauvant and others 2014).

The BRICS provide a representational picture of variation in OFDI regulation:

- **China**, over the course of 2000–14, moved from restricting to encouraging OFDI, although it tightened restrictions again at the end of 2016 (box 4.1).
- **Brazil** has generally favored OFDI, and in 2007 adopted financial incentives to encourage it in specific sectors in which...
the Brazilian economy had a comparative advantage (for example, mining, petroleum, pulp and paper, and beef) (Nunes de Alcântara and others 2016).

- Russia has also generally welcomed OFDI, mostly in the energy sector, but it has also blocked individual deals (Fortescue and Hanson 2015).
- India maintains a relatively restrictive OFDI framework, despite recent liberalization. OFDI in real estate is forbidden, in financial services is quite restricted, and in energy and natural resources, manufacturing, education, and hospitals requires prior approval by the Reserve Bank of India. Restrictions also apply on how OFDI is carried out in neighboring countries (for example, Bhutan, Nepal, and Pakistan). Quantitative restrictions are also set by the net worth of the Indian firm. If OFDI is approved, the firm must submit annual performance reports on each OFDI deal.
- South Africa also restricts OFDI, although with its own particular regulatory conditions. Firms face a limit
of 1 billion rand per calendar year for OFDI, above which they must formally apply to the South African Reserve Bank and ensure that at least 10 percent of the target entity’s voting rights are obtained through the investment. Even for deals under the 1 billion rand limit, restrictions remain, such as the net sale proceeds being repatriated to South Africa and South African-owned intellectual property not being sold without prior approval.37

Given the potential benefits of OFDI to home economies, developing country governments with OFDI restrictions may wish to carefully weigh their costs and benefits.

Conclusion

From the empirical evidence, developing country OFDI clearly has the potential to contribute substantially to development in home markets. Evidence suggests that OFDI increases home innovation and exports, but conclusive evidence is not yet available regarding productivity, domestic investment, employment, and economic growth. One reason may be that it is relatively easier to detect effects for variables at the firm or sector level and more difficult to do so at the economy level.

Even within a single variable, the effect of outward investment can vary across sectors, factors of production, investment types, and over time. OFDI may, in fact, simultaneously exhibit positive and negative effects across these different dimensions. For example, it may benefit high-skilled labor while hurting low-skilled labor; or it may force less competitive home firms to exit the market, while boosting the productivity and profits of more competitive home firms that seize opportunities or adjust to new realities. Differences may also arise concerning the time horizon. In the short term, the impact of outward investment on the home economy may be more limited but over time different transmission channels (scale effects, competition effects, and knowledge effects) may play out, augmenting and accentuating effects on the home economy. To understand OFDI, we need to move beyond thinking of it as having simply a positive or negative impact on home economies and disaggregate its effects across different dimensions.

OFDI policy should therefore adopt a holistic approach. It should consider both the effects on single variables and on the set of variables that policy makers care about. Just as with trade, OFDI will create winners and losers, but overall the positive effects on the home economy may outweigh the negative effects. Concretely, our study suggests the following policy considerations:

Given the growing importance of developing country OFDI, governments can target investment promotion activities not only to traditional sources of FDI from developed economies, but also to new sources from developing economies. South–South and intra-regional developing country OFDI represent a sizable share of total FDI flows. IPAs may therefore wish to court developing country OFDI from regional neighbors and developing economies in other regions as a potential source of investment. This source holds considerable promise but has been largely underemphasized in many investment promotion strategies.

Governments may also want to review any restrictions on OFDI, weigh their costs and benefits, and ensure that these are based on sound policy goals.38 Several of the largest source markets of developing country OFDI have recently eased restrictions on OFDI, although restrictions do remain. These controls may be based on macroeconomic objectives such as securing financial stability or promoting domestic investment. But the evidence suggests source countries can also benefit from OFDI, and restrictions may only be constraining positive home effects.

Governments can maximize the potential positive home effects from OFDI by adopting measures that strengthen economy-wide
absorptive capacity. Given that empirical evidence indicates that absorptive capacity is a U-shape function—with simple knowledge at one end and complex knowledge at the other—governments may wish to first identify the size of the technology gap to tailor the type of policy intervention accordingly. Measures to consider include boosting R&D expenditure, providing training programs, promoting firm linkages, establishing institutional partnerships, helping to disseminate information, and redesigning school curricula.

