Country Wise Foreign Direct Investment Inflows Pattern In India

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Abstract - FDI equity inflows data from Mauritius, Singapore, Netherlands, Japan, USA, UK, Germany, Cyprus, France, Cayman Islands, UAE, and Switzerland for financial year 2000-01 to 2019-20 were analysed for growth pattern. Gradual increase in FDI inflows of all countries were observed during the period of study. Mauritius came out to be main investor in India with a share of 30.13% followed by Singapore (20.78%). The compound annual growth rate of total FDI inflows in India during the study period is 16.24% whereas compound annual growth rate of FDI flows from Mauritius, Singapore, Netherlands, Japan, USA, UK, Germany, Cyprus, France, Cayman Islands, UAE, and Switzerland is 11.45%, 27.33%, 20.77%, 14.27%, 13.16%, 16.25%, 7.13%, 40.35%, 15.62%, 39.15%, 33.82%, 13.71% respectively. FDI inflows to India from Mauritius, Singapore, Netherlands, Japan, USA, UK, Germany, Cyprus, France, Cayman Islands, UAE, and Switzerland by ARIMA models is projected to be USD $ million 18496, 23023, 7458, 4803, 4573, 2792, 891, 986, 1360, 7915, 1230, and 618 respectively in 2029-30.

Index Terms: ARIMA, compound growth rate, country wise FDI flows, pattern

1. INTRODUCTION

Foreign Direct Investment has been one of the major sources of capital flow for the economic development of India. Several steps after 1991 have been taken by the government to ensure that foreign capital continuously flow into the country. Foreign direct investment up-to 100% has now been permitted in almost all sectors except few. Simplification of procedure and inclusion of more and more sector under automatic route have lead to the increased foreign direct investment inflows in India. These structural reforms undertaken by Government of India have evoked strong positive response from foreign investors. Foreign direct investment contributes to the development through transfer of financial resources, technology and innovative and improved management techniques along-with raising productivity. The foreign investment is being made to harvest the benefits of relatively lower wages and tax exemptions etc. After liberalization of investment policies in 1991, there is a tremendous growth of foreign direct investment inflow in India. FDI inflows in India played a significant role in economic growth and development. According to Department of Industrial promotion and Policy, cumulative FDI equity inflow between April 2000 and March 2020 is US $ 470118.99 million. In terms of cumulative foreign direct investment inflows and its geographic origin, Mauritius accounted for 30.13% of total FDI inflows followed by Singapore (20.88%), Netherlands (7.33%), Japan (7.12%), USA (6.38%), UK (5.96%), Germany (2.57%), Cyprus (2.26%), France (1.83%), Cayman Islands (1.6%), UAE (1.48%) and Switzerland (1.02%). The total share of these twelve countries is 88.56%. The share of remaining countries is 11.37%. Therefore, top twelve countries investing in India having contribution of more than 1% to cumulative foreign direct investment inflows between 2000-01 and 2019-20 have been selected for the study.

2. REVIEW OF LITERATURE
Teli (2014) studied FDI inflows in India from 1991 to 2012 and observed that FDI inflows showed positive trend over the period of study. It was found that Mauritius and Singapore had 48% of cumulative inflows of FDI. Service sector has topped in attracting highest FDI inflows followed by manufacturing sector. Very high correlation was found between FDI inflows and other related economic indicators. Biswas (2015) developed a time series model using Box-Jenkins methodology to forecast FDI inflows in India over the period of 2015 to 2034. The results of models shows that there will be smooth increase of FDI inflows in India over the years (2015-2034). Singh (2015) forecasted FDI in India from 2014 to 2020 using univariate ARIMA models. ARIMA (111) model was found to be the most suitable of all the models used. As per the model, India can receive FDI up to US $ 74935.27 million in 2020. Sirisha and Malyadri (2015) analyzed sector wise and country wise inflows of FDI during the period of 2009-2014. It was observed that communication services attracted highest FDI inflows followed by retail and wholesale trade during the period as per compound annual growth rate and manufacturing as per the share. Luxemburg is at highest FDI inflows as per compound annual growth rate and Mauritius as per the share followed by Japan and Spain. Ghosh (2015) analyzed sector and country wise trend of FDI inflows in India from 1991-92 to 2012-13. Negative trend in electrical equipments, transportation, chemicals and food processing and positive trend in metallurgy and service sectors were observed. The author also investigated determinants of FDI inflow in India since 1980-81. Khurrrana and Nain (2016) analysed share of top investing countries FDI equity flow in India. It was observed that India’s 85% of cumulative FDI is contributed by Mauritius, Singapore, USA, UK, Netherlands, Germany, Cyprus, France and UAE from April 2000 to March 2016. Mauritius is the most dominant source of FDI contributing 33% of total investment in India. The maximum FDI has taken place in service sector. Madaan et al (2018) analyzed FDI inflows data of 2004-2018 and forecasted FDI inflows in India for the coming years using growth, trend analysis and ARIMA forecasting techniques. Many fold increase in FDI inflows in India with positive trend in coming years is projected for the study. Adhana and Gualti (2019) studied the trend of FDI inflows in India during 2000-01 to 2017-18. Mauritius with 34 % share was highest foreign investor in India followed by Singapore (18%), Japan (7%) and UK (7%). The services sector has highest FDI equity inflows (18%) followed by computer software and hardware, telecommunication, construction development and automobile industry with 8%, 8%, 7%, and 5% respectively. It was concluded that sources of investment other than mergers & acquisitions are least effective. Vyas (2019) studied changing trends in the flow of FDI using data of 1991-92 to 2008-09. The country wise FDI inflows revealed that Mauritius is top investing country in India with a share of 44%. During the period of 1991-2006, largest recipient of FDI was electric equipment sector with a share of 17.54% but service sector enjoyed the highest share of 22% of FDI inflows from the period of 2006 to December 2009. Rakhi (2020) analyzed trend of sector wise and country wise FDI inflows in India. Major FDI inflows in India went to service sector followed by computer software and hardware and telecommunication. Growth in service sector has been higher than the manufacturing and agriculture sector. India is the 9th largest recipient of FDI among top ten countries in 2020. Singapore is the top investing countries in India followed by Mauritius. Rao and Chengalrayulu (2020) analyzed the growth and development of FDI inflows in India using 10 years data. It was observed that the highest FDI came from Singapore followed by Mauritius, Netherlands, USA, Japan, and Cayman Islands from 2015-16 to 2019-20. The highest share of manufacturing sector was 22.79% in FDI inflows. An additional incentive to foreign investors to invest in states where level of FDI inflows is low was suggested.

