

FDI inflow and Economic Growth in India An Empirical Analysis

Supravat Bagli and Manikal Adhikary

¹Department of Economics, Sidho-Kanho-Birsha University, West Bengal, India

²Department of Economics, Burdwan University, Burdwan, West Bengal, India

Email: Supravat.bagli@gmail.com

Paper no: 114 **Received:** 22 December, 2013 **Revised:** 7 February, 2014 **Accepted:** 28 February, 2014

Abstract

This study has assessed the impact of the growth of FDI inflow along with some other potential determinants on economic growth in India. Our econometric analysis, based on a secondary time series data, demonstrates that real GDP and other selected macroeconomic aggregates have grown in a favourable direction in the era of strong liberalization (1991-2010) in contrast to the moderate liberalization era (1980-1990). In order to estimate the economic growth measured by the rate of change of real GDP we have formulated a linear regression model following the generalized version of the Solow-Swan growth model. Augmented Dickey Fuller test and Phillips Perron test statistics confirm that the variables included in the regression model are stationary. This study has revealed that the growth of domestic capital formation has a positive and significant contribution to economic growth. Population growth poses the primary constraint against economic growth. However, growth of openness and growth of FDI inflow are immaterial in the determination of the economic growth in India.

Keywords: Economic Growth, Gross Domestic Capital Formation, Inflow of FDI, Population Growth, Openness

It is well known that India followed restricted trade policies since the first five year plan to the middle of the fifth five year plan. During that period Indian economy could be cited as an example of the conservative economy. India has gradually liberalized its trade policies since the end of the 1970s starting with some import liberalization policies. Relaxations of Monopolies and Restrictive Trade Practices (MRTP) Act and Foreign Exchange Regulation Act (FERA) in 1980 were the first systematic liberalization policy in India. In 1991, India opted for Structural Adjustment Programmes (SAP) with primary goal of growth maximization. The major pillars of SAP were: [a] reduction of trade barriers, [b] free inflow of foreign capital and technology, [c] elimination of various subsidies, [d] privatization and [e] free movement of labour among the countries. It has made a sea-change in the process of globalization of Indian economy. Thus, the strong liberalization era started since 1991. As a founder member of WTO in mid-1990s India also accelerated the liberalization of the trade policies and since then it had also been

taking several steps towards complete liberalization. These liberalization steps are heavily connected with trade openness. In this study we intend to analyze the impact of FDI inflow and openness on economic growth in India for the period ranging from the year 1980 to 2010. In order to capture the role of FDI inflow and openness on the growth of the major macroeconomic aggregates we have divided the entire period (1980-2010) under study into two regimes. Regime-1 ranges from 1980 to 1990 which may be considered as an era of moderate liberalization. Regime-2 covers the period from 1991 to 2010 which is considered as an era of strong liberalization. This paper has two-fold objectives. First, we would like to compare the annual exponential growth rates of the major macroeconomic aggregates in between the two regimes before and during strong liberalization periods. Second, an attempt has been made to estimate the effect of FDI inflow along with some other determinants on economic growth.

The rest of this study consists of five sections. Section-2 has presented a brief review of literature followed by a theoretical discussion regarding the relation between economic growth and FDI inflow along with other determinants in section-3. Section-4 explains the methodological framework and data source for this study. We have reported the empirical results in section-5. Finally, section-6 has suggested some policies and concluded this paper.

Literature Review

In this section we have cited some selected literature on FDI, openness and economic growth. There are many studies regarding the causality between FDI and economic growth across the globe. But they are not unanimous regarding the relation between FDI and economic growth. Some studies (Kumar, *et al.*, 2002; Nath, 2004, 2005; Li, *et al.*, 2005) have reported the causality from FDI to Growth. A wing has contradicted this finding and shown Growth-FDI causality (Chowdhury, *et al.*, 2005; Chakraborty, *et al.*, (2002). There are some studies which found no or moderate relationship (Bacic, *et al.*, 2005) or even negative relationship between FDI and Economic Growth (Saltz, 1992, Bende-Nabende, *et al.*, 2000). Thus, the relationship between FDI and Economic growth varies across the countries. The above ambiguous findings justify re-examining the effect of FDI on economic growth during the era of trade liberalization in India. Based on the panel data collected from 23 developing countries, Basu, *et al.*, (2003) has estimated the causal relationship between GDP growth and FDI. They have shown that GDP growth and FDI run in both ways in relatively liberalized countries whereas they run in only one way - from GDP growth to FDI—in relatively closed countries. The study by Trevino, *et al.*, (2003) based on five developing countries in Asia, has reported that the positive impact of FDI on economic growth is greater in more open economies. It is expected that FDI-to-growth causality is more likely to exist in more open economies. Using both cross section and panel data analysis, Johnson (2006) has shown that FDI inflows accelerated economic growth in developing countries, but not in developed countries.

