PUBLIC SPENDING AND ECONOMIC GROWTH FOR INDIAN STATES

Ashwani [*] *and Ved Pal Sheera* [**]

ABSTRACT

The role of fiscal policy has been identified varying with respect to nature of economic shock as fiscal expansion during the global financial crisis and fiscal consolidation in the sovereign debt crisis. Indian economic system has also experienced the similar phenomenon for last couple of years, but now moving towards fiscal consolidation amid the surmountable deficit. The study aims to highlight the contribution of components of public finance to the economic growth of Indian states. It can prove beneficial for devising the policies related to fiscal consolidation while holding the growth impetus of states. Empirical results suggest that both capital spending and private sector capital formation have significant positive impact on economic growth of Indian states. The coefficient value for revenue expenditure appears negative in the growth regression and statistically significant also. On revenue front, study does not produce significant influence of both tax and non-tax components on economic growth.

Key Words: *Capital expenditure, revenue expenditure, economic growth, Indian States*

JEL Classification: *H50, H12*

1. INTRODUCTION

The recent inclination of the policymakers in the fiscal policy as an instrument to counter the business cycle and to enhance the long-run prospects of growth has generated substantial interest among the researchers to investigate the public finance and growth phenomenon. The instruments of policy in the form of revenue and expenditure composition are considered to create the environment which leads to better utilization of primitive resources in the system. In the past, vast numbers of studies have utilized the endogenous growth framework to investigate the role of fiscal environment in relation to economic growth (Barro 1990; Barro and

[*]　Assistant Professor, Department of Humanities and Social Sciences, National Institute of Technology, Kurukshetra, *E-mail: ashwani@nitkkr.ac.in*

[**]　Professor, Haryana School of Business, Guru Jambheshwar University of Science & Technology, Hisar (Haryana)-125001(India), *E-mail: vedpalhsb@gmail.com*

Sala-i-Martin 1992; Kneller *et al.* 1998). Moreover, some studies (like Devarajan *et al.* 1996; Gupta *et al.* 2005; Bose *et al.*, 2007; Ghosh and Gregoriou 2008) identified the different instruments of fiscal policy for their role in growth of a system. Few studies also tried to find out the optimal level of fiscal policy for different economies. The recent past literature has generated a debate on the relative contribution of public spending components to the economic growth. Public investment in capital formation may affect growth by increasing the quantity of factors of production, minimising the transportation cost, inducement to the private investment, etc., while current spending on education and health services may have an impact on growth by enhancing capabilities and improving the marginal productivity of human capital. It is pointed out by various empirical studies that public spending for capital accumulation promoted private sector investment, and thus combined together enhances economic growth.

Practically, India had relied heavily on the fiscal policy as a tool to stabilize the economy prior to the economic reforms of 1991. That phenomenon was largely influenced by the Keynesian approach for maintaining the aggregate demand in the system. In the last two decades, the importance of monetarism thesis is well considered by the policy makers in India as a stabilizer in the system. Also, a policy mix of the two approaches has caught serious attention in the recent environment in maintaining the growth momentum of the economy under different economic shocks as evidenced during the Asian financial crisis, global financial crisis and sovereign debt crisis.

Recently, the importance of fiscal policy is heightened worldwide with the occurrence of sovereign debt crisis. The crisis originated in Europe due to fiscal irresponsibility, puts forth various challenges before the world economies. It is not giving enough space to policy makers across countries for increasing the public spending. Indian economy has achieved unprecedented economic growth for last decade prior to the economic shocks of global financial meltdown and sovereign debt crisis. But after these shocks, the economy is facing pessimistic environment emanating from the poor performance of macro indicators such as decline in investment and savings, high fiscal deficit, rising inflation and poor industrial performance. On external front, pressure on current account deficit, declining value of Indian currency and low capital inflows are the key concerns before policymakers. The excessive spending for reviving the economy from global financial crisis has put the economy at par where further expansion of fiscal policy is very challengeable. Now, the economy is striving to maintain its pre-crisis growth momentum. The accomplishment of such targets requires the economic policy to be geared in multi-dimensional criteria such as to promote the innovation with enhanced human capital, minimization of market imperfections, more conducive investment environment, etc.[1] Among these, one of the major concern for India may be to give due importance to the fiscal policy and assign public