3. METHODOLOGY

The study is based on secondary data of FDI inflows to India from twelve countries. The time series data of financial year 2000-01 to 2019-20 was collected from various sources i.e., Publication of Ministry of Commerce and Industry, Government of India, Reserve Bank of India, reports of Government of India and other websites. For analysis purpose, countries investing in India were
identified based on the percentage contribution to cumulative FDI inflows in India during financial year 2000-01 to 2019-20. The countries having more than 1% share during the study period were selected for the analysis. To evaluate the trend and growth of FDI inflows in India from 2000-01 to 2019-20 from Mauritius, Singapore, Netherlands, Japan, USA, UK, Germany, Cyprus, France, Cayman Islands, UAE, and Switzerland. Annual growth rate, percentage and compound annual growth rate have been used as analytical tools and bar diagram as graphical tool. ARIMA models were employed to forecast FDI inflows to India from the above twelve countries. The study is undertaken with the following objectives:

1) To analyze growth, trends and pattern of FDI inflows in India with a view to understand its geographical origin.
2) To forecast the volume of FDI inflows to India from twelve countries for 2029-30.

4. RESULTS AND DISCUSSION

A. Country wise FDI Inflows to India

The total FDI flow to India from all countries from April 2000 to March 2020 in USD $ million is 469997.66. The share of the countries having more than 1% contribution to FDI inflows in India in US $ million are 142710.44 (30.36%), 97669.64 (20.78%), 33852.04 (7.20%), 33499.21 (7.13%), 29779.40 (6.09%), 129196.01 (2.59%), 10748.39 (2.29%), 8539.31 (1.82%), 7535.86 (1.60%), 6990.60 (1.49%), and 4842.38 (1.03%) for Mauritius, Singapore, Netherlands, Japan, USA, UK, Germany, Cyprus, France, Cayman Islands, UAE, and Switzerland respectively. As per statistics on country wise FDI equity inflows from April 2000 to March 2020 of Department of Industrial promotion and Policy, the total shares of these twelve countries 88.63%. The share of Mauritius and Singapore is 51.14% whereas the share of Netherlands, Japan, USA, and UK together is 26.67%. The annual (financial year) inflow of FDI from these countries is shown in Figure 1. The Figure 1 shows in general gradual increase of FDI inflows from 2000-01 to 2019-20 with some ups and downs. The FDI inflows for Mauritius, Singapore, Netherlands, Japan, USA, UK, Germany, Cyprus, France, Cayman Islands, UAE, and Switzerland in 2000-01 was in US $ million 942, 117, 162, 224, 356, 70, 123, 1, 104, 5, 1, and 16 respectively and it increased to US $ million 8241, 14671, 6500, 3226, 4223, 1422, 488, 879, 1896, 3702, 339, and 209 respectively. However, sudden decrease in FDI inflows in 2010-11 was observed from all countries except Netherlands, Japan, UK, France, and Switzerland. The sudden decrease in FDI inflows from Mauritius, Japan, and France was observed in 2013-14. The FDI inflows show decreasing trend in 2018-19 and 2019-20 from Mauritius, Singapore, Germany, UAE, and Switzerland. The highest FDI inflows to India from Mauritius, Singapore, Netherlands, Japan, USA, UK, Germany, Cyprus, France, Cayman Islands, UAE, and Switzerland in US $ million was 15941 (2017-18), 16228 (2018-19), 6500 (2019-20), 3226 (2019-20), 4223 (2019-20), 1422 (2019-20), 1622 (2011-12), 1587 (2011-12), 1896 (2019-20), 3702 (2019-20), 1050 (2017-18), and 895 (2010-11) respectively. The share of twelve countries in percentage to total FDI inflows in India is shown in Figure 2. The share of Mauritius, Singapore, Netherlands, Japan, USA, UK, Germany, Cyprus, France, Cayman Islands, UAE, and Switzerland to total FDI inflows in India was 38.25%, 4.75%, 6.58%, 9.09%, 14.45%, 2.84%, 4.99%, 0.04%, 4.22%, 0.20%, 0.04%, and 0.65% respectively in 2000-01 whereas the share in 2019-20 was 16.49%, 29.36%, 13.01%, 6.45%, 8.45%, 2.85%, 0.98%, 1.76%, 3.79%, 7.41%, 0.68%, and 0.42% respectively. The highest share to FDI inflows to India from Mauritius, Singapore, Netherlands,