Using data from 30 developing countries over the period 1970-82, Edward (1992) has investigated the impact of trade openness on the growth of GDP. He used two sets of measures for openness. The first set consists of the trade policies (tariff and non-tariff barriers) related to import restriction whereas the second set includes the trade intervention and capture the extent to which trade policy has distorted trade. Estimates of the linear regression model reveal that the indicators of trade openness are favourable for faster growth of real GDP. Sinha, *et al.*, (2000) has examined the impact of openness along with domestic investment and population growth on growth of GDP for 15 Asian countries including India

during the period 1950 to 1992. They have used the growth rate of trade volume (sum of export and import) as a measure of openness. Estimating an ARMA model they have found that the growth of trade volume and the growth of domestic investment have some favourable impact on growth of GDP in some of the Asian countries such as China, Hong Kong. Growth of population is not a significant determinant of economic growth in most of the countries. However, in the case of India, growth of openness has no significant impact on GDP growth. Ynikkaya (2003) has estimated the impact of trade openness on GDP growth for 120 countries for the period 1970-1997. He incorporated several indicators of trade openness under two categories. One category includes different ratios of trade volumes; namely volume of export, volume of imports, volume of export plus import and trade with developed countries to GDP. Second category is based on different trade policy variables like restrictions on foreign exchange on current transactions. Using the Generalized Method of Movement he has estimated the impact of openness variables on GDP growth. This estimation has revealed that openness variables measured by trade volume are positively related with per capita GDP growth for developed and developing countries. This estimation has also reported that trade restrictions in the developing countries are favourable for faster growth of GDP. Siddiqui, *et al.*, (2005) has analyzed the impact of trade openness, impact of population growth and the impact of investment growth on output growth for Pakistan for the period 1972-2002. Following Sinha (2000) they have considered trade volume as proxy for trade openness. In order to examine the impacts they have applied a multivariate causality analysis. The estimation of VAR model demonstrates that there is a long run negative relation between growth of trade volume and GDP growth for Pakistan. However, investment growth and population growth were found to have a positive and significant relation with GDP growth in Pakistan. Therefore, the existing literature does not confirm any unique relation among economic growth, growth of capital/investment, FDI and population growth. With this end in view we have planned to study the impact of openness including FDI inflow, domestic capital formation and population on economic growth in India.

Determinants of Economic Growth

There is a long debate in the theory of international economics regarding the relationship between trade and economic growth. One school of thought has tried to establish free trade as engine of economic growth whereas the other has criticized this doctrine. The theory of export-led strategy for economic growth has established that trade enhances economic growth of the developing countries. Growth of export increases productivity through expanding the economies of scale in the industries producing exportable goods. Open trade helps the country to make better allocation of its internal resources. It brings specialization and thereby efficiency in production. This will in turn reduce the cost of production of the exportable goods and services. Export growth creates the outlet for excess production and earns foreign exchange which helps the country expand import. Open trade provides the platform for the country to participate freely in the international market. Free interaction in international market imports the production technique and knowledge of management efficiency and therefore, increases productivity. On the other hand, import growth fosters capital accumulation importing capital goods and necessary intermediate factors of production. Therefore, export growth as well as import growth may have a stronger contribution to the economic growth of any country. Though empirical studies cited in section 2 are not unanimous regarding the effect of openness (growth of trade volume) on economic growth, we expect that the growth of openness has a favourable effect on economic growth.

