Greenfield FDI:
The Concept and Trends & Patterns during 2003-2013

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Trends and Patterns in Global Greenfield Investments

Of particular importance for developing countries are the investments that lead to creation of new production and service facilities. The reported global FDI flows consisting of a fairly large amount of reinvested earnings, M&As and speculative flows do not give a clear idea of the inflows leading to new capacity creation. While some individual countries might be collecting data on new projects such data are not compiled by any official agency globally. UNCTAD, therefore, relies on privately assembled datasets to understand the general direction in which new investments are flowing and M&As are taking place. As a part of its information dissemination efforts, UNCTAD has been providing broad aggregates of what are termed as announced greenfield projects at sectoral, and source and destination country levels for the period since 2003.[1] While interpreting the data it should be kept in mind that since the estimated investments in these projects do not necessarily reflect the FDI (especially *actual* cross-border flows) involved in them and that not all of them might have finally materialised since these are based on announcements. The fact that UNCTAD does not make any effort to directly relate FDI flows with greenfield investments (GFI) is a clear indication of this caveat. In the following we first briefly provide the changing magnitude of FDI inflows, greenfield investments and M&As as also India's share in each of the three types of investments. The remaining part of this paper is devoted to a description of the broad features of the greenfield investments (GFI) and the developments in the manufacturing sector using the same database that the UNCTAD relies upon.

While the data on global FDI inflows, greenfield investments and M&As (sales) are not strictly comparable, till 2007 there was similarity in the movements of all the three at the global level, more so in case of FDI Inflows and M&As. (Chart 1) The gap became, however, much wider after 2006. Secondly, all the three types started rising from the bottom of 2003. By 2014, while greenfield investments and

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1 UNCTAD takes this information from FDI Markets of Financial Times. The data source tracks new investment projects and expansion of the existing ones. The main selection criterion for inclusion is that the investment project has to create new direct jobs and capital investment. While the database does not have information on the amount of FDI involved, there may also be some projects not qualified as FDI. See: UNCTAD, World Investment Report, 2014: Methodological Note, p. 62. Accessed at http://unctad.org/en/PublicationChapters/wir2014chMethodNote_en.pdf

M&As almost returned to their 2003 positions, FDI inflows managed to remain at much higher levels in spite of the steep fall after 2009. This probably indicates the growing importance of other forms of inflows, namely reinvested earnings. India's share in these different categories varied considerably. (Chart 2) There was considerable co-movement in case of shares in FDI inflows and M&A values. However, her share in greenfield investments varied differently from the others especially after 2009. Share of India in FDI inflows was the highest in 2008 at a little more than 3%. That position was nearly reached in 2014 in the face of a decline in global FDI inflows, thereby indicating that India resisted the global trend. In case of M&As India's share increased almost continuously till 2011.

Chart-1: Global FDI Inflows and Values of Announced Cross-border Greenfield Investments and M&As

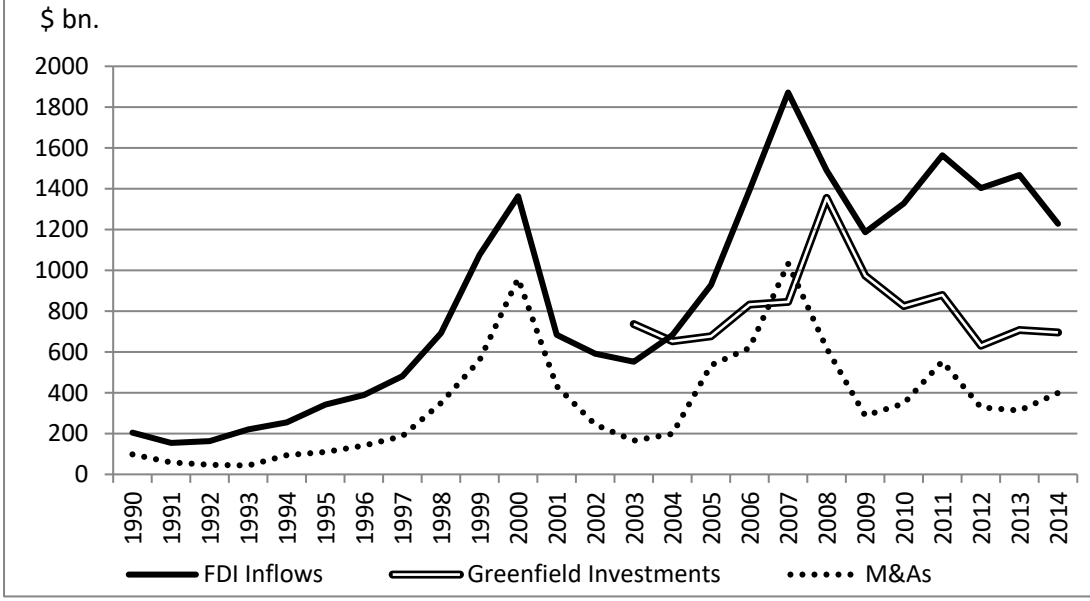
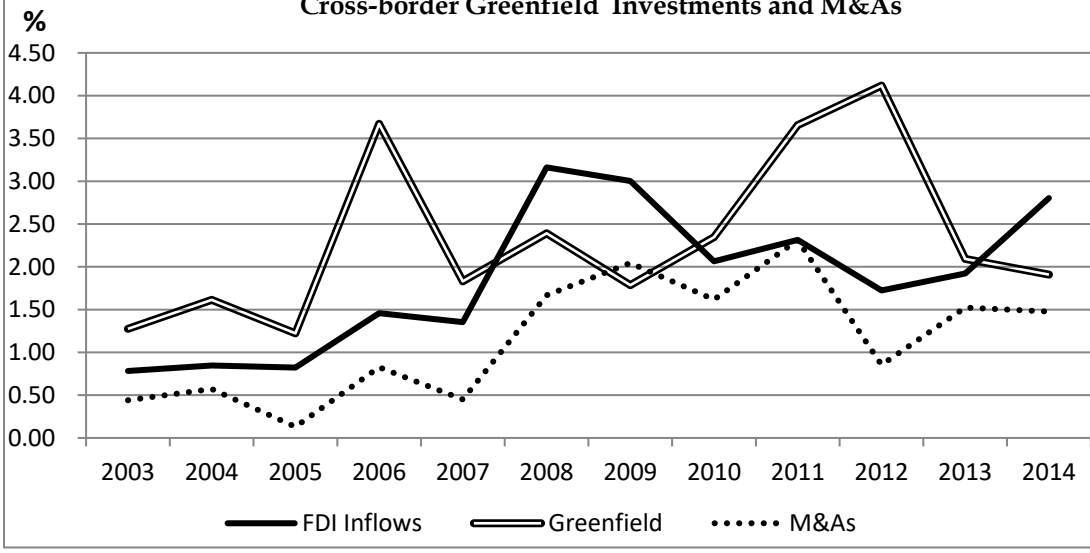


Chart -2: India's Share in Global FDI Inflows and Values of Announced Cross-border Greenfield Investments and M&As



For purpose of analysing the developments with regard to GFI we have divided the twelve year period 2003-2014 into four sub-periods of three years each. The third period (2009-2011) essentially covers the global financial crisis. The number of GFIs announced did not decline during the financial crisis but the pace definitely slowed down. (Table 1) They had actually declined in the following period. The slowing down was accompanied by a decline in the value of the investments. As a result, there was a steady decline in the average project size –- from $60.8 mn in 2006-2008 to $50.1 mn in 2009-2011 and finally to $39.1 mn in 2012-2014. Cross-border M&As fell in both the periods. In contrast, the reported global FDI inflows registered a marginal increase during 2012-2014. (Table 2)

While the share of developed countries among the source economies did not decline as much in terms of number of projects, there was a perceptible and steady decline in their share in value terms. (Table 1) Developing countries have improved their share over the period with the transition economies led by the Russian Federation playing a marginal role in investing abroad in greenfield projects. China led the way among the developing countries, the other important investors being Hong Kong, and South Korea followed by India, UAE and Singapore. Malaysia and Taiwan were the other two major investing countries. Russia's share declined within the group from 93% to 73.3% because other investors emerged among the transition economies.

