TRENDS IN OUTWARD FDI FROM DEVELOPING COUNTRIES WITH SPECIAL REFERENCE TO BRICS COUNTRIES

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The motivation of this paper is to see what are the patterns of dominance and competition of outward FDI amongst developing or BRICS Countries. We use set of new indices and Bodenhorn's measure of Mobility and Turnover. FDI outflow from developing countries and BRICS countries is growing at 15 percent and 28 percent respectively. Growth rate of FDI outflows from developing countries is higher than the world. Most dominating country is China, Hong Kong SAR. BRICS countries have one-fourth in FDI outflow. India is at eleventh position and has 2.2 percent share only. Mobility and turnover is higher in outflow than stock. FDI outflow is dominated by a few developing countries within developing countries group. This is an expected result because they are not major exporters of capital. In general, outward FDI has been increasing from developing or BRICS countries, but these countries are not leading in global outward FDI.

Key words: Foreign Direct Investment, Outward Stock and Flow, Dominance, Mobility and Turnover

INTRODUCTION

On account of globalisation, we expect that international capital flows would be rationally distributed. The implication is that both in terms of outflows as well as inflows, the distribution would be more rationale. The rationale distribution of outflows implies that the home (source) countries should compete with each other, so as to provide competitive conditions for FDI flows for the recipient or host countries. Otherwise home countries would be able to dictate the terms of FDI outflows. For instance they may seek profit guarantees. If such guarantees are granted they would encourage inefficient production. If there is a competition then we would expect that

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outflows would come from the most efficient source. The gain from such international relocation of production will go to the host countries. It is therefore necessary that the pattern of FDI outflows should not be dominated by few countries. This tendency would lead to misallocation of capital flows and would result in sub-optimal use of global resources that are employed by FDI flows. It may therefore result in a situation where the gains from opening of capital flows do not lead to a maximisation of global production and global economic welfare. It is expected that the managerial and technical efficiency of multinational enterprises (MNE) would result in more efficient use of host country resources. Implicit in the design of opening up and globalisation is the understanding that the objective of permitting global capital flows is to maximise international production and economic welfare.

The motivation of this paper is to see whether developing or BRICS countries are leading or following the world economy. How these countries are performing in relation to the developed world. We want to see what are the patterns of dominance and competition of outward FDI in developing or BRICS Countries.

Plan of the Study

In Section 1 is discussing about introduction. Section 2 explains about data source and methodology. Section 3 gives the literature review. The following Section contains all the results and analysis. The last section is about conclusions and final analysis.

DATAAND METHODOLOGY

Data Sources: we have collected online data for our study mainly from UNCTAD. Our period of study is 1990-2011. We have taken 22 developing countries including BRICS countries. BRICS countries include Brazil, Russia Federation, India, China and South Africa.

Growth Index

Growth Index of FDI means growth of FDI with respect to base year FDI. It indicates growth of outward FDI in subsequent years in percentage point with reference to base year.

$$GI_{FDI} = FDI_t/FDI_b*100$$

GI_{FDI} = Growth index of FDI
FDI_t = FDI at t year
FDI_b = FDI at base year
Base year = 1990
t = 1990, 1991, 1992................., 2009.

Growth Rate (Semi-log Growth Equation)

We use a set of semi-log growth equations to measure rate of growth over different periods. Time factor represents policy and general factors that influence FDI. This enables measurement of rate of growth (RoG) through time series analysis during 1990 to 2011. Rate of growth is measured for each countries group over time. Adjusted R square measures influence of time on FDI. P-value represents the level of significance. The growth equation is

$$FDI = e^{a+bT}$$

Taking log of both sides and adding error term (or semi-log growth equation).

$$\text{Log}(FDI) = a + bT + u_t$$

'a' represents intercept
'b' represents annual exponential growth rate.
'u' represents error term
'T' = 1990, 1991,..., 2011

Trends: Proportion of FDI

With globalisation and WTO, FDI flows and stock has been increased many times of absolute term for each country groups over last two decades. We are here examining the change in geography of FDI flows and stock in proportionate terms for each country grouping.

Dominance Patterns

Dynamic changes in the pattern of outward FDI would result in changing ranks of different countries in terms of the outflows and outward stocks. This represents a state of competition amongst different countries. It is normally not possible for any single country to dominate FDI outward investment pattern for whole period 1990 to 2009. Even if a country is not at top in one or more years it should be possible to capture the dominating country. It is interesting to know whether there is any dominant country or a constant flux in the ranking of different countries. We have studied dominance in three ways:

1. The rankings patterns at three points of time, which is a discrete measure of dominance.
2. Index of Rank Dominance (IRD) which is a relative dominance measure by ranks, (Murthy, 2011). This is measure of continuous dominance.
3. Bodenhorn's measure of competition.