The volume of trade is not the only indicator of openness. There are many policy parameters which

have been used as indicator of openness. Due to lack of data we cannot consider all the policy parameters as indicators. However, in this study the inflow of FDI has been considered as another indicator of openness. Inflow of FDI makes possible to invest more than the domestic savings. It is favourable for economic growth if the productivity of investment remains positive. FDI brings advanced technologies and managerial excellence. Usually, FDI comes with the collaboration with the domestic capital. So, domestic producers can expand production using these advanced technologies. Inflow of FDI produces positive externalities through technology spillovers. Inflow of FDI reduces the gap between the domestic savings and the desired investment in developing countries which suffer from the problem of deficiencies of capital stock. Besides, inflow of FDI may create the employment opportunity of the country. Therefore, we can expect that FDI is likely to have a positive effect on economic growth. However, a handful empirical study regarding the relation between economic growth and FDI does not support this view. So far the relationship between the growth of FDI and economic growth is important for policy prescription. With this end in view, we are interested to find out the impact of the growth of FDI on economic growth in India. It justifies us to consider the growth of FDI as an important determinant of economic growth.

We also incorporate two very important internal factors in the determination of the rate of economic growth. These are the growth of gross domestic capital formation and the growth of population. There is no point to deny that growth of capital formation enhances economic growth increasing the productivity of labour. The impact of population growth in economic growth is still now a debatable question. One argument states that population growth helps to supply cheap labour and increases demand for goods and services. It accelerates the growth process. But another view asserts that population growth expands consumption expenditure which slows down the capital formation and thereby creates a leakage in the growth process. In order to determine the impact of population growth in India we take it as a determinant of economic growth. Therefore, we formulate a linear model where economic growth depends on the growth of population, growth of domestic capital formation, growth of FDI inflow and the growth of openness. Details of the methodological framework have been described in the next section.

Methodology and Data

In order to obtain the annual exponential growth rate of the macroeconomic aggregates for the entire period (1980-2010) under study we have formulated a log-linear model as follow. Initially to calculate the annual compound growth rate of variable Y we can use the compound interest formula as follows.

$$Y_t = Y_0(1+r)^t \quad (3.1)$$

Where, r stands for compound annual growth rate of Y. By taking natural logarithm both sides of (3.1) we get

$$\ln Y_t = \ln Y_0 + t \ln(1+r) \quad (3.2)$$

The equation (3.2) can be rewritten as,

$$\ln Y_t = \alpha + \beta t + \varepsilon_t \quad (3.3)$$

Where Y_t stands for the value of the variable of interest at period t

t denotes time (year)

ε_t captures the error in the model

$\alpha (= \ln Y_0)$ and $\beta [= \ln(1+r)]$ are the parameters of this model. Therefore, in our context $(\exp \beta - 1) \times 100$ turns out to be the exponential growth rate (per cent) of the variable Y .

We have checked whether there is any structural shift during the period under study applying the CUSUM and CUSUMQ test tool (Brown, *et. al.*, 1975). These tests for structural stability suggest the time point from which the structural break has occurred. Conducting CUSUM and CUSUM squared test for the relevant variables we find that in the year 1991 all the variables have structural break points. It has justified us to divide the entire period into above said two sub-periods.

In order to compare the growth rate of a variable in different sub-period, usually, we estimate the sub-period growth rate of the variable of interest. For this purpose investigators fit a separate exponential trend line for each sub-period for the series under consideration. However, this conventional approach suffers from the problem of discontinuity bias in the trend analysis of the growth for different sub-periods. In order to overcome the problem of discontinuity bias this study has applied the linear Spline function approach (Poirier, 1974) for capturing the trend in the growth of the selected macroeconomic aggregates for the defined regimes i.e. for the period 1980-90 and for the period 1991-2010. Assuming a linear time trend we can specify the function as follows.

$$\text{Regime-1: } \ln Y_t = \alpha_1 + \beta_1 t + \varepsilon_t \text{ where } t < 1991$$

$$\text{Regime-2: } \ln Y_t = \alpha_2 + \beta_2 t + \varepsilon_t \text{ where } t \geq 1991 \quad (3.4)$$

