Indian Journal of Science and Technology, *Vol 9(48), DOI: 10.17485/ijst/2016/v9i48/105731, December 2016*
ISSN (Print) : 0974-6846
ISSN (Online) : 0974-5645

Fiscal Federalism and States' Economic Growth in India- An Analytical Study

Shilpa Sindhu[1]*, Sahil Khatkar[2] and Anupama Panghal[3]

[1]School of Management, Northcap University, Gurgaon - 122017, Haryana, India; shilpasindhu@ncuindia.edu
[2]Credit Suisse Business Analytics, Mumbai - 400076, Maharashtra, India; Sahil5048@gmail.com
[3]FBM, NIFTEM University, Kundli, Sonepat - 131028, Haryana, India; anupamakhatkar@gmail.com

Abstract

Objectives: This study is aimed at analyzing various facets of Fiscal Federalism and its impact on the growth of states in India. **Methods/Analysis:** The Study proposes a model to test the impact of autonomy and hard budget constraints, two important features of decentralization, on the economies of the states. The model has been analyzed using the Fixed Effects Least Squares method for panel data using EViews. **Findings:** The results point out quite a few aspects of the impact of fiscal federalism on Indian states. The paper concludes by giving possible reasons for the negative relation between autonomy with growth and the positive relation between central grants with growth. The fact that the OwnTax ratio is negatively related to the GSDP growth rate shows that the level of autonomy of a state is negatively related to the growth of the state. The study also revealed a high dependence of the states on the grants and tax sharing mechanisms for growth. It was found that the central intervention in the states' economy was positively related to their growth, which points to soft budget constraints on the states which depend highly on the central government to finance their spending. The overall level of decentralization was also found to be quite poor, though the relationship is not very economically significant. **Applications/Improvement:** The Study highlights that trade-off between the autonomy and budget constraint aspects of fiscal federalism needs to be a major concern and work area for policy makers in India.

Keywords: Economic Growth, Fiscal Federalism, Tax

1. Introduction

Since the beginning of the 20th century, India has financially segregated the centre and the states in some form or the other, thus meriting a study of the methods adopted to determine the level of this fiscal federalism in the country as well as analyzing the economic outcomes of the same. This study is aimed at analyzing the complex tax structure of India, with a focus on various facets of tax distribution among states and its impact on their growth.

Taxation is the most important means by which governments finance their expenditure by imposing charges on their citizens and corporate entities[1]. They are also used as public policy tools with a high impact on other macroeconomic variables, such as, reducing budget deficits of the past, allowing room for increased (or decreased) government spending, counteracting the influence of other factors, attempting to reduce income inequality and promoting overall long-term growth. Moreover, the changes in tax structure can be utilized to finance instances of unexpected high government spending, such as war or natural disasters. While the government policies determine the level of taxation, sometimes changes in the tax base, like a change in the overall level of income, stock prices or inflation, can cause changes in the way the tax system operates inherently[2].

Fiscal federalism is a form of tax structure where the fiscal authority and responsibility of a nation is shared by the central and provincial levels of the government. This is done because it is assumed that the state and local governments, being closer to the people, would have a better understanding of their preferences and would be better

**Author for correspondence*

suited to provide these services than the umbrella central government[3]. While the traditional theory of fiscal federalism was based on the assumption that the benevolent governments would seek to maximize social welfare of the public[4], emphasizing vertical and horizontal equity, the second generation of fiscal federalism provides a more realistic approach of political and fiscal incentives for decentralization which lead to economic growth[5].

In India, the Government of India Acts of 1919, providing for a separation of revenue heads between the center and the provinces, and 1935, which allowed for the sharing of centre's revenues and provision of grants-in-aid, laid the foundation of fiscal decentralization[6], with the current system of taxation comprising of various sets of tax revenues and expenditures divided between the centre and the states.

Fiscal decentralization has various facets, like the autonomy provided to the states in collecting and spending their own revenue and the readiness of the centre to provide grants to these provinces in case of deficit or disaster. Thus, even though India follows fiscal federalism, the extent to which it allows the states autonomy and grants could well determine the impact of this decentralization on the economy. The following study aims to find a relation between these factors and the state-wise economy growth as captured by the Fixed Effects Least Squares model for a period of ten years, from 2002-2012.