The index of rank dominance (IRD) is an innovative measure which tells us a coefficient that expresses the degree of dominance of an ordinal measure such as rank. IRD has further refined as a relative- Relative Index of Rank Dominance (RIRD), which measures dominance in a relative sense. This gives the proportionate weight of the rank dominance index.

Index of Rank Dominance

Amongst the top twenty or ten countries respectively which of the country's has the dominant position (i.e. highest rank) for the longest period is estimated with the help of index of rank dominance (Bhanu Murthy, 2011).

$$I_{RD} = \frac{\sum_{i=1990}^{2011} (\ Rank\ Score)_i}{Maximum\ Rank\ Score\ X\ No.\ of\ Years}$$

$\boldsymbol{I_{RD}}$= is the index of Rank Dominance.

Rank Score = 20, 19, 18... (In decreasing order of rank).

There are four properties of this new index:

1. The value of $\boldsymbol{I_{RD}}$ lies between 0 and 1, that is,

   $0 < \boldsymbol{I_{RD}} \leq \mathbf{1}$

$\boldsymbol{I_{RD}}$ measures in relative terms the position of the most dominant centre over period from 1990 to 2011 for attracting FDI. The value of $\boldsymbol{I_{RD}}$ lies between zero and one but never become zero because in this index, countries included must be at least one time be placed in the top twenty (ten) positions over the period 1990 to 2011. The maximum value of $\boldsymbol{I_{RD}}$ shall be one provided a country has been at top position in all years from 1990 to 2011 in outward FDI.

2. IRD is a measure of continuous dominance.

3. RIRD enables measuring the relative continuous dominance.

4. IRD is a measure that applies to panel data. That is it measures the dominance and amongst 'N' countries over a time periods of 'T' years.

Mobility and Turnover

This is as a sum of rank changes among the top FDI home countries. Mobility is a churning in rank position of the leading FDI donor counties. It means changes in rank position within leading countries. The measure of turnover as the number of countries below the leading FDI home countries replace the countries belonging to the leading FDI home countries. In mobility and turnover the changes in rank of current year are with respect to previous year. This measures the competition among FDI home countries in order to exploit the factors of production in recipient countries. This mobility and turnover are based on Bodenhorn, et al. (1990). Measure of mobility and turnover over the periods 1990 to 2009 are calculated and the significance of their difference are tested. This is done with a view to understand whether dominance pattern of FDI outflows has changed, Murthy and Deb (2008).

LITERATURE REVIEW

Jha (2003) points out that unless FDI makes its own contributions towards technology progress, productivity spillovers and a consolidation of niche export markets, it may be considered as a part of the level of general investment in the economy. FDI needs certain types of domestic policy support in order to flourish. This paper emphasizes the view that an enlightened FDI policy, both at the national and the states level, is to be seen as part of a general policy of enhancing investment in this economy under condition of sustained production efficiency.

Kumar (2003) -This paper has overviewed the evolution of Indian government's attitude towards FDI, examined the trends and patterns in FDI inflows during the 1990s and has considered its impact on a few parameters of development in a comparative East Asian perspective. The paper finds a good correspondence between industrial growth rate in a year and the FDI inflows in the following year. The industrial growth seems to signal to the foreign investors about the prospects of the economy. Therefore, it appears that policy liberalization may be a necessary but not a sufficient condition for FDI inflows.

Rao and Murthy (2006) "Towards Understanding the State-wise Distribution of Foreign Direct Investments in the Post-Liberalisation Period" – This paper has overviewed the state-wise distribution of foreign direct investments in the post liberalisation period. It may be said that states in the western and southern regions attracted much of the approved FDI. Even if some of the backward states attracted foreign investment proposals based on their natural resources. However the manufacturing FDI would not go to the relatively backward states except in case of extractive activities and those based on natural resources. Overall, it does appear that, in line with experience elsewhere, FDI has shown a preference for developed states. The two factors combined may accentuate the differences between the developed and backward states. The backward states may neither be in a position to offer the incentives to offset disadvantages and even if they do, the net benefit for their economies is not guaranteed. States have to improve the overall investment climate to be able to attract investment, whether domestic or foreign. The private sector would not always be forthcoming to meet this basic requirement. The role of public investment is thus obvious:

……. although attracting FDI can be an important element of a regional development strategy, the key to successful development will ultimately be sound domestic macroeconomic and structural policies, adequate and efficient domestic savings and investment and human capital accumulation, supported by sound and strong domestic institutions. FDI is not a substitute for getting domestic policies "right". Appropriate domestic policies will help attract FDI and maximise its benefit, while at the same time removing obstacles to local business (Ögütçü, 2002). Targeting FDI, or expecting it to deliver the goods on its own, may thus not always be the right choice for the states. This is more so because, crowding in effects of FDI on domestic investment are not always guaranteed. Further, with performance requirements no longer significant and mergers and acquisitions (Mass) playing a major role in FDI flows, the need for looking at the disaggregated picture to understand the contribution of FDI to regional development becomes quite obvious.