In order to tackle the discontinuities in the regime-wise growth rates, the linear spline function has been re-parameterized as follows.

$$\ln Y_t = \gamma_0 + \gamma_1 w_{1t} + \gamma_2 w_{2t} + \varepsilon_t \quad (3.5)$$

Where $w_{1t} = t$

$$w_{2t} = 0 \text{ if } t < 1991$$

$$w_{2t} = t - 1990 \text{ if } t \geq 1991$$

Finally, the growth rate for i^{th} regime of the particular variable Y can be deduced using the formula as noted below.

$$[\exp(\beta_i) - 1] \times 100 \quad \forall i = 1, 2,$$

Where β_1 , γ_1 and $\beta_2 = \gamma_1 + \gamma_2$

In order to estimate the impact of openness along with the other potential determinants on economic growth we have followed the production-function approach. It is fact that aggregate output of an economy for a given time depends on capital formation, labour force. In addition to these, we have considered openness as an important determinant of total production of our country. For the sake of simplicity we have considered percentage of real trade volume (sum of export and import) to real Gross Domestic Product (GDP) as the measure of openness (IOP). Apart from the gross domestic capital formation (GDCF) we have incorporated inflow of foreign direct investment (FDI) as determinant of economic growth in our economy. It is also an indicator of openness. Due to absence of annual time series data for labour force for the period under consideration, in this study total population (POPL) has been used as the proxy for labour force. Real GDP at base period 2004-05 is used as the proxy for aggregate output in the economy. Therefore, we can write,

$$GDP = f(POPL, GDCF, FDI, IOP) \quad (3.6)$$

Assuming a linearly homogeneous production we have derived a model where the growth of GDP has four components, namely, population growth, growth of domestic capital formation, growth of FDI inflow and growth of openness. Actually, we have estimated the linear regression model.

$$\begin{aligned} \text{LOG} \left[\frac{GDP_t}{GDP_{t-1}} \right] = & \delta_0 + \delta_1 \text{LOG} \left[\frac{POPL_t}{POPL_{t-1}} \right] + \delta_2 \text{LOG} \left[\frac{GDCF_t}{GDCF_{t-1}} \right] \\ & + \delta_3 \text{LOG} \left[\frac{FDI_t}{FDI_{t-1}} \right] + \delta_4 \text{LOG} \left[\frac{IOP_t}{IOP_{t-1}} \right] + U_t \end{aligned} \quad (3.7)$$

Theoretically our model (3.7) can be derived following a generalized version of the Solow-Swan model. The growth of real GDP has been used as the proxy for Economic growth. Before going estimate this regression model we have checked the stationarity property of the variables included in the above regression model. For this purpose we have used the well-known unit root tests, namely, augmented Dickey Fuller test and Phillips Perron test.

This study is based on a set of time series data which are collected from different secondary sources. We have collected annual time series data for real GDP at market price and Gross Domestic Capital formation at constant prices in 2004-05 from Handbook of Statistics on the Indian Economy, 2010-11, RBI, 2011. The annual time series data for export, import and for population in crore have been collected from Economic Survey, 2011-12, Government of India. The data for inflow of gross Foreign Direct investment in India are found from UNCTAD Statistics 2008, and 2012 United Nations. The data for Wholesale Price Index, Exchange rate, and Unit Value Index collected from Handbook of Statistics on the Indian Economy, 2010-11, RBI, have been used to deflate the relevant nominal data set at constant price in 2004-5. Our data set ranges from 1980 to 2010. This means that the sample size consists of 31 observations for each series.

Empirical Findings

Table-1 presents the descriptive statistics of the selected macroeconomic aggregates. Note that GDP, GDCF and FDI have been deflated at the constant price level 2004-05. Exports and imports have been deflated by the unit value index of exports and unit value index of imports respectively for the base period 2004-05. It has been observed that during the period 1980-2010 India's average real GDP at market price measured at 2004-05 was rupees 22656.18 crore and over this period variation of GDP was 54.77 percent (CV). The average inflow of FDI during this period was Rs.24962.69 crore which had been found to be varying widely over the period of economic liberalization. The gross inflow of FDI is roughly four percent of our domestic capital formation. The description of gross domestic capital formation (GDCF) shows that during the period under consideration average GDCF was Rs.6594.45 crore which was 29 per cent of average real GDP over this period. Average value of import of India is closely 1.5 times of her average export value over the liberalization period.

