

India as a Source of Outward Foreign Direct Investment

RABIN HATTARI & RAMKISHEN S. RAJAN

ABSTRACT *While India is an increasingly attractive destination for foreign capital, the country is also becoming a significant source of outflows. Many Indian enterprises view outward foreign direct investment (OFDI) as an important dimension of their corporate strategies. This paper presents some data on the magnitude and composition of Indian OFDI. It also discusses the rationale for and empirical determinants of overseas acquisitions by Indian companies. The empirical findings suggest that OFDI from India is not entirely different from that of other countries in that they are motivated by many common factors. There is evidence, however, that Indian OFDI is more market- and resource-seeking than OFDI from most other countries. The paper concludes with a broader discussion of the impact of the global rise of Indian companies on the Indian economy.*

1. Introduction

Although foreign direct investment (FDI) inflows into India remain below potential, they have increased markedly over the years. Despite this spurt of FDI into India, it does not seem to have been an especially large source of net external financing and reserve accumulation in India compared with portfolio or debt flows, at least until fiscal year 2005–06. Indeed, India's FDI inflows, as seen in the balance of payments account, have remained rather modest (Table 1). The reason for this apparent paradox is that the balance of payments data are in net figures, i.e. inflows minus outflows. While India continues to maintain controls on most types of capital outflow for prudential reasons (Sy, 2007; Mohan, 2008; Prasad, 2008), it has been progressively liberalizing overseas investments by Indian companies. Accordingly, while *net* FDI inflows have risen steadily in India since the initiation of reforms in 1991, *gross* outflows since 2000 have largely kept pace with gross FDI inflows (Table 2 and Figure 1). In other words, while India is an increasingly attractive destination for FDI, the country is also becoming a significant source of outflows as many Indian enterprises view outward investments as an important dimension of their corporate strategies.

The phenomenon of FDI flows from developing economies, particularly those arising from multinational corporations (MNCs) from India and China, has generated significant

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Table 1. India's balance of payments, 1997–2009

	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09 ^a
<i>Gross international reserves</i>	29.7	33.2	38.7	42.9	54.7	76.1	113	141.5	151.6	199.2	309.7	312.1
(in percent of GDP)	7.2	8	8.6	9.3	11.4	15	18.8	20.3	18.8	21.6	27.2	
<i>Change in international reserves</i>	2.9	3.5	5.5	4.2	11.8	21.4	36.9	28.5	10.1	47.6	110.5	2.4
<i>A. Current account balance</i>	-5.5	-4	-4.7	-2.7	3.4	6.3	14.1	-2.5	-9.9	-9.8	-17.4	-10.7
(in percent of GDP)	-1.3	-1	-1	-0.6	0.7	1.2	2.3	-0.4	-1.2	-1.1	-1.5	
<i>Merchandise trade balance</i>	-15.5	-13.2	-17.8	-12.5	-11.6	-10.7	-13.7	-33.7	-51.9	-63.2	-90.1	-31.6
(in percent of GDP)	-3.8	-3.2	-4	-2.7	-2.4	-2.1	-2.3	-4.8	-6.4	-6.8	-7.9	
<i>B. Capital account balance</i>	9.8	8.4	10.4	8.8	8.6	10.8	16.7	28	25.5	45.8	108	13.2
FDI, net	3.5	2.4	2.1	3.3	4.7	3.2	2.4	3.7	3	8.5	15.5	10.1
portfolio flows, net	1.8	-0.1	3	2.6	2	0.9	11.4	9.3	12.5	7.1	29.3	-4.2
<i>C. Errors and omissions, net</i>	0.2	-0.2	0.7	-0.3	-0.2	-0.2	0.6	0.6	-0.5	0.6	1.5	-0.3
<i>D. Valuation change</i>	-1.6	-0.7	-0.9	-1.7	0	4.5	5.5	2.4	-5	11	18.4	0.2
Non-FDI capital account balance (including errors and omissions)	6.5	5.9	9	5.3	3.6	7.4	14.9	24.9	22	37.9	94	2.8

^a Estimates.

Source: Prasad (2008), based on data from RBI.

Table 2. Capital inflows to and inflows from India, 1995–2008

	Inflows					
	Gross inflows		Components (as percent of gross inflows)			
	USD billions	Percent of GDP	FDI	Portfolio	Loans	Other
1995–96	7.8	2.1	27.6	34.3	28.4	9.6
1996–97	13.6	3.5	20.9	24.4	35.3	19.4
1997–98	14	3.3	25.4	13.1	34.3	27.2
1998–99	10.8	2.5	23	–0.6	41	36.7
1999–2000	10.8	2.4	20	28	14.8	37.2
2000–01	14.9	3.2	27	18.5	35.3	19.2
2001–02	9.2	1.9	66.7	22	–13.7	25
2002–03	4	0.8	125.7	24.4	–96.1	46
2003–04	16.3	2.8	26.4	69.5	–26.7	30.8
2004–05	35.4	5.1	16.9	26.3	30.9	25.9
2005–06	35.2	4.3	25.3	35.4	22.4	16.9
2006–07	61.3	6.7	35.9	11.4	40.1	12.6
2007–08	98.1	8.6	18.3	33.5	28.9	19.3
	Outflows					
	Gross outflows		Components (as percent of gross outflows)			
	USD billions	Percent of GDP	FDI	Portfolio	Loans	Other
1995–96	3.5	0.9	5.4		0.2	94.4
1996–97	3.1	0.8	6.1		0	93.9
1997–98	2.5	0.6	1.5		0.4	98
1998–99	2.9	0.7	3.4		0.5	96
1999–2000	2.9	0.6	2.5		–0.3	97.8
2000–01	3.5	0.8	21.6	4.8	0.6	72.9
2001–02	3.1	0.6	45.4	2.3	2.7	49.6
2002–03	3.1	0.6	57.9	1.1	0.7	40.2
2003–04	4.3	0.7	44.9	0	2.3	52.7
2004–05	6.8	1	33.5	0.4	4.9	61.2
2005–06	10.9	1.3	53.9	0	2.9	43.2
2006–07	17.5	1.9	77	–0.3	1.8	21.5
2007–08	26	2.3	64.6	–0.6	0.1	35.9

Note: Prior to 2000–01, outward FDI and portfolio flows were not reported separately.

