ISSN: 2288-2766 © 2015 EABEA. http://www.eabea.or.kr
doi: http://dx.doi.org/10.13106/eajbe.2015.vol3.no1.8.

Impact of Foreign Direct Investment on Power Sector: An Empirical Study with Refrence to India

K. Maran[1], R. Anitha[2]

1 First Author & Corresponding Author Dr. Professor & Director, Sri Sai Ram Institute of Management Studies Chennai, India. E-mail: maran.mba65@gmail.com

[2] Faculty- Commerce, Anna Adharsh College, Chennai, India.

Received: August 03, 2014., Revised: December 01, 2014., Accepted: March 15, 2015.

Abstract

In the later quarter of the twentieth century, the need for foreign capital is realized among the various countries of the world. Developing countries especially developed multi-pronged strategies to attract foreign capital into the country. One such strategy is the adoption of liberalization policy. Almost all the developing countries started opening their economy, out of the compulsion, to achieve faster rate of economic growth and development. Even a communist country like China adopted liberalization policy as a strategy for accelerated economic growth during 1979. India also joined the race by 1991, when the government announced the policy of liberalization. The importance of FDI extends beyond the financial capital that flows into the country. The huge size of the market in this sector and high returns on investment are two important factors in boosting FDI inflows to power sector. 100 percent FDI is allowed under automatic route in almost all the sub sectors of power sector except the atomic energy. Major foreign investment is made in this sector during 2000 to 2009 is Mauritius with an investment of US$ 4490.96 i.e., 4.24 percent of the total FDI inflows into the country during the period. The estimation of future FDI flow shows a marginal decline in the year 2010. Then from 2011 to 2015 onwards upward trend of FDI was observed.

Keywords: FDI, Economy, Service Sector, Estimated, Pre and Post Liberalization, Power Sector.

1. Introduction

Many countries in the world realized that foreign capital is a stimulant of economic development at the beginning of the twentieth century. To support the statement, the experience of many countries owned their growth and development to the volume of foreign capital inflow into their economies. In the later quarter of the twentieth century, the need for foreign capital is realized among the various countries of the world. Developing countries especially developed multi-pronged strategies to attract foreign capital into the country. One such strategy is the adoption of liberalization policy. Almost all the developing countries started opening their economy, out of the compulsion, to achieve faster rate of economic growth and development. Even a communist country like China adopted liberalization policy as a strategy for accelerated economic growth during 1979. India also joined the race by 1991, when the government announced the policy of liberalization. The importance of FDI extends beyond the financial capital that flows into the country. In addition, FDI inflows can be a tool for bringing knowledge, managerial skills and capability, product design, quality characteristics, brand names, channels for international marketing of products, etc. and consequent integration into global production chains, which are the foundation of a successful exports strategy. The power sector in India has attracted considerable FDI during the period 1991-99 and accounted for 8.75 percent share of total FDI inflows during this period. During the period 2000- 2005 it increased its share to 16.96 percent to the cumulative FDI. The huge size of the market in this sector and high returns on investment are two important factors in boosting FDI inflows to power sector. 100 percent FDI is allowed under automatic route in almost all the sub sectors of power sector except the atomic energy. Major foreign investment is made in this sector during 2000 to 2009 is Mauritius with an investment of US$ 4490.96 i.e., 4.24 percent of the total FDI inflows into the country during the period. Mauritius is followed by Singapore with 8.06 percent and UAE with 5.91 percent, USA with 4.10 percent and UK with 2.36 percent. In India, Mumbai attracts a huge amount of foreign investment in this sector to the extent of 24.44 percent, then Delhi with 17.16 percent, Ahmedabad with 15.18 percent and Hyderabad with 10.19 percent.