EMPIRICAL RESULTS AND ANALYSIS

FDI stands for international relocation of production from home country to host country. Production needs factors of production. The assumption is that developing and transitional economies have the potential for economic growth because they have adequate factor of production albeit the complementary factor namely, capital. FDI represents the complementary factors of production. It is therefore felt that the breakthrough in the growth of developing economies is possible only if the complementary factor is made available. The opening of the global economy, "the setting up of WTO laying down of the rules of the level playing field" and subsequent changes in the world economy are expected to bring about a rational distribution of the most scarce complementary resource, namely, capital in the form of the FDI. Unlike portfolio investment, FDI brings along with it managerial and technological resources.

Trends of FDI in Absolute Term

Globalisation has been promoting international capital investment. We are examining the trends of outward FDI in terms of flow and stock in absolute term over last two decades.

FDI Outflows: Magnitude of world and developed countries FDI outflow has increased every year with respect to base year except in 1991-1993. Outflow from transitional countries in first half periods, is in nature of transient outflow and has no pattern but in second half, outflow has been consistently rising. However outflow from developing countries including BRICS countries has increased in every subsequent year with respect to base year. In terms of growth index, outflow from all five groups has increased. However FDI outflow from developing, BRICS countries and transitional countries has higher growth than world and developed countries outflow. However, within developing countries, growth of FDI outflow from BRICS countries has more than double of developing countries. FDI outflow from BRICS, developing and transitional countries has been increasing due competition and globalisation. Due to globalisation, liberalisation and competition, developed countries' dominance and control over global productive resources has been decreased.

The world FDI outflow increased seven times, while that of developed, developing, BRICS and transitional countries increased 5.4 times, 32 times, 84.4 times and 46.7 times respectively. East-Asian crisis has impact on developing and BRICS countries. Therefore, FDI outflow declined from these countries. Year 2000 is a threshold year. All trends indicate a jump. But in case of BRICS, the threshold is year 2001. However there is short dip in 2002. Year 2003 onwards, FDI outflow from BRICS countries increased because of world recovery till 2008. Again short din in 2009 in case of BRICS due to global financial crisis and but revival in 2010 and 2011 (Table 1).

FDI Outflow:

Table 1: FDI Outflow (in absolute terms) – Indices and Trends

Year	FDI in million $					Base Year = 1990 (1992 in case of Transition Economics)				
	World	Developed economies	Developing economies	Transition economies	BRICS	World	Developed economies	Developing economies	Transition economies	BRICS
1990	241498	229584	11914	0	1746	100	100	100	-	100
1991	198041	184564	13477	0	2432	82	80	113	-	139
1992	202635	177913	23156	1566	7664	84	77	194	100	439
1993	242554	202193	39319	1042	6213	100	88	330	67	356
1994	286888	239039	47529	320	4289	119	104	399	20	246
1995	363241	306894	55724	624	6318	150	134	468	40	362
1996	397770	331416	65406	947	5426	165	144	549	60	311
1997	477507	398863	75218	3426	9326	198	174	631	219	534
1998	689700	637994	50294	1411	8585	286	278	422	90	492
1999	1088079	1018443	67345	2291	7333	451	444	565	146	420
2000	1226633	1088321	135116	3195	7159	508	474	1134	204	410
2001	747657	661828	83087	2742	11251	310	288	697	175	645
2002	528496	476341	47484	4671	10309	219	207	399	298	591
2003	570679	513210	46668	10802	15272	236	224	392	690	875
2004	925716	788795	122792	14129	32612	383	344	1031	902	1868
2005	888561	741744	132507	14310	31461	368	323	1112	914	1802
2006	1415094	1152034	239336	23724	92862	586	502	2009	1515	5320
2007	2198025	1829578	316863	51583	98011	910	797	2660	3294	5615
2008	1969336	1580753	328121	60462	147591	815	689	2754	3861	8455
2009	1175108	857792	268476	48840	117458	487	374	2253	3119	6729
2010	1451365	989576	400144	61644	146148	601	431	3359	3936	8372
2011	1694396	1237508	383754	73135	147345	702	539	3221	4670	8441

Source: www.unctad.org and Authors' Estimation

FDI Outward Stock:

