

General Government Expenditure and Economic Growth in India: 1980-81 to 2015-16

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Abstract

The objective of this paper is to investigate the impact of General government expenditure on GDP growth in India for the period 1980-81 to 2015-16 by using Simple Regression Analysis. FDI Growth Rate and two dummy variables *i.e.*, one for financial crisis 2008 and another one for reform period 1991 have been used. All the explanatory variables are positively and significantly affecting the GDP growth rate except FDI Growth rate. The crisis period dummy shows that in post 2008 there was a negative and significant impact of general government expenditure on GDP growth rate. The reform period dummy shows that in post 1991 there was a positive and significant impact of general government expenditure on GDP growth rate. We have tested the multicollinearity test, which indicates presence of no serial correlation among the explanatory variables. We have also tested the autocorrelation, using the Breusch Pagan test, the results of which indicate the presence of no autocorrelation. The study further reveals that Non-development expenditures continue to be a large proportion of the general government expenditure. Expenditure management has to lay more emphasis on the design of the programme and the exploration of the alternatives. The authors suggest that there is a need to raise the development expenditure on infrastructure to achieve more economic growth. The study highlights that in addition to fiscal correction and consolidation, fiscal reform at the state level should focus on fixing ceilings on guarantees, taking into account the default and development probability, nature of guarantees issued, pricing of services rendered by the project for which guarantees are extended.

Keywords

General Government Expenditure, GDP Growth, Development Expenditure, Non-Development Expenditure, FDI

1. Introduction

Public expenditure is playing an important role in the economic development of a country like India. With increase in responsibilities of the government and with the increasing participation of government in economic activities of the country, the volume of public expenditure in a highly populated country like India is increasing at a rapid rate. Public expenditure is of two different types, *i.e.*, developmental and non-developmental expenditure. Development expenditure of the Government is mostly related to the developmental activities viz., development of infrastructure, industry, health facilities, educational institutions etc. The non-developmental expenditure is mostly a maintenance type of expenditure and it is related to maintenance of law and order, defense, administrative services etc. The size of the government is expected to affect the economic growth of a country through the impact of taxation, expenditure and budget balance on several economic issues such as the efficiency of resource allocation and the rate of factor accumulation (Dar and Amir Khalkhali, 2002). Public expenditures refer broadly to expenditure made by Local, State and national Government and agencies as distinct from those of private in individuals, organization of firms [1]. These expenditures were usually broadly categorized into recurrent and capital expenditures. Recurrent expenditure corresponded to government's purchase of current goods and services (labour, consumables, wages and salaries, etc.), while the capital expenditure would ideally include not merely investments in infrastructure (roads, schools, hospitals, etc.) but also all other expenditures that might contribute to development [2].

Public expenditure is directed towards accelerating economic growth and development with the ultimate aim of transforming the nation into an industrialized economy as well as raising standard of living of the people [3]. Public expenditures have played an important role in physical and human capital formation over a period of time. Appropriate public expenditures can also be effective in boosting economic growth, even in the short run [4]. Public expenditure is the beginning and end of the collection of revenues by the government (Jhingan M L, 2004). Public expenditure is simply government spending from revenue derived from taxes and other sources and it is centered on expenses contracted on government own maintenance for the growth and stability of the general economy [5].

The impact of government spending on economic growth depends on what the government spends money on, and how well the institutional mechanism established to manage expenditure works in delivering value for money (Edgardo M. Favaro & Ashok K. Lahiri, 2006). In the early stages of economic growth and development, public sector investment as a proportion of the total investment of the economy is found to be high. The public sector is, therefore, seen to provide social infrastructure overheads such as roads, transportation systems, sanitation systems, law and order, health and education and other investments in human capital. The public sector investment is necessary to gear up the

economy for take-off into the middle stages of economic and social development. In the middle stages of growth, the government continues to supply investment goods but this time public investment is complementary to the growth in private investment. During all the stages of development, market failures exist which can frustrate the push towards maturity, hence the increase in government involvement in order to deal with these market failures (Musgrave and Rostow). Once the economy reaches the maturity stage the mix of public expenditures will shift from expenditures on infrastructure to increasing expenditures on education, health and welfare services. In the mass consumption stage, income maintenance programmes and policies designed to redistribute welfare will grow significantly relative to other items of public expenditure and also relative to Gross National Product (GNP). As real incomes in the economy rose (*i.e.*, as GNP increased) public expenditures on education, recreation and culture, health and family welfare services would rise more than in proportion, which would account for the ratio of government expenditure to GNP.