2. Review of Literature

Uttama and Peridy (2010) investigate the existence of productivity spillovers due to FDI in ASEAN countries. The theoretical model strongly supports this hypothesis, by showing that the entry of multinational firms gives rise to productivity spillovers through both backward and forward linkages. This theoretical prediction is supported by the Toda-Yamamoto causality test for all the ASEAN countries investigated. The recent efforts of ASEAN countries in terms of regional integration and FDI liberalization are likely to have contributed to the tremendous increase in both intra and extra FDI flows in the ASEAN area. This means that in addition to direct effects on the domestic economy (in terms of employment, production and trade), this surge in FDI is likely to give rise to strong indirect effects, especially productivity spillovers which strengthen the profitability and the competitiveness of the domestic economy. The main results give strong evidence that FDI causes productivity growth in ASEAN countries. These results correlate the prediction of the theoretical model, which provide a strong support for the relationship between FDI and productivity spillovers.

Rao and Dhar (2011) finds that portfolio investors and round tripping investments have been important contributors to India's reported FDI inflows thus blurring the distinction between direct and portfolio investors on one hand and foreign and domestic investors on the other. These investors are also the ones who have exploited the tax haven route most. Besides, the falling share of manufacturing and even of IT and ITES means that there is less likelihood of FDI directly contributing to export earnings. India seems to have been caught in a trap wherein large inflows are regularly required in order to finance the current account deficit. To keep FDI flowing in, the investment regime has to be liberalized further and merger and acquistion are allowed freely. Finally, it is concluded that if FDI has to deliver, it has to be defined precisely and chosen with care instead of treating it as generic capital flow. India should strengthen its information base that will allow a proper assessment of the impact that FDI can make on its development aspirations.

Asiedu and Lien (2011), in their empirical studies examine the impact of democracy on foreign direct investment assume that the relationship between democracy and FDI is the same for resource exporting and non-resource exporting countries. This paper examines whether natural resources in host countries alter this relationship. We estimate a linear dynamic panel-data model using data from 112 developing countries over the period 1982–2007. We find that democracy promotes FDI if and only if the value of the share of minerals and oil in total exports is less than some critical value. We identify 90 countries where an expansion of democracy may enhance FDI and 22 countries where an increase in democratization may reduce FDI. We also find that the effect of democracy on FDI depends on the size and not the type of natural resources.

3. Statement of the Problem

During 1990, India was facing with a serious economic and Balance of Payment crisis. It was the time when Government felt the need for foreign capital to supplement domestic capital to overcome the crisis and to stimulate economic growth. In 1991, the Government liberalized the economy by opening the doors to foreign investors so as to bring India in tune with the global economy. India was then attracted to foreign investors; as a result there was a massive increase of foreign investment flow into the country. The foreign investment inclusive of both FDI and FPI which was US$133 million in 1991-92 increased to US $ 69,557 million in 2009-10. The contribution of FDI inflow into the country was US $ 129 million in 1991-92 to US $ 37,182 in 2009-10. In the year 2011-12, the foreign direct investment indicates the decline position due to economical conditions. The consequences of economical crises were aggrieved real estate, construction industry, oil industry, and service and telecommunication sector. Even though the economical crisis the FDI inflow in power sector is somewhat good, India has to develop more power projects to meet out the power demand in the current scenario and also the power project has the more scope in the

Indian market, the present Indian funds are not in the position to meet out the supply of power hence the FDI is only a solution to full fill the present demand of the power for Indian business. In this respect the researcher has focused FDI and its impact on growth of power sector India.

3.1. Objective of the Study

- To analyze the Foreign Direct Investment trends in Indian Power Sector
- To identify the forecast value of FDI in 2015

3.2. Methodology

3.2.1. Research Design

The design adopted for the study is Descriptive Research Design, as the study is concerned with describing the characteristics and specific predictions about Foreign Direct Investments in India during a particular period.