Table 1: Source-wise Distribution of Announced Greenfield Investment Projects (Percentages)

Source: Region/economy	*2003-2005*	*2006-2008*	*2009-2011*	*2012-2014*	*2003-2005*	*2006-2008*	*2009-2011*	*2012-2014*
	Number of Projects				*Investment ($ bn.)*			
	26,140	35,895	38,279	35,594	1,627	2,183	1,918	1,393
Developed countries	**85.1**	**83.5**	**81.8**	**81.1**	**78.8**	**72.0**	**71.6**	**68.5**
– Europe	53.1	59.9	60.1	59.2	48.7	59.1	58.5	55.2
– North America	33.8	29.6	29.5	29.5	36.2	27.1	28.1	30.1
– Other developed economies	13.0	10.5	10.4	11.3	15.2	13.8	13.5	14.6
Developing economies	**13.3**	**14.9**	**16.6**	**17.6**	**18.3**	**26.1**	**26.2**	**29.8**
– South Africa	2.6	2.3	3.1	3.9	6.5	1.2	5.8	2.3
– China	8.0	9.8	14.7	14.7	8.0	12.0	12.4	17.3
– Hong Kong, China	8.5	6.8	5.2	5.6	11.9	5.6	4.9	12.8
– Korea, Republic of	13.8	11.6	9.4	8.6	14.1	10.1	12.3	10.6
– Taiwan Province of China	8.6	6.8	6.4	5.3	8.0	4.3	7.6	4.8
– Malaysia	5.8	4.5	3.5	2.5	4.7	6.1	5.4	5.1
– Singapore	6.7	6.3	4.7	5.5	6.0	5.5	5.2	7.3
– Thailand	1.8	1.8	2.0	2.5	1.0	1.7	2.7	1.9
– India	13.8	13.8	14.2	11.4	7.5	9.9	9.8	8.9
– Kuwait	1.1	2.4	1.6	1.1	2.8	4.5	1.2	1.9
– United Arab Emirates	4.7	9.6	9.1	11.4	8.7	18.6	8.6	8.6
– Brazil	2.8	3.2	3.0	2.5	3.4	2.5	3.1	2.3
– Mexico	1.6	1.4	1.8	1.8	1.3	0.7	2.0	2.0
Transition economies	1.6	1.6	1.6	1.3	3.0	1.9	2.1	1.7
– Russian Federation	74.9	69.7	65.3	69.3	93.0	71.4	77.6	73.3
– Ukraine	13.8	13.3	10.8	12.6	3.1	11.7	4.8	8.6

Source: Based on World Investment Report 2015 Annex Web Tables 18 and 21.

While there was a noticeable change in the relative shares of developed and developing countries as investors, the shares of the two as destinations remained remarkably stable whether seen in terms of numbers or in value. (Table 3) Interestingly, China's share among the developing countries declined from the peak of 2003-2005 (both in number of projects and value) but remained stable thereafter in terms of value even in the face of a gradual decline in the number of projects. In contrast India's shares peaked in 2006-2008. Marginal increases were recorded by many countries, thereby indicating greater scope for south-south investments as also increased competition among the developing countries. In the face of declining share of transition economies once again there seems be a greater degree of dispersion of investments within these countries. While Russia lost its share, Serbia gained remarkably – from a mere 2.1% during 2003-2005 to 12.8% in 2012-2014, Ukraine too has a reasonably large share within the group of economies.

Table 2: Changes in Different types of Global Investments

		2003-2005	*2006-2008*	*2009-2011*	*2012-2014*
		Reported Aggregates			
FDI Inflows	Value ($ bn.)	2,162	4,754	4,078	4,098
Greenfield	Value ($ bn.)	1,627	2,183	1,918	1,393
M&As	Value ($ bn.)	899	2,270	1,188	1,040
Greenfield	Numbers	26,140	35,895	38,279	35,594
M&As	Numbers	24,066	33,513	28,816	27,813
		Change Over the Previous Period (%)			
FDI Inflows	Value ($ bn.)		119.9	-14.2	0.5
Greenfield	Value ($ bn.)		34.2	-12.1	-27.4
M&As	Value ($ bn.)		152.5	-47.7	-12.5
Greenfield	Numbers		37.3	6.6	-7.0
M&As	Numbers		39.3	-14.0	-3.5

Source: Based on World Investment Report 2015 various Annex Web Tables.

Table 3: Destination-wise Distribution of Greenfield Investment Projects (Percentages)

Destination: Region/Economy	*2003-2005*	*2006-2008*	*2009-2011*	*2012-2014*	*2003-2005*	*2006-2008*	*2009-2011*	*2012-2014*
	Number of Projects				*Investment*			
Developed countries	**46.7**	**49.2**	**48.1**	**49.5**	**31.9**	**33.7**	**33.6**	**33.7**
– Europe	75.5	77.5	67.7	63.3	62.3	71.1	57.4	56.5
– North America	17.5	16.0	24.6	27.9	25.2	18.3	31.3	32.4
– Other developed economies	7.1	6.4	7.6	8.8	12.5	10.6	11.3	11.1
Developing economies	**45.8**	**44.4**	**46.3**	**46.0**	**60.6**	**59.5**	**60.7**	**61.8**
– South Africa	1.2	1.4	1.8	2.1	0.8	1.1	1.4	1.1
– China	30.1	23.1	18.7	16.3	26.4	19.1	19.1	18.4
– Korea, Republic of	2.5	1.4	1.7	1.9	3.0	1.6	1.1	1.8
– Malaysia	2.9	2.8	2.5	2.8	1.6	2.0	2.5	2.6
– Singapore	3.5	4.2	5.0	6.1	2.0	2.7	2.9	2.4
– Thailand	3.0	3.0	2.9	2.3	2.6	1.4	1.2	1.6
– Viet Nam	3.3	4.4	2.9	2.8	2.6	6.2	4.0	3.6
– India	12.5	14.4	11.6	9.7	5.5	9.3	8.7	6.0
– United Arab Emirates	3.8	5.9	5.2	4.8	1.7	3.1	2.0	2.4
– Brazil	5.1	3.1	5.5	6.0	6.5	3.9	7.8	6.1
– Mexico	3.4	4.2	4.2	5.8	2.2	3.7	3.9	6.5
Transition economies	**7.5**	**6.4**	**5.5**	**4.5**	**7.5**	**6.8**	**5.7**	**4.5**
– Serbia	6.4	9.0	9.9	16.0	2.1	6.8	7.3	12.8
– Russian Federation	57.5	51.6	49.2	40.1	52.4	52.2	51.8	45.7
– Ukraine	12.4	13.8	11.0	10.3	7.8	9.5	7.5	9.6

Source: Based on World Investment Report 2015 Annex Web Tables 19 and 22.

The sectoral composition of GFI changed during 2003 and 2014 with the share of primary sector falling significantly both in terms of the number of projects and the investments involved. (Table 4) Though the shares of manufacturing and services sectors fluctuated, overall, the share of manufacturing sector declined, again both in terms of number of projects and investments. Services sector, which also included utilities, gained significantly and accounted for majority of the projects and investment. The main component of the primary sector was mining, quarrying and petroleum. The industries which had major shares within the manufacturing sector varied depending upon whether one is looking at the number of projects or the amounts. While the share of food products in projects remained stable after an initial decline, its share in investment increased. The relative share of textiles increased substantially both in numbers and in value. It accounted for the largest number of projects during 2012-2014 accounting for 17% of the total. The share of coke, petroleum products, etc. declined significantly in terms of value. Chemicals and chemical products declined marginally in terms of numbers but increased slightly in terms of value. Metals and metal products had a mixed experience but its share in value terms declined perceptibly. Shares of machinery and equipment increased but its share was more prominent in case of the number of projects signifying relatively smaller project sizes. There was a substantial decline in the shares – numbers and amount -- of electrical and electronic equipment. Transport equipment sector had the highest share in investment in all the periods and it accounted for a quarter of the investment during 2012-2014. Its share in numbers was large but the share fluctuated.