Japan, USA, UK, Germany, Cyprus, France, Cayman Islands, UAE, and Switzerland was 53.83% (2001-02), 36.58% (2018-19), 22.35% (2003-04), 15.23% (2002-03), 20.78% (2004-05), 22.42% (2011-12), 5.47% (2005-06), 6.30% (2009-10), 4.22% (2000-01), 7.41% (2019-20), 2.43% (2009-10, 4.19% (2010-11) respectively whereas lowest share was 16.49% (2019-20), 1.33% (2001-02), 1.37% (2005-06), 0.68% (2006-07, 3.17% (2001-12), 1.89% (2017-18), 0.94% (2010-11), 0.04% (2011-12), 0.32% (2005-06), 0.02% (2001-02), 0.04% (2000-01), and 0.39% (2009-10) respectively. The share of Mauritius to total FDI inflows in India came down to 18.22% in 2018-19 and further to 16.49% in 2019-20 from 35.54% in 2017-18. The policy makers should looks into the declining trend of FDI inflows from Mauritius and should take corrective policy measures to halt the declining trend.
B. Growth Pattern of FDI Inflows to India from Countries

The annual growth rate of FDI flows from the countries is shown in Figure 3. The annual growth rate of total FDI flows in India in 2001-02 was 65.04% and it came down to 12.65% in 2019-20. The highest annual growth rate of 125.49% was recorded in 2006-07. The negative annual growth rate was observed in 6 years of the study period. The highest annual growth rate of FDI flows from Mauritius, Singapore, Netherlands, Japan, USA, UK, Germany, Cyprus, France, Cayman Islands, UAE, and Switzerland was 147.59% (2006-07), 431.66% (2007-08), 747.37% (2006-07), 858.82% (2007-08), 129.82% (2015-16), 606.02% (2006-07), 7.11% (2011-12), 16.50% (2005-06), 550% (2006-07), 4700% (2002-03), 2200% (2001-02) and 382.86% (2007-08) respectively. The negative annual growth rate was observed in 8, 8, 5, 6, 7, 10, 9, 6, 9, 8, 8, and 9 years of study period in case of Mauritius, Singapore, Netherlands, Japan, USA, UK, Germany, Cyprus, France, Cayman Islands, UAE, and Switzerland respectively. The compound annual growth rate of total FDI inflows in India during the study period is 16.24% whereas for FDI flows from Mauritius, Singapore, Netherlands, Japan, USA, UK, Germany, Cyprus, France, Cayman Islands, UAE, and Switzerland is 11.45%, 27.33%, 20.77%, 14.27%, 13.16%, 16.25%, 7.13%, 40.35%, 15.62%, 39.15%, 33.82%, 13.71% respectively. The compound growth rate of FDI flows from the countries is shown in Figure 4. The compound annual growth rate of FDI flows from Singapore, Netherlands, UK, Cyprus, France, Cayman Islands, and UAE is more than the total FDI inflows in India during the study period. To analyze growth of FDI flows from these countries, the study period was sub-divided into four periods of five years each i.e., 2001-05, 2006-10, 2011-15, and 2016-20. Compound annual growth rate of FDI flows for each period were calculated and are shown in Figure 4. The compound annual growth rate of total FDI flows in India for the period of 2001-05, 2006-10, 2011-15, and 2016-20 are 5.50%, 36.06%, 6.82% and 4.55% respectively. The comparison of compound annual growth rate of FDI flows for four periods of 5 years each shows that the compound annual growth rate during period of 2005-06 to 2009-10 was highest for all the countries except Germany (2010-11 to 2014-15), Cayman Islands (2015-16 to 2019-20), UAE (2000-01 to 2004-05) and Switzerland (2000-01 to 2004-05). The study period was also sub divided into two periods of 10 years each i.e., 2001-10, and 2011-20 for decade wise comparison. The values of compound annual growth rate for two decades are given in Table 1. The compound annual growth rate of total FDI inflows in India for the period of 2001-10 and 2011-20 was 26.49% and 8.86% respectively. Comparison of compound annual growth rate of FDI flows for the two decades shows that compound annual growth rate was higher in 2001-10 from all countries except Cayman Islands (2011-20). The four countries i.e., UK, Cyprus, UAE, and Switzerland recorded negative compound annual growth rate in 2011-20 whereas
from these countries during 2001-10 was 25.10%, 109.48%, 90.49%, and 20.35% respectively. This analysis clearly shows that FDI flows from all countries except Cayman Islands slow down in the second decade of the century. Thus, there is need for India to revisit its FDI policy to reverse the trend of slowdown in FDI flows from these countries.