3.2.2. Period of Study

The main purpose of the study is to analyze the magnitude, causes and effects of Foreign Direct Investment inflow into the country. Hence FDI inflows into the country is analyzed for a period of 30 years from 1980-81 to 2009-10. For better analysis, the period is classified into two phases: the first phase is the period of Pre-Liberalization i.e., period from 1980-81 to 1990-91 and the second phase is the Post Liberalization period from 1991-92 to 2009-10. The rest of the analysis, that is, the country wise source, sect oral analysis, relationship between FDI and FPI, factors which determine FDI flow and its impact on the economy are analyzed for a period of 19 years from 1991-92 to 2009-10.

The period under study is important for a variety of reasons. First of all, it was during July 1991 that India opened its doors to private sector and to foreign investors by liberalizing and globalizing the economy. Secondly, the experiences of South-East Asian countries by liberalizing their economies in 1980s became the stars of economic growth and development in early 1990s. Thirdly, India's experience with its first generation economic reforms and the country's economic growth performance was considered as safe havens for FDI which led to second generation of economic reforms in India in first decade of this century. Fourthly, there is a considerable change in the attitude of both the developing and developed countries towards FDI. They both consider FDI as the most suitable form of external finance. Fifthly, there is an increase in competition for FDI inflows particularly among the developing nations.

3.2.3. Sources of Data

The study is based on secondary data which is published sources of data collected from various sources. The data was extracted from the following sources; Handbook of Statistics on the Indian economy, RBI, various issues, UNCTAD, WIR series, various issues, Economic Survey, Government of India, various issues, World Development Indicators, World Bank, Department of Industrial Policy and Promotion (DIPP), Secretariat of Industrial Assistance (SIA), Central Statistical Organization (CSO).

Both statistical and econometric analysis was carried out with the data to accomplish the objectives set for the study.

3.2.4. Tool for Analysis

- FDI inflow into India was analyzed for a period of 30 years from 1980-81 to 2009-10. In order to analyze the collected data, the following mathematical tools were used. Firstly, annual growth rate (AGR) for each and every year of the study is worked out by using the following formula:

AGR = (X2- X1)/ X1

Where, X1 = first value of variable X

X2 = second value of variable X

Secondly, the total period is classified as Pre-liberalization period from 1980-81 to 1990-91 and Post-liberalization period from 1991-92 to 2009-10. The compounded annual growth rate (CAGR) of FDI inflows during pre and post liberalization period is calculated to find out the trend of FDI flow into the country. It is calculated by using the formula:

CAGR (t0, tn) = (V(tn)/V(t0))1/tn – t0 -1

Where, V (t0): start value, V (tn): finish value, tn − t0: number of years.

Further, the flow of foreign direct investment into the country for next five years, i.e., from 2010-11 to 2014-15, is estimated by using Auto Regression Moving Average (ARIMA) model.

4. Results and Discussion

FDI inflows into this sector are estimated for a future period of 6 years from 2010 to 2015 using ARIMA model. The results of the model and estimation of projected FDI inflow are shown in table 4.24 and 4.25.

Table 1: Result of ARIMA model of FDI Inflows to Power Sector

Model	Coefficient	Std. Error of Coefficient	t value	p value
AR1	0.619	0.354	1.747	0.118
Year	6209.802	3123.494	1.988	0.082
Constant	-12418942.645	6259495.377	-1.984	0.082

Log Likelihood : -122.186

Alkaline Information Criterion (AIC) : 250.373

Schwarz's Bayesian Criterion (SBC) : 251.567

From the above result, as the p-value of the constant and first lag is very less indicates that the fit is good. The Alkaline's Information Criterion (AIC) and Schwarz's Bayesian Criterion (SBC) both measure goodness of fit and account for model complexity. The ARIMA model equation is fitted as , $(\Delta FDI)_t = -12418942.645 + 0.619 (\Delta FDI)_{t-1} \quad \varepsilon_t$

Where, $(\Delta FDI)_t$ = first order difference in FDI = $(FDI)_t - (FDI)_{t-1}$