The economic growth of any area is dependent on various factors, like the investment, the socio-political system, the nature of the market and the resources available. In an economy like India, however, the growth of all regions is not symmetric. With the highly varied demography and the multitude of cultures, traditions and preferences of people in different regions of the country, the possibility of the central governments to react to this difference in preferences and provide services which can lead to an equitable growth in all regions becomes almost impossible. Hence, the provincial governments start playing a major role in the economy. It has been prominently accepted that a region's investment policy may be well developed only if the investment climate is properly assessed there[7]. "In India, the taxation system is quite complex with various taxes being divided among the states and the centre"[8]. In brief, "Central Government levies taxes on income (except tax on agricultural income, which the State Governments can levy), customs duties, central excise and service tax"[9]. States can levy taxes on land revenue, state excise, stamp duty, Value Added Tax and profession taxes.Local bodies usually levy taxes on property and for utilities like water supply and drainage.

However, even though the decentralization exists, the extent of this decentralization and whether it is being realized in practice could still affect the macroeconomic parameters to a large extent. The autonomy of a state as well as the hardness of its budget constraint are two important factors which must be considered while measuring any impact of fiscal decentralization on the overall growth of the state.

Although Central Government as one of its prime responsibilities has to achieve macroeconomic stability, but overall financial sustainability and stability can only be achieved by having proper coordination between Central and State Governments[10].

But this system had some associated issues like soft budgets where the states tried to export their tax burden to residents of other states during the times of deficits through risk-sharing arrangements and central aids. Whenever the central government gets involved in providing finances to states, a dilemma arises. Such support undermines the hard budget constraints and also the incentive for states to control their deficits[11]. Similarly, there was the issue of autonomy where if the states are not allowed enough autonomy, they may fail to serve the very purpose that a decentralized system is used for- that of reacting to the local preferences of the people and officials. The level of autonomy is usually calculated by the own-tax revenue generation capabilities of the states as compared to the revenue generated through central means.

If the decentralization supports greater own-revenue generation by the state governments, and the spending is kept under the ambits of the budget constraints without a view to misuse the risk-sharing mechanisms, the fiscal space of the states can be expanded to deal with increased spending needs. In such a system, the centre sets the goal for the regional authorities to work out their own regional strategies, which brings the local authorities to a higher level of management[12]. Centre has the power to grant loans to states and also the power to write off the loans, but these decisions are highly politically influenced, which further makes the system complicated[13].

India has a comparatively complex tax structure and administration as compared to several other countries throughout the world. There is a need that central governments, state governments and political parties work together towards simplification of the system[14], something which the proposed Goods and Service Tax can be a step towards accomplishing if implemented in the right manner.

In[15] has carried out research to explore "how fiscal relations between centre and states should be re-organized to further enhance aggregate economic growth". He concluded through his study that "there is an urgent need to review the totality of transfers from the central to state governments and local bodies. There is a compelling necessity to review and recalibrate the entire gamut (and not piecemeal) of federal relations – tax, expenditure and transfers. This is critical to ensure the stability and predictability needed to ensure that India's state driven growth blossoms and attains full fruition".

2. Methodology

2.1 Objectives of the Study

- To study the major elements of fiscal federalism with a focus on the State's Economy.
- To identify a relationship between the State's Autonomy and Budget hardness and State's Economic Growth.
- To propose a suggestive framework for making a balance between Fiscal Federalism and State's Economic Growth.

2.2 Model

The model proposed for the study is:

$$G = \beta_0 + \beta_1 CapOut + \beta_2 OwnTax + \beta_3 Grants + \beta_4 PCCapRatio$$

where,

G = GSDP growth rate at constant prices.

This measures the rate of economic growth of each state.

$CapOut$ = Ratio of state's capital outlay to the GSDP of the state.

This is a control variable which measures the investment function of the state.

$OwnTax$ = Ratio of state's own tax revenue to total tax revenue.

This is a variable which measures the state autonomy by relating the revenue which it generates on its own to the total generation of revenue.

$Grants$ = Ratio of central grants to the total revenue of the state.

This is a measure of how easily the centre intervenes in the state fiscal system by providing grants, thus giving an estimate of the hardness of the budget constraints faced by the states.

$PCCapRatio$ = Ratio of per capita state capital outlay to the per capita central capital outlay.

This is a measure of state's level of decentralization by reviewing the amount it invests for its people as opposed to the amount invested by the centre.

The model has been analyzed using the Fixed Effects Least Squares method for panel data using EViews.