Source: Prasad (2008), based on data from RBI.

interest in policy-making circles, academia and the popular press in recent times. Of the top 100 MNCs from developing economies that have the potential to become global players, 65 are from Mainland China and India (Boston Consulting Group (BCG), 2006).¹ Given this, and a similar trend among major Indian players, it is clear that outward investments by these Asian giants are set to rise further. Whereas China's internationalization thrust has hitherto been more top-down, India's approach has been more decentralized and calibrated, a reflection of the differing political systems in, and the overall development strategies of, the two countries. Many Indian companies have been involved in outward ventures for far longer than their Chinese counterparts and have, over time, developed the requisite knowledge and acumen to deal with the complex issues relating to the management of cross-border alliances. While India's trade and FDI barriers

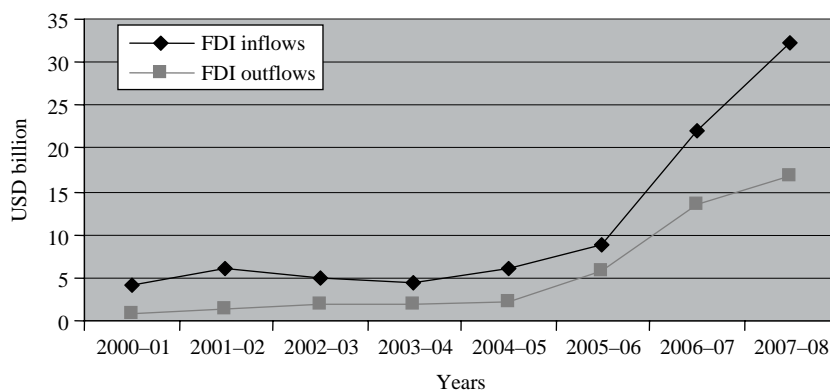


Figure 1. India's FDI inflows and outflows, 2001–08 (billions of US dollars). *Source:* Based on Reserve Bank of India Monthly Bulletin (10 July 2009).

have been gradually dismantled since 1991, the policies governing outward foreign direct investment (OFDI) from India have undergone significant liberalization.

This paper provides evidence on the quantities and underlying motivation of India's OFDI. It is organized as follows: Section 2 outlines some important FDI data definitions and caveats that are often overlooked; Section 3 highlights broad trends in OFDI from India; Section 4 discusses some rationales for OFDI from India in recent times; Section 5 complements the discussion by estimating a gravity model using annual bilateral data of OFDI for the period 2000–05; and Section 6 concludes the paper with a discussion of the impact of the global rise of Indian MNCs on the Indian economy more broadly.

2. Definitions and Data Caveats on FDI

One is often confronted with a host of problems when analyzing FDI data, especially in the case of developing economies. According to the International Monetary Fund's (IMF's) *Balance of Payments Manual* (5th edition, 1993):

FDI refers to an investment made to acquire lasting interest in enterprises operating outside of the economy of the investor. Further, in cases of FDI, the investor's purpose is to gain an effective voice in the management of the enterprise. The foreign entity or group of associated entities that makes the investment is termed the 'direct investor'. The unincorporated or incorporated enterprise—a branch or subsidiary, respectively, in which direct investment is made—is referred to as a 'direct investment enterprise'.²

This is the definition adopted by the IMF and the United Nations Conference on Trade and Development (UNCTAD). At an operational level, FDI commonly has three broad characteristics. First, it refers to a source of external financing rather than net physical investment or real activity *per se*.³ A priori it is unclear whether FDI flows overestimate or underestimate changes in actual real economic activity as this requires consideration of the impact of FDI on existing domestic investment, the extent of technology transfer,

employment creation, and the like. Second, as a matter of convention, FDI involves a 10% threshold value of ownership—so an acquisition of 9.9% is considered portfolio flows whereas anything over that is considered FDI.⁴ Third, FDI consists of both the initial transaction that creates (or liquidates) investments and subsequent transactions between the direct investor and the direct investment enterprises aimed at maintaining, expanding or reducing investments. More specifically, FDI is defined as consisting of three broad aspects: new foreign equity flows (which are the foreign investor's purchases of shares in an enterprise in a foreign country); intra-company debt transactions (which refer to short-term or long-term borrowing and lending of funds, including debt securities and trade credits, between the parent company and its affiliates); and reinvested earnings (which comprise the investor's share of earnings not distributed as dividends by affiliates or remitted to the home country, but rather reinvested in the host country). Table 3 offers an indication of the various components of OFDI from India. New equity flows could be either in the form of mergers and acquisitions (M&A) of existing local enterprises or in the form of green-field investments (i.e. the establishment of new production facilities).

Although countries are increasingly following the above definition of FDI, there remain many data concerns. In the case of India, the data on bilateral FDI outflows are rather sketchy (Gopalan & Rajan, 2009). The Ministry of Finance reports the value of aggregate FDI outflows from India and the value of approvals of FDI outflows at a bilateral level.⁵ However, a consistent time series of the actual value of outflows with a country-wise breakdown does not seem to be available in the public domain.⁶ Although data on actual FDI inflows are reported by the Department of Industrial Policy and Promotion (DIPP) at a disaggregated country level,⁷ there are serious concerns about the usefulness of the bilateral FDI inflows data that are available in the public domain.

An increasing share of FDI is in the form of M&A, and much of these data—which are compiled by commercial sources—do not necessarily adhere to the UNCTAD-IMF definition. More to the point, cross-border M&A data as computed by Bloomberg, Capital IQ, Dealogic, Thomson Financial and others do not follow the 10% equity threshold and in fact may not even be foreign capital in a balance of payments sense as they do not take into account the flow of funds (i.e. funds may be primarily sources from the host country). In addition, when looking at M&A between two countries, the source of funds may largely be from a third country, implying a lack of correspondence between FDI flows and M&A transactions. Low *et al.* (1996, pp. 2–3) pointed out that there are two possible ways to account for OFDI: the first is by the “country of capital source” and the second is “by country of ownership”. The latter takes into consideration investments that are

Table 3. India's outward FDI: actual outflows (millions of US dollars), 2003–08

Periods (April–March)	Equity	Loans	Total
2003–04	1234.25	260.93	1495.18
2004–05	1365.59	402.79	1768.38
2005–06	3858.46	1008.10	4869.56 ^a
2006–07	11599.01	1281.07	12880.08
2007–08 ^b	14200	3200	17400

^a Includes guarantee invoked.

^b Estimates.

Source: Data from RBI.

funneled through offshore centers as “it makes little sense to attribute such investments to the tax havens themselves” (Low *et al.*, 1996, p. 3).

For instance, the British Virgin Islands (BVI) has consistently been the second largest source of FDI into Mainland China, surpassed only by Hong Kong, with the Cayman Islands and Western Samoa also being among the top 10 in 2006.⁸ Similarly, the data on FDI inflows into India almost always reveal Mauritius as the largest source of foreign investment flows into the country; but Mauritius is widely regarded as an offshore financial center (OFC) that is used by most foreign investors as an intermediary to reach India, predominantly to capitalize on the tax rebates that the country offers so as to minimize their overall tax burden. Conversely, as Indian companies have become more globalized, many have chosen either to use their overseas locally incorporated subsidiaries to invest outside their home countries, or to establish holding companies and/or special purpose vehicles in OFCs, or other regional financial centers, such as Singapore or the Netherlands, to raise funds and invest in third countries. Apart from this so-called transshipping, a portion of these inflows, from Mauritius in particular and also other OFCs, could also be round-tripping back to India to escape capital gains or other taxes, or for other reasons, not unlike the investments dynamics between China and Hong Kong, although on a much smaller scale.⁹