Table 2: Actual and estimated values of FDI Inflows to Power Sector

Year	Actual Values	Estimated Values	95% Confidence Limit		% growth of FDI over previous year
			Lower CL	Upper CL	
1991-99	3,643.77	-5,546.88	-76,285.20	65,191.45	-
2000	4,840.17	6,353.04	-37,541.94	50,248.03	-
2001	17,411.75	9,458.95	-34,113.45	53,031.34	260
2002	31,076.68	19,607.45	-23,813.63	63,028.54	78
2003	7,418.51	30,432.88	-13,009.95	73,875.71	-76
2004	7,159.79	18,150.81	-25,486.57	61,788.19	-3

2005	2,765.05	20,355.82	-23,646.62	64,358.26	-61
2006	8,931.46	20,000.14	-24,533.69	64,533.96	223
2007	10,207.64	26,183.07	-19,042.59	71,408.73	14
2008	54,612.13	29,338.37	-16,732.36	75,409.10	435
2009	79,771.86	59,195.28	12,134.51	106,256.04	46
2010		77,137.37	28,950.52	125,324.21	-3
2011		77,871.48	13,838.13	141,904.84	1
2012		80,691.18	5,869.71	155,512.65	4
2013		84,802.10	1,389.60	168,214.60	5
2014		89,712.44	-1,184.21	180,609.09	6
2015		95,117.72	-2,682.27	192,917.71	6

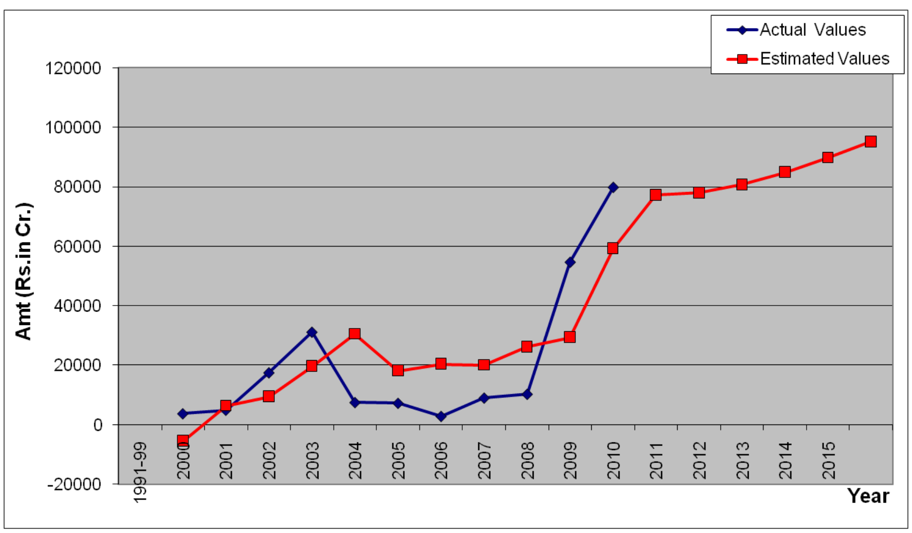

Figure 1: Trends in Power Sector

Table 2 shows FDI inflows in Power sector during the post liberalization period i.e., from 1991 to 2009. Based on the FDI inflows in this industry for a period of 19 years, projection of future flow of FDI in this industry is estimated for a period of 6 years i.e., from 2010-15. This industry has attracted a huge amount as foreign investment from

2006 onwards. The estimation of future FDI flow in this industry shows a marginal decline in the year 2010. Then, from 2011 to 2015 onwards an upward trend in the flow of FDI is observed.