Table 2: FDI Outward Stock (in absolute terms) - Indices and Trends

Year	FDI In millions $					Base Year = 1990				
	World	Developed economies	Developing economies	Transition economies	BRICS	World	Developed economies	Developing economies	Transition economies	BRICS
1990	2092927	1946273	146094	560	60863	100	100	100	100	100
1991	2345990	2184697	160315	978	64059	112	112	110	175	105
1992	2386056	2199361	186023	672	70992	114	113	127	120	117
1993	2774477	2547665	223742	3071	77003	133	131	153	548	127
1994	3110725	2830698	276518	3509	81208	149	145	189	627	133
1995	3790105	3456616	329152	4337	89370	181	178	225	774	147
1996	4305598	3916938	383233	5427	93354	206	201	262	969	153
1997	4985681	4420714	556161	8806	99060	238	227	381	1572	163
1998	5940770	5355684	574838	10247	109481	284	275	393	1830	180
1999	7218780	6482358	725705	10717	120725	345	333	497	1913	198
2000	7952878	7074435	857107	21337	133914	380	363	587	3809	220
2001	7718988	6766635	906907	45447	148673	369	348	621	8114	244
2002	7785795	6811667	909003	65126	179996	372	350	622	11627	296
2003	9916512	8823480	998159	94873	212245	474	453	683	16939	349
2004	11694927	10413692	1169747	111487	268082	559	535	801	19905	440
2005	12464847	10951817	1360935	152095	330591	596	563	932	27155	543
2006	15697204	13636336	1837998	222870	481590	750	701	1258	39791	791
2007	19272591	16367070	2517785	387736	715772	921	841	1723	69226	1176
2008	16342809	13648378	2463069	231362	622458	781	701	1686	41307	1023
2009	19325746	16152432	2834914	338399	854087	923	830	1940	60417	1403
2010	20864846	17144628	3313808	406411	1039223	997	881	2268	72560	1707
2011	21168489	17055964	3705410	407115	1114210	1011	876	2536	72686	1831

Source: www.unctad.org and Authors' estimation.

FDI outward stock: It is an accumulated FDI outflow over periods. Outward stock follows pattern of outflow. FDI stock in all four cases has increased quantitatively in every subsequent year with respect to 1990. Growth rate of stock is high in case of transitional, developing and BRICS countries respectively. However magnitude of FDI stock is much higher in case of developed countries. Therefore, more than 80 percent of international productive capitals and resources is owned and controlled by developed countries, in spite of a twenty two year period of a globalised and competitive world . Due to global financial crisis, dip in 2008 in case of all groupings. FDI outward stock from world, developed, developing, BRICS and transitional countries increased 10 times, 8.7 times, 25 times 18.3 times and726 times respectively (Table 2).

Developed countries have ownership over productive capital resources. This is almost unchallengeable. However, due to globalization and WTO, global competition has increased for controlling over global productive resources. Due to global competitive environment, outward FDI has been significantly rising from developing countries including BRICS countries both in term of flow and stock.

Regression statistics of outward FDI in absolute terms, interestingly, shows that rate of growth are positive and highly statistically significant in each of both outflow and stock groups. World FDI outflow is increasing at 11 percent per annum during 1990-2011. The growth rate of outflow for developed, developing, transitional and BRICS countries are 10 percent, 15 percent, 28 percent and 21 percent respectively. However, outflow from transitional countries is growing at much faster rate which is 28 percent per annum. In case of FDI outward stock, growth pattern in all cases is the same as in the case of outflow, only the growth rate is different (Table 3).

Table 3: International FDI Patterns (in absolute term) during 1990-2011

	World	Developed Economics	Developing Economics	Transitional Economics	BRICS
	FDI Outflow				
Adjusted R Sq.	0.82	0.76	0.84	0.90	0.89
Coefficients	0.11	0.10	0.15	0.28	0.21
p-value	0.00	0.00	0.00	0.00	0.00
	FDI Outward Stock				
Adjusted R Sq.	0.98	0.98	0.99	0.97	0.94
Coefficients	0.12	0.11	0.16	0.33	0.15
p-value	0.00	0.00	0.00	0.00	0.00

Source: Authors' statistical Estimation

Trends of Outward FDI in Proportionate term

With globalisation and WTO, outward FDI in terms of flow and stock has been increased many times of absolute term for each country groups over last two decades. We are here examining the change in geography of FDI flows and stock in proportionate terms for each country grouping.