Given that OFDI by developing country firms has only boomed in the last decade, current research is fairly limited and many questions remain. More work is needed regarding how home effects vary across OFDI type, whether natural resource-seeking, efficiency-seeking, market-seeking, or strategic asset-seeking. The effect on the home economy is likely to depend on the motivation for undertaking OFDI, but no work has yet disentangled these dynamics.

In addition, more evidence is needed regarding developing country OFDI’s effect on home economy productivity, employment, growth, and domestic investment.

Finally, developing country governments need to better understand how investment incentives and other policies affect their firms’ OFDI decisions. A clearer understanding of the dynamics in these three areas would allow policy makers to better design and implement OFDI policy interventions.

Annex 4A. Developing Country OFDI by Income Category

Source: Computation based on UNCTAD and World Development Indicators, World Bank.
Note: OFDI = outward foreign direct investment.
Annex 4B. Estimation of a Gravity Model on Developing Country FDI Determinants

This annex presents the details and results of a gravity model that evaluates the strength of standard FDI location determinants in guiding developing country OFDI. Gravity models have become a widely used framework for explaining economic relations between countries. Early empirical applications, dating back to the decade of the 1960s, largely focused on explaining patterns of bilateral trade (Linneman 1966). One of the most robust findings of this research strand is the significance of relative market size, geographical distance, and common cultural and institutional features, such as language, colonial experience, or trade agreements, as predictors of trade between two countries.

Taking advantage of the increasing availability of bilateral economic data, the gravity specification has eventually been applied to the study of capital flows, and FDI in particular (Bevan and Estrin 2004; Talamo 2007). This gravity exercise follows the empirical inquiry of Gómez-Mera and others (2015), a study that explains OFDI patterns of four emerging economies (Brazil, India, Korea, and South Africa) through a gravity specification. Such specification includes standard location determinants on host market size (GDP per capita, population) and some of the standard bilateral variables (for example, distance, common language, colonial links).

Thus, it arrives at the following conclusions: First, the market size of the host economy is a significant predictor of the outward investments of these emerging economies. Second, the lower transaction costs derived from sharing the same language or colonial heritage are significant determinants of the probability of investing. Third, physical distance between countries reduces the probability of investing. Fourth, the existence of bilateral investment treaties (BITs) between source and host economy is a predictor of OFDI for these countries, reducing also the cost derived from geographical distance.

The present analysis departs from Gómez-Mera and others (2015) in two main ways. First, the use of the United Nations Conference on Trade and Development FDI bilateral dataset allows for creation of a panel dataset that covers developing countries engaged in OFDI between 2001 and 2012. Second, having a panel dataset influences the choice for the Poisson Pseudo-Maximum Likelihood method (PPML), which offers several advantages for estimating panel datasets with gravity variables (Santos Silva and Tenreyro 2006). The following equation illustrates the baseline econometric specification.

\[
F_{ijt} = \alpha + \beta_1 \text{GDPPC}_{it} + \beta_2 \text{POP}_{it} \\
+ \beta_3 \text{DISTCAP}_{ij} + \beta_4 \text{Contig}_{ij} \\
+ \beta_5 \text{Commlang}_{ij} + \beta_6 \text{Colony}_{ij} \\
+ \beta_7 \text{BIT}_{ij} + \beta_8 \text{DIST}_{ij} \times \text{BIT}_{ij} \\
+ \beta_9 X_{ijt} + \beta_{10} D_{it} + e_{ijt},
\]