finances an important role in the process of achieving the goal. In a very recent report of Kelkar committee, it is recommended that India has to take corrective actions for maintaining the surmountable fiscal deficit which is a serious hurdle for growth. It was pointed out that India needs enough public investment for accelerating the growth which may be supplemented by private investment with lower interest rates with improved economic conditions. On this front the identification of potential sectors and type of investment remains a major policy agenda for India. The major attackable issues may be the inequitable subsidies and focus on greater tax compliance.[2]

India is comprised of 28 states and seven "Union Territories" (including the National Capital Territory of Delhi), and its system is classified with quasi federal system where it restricts the states to function quite freely. On fiscal federation front, there is much sharing between centre and state regarding the components of fiscal policy viz. public expenditure, revenue and public debt. The composition of spending components identifies the greater dominance of revenue expenditure in the total expenditure for all the states. However, the share of capital expenditure has been observed for increase in the last decade in majority of states.

The widening fiscal deficit of India since 1980s has invoked to introduce key reforms in the system. Indian economy has undergone with major fiscal reforms in the form of introduction of value added tax system along with other fiscal legislations like Fiscal Responsibility and Budget Management Act 2003. The Thirteenth Finance Commission which was set up in 2007, designed a roadmap for fiscal consolidation, and the same approach has been well explored in the Kelkar report 2012.[3] The recent initiative towards regime of indirect tax reforms in the form of Goods and Services tax is inviting serious concerns of academics and policy makers. Even with these initiatives, the economy has been facing the challenge of surmountable deficit, and the intensity of the fiscal stress is observed much more acute in many states than these aggregate figures indicate.[4] Taking into account the stock of such experiences, every state has approached towards fiscal consolidation, and expecting higher revenue receipts and lower revenue expenditure for controlling it (RBI 2012).

In this environment it is worth to have an empirical study of diagnosing the relationship between fiscal indicators and economic growth. The present study gets motivation from above mentioned issues, and tries to highlight the role of current expenditure and capital expenditure in the economic growth of states. It may have two policy implications that, one the growth determinant from the fiscal side is identified, and secondly it may help for putting in place the priority of allocation for fiscal consolidation. The paper is organised as follows: following section reviews the concerned literature, section 3 discusses the research methodology, section 4 exhibits the results

and gives their economic interpretation. Last section concludes the whole discussion.

2. REVIEW OF LITERATURE

At the outset of growth literature, the economic growth was considered to be an outcome of exogenous factors of public policy such as technological progress and labour force. The pioneer work of Romer (1986), Lucas (1988), Barro (1990), among others has led to the emergence of endogenous growth theory. In this theory various factors have been endogenised by different scholars over the period of time, and the fiscal policy has emerged as one of them. The credit of endogenising the fiscal policy into economic growth goes back of Barro (1990) where well role has been defined for productive expenditure and taxation in determining the economic growth. He used public services as a flow variable in the production function, but it appeared statistically insignificant in the model. In the similar spirit, Futagami et al. (1993) considered the public capital as stock variable and argued that it a sufficient condition to give rise to transitional dynamics. The theoretical and empirical literature has produced the mixed results of the role of fiscal policy variables in the economic growth. Kneller *et al.* (1999) observed for OECD countries that the productive expenditure has positive impact and distortionary taxation has negative influence on economic growth. For same set of countries, Bleany *et al.* (2001) noticed that taxation has negative bearings with the economic growth.