Table 4: Sectoral Distribution of Greenfield Investment Projects (Percentages)

Sector	*2003-2005*	*2006-2008*	*2009-2011*	*2012-2014*	*2003-2005*	*2006-2008*	*2009-2011*	*2012-2014*
	Number of Projects				*Investment*			
Primary	**3.5**	**1.5**	**1.4**	**0.6**	**16.9**	**8.8**	**9.6**	**4.9**
– Mining, quarrying & petroleum	99.1	98.2	98.4	98.0	99.8	99.8	99.9	97.4
Manufacturing	**52.4**	**46.6**	**48.3**	**46.7**	**50.0**	**43.2**	**47.0**	**42.9**
– Food, beverages & tobacco	9.1	7.5	7.5	7.7	4.7	4.4	6.5	7.2
– Textiles, clothing & leather	9.5	11.3	15.9	17.5	2.7	2.9	4.5	7.7
– Coke, petroleum products & nuclear fuel	1.7	2.0	1.8	1.1	18.2	18.0	15.7	8.1
– Chemicals & chemical products	13.2	11.4	11.6	11.1	13.7	12.5	13.9	15.0
– Metals & metal products	5.1	6.8	5.3	4.9	10.4	12.7	9.5	7.7
– Machinery & equipment	8.0	10.5	12.2	12.4	2.0	2.7	3.7	4.2
– Electrical & electronic equipment	19.1	16.5	15.2	13.6	16.4	13.9	13.0	10.2
– Motor vehicles & other transport equipment	16.0	15.4	14.0	14.5	18.5	18.0	19.8	25.0
Services	**44.1**	**51.8**	**50.4**	**52.7**	**33.1**	**48.1**	**43.4**	**52.2**
– Electricity, gas & water	2.2	5.0	5.0	3.6	13.0	21.0	25.2	21.1
– Trade	16.8	10.1	10.6	9.5	7.3	6.1	7.5	6.6
– Transport, storage & communications	13.9	12.6	12.4	13.4	14.6	11.6	14.3	15.9
– Finance	15.6	18.7	18.0	16.1	7.0	10.0	11.7	11.0
– Business services	39.0	40.2	43.1	48.6	9.8	20.2	17.5	23.0

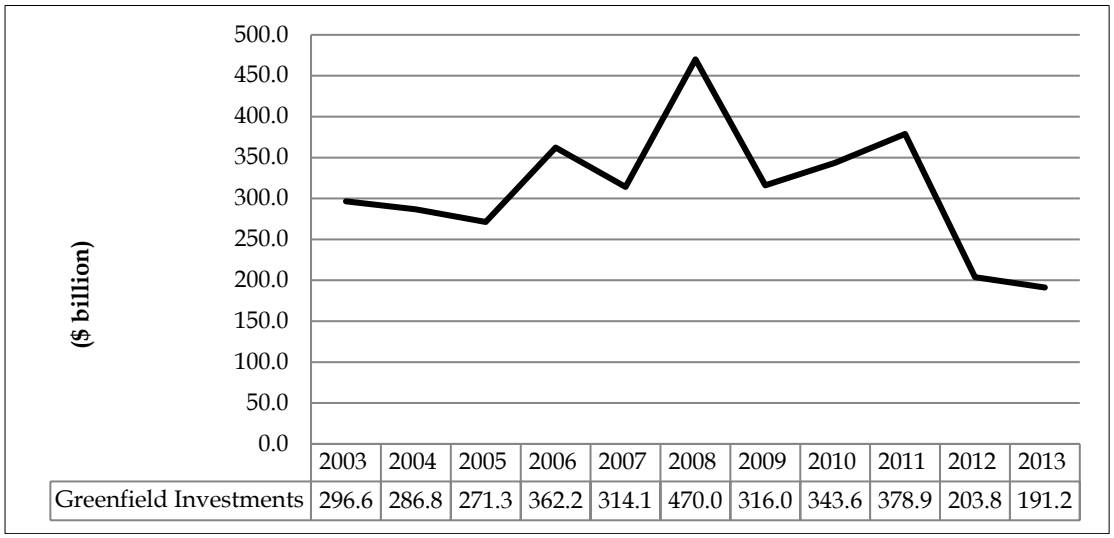
Source: Based on World Investment Report 2015 Annex Web Tables 20 and 23.

Greenfield Investments in the Manufacturing Sector

The aggregate tables provided by UNCTAD enable only a limited analysis of the trends and patterns in GFI. More particularly one cannot relate sources and destinations for any set or sub-set of industries or countries. In the following we shall present a disaggregated analysis of GFI based on the fDImarkets data of the Financial Times group, also the source for the above tabulations.[2] We analysed the data for the period 2003-13.

Our first observation is that between 2003 and 2013, GFI in the manufacturing sector (GFIM) has gone a full circle. These investments were just less than $300 billion in 2003 and registered a steady upswing until 2008, when it reached its peak at $ 470 billion, just as the financial crisis was unravelling. Thereafter, and corresponding with the global economic uncertainties, GFI have remained well below the 2003 peak. The post-crisis period witnessed a continuous decline in this form of investment, interspersed by a modest recovery between 2010 and 2011, when expectations rose that imminent threats to the stability of the global economy had waned. However, it was soon clear that uncertainties were far from over, both in advanced and emerging economies. Not surprisingly, therefore, another steep decline in GFIM took place after 2011, which took these investments to their lowest point in a decade; to below $ 200 billion in 2013 (Chart 3). Thus, GFIM in the pre-crisis phase was more than 58% of the total investments during 2003-13. These trends in the inflows of GFIM speak of the struggles of the global economy to emerge from the shadows of the financial crisis, which have stymied the growth of this form of investment while bolstering the flows of speculative forms of capital.

Chart 3: Trend in Greenfield Investments in the Manufacturing Sector (2003-13)



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Greenfield Investments	296.6	286.8	271.3	362.2	314.1	470.0	316.0	343.6	378.9	203.8	191.2

Source: Based on Financial Times Ltd, fDi Markets (www.fDimarkets.com)

[2] This part of the analysis was conducted in early 2014 during the period of active subscription to the database. As the data gets updated on a continuous basis, there are bound to be some differences between aggregates presented here and those given in the latest Annex Tables of the *World Investment Report*.

China was the largest destination of GFIM, with a 16% share in the total investments during 2003-13 (Table 5). The importance of China as a destination can be gauged from the fact that the total investments it attracted were more than twice than those directed at the second largest destination, the United States. India was the third largest destination; its share exceeding 5%. Importantly, four of the five top destinations of GFIM are the BRIC countries. This group of countries accounted for nearly a third of the total investments (32%), even when South Africa was unable to match the other countries in this grouping in terms of its attractiveness. There is no denying the importance of these countries, considering that the members of the OECD could attract less than a third of total GFIM (31.4%).