2.3 Data

The state revenue and expenditure data has been taken from the RBI website[16] and the state growth data has been taken from the planning commission website[17]. The population estimates have been taken from the report by the National Commission on Population[18] and the central expenditure data from the Indian Public Finance Statistics reports[19] for the years 2002-2012.

The basic concept of Fiscal Federalism has been studied in this paper with prime focus on how various taxes have been distributed at different levels. Two major factors identified for the study viz. State's Autonomy and Budget hardness have also been studied thoroughly.

The level of fiscal federalism of a tax system can be determined by the autonomy of the provincial governments as well as the hardness of the budget constraints that they follow. These factors have been approximated by ratios of the state's spending and revenues as compared to their total spending and revenues with respect to the centre, and a linear model has been proposed to test their impact on the economy.

3. Results and Discussion

3.1 Empirical Results

The results obtained by the analysis of the model using the Fixed Effects Least Square method, using White cross-section weights, are shown in subsequent tables:

This covers the significance tests for the combined coefficients for all the states under consideration (as given in Table 1.) in the respective ten-year periods.

Table 1. Combined coefficients

Dependent Variable: G				
Method: Panel EGLS (Cross-section weights)				
Date: 12/10/15 Time: 13:55				
Sample: 2002 2012				
Periods included: 11				
Cross-sections included: 29				
Total panel (balanced) observations: 319				
Linear estimation after one-step weighting matrix				
White cross-section standard errors & covariance (d.f. corrected)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16.58421	2.862605	5.793400	0.0000
CAPOUT	9.959443	14.21547	0.700606	0.4841
OWNTAX	-16.72120	4.547607	-3.676922	0.0003
GRANTS	2.695257	2.281404	1.181403	0.2384
PCCA - PRATIO	-0.000477	0.005364	-0.088842	0.9293
	Effects Specification			
Cross-section fixed (dummy variables)				
	Weighted Statistics			
R-squared	0.269219	Mean dependent var		14.19017
Adjusted R-squared	0.187453	S.D. dependent var		8.514760
S.E. of regression	5.432708	Sum squared resid		8441.095
F-statistic	3.292567	Durbin-Watson stat		2.069371
Prob (F-statistic)	0.000000			
	Unweighted Statistics			
R-squared	0.129073	Mean dependent var		8.018433
Sum squared resid	8897.186	Durbin-Watson stat		2.428028

The coefficients' confidence intervals have been presented in Table 2.

Table 3. State-wise serial codes

Code	States	Code	States
1	Andhra Pradesh	16	Manipur
2	Arunachal Pradesh	17	Meghalaya
3	Assam	18	Mizoram
4	Bihar	19	Nagaland
5	Chhattisgarh	21	Punjab
6	Goa	22	Rajasthan
8	Haryana	23	Sikkim
9	Himachal Pradesh	24	Tamil Nadu
10	Jammu & Kashmir	25	Tripura
11	Jharkhand	26	Uttarakhand
12	Karnataka	28	West Bengal
13	Kerala	29	Delhi
15	Maharashtra		

This provides the state-wise codes which are used in Figure 1.

In Figure 1 presents the curve fit for all the points of the analysis, with the x-axis corresponding to each state (as per their serial code) per year.

Table 2. Coefficient confidence intervals

Coefficient Confidence Intervals							
Date: 12/10/15 Time: 14:08							
Sample: 2002 2012							
Included observations: 319							
		90% CI		**95% CI**		**99% CI**	
Variable	**Coefficient**	**Low**	**High**	**Low**	**High**	**Low**	**High**
C	16.58421	11.86035	21.30808	10.94977	22.21866	9.161111	24.00732
CAPOUT	9.959443	-13.49891	33.41780	-18.02078	37.93966	-26.90310	46.82199
OWNTAX	-16.72120	-24.22565	-9.216741	-25.67222	-7.770173	-28.51373	-4.928668
GRANTS	2.695257	-1.069512	6.460027	-1.795214	7.185728	-3.220715	8.611230
PCCAPRATIO	-0.000477	-0.009329	0.008376	-0.011035	0.010082	-0.014387	0.013434