where the dependent variable is the flow of FDI between source \(i\) and host \(j\) in year \(t\). The specification model includes a categorical variable controlling for fixed effects of the source country \((D)\). The host market attractiveness variables include per capita GDP in purchasing power parity in current international dollars \((\text{GDPPC})\) and population \((\text{POP})\). The standard gravity variables are the distance between source and host country capitals \((\text{DISTCAP})\), a dummy variable for source and host country sharing the same border \((\text{Contig})\), the same language \((\text{Commlang})\), and the same colonial history \((\text{Colony})\). In line with Gómez-Mera and others (2015), exports from source to host \((X)\) are included to control for the complementarities between trade and FDI. In addition, a dummy for a ratified BIT is included, both independently and interacted with distance (data definitions and sources are included in table 4B.1). The use of these variables and data sources allows for the creation of a panel for 133 developing source countries and 147 host countries (developed and developing), across the 2001–12 interval.
The results of the PPML estimation, with and without interaction term (table 4B.2), show that the trade-off between host market strength and physical and cultural proximity remains when the analysis is extended to a comprehensive sample of developing country FDI sources. The results largely corroborate the ones found in Gómez-Mera and others (2015): both host market attractiveness variables (GDPPC, POP) and the reduced transaction costs derived from shared cultural links (Commlang, Colony) are significant predictors of FDI flows from developing countries.
countries. Distance, on the other hand, acts as a significant inhibitor of these flows. Thus, BITs are found to be an enabler of FDI flows. All things considered, the only result that is in dissonance with those found in Gómez Mera and others (2015) is the role of BITs in reducing the deleterious effect of distance over FDI flows, with the interaction term between both variables not being significant across any specification.41

Annex 4C. Developing Country OFDI by Industry

**FIGURE 4C.1  Distribution of Developing Country OFDI across Industries**

<table>
<thead>
<tr>
<th>Region</th>
<th>Industry</th>
<th>Share of cumulative FDI outflows (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Asia and Pacific</td>
<td>Coal, oil, and natural gas</td>
<td>24.0</td>
</tr>
<tr>
<td></td>
<td>Metals</td>
<td>10.6</td>
</tr>
<tr>
<td></td>
<td>Other primary</td>
<td>0.4</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>Other manufacturing</td>
<td>15.8</td>
</tr>
<tr>
<td></td>
<td>Food and tobacco</td>
<td>5.2</td>
</tr>
<tr>
<td></td>
<td>Automotive OEM</td>
<td>3.2</td>
</tr>
<tr>
<td>Services</td>
<td>Real estate</td>
<td>11.9</td>
</tr>
<tr>
<td></td>
<td>Other services</td>
<td>10.6</td>
</tr>
<tr>
<td></td>
<td>Financial services</td>
<td>8.2</td>
</tr>
<tr>
<td></td>
<td>Transportation</td>
<td>5.5</td>
</tr>
<tr>
<td></td>
<td>Alternative or renewable energy</td>
<td>4.5</td>
</tr>
<tr>
<td>Primary</td>
<td>Coal, oil, and natural gas</td>
<td>24.5</td>
</tr>
<tr>
<td></td>
<td>Metals</td>
<td>11.3</td>
</tr>
<tr>
<td></td>
<td>Other primary</td>
<td>0.7</td>
</tr>
<tr>
<td>Europe and Central Asia</td>
<td>Other manufacturing</td>
<td>18.0</td>
</tr>
<tr>
<td></td>
<td>Transportation</td>
<td>11.8</td>
</tr>
<tr>
<td></td>
<td>Financial services</td>
<td>9.0</td>
</tr>
<tr>
<td></td>
<td>Communications</td>
<td>7.5</td>
</tr>
<tr>
<td></td>
<td>Real estate</td>
<td>6.9</td>
</tr>
<tr>
<td></td>
<td>Other services</td>
<td>4.4</td>
</tr>
<tr>
<td></td>
<td>Alternative or renewable energy</td>
<td>2.6</td>
</tr>
<tr>
<td>Primary</td>
<td>Coal, oil, and natural gas</td>
<td>12.6</td>
</tr>
<tr>
<td></td>
<td>Metals</td>
<td>11.9</td>
</tr>
<tr>
<td></td>
<td>Other primary</td>
<td>0.3</td>
</tr>
<tr>
<td>Latin America and Caribbean</td>
<td>Other manufacturing</td>
<td>13.5</td>
</tr>
<tr>
<td></td>
<td>Beverages</td>
<td>9.0</td>
</tr>
<tr>
<td></td>
<td>Food and tobacco</td>
<td>8.6</td>
</tr>
<tr>
<td></td>
<td>Building and construction materials</td>
<td>6.0</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>Communications</td>
<td>12.1</td>
</tr>
<tr>
<td></td>
<td>Financial services</td>
<td>9.0</td>
</tr>
<tr>
<td></td>
<td>Transportation</td>
<td>8.8</td>
</tr>
<tr>
<td></td>
<td>Other services</td>
<td>8.1</td>
</tr>
</tbody>
</table>