Developed countries have ownership over productive capital resources. This is almost unchallengeable. This is also reflected from table 4 and Table 5. In 1990, more than 95 percent of FDI outflows originated from developed countries. This shows that developed countries had controlled over productive capital resources. This proportion of controlling of developed countries over productive capital has been decreased over periods. However more than 73 percent of world productive capital is stilled owned and controlled by developed countries in 2011 (table 4). Developing countries owned and controlled less than 5 percent world capital in 1990. Due to globalisation and competition, developing countries have been owning and controlling more capital, which is around 22 percent in 2011. Share of BRICS countries has reached to around 10 percent in 2010. Outward stock has followed the same pattern of controlling over productive capital as revealed by FDI outflows. Developed countries has controlled over more than 80 percent of FDI outward stock (table 5). This means that most of FDI in terms of outflows and outward stock has been originated from developed countries. This shows dominance of developed countries over world productive capital resources. Growth index of outflow of percentage share follows pattern of outflow in absolute terms for BRICS and other developing countries.

Table 4: FDI Outflow (in percentage term) – Indices And Trends

Year	Percentage Share				Base Year = 1990 (1992 in case of Transitional)			
	Developed economies	Transition economies	BRICS	Other Developing Economics	Developed Countries	Transition Countries	BRICS	Other Developing Countries
1990	95.07	0.00	0.72	4.21	100.00	-	100.00	100.00
1991	93.19	0.00	1.23	5.58	98.03	-	169.89	132.45
1992	87.80	0.77	3.78	7.65	92.36	100.00	523.25	181.58
1993	83.36	0.43	2.56	13.65	87.69	55.57	354.37	324.16
1994	83.32	0.11	1.50	15.07	87.65	14.43	206.85	357.96
1995	84.49	0.17	1.74	13.60	88.87	22.22	240.64	323.03
1996	83.32	0.24	1.36	15.08	87.64	30.81	188.73	358.13
1997	83.53	0.72	1.95	13.80	87.87	92.83	270.19	327.73
1998	92.50	0.20	1.24	6.05	97.30	26.48	172.20	143.63
1999	93.60	0.21	0.67	5.52	98.46	27.25	93.24	130.99
2000	88.72	0.26	0.58	10.43	93.33	33.70	80.75	247.75
2001	88.52	0.37	1.50	9.61	93.11	47.45	208.19	228.19
2002	90.13	0.88	1.95	7.03	94.81	114.35	269.87	167.06
2003	89.93	1.89	2.68	5.50	94.60	244.92	370.23	130.66
2004	85.21	1.53	3.52	9.74	89.63	197.50	487.39	231.36
2005	83.48	1.61	3.54	11.37	87.81	208.38	489.84	270.08
2006	81.41	1.68	6.56	10.35	85.64	216.94	907.87	245.83
2007	83.24	2.35	4.46	9.96	87.56	303.67	616.90	236.47
2008	80.27	3.07	7.49	9.17	84.43	397.27	1036.83	217.72
2009	73.00	4.16	10.00	12.85	76.78	537.80	1382.84	305.22
2010	68.18	4.25	10.07	17.50	71.72	549.59	1393.11	415.63
2011	73.04	4.32	8.70	13.95	76.83	558.51	1203.07	331.37

Source: www.unctad.org and Authors' Estimation

Table 5: FDI Outward Stock (in percentage term) - Indices and Trends

	Percentage Share				Base Year = 1990			
Year	Developed economies	Transition economies	BRICS	Other Developing Economics	Developed economies	Transition economies	BRICS	Other Developing Economics
1990	92.99	0.03	2.91	4.07	100.00	100.00	100.00	100.00
1991	93.12	0.04	2.73	4.10	100.14	155.72	93.90	100.75
1992	92.18	0.03	2.98	4.82	99.12	105.24	102.31	118.38
1993	91.83	0.11	2.78	5.29	98.74	413.58	95.44	129.87
1994	91.00	0.11	2.61	6.28	97.85	421.55	89.77	154.18
1995	91.20	0.11	2.36	6.33	98.07	427.60	81.09	155.35
1996	90.97	0.13	2.17	6.73	97.83	470.97	74.56	165.33
1997	88.67	0.18	1.99	9.17	95.35	659.96	68.32	225.14
1998	90.15	0.17	1.84	7.83	96.94	644.54	63.37	192.35
1999	89.80	0.15	1.67	8.38	96.56	554.75	57.51	205.79
2000	88.95	0.27	1.68	9.09	95.66	1002.53	57.90	223.30
2001	87.66	0.59	1.93	9.82	94.27	2200.04	66.23	241.21
2002	87.49	0.84	2.31	9.36	94.08	3125.62	79.50	229.92
2003	88.98	0.96	2.14	7.93	95.68	3574.97	73.60	194.61
2004	89.04	0.95	2.29	7.71	95.75	3562.17	78.83	189.32
2005	87.86	1.22	2.65	8.27	94.48	4559.48	91.20	202.98
2006	86.87	1.42	3.07	8.64	93.42	5305.37	105.50	212.19
2007	84.92	2.01	3.71	9.35	91.32	7517.67	127.71	229.60
2008	83.51	1.42	3.81	11.26	89.81	5289.96	130.97	276.56
2009	83.58	1.75	4.42	10.25	89.88	6543.05	151.97	251.69
2010	82.17	1.95	4.98	10.90	88.36	7278.42	171.27	267.70
2011	80.57	1.92	5.26	12.24	86.64	7186.45	181.00	300.58