In another study for USA, core infrastructure investment is found positively associated with the productivity of private capital which in turn affected economic growth (Aschauer 1989). From the empirics of cross country study, Easterly and Rebelo (1993) highlighted positive effect of public investment in transport and communications on economic growth. Avila and Strauch (2003) ascertained that the productive expenditures and distortionary taxation have effect on economic growth and non-distortionary taxation and unproductive expenditures have no discernible impact. However, direct taxation has affected the physical accumulation of capital. Bose et al. (2007) used a panel data for 30 developing countries and concluded that the share of government capital expenditure in GDP is positively and significantly related to income growth per-capita, whereas the share of current expenditure is not. The government expenditure in education, health, and other services has affected the economic growth (Barro and Sala-i-Martin 1995, Chen & Gupta 2006). In an empirical study for 39 low income countries during 1990s, Gupta *et al.*, 2005 highlighted that the countries where spending is concentrated on wages tend to have lower growth while those allocate higher shares to capital and nonwage goods and services enjoys faster growth. They showed that fiscal consolidations achieved through cutting selected current expenditures while protecting capital expenditure

tend to raise growth rates. It was also shown that larger current expenditures and direct taxes diminish economic growth and reduce inequality, while increase in public investment reduces inequality without harming output. This suggests the trade-off between efficiency and equity which requires the attention of government while designing the fiscal policy.[5] The larger government size which is funded through the higher level of taxes also poses a serious threat of not allocating the resources more efficiently. In the recent past, Abdullah *et al*. (2008) observed long-run relationship between fiscal policy, institutions and economic growth for Asian countries.

In contrast, vast numbers of literature have produced counter views for the relationship between fiscal components and economic growth. The elasticity of output with respect to public capital was found statistically insignificant in a panel data set of 48 US states (Evans & Karras 1994). Devarajan *et al*. (1996) identified current spending as an important determinant of economic growth particularly in the country where the share of capital spending is already high. Here role of capital spending is not found important in explaining economic growth. In the same line Ghosh and Gregoriou (2008) produced the empirical work for developing countries and contended that current spending has positive significant effect on the economic growth whereas capital spending has negative bearings. Further, at disaggregate level it was observed that spending on operations and maintenance has a stronger impact on growth than both health and education spending. The findings remained same even after including the revenue side of the government budget constraint.

All these existing literature give a very good justification of testing the empirical relationship between economic growth and public finance developments for India when the country has travelled a long journey after reforms. More importantly, such types of relations are found missing in the literature for Indian states to the best of my knowledge. In the existing literature most of the studies are based on the panel data across countries and every country has its own characteristics in terms of economic, political, social and cultural issues. Drawing inferences for an economy through across countries may be relatively less suitable however various econometric models account these individual differences. The present study is focused on the state level data of India, however each state is unique, but more or less is the part of aggregate fiscal policy of India and it may pertain the greater degree of association with economic growth.

3. RESEARCH METHODOLOGY

3.1. Choice of Variables and Data Set

In order to investigate the relationship between composition of government sending and economic growth, the present study utilizes the panel data set

of 19 states.[6] The sample of state comprises the state which has relatively larger size of economy and higher growth in gross domestic product. These states are contributing substantially in the overall economic structure of India. Debroy *et al.* (2011) used these states to assess the status of economic freedom in India.[7] The selection of variables grounds on the existing literature related to the fiscal policy and economic growth. On fiscal policy front the literature gave the prominent role to both sides of the government budget constraint i.e. expenditure side as well as revenue side (Barro 1990). It was argued that failure to include both productive government expenditure and distortionary taxation in regressions would lead to mis-specified models (Avila & Strauch 2003). Ghosh and Gregoriou (2008) also highlighted the need of incorporating both the sources and uses of funds simultaneously in evaluating the effect of fiscal policy on economic growth. They used tax and non-tax revenue as explanatory variables along with budget balance and public spending components. These indicators reflect the capacity of generating the revenue, and may give relatively complete picture of behaviour of components of public finance. We settle on both indicators of expenditure and revenue along with the fiscal deficit/surplus. On spending side, the capital and revenue expenditure are considered, and on revenue front, the tax and non-tax revenues are taken into account. Some studies considered either tax revenues or budget balance along with the public spending (Gupta *et al.* 2005; Bose *et al.* 2007). Gupta *et al.* (2005) utilized budget balance and tax & non-tax revenues separately.