Thus, the bilateral FDI data—which only capture the actual flow of funds rather than ultimate ownership—may offer a rather distorted picture of the extent of the linkages between India and the rest of the world. Consequently, the usefulness of such data for research and policy analysis needs to be questioned. Any inference from this sort of data tends to offer a misleading picture of reality. In order to understand the real linkages between India and the rest of the world, one would need to examine the data on the actual ownership of the foreign investment flows. Although data on individual firms that have invested in India may be available via firm-level surveys, for a more complete picture of FDI inflows into the entire economy one would need to examine an aggregation of all such firms investing in India from different parts of the world.¹⁰

Keeping the preceding caveats in mind, in what follows we make use of a combination of sources and definitions in order to gain a complete picture of FDI inflows to and outflows from India. However, we mainly use the balance of payments data in the empirical parts of the paper (Section 5) because they are more reliable and easily available in a timely manner, though we supplement them with other data where necessary.¹¹ Overall, in order to get a more complete understanding of outward investments by Indian corporations we use multiple data sources, including the UNCTAD, the Economist Intelligence Unit (EIU), official Indian government data (from the Ministry of Commerce and/or the Reserve Bank of India (RBI)), and survey data. In addition, as a few private companies have been tracking M&A transactions globally (including Bloomberg and Thomson Financial), we draw on these data as well as on other secondary sources.¹²

3. What do the Data Tell Us about Indian OFDI?

Although Indian corporations have been investing overseas for decades, there has been a marked jump in such investments since the 1990s. As noted earlier, India’s outward push can be divided into the pre-1990 period and the post-liberalization period. Pradhan (2008, p. 15) rationalizes the initial OFDI push by Indian firms as follows:

In pre-1990s period, there are mainly two push factors that led to Indian firms' entry into foreign markets. They are stagnant domestic market and policy restrictions on large firms' growth. Large private owned Indian firms that were desperate to grow found themselves in [a] disadvantageous situation created by Indian policy regime[s] like [the] Monopolies and Restrictive Trade Practices (MRTP) Act, Foreign Exchange Regulation Act (FERA), licensing regulation and reservation policies for public-owned and small scale sector. Slow growing domestic market further added to the drive of these Indian firms to seek new markets in developing and developed countries.

Since the 1990s and particularly post-2000, however, India has been undergoing a second wave of OFDI. Whereas the bulk of India's OFDI in the first wave was concentrated in developing countries in Africa and Asia, contemporary OFDI flows from Indian firms have been directed more towards developed countries (Pradhan, 2005, 2007). As Table 4a makes apparent, between 2001 and 2005, the USA, Russia, Sudan, Australia, the UK and Singapore stand out as the favored destinations for Indian companies. The most recent data, for April–December 2008, show a broadly similar concentration of Indian OFDI in the USA and UK (about one-quarter of all Indian OFDI). Interestingly, a little over half of OFDI from India has been channeled to small countries such as Singapore, the Netherlands and Mauritius in particular (as well as the British Virgin Islands, which is not shown in Table 4b). As discussed above, the bulk of these investments are ultimately destined for

Table 4a. Direction of India's outward FDI (percent share): countries receiving at least 5%, 1996–2005

Country	1996–2001	2001–05
Australia	0.1	6.7
British Virgin Islands	10.3	2.3
Hong Kong	5.9	1.9
Mauritius	8.2	7.7
Russia	23.2	16.2
Singapore	2.0	5.0
Sudan	0.0	15.2
UK	5.4	5.5
USA	20.4	11.7

Source: Banga (2007) based on data from RBI.

Table 4b. Direction of India's outward FDI (percent share): countries receiving at least 5%, April–December 2008

Country	April–December 2008
Mauritius	10.4
Netherlands	20.6
Singapore	18.9
UK	14.5
USA	13.2

Source: Data from RBI.

third countries. In addition, firms sometimes use their overseas subsidiaries to finance new purchases. For instance, Tata Steel financed the Corus acquisition partly via a debt arranged by a consortium of banks at Tata Steel UK as well as in the form of bridging finance by its subsidiary Tata Steel Asia Singapore. To this end we need to examine other data. In fact, the focus of the second wave of Indian OFDI appears to have shifted to overseas acquisitions globally as a mode of foreign market entry and inorganic growth for Indian companies as opposed to green-field investments. As noted, M&A data are usually based on ownership as opposed to flow of funds.

Cross-border M&A sales and purchases involving developing Asia grew almost eightfold from around US\$7 billion in 1990 to US\$54 billion in 2006 (Table 5). As is evident, apart from China and Hong Kong, which dominate deals in Asia (some of which are round-trips) as well as Singapore (which is a regional financial centre), India, Taiwan and Korea are major acquirers of overseas investments. The data also reveal a jump in India's purchases from 2006 onwards.¹³ Figure 2 provides a geographical distribution of the value of Indian M&A overseas during the period 2000–2007. As can be seen, Indian acquisitions have been divided across Europe (particularly UK), and North America (Canada and US).¹⁴ Although the data between FDI and M&A are not directly comparable for the reasons discussed previously, it is instructive to note that a much greater share of Indian M&A activity is targeted at Europe and North America (largely the USA), suggesting that some of the flows to the business and financial centers from India are ultimately destined there (also see Gopalan & Rajan, 2009).

Although India may be best known in the USA and elsewhere for its software companies and the “new economy”, the second wave of OFDI has actually been quite broad-based and has included a number of manufacturing firms (Accenture, 2006). The manufacturing sector in India has had to face many obstacles over the years. Much has already been written about how bad the infrastructure in India is, as well as the prevalent bureaucratic red tape and corruption (see Rajan, 2009, chapter 6). However, these obstacles notwithstanding, once the process of relaxation of controls began in 1991, growth in Indian industry accelerated, and this has continued. The years of surviving under heavy bureaucratic controls and severely restrictive business conditions (the so-called “license Raj”) have made many Indian businesses especially versatile, and the introduction of foreign competition in India since the early 1990s has only helped to enhance the robustness of Indian industry. After a period of consolidation and the strengthening of balance sheets, the Indian manufacturing sector has been growing at a very healthy rate in the last half decade (see Rajan, 2009, chapter 6). This has given rise to a new confidence among Indian corporations, and, with rapid growth and ample cash, many of them have been making overseas acquisitions quite aggressively, especially since 2004. The spurt in India's overseas acquisitions has propelled many Indian companies into the list of Fortune 500 companies on the basis of their global revenues (Table 6). Four of these companies are in the oil and gas industry, two in manufacturing and one in financial services.