*Source:*www.unctad.org and Authors' Estimation

In terms of FDI outflow, for developed countries, adjusted R square is 43.7 percent. The growth rate is 0.9 percent and negative but significant. It means FDI outflow is decreasing at slow rate from developed countries. Adjusted R square is 52 percent and rate of growth is 9.8 percent per annum and highly significant in case of BRICS countries. In case of transitional countries, adjusted R square is 70.1 percent and growth rate is 17.1 percent and significant. However, in case other developing countries excluding BRICS, growth rate is positive but not significant (Table 6). It implies that due to globalisation and competition FDI outflow from BRICS, developing and transitional countries is increasing over a period of time. These countries have been also owning and controlling world productive capital. However, FDI outflow has been dominated and controlled by few developed countries.

Growth rate is significant in case of FDI outward stock in all cases. Growth rate is positive in case of BRICS, other developing and transitional countries but it is negative in case of developed countries. It means that outward stock is decreasing slowly from developed countries and is increasing in developing including BRICS and transitional countries. However, stock is growing at faster rate in case of transitional countries.

The net result of both indicators is that the share of developed countries is declining at a very slow rate, although these are statistically significant. The share of transitional countries is growing at high rate and also statistically significant in all four cases. However, for developing countries including BRICS, FDI outflow and outward stock are growing slowly and also significant (table 6).

Table 6: International FDI Patterns in Percentage Term During 1990-2011

	Developed Economics	Transitional Economics	BRICS	Other Developing Countries (Excluding BRICS)
	FDI Outflows			
Adjusted R Sq.	0.437	0.701	0.520	0.068
Coefficients	-0.009	0.171	0.098	0.021
p-value	0.000	0.000	0.000	0.128
	FDI Outward Stock			
Adjusted R Sq.	0.877	0.935	0.242	0.779
Coefficients	-0.006	0.216	0.027	0.043
p-value	0.000	0.000	0.012	0.000

Source: Authors' statistical estimation

Dominance Pattern

Dynamic changes in the pattern of outward FDI would result in changing ranks of different countries in terms of the outflows and outward stocks. This represents a state of competition amongst different countries. It is normally not possible for any single country to dominate FDI outward investment pattern for whole period 1990 to 2011. Even if a country is not at top for one or more years it should be possible to capture the dominating country. It is interesting to know whether there is any dominant country or a constant flux in the ranking of different countries. The index of rank dominance (IRD) is an innovative measure which tells us a coefficient that expresses the degree of dominance of an ordinal measure such as rank. IRD has further refined as a relative-Relative Index of Rank Dominance (RIRD), which measures dominance in a relative sense. This gives the proportionate weight of the rank dominance index.

Table 7 shows that most dominant country in terms of FDI outflows is China, Hong Kong SAR in case of top ten developing countries of the world during 1990-2011. The next best countries are British Virgin Islands and Singapore. The RIRD shows that FDI outflows are top heavy. The first five countries dominate the pattern of outflow such that they represent almost 60 percent of FDI outflows from developing countries. This means that the pattern of distribution of FDI outflows is highly dominating by few developing countries in case of developing countries group. In top five countries, only China belongs to BRICS countries. BRICS countries has dominated one-fourth of outflow from developing countries, three-fourth FDI outflow from other developing countries. India is at eleventh position and has share is only 2.2 percent. RIRD shows that FDI outflows are skewed in nature.

Table 7: Index of Rank Dominance of FDI Outflows of Top Ten Developing Countries During 1990-2011

Country	Score	IRD	RIRD
China, Hong Kong SAR	214	0.973	0.176
British Virgin Islands	143	0.650	0.118
Singapore	126	0.573	0.104
China, Taiwan Province of	118	0.536	0.097
China	118	0.536	0.097
South Korea	111	0.505	0.091
Russian Federation	106	0.482	0.087
Cayman Islands	57	0.259	0.047
Brazil	42	0.191	0.035

