Contribution of FDI and FII in Indian Economic Growth

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Abstract— Foreign Direct Investment acts as a traverse in filling the aperture between investments and saving. As a result inflow of Foreign Capital has become a striking measure of economic development in both developed and developing countries. FDI & FII are becoming important sources of finance in developing countries including India. The current paper makes an attempt to study the relationship and impact of FDI & FII on the Indian Economic Growth using the statistical measures, correlation and regression analysis. SENSEX and Nifty were considered as the representatives of stock market as they are the most popular Indian stock market indices. Based on 10 years data starting from 2007-08 to 2017-18, it was found that the flow of FII has no significant impact on the Indian Economic Growth but FDI flow in India determines the trend of Indian Economic Growth.

Keywords—FDI, FII, SENSEX, NIFTY, Economic Growth

I. INTRODUCTION

There is barely an Indian psyche aspect that the concept of foreign has not pervaded. In 1991, when the Indian Government initiated the reforms, the terms, manifest modernization, international brands, and acquisitions by MNC’s in popular imagination, has amassed renewed significance. Contrary to the grand narrative, opening of floodgates idea” of 1991 what took place was a gradual process of changes in policies on investment in certain sub-sections of the Indian economy.

Since 1950 the rapid growth of world population has occurred mostly in developing countries. This growth has been paralleled by more rapid increase in gross domestic product, and thus the income per capita has surged in most countries around the world. An increase in FDI may be associated with improved economic growth due to the influx of capital and increased tax revenues for the host countries.

Foreign institutional investors play a vital role in any economy. They exert strong influence on the total inflows coming into the economy. They are considered as both a trigger and catalyst for the market performance by encouraging investment from all classes of investors which further leads to growth in financial market trends under a self-organized system.

II. REVIEW OF LITERATURE

John Andreas1 in his work “The Effects of FDI Inflows on Host Country Economic Growth” discusses the potential of FDI inflows to affect host country economic growth. The paper argues that FDI should have a positive effect on economic growth as a result of abundance technology and physical capital inflows. A cross section and panel data analysis during the period 1980 to 2002 on a dataset covering 90 countries, finds that FDI inflows enhance economic growth in developing economies only but not in developed economies. This paper has assumed that the direction of causality goes from inflow of FDI to host country economic growth. However, economic growth could itself cause an increase in FDI inflows. Economic growth increases the market size of the host country market and strengthens the incentives for market seeking FDI. This could result in a situation where FDI and economic growth are mutually supporting. However, for the ease of most of the developing economies growth is unlikely to result in market – seeking FDI due to the low income levels. Therefore, causality is primarily expected to run from FDI inflows to economic growth for these economies.

According to Dornbusch and Park (1995), foreign investors pursue a positive feedback strategy, which makes stocks to overreact to change in fundamentals. Nitin Kansal examined the “Impact of FDI & FII on India”. The objective of his research is to find the trends & patterns in the FDI from different countries flown into India during 1991-2007 period means i.e. during post liberalization period & Influence of FII movement of Indian stock exchange during the post liberalization period that is 1991 to 2007. It concludes that FDI did have high significant impact on the Indian capital market.

Objectives:
1. To study the contribution of FDI and FII to the economic growth of India
2. To study the relationship between FDI, FII inflow and the Indian stock market with reference to SENSEX and NIFTY.

Foreign Direct Investment:

According to the Detailed Benchmark Definition of Foreign Direct Investment (1996) published by the Organization for Economic Cooperation and Development, a single investor owns 10 per cent or more of the ordinary shares or voting power of an enterprise (unless the ownership does not incur the investor an effective vice in the management), or owns less than 10 per cent of the ordinary shares or voting power of an enterprise, yet still maintains an effective voice in
management. And the level of such ownership over the enterprise is known as threshold equity ownership.

In 2017, global foreign direct investment was $1.52 trillion, according to the United Nations. The FDI is down 16 percent from 2016's record of $1.8 trillion. The decline was due to a 27 percent drop in developed countries. Investments returned to normal levels in the United States after spiking in 2016.