The relationship between public expenditure and economic growth is an important subject of analysis and debate, especially for developing economies. A central question is whether public expenditure increases the GDP growth rate of the economy.

1.1. Objectives of the Study

- 1) To study the trends in general government expenditure and Real GDP growth of the Indian economy from 1980-81 to 2015-16;
- 2) To study the impact of general government expenditure on deficits from 1980-81 to 2015-16;
- 3) To study the relationship between General government expenditure and GDP growth.

1.2. Literature Review

Many studies have examined the impact of public expenditure on GDP growth. It is believed that public expenditure leads to more GDP growth rate. However, empirical evidence is not conclusive about this.

John Loizides and George Vamvoukas [6] used a bivariate error correction model within a Granger causality framework, as well as adding unemployment and inflation (separately) as explanatory variables, creating a simple “trivariate” analysis for each of these two variables. The combined analysis of bivariate and trivariate tests offers a rich menu of possible causal patterns. Using data on Greece, UK and Ireland, the analysis shows: 1) government size Granger causes economic growth in all countries of the sample in the short run and in the long run for Ireland and the UK; 2) economic growth Granger causes increases in the relative size of government in Greece, and, when inflation is included, in the UK.

Vijay L.N. Gangal and Ms. Honey Gupta [4] analyzed the impact of public expenditure on economic growth of India from 1998 to 2012. This study in-

cludes annual data of total public expenditure (TPE) and Gross Domestic Product (GDP) per capita as indicator of Economic Growth. “ADF Unit Root Test”, “Cointegration Test” and “Granger Causality test” techniques have been applied. The study reveals that there is linear stationarity in both the variables that indicates the long run equilibrium and there is a positive impact of Total public expenditure on economic growth. There is a unidirectional relationship, *i.e.* from TPE to GDP found by Granger causality Test. There is positive impact of shocks from TPE to GDP and vice versa.

Ram [7] and Rubinson [8] found evidence of a positive relationship between public expenditure and growth. Landau [9] provided evidence in line with a negative relationship.

Devarajan, *et al.* [10] and Feder [11] examine the relation between the share of total government expenditure in GDP and the growth in per capita real GDP and find negative and significant relationship between the two.

Ghura [12] tests the relation between government consumption as a percent of GDP and economic growth using data from developing countries. He finds significantly negative relation between government consumption and the growth in per capita real GDP.

Chude, Daniel Izuchukwu [13] used Error Correction Model (ECM) to determine the effect of public expenditure on economic growth in Nigeria for the period 1977-2012. The study also used Ex-post facto research design and applied time series econometrics technique to examine the long and short run effects of public expenditure on economic growth in Nigeria. The results indicate that Total Expenditure Education is highly and statistically significant and have positive relationship on economic growth in Nigeria in the long run.

1.3. Research Gap

The earlier review of literatures focuses on the impact of either Central Government or State Government’s expenditure on Gross Domestic product/Gross State Domestic product. Economic theory would suggest that on some occasions lower levels of public expenditure would enhance economic growth while on other occasions higher levels of public expenditure would be more desirable. From an empirical perspective the evidence generated becomes more confusing as a number of studies favour one or the other approach. The results of the few studies that have been carried out in India have been conflicting. There is therefore a gap in literature as far as a study on the effects of public expenditure on economic growth in India is concerned. This study therefore sought to fill this research gap by answering one question: What is the relationship between general Government Expenditure and economic growth in India?