Table 5: Major Destinations of Greenfield Investments in the Manufacturing Sector (2003-13)

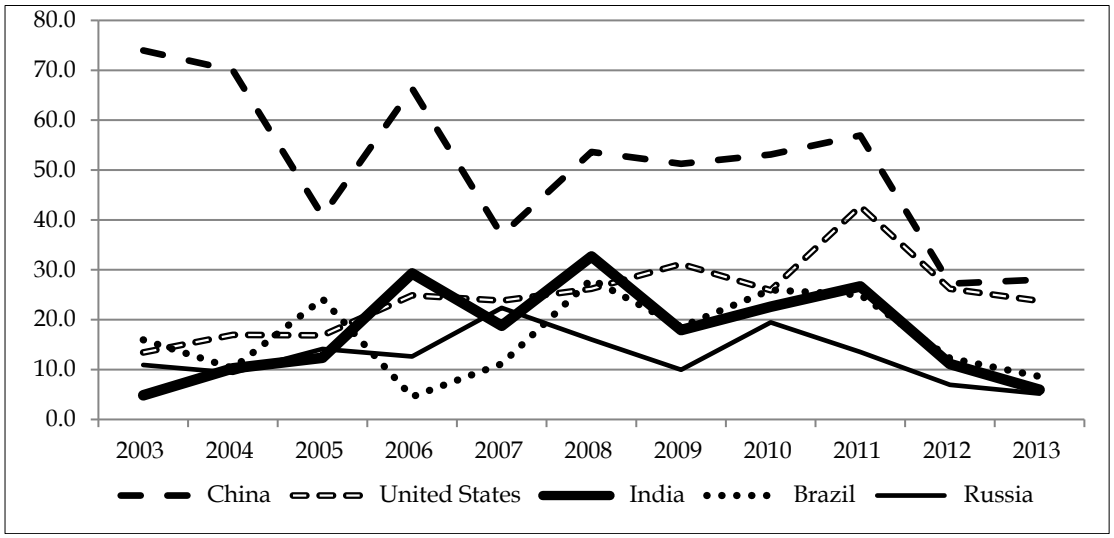
Destination	*Investment ($ bn)*	*Share (%)*
China	558.3	16.3
United States	271.9	7.9
India	192.5	5.6
Brazil	184.6	5.4
Russia	140.4	4.1
Vietnam	113.0	3.3
Mexico	105.6	3.1
Saudi Arabia	102.3	3.0
Indonesia	95.8	2.8
Australia	71.1	2.1
Malaysia	68.5	2.0
Canada	57.7	1.7
South Korea	56.7	1.7
Turkey	56.6	1.6
Singapore	56.0	1.6
Germany	55.5	1.6
Poland	54.2	1.6
UK	52.8	1.5
Thailand	46.8	1.4
Spain	46.0	1.3
Qatar	45.0	1.3
Romania	35.1	1.0
France	34.6	1.0
Philippines	32.8	1.0

Note: Countries having more than 1% share have been included
Source: Based on Financial Times Ltd, fDi Markets (www.fDimarkets.com)

The aggregates presented above, however, provide only a partial picture of the GFIM into the top five major destinations during 2003-13. Yearly figures, which are presented in Chart 4, show interesting trends across countries. China was an overwhelming favourite in 2003, attracting greenfield projects involving $74 billion

investments, nearly a quarter of the global total. This was considerably higher than the second most preferred destination, Brazil, which could attract only $16 billion of these investments, a share of just above 5%. United States, which, according to the UNCTAD, was closely following China in terms of total foreign direct investment inflows in 2003, received only 4.5% of the GFIM. India was not only the least preferred destination among the top five destinations during 2003-13, it did not figure in the top 10 destinations in the year 2003.

Chart 4: Greenfield Manufacturing Investments across Major Destinations (2003-13)



Source: Based on Financial Times Ltd, fDi Markets (www.fDimarkets.com)

After remaining an overwhelmingly preferred destination of GFIM in the pre-crisis period (2003-07), China experienced a sharp decline in its share thereafter. In 2005, China's share came down to 15%, from over 24% a year earlier. Its share remained below 15% in most of the later years. Thus, in 2013, China was able to attract $24 billion of GFIM, less than a third of what it did in 2003.

All the remaining countries, barring the United States, saw progressively higher greenfield investment inflows until the onset of the financial crisis. In absolute terms, India suffered the biggest drop; its GFIM fell from nearly $35 billion in 2008 to $6 billion in 2013. Consequently, India fell out of the top 10 destinations of GFIM in 2013.

The United States was able to steadily increase its share in the global GFIM since 2003; in fact, it was the only country among the major destinations to have seen an appreciable increase in its share. In 2013, its share had increased to nearly 13%, as compared to 4.5% in 2003. (Also Table 6) The stimulus package for reviving the United States economy, which was announced by the Bush Administration, and implemented under President Obama, provided the platform for the larger involvement of foreign investors in greenfield manufacturing projects in the country.

GFIM participated in a wide array of manufacturing sectors, but nearly 79% of these investments were in the top 10 sectors (Table 7). These investments were

concentrated in four broad industrial groupings, namely, automotives, conventional fuels, metals, chemicals and electronics[3]. These five groupings accounted for nearly 71% of the GFIM for the period 2003-13 taken as a whole. The automotive industry attracted the largest share of these investments; the original equipment manufacturers (OEMs) and the components sectors between them had a share of 17.4% of the total investments. This industry was able to out-perform the large investment industries like conventional fuels and metals, both of which had lesser shares (17% and 14% respectively). The importance of the sectors linked to the automotive industry is a testimony to the growing strength of these sectors worldwide, especially through the development of the global/regional value chains. The same dynamics have brought into prominence the sectors linked to the electronics industry. These sectors received close to 12% of the total GFIM.

Table 6: Changes in the Shares of Major Destinations of Greenfield Investments in the Manufacturing Sector (2003-13)

Destination	*Share (%)*	
	2003-07	*2008-13*
China	18.8	15.1
United States	6.3	10.4
India	4.9	5.9
Brazil	4.3	6.3
Russia	4.5	3.8
Vietnam	2.5	2.8
Mexico	1.8	3.9
Saudi Arabia	2.6	2.4
Indonesia	2.1	3.7
Australia	3.2	1.4
Malaysia	1.2	2.3
Canada	1.9	1.6
South Korea	2.4	1.0
Turkey	1.7	2.0
Singapore	2.2	1.4
Germany	1.7	1.4
Poland	1.9	1.1
UK	1.3	1.9
Thailand	1.3	1.4
Spain	1.8	1.0
Qatar	2.0	1.0
Romania	1.2	0.7
France	1.1	0.8
Philippines	1.0	0.6

Note: Countries having more than 1% share in total investments during 2003-13 have been included

Source: Based on Financial Times Ltd, fDi Markets (www.fDimarkets.com)

[3] In addition to the two sectors belonging to the electronics industry, semiconductors and electronic components, figuring in Table 7, two other sectors have been included. These are consumer electronics and business machines.

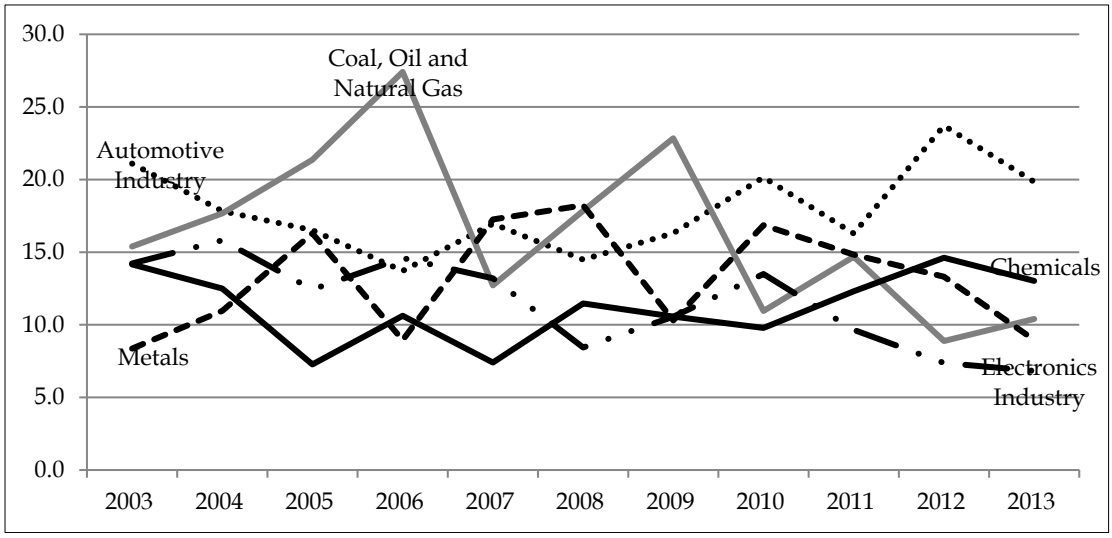
Table 7: Greenfield Investments across Sectors (2003-13)