5. Conclusion

After liberalizing the economy in 1991, Foreign Direct Investment played a major role in the growth of the country. The findings of the study reveal that there has been increase in power sect oral growth in the Indian economy, because of the industrial growth in the global scenario, the Exports, Imports business raise the level of employment and also per capita income. A rise in all the above factors leads to an overall growth of the country creating a positive impact on the economy. Although there has been increased flow of FDI into the country during the post liberalization period, it is found that the global share of FDI in India is very less when it is compared to other developing countries. Further, it was found that the realization of approved FDI into actual is very less over the years. Therefore, to overcome this situation, the Government of India should take serious steps to simplify the procedures and remove red-tapism so that actual FDI can be raised. Government should also revise the sect oral cap and bring more sectors under the automatic route. Further, agreement of Double Taxation treaties should be signed with other countries in order to increase bilateral trade between the countries. Therefore, there is an urgent need to adopt innovative policies and good corporate governance practices on par with international standards, by the Government of India, to attract more and more foreign capital in power sector to enhance its performance and also to contribute more in Indian economy.

References

Aditya, K.R. Bajaj, and Nigam, Swastik (2003). Globalization in the Indian Pharmaceutical Industry : Foreign Direct Investment spillovers and implications on Domestic Productivity (1991-2007). IIM Ahmedabad.

Andreas, Johnson (2004). *The Effects of FDI Inflows on Host Country Economic Growth*. Retrieved May 11 2016, from http://www.infra.kth.se\cesis\research\publications\ working

Annual Survey of Industries (2015). Ministry of Statisitics and Programme Implementation. Government of India, various issues.

Asiedu, Elizabeth, & Lien, Donald (2011). Democracy Foreign Direct Investment and Natural Resources. *Journal of International Economics*, 84(1), 99-111.

Avik, Chakrabarti (2003). A Theory of the spatial distribution of Foreign Direct Investment. *International Review of Economics & Finance*, 12(2), 149-169.

Balasubramanyam,V. N., and Spasford, David (2007). Does India need a lot more FDI?. Economic and Politically Weekly.

Balasundaram, Maniam, and Amitiava, Chatterjee (1998). The Determinants of US Foreign Investments in India: Implications and Policy Issues. *Managerial Finance*, 24(7), 55-62.

Bose, Jayashree (2007). Foreign Direct Investment Inflows in India and China : A Sectoral Experiences. Hyderabad :ICFAI University Press.

Cooper Donald R. and Schindler Pamela S. (2000), Business Research Methods, Tata McGraw Hill Publishing Company Ltd., New Delhi.

Ganesh, S. (1997). Who is afraid of Foreign firms? Current Trends of Foreign Direct Investment in India. *Economic and Political Weekly*, 32(22), 1265-1274.

Jayachandran, G., and Seilan, A. (2010). A Casual relationship between Trade, Foreign Direct Investment and Economic Growth for India. *International Research Journal of Finance and Economics*, 42, 74-88.

Kottaridi, Constantina, & Stengos, Thanasis (2010). Foreign Direct Investment, Human Capital and non-linearities in Economic Growth. *Journal of Macroeconomics*, 32(3), 858-871.

Mohamed, Sufian Eltayeb, and Sidiropoulos, Moise G. (2010). Another Look at the Determinants of Foreign Direct Investment in MENA Countries: An Empirical Investigation. *Journal Of Economic Development*, 35(2), 75-95.

Nag, Dhakal, Raja, Dharmendra, Pradhan, Gyan, & Upadhyaya, Kamal P. (2010). Exchange Rate Volatility and Foreign Direct Investment: Evidence from East Asian Countries. *International Business & Economic Research Journal*, 9(7), 121-128.

Nagesh, Kumar. N. (2000). Mergers and Acquisitions by MNCs : Patterns and Implications. *Economic and Political Weekly*, August 5.

Rao, Chalapati K. S., & Dhar, Biswajit (2011). India's FDI Inflows Trends & Concepts. Working paper No. 2011/01, ISID, February.

Uttama, Nathapornpan Piyaareekul, and Peridy, Nicolas (2010). Foreign Direct Investment and Productivity Spillovers: the Experience of ASEAN Countries. *Journal of Economic Integration*, 25(2), 298-323.