Table 1: Descriptive Statistics of the Selected Macroeconomic Aggregates in India during the Period 1980-2010 @

	RGDP	POPL	IFDI	GDCF	EXPORT	IMPORT	TVOL	IOP
Mean	22656.18	92.55	24962.69	6594.45	219729.30	320439.00	540168.30	20.20
Median	19058.99	92.20	10736.05	4712.42	173793.50	245490.20	420722.30	20.82
Maximum	52368.23	118.58	146611.40	19741.72	671242.20	1087672.00	1758914.00	33.59
Minimum	8663.40	67.52	23.55	1800.32	48940.25	66064.59	115004.80	12.24
Std. Dev.	12410.13	15.86	39180.40	5292.32	185263.20	289271.30	472918.00	7.05
Skewness	0.88	0.04	1.93	1.23	0.97	1.31	1.17	0.48
Kurtosis	2.72	1.74	5.72	3.27	2.73	3.73	3.30	1.93
Jarque-Bera	4.08	2.07	28.77	7.89	5.00	9.61	7.23	2.70
Probability	0.13	0.36	0.00	0.02	0.08	0.01	0.03	0.26

Source: Authors' computation based on secondary source of data

@ RGDP: Real Gross Domestic Product at market price computed at constant price 2004-05, 00' in crore, POPL: Population in crore, IFDI: Inflows of FDI in crore, GDCF: Gross domestic capital formation at constant price, 2004-05, 00' in crore, EXPORT: Export in crore at constant price 2004-05, IMPORT: Import in crore at constant price 2004-05, IOP: Index of openness= $100 \times (\text{EXPORT} + \text{IMPORT}) / \text{RGDP}$

Refer to the Table 2. We observe that GDP has grown at 5.84% per annum during the entire period of liberalization in India. It has grown more rapidly in the strong liberalization period (1991-2010) compared to the moderate liberalization period (1980-90). It indicates that liberalization is likely to have a significant impact on economic growth. We see that population of India increased at 1.91% rate during the entire period (1980-2010). During the moderate liberalization period, the growth rate of population was 2.24% whereas in the strong liberalization period population increased at the rate of 1.81% per annum. It appears interesting that during the strong liberalization period, the gross domestic capital formation increased in nearly double the rate compared to its rate during the moderate liberalization period. It has been observed that the growth rate of FDI for the period 1980-90 and for the period 1991-2010 did not vary impressively. However, the export and import and thereby the trade volume have grown at a commendable rate. The figure of the growth rate of openness for the period 1980-90 confirms that the period 1980-90 was the era of moderate liberalization regime in India. However, it has increased almost four-fold during the period 1991-2010 compared to the growth of openness in the moderate liberalization era. It justifies calling the era (1991-2010) in the name of strong liberalization. After all it has found that all the relevant macroeconomic

aggregates have grown during the entire liberalization period. With this end in view, we have tried to estimate the impact of openness along with some other potential determinants of growth.

Table 2: Structural Shifts and Growth rates of Selected Macroeconomic Aggregates

Variables	Coefficients for Regime			Growth rates (per cent)		
	Constant	Regime-1 (1980-90)	Regime-2 (1991-2010)	Regime-1 (1980-90)	Regime-2 (1991-2010)	Entire period (1980-2010)
Real GDP	9.03(469.75*)	0.047 (20.26*)	0.015 (5.03*)	4.82	6.44	5.84
Population	4.18(1070.68*)	0.022 (46.90)*	- 0.004 (6.79*)	2.24	1.81	1.91
Domestic Capital Formation	7.41(115.84*)	0.052 (6.81*)	0.037 (3.73*)	5.42	9.49	8.06
Inflow of FDI	4.52(9.84*)	0.233 (4.19*)	0.018 (0.25*)	26.31	28.67	24.72
Volume of Export	10.61(212.00*)	0.065 (10.88*)	0.040 (5.10*)	6.81	11.22	9.56
Volume of Import	11.07(203.95*)	0.053 (8.21*)	0.055 (6.44*)	5.54	11.55	9.46
Trade Volume	11.56(304.55*)	0.058 (12.81*)	0.049 (8.18*)	6.06	11.42	9.5
Trade Openness	2.53(64.55*)	0.011 (2.47*)	0.033 (5.45*)	1.18	4.67	3.66