Sectors	*Investment ($ bn)*	*Share (%)*
Coal, Oil and Natural Gas	580.8	16.9
Metals	463.5	13.5
Automotive OEM	454.9	13.2
Chemicals	381.5	11.1
Electronic Components	168.8	4.9
Semiconductors	156.4	4.6
Automotive Components	143.4	4.2
Food & Tobacco	131.7	3.8
Building & Construction	109.8	3.2
Paper and Printing	105.6	3.1

Source: Based on Financial Times Ltd, fDi Markets (www.fDimarkets.com)

Chart 5 provides the shares of the major industrial groupings receiving GFIM during 2003-13. Strikingly, all the major groupings saw declines in their respective shares in the total greenfield investment. In 2003, the combined share of these sectors was 71%, which, after increasing marginally during the two following years, declined to below 58% in 2013. However, the trends of individual industries were markedly different. The automobiles industry, after witnessing a slump until 2006, saw a trend growth in GFIM in the subsequent period. The share of the metal industry in the total inflows fluctuated right through the decade for which we have the data, while GFIM in conventional fuels and the electronics industries tailed off in the later years. The share of conventional fuels declined to 10% after reaching a high share of 27% in 2007, while the electronics industry, which was the third largest recipient of GFIM in 2003 with a 15% share, saw its share decline to below 7% in 2013.

Chart 5: Shares of Major Industries in Greenfield Investments (2003-13) (Figs. in %)

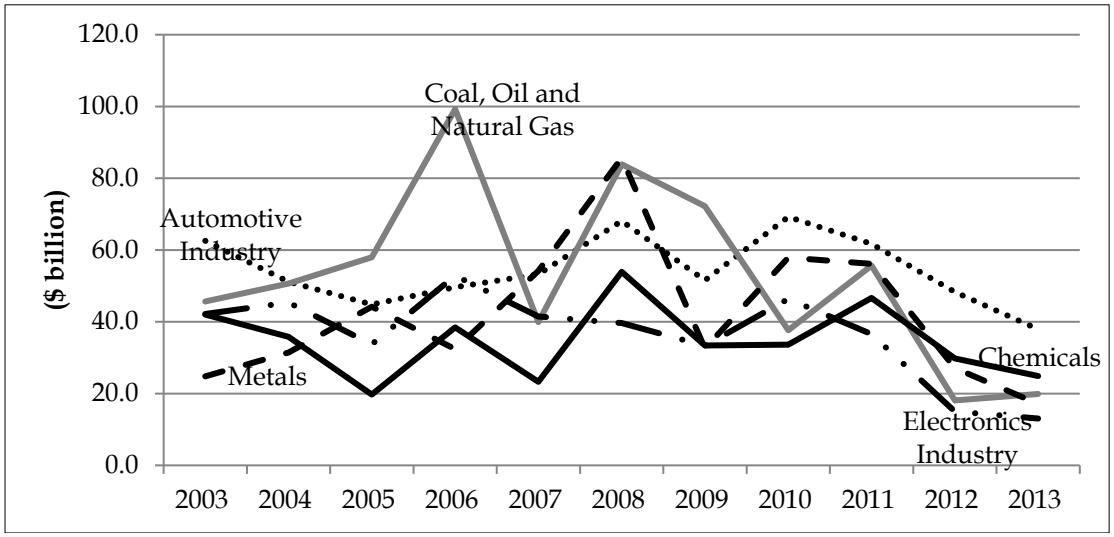


Source: Based on Financial Times Ltd, fDi Markets (www.fDimarkets.com)

The trends seen from the above chart do not reveal the true picture of the GFIM flowing into the industries included in the above chart. A better assessment of the same can be made from the chart below (Chart 6), wherein the magnitude of these investments in the major industries is given.

Over the period for which we have the data, there was a perceptible decline in GFIM in all the major industries. However, around the declining trends, at least two distinct investment cycles could be seen in almost all sectors, barring conventional fuels. GFIM in these industries grew until the onset of the financial crisis, following which there was a decline in the investments. In case of conventional fuels, GFIM reached record levels in 2006, well before the financial crisis. However, in the period since, this sector got little backing from the investors in new plant and machinery after 2008 and especially during 2012-13, which was due partly to the capacity glut in the oil industry and the declining preference for coal as most countries turned to green fuels in response to growing concerns over global warming. Metal industry, too, saw a similar declining trend in GFIM after 2008 owing to the softening of commodity prices in recent years. The automotive industry witnessed a shift in focus of investors in favour of the component manufacturers; a trend that was driven by the increasing fragmentation of production of the industry.

Chart 6: Greenfield investments across major sectors (2003-13)

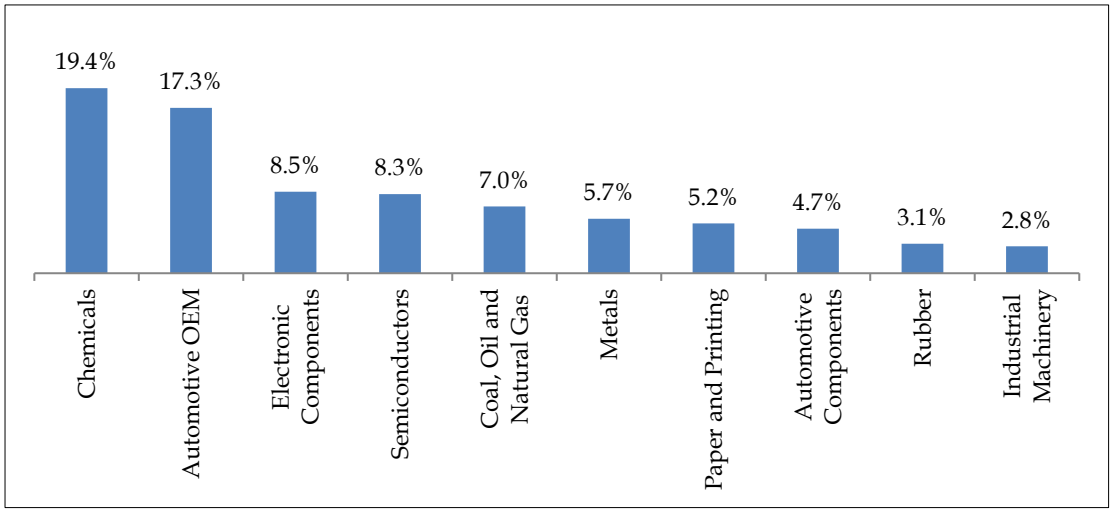


Source: Based on Financial Times Ltd, fDi Markets (www.fDimarkets.com)

We would now look at the sectoral composition of GFIM in the five leading recipients of this form of investment between 2003 and 2013, namely China, the United States, India, Brazil and Russia. More than 80% of the GFIM received by China, the largest recipient of such investments, were concentrated in the top 10 sectors (Chart 7). Of these top 10, sectors that are part of three industries, automotive, chemicals and electronics, accounted for 58% of the total GFIM in China. The two sectors in automotive industry accounted for the largest share of the investments (22%), with the electronics industry (including the two sectors not figuring in the list of top 10, namely, business machines and consumer electronics), following with a share of nearly 20%.