Per-capita real state gross domestic product (SGDP), which reflects the living standard of people, is used as proxy for economic growth. The base year for the constant series is 1999-2000. As we know the capital formation reflects the potential level of production of any economy, and hence the gross fixed capital formation (GFCF) for private sector is considered.[8] The status of un-availability of the estimates of private investment is highlighted in Lakhchaura (2004), EPWRF (2003) and Mallick (2008). Most recently, GOI (2012) has also expressed its views about the non-availability of capital formation in private sector for Indian states.[9] The present study uses the figures of gross fixed capital formation of private sector as an indicator of private investment.[10] The sample period of the study ranges from 1999-2000 to 2009-10. In order to find the state-wise private sector formation, the total private sector investment in India is apportioned for every state based on the respective weights in capital formation for registered manufacturing firms as reported by Annual Survey of Industries. In brief, study utilizes per-capita real GSDP, capital and revenue expenditures and tax and non-tax revenues, gross fiscal deficit and gross fixed capital formation in private sector for identifying the contribution of public finance components.

3.2. Data Sources

The study is based on secondary data and the information for fiscal indicators and economic growth variables are obtained from the national sources. These sources include the occasional publication such as Handbook of Statistics on State Government Finance 2010 of Reserve Bank of India (RBI), and annual publications such as State Finances: A Study of Budgets and Handbook of Statistics on Indian Economy 2010 of RBI. Other data sources are Annual Survey of Industries, various issues, a publication of NSSO; National Accounts Statistics, various issues a publication of Central Statistical Organization (CSO).

3.3. Econometric Models

The present study is an attempt to identify the contribution of components of government spending in the economic growth of Indian states. In order to estimate the empirical relationship between these two forces, study utilizes the growth models as specified by existing empirical studies such as Deverajan *et al.* (1996), Gupta *el al.* (2005), Ghosh and Gregoriou (2008), among others. Keeping into account the availability of panel data, study employs the fixed effects (FE) and random effects (RE) model. The specification of ordinary least square technique for panel data under fixed effect model is as follows:

$$G_{it} = \beta_{1i} + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon_{it} \tag{1}$$

Where i and t subscript are for each individual and time respectively. G is the dependent variable and X_is are explanatory variables. In this model slope coefficients remain constant across time and individual. Here all behavioural differences between individuals, referred to as individual heterogeneity are assumed to be captured by the intercept. The intercept terms are denoted as fixed effects. But in many panel data sets the fixed effects may appear random also. In order to capture this effect, random effect model was introduced. More importantly, there is likely chance of finding correlation among explanatory variables and error terms as the individuals possess different characteristics, and consequently the precision of estimators get affected. This problem is relatively better handled in the random effects model. This model assumes that there is orthogonal condition meaning by no correlation between u_i and explanatory variables. Random effects model is defined as:

$$G_{it} = \alpha_1 + \alpha_2 X_{2it} + \alpha_3 X_{3it} + (\varepsilon_{it} + u_i) \tag{2}$$

$$= \alpha_1 + \alpha_2 X_{2it} + \alpha_3 X_{3it} + v_{it} \tag{3}$$

Where now α_1 is the intercept parameter, and v_{it} is composed of a component u_i that represents a random individual effect and a component e_{it} is the usual regression error term.[11] The selection of either of these two techniques is made on the basis of Haussman statistic.

The study specifies following models while considering the given explanatory variables as:

$$G_{it} = \gamma_1 + \gamma_2(g_{cap,it})/(TE_{it}) + \gamma_3(TE_{it})/y_{it} + \gamma_4 gfcf_{it}/(TE_{it}) + \varepsilon_{it} \qquad (4)$$

$$G_{it} = \theta_1 + \theta_2(g_{rev,it})/(TE_{it}) + \theta_3(TE_{it})/y_{it} + \theta_4 gfcf_{it}/(TE_{it}) + \varepsilon_{it} \qquad (5)$$

$$G_{it} = \delta_1 + \delta_2(g_{cap,it})/(TE_{it}) + \delta_3 gfcf_{it}/(TE_{it}) + \delta_4 TR_{it}/y_{it} + \delta_5 NTR_{it}/y_{it} + \delta_6 GFD_{it}/y_{it} + \varepsilon_{it} \qquad (6)$$

$$G_{it} = \lambda_1 + \lambda_2(g_{rev,it})/(TE_{it}) + \lambda_3 gfcf_{it}/(TE_{it}) + \lambda_4 TR_{it}/y_{it} + \lambda_5 NTR_{it}/y_{it} + \lambda_6 GFD_{it}/y_{it} + \varepsilon_{it} \qquad (7)$$