4. Motives Behind India's OFDI: Qualitative Discussion

As noted, while Indian companies were investing overseas even before 1991, when India remained relatively closed, over 80% of Indian OFDI during that period was concentrated in other developing countries and was green-field in nature (Pradhan, 2008). Since 1991, however, as India's trade and FDI barriers have been gradually dismantled, the policies

Table 5. M&A deals of selected Asian countries (billions of US dollars), 1990–2006

Country	1990–1997	1998–2006	2000	2001	2002	2003	2004	2005	2006
<i>Sales</i>									
World	154.9	631.1	1,143.8	594.0	369.8	297.0	380.6	716.3	880.5
<i>East Asia</i>	4.1	16.9	14.1	18.8	10.0	14.1	16.7	25.8	28.3
China	0.7	3.9	2.2	2.3	2.1	3.8	6.8	8.3	6.7
Hong Kong, China	3.0	6.1	4.8	10.4	1.9	6.1	3.9	9.5	12.8
Korea, Republic of	0.3	5.4	6.4	3.6	5.4	3.8	5.6	6.5	2.8
Taiwan Province of China	0.1	1.4	0.6	2.5	0.5	0.4	0.4	0.8	5.7
<i>South Asia</i>	0.5	2.9	1.2	1.1	1.9	1.5	2.2	4.6	10.1
India	0.3	2.1	1.2	1.0	1.7	0.9	1.8	4.2	6.7
<i>South-East Asia</i>	2.4	8.9	5.7	13.1	4.9	4.6	5.2	14.8	15.4
Indonesia	0.3	2.2	0.8	3.5	2.8	2.0	1.3	6.8	0.6
Malaysia	0.3	1.1	0.4	1.4	0.5	0.1	0.6	1.5	2.8
Philippines	0.9	0.9	0.4	2.1	0.5	0.2	0.7	0.3	0.2
Singapore	0.6	2.9	1.5	4.9	0.6	1.8	1.2	5.8	7.3
Thailand	0.2	1.7	2.6	1.0	0.2	0.1	1.2	0.3	4.3
<i>Purchases</i>									
World	154.9	631.1	1143.8	594.0	369.8	297.0	380.6	716.3	880.5
<i>East Asia</i>	4.4	9.0	9.1	3.8	6.3	6.7	5.2	16.8	24.2
China	0.4	2.9	0.5	0.5	1.0	1.6	1.1	5.3	14.9
Hong Kong, China	3.0	4.9	5.8	3.0	5.1	4.2	3.0	10.5	7.8
Korea, Republic of	0.8	0.6	1.7	0.2	0.1	0.7	0.4	0.5	0.9
Taiwan Province of China	0.3	0.5	1.1	0.2	0.1	0.3	0.7	0.6	0.5
<i>South Asia</i>	0.2	1.5	0.9	2.2	0.3	1.4	0.9	2.6	4.7
India	0.2	1.5	0.9	2.2	0.3	1.4	0.9	2.6	4.7
<i>South-East Asia</i>	3.2	11.0	11.1	18.8	4.2	8.9	13.2	15.9	18.1
Indonesia	0.2	1.0	1.4	0.0	0.2	0.0	0.5	5.9	0.3
Malaysia	1.7	1.6	0.8	1.4	0.9	3.7	0.8	1.7	3.0
Philippines	0.1	0.3	0.1	0.3	0.0	0.0	0.1	2.0	0.2
Singapore	1.1	7.8	8.8	16.5	2.9	5.0	11.6	6.1	14.2
Thailand	0.1	0.2	0.0	0.7	0.1	0.2	0.2	0.2	0.2

Source: Data from UNCTAD.

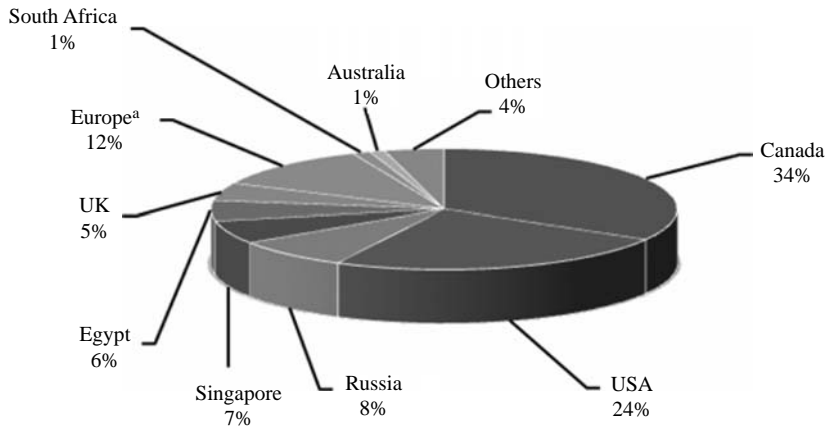


Figure 2. Share of total outbound acquisitions by India (%) 2000-07 (top ten destination countries). *Note:* Based on data with over 10% equity to be consistent with definition of FDI.^aEurope: aggregation of shares of all of Europe except Netherlands, United Kingdom and Russia. *Source:* Authors' compilations from Zephyr database.

governing OFDI from India have undergone significant liberalization. As noted by Kumar (2008, pp. 142–143):

The Guidelines for Indian Joint Ventures and Wholly Owned Subsidiaries Abroad, as amended in October 1992, May 1999 and July 2002, provided for automatic approval of OFDI proposals up to a certain limit. This limit was expanded progressively from US\$ 2 million in 1992 to US\$ 100 million in July 2002. In January 2004 the limit was removed altogether and Indian enterprises are now permitted to invest abroad up to 100 percent of their net worth on an automatic basis.

In the last few years, the RBI has adopted a number of overseas investment norms for FDI, including raising the overseas investment limit from 300% of the net worth to 400% of the Indian company under the Automatic Route. Indian companies have been allowed to invest in energy and natural resources sectors (oil, gas, coal and mineral ores) in excess of the current limits with the prior approval of the RBI. In addition, listed Indian companies have been permitted to undertake portfolio investment abroad of up to 50% of the net worth. In February 2009 the government liberalized FDI norms further by allowing an

Table 6. Indian MNCs in the Fortune 500 List, 2008

Rank	Company	Global 500 Rank	Revenues (US\$ millions)	City
1	Indian Oil	116	57 427	New Delhi
2	Reliance Industries	206	35 915	Mumbai
3	Bharat Petroleum	287	27 873	Mumbai
4	Hindustan Petroleum	290	27 718	Mumbai
5	Tata Steel	315	25 707	Mumbai
6	Oil & Natural Gas (ONGC)	335	24 032	Dehradun
7	State Bank of India (SBI)	380	22 402	Mumbai

Source: Data from *Fortune Magazine*.

Indian majority-owned and controlled holding company (i.e. over 51% in Indian hands) to invest in a “downstream” subsidiary without the foreign share (of 49% or less) counting against the new company’s FDI limit.