**Foreign Institutional Investment:**

The term foreign institutional investment denotes all those investors or investment companies that are not located within the territory of the country in which they are investing. These are actually the outsiders in the financial markets of the particular company. Foreign institutional investment is a common term in the financial sector of India.

The types of institutions that are involved in the foreign institutional investment are as follows:

- Mutual Funds
- Hedge Funds
- Pension Funds
- Insurance companies

The economies like India, which are growing very rapidly, are becoming hot favorite investment destinations for the foreign institutional investors. These markets have the potential to grow in the near future.

This is the prime reason behind the growing interests of the foreign investors. The promise of rapid growth of the investable fund is tempting the investors and so they are coming in huge numbers to these countries. The money, which is coming through the foreign institutional investment, is referred as „hot money” because the money can be taken out from the market at any time by these investors.

**Research Methodology:**

The universe of the present study is FDI and FII in India and Indian economic growth. The SENSEX and NIFTY indices considered as the representative of Indian stock market as they are the popular indices of Indian stock market.

**Data Collection:**

This study is based on the secondary data. The data related to FDI and FII have been collected from DIPP. The Sensex and NIFTY data is downloaded from the websites of Bombay Stock Exchange and National Stock Exchange respectively. The closing index value at the end of each year is taken which the presence, the figure of entire year. The study considers the period of 10 years from 2007-2008 to 2016-2017.

**Tools and Techniques:**

To analyze the data, statistical tools such as correlation and regression analyses are used.

Correlation coefficient is a statistical measure that determines the degree to which two variables movements are associated. The correlation coefficient value ranges from -1 to 1. Negative value of correlation indicates, if one variable increases in its value, another variable decreases in its value and positive value indicates, if one variable increases in its value, another variable also increases in its value. To know the linear relationship between variables FDI and SENSEX, FDI and NIFTY, FII and SENSEX and FII and NIFTY correlation is applied.

The regression analysis is a statistical technique used to evaluate the effects of an independent variable on other dependent variable the attempt is made to study the impact of FDI and FII on SENSEX and FDI and FII on NIFTY. FDI and FII are considering as independent variable and SENSEX and Nifty are considered as dependent variables.

**Hypothesis:**

- **H₀₁:** FDI and FII has no significant impact on BSE SENSEX movements
- **H₁₁:** FDI and FII has significant impact on BSE SENSEX movements
- **H₀₂:** FDI and FII has no significant impact on NIFTY movements
- **H₁₂:** FDI and FII has significant impact on NIFTY movements

**Analysis:**

The table presents the amount of flow of FDI and FII in India in terms of US $ million and the closing index value of SENSEX and NIFTY at the end of each year.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>FDI</th>
<th>FII</th>
<th>SENSEX</th>
<th>NIFTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007-08</td>
<td>34,843</td>
<td>20,328</td>
<td>15644.44</td>
<td>4734.5</td>
</tr>
<tr>
<td>2008-09</td>
<td>41,873</td>
<td>-15,017</td>
<td>9708.5</td>
<td>3020.95</td>
</tr>
<tr>
<td>2009-10</td>
<td>37,743</td>
<td>29,948</td>
<td>17327.77</td>
<td>3249.1</td>
</tr>
<tr>
<td>2010-11</td>
<td>34,847</td>
<td>29,422</td>
<td>19445.22</td>
<td>5833.75</td>
</tr>
<tr>
<td>2011-12</td>
<td>46,556</td>
<td>16,312</td>
<td>17404.2</td>
<td>5295.35</td>
</tr>
<tr>
<td>2012-13</td>
<td>34,298</td>
<td>27,582</td>
<td>18833.77</td>
<td>5682.55</td>
</tr>
<tr>
<td>2013-14</td>
<td>36,046</td>
<td>5,009</td>
<td>22386.27</td>
<td>6704.2</td>
</tr>
<tr>
<td>2014-15</td>
<td>45,148</td>
<td>40,923</td>
<td>27957.49</td>
<td>8491</td>
</tr>
<tr>
<td>2015-16</td>
<td>55,359</td>
<td>-4,016</td>
<td>25341.86</td>
<td>7738.4</td>
</tr>
<tr>
<td>2016-17</td>
<td>60,220</td>
<td>7,735</td>
<td>29620.5</td>
<td>9173.75</td>
</tr>
<tr>
<td>2017-18</td>
<td>61,963</td>
<td>22,165</td>
<td>32968.68</td>
<td>10113.7</td>
</tr>
</tbody>
</table>