1.4. Methodology

The annual data on aggregate real output or real GDP ,general government expenditures, foreign direct investment during 1980-81 to 2015-16 are retrieved

from the Statistical Abstracts published every year by the Directorate of Economics and Statistics, Publications of National Sample Survey Organization, Reserve Bank of India, Reports on currency & finance and various reports of Ministry of Finance. In this study a simple regression analysis is used to establish the relationship between general government expenditure and GDP growth rate. The following regression equation has been used in this study.

$$Y = b_0 + b_1 \cdot X_1 + b_2 \cdot X_2 + D_1 \cdot X_3 + D_2 \cdot X_4 + e \quad (1)$$

In the above equation

Y = GDP Growth Rate (GDPGr)

X_1 = General Government Expenditure (GGE)

X_2 = FDI Growth Rate (FDIG)

D_1 = Reform Period Dummy coefficient

(For pre 1991 time period $X_3 = 0$, for post 1991 time period $X_3 = 1$)

D_2 = Crisis Period Dummy coefficient

(For pre 2008 time period $X_4 = 0$, for post 2008 time period $X_4 = 1$)

We have also used the tests for multicollinearity and Autocorrelation, the results of which are discussed under results & discussion chapter.

2. Public Expenditure of the General Government (Centre and States) Since 1980-81

Data pertaining to General Government Expenditure and its Growth since 1980-81 is presented in the following **Table 1**.

Table 1 provides information about the combined public expenditure of both central and state governments since 1980-81. It is observed that the public expenditure at current prices looks quite impressive during the study period. In 1980-81 the total public expenditure in both revenue and capital accounts was Rs. 36,845 crores. It rose to Rs. 176,548 crores in 1990-91 and to Rs. 1,315,283 crores in 2007-08. According to the revised estimates for 2015-16 the public expenditure was amounted to Rs. 3,974,103 crores.

To achieve economic growth development of infrastructural facilities *i.e.*, Irrigation, Transport and Communication facilities has been undertaken by the government over the planning period. As a result the ratio of public expenditure to GDP rose steadily until 1990-91. Against 9.1 per cent in 1950-51, the ratio of public expenditure to GDP was 15.3 per cent in 1960-61, 17.2 per cent in 1970-71, 25.6 per cent in 1980-81 and 28.5 per cent in 1990-91. Thereafter, there was a decline in the ratio of public expenditure to GDP as the government tended to check growth in public expenditure. Since 1990-91 the government has been withdrawing itself from the various sectors and there is a significant decline in the ratio of public expenditure to Gross Domestic Product (GDP). As a result, the ratio of public expenditure to GDP declined to 24.7 per cent in 1996-97 and stood at 25 per cent in 1997-98. Since the trend of declining public expenditure-GDP ratio has been reversed and, as a result, in 2011-12 public expenditure-GDP ratio was once again as high as 28.1 per cent. It is observed from

Table 1. Public expenditure of the general government (centre and states) since 1980-81.

Year	Amount (Rs. In crores)	Growth in Expenditure	Year	Amount (Rs. In crores)	Growth in Expenditure
1980-81	36,845	15.76	1998-99	463,945	14.15
1981-82	43,738	17.08	1999-00	540,423	9.26
1982-83	52,747	13.29	2000-01	595,595	8.79
1983-84	60,829	16.92	2001-02	652,967	7.37
1984-85	73,215	12.76	2002-03	704,904	11.49
1985-86	83,921	16.74	2003-04	796,384	8.44
1986-87	100,790	10.14	2004-05	869,757	9.39
1987-88	112,169	13.75	2005-06	959,855	13.46
1988-89	130,048	17.75	2006-07	1,109,174	15.67
1989-90	158,107	10.45	2007-08	1,315,283	17.78
1990-91	176,548	5.03	2008-09	1,599,680	13.63
1991-92	185,905	8.44	2009-10	1,852,120	13.66
1992-93	203,043	12.73	2010-11	2,145,150	11.42
1993-94	232,650	14.74	2011-12	2,421,770	10.14
1994-95	272,874	10.12	2012-13	2,694,933	10.18
1995-96	303,582	11.63	2013-14	3,000,300	15.61
1996-97	343,548	10.84	2014-15	3,555,330	10.54
1997-98	385,302	16.95	2015-16	3,974,103	-

Source: (1) Data for the period 1980-81 to 1990-91 from various Economic Surveys, Ministry of Finance; (2) Data for the period 1991-92 to 2015-16 from Public Finance Statistics, GOI. Note: Public Expenditure for the period 1991-92 includes other expenditure also.

the above table that the growth in public expenditure has been deteriorated from 15.76 per cent in 1980-81 to 5.03 per cent in 1990-91 as the economy was in crisis. Since 1991-92 the growth in public expenditure rose steadily until 1993-94. Thereafter, there was a decline in the growth of general government expenditure until 1996-97. Since then the trend of declining growth in general government expenditure has been reversed and as a result the growth in public expenditure was once again as high as 17.78 per cent in 2007-08. It is also observed since 2008-09 the growth in public expenditure was deteriorated and stood at 10.54 per cent in 2014-15.