Malaysia	35	0.159	0.029
India	27	0.123	0.022
Mexico	23	0.105	0.019
Panama	20	0.091	0.016
Argentina	16	0.073	0.013
South Africa	14	0.064	0.012
Chile	14	0.064	0.012
Indonesia	10	0.045	0.008
United Arab Emirates	10	0.045	0.008
Nigeria	4	0.018	0.003
Venezuela	3	0.014	0.002
Saudi Arabia	2	0.009	0.002
Colombia	2	0.009	0.002
	Total	5.523	1.000

Source: Authors' statistical estimation

Table 8 shows that most dominant country in terms of FDI outward stock is China, Hong Kong SAR in case of top ten developing countries of the world during 1990-2011. The next best countries are China, Taiwan and Singapore. The RIRD shows that FDI outflows are top heavy. The first five countries dominate the pattern of outflow such that they represent almost 66 percent of FDI outward stock of developing countries. This means that the pattern of distribution of FDI outflows is highly dominating by few developing countries in case of developing countries group. In top five countries, only Brazil belongs to BRICS countries, which represents 12.1 percent of stock. BRICS countries has dominated one-third of outward stock of developing countries, two-third FDI outward stock controlled by other developing countries. India share is 0.2 percent only. RIRD shows that FDI outflows are skewed in nature.

Table 8: Index of Rank Dominance of FDI Outward Stock of Top Ten Developing Countries During 1990-2011

Country	Score	IRD	RIRD
China, Hong Kong SAR	211	0.959	0.174
China, Taiwan Province of	161	0.732	0.133
Singapore	156	0.709	0.129
Brazil	147	0.668	0.121
British Virgin Islands	124	0.564	0.102
China	106	0.482	0.088
Russian Federation	87	0.395	0.072
South Africa	85	0.386	0.070
South Korea	50	0.227	0.041

Argentina	36	0.164	0.030
Cayman Islands	15	0.068	0.012
Panama	11	0.050	0.009
Malaysia	9	0.041	0.007
Mexico	8	0.036	0.007
India	3	0.014	0.002
Indonesia	1	0.005	0.001
	Total	5.5	1

Source: Authors' statistical estimation

Within BRICS countries group, China is most dominating in terms of FDI outflow. Nest best is Russian Federation. India has fifth and last position. India represents only around 44 percent of China dominance (table 9). In case of FDI outward stock, Brazil is most dominating in BRICS countries. Next best is Russian Federation. India has fifth and last position as in case of outflow. India represents only around 27 percent of Brazil dominance (table 10).

Table 9: Index of Rank Dominance of FDI Outflow of BRICS Countries During 1990-2011

Country	Score	IRD	RIRD
China	93	0.845	0.282
Russian Federation	87	0.791	0.264
Brazil	65	0.591	0.197
South Africa	44	0.400	0.133
India	41	0.373	0.124
	Total	3	1

Source: Authors' statistical estimation

Table 10: Index of Rank Dominance of FDI Outward Stock of BRICS Countries During 1990-2011

Country	Score	IRD	RIRD
Brazil	97	0.882	0.294
Russian Federation	75	0.682	0.227
China	70	0.636	0.212
South Africa	62	0.564	0.188
India	26	0.236	0.079
	Total	3	1

Source: Authors' statistical estimation

Ranking Pattern

Table 11 and table 12 show that change in ranks in 1990, 1995, 2000, 2005 and 2010 top ten of developing countries in terms of outflow and outward stock respectively. The change in ranks of FDI outflows is more than that of FDI outward stock. This indicates that competition among developing countries for investing in host countries has increased in recent year.

Table 11: Ranks of FDI Outflows of Developing Countries

Country	1990	1995	2000	2005	2010
China, Taiwan Province of	1	5	4	9	12
China, Hong Kong SAR	2	1	1	1	1
Singapore	3	2	5	5	6
South Korea	4	3	6	7	5
China	5	8	12	4	2
Panama	6	14	22	17	18
Brazil	7	11	9	15	11
Nigeria	8	17	20	21	22
Venezuela (Bolivarian Republic of)	9	20	14	19	16
Cayman Islands	10	15	3	8	7

Source: Authors' statistical estimation

Table 12: Ranks of FDI Outward Stock of Developing Countries

Country	1990	1995	2000	2005	2010
Brazil	1	2	5	6	7
China, Taiwan Province of	2	3	3	5	6
South Africa	3	5	6	11	12
China, Hong Kong SAR	4	1	1	1	1
Singapore	5	4	4	2	4
Argentina	6	8	9	12	16
China	7	6	7	8	5
Panama	8	11	14	15	15
Mexico	9	13	15	7	9
Saudi Arabia	10	17	18	19	17

Source: Authors' statistical estimation

Table 13 and table 14 show that change in ranks within BRICS countries. India position has somewhat improved in recent year.