**Correlation between FDI & FII and SENSEX & NIFTY:**

Correlation is applied to study the statistical relationship of the variables FDI, FII, BSE SENSEX and NIFTY. When correlation is applied on the above mentioned 10 years data. Based on the results it can be concluded that there is a strong positive correlation between FDI & SENSEX and FDI & NIFTY i.e. 0.72 and 0.74 respectively. When it comes to FII,
it was found that there is a weak positive correlation between FII & SENSEX and FII & NIFTY i.e. 0.27 and 0.25

Regression Analysis:
1. Independent variable: FDI & FII, Dependent variable: BSE SENSEX
   a) Regression analysis for model
      \[ Y (SENSEX) = a + b_1 X_1 (FDI) + b_2 X_2 (FII) \]
      gives the following results

      | TABLE 2 |
      | Regression Statistics |
      | Multiple R | 0.83 |
      | R Square | 0.72 |
      | Adjusted R Square | 0.64 |
      | Standard Error | 4153.20 |
      | Observations | 10 |

      TABLE 3
      ANOVA
      \[
      \begin{array}{ccc}
      \text{df} & \text{REGRESSION} & \text{RESIDUAL} & \text{TOTAL} \\
      \hline
      \text{SS} & 31904873.82 & 12074348.25 & 43979220.75 \\
      \text{MS} & 156524369.1 & 17249069.9 & \\
      \text{F} & 9.07 & & \\
      \text{Significance} & 0.01 & & \\
      \end{array}
      \]

      TABLE 4
      T-STAT AND P-VALUE
      \[
      \begin{array}{ccc}
      \text{INTERCEPT} & \text{FDI} & \text{FII} \\
      \hline
      \text{Coefficient} & -2584.65 & 0.74 & 0.20 \\
      \text{Standard error} & 6731.09 & 0.14 & 0.08 \\
      \text{t-Stat} & -0.83 & 3.98 & 2.43 \\
      \text{P-value} & 0.43 & 0.01 & 0.4 \\
      \text{Lower 95%} & -21501.15 & 0.22 & 0.01 \\
      \text{Upper 95%} & 10331.85 & 0.66 & 0.39 \\
      \end{array}
      \]

      A simple summary of the above output is that the fitted line is \[ Y (SENSEX) = -5584.65 + 0.54 X_1 (FDI) + 0.20 X_2 (FII) \]

      From the ANOVA table, the F-test statistic is 9.07 with p value of 0.01. Since the P-value is less than 0.05 (0.001<0.05) we accept alternate hypothesis. This is concluded that the model is statistically significant at the significant level 0.01.

      The coefficient of FDI has estimated standard error of 0.14, t-Statistic of 3.98 and P-value of 0.01. It is therefore statistically significant at significance level \( \alpha=0.05 \) as \( P<0.05 \). Lower 95% and Upper 95% shows that limits of a confidence interval for the slope of regression line that is via 95% confident that \( 0.22> b_1 > 0.01 \).

      As a result we accept the alternate hypothesis, thus for the above model FDI has impact on significant BSE SENSEX movement.

      The coefficient of FII has estimated standard error of 0.08, t-statistic of 2.43 and P-value of 0.4. It is therefore statistically significant at significance level \( \alpha=0.05 \) as \( P<0.05 \). Lower 95% and Upper 95% shows that limits of a confidence interval for the slope of regression line that is via 95% confident that \( 0.01 \leq b_2 \leq 0.39 \).

      As a result we can reject the null hypothesis, thus for the above model FII has significant impact on significant BSE SENSEX movement.