C. Forecasting of FDI Flows to India from Countries

The annual time series data of FDI flows from Mauritius, Singapore, Netherlands, Japan, USA, UK, Germany, Cyprus, France, Cayman Islands, UAE, and Switzerland for the period of 2000-01 to 2019-20 were subjected to the process of development of

ARIMA modelling to find the suitable ARIMA model for forecasting of FDI inflows to India from Mauritius, Singapore, Netherlands, Japan, USA, UK, Germany, Cyprus, France, Cayman Islands, UAE, and Switzerland for the period of 2020-21 to 2029-30. The ARIMA modelling process involved the steps of identification of order of the model, parameter estimation and forecasting. Auto-correlation function and partial auto-correlation function were used to identify the tentative order of the models. Eight different ARIMA models were namely ARIMA (110), ARIMA (011), ARIMA (111), ARIMA (211), ARIMA (112), ARIMA (121), ARIMA (212) and ARIMA (012) were used in this study for each of the twelve time series. The model which has minimum value of Akaike Information Criteria was selected for forecasting of FDI inflows. ARIMA (012), ARIMA (212), ARIMA (112), ARIMA (101), ARIMA (212), ARIMA (011), ARIMA (012), ARIMA (112), ARIMA (111), ARIMA (012), and ARIMA (112) were found to be most suitable and provided best fit to the FDI inflows to India from Mauritius, Singapore, Netherlands, Japan, USA, UK, Germany, Cyprus, France, Cayman Islands, UAE, and Switzerland respectively. The forecast of FDI flows from Mauritius, Singapore, Netherlands, Japan, USA, UK, Germany, Cyprus, France, Cayman Islands, UAE, and Switzerland for the time period of 2020-21 to 2029-30 are shown in Figure 5. As per forecast of these models, FDI inflows to India from Mauritius, Singapore, Netherlands, Japan, USA, UK, Germany, Cyprus, France, Cayman Islands, UAE, and Switzerland is projected to be US $ million 18496, 23023, 7458, 4803, 4573, 2792, 891, 986, 1360, 7915, 1230, and 618 respectively in 2029-30. The compound annual growth rate of FDI inflows to India from Mauritius, Singapore, Netherlands, Japan, USA, UK, Germany, Cyprus, France, Cayman Islands, UAE, and Switzerland are likely to be 4.46%, 5.57%, 3.52%, 3.72%, 2.37%, 2.89%, -1.61%, 1.34%, 9.02%, 6.49%, 4.04%, and 3.72% respectively.

5. CONCLUSION

The total share of FDI flows from Mauritius, Singapore, Netherlands, Japan, USA, UK, Germany, Cyprus, France, Cayman Islands, UAE, and Switzerland is 88.63% from April 2000 to March 2020. The share of Mauritius and Singapore is 51.14% whereas the share of Netherlands, Japan, USA, UK is 26.27% during this period. In general, there is gradual increase of FDI flows from these countries from 2000-01 to 2019-20 with some ups and downs. The analysis clearly shows that FDI from all countries except Cayman Islands slow down during 2011-20 in comparison to 2000-01. As per forecast of the ARIMA models, FDI flows from Mauritius, Singapore,
Japan, USA, UK, Germany, Cyprus, France, Cayman Islands, UAE, and Switzerland is projected to grow at compound annual growth rate of 4.46%, 5.57%, 3.52%, 3.72%, 2.37%, 2.89%, -1.61%, 1.34%, 9.02%, 6.49%, 4.04%, and 3.72% respectively.

REFERENCES


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