Development and Non-Development Expenditure of Centre & States in India

General Government expenditure can be classified into both Development and Non-Development expenditure. Since Independence the non-development expenditure of the general government has been increased tremendously due to the increasing activities of the state, the establishment of an independent democratic state, increasing problems of law and order, and the increasing defense

expenditure. To achieve economic growth development of infrastructural facilities *i.e.*, Irrigation, Transport and Communication facilities has been undertaken by the government over the planning period. Since 1990-91 the government has been withdrawing itself from the various sectors and there is a significant decline in the ratio of public expenditure to Gross Domestic Product (GDP). Data pertaining to Development and Non-development expenditure of the centre and states is presented in the following **Table 2**.

It is observed from the above **Table 2** that there was a spectacular rise in the

Table 2. Development and Non-development Expenditure of Centre & States in India.

Year	Development Expenditure (Rs. Crores)	Non-development Expenditure (Rs. Crores)	Total Expenditure (Rs. Crores)	Ratio of Development Expenditure to Public Expenditure of the general government Percentage)
1950-51	326	574	900	36.22
1960-61	1,261	1,370	2,631	47.93
1970-71	3,537	4,306	7,833	45.16
1980-81	24,426	12,419	36,845	66.29
1990-91	64,360	97,724	176,548	36.45
1996-97	154,900	1,85,368	343,548	45.00
1997-98	178,817	2,01,399	385,302	46.00
1998-99	215,662	2,39,720	463,945	46.40
1999-00	257,142	2,74,483	540,423	47.00
2000-01	277,760	3,08,546	595,595	46.60
2001-02	307,864	3,32,224	652,967	47.15
2002-03	339,523	3,59,329	704,904	48.17
2003-04	371,651	4,17,834	796,384	46.67
2004-05	416,340	4,45,354	869,757	47.87
2005-06	440,377	5,09,525	959,855	45.88
2006-07	507,635	5,88,028	1,109,174	45.77
2007-08	588,779	7,10,271	1,315,283	44.76
2008-09	637,453	9,43,708	1,599,680	39.85
2009-10	768,734	10,62,810	1,852,120	41.51
2010-11	852,046	12,67,700	2,145,150	39.72
2011-12	969,588	14,20,940	2,421,770	40.04
2012-13	1,085,050	15,74,160	2,694,933	40.26
2013-14	1,242,780	17,14,220	3,000,300	41.42
2014-15	1,407,620	20,93,680	3,555,330	39.59
2015-16	1,583,290	22,11,770	3,974,103	39.84

Source: Public Finance Statistics, GOI, 2006-07 & 2015-16; Note: Total expenditure from the period 1990-91 includes other expenditure also.

public expenditure during the planning period has been expansion in developmental activities over the years. The expenditure on developmental activities in 1950-51 was Rs. 326 crore. Over the years it rose considerably. In 1990-91 the total development expenditure was Rs. 64,360 crores, it rose to Rs. 277,760 crore in 2000-01 and to Rs. 371,651 crore in 2003-04 and further rose to Rs. 1,583,290 crore in 2015-16. The ratio of the developmental expenditure to the total expenditure was 36.2 per cent in 1950-51. For a period of three decades, *i.e.* up to 1980-81, it increased considerably. However, since 1980-81 there has been a significant decline in it. Thus, the development expenditure of both Centre and states combined together has increased from Rs. 326 crores in 1950-51 to 1,583,290 crore in 2015-16. The ratio of the developmental expenditure to the total expenditure was 39.84 per cent in 2015-16. The share of Development Expenditures in the GDP rose after 1981-82 and reached its peak values in the mid 1980 s. In the 1990s and 2000s, the share of Development Expenditures in GDP fell sharply. Thus, while there was a rise in the share of public expenditures and development expenditures in the GDP until the mid-eighties, the trend had reversed significantly in the nineties and continued in 2000s. An important factor that has been constraining the growth of Development Expenditures is the rising share of Non Development Expenditures. Non-development expenditures continue to be a large proportion of the total general government expenditures.