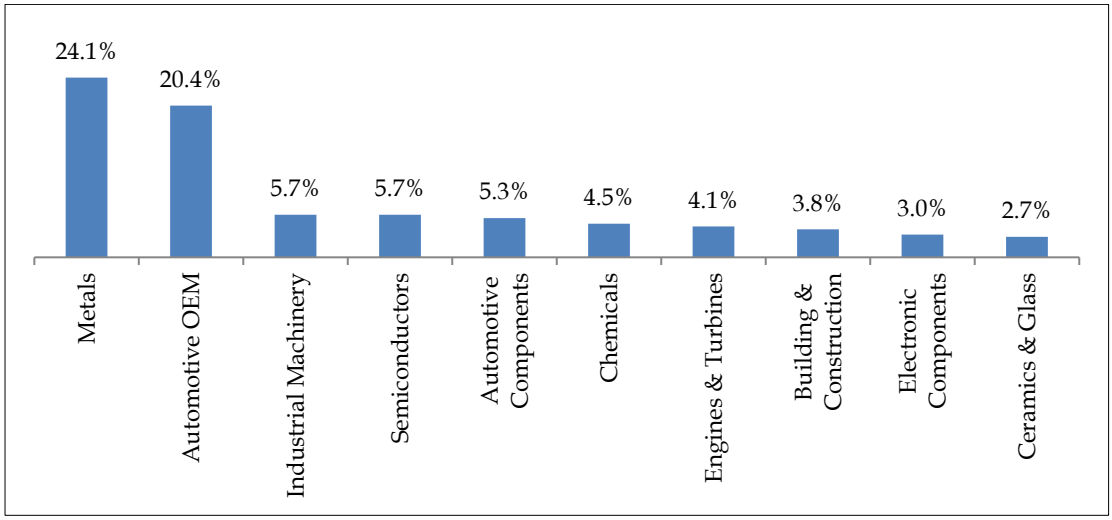
The top 10 sectors that received GFI in India had a lesser share as compared to China and Brazil (79%). With the country emerging as a major producer of automobiles, this sector was expectedly the largest recipient of GFIM: $40 billion and a share exceeding 25%. (Chart 8) More than one-half of the investments of the automobile OEMs were explained by the projects of 11 global auto giants, which contributed $20.4 billion. Metals, too, attracted sizeable inflows of GFIM, and had a 24% share. The two largest investments in India belong to this sector: Vedanta Resources and POSCO proposed nearly $15 billion as GFIM, more than 8% of the total inflows into India. India was one of only two countries in the top 5 (the other being Russia) that had received investments in the building and construction-related materials. Liberalisation of FDI policy in the housing and construction in 2005 was followed immediately by $2.8 billion of GFIM flowing into this sector in 2006, which was roughly one-half of the total investments that were proposed in this sector during 2003-2013. Important industries for which India failed to attract major investments

Chart 7: China's Greenfield Investments across Sectors (2003-13)



Source: Based on Financial Times Ltd, fDi Markets (www.fDimarkets.com)

Chart 8: India's greenfield investments across sectors (2003-13)

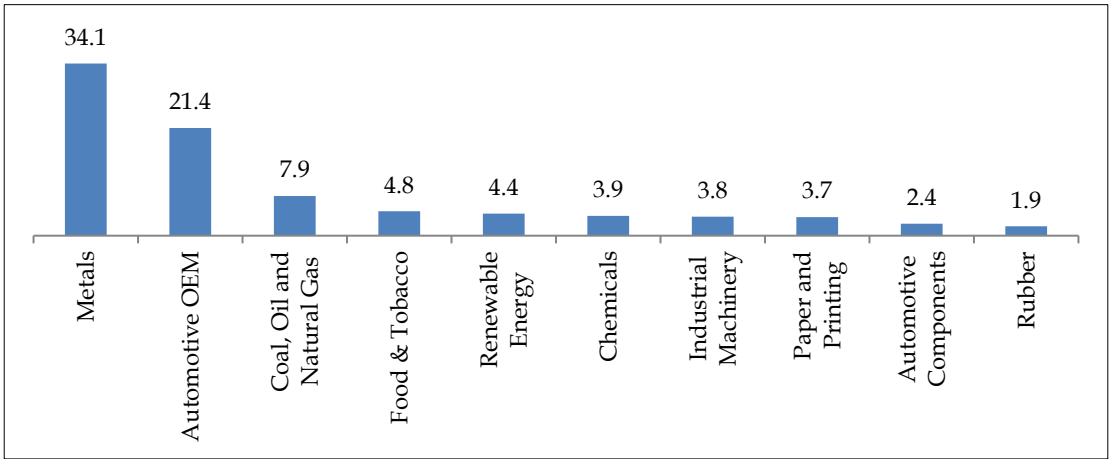


Source: Based on Financial Times Ltd, fDi Markets (www.fDimarkets.com)

were aerospace, alternative/Renewable energy, medical devices, business machines, biotechnology, space & defence. Interestingly, pharmaceutical industries which occupy the top most position in the FDI flows into the manufacturing sector, rank low (15 out of 31) in terms of the proposed investment in greenfield manufacturing projects with a 1.8% share.

Brazil's GFIM was highly concentrated in the top 10 sectors; accounting for over 88% of these investments proposed in the country (Chart 9). Metals and automotive industries were the dominant industries; almost 58% of GFIM went into these industries. While most of these investments in the former industry were received prior to 2008, automotive industry became the preferred option for the investors in the more recent years. Two of the top 10 sectors, namely, food and products and rubber, are agro-based, and could therefore leverage the strong presence that Brazil has in the international markets as a leading agricultural exporter from the developing world. Another interesting feature of Brazil was the expected entry of GFIM in the renewable energy sector in a big way. In fact, Brazil is the only one among the top 5 destinations of GFIM in which foreign investors have invested in the energy sources of the future.

Chart 9: Brazil's Greenfield investments across sectors (2003-13) (percentages)

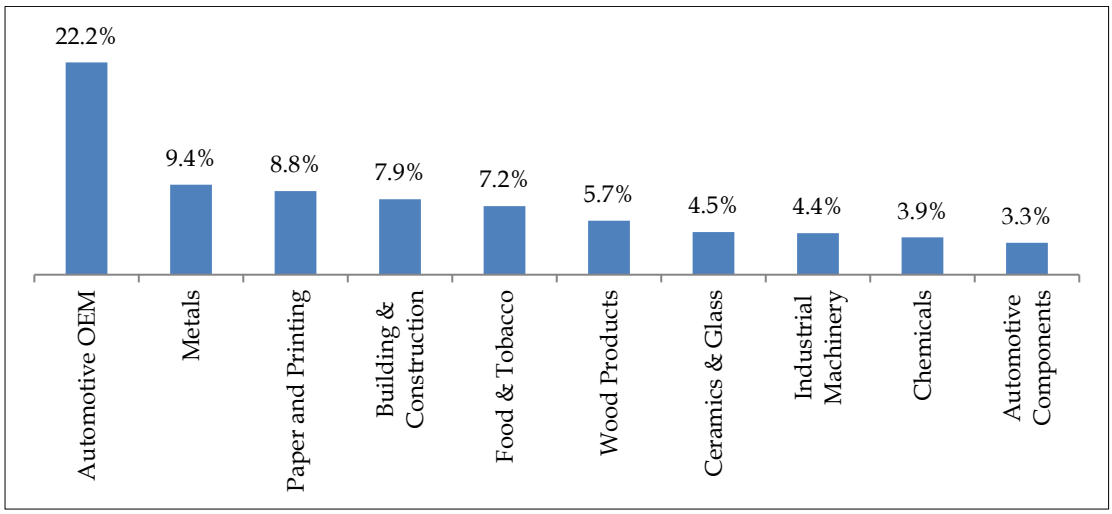


Source: Based on Financial Times Ltd, fDi Markets (www.fDimarkets.com)

The top 10 sectors receiving GFIM in Russia accounted for 77% of the investments, the lowest among the top 5 destinations of these investments (Chart 10). The automotive industry received the largest share (25.5%) and was the only prominent industry. Seven global auto giants that had proposed to invest in Russia accounted for nearly 12% of the total GFIM.