What, then, have the strategic drivers behind the internationalization thrust of Indian corporations been in recent times? The motivations for overseas acquisitions are, in fact, multidimensional in nature. They include:

- (1) *Resource-seeking*: This refers to a desire to ensure that a stable and secure supply of resources is available to fuel the country’s energy-intensive growth. This has been the primary motivation behind overseas acquisitions of oil-related equity abroad by the Oil and Natural Gas Corporation (ONGC) and the Gas Authority of India Ltd (GAIL), the overseas acquisitions by India’s Suzlon Energy Ltd, the world’s fifth largest wind turbine manufacturer, and Hindalco’s acquisition of copper mines in Australia and the Atlanta-based Novelis, making it the world’s largest aluminum rolling company.¹⁵
- (2) *Technology and R&D-seeking*: This refers to an aspiration by Indian companies to buy technology, processes, management know-how and marketing and distribution networks. This is particularly important for Indian pharmaceutical companies that are looking to expand their R&D base.¹⁶
- (3) *Brand name and expanding product mixes*: Realizing that the margins to be made are in branding, Indian companies are attempting to acquire firms that have established and prestigious brands, e.g. Tata Motors’ purchase of Jaguar and Ford.
- (4) *Market-seeking*: Indian companies are attempting to consolidate existing markets and/or to seek out new ones. Such market-seeking investments will grow in importance as Indian companies are beginning to face intense foreign competition at home and are looking to expand overseas market shares. This is partly the motivation behind the State Bank of India’s (SBI’s) forays into Mauritius, Indonesia and Kenya as the Indian banking sector is steadily being deregulated in response to both domestic and international competition. In addition, the desire to gain access to large developed-economy markets is likely to result in increasing investment activity by Indian firms to finance further and larger acquisitions abroad. This is particularly important for the non-tradables sectors such as hospitality industries (e.g. Taja group hotels) and education (e.g. National Institute for Information Technology (NIIT)). Many software companies have been establishing facilities in developing countries such as the USA (“reverse outsourcing”) in order to acquire domain knowledge of clients and seek out new business opportunities. Similarly, India’s pharmaceutical companies have been attempting to seek new unregulated markets for their generic drugs, while also looking to acquire facilities that already have regulatory clearance in regulated markets such as the USA and Western Europe.
- (5) *Risk diversification-seeking*: Many Indian software companies such as Infosys and Wipro are setting up “disaster recovery” centers overseas (in China and the Philippines, for instance) in case of systems failures. Generally speaking, it is obvious that many Indian firms are attempting to globalize their businesses and sources of revenues as a means of reducing dependence on the Indian market and the domestic business cycle alone.

- (6) *Efficiency-seeking*: As trade barriers decline, firms are undertaking industrial restructuring by creating regional production networks. Indian IT companies such as Tata Consultancy Services (TCS) and Infosys are establishing major global sourcing bases in China. Similarly, Tata Motors' acquisition of Daewoo Heavy Vehicles of Korea in 2005 has led to a regional production networking strategy whereby small and medium-sized vehicles are manufactured in Indian plants and sold through Daewoo outlets and brands, while, simultaneously, heavy trucks built at the Daewoo plant are sold by Tata outlets in India and other countries under the Tata brand name (Kumar, 2006).

5. Empirical Determinants of OFDI from India

Having outlined the broad rationale for and trends in India's outward investments, this section attempts to explore the determinants of such outflows empirically by estimating a gravity model. The aim here is to develop a relatively parsimonious model that includes commonly used determinants as well as to focus on specific bilateral variables noted in Section 4. We start our analysis by estimating a global baseline on the pull and push factors of a country's outward investment in general. Next, we try investigate whether India's outward investment does in fact follow that of our global baseline.

As we focus on country-pairs, we follow a gravity type framework, which argues that market size and distance are important determinants in the source country's choice of location for direct investment. The model has been used in a host of papers with some variations (see Hattari & Rajan, 2008a, b, and references cited within). We augmented the basic gravity model with a selection of explanatory variables based on the discussion in Section 4.

5.1 The Model and Data

The basic specification of our estimated model is:

$$\ln(FDI_{ijt}) = \beta_0 + \beta_1 \ln(GDP_{it}) + \beta_2 \ln(GDP_{jt}) + \beta_3 LANG_{ijt} + \beta_4 COLONY_{ijt} + \beta_5 \ln(DIST_{ij}) + \beta_6 X_{ijt} + \mu_j + \lambda_t + v_{ijt}, \quad (1)$$

where: FDI_{ijt} are the real bilateral FDI flows from source country (i) to host country (j) in time (t); GDP_{it} and GDP_{jt} are real GDPs in US dollars for the source country (i) and the host country (j) in time (t); $LANG_{ij}$ is a binary variable equal to unity if the two economies share a common official language; $COLONY_{ij}$ is a binary variable equal to unity if the two economies have a past colonial relationship; $DIST_{ij}$ is the geographical distance between the host and source countries; X_{ijt} is a vector of explanatory variables influencing FDI outflows; μ_j denotes the unobservable type of source country effects; λ_t denotes unobservable time effects (we use year dummies); and v_{ijt} is a nuisance term.

The basic set of explanatory variables used is: the bilateral real exchange rate of the source country with respect to the host country; gross secondary school enrollment in the host country; research and development (R&D) expenditure as a percentage of GDP in the host country; energy production in the host country; the ratio of market capitalization to GDP in the host country; the ratio of total trade to GDP in the host country; a binary variable equal to unity if the two economies have a free-trade agreement (FTA); the lag of

bilateral exports from source to host countries; and the level of capital account openness in the source country. We also interact the explanatory variables with an India dummy as the source country to examine whether the motives for India's FDI outflows differ from those of the rest of the world.

We expect the coefficients of the real GDP of the source and host countries both to be positive as they proxy for masses, which are important in gravity models. Indeed, while larger host countries often tend to attract more FDI because of market size, the sign of the source country size could be ambiguous a priori as richer and smaller economies often invest overseas aggressively to expand their economic size beyond their domestic markets. We also hypothesize that the change in the real exchange rate should have a negative sign as a real exchange rate depreciation of the host country (i.e. a fall in the index) should raise FDI flows from the source country (due to the wealth effects). The sign on stock market capitalization ratio to GDP in the host country is expected to be positive, signifying both higher levels of financial development and stronger/more attractive companies. The sign of the ratio of the R&D expenditure to GDP in the host country depends on the source country's competitive advantage, but one would expect this to be positive, i.e. technology and R&D-seeking investments. The sign for energy production in the host country should be positive, i.e. resource-seeking investments. The sign for trade openness should also be positive, as a country that has a high level of trade openness is more likely to accept and receive FDI, especially export-oriented FDI. The sign of gross secondary school enrollment is expected to be positive because OFDI from the source countries will usually flow to a host country that has a higher pool of educated workers. The sign of bilateral export is expected to be positive. The more open the host economy as proxied by the ratio of trade to GDP, the more source countries will directly invest in the country. In a similar vein, strong bilateral trade between the two countries can have a positive impact on FDI flows. A FTA between the two economies ought also to increase bilateral FDI flows. In our analysis we also examine the impact of the capital account openness of the source country, i.e. the greater the degree of openness, the greater the ability of corporations to invest overseas.

5.2 Data, Methodology and Results

Country coverage, data sources and definitions are summarized in Appendices 1–3. Our sample is based on a balanced panel of annual data on 57 source countries and 57 host countries between 2000 and 2005.¹⁷ Hence, we have over 3000 country-pairs. Our data set contains over 19 000 observations, but it also contains a large number of missing variables, approximately 58%, and a very small number of disinvestment figures—about 1500 observations (shown in the data as negative). A missing variable for bilateral FDI may indicate either “unreported FDI”, reflecting the fact that the two countries have chosen to report low FDI values as zero, or “no FDI”, indicating no FDI flows between the two. After a thorough observation of our data we feel that most of the missing variables in our data set happen because of “no FDI”. As for the negative disinvestment figures, we treated these as zero observations because they represent no investment in the host countries.