Although during the first three decades of the planning period, the relative importance of non-development expenditure had declined, the absolute amount of expenditure under non-development heads had increased. The expenditure on non-developmental activities in 1950-51 was Rs. 574 crore. In 1990-91 the total non-development expenditure was Rs. 97,724 crore. Thereafter it increased to Rs. 185,368 crore in 1996-97 and further rose to Rs. 417,834 crore in 2003-04 and Rs. 2,211,770 crore in 2015-16.

Table 3 provides information about the trends in various indicators of fiscal imbalance since 1980-81. It is observed from the above table that the combined fiscal deficit of both central and state governments rose substantially between 1980-81 and 1990-91. In this period the gross fiscal deficit of the general government rose alarmingly from 6 per cent of GDP in 1980-81 to 9.1 per cent of GDP in 1990-91. Because of fiscal consolidation program, the fiscal deficit-GDP ratio declined in the initial period of 1990s, but again started to rise steeply in the year 1993-94 in case of state governments and in the later part of 1990s in case of central governments. The combined fiscal deficit of centre and state stood at 9.1 percent of GDP in 1990-91 after that it fell to 6.1 percent in 1996-97; but then it started rising and was at around 10 percent in year 2001-02 and 2002-03. There was however, a steady decline in fiscal deficit-GDP ratio subsequently as a result of the enactment of Fiscal reforms and Budget management Act in 2004. The fiscal deficit of the general government declined to 5.1 per cent of GDP in 2006-07 and further to 4.0 per cent of GDP in 2007-08 as a result of substantial effort at fiscal correction. Public expenditure of the general government has been increased in the latter half of 2008-09 to address the slow growth

Table 3. Impact of general government expenditure on deficits in India since 1981-82 as a proportion of GDP.

Year	Gross fiscal deficit	Gross primary deficit	Revenue deficit	Growth Rate	Year	Gross fiscal deficit	Gross primary deficit	Revenue deficit	Growth Rate
1981-82	6	3.9	-0.6	5.63	1998-99	8.7	3.5	6.1	6.68
1982-83	5.7	3.3	0.2	2.92	1999-00	9.1	3.7	6.0	8.00
1983-84	7	4.6	1	7.85	2000-01	9.2	3.4	6.4	4.15
1984-85	8.6	5.9	1.7	3.96	2001-02	9.6	3.6	6.8	5.39
1985-86	7.7	4.7	1.8	4.16	2002-03	9.3	3.0	6.4	3.88
1986-87	9.5	6.2	2.3	4.31	2003-04	8.3	2.0	5.6	7.97
1987-88	8.8	5.3	2.8	3.53	2004-05	7.2	1.3	3.5	7.05
1988-89	8.2	4.4	2.8	10.16	2005-06	6.5	1.0	2.7	9.48
1989-90	8.6	4.5	3.1	6.13	2006-07	5.1	-0.3	1.3	9.57
1990-91	9.1	4.9	4.1	5.29	2007-08	4.0	-1.2	0.2	9.32
1991-92	6.8	2.2	3.3	1.43	2008-09	8.3	3.3	4.3	6.72
1992-93	6.8	2.1	3.1	5.36	2009-10	9.3	4.5	5.7	8.59
1993-94	8	3.1	4.1	5.68	2010-11	6.9	2.4	3.2	8.91
1994-95	6.9	1.8	3.6	6.39	2011-12	7.6	3.2	4.1	6.69
1995-96	6.3	1.5	3.1	7.29	2012-13	7.4	2.9	3.7	4.47
1996-97	6.1	1.2	3.4	7.97	2013-14	6.69	1.92	3.21	4.70
1997-98	7	2.1	4.0	4.30	2014-15	6.95	2.21	2.96	4.6
					2015-16	6.19	1.43	2.36	7.6

Source: (1) Data for the period from 1981-82 to 2012-13, Government of India, Ministry of finance, Public Finance Statistics; (2) Data for the period from 2013-14 to 2015-16 Public Finance Statistics 2015-16. p. 41, 42, 43.

in the economy due to American crisis. As a result fiscal deficit increased considerably to 8.3 per cent of GDP in 2008-09. It rose further to 9.3 per cent of GDP in 2009-10. After declining 6.9 per cent of GDP in 2010-11, it again rose to 7.6 per cent of GDP in 2011-12. It has shown downward trend afterwards and was at 6.19 per cent of GDP in 2015-16.