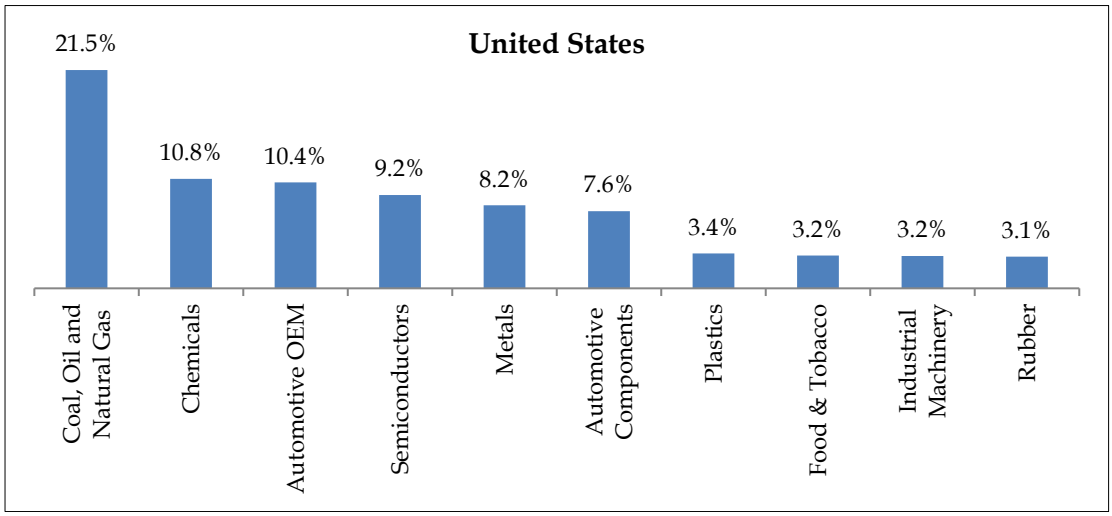
GFIM into the United States, the second largest recipient of this form of investment during 2003-13 was dominated by two industries, namely, conventional fuels and automobiles. (Chart 11) 40% of the total GFIM was accounted for by these two industries. Projects proposed by three petroleum firms, SASOL, Royal Dutch and British Petroleum involved a total investment of $43 billion, or nearly 16% of the total GFIM, while 9 automobile firms' investments added up to $33 billion, approximately 12% of the total investments.

Chart 10: Russia's Greenfield investments across sectors (2003-13)



Source: Based on Financial Times Ltd, fDi Markets (www.fDimarkets.com)

Chart 11: United States' Greenfield investments across sectors (2003-13)



Source: Based on Financial Times Ltd, fDi Markets (www.fDimarkets.com)

As noted in the beginning, the share of developed countries in the proposed GFI declined gradually over the years. A similar fall was also noted in the case of manufacturing sector. (Table 8) A major chunk of the investment was directed at developing countries notably to those belonging to Asia. Even so, when seen in two periods namely, the years till 2008 and thereafter, Latin America improved its share substantially. (Table 9) The developed countries' main focus was on the developing countries, though it was somewhat lower for EU and far lower for the erstwhile Socialist Bloc countries which since joined the EU. Developing countries also mostly sought to invest in other developing countries as seen from their intra-group shares of 83.2% and 76.6%. The shares, however, indicate a shift toward the developed countries in the second period. African and Latin American companies were more oriented towards their respective regions though they tried to make a foray into the advanced markets of North America. While East Asia had a better focus on the Americas, South Asia and West Asia and to a lesser extent South East Asia tried to

Table 8: Changing Shares of Developed and Developing Countries in the Proposed GFIM Investments (2003-13)

Year(s)	*Source Countries*		
	Developing Countries	*Developed Countries*	*Transition Economies*
2003	17.3	81.6	1.1
2004	17.2	80.2	2.6
2005	21.1	75.3	3.6
2006	24.3	73.4	2.4
2007	25.0	72.2	2.7
2008	27.6	71.1	1.4
2003-2008	*22.7*	*75.1*	*2.4*
2009	30.3	67.2	2.5
2010	26.5	71.1	2.4
2011	34.6	63.0	2.4
2012	31.3	66.2	2.5
2013	24.1	73.6	2.3
2009-2013	*29.8*	*67.8*	*2.4*
All Years	**25.7**	**72.0**	**2.3**

Source: Based on Financial Times Ltd, fDi Markets (www.fDimarkets.com)

Table 9: Direction of Investment by Different Groups of Countries in Two Sub-Periods

Source/Destination Economy/Region	*Asia*				*Africa*	*Latin America & Caribbean*	*Developed Economies*				*Transition Economies*
	South-East	*East*	*South*	*West*			*North America*	*Other Developed*	*EU#*	*Other EU*	
Developed [1]	10.5	19.3	6.1	7.8	4.9	11.6	9.0	4.3	12.0	7.8	6.7
Developed [1]	10.1	17.0	7.1	7.5	5.7	17.0	12.2	3.2	9.0	4.6	6.7
North America [1]	10.5	19.1	5.7	11.3	4.0	15.1	4.5	4.9	15.8	4.7	4.4
North America [2]	8.3	18.6	6.0	12.9	2.9	21.5	6.7	4.8	11.7	3.4	3.2
Other Developed [1]	20.9	26.4	5.7	5.0	2.3	6.0	10.7	12.6	5.1	3.7	1.7
Other Developed [2]	26.0	18.0	10.4	3.5	1.3	13.1	16.7	2.3	4.3	1.7	2.8
European Union# [1]	6.7	17.1	6.4	7.3	6.2	12.2	10.7	1.0	12.8	10.7	8.9
European Union# [2]	4.9	16.0	6.6	6.1	8.9	16.3	13.6	2.8	9.5	6.1	9.3
Other EU [1]	3.5	1.4	5.5	0.4	12.5	2.0	0.2	0.0	2.4	22.3	49.7
Other EU [2]	15.3	4.2	2.5	7.6	1.2	1.3	1.7	0.0	5.4	12.5	48.4
Developing [1]	19.5	22.5	8.8	10.7	11.1	10.6	5.0	0.9	2.9	4.1	4.0
Developing [2]	19.1	17.8	6.3	9.1	15.3	9.0	12.1	0.9	3.0	2.2	5.3
Asia: South East [1]	35.5	30.2	13.3	6.8	4.3	2.7	0.4	0.4	2.4	2.2	1.8
Asia: South East [2]	33.3	28.5	9.4	0.7	10.4	2.7	3.1	0.9	2.7	1.0	7.1
Asia: East [1]	21.3	29.1	9.1	4.4	5.9	8.3	6.9	0.9	1.5	7.1	5.5
Asia: East [2]	20.3	29.7	7.6	6.7	5.5	9.4	9.6	0.8	1.0	3.3	6.1
Asia: South [1]	26.2	4.6	5.3	29.2	18.2	5.6	3.4	0.5	3.6	0.8	2.6
Asia: South [2]	20.4	4.2	1.7	14.0	34.8	2.9	6.0	0.4	12.1	0.7	2.8
Asia: West [1]	8.6	23.2	13.1	18.5	20.4	1.0	3.2	0.3	4.5	2.2	5.1
Asia: West [2]	29.3	2.5	9.9	25.2	18.9	1.2	0.7	1.7	2.0	1.5	7.1
Africa [1]	2.4	34.0	5.3	8.8	41.2	0.4	4.1	0.7	1.2	0.4	1.3
Africa [2]	0.1	1.0	2.1	2.9	43.3	0.1	45.9	0.0	0.7	0.7	3.3
Latin America* [1]	5.9	5.8	1.7	1.5	1.5	62.7	7.2	3.1	7.3	2.3	1.1
Latin America* [2]	0.7	2.3	0.5	2.6	2.9	57.9	21.3	1.5	7.3	2.2	0.8
Transition Econ [1]	1.6	8.1	2.7	25.1	4.9	4.1	0.5	0.1	0.4	12.4	40.1
Transition Econ [2]	15.5	1.7	2.2	25.7	0.4	1.9	7.4	0.2	3.5	8.5	33.0
All Countries [1]	12.3	19.8	6.6	8.9	6.3	11.2	7.9	3.4	9.7	7.1	6.8
All Countries [2]	12.9	16.9	6.8	8.4	8.4	14.3	12.0	2.4	7.1	4.0	6.9

[1] Estimated proposed investment during 2003-2008.
[2] Estimated proposed investment during 2009-2013.
Source: Based on Financial Times Ltd, fDi Markets (www.fDimarkets.com)

increase their presence in Africa. Transition economies also had a fair share of the proposed investments in developing countries but they were also planning to invest among themselves. Interestingly, bulk of the investments of the new members of EU were proposed either in other members of the group or in the transition economies.