In all of our estimations we deal with the issue of censored data. The common approach to dealing with censored data is to run a Tobit model. We follow di Giovanni (2005) and Hattari & Rajan (2008a, b) by computing a Tobit model using the two-step procedure.

First, a probit model is estimated for whether a deal is observed or not conditional on the same right-hand variables as in equation (1), and the inverse Mills' ratio is constructed from the predicted values of the model. Second, a regression is run to estimate equation (1) including the inverse Mills ratio as a regressor.¹⁸

The results are shown in Table 7. Referring to Regression 1, we find that the distance variable is statistically and economically significant. A shared common official language and a past colonial relationship will increase FDI flows (elasticity of 0.70 and 0.61, respectively), whereas greater distance between the host and source country tends to lower FDI flows (elasticity of 0.50). Despite much discussion about the "death of distance" and the "world being flat", cross-border economic transactions remain hampered by physical distance, which may be proxying transaction costs, time zone differences and/or information gaps (Hattari & Rajan, 2008a, b, 2009a). Larger countries tend to invest more outside their countries, with the elasticity of size of the source country's GDP being 0.58. The sign for host country size is correct, i.e. positive, but not statistically significant. With regard to the explanatory variables, the result on bilateral real exchange rate is negative and significant, but this is not altogether surprising, as noted previously. Source countries tend to invest directly in host countries with higher R&D spending (as a share of GDP), those with natural resource abundance, and those with a better pool of educated workers. The importance of trade is also highlighted in our analysis. A source country will directly invest more in a host country if the host country has a higher degree of trade openness (as a share of GDP) and has had more intensive bilateral trade relations. However, a bilateral FTA is not statistically significant, its effects possibly taken into account in the *de facto* trade relations (i.e. bilateral exports).¹⁹ Countries are also more likely to invest directly in host countries where stock market capitalization is higher (or, more generally, a country that is more financially developed).

Next, we interacted the host country-specific variables with a dummy variable for India. The result is shown in Regression 2 (third column) of Table 7. As is apparent, the basic gravity model variables (i.e. size and distance) remain highly robust across this specification, suggesting that drivers of outward investments from Indian corporations are not that different from their counterparts elsewhere. Beyond this there are a few notable findings. There is evidence that Indian OFDI tends to be relatively more market-seeking and somewhat less R&D-seeking than OFDI from other countries in the sample, and, interestingly, Indian firms appear to be much more resource-seeking than their counterparts from other countries.²⁰

5.3 Robustness Check

We undertook a number of robustness checks starting with the baseline model noted above.²¹ First, in order to smooth out lumpiness in annual flows data we used 2-year averages and found that the results were not materially different. Second, we removed the FTA dummy and capital account openness index of the source country because they have no effect on India and re-ran the baseline regression. Third, we excluded the ratio of R&D expenditure to GDP because it did not have any economic significance for India and re-ran the baseline regression. Fourth, we re-ran our regression by treating zero observations in bilateral FDI data as $\ln(1 + FDI)$ (see Eichengreen & Irwin, 1995; Hattari & Rajan, 2008a). In this way, for large values of FDI, $\ln(1 + FDI) \approx \ln(FDI)$. In all cases the results remained largely unchanged.²²

Table 7. Gravity equation

Dependent variable: ln of bilateral real M&A deals		
Regression type	Two-stage Tobit	Two-stage Tobit
Source countries	All	All
ln(real GDP <i>i</i>)	0.580*** (0.041)	0.592*** (0.042)
ln(real GDP <i>j</i>)	0.040 (0.058)	0.045 (0.058)
Common official language	0.774*** (0.117)	0.798*** (0.117)
Colony	0.609*** (0.135)	0.580*** (0.135)
ln distance	-0.459*** (0.047)	-0.466*** (0.048)
ln (Real exchange rate of source w.r.t. host)	-0.525** (0.260)	-0.552** (0.261)
ln (Energy production in <i>j</i>)	0.225*** (0.037)	0.227*** (0.037)
ln (ratio of market capitalization of stock exchange to GDP in <i>j</i>)	0.318*** (0.067)	0.315*** (0.068)
Gross of secondary school enrollment in <i>j</i>	0.449** (0.222)	0.453** (0.223)
ln (ratio of Research and Development Expenditure to GDP in <i>j</i>)	0.231*** (0.065)	0.239*** (0.066)
Capital openness in <i>i</i>	0.624*** (0.034)	0.598*** (0.035)
Free-trade Agreement between <i>i</i> and <i>j</i>	0.010 (0.094)	-0.002 (0.094)
ln(lag of export from <i>i</i> to <i>j</i>)	0.452*** (0.045)	0.433*** (0.046)
India dummy		-13.319* (7.654)
ln(real GDP <i>j</i>) × India dummy		1.741* (0.933)
ln (Real exchange rate of source w.r.t. host) × India dummy		-2.837 (3.143)
ln (Energy production in <i>j</i>) × India dummy		0.262** (0.119)
ln (ratio of market capitalization of stock exchange to GDP in <i>j</i>) × India dummy		0.464 (0.435)
Gross of secondary school enrollment in <i>j</i> × India dummy		-0.424 (0.301)
ln (ratio of Research and Development Expenditure to GDP in <i>j</i>) × India dummy		-0.738 (1.193)

(Continues)

Table 7. *Continued*

Dependent variable: ln of bilateral real M&A deals		
Regression type	Two-stage Tobit	Two-stage Tobit
Source countries	All	All
ln(lag of export from <i>i</i> to <i>j</i>) × India dummy		0.015 (0.252)
Observations	3526	3526
Adjusted <i>R</i> -squared	0.590	0.590

Notes: Robust standard error in parentheses.

*Significant at 10%; **significant at 5%; ***significant at 1%.

Year dummies, developed/developing countries dummies, inverse Mills' ratio, and constant.

Source: Authors' calculation.

6. Summary and Implications of the Rise of India's MNCs

General discussion on OFDI by Indian MNCs suggests that such flows have been aimed at accessing large markets, buying brand names, acquiring technology, processes, management know-how and marketing and distribution networks and consolidating existing markets as well as seeking new ones. "Building scale" to enhance global competitiveness seems to have been the mantra followed by many Indian firms. Their outward push has been facilitated by policy reforms; the Indian government has taken a much more positive attitude towards this internationalized trend and liberalized foreign exchange policies, foreign ownership ceilings, access to international capital markets, and other rules and regulations, all with the aim of promoting outward investments. Our empirical findings suggest that OFDI from India is not entirely different from that of other countries in that it is motivated by broadly similar factors. There is evidence, however, that Indian OFDI is more market and resource-seeking than OFDI from most other countries in general.