* stands for significant at 1% level, ** stands for significant at 5% level, *** stands for significant at 10% level

Source: Authors' computation based on secondary source of data

In any time series analysis we need to test the stationarity of the series of interest. Table-3 depicts results of the augmented Dickey Fuller test (ADF) and Phillips Perron (PP) test for unit root in connection with the variables under consideration. ADF statistics for all the growth variables, except population growth, are statistically significant. The test statistics of PP test, which are more appropriate in the context of structural break, are statistically significant for all growth variables under consideration. It confirms that the variables have no unit root. Therefore, all the growth variables under consideration are stationary. These findings rationalize our objective to find out the impact of openness and the impact other macroeconomic variables on economic growth.

Table 3: Unit Root Test for Selected Variables at constant price, 2004-05

Variables	ADF Test Statistic	PP Test Statistic
Growth of real GDP	-2.816544***	-4.362604*
Growth of FDI inflow	-4.985230*	-5.831929*
Growth of gross domestic capital formation	-3.415678**	-6.515076*
Growth of Trade openness	-3.542853**	-4.581766*
Growth of Population©	-3.082298	-4.238009**
Critical Values of ADF Test Statistic (test equation includes intercept)		1% Critical Value -3.6852 5% Critical Value -2.9705 10% Critical Value -2.6242
Critical Values of Phillips-Perron Test Statistic Test Equation includes intercept		1% Critical Value -3.6752 5% Critical Value -2.9665 10% Critical Value -2.622

* stands for significant at 1% level, ** stands for significant at 5% level, *** stands for significant at 10% level

Source: Authors' computation based on secondary source of data

©ADF test equation and Phillips-Perron Test Equation include trend and intercept

Table 4: Estimated Results of the Impact of Openness on Economic Growth of India

Variables	Coefficient	Std. Error	t-Statistic	Prob.
Constant	0.087603	0.023568	3.717091	0.001
Growth of Population	-1.96868	1.176983	-1.67265	0.1069
Growth of gross domestic capital formation	0.129292	0.036541	3.538308	0.0016
Growth of FDI inflow	-0.00607	0.0038	-1.59765	0.1227
Growth of Trade openness	0.011784	0.055171	0.213587	0.8326
Summary Statistics				
R-squared	0.48542	Mean dependent variable		0.059973
Adjusted R-squared	0.403087	S.D. dependent variable		0.021246
S.E. of regression	0.016414	Akaike info criterion		-5.23031
Sum squared residual	0.006736	Schwarz criterion		-4.99678
Log likelihood	83.45462	Durbin-Watson stat		1.962832

* stands for significant at 1% level, ** stands for significant at 5% level, *** stands for significant at 10% level

Source: Authors' computation based on secondary source of data

The results of the regression analysis have been depicted in table-4. The values of R^2 and Durbin-Watson statistics confirm that our model specification is statistically acceptable. Coefficient of the growth of population has shown that the growth of population in India has a negative effect on economic growth during the period of liberalization. This implies that the growth of population in India fails to meet the demand for productive labour for economic growth; rather it increases the unproductive consumption expenditure. We see that the coefficient of growth of domestic capital formation is positive and statistically significant at 1% level of significant. It indicates that the growth of domestic capital formation speeds up the economic growth in India. The coefficient of the growth of inflow of FDI indicates that inflow of FDI in India trims down the economic growth. However, it is not statistically significant. Finally, we observe that the growth of trade openness has some positive impact on economic growth but it is statistically insignificant. Therefore, the inflow of FDI is immaterial for faster economic growth in India. In order to explain this result we may mention a few points. First, in accordance with the industrial policies in the era of moderate liberalisation FDI in India were necessarily accompanied by technologies transfer agreement. The Industrial Policy of 1991 and the subsequent policy amendments have relaxed this restriction. As a result, a major part of FDI in India comes to service sector particularly in the derivative market. It may help to raise the index of capital market, but not the real growth of the economy. Besides, a part of FDI in India introduces inappropriate technology and retards the development of domestic capital goods industries. Second, a part of profit of FDI outflows from the host country. In this sense FDI is more dangerous than external borrowings. While borrowings create repayment compulsion for a certain period of time, FDI may generate an unending commitment. If every year a constant amount of FDI inflows in a country and a constant rate of profit on it, outflows, it definitely generates a negative net inflow for this country after a certain lag. It may be the probable explanation of the very recent falling tendency of growth in India. Third, this result may arise due to insignificant