It has emerged from the above that the developed countries were targeting the developing countries consistently. Given the developing countries' need for technology of particular importance will be the investments from the developed ones. We made an attempt to identify the leading countries for each of the main branches of manufacturing sector for which the database has provided the classification. In each of the cases, India's share and rank were also noted. The 26 industries which are reported in Table 10 accounted for 98.7% of the proposed GFIM by the developed country investors. It can be seen that in 15 of the 26 industries, China stood first with her shares often far exceeding that of the nearest competitor. India has an overall position of 3. Except for seven, in all the sectors, India's rank was 5 or lower. India was thus hovering at the top but never reached the top. The rank was the least in case of coal, oil & natural gas (51), wood products (26) and business machines (11). Both the latter two are themselves ranked low in terms of the proposed investment by the developed country investors.

This paper discussed some of the key features of GFI and within it the GFIM since 2003. China was the most favourite destination of GFI, even though its share had declined in the more recent years. Other than the United States, the emerging economies were the major destinations for the period as a whole. India figured in the list of top 5 destinations, due to some healthy volumes of FDI that it had received especially since 2008.

The sectoral composition of GFIM underwent significant changes. The dominance of the large investment sectors like metals and conventional energy seen in the beginning of the 2000s was eclipsed by the automotive and electronics industries. Available data also informed us that the developing countries as a group were able to increase their share in the global GFIM. Their share had gone up to beyond a third of the total in 2011, but has declined subsequently to below 30 percent. China was the overwhelming favourite of the developed country investors in almost all the major manufacturing sectors, while India, in keeping with its overall standing as a destination of GFIM, was the third most preferred choice. While India has attracted considerable investments in the automotive sector, the fact that it was among the leading recipient in other leading BRIC countries also implies that the scope for exports of automobiles for India could be quite limited. A more disaggregated analysis is required to understand India's prospects in this sector.

The data on proposed greenfield investments can only provide the broad indications. More attention has also to be paid to the nature of the investors, even though they may be categorised as investing through developed country bases.

Table 10: Top Destination Countries for Greenfield Manufacturing Projects proposed by Developed Country Investors#

*Rank**		*First*	*Second*	*India's Position & Share*
	All Industries	*China (20.8)*	*Brazil (7.9)*	*3 (7.7)*
1	Automotive OEM	China (29.9)	Brazil (12.2)	3 (12.0)
2	Coal, Oil & Natural Gas	Qatar (12.1)	Saudi Arabia (10.6)	51 (0.1)
3	Metals	Brazil (22.4)		2 (12.2)
4	Chemicals	China (36.0)	Saudi Arabia (17.3)	5 (3.1)
5	Automotive Components	China (23.7)	Mexico (15.7)	3 (8.5)
6	Electronic Components	South Korea (27.3)	China (19.9)	7 (4.1)
7	Semiconductors	China (37.6)	Singapore (18.8)	3 (12.2)
8	Food & Tobacco	China (14.7)	Russia (11.8)	7 (3.5)
9	Paper, Printing & Paper Products	China (25.0)	Russia (15.9)	8 (2.9)
10	Building & Construction Materials	Russia (15.1)		2 (11.4)
11	Industrial Machinery	China (24.6)		2 (17.9)
12	Rubber	China (25.7)		2 (10.4)
13	Pharmaceuticals	China (22.6)	Singapore (19.3)	3 (14.2)
14	Plastics	China (31.9)	Russia (11.0)	8 (3.2)
15	Alternative/Renewable Energy	Brazil (25.6)	Philippines (16.8)	4 (4.3)
16	Beverages	Mexico (20.1)	China (11.6)	4 (5.7)
17	Aerospace	China (29.0)	Mexico (24.3)	3 (10.1)
18	Engines & Turbines	Turkey (25.4)	China (24.0)	3 (22.1)
19	Ceramics & Glass	Russia (19.8)	China (13.2)	3 (7.4)
20	Business Machines	Singapore (24.6)	China (23.5)	11 (1.1)
21	Wood Products	Russia (36.1)	Mozambique (12.1)	26 (0.2)
22	Consumer Electronics	China (20.5)	Mexico (12.7)	4 (11.3)
23	Non-automotive OEMs	Russia (25.7)		2 (22.3)
24	Consumer Products	China (19.3)	Mexico (16.5)	4 (8.5)
25	Textiles	China (25.0)		2 (8.4)
26	Medical Devices	China (28.6)	Mexico (9.2)	3 (8.1)

Excluding the countries belonging to the erstwhile Socialist Bloc.
* Ranked according to the total estimated investment proposed during 2003-2013.
Figures in brackets are percentage shares in the respective sector's total investment.
Source: Based on Financial Times Ltd, fDi Markets (www.fDimarkets.com)

Vedanta group's GFIM in India's metals sector is a prime example in this regard. Further, the realisations might be far different from the proposals. This is where the country needs to do a thorough follow up of such announcements whether such announcements result in transfer of advanced technologies and strengthen India's industrial base or not. If they had materialised was the scale large enough for the country to derive the full benefits? How far the production has been indigenised? If the project did not come through had the investor opted for another country or the project was abandoned due to changed market conditions? If it went to another destination was it because of the better incentives offered by the latter? It is also necessary to check the foreign investors' background and other signals emanating from them to have realistic expectations from the announcements.[4] The data providers and the international organisations do not make any attempt to hide the limitations of data on various aspects of international investments. It is for the users to exercise discretion.

[4] For instance, it was much publicised during the mid-2000s that a "little known" Intellect Inc of South Korea will invest $600 mn. in the first phase and another $2 bn. in the second phase, in what was termed as India's "first of its kind" semiconductor manufacturing facility in Andhra Pradesh. The unit was to provide employment to about 10,000 persons. The company incorporated for setting up the project was India Semiconductor Manufacturing Co Ltd (ISMC). The state government was supposed to give 50 acres of land free of cost on a 30-year lease. See: "IBM signs pact with Intellect for fab facility", Business Standard (online) June 22, 2005 and other related news items. Other reports suggest that the project was to be implemented by the Korean promoter's company NanoTech Silicon India Pvt Ltd, incorporated in 2005. The company has been, however, defaulting in its filings with the Ministry of Corporate Affairs since 2006-07. "$12 billion chip unit coming up in India ", 27 June 2005, http://www.siliconindia.com/shownews/12_billion_chip_unit_coming_up_in_India-nid-28593-cid-2.html
In another instance of expected major investments in the sector, a senior official of Intel told sometime back that "[W]hat we do here is not manufacturing, it's actually what we call 'higher value-add'. So this is a place that does the development on the highest end processors that we have and I think it really leverages the kind of talent that we see coming out of the university system here, the technical talent that really proves the importance of this site. ... Specific to manufacturing, we do not have plans to do manufacturing in India, least of which is because we are not adding manufacturing sites right now". "We do not have plans to start manufacturing in India: Intel CFO", March 12, 2014, http://www.businesstoday.in/opinion/interviews/intel-cfo-says-no-plans-to-start-manufacturing-in-india/story/204188.html