Revenue deficit of the general government also rose substantially from 0.2 per cent of GDP in 1982-83 to 4.1 per cent of GDP in 1990-91. There was a steady decline in the revenue deficit-GDP of the general government as a result of reduction in the government expenditure towards development and welfare activities. It is observed from the above table that the revenue deficit which was marginally a surplus has gradually increased and reached at peak level of 6.8 percent of GDP in 2001-02 and has shown a downward trend due to FRBM Act. However, in 2008-09 it has again increased to 4.3 per cent of GDP. It again rose to 5.7 per cent of GDP in 2009-10 and has shown downward trend afterwards and was at 2.36 per cent of GDP in 2015-16.

During 1970-71 to 1980-81 the rate of growth of GDP was 2.9 per cent. During 1980-81 and 1990-91 Real GDP showed an annual average growth rate of 5.2 per cent. This was a very healthy development because the economy was able to cross the barrier of the Hindu Rate of Growth. During 1990-91 to 2000-01 the annual average Real GDP was just of the order of 5.5 per cent per annum. The annual average Real GDP growth was recorded at 5.6 per cent during 1980-81 to 2000-01. It implies that the economy has performed better during these two decades as compared with earlier three decades. From 2000-01 to 2007-08 the Real GDP growth was accelerated and it implies a very healthy development in the economy. The global crisis has hit India through a “sudden stop” of capital inflows and a collapse of both external and domestic demand. The growth of the economy dropped to 6.7 per cent in 2008-09. The policies adopted by government of India to come out from the crisis have contributed for more growth in the subsequent years. There was, however a steady decline in the Real GDP growth due to low manufacturing growth and unfavorable weather conditions during 2011-12 to 2014-15. India’s gross domestic product (GDP) grew 7.6 per cent in 2015-16, due to raise in farm output, and an improvement in electricity generation and mining production.

Table 4 shows that FDI inflow into India since 1980-81. During the pre-liberalization period, foreign investments into India were restricted and allowed moderately in few sectors. This is mainly because of the kind of policies which the government of India has adopted over the years which includes, “inward looking strategy”; and dependence of external borrowings. In turn, the borrowings resulted in foreign debts which were preferred to the foreign investments to bridge the gap between domestic savings and the amount of investments

Table 4. Foreign direct investment inflows in India.

Year	FDI inflows (US\$ mn)	year	FDI inflows (US\$M)	Year	FDI inflows (US\$M)
1980-81	8	1992-93	315	2004-05	3713
1981-82	10	1993-94	586	2005-06	3034
1982-83	60	1994-95	1314	2006-07	7693
1983-84	60	1995-96	2144	2007-08	15,893
1984-85	60	1996-97	2821	2008-09	22,372
1985-86	160	1997-98	3557	2009-10	17,966
1986-87	196	1998-99	2462	2010-11	11,834
1987-88	190	1999-00	2093	2011-12	22,061
1988-89	267	2000-01	3272	2012-13	19,819
1989-90	330	2001-02	4734	2013-14	21,564
1990-91	97	2002-03	3217	2014-15	31,300
1991-92	154	2003-04	2388	2015-16	36,000

Source: Various Economic Surveys.