Note: The figure continues on the next page.
**FIGURE 4C.1** Distribution of Developing Country OFDI across Industries (continued)

<table>
<thead>
<tr>
<th>Region</th>
<th>Sector</th>
<th>Other manufacturing</th>
<th>Building and construction materials</th>
<th>Food and tobacco</th>
<th>Other services</th>
<th>Communications</th>
<th>Financial services</th>
<th>Real estate</th>
<th>Coal, oil, and natural gas</th>
<th>Metals</th>
<th>Other primary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle East and North Africa</td>
<td>Primary</td>
<td>4.5</td>
<td>7.2</td>
<td>4.5</td>
<td>11.0</td>
<td>9.3</td>
<td>9.1</td>
<td>8.9</td>
<td>20.7</td>
<td>24.4</td>
<td>8.3</td>
</tr>
<tr>
<td>South Asia</td>
<td>Manufacturing</td>
<td>Other services</td>
<td>7.3</td>
<td>4.4</td>
<td>12.1</td>
<td>7.3</td>
<td>5.9</td>
<td>5.9</td>
<td>5.0</td>
<td>19.0</td>
<td>11.6</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>Manufacturing</td>
<td>Other manufacturing</td>
<td>4.8</td>
<td>2.9</td>
<td>11.2</td>
<td>4.8</td>
<td>11.8</td>
<td>10.1</td>
<td>9.6</td>
<td>27.8</td>
<td></td>
</tr>
</tbody>
</table>

**Notes**

(2007–15), Slovenia (1997–2015), Trinidad and Tobago (2006–15), Uruguay (2012–15), and República Bolivariana de Venezuela (2014). Two additional adjustments have been made. First, the sample disregards 38 tax and financial havens, following an OECD list available at http://www.oecd.org/countries/monaco/jurisdictionscommittedtoimprovingtransparencyandestablishingeffectiveexchangeforinformationintaxmatters.htm. Second, Hong Kong SAR, China, is also removed, given its intermediary role for Chinese OFDI.

2. The literature uses a four-part typology to disaggregate FDI flows by investor motivation: natural resource–seeking, efficiency-seeking, market-seeking, or strategic asset–seeking (Dunning 2000).

3. In value terms, the region's OFDI increases from $32 billion in 2000–04 to $788 billion in 2010–15.

4. These shares correspond to $33 billion and $242 billion, respectively.


6. An example is the contribution of these countries to global GDP growth. During 1995–2000, the BRICS accounted for half the GDP growth generated in the developing world. This contribution has increased further in recent years, reaching 60 percent during 2010–15.

7. The heat map establishes discrete thresholds at lower than 5 percent, 5–10 percent, 10–15 percent, 15–20 percent, and greater than 20 percent.

8. This figure is based on the UNCTAD FDI bilateral dataset, which maps investment flows and stocks across both home and host economy, between the years 2001 and 2012.

9. The correlation between the share of inward developing country OFDI and per capita GDP (PPP) is -0.51.

10. Another dimension by which to study this regional bias is that across regional trade blocks. In this regard, the relative importance of FDI between members varies markedly across different customs unions and regional trade agreements. As an example, and relying on the UNCTAD bilateral FDI dataset, the share of the intra-agreement stock of OFDI (for example, the share of OFDI stock from member countries located in another member of the agreement) is virtually zero in the Caribbean Community (CARICOM), 10 percent in the Mercado Común del Sur (Mercosur), 22 percent in the West African Economic and Monetary Union (WAEMU), 36 percent in the Association of Southeast Asian Nations (ASEAN), and 76 percent in the East African Community (EAC).

11. The sample of developing countries is the same used for the descriptive analysis in this chapter (for example, the countries below the high-income threshold in 1995).