inflow of FDI in India during the liberalization era. Actually, we are in the opening chapter regarding the welcome of FDI. The contribution of FDI on economic growth depends on the skill of human capital of the host country (Borensztein *et al.*, 1998; De Mello, 1999). With this view, we can state that the lack of skill human capital in India may be the cause of insignificant impact of FDI on economic growth. Openness policies have facilitated India to increase its trade volumes, but it has no impact on economic growth. This result has supported the findings of Sinha (2000) which showed the growth of trade volume as an insignificant determinant of GDP growth in India during 1950-1992. The findings of the present study reveal that findings of Sinha (2000) did not alter even during the period of strong liberalisation. Therefore, the objective of structural adjustment programme has not been fulfilled in the context of Indian economy.

Concluding Remarks

The empirical analysis of growth of the selected macroeconomic aggregates shows that all the variables except population have grown more rapidly in the period of strong liberalization in contrast to their growth rates during the period of moderate liberalization. Growth rate of population has decreased in the strong liberalization era in contrast to the rate in the moderate liberalization era. This analysis shows that relative to the moderate liberalization era, the real GDP has grown at a higher rate in strong liberalization era. However, this study has been undertaken to examine the impact of openness on the economic growth. Our regression analysis has revealed that the population poses a constraint against faster economic growth in India. During the twelfth five years plan India has taken several steps for achieving faster inclusive growth. But, surprising enough that in this plan period India did not put emphasis on population control. Therefore, this study draws the attention of the Government to take appropriate population control policies for ensuring faster economic growth in near future.

We have found that the growth of domestic capital formation significantly accelerates the economic growth in India. Therefore, this study suggests for encouraging the indigenous entrepreneurs to make a higher growth of domestic capital. Specifically, we need to create an environment where rural small entrepreneurs will be encouraged to invest their indigenous capital in production.

However, in our econometric analysis we have found that the growth of FDI and the growth of openness are statistically insignificant in the determination of economic growth. This finding contradicts the recent policy for encouraging the inflow of FDI in India. We know that a major part of FDI comes in the form of portfolio investment. It makes the repatriation of the profit frequently. It may have a disadvantageous impact on long run economic growth in Indian economy. This study also supports the finding of Ynikkaya (2003) which shows that the trade restriction is a better policy for faster growth of the developing country. May be unfortunate and unexpected, the empirical analysis in this study has revealed that the growth of openness (that is, liberalization, privatization and globalization and inflow of FDI) has not played a significant role in the economic growth of India. Therefore, India has to check the flow of foreign portfolio investment and emphasize on FDI in capital or management form. Then it may be beneficial for growth. We should rather have to mitigate the constraints against the growth of domestic capital formation and have to take strict population policy, which have been neglected in the current economic policies to ensure faster economic growth in India.