required. Economic Reforms introduced in India since 1991 has resulted in an acceleration in the flow of foreign investment into the country. Accordingly, India has been experiencing a continuous flow of Foreign Direct Investment in recent years. The table reveals that there has been massive increase in FDI inflows into the country since 1991-92. From 154 m\$ in 1991-92, FDIs rose to 3557 m\$ in 1997-98. The inflow of Foreign Direct investment registered a robust growth in 2006-07. FDI inflows reached a peak of 15,893 m\$ in 2007-08, it reflected the continued strength of sustained economic activity and positive investment climate. The strength of the corporate performance, positive investor sentiment, further liberalization of FDI policies in sectors such as telecom, retail and expanding promotional efforts by the government also played a role in attracting FDI inflows continued to be preponderantly of the equity variety, broad-based and spread across a range of economic activities like financial services, manufacturing, banking services, information technology services and construction (Economic Survey 2007-08, p. 123). However, because of recession in the investing countries, overall FDI inflows to India in 2009-10 were only 17,966 m\$ and again declined to 11,834 M\$ in 2010-11. As it is clear from the table that FDI inflows to India registered an impressive increase in 2011-12 to 22,061 M\$ but declined thereafter. However, FDI inflows recovered strongly in 2015-16 to 36,000 M\$.

3. Relationship between General Government Expenditure and Economic Growth: Results and Discussion

Table 5 shows that R square value is 83%, which means 83% of the variation in GDP growth rate is explained by all the independent variables, which are general Government expenditure, reform period dummy, crisis period dummy and FDI growth rate respectively.

Hypothesis: There is no significant impact of General Government Expenditure on GDP Growth rate

We reject the hypothesis. So the model is significant.

All the above explanatory variables are positively and significantly affecting the GDP growth rate except FDI Growth rate (**Table 6**). The coefficient reflects that when General Govt. expenditure increases by 1 unit, GDP growth rate increases by 1.134 units. Reform period dummy showing Post 1991 there was a

Table 5. ANOVA results.

Source	Sum of Squares	Degrees of freedom	Mean sum of squares
Model	15.169	4	3.7922
Residual	141.112	31	4.5520
Total	156.281	35	4.4651

No of observations = 36
R Square = 83%
Adjusted R Square = 81.4%

Table 6. Regression equation results.

Variable	Coefficient	P value < 0.05
General Government Expenditure (GGE)	1.134133	0.002
FDI Growth rate (FDIG)	0.0003821	0.95
Reform period dummy (D1)	1.150171	0.05
Crisis period dummy (D2)	-0.0465661	0.006

positive and significant impact on GDP Growth rate. The crisis period dummy shows a negative sign and significant, which means post 2008 there was a negative impact on GDP growth rate.

We have also applied the test for multicollinearity, Variance Inflation Factor (VIF) = 1.13, which is within accepted levels. So we can say that there is no serial correlation among the explanatory variables. Breusch-Godfrey LM test for autocorrelation has also been applied to test for autocorrelation and it shows that there is no serial correlation.

4. Conclusions

From the above discussion, it can be concluded that all the explanatory variables are positively and significantly affecting the GDP growth rate except FDI Growth rate. The crisis period dummy shows that in post 2008 there was a negative and significant impact of general government expenditure on GDP growth rate. The reform period dummy shows that in post 1991 there was a positive and significant impact of general government expenditure on GDP growth rate. The multicollinearity test indicates presence of no serial correlation among the explanatory variables. Autocorrelation, using the Breusch Pagan test indicates the presence of no autocorrelation. Non-development expenditures continue to be a large proportion of the general government expenditure. Expenditure management has to lay more emphasis on the design of the programme and the exploration of the alternatives. Hence, there is a need to raise the development expenditure particularly on both physical and social infrastructure to achieve more economic growth.

There appears to be a further need for fiscal consolidation. Such consolidation cannot be done overnight. At the same time, it cannot be postponed for long. With the integration of the country with global markets, restoring solvency and sustainability is critical for maintaining high growth, low inflation and orderly conditions in the foreign exchange markets for the rupee. As much attention needs to be paid to the quality of fiscal consolidation as to its speed.

Apart from fiscal correction and consolidation, fiscal reform at the state level should focus on the growing volume of guarantees and other payment assurances in the nature of guarantees. There is need for fixing ceilings on guarantees, taking into account the default and development probability, nature of guarantees issued, pricing of services rendered by the project for which guarantees are extended. The scheme of assignment of tax powers and functions needs to be re-

viewed so that the vertical gap is narrowed and the burden on the transfer system is eased. One way of giving greater fiscal room to states would be to empower them to tax services along with goods. On the expenditure side, any action on the part of the Centre that entails large additional spending responsibilities on states should be preceded by consultation with state governments. At the same time, ways should be explored for introducing market discipline in state's borrowing.

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