Where G represents growth in per-capita real state gross domestic product, g_{cap}: capital spending, g_{rev}: revenue spending, TE: capital plus revenue spending, y: state output, GFCF: gross fixed capital formation of private sector, TR: tax revenue, NTR: non-tax revenue and GFD: gross fiscal deficit.

4. EMPIRICAL RESULTS

For investigating the contribution of components of public instruments to economic growth for given data, the models given from 4 to 8 are tested for applicability of random effects or fixed effects technique. For the purpose, the conventional Hausman test is applied, which compares the estimators obtained through fixed effects and random effects model. Acceptance of null hypothesis that there is no systematic difference in coefficients, suggests for fitting the random effects model and rejection of it supports the fixed effects model. The results of test statistic are presented in Table 1 where calculated test statistic is 0.63 and is distributed $\div^2(3)$. It accepts the null hypothesis of not systematic difference in coefficients which suggests that the random effects model is suitable technique for the given data set. It indicates that the estimates will be relatively consistent and efficient as RE model accounts the orthogonality condition.

Table 1
Hausman Test Statistic in the Presence of Capital Component of Spending

Variable	(b) FE	(B) RE	(b-B) Difference	Sqrt(diag (V_b-V_B)) S.E.
g_{cap}	10.6550	10.3234	0.3316	1.2671
TE/y	-2.2908	-2.2734	-0.0174	1.0096
Gfcf	0.9008	0.7004	0.2004	0.3922
$\chi^2(3)[(b-B)'[(V\_b-V\_B)^{\wedge}(-1)](b-B)] = 0.63$, Prob. $> \chi^2 = 0.8906$				

b = consistent under H_o and H_a; obtained from xtreg, B = inconsistent under H_a, efficient under H_o; obtained from xtreg, Test: H_o: difference in coefficients not systematic

The results for equation 4 are presented in Table 2. It is found that there is a positive and statistically significant relationship between the capital component of public expenditure and per-capita real state GDP

growth. The results indicate that a unit increase in the capital spending ratio (g_{cap}) increases per-capita real SGDP growth by 10.32 percentage points. In the same regression, the public expenditure-to-GDP ratio is negative and statistically significant. The gross fixed capital formation, an indicator of private-to-public spending, holds positive coefficient value 0.70. The estimated model is based on two important assumptions such as homoscedasticity and no contemporaneous correlation. But there may be the possibility of heteroscedasticity and correlation in error terms among individuals. The cluster-robust standard errors for random model relax these assumptions (Hill 2011). This method is utilized on the same set of variables, and its results are exhibited on the right side of Table 2. It leaves the coefficient values unchanged, however makes some adjustment in the standard error and consequently to the test statistic value. These results support that the private capital formation is now statistically significant with same magnitude. It may be inferenced that both the capital expenditure and private investment are important factors for economic growth of states, however the overall total spending is found negatively influencing the economic growth. The results appear convincing as India being a developing nation has enough potential to grow. In this environment capital expenditure plays a vital role as rationalized by existing growth models (like Barro 1990).