2. Independent variable: FDI & FII, Dependent variable: NIFTY
   b) Regression analysis for model
      \[ Y (NIFTY) = a + b_1 X_1 (FDI) + b_2 X_2 (FII) \]
      gives the following results

      | TABLE 5 |
      | Regression Statistics |
      | Multiple R | 0.86 |
      | R Square | 0.74 |
      | Adjusted R Square | 0.66 |
      | Standard Error | 1243.50 |
      | Observations | 10 |

      TABLE 6
      ANOVA
      \[
      \begin{array}{ccc}
      \text{df} & \text{REGRESSION} & \text{RESIDUAL} & \text{TOTAL} \\
      \hline
      \text{SS} & 30624082.48 & 10824092.66 & 414481750.11 \\
      \text{MS} & 153124041.24 & 13462989.95 & \\
      \text{F} & 9.902 & & \\
      \text{Significance} & 0.009 & & \\
      \end{array}
      \]

      TABLE 7
      T-STAT AND P-VALUE
      \[
      \begin{array}{ccc}
      \text{INTERCEPT} & \text{FDI} & \text{FII} \\
      \hline
      \text{Coefficient} & -1977.016 & 0.17 & 0.05 \\
      \text{Standard error} & 2015.345 & 0.04 & 0.02 \\
      \text{t-Stat} & -0.98 & 4.2 & 2.42 \\
      \text{P-value} & 0.35 & 0.004 & 0.04 \\
      \text{Lower 95%} & -5742.25 & 0.07 & 0.001 \\
      \text{Upper 95%} & 2788.516 & 0.26 & 0.12 \\
      \end{array}
      \]
A simple summary of the above output is that the fitted line is 
\[ Y (\text{NIFTY}) = -1977.016 + 0.17 X_1 (\text{FDI}) + 0.05 X_2 (\text{FII}) \]

From the ANOVA table, the F-test statistic is 9.902 with p-value of 0.004. Since the P-value is less than 0.05 (0.004<0.05) we accept alternate hypothesis. This is concluded that the model is statistically significant at the significant level 0.004.

The coefficient of FDI has estimated standard error of 0.04, t-Statistic of 4.2 and P-value of 0.004. It is therefore statistically significant at significance level \( \alpha = 0.05 \) as \( P<0.05 \). Lower 95% and Upper 95% shows that limits of a confidence interval for the slope of regression line that is via 95% confident that \( 0.27 > b_1 > 0.26 \).

As a result we accept the alternate hypothesis, thus for the above model FDI has impact on significant NIFTY movement.

The coefficient of FII has estimated standard error of 0.02, t- statistic of 2.42 and P-value of 0.04. It is therefore statistically significant at significance level \( \alpha = 0.05 \) as \( P<0.05 \). Lower 95% and Upper 95% shows that limits of a confidence interval for the slope of regression line that is via 95% confident that \( 0.001 \leq b_2 \leq 0.12 \).

As a result we can reject the null hypothesis, thus for the above model FII has significant impact on significant NIFTY movement.

**Findings of the Study**

- The flow of FDIs has shown an increasing trend during the considered period of years i.e. 2007-08, 2008-09, 2014-2018
- When flow of FII and FDI are compared, the flow of FII is less than flow of FDI into India i.e. from 2007-10, 2014-18
- The value of both indices show a mixed trend but both of them are moving up or down at same time
- There is a strong positive correlation between FDI & SENSEX and FDI & NIFTY i.e. 0.72 and 0.74 respectively
- There is a weak positive correlation between FII & SENSEX and FII & NIFTY i.e. 0.27 and 0.25
- Flow of FDI has significant impact on BSE Sensex
- Flow of FII has no significant impact on BSE Sensex
- Flow of FDI has significant impact on CNX Nifty
- Flow of FII has no significant impact on CNX Nifty

**III. CONCLUSIONS**

The flow of foreign capital is playing a major role in the development of Indian economic growth. The foreign investors are coming to India in two ways i.e. FDI or FII. As far as FDI is concerned, it is directly related with economic growth but provides prospects to industries for technological up-gradation, gaining access to global managerial skills and practices, optimizing utilization of human and natural resources and global competitive advantage with greater efficiency. On the other hand FII has not directly concerned with economic growth and helpful in the development & growth of Indian economy. From the current study it is evident that there is a strong positive correlation between FDI & SENSEX and FDI & Nifty and week positive correlation between FII & SENSEX and FII & Nifty.

**REFERENCES**