While the first wave of Indian OFDI pre-liberalization was made by a handful of firms and concentrated largely in Asian and African developing countries, the second wave of Indian OFDI post-liberalization—especially since 2000—has been in developed countries, primarily in the form of M&As as opposed to green-field establishments with participation by many Indian firms. Although the ongoing global financial and economic crisis may slow the pace of India's overseas forays, Indian businesses that have steadily strengthened their balance sheets are relatively better placed than their counterparts from other countries as they are relatively more cash-rich and will be able to benefit from the sharp decline in asset prices worldwide.²³

Although the success rates of these cross-border deals remain to be seen, does this phenomenon of OFDI from India have broader implications for the rest of India? More research remains to be done on the post-merger success rates of Indian firms' overseas acquisitions. From a macroeconomic perspective, some have argued that OFDI from a developing economy such as India should not be actively promoted as it reduces the net external financing for domestic investment and thus for domestic GDP. This concern takes on added significance during a period of acute global risk aversion and sharp capital withdrawals from India as well as other emerging economies. However, such an analysis

misses the other economic benefits of outward acquisitions. An Indian company that invests overseas may help generate positive linkages with the rest of the economy by using Indian factors of production (management, construction, IT, etc.) while also bringing back to India new technologies, brand names, export markets, and so forth. All of this should have positive spillovers to India's GDP.²⁴ Similarly, more OFDI by Indian corporations could encourage greater levels of foreign investments into India too, as there is greater awareness and appreciation of India's potential and inherent strengths. In addition, in so far as Indian firms overseas repatriate part of their profits or dividends back to the home country, India's GNP (which is more relevant to national income) will rise, even if its GDP does not.²⁵ In the case of India, in April–December 2007, these factor incomes from OFDI were about US\$337 million, or roughly 0.4% of total capital inflows during that period (RBI, 2008).

At an even broader level, the Chinese have clearly used their outward investments in developing economies to enhance the country's foreign policy objectives (as outlined by Kurlantzick, 2008). They have been able to wield this "soft power" very effectively because the investments have generally been driven by state-owned enterprises (SOEs). Against this, with the exceptions of the energy sector, India's OFDI has been driven largely by private initiative, with little coordination with the government.²⁶ As noted by Pal (2008, p. 9) regarding Chinese and Indian OFDI to Africa:

Chinese policies are more coordinated and the state plays a much more proactive role in OFDI. In fact, in their quest for secure supplies of energy and raw materials, Chinese economic policies are complemented by parallel and sustained Chinese diplomatic efforts in the African countries. These, coupled with the fact that China has become quite generous in giving aid and ODA to Africa, indicate that China has managed to formulate a long-term and more comprehensive policy about OFDI in Africa. On the other hand, Indian initiatives to gain confidence of the African governments are largely driven by private companies themselves.

Indeed, in some sense, India's first wave of liberalization, which was aimed more at "assisting partners from the south" and enhancing South–South cooperation and the Non-Aligned Movement (NAM), was arguably aimed more obviously at using its soft power in the conventional sense. By contrast, FDI in the post-liberalization period is, as noted, targeted at buying existing firms in developed countries for various strategic and competitiveness considerations. However, India's OFDI has certainly boosted India's image abroad—as offering dynamic, highly educated, top-class managers, scientists and engineers. While the Indian press has been quick to cheer-lead India Inc.'s overseas forays, they certainly have not gone unnoticed by the world media. The following headlines offer just a few examples of this:

- "India's rise as a manufacturing giant" on the BBC on 13 February 2007.
- "India takes on the world" in *Time Magazine* on 20 November 2006.
- "Corporate India is finding confidence to go global" in the *Financial Times* on 4 October 2006.
- "India's mini multinationals make waves in Western markets" in the *International Herald Tribune* on 2 September 2005.
- "India Inc goes global" in the *Asia Times* on 25 November 2005.

In addition, India's OFDI by the Tatas and other conglomerates in the manufacturing sector has led to a growing awareness that the Indian growth story is much more broad-based and not just limited to services. High-profile acquisitions of iconic global brand names in developed countries (Corus Steel and Jaguar and Land Rover by Tata) have no doubt also helped to raise the global image of India Inc. as well as of India itself more broadly.²⁷ In addition, many Indian conglomerates are also undertaking—through their own initiatives—social/charitable programs in some developing countries in Africa to enhance their image further, with positive spillovers to India's image overseas as well. The creation of the public–private partnership called the India Brand Equity Foundation (www.ibef.org) is clearly aimed at fortifying India Inc.'s positive global image and, in the process, helping to project and enhance India's soft power as well.

Notes

- ¹ Twenty-one Indian companies and 44 Chinese companies are among the top 100 such multinationals.
- ² See <http://www.unctad.org/Templates/Page.asp?intItemID=3146&lang=1> (accessed 19 October 2010).
- ³ The impact of FDI on net capital flows is also uncertain, as greater FDI inflows could encourage portfolio and bank flows, while simultaneously M&A inflows could lead to the previous local owners choosing to invest some of their returns overseas, leading to capital outflows.
- ⁴ Thus, is FDI, especially in the form of M&A, necessarily so much more stable than portfolio flows?
- ⁵ This information is available from the Department of Economic Affairs, Ministry of Finance, India, available at: http://finmin.nic.in/the_ministry/dept_eco_affairs/dea.html
- ⁶ Only since April 2008 has the Reserve Bank of India started publishing this information (the actual value of FDI outflows from India with a country-wise breakdown), in an article titled "Indian investment abroad in joint ventures and wholly owned subsidiaries" in its monthly bulletin, available at: <http://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/83887.pdf>
- ⁷ This information is available in the various issues of the Secretariat for Industrial Assistance newsletters compiled by the DIPP, Ministry of Commerce & Industry, India, available at: http://sia.dipp.nic.in/publicat/pub_mn.htm
- ⁸ <http://www.uschina.org/info/forecast/2007/foreign-investment.html#table4>
- ⁹ For a discussion on China–Hong Kong flows within the larger context of intra-Asian FDI flows, see Hattari & Rajan (2008a).
- ¹⁰ In a series of papers, Pradhan (2005, 2007, 2008, 2009) makes use of such data based on newspaper reports and unpublished firm-level information from the Ministry of Commerce, India. These data are not publicly available, though we do draw partly on his secondary data. Also see Kumar (2008), who uses an ownership-based firm-level data set (RIS database on Outward Investments of Indian Enterprises).
- ¹¹ See UNCTAD (2005) and Hattari & Rajan (2008a, 2009b) for a discussion of FDI data, definitions and limitations.
- ¹² See Hattari & Rajan (2009b) for a more systematic analysis of M&A data definitions and trends.
- ¹³ See, for instance, *The Economist*, 28 May 2009, available at: http://www.economist.com/businessfinance/displaystory.cfm?story_id=13751556 (accessed 19 October 2010).
- ¹⁴ Indian companies invested in 75 projects in the UK during 2007–08, in various sectors, making India the second largest investor in the UK. Also see Gopalan & Rajan (2009).
- ¹⁵ For a summary of Indian overseas resource acquisitions, see <http://www.thehindubusinessline.com/cgi-bin/bl.pl?subclass=348>. Indian and Chinese oil firms have also begun collaborating on overseas resource acquisitions to reduce head-to-head competition.
- ¹⁶ Some of the main acquisitions by Indian pharmaceutical companies in Europe are outlined by Milelli (2006) based on data from Thomson Financial.
- ¹⁷ The sources and definitions of data are available in Hattari & Rajan (2008a, b).
- ¹⁸ We also computed the Variance Inflating Factors, but there is no evidence of multicollinearity.
- ¹⁹ We have also looked at the number of double tax agreements in the host country as one of the explanatory variables. We found this term to have a positive sign but it was not statistically significant.