12. To illustrate FDI trends across sectors, the analysis relies on information from two transaction-level data sources on FDI projects. First, the fDi Markets dataset tracks media announcements of firm-level greenfield FDI projects. Second, the Thomson Reuters dataset provides the value of individual M&A transactions. The matching methodology detailed in Kierkegaard (2013) is used to merge both datasets. In all, the information from these two datasets allows us to create a single FDI dataset covering the years 2003–15 and including both greenfield and M&A.

13. The groups “Other Manufacturing” and “Other Services” are residual categories that include manufacturing and service industries with shares smaller than the sectors included for each region. For example, all the industries included in “Other Manufacturing” in East Asia and Pacific hold an OFDI share that is smaller than Communications (3.7 percent). Therefore, the industries included in these residual categories may differ by region. The manufacturing industries that are always included in “Other Manufacturing” are aerospace, automotive components, biotechnology, business machines and equipment, consumer electronics, consumer products, electronic components, engines and turbines, industrial machinery, medical devices, nonautomotive transport original equipment manufacturer, and pharmaceuticals. Service industries that are marginal enough to be included in the “Other Services” category are business services, leisure and entertainment, and warehousing and storage.

14. The preference for greenfield is most evident in South Asia and Europe and Central Asia, with 60 percent of South Asia and 35 percent of Europe and Central Asia projects channeled this way. The only exception is Latin America and the Caribbean, where 54 percent of projects are through M&A. When measured by cumulative project value (versus
the number of projects), the share of green-field projects in total OFDI is 68 percent in South Asia, 62 percent in Middle East and North Africa, 60 percent in East Asia and Pacific, 59 percent in Europe and Central Asia, and 58 percent in Sub-Saharan Africa. Again, the only exception is Latin America and the Caribbean, where the share of green-field projects in total OFDI is 33 percent.

15. This information is conveyed in the last column of figure 4.7, which shows the deviation in percentage points of the greenfield share of developing country OFDI relative to developed economies.

16. Eurostat (2017) identifies those industries with high or medium-high technology intensity.


18. Countries can also play a significant role in giving their firms incentives to undertake OFDI, through what has alternatively been called “home country measures” or “home determinants.” For a comprehensive discussion of the measures that economies can enact in support of their firms undertaking OFDI, see Sauvant and others (2014). These measures can take the form of information, support services, financial measures, and fiscal measures. The relationship between home determinants and home effects is a rich and unexplored area that merits future investigation.

19. While economies of scale arise from lower average costs attributable to an increase in the size of the operation, economies of scope arise from lower average costs owing to production of similar goods or services.

20. Innovation is generally examined through R&D measures (expenditures, employment) and patent measures (registration, citation).

21. Dunning’s classic typology for FDI motivations includes strategic asset-seeking FDI (Dunning 2000); more recently, scholars have used the term knowledge-seeking FDI (Meyer 2015). The former type is broader than the latter: all knowledge-seeking FDI is strategic asset-seeking, but not all strategic asset-seeking is knowledge-seeking. For example, acquiring a brand for brand-name recognition is strategic asset-seeking but not knowledge-seeking. Knowledge-seeking OFDI aims to augment firm-specific advantage owned by the firm to improve its competitiveness by acquiring new knowledge (Chen, Li, and Shapiro 2012). This chapter is mostly concerned with knowledge-seeking OFDI and not other forms of strategic asset-seeking as this type of investment is more likely to generate home effects. In this chapter, the term “knowledge” is used to subsume different forms of knowledge, including technology and management know-how.

22. Chen, Li, and Shapiro (2012) investigate the explanatory power of three host economy knowledge-related independent variables (R&D employment, R&D expenditures, and patents) for variation in home technological ability (proxied by home economy firm-level R&D expenditure).


24. For the chemical and pharmaceutical sectors, see Criscuolo (2009). For the auto industry, see Mani (2013).

25. Looking at the Indian automotive industry, Pradhan and Singh (2008) examine OFDI from 1988 to 2008 and find a positive effect on home in-house R&D intensity for investments in both developed and developing host economies, although it is stronger for OFDI in developed economies.