References

- Adhikary, M. L. and R. Mazumder 2009. Economic Reforms and Productivity Change in Selected Indian Industries. Delhi. Abhijeet Publications.
- Bacic, K., Racic, K., and Ahec-Sonje, A. 2005. The Effects of FDI on Recipient Countries in Central and Eastern Europe.
- Basu, P., C. Chakraborty, and D. Reagle 2003. Liberalization, FDI, and Growth in Developing Countries: A Panel Cointegration Approach. *Economic Inquiry* **41**: 510-516.
- Borensztein, E., De Gregorio, J. and Lee, J.-W. 1998. How does Foreign Direct Investment affect Economic Growth?, *Journal of International Economics* **45**: 115-135.
- Brown, R. L., J. Durbin and J. M. Evans 1975. Techniques for Testing the Constancy of Regression Relationships over Time. *Journal of the Royal Statistical Society. Series B (Methodological)* **37**(2): 149-192.
- Chakraborty, C., and Basu, P., 2002. Foreign Direct Investment and Growth in India: A Cointegration Approach, *Applied Economics* **34**: 1061-1073.
- De Mello, L.R. 1999. Foreign Direct Investment-led Growth: Evidence from Time Series and Panel Data. *Oxford Economic Papers* **51**: 133-151.
- Dickey, D.A. and Fuller, W.A. 1979. Distribution of the Estimators for Autoregressive Time Series with a Unit Root. *Journal of American Statistical Association* **74**: 427-433
- Edwards, S., 1992. Trade orientation, distortions and growth in developing countries. *Journal of Development Economics* **39**: 31– 57.
- Government of India 2012. Economic Survey 2011-12. *Department of Economic Affairs, Economic Division, Ministry of Finance, New Delhi: Oxford University Press.*
- Johnson, A. 2006. The Effects of FDI Inflows on Host Country Economic Growth. CESIS Working Paper Series, Paper No. 58, Sweden, *Royal Institute of Technology.*
- Kumar, N. 2005. Liberalization, Foreign Direct Investment Flows and Development Indian Experience in the 1990s. *Economic and Political Weekly*, April, 2, pp. 1459-69.
- Kumar, N. and Pradhan, J.P. 2002. Foreign Direct Investment, Externalities and Economic Growth in Developing Countries: Some Empirical Explorations and Implications for WTO Negotiations and Investment, RIS Discussion Papers, No: 27/2002
- Li, Xiaoying and Xiaming Liu 2005. Foreign Direct Investment and Economic Growth: An Increasingly Endogenous Relationship. *World Development*: **33**(3): 393-407.
- Nath, K. Hiranya 2004. Trade, Foreign Direct Investment and Growth: Evidence from Transition Economies. Retrieved from www.shsu.edu/~eco_hkn/hiranya_wip1.pdf
- Nath, K. Hiranya, 2005. Trade, Foreign Direct Investment and Growth: Evidence from Transition Economies. SHSU Economics & International Business Working Paper. Retrieved from www.shsu.edu/~eco_www/resources/documents/wp05-04.pdf
- Phillips, P.C.B. and P. Perron 1988. Testing for Unit Root in a Time Series Regression, *Biometrika* **75**: 335-346.
- Poirier, J. D. 1974. The Econometrics of Structural Change, Amsterdam, North-Holland, Chapter 2.
- Reserve Bank of India 2011. Handbook of Statistics on the Indian Economy, 2010-11. Retrieved from www.rbi.org.in
- Retrieved from www.hwwa.de/etc/EI_WS_050916/Bacic_Racic_Sonje.pdf
- Saltz, I. 1992. The Negative Correlation between Foreign Direct Investment and Economic Growth in the Third World: Theory and Evidence. *Rivista Internazionale di Scienze Economiche e Commerciali* **39**: 617-633,
- Sampathkumar, T. 2012. FDI and Economic Growth: A Bivariate Causality using Bounds Test. *Proceedings of the 48th Annual Conference of The Indian Econometric Society*. held at Pondichery University, India
- Siddiqui, A. H. and J. Iqbal 2005. Impact of Trade Openness on Output Growth for Pakistan: An Empirical Investigation. Retrieved from www.pafkiet.edu.pk
- Sinha, D. and Sinha, T. 2000. Openness, Investment and Economic Growth Asia. *The Indian Economic Journal* **49**(4): 110-117
- Trevino, Len J. and K. P. Upadhyaya 2003. Foreign aid, FDI and Economic Growth: Evidence from Asian Countries. *Transnational Corporations* **12** (2): 119-135.
- UNCTAD ,2008 and 2012. United Nations Conference on Trade and Development, World Investment Report 2012. *New York and Geneva: United Nations.*
- Ynikkaya Halit 2003. Trade Openness and Economic Growth: a cross country empirical investigation. *Journal of Development Economics* **72**: 57-89.