Table 13: Ranks of FDI Outflow of BRICS Countries

Country	1990	1995	2000	2005	2010
China	1	2	3	2	1
Brazil	2	3	2	4	4
Russian Federation	3	4	1	1	2
South Africa	4	1	5	5	5
India	5	5	4	3	3

Source: Authors' Estimation

Table 14: Ranks of FDI Outward Stock of BRICS Countries

Country	1990	1995	2000	2005	2010
Brazil	1	1	1	2	3
South Africa	2	2	2	4	5
China	3	3	3	3	2
Russian Federation	4	4	4	1	1
India	5	5	5	5	4

Source: Authors' Estimation

Mobility and Turnover

The Index of Rank Dominance is a summary measure and it has to be interpreted along with the Bodenhorn's Measure of Mobility and Turnover. IRD conceals dynamic changes in ranks. Bodenhorn's Measure, on the other hand captures the dynamic changes in rivalry amongst donor countries, both in terms of flows and stocks. Table 15 clearly shows that changes in ranks in stock terms are much less. This is expected because stocks are accumulated. This is statistically significant. There is decline in rivalry amongst developing country outflows. Growth rate is negative and significant at 10 percent. This is an expected result because they are not major exporters of capital. In fact, very few countries amongst developing countries may be dominating the total capital outflow and outward stock. Table 15 clearly shows that the volatility in developing country outflows is extreme.

Table 15: Bodenhorn's Mobility and Turnover of Developing Countries

Year	FDI Outflow	FDI Outward Stock
1991	35	3
1992	51	4
1993	45	8
1994	43	8
1995	21	1
1996	15	6
1997	23	2
1998	19	2
1999	25	6
2000	11	11
2001	32	20
2002	46	6
2003	40	4
2004	45	2
2005	33	4
2006	29	7
2007	12	2
2008	16	9
2009	25	12
2010	14	1
2011	16	7

Source: Authors' Estimation

Table 16: Regression Statistics of Bodenhorn's Mobility and Turnover of Developing Countries During 1990-2011

	FDI Outflows	FDI Outward Stock
Adjusted R Sq.	0.127	-0.048
Coefficient	-0.032	0.008
P Value	0.063	0.786

Source: Authors' Statistical Estimation

There is decline in rivalry amongst developing country outflows and it is significant at 10%. This is an expected result because they are not major exporters of capital. In fact, very few countries amongst developing countries may be dominating the total capital outflow and outward stock. Therefore, in Table 16 we find that the competition amongst developing country outflows is not significant.

CONCLUSION

The paper has analyzed capital flows in terms of outward FDI of developing countries including BRICS countries in stock and flow terms. The purpose of the paper was to investigate patterns of outward FDI from developing countries over a period of 22 years, since liberalization (1990). Growth index indicates the increase of outward FDI in subsequent year with respect to base year. In absolute term, FDI has been increased many times with respect to base year 1990 in each group countries. World FDI outflow is growing at 11 percent per annum. However, FDI outflow from developing and BRICS countries is growing at 15 percent and 28 percent respectively. It means growth rate of FDI outflow from developing is higher than world. Outward stock follows growth pattern of outflows. In percentage term, growth index of developed countries has declined in both flow and stock term. However, growth index of transitional, BRICS and developing countries other than BRICS countries is positive and significant in both flow and stock term. Growth rate of FDI outflow from BRICS countries is higher than developing countries other than BRICS countries. But in case of outward stock, growth rate of BRICS countries is lower than developing countries other than BRICS. This mean that FDI outflows from BRICS countries has increased in recent years. China, Hong Kong SAR is a most dominating in both flow and stock amongst developing countries. Top five countries have around 60 percent control and dominance in case of outflow. BRICS countries is controlling one-fourth of developing countries outflows. India is at eleventh position and has 2.2 percent share of outflow of developing countries. In terms of outward stock, top five countries have around 66 percent dominance amongst developing countries. BRICS countries represents one-third of developing countries FDI outward stock. India is at fifteenth position and has share is 0.2 percent only. Dominance patterns among developing countries are not stable, when seen with the Bodenhorn's measure of mobility and turnover. Mobility and turnover is higher in case of outflow than stock. In case of outflow, growth rate is 3.2 percent and it is negative and significant at 10 percent. It means there is decline in competition amongst developing countries outflows. And FDI outflow is dominated and controlled by few developing countries within developing countries group. This is an expected result because they are not major exporters of capital. In stock terms, there is a less than one percent growth in competition amongst developing countries. But it is not significant. In fact, very few countries amongst developing countries may be dominating the total capital outflow and outward stock. In general, outward FDI has been increasing from developing or BRICS countries, but these countries are not leading in global outward FDI.

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