- However, the relevance of the number of tax agreements of a host country is still questionable because it does not show a bilateral relationship, which is more important as a driver for bilateral FDI flows.
- ²⁰ Kumar (2008, p. 162) examined Indian OFDI using data based on Indian investments overseas using a more limited ownership-based firm-level data set (RIS database on Outward Investments of Indian Enterprises). He found that firm size “exerts a positive but a nonlinear effect” and that “enterprises that are already engaged in exporting are more likely to be outward investors.”
- ²¹ We thank an anonymous referee for suggesting these checks.
- ²² Available from the authors on request.
- ²³ See Pradhan (2009) for a discussion of the immediate impact of the global financial crisis of 2008–09 on India’s OFDI. What is less clear is whether and how the crisis has affected the structure of economic growth in the USA and Europe, and the implications of that for the business strategies of Indian companies looking to expand overseas.
- ²⁴ Exactly how India’s OFDI impacts the country’s output and employment is an under-researched subject. However, in one of the few such studies, Pradhan (2007, pp. 36–37) pointed to some evidence that OFDI generates additional net export demand from India with some positive impact on home country employment. As he noted:
- Indian OFDI can contribute towards home country employment by generating additional demand for skilled manpower like supervisors, technicians, engineers, and R&D at the headquarter so as to manage their overseas affiliates and provide them consultancy and technical services. The impact of OFDI in a given period can have negative impact on home country employment due to its negative impact on domestic investment rate. However, when the overseas subsidiaries of Indian firms start expanding over time they are likely to have positive impact on domestic investment ... Their increasing demand for raw materials, stores and spares, capital goods, technology and consultancy services from India would benefit the home country considerably and can create more domestic employment. Moreover, the returns from overseas subsidiaries like dividends and interests may also enable Indian parent firms to expand in the long run leading to more employment opportunities.
- Given the relatively early stage of India’s second wave of OFDI and the boom of the last few years, it would be important to extend this study to include more recent data. The technological spillovers of OFDI to the Indian economy—if any—have thus far not been empirically investigated carefully and are an important area for future research.
- ²⁵ Thus, in the case of the USA, its factor income balance has generally been positive despite being a net debtor.
- ²⁶ While Indian private sector firms are most active in overseas purchases, Indian public sector banks and oil companies have also been active in overseas acquisitions.
- ²⁷ Conversely, episodes such as the scandal at Satyam Computer Services (in which the chairman, Ramalinga Raju, significantly inflated the company’s earnings and assets for years) tarnish India Inc.’s global image and raise important questions about the quality of corporate governance.

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Appendix 1

Table A1. Sample countries

Australia	Italy	Switzerland	Ecuador	Pakistan	Sri Lanka
Austria	Japan	UK	Egypt	Peru	Taiwan
Belgium	Korea	USA	Greece	Philippines	Thailand
Canada	Mexico	Argentina	Hong Kong	Poland	Turkey
Denmark	Netherlands	Brazil	India	Romania	Ukraine
Finland	New Zealand	Bulgaria	Indonesia	Russia	Venezuela
France	Norway	Chile	Iran	Saudi Arabia	Vietnam
Germany	Portugal	China	Israel	Singapore	
Hungary	Spain	Colombia	Malaysia	Slovakia	
Ireland	Sweden	Czech Republic	Nigeria	South Africa	

Appendix 2. Data Sources

- Bilateral distance: weighted distances in kilometers, which use city-level data to assess the geographic distribution of population inside each nation, from Centre d'Etudes Prospectives et d'Informations Internationales (CEPII)'s website, available at: <http://www.cepii.fr/anglaisgraph/bdd/distances.htm>
- Bilateral exports: in millions of US dollars, from International Monetary Fund, *Direction of Trade*, available at: <http://www.imfstatistics.org/DOT/>
- Bilateral FDI inflows in millions of US dollars: UNCTAD FDI/TNC database and the EIU's World Investment Service databases.
- Capital Account Openness Index, Menzie Chinn and Hiro Ito Index, available at: <http://web.pdx.edu/~ito/>
- Consumer Price Index: International Financial Statistics, IMF available at: <http://www.imf.org>
- Energy production, in kilotons, from World Bank, *World Development Indicators*, available at: <http://publications.worldbank.org/WDI>
- Geography variables (Comlang, Contig, Colony): from Centre d'Etudes Prospectives et d'Informations Internationales (CEPII)'s website, available at: <http://www.cepii.fr/anglaisgraph/bdd/distances.htm>
- Gross secondary school enrollment, in percent of total enrollment, from World Bank, *World Development Indicators*, available at: <http://publications.worldbank.org/WDI>
- Ratio of research and development expenditure to GDP, from World Bank, *World Development Indicators*, available at: <http://publications.worldbank.org/WDI>
- Ratio of stock market capitalization to GDP, from World Bank, *World Development Indicators*, available at: <http://publications.worldbank.org/WDI>
- Ratio of trade to GDP, from World Bank, *World Development Indicators*, available at: <http://publications.worldbank.org/WDI>
- Real exchange rate (RER) is the bilateral nominal exchange rate of the source economy currency with respect to the host economy currency adjusted for relative consumer prices. Data from the International Financial Statistics, IMF.
- Real GDPs in millions of US dollars, from World Bank, *World Development Indicators*, available at: <http://publications.worldbank.org/WDI>

Appendix 3

Table A2. Table of summary of statistics

Variable	Obs	Mean	SD	Min	Max
Bilateral FDI	7747	502	7692	-305 502	394 332
Real GDP of source country in US dollars	19 152	621	1553	13	12 398
Real GDP of host country in US dollars	19 152	621	1553	13	12 398
Common official language (Yes = 1, No = 0)	19 152	0	0	0	1
Colonial relationship (Yes = 1, No = 0)	19 152	0	0	0	1
Distance (in nautical miles)	19 152	7628	4901	60	19 772
Bilateral exchange rate of host with respect to source countries	18 370	257	1499	0	28 834
Consumer Price Index (CPI) of host country	19 152	116	29	93	342
Consumer Price Index (CPI) of source country	19 152	116	29	93	342
Energy production in host country (in kilotons)	19 152	158 461	308 262	0	1 699 613
Ratio of market capitalization to GDP in host country	18 984	66	67	0	401
Gross secondary school enrollment in host country (in percent of total enrollment)	16 856	93	24	24	162
Ratio of R&D expenditure to GDP in host country	14 840	1	1	0	5
Capital Account Openness Index (0 = low, 100 = high)	19 152	3	2	0	4
Free Trade Agreement (Yes = 1, No = 0)	19 152	0	0	0	1
Number of double tax agreements in host country	19 152	2	2	0	11
Bilateral exports from <i>i</i> to <i>j</i>	17 123	1958	8755	0	269 028