Table 2
Contribution of Capital Expenditure in GSDP (Random Effects Model)

Variable	Coefficient	GLS Standard Errors			Cluster-Robust Standard Errors		
		Std. Error	T- Statistic	P. Value	Std. Error	T- Statistic	P. Value
g_{cap}	10.3234	1.6982	6.0800	0.0000	1.4660	7.0400	0.0000
TE/y	-2.2734	1.1420	-1.9900	0.0470	0.7650	-2.9700	0.0030
gfcf	0.7004	0.4450	1.5700	0.1160	0.2572	2.7200	0.0060
_cons	0.6391	0.8201	0.7800	0.4360	0.7916	0.8100	0.4190

Similar to the capital spending, the choice of FE and RE techniques is made for the regression equation 5 comprising the revenue expenditure along with the same set of explanatory variable. The test statistic accepts the null hypothesis of not systematic difference in coefficients and supports the RE technique for identifying the role of revenue expenditure in economic growth. As per the results reported in table 3, it can be stated that the coefficients values for all explanatory variables remain strikingly similar to the results given in Table 2 except the value for revenue spending variable. Its coefficient value holds the negative sign and statistically significant with value 10.32. The coefficient value of public expenditure variable (TE/y) which shows the level effect of total government spending on per-capita growth, again enters negatively significant in the cluster-robust technique.

Table 3
Contribution of Revenue Expenditure in GSDP (Random Effects Model)

Variable	Coefficient	GLS Standard Errors			Cluster-Robust Standard Errors		
		Std. Error	T- Statistic	P. Value	Std. Error	T- Statistic	P. Value
g_{rev}	-10.3234	1.6982	-6.0800	0.0000	1.4660	-7.0400	0.0000
TE/y	-2.2734	1.1420	-1.9900	0.0470	0.7650	-2.9700	0.0030
gfcf	0.7004	0.4450	1.5700	0.1160	0.2572	2.7200	0.0060
_cons	10.9625	1.3698	8.0000	0.0000	0.9877	11.1000	0.0000

In order to have the robustness check as exhibited in Ghosh and Gregoriou (2008), an attempt is made to incorporate some additional variables associated with fiscal policy. For the purpose, both the dimensions of fiscal indicators viz. expenditure side and revenue side are utilized along with the fiscal deficit. Also, these indicators reflect the capacity of generating the revenue, and may give relatively complete picture of behaviour of components of public finance. Similar to pervious exercise Hausman statistic is used to decide the appropriateness of the model between fixed effects and random effects. Again based on the test statistic presented in table 4, it can be stated that the random effects model provides relatively consistent and efficient estimators.

Table 4
Hausman Test Statistic**

Variable	(b) FE	(B) RE	(b-B) Difference	Sqrt(diag(V_b-V_B)) S.E.
cap_exp	8.3236	7.8371	0.4865	0.6774
gfcf_exp	0.8479	0.6794	0.1685	0.3749
tax_gdp	-13.7265	-10.5217	-3.2048	20.3393
ntax_gdp	-13.9467	-4.0869	-9.8598	25.7560
gfd_y	-12.3960	-9.0800	-3.3160	8.1316
χ^2 (5)[(b-B)'[(V_b-V_B)^(-1)](b-B)] = 1.70, Prob. > χ^2 = 0.8888				

** In the Presence of Public Spending and Revenue- Indicators

The results for equation 6 are presented in Table 4. In terms of contribution of capital spending to economic growth, there is smaller change in the coefficient value compared to the previous model, and it appears statistically significant. The results again suggest significant positive contribution of private sector capital formation on economic growth of states. The coefficient values for tax, non-tax revenue and gross fiscal deficit indicators hold negative value, however statistically insignificant (Table 5). This outcome is intuitive in the sense that higher taxes remain a discouraging factor for the industry and higher fiscal deficit restrain the government to fully in-cash the profitable projects because of lack of funds.

Table 5
Contribution of Capital Expenditure in GSDP along with Fiscal Deficit Indicator*

Variable	Coefficient	GLS Standard Errors			Cluster-Robust Standard Errors		
		Std. Error	T- Statistic	P. Value	Std. Error	T- Statistic	P. Value
cap_exp	7.8371	1.2998	6.0300	0.0000	1.2581	6.2300	0.0000
gfcf_exp	0.6794	0.4725	1.4400	0.1500	0.3155	2.1500	0.0310
tax_gdp	-10.5217	12.5383	-0.8400	0.4010	17.5496	-0.6000	0.5490
ntax_gdp	-4.0869	9.3648	-0.4400	0.6630	7.1975	-0.5700	0.5700
gfd_y	-9.0800	13.9874	-0.6500	0.5160	13.1036	-0.6900	0.4880
_cons	2.3493	1.7422	1.3500	0.1780	2.3296	1.0100	0.3130