27. The coefficients of OFDI are positive and statistically significant at the 5 percent level for all countries, indicating that the OFDI and exports are complementary (Ahmad, Draz, and Yang 2016).


29. For a discussion of the implications of different levels of absorptive capacity, see Tang and Altshuler (2015).

30. Other studies have suggested that the export intensity of a firm, its size, governance structures, and R&D spending all may affect absorptive capacity. First, firms that are exporters have more knowledge of, and experience with, foreign markets, which may make them more capable of understanding
and absorbing foreign technologies (Tang and Altshuler 2015). Second, small firms may enjoy more spillovers as they are less bureaucratic, making it easier to adjust to new technologies (Sinani and Meyer 2004); nonetheless, small firms may not be able to compete as effectively with foreign firms (Aitken and Harrison 1999). Third, large, family-owned conglomerates have emerged in many developing countries to address market failures linked to weak property rights, contract enforcement, and widespread corruption. Yet studies have found such relation-based governance to be associated with lower levels of innovation—as innovation makes the sunk costs invested in relationships less valuable—suggesting lower levels of absorptive capacity (Li, Park, and Li 2003). Fourth, R&D spending may improve recipients’ absorptive capacity, while also helping transform pure knowledge into inputs for productive innovation (Chen, Li, and Shapiro 2012).

31. The International Monetary Fund defines low-income developing countries as those with a level of per capita gross national income less than the Poverty Reduction and Growth Trust (PRGT) income graduation level for non-small states (IMF 2014).

32. Looking at the share of countries at different income levels that maintain some form of OFDI restrictions does not, however, capture the relative intensity of restrictions. On the basis of individual country examples, OFDI restrictions seem to be getting less restrictive over time even if some form of OFDI restriction today remains in place in many countries. Future work will explore the relative intensity of OFDI restrictions across countries at different levels of development, and across time.


34. The Government of India specifies that real estate is the “buying and selling of real estate or trading in Transferable Development Rights (TDRs) but does not include development of townships, construction of residential/commercial premises, roads or bridges” See Question 4 “Can overseas direct investment be made in any activity? What are the prohibited activities for overseas direct investment?” in Frequently Asked Questions, Overseas Direct Investments, Reserve Bank of India (updated April 12, 2017), available at https://www.rbi.org.in/Scripts/FAQView.aspx?id=32.

35. See Question 12 “Are overseas investments freely allowed in all the countries and are there any restrictions regarding the currency of investment?” in Frequently Asked Questions, Overseas Direct Investments, Reserve Bank of India (updated April 12, 2017), op cit.

36. See full list of 61 Frequently Asked Questions, Overseas Direct Investments, Reserve Bank of India (updated April 12, 2017), op cit.


38. For discussion of how developing economies in Asia have successfully reformed their OFDI regulatory frameworks, see Rasiah, Gammeltoft, and Jiang (2010).

39. Gómez-Mera and others (2015) devise a cross-sectional econometric specification with two steps: a logit model to determine the probability of investment, and a zero-truncated negative binomial model to determine the drivers of the positive count of investments. With our dependent variable being the flow of FDI between two countries at a given year, our analysis adopts a Poisson Pseudo-Maximum Likelihood Estimator (PPML). Under weak assumptions, Santos Silva and Tenreyro (2006) find that the PPML provides consistent estimates, circumventing the problem of heteroscedasticity in standard nonlinear gravity specifications. Thus, the PPML estimator is also consistent in the presence of fixed effects. It is also better suited to include zero observations, eliminating the possibility of sample selection bias.

40. The gravity equation under PPML does not specify bilateral country-pair fixed effects controlling for unobserved time-invariant heterogeneity, due to problems of collinearity with explanatory variables. Instead, the specification includes single source fixed effects.
41. The CEPII dataset includes alternative variables to test for shared colonial history and language. Specifically, a dummy variable for source and host having the same colonizer after 1945 (comcol) and a dummy that takes the value of 1 if a language is spoken by at least 9 percent of the population in both countries (comlang-ethno). The use of these alternatives did not change any of the results, except for comcol, which is insignificant as a proxy for shared colonial history.

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