* Results are obtained through random effects model

Similar to the previous exercise, current expenditure variable is also utilized along with revenue constraint of budget (equation 7). The coefficient value of revenue expenditure remains same except the sign gets reversed with statistically significant as depicted in table 6. The magnitude, sign and significance of all other variables remain the same as observed in table 5. Even after including the revenue constraint of the budget in the growth regression, the direction of results remains same as the capital expenditure is contributing positively to the economic growth of states.

Table 6
Contribution of Revenue Expenditure in GSDP along with Fiscal Deficit Indicator*

Variable	Coefficient	GLS Standard Errors			Cluster-Robust Standard Errors		
		Std. Error	T- Statistic	P. Value	Std. Error	T- Statistic	P. Value
rev_exp	-7.8371	1.2998	-6.0300	0.0000	1.2581	-6.2300	0.0000
gfcf_exp	0.6794	0.4725	1.4400	0.1500	0.3155	2.1500	0.0310
tax_gdp	-10.5217	12.5383	-0.8400	0.4010	17.5496	-0.6000	0.5490
ntax_gdp	-4.0869	9.3648	-0.4400	0.6630	7.1975	-0.5700	0.5700
gfd_y	-9.0800	13.9874	-0.6500	0.5160	13.1036	-0.6900	0.4880
_cons	10.1864	1.7127	5.9500	0.0000	2.1291	4.7800	0.0000

* Results are obtained through random effects model

5. CONCLUSION

The study tried to highlight the role of components of public finance in the economic growth using panel data of Indian states. The Hausman statistic suggests fitting the random effects model which provides relatively consistent and efficient estimators. Among spending components, capital expenditure is found for positively affecting the economic growth whereas the revenue expenditure component is observed for lowering the growth. The results are consistent with many empirical studies related to the public spending composition and economic growth such as Gupta *et al.* (2005), Kneller *et al.* (1999) and Bose *et al.* (2007), and are as per the expectations to the endogenous growth theory. As per expectation, the private sector

capital formation is positively contributing to the economic growth of states. The direction of results remains same even in the presence of revenue constraints of the budget and gross fiscal deficit. Based on the results of study, it can be inferenced that the increase in capital spending is a prudent option before policymakers to maintain the growth trajectory. Though, every state has moved towards increase in the capital expenditure in the recent years, but the larger pie goes to revenue expenditure in all the states. The optimum utilization of current expenditure requires a close attention of policymakers as it lowers the economic growth. It is suggested that that the target of fiscal consolidation amid same growth impetus in India can be achieved through minimizing the revenue expenditure while preserving the capital spending. The approach of twelfth five year plan towards the increase in the allocation of funds for health and education particularly in capital formation seems a best option to revive the growth. However for further understanding, there is scope for future research to investigate the role of sub-heads of public spending such as health, education, operation & maintenance, etc. in the economic growth of states. Also, the invitation to private players in capacity building may prove an alternate for maintaining the fiscal deficit as well as in creation of capital goods.

Notes

1. In this direction the step taken by the Government of India towards New Manufacturing Policy which targets to increase the share of manufacturing sector in GDP to 25 percent by 2025 from the current share of 18 percent, may be a favorable initiative. Also, the skill development and more allocation of resources towards Research and Development seem to generate the positive outcome.

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5. Leonel Muinelo-Gallo & Oriol Roca-Sagales (2011). Economic growth and inequality: The role of fiscal policies. *Australian Economic Papers,* Blackwell Publishing Ltd, University of Adelaide and Flinders Univrsity.

6. These states are Andhra Pradesh, Assam, Bihar, Chattisgarh, Delhi, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, Uttrakhand and West Bengal.

7. Debroy *et al.* (2011). Economic freedom for the states of India 2011. Academic Foundation, New Delhi.

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10. The data for this indicator is taken from Rajeswari (2009).

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