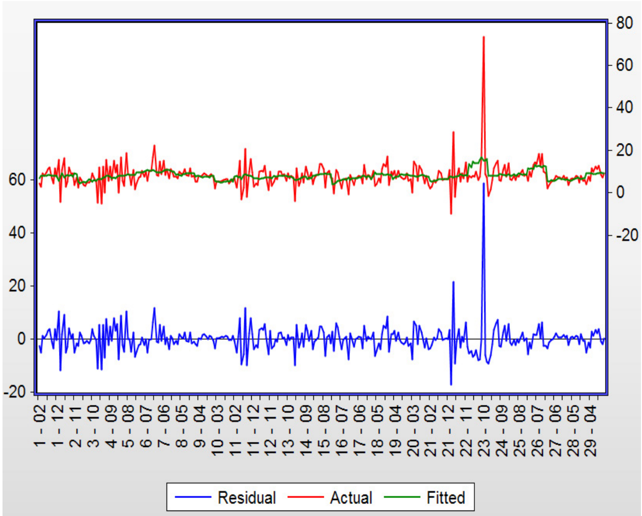

Figure 1. Actual vs fitted curve.

3.2 Discussion

3.2.1 Model Estimates

Figure 1 shows that, except for Sikkim, the values of the residuals are quite low, and the fitted model is quite close to the actual values. Moreover, Table 3 shows that OwnTax and PCCapRatio are negatively related to the GSDP growth rate, with the OwnTax term highly significant at the 5% significant level of the two-side t-test, while the PCCapRatio term is not so. The Grants ratio is positively related to the growth rate, and is significant at higher levels of significance.

The overall F-statistic of the test is significant at 10% levels of significance, while the t-statistic for the constant term and the autonomy term are significant at 5% levels and that of the grants to revenue ratio is almost significant at the 20% level of significance. This could be because of data recording issues or the lack of available data on other state-wise parameters which could act as control variables for the model.

However, while the model is not an extremely good estimate, it does provide useful insights into the various facets of fiscal federalism and the economy's growth, as discussed below.

3.2.2 Autonomy

The results point out quite a few aspects of the impact of fiscal federalism on Indian states. The fact that OwnTax ratio is negatively related to the GSDP growth rate shows that the level of autonomy of a state is negatively related to the growth of the state. This could be because of various factors:

- Inefficient resource utilization by the state governments.
- Misappropriation of the funds by the political class.
- Over-dependence on risk sharing and grants with a hope of making profits off the tax sharing mechanism.
- Leakages in the tax collection system and underperforming tax authorities.

Thus, the more a state is earning from its own, the worse it is turning out for the economic growth rate of the state. Hence, the states need to develop their tax collection and utilization mechanisms, while the centre needs to keep a stern eye on their resource application.

3.2.3 Hard Budget

The positive relation between CapOut and GSDP rate indicates that higher the percentage of central grants in the total revenue of a state, the higher is the growth rate. These points to a high dependence of the states on the grants and tax sharing mechanisms for growth. While in some cases, like those of communal violence or natural disasters, this dependence is justified, it shouldn't be a trend that is followed in the general sense. This also means that the states' markets and credit scoring mechanisms do not penalize those states overly dependent on aids and grants.

The central government should keep tougher limits for the states to utilize their own resources and not agree to aid the states as often.

3.2.4 Level of Decentralization

The very low coefficient of PCCapRatio, while being insignificant and high levels, points to a general trend that the states' level of decentralization is inefficient. This means that the state governments are unable to correctly predict the people's choices and are unable to provide the level of public goods that are required by the tax payers. A part of the problem can be explained by the socio-political nature prevalent in the nation where accountability is very poor and corruption very high. Thus, the political class ought to provide better services to the taxpayers and increase the actual level of decentralization, rather than only dealing with it on paper.

4. Conclusion

The study analyzed the basic tax structure of the country, listing out the various taxes which are divided between the centre and states. While this structure is good on paper, the actual collection and resource utilization of these taxes needs to be analyzed further.

A look at the theory of fiscal federalism revealed that both the people and the officials benefit from decentralization as the needs of the people can be better understood by local administrations rather than central ones. However, there are two basic features of fiscal federalism which need to be balanced out, autonomy and hard budget constraints. The more the autonomy for a state, the better services it can provides; however, the softer the budget constraint on the state, the more it may try to unduly benefit from the tax sharing mechanisms. Thus, decentralization requires careful planning as to the amount of power and freedom given to each state and the levels of central spending and intervention in the state mechanisms.

With these considerations having been analyzed, a model was constructed to test the impact of fiscal decentralization, autonomy and central intervention on the Indian states' economic growth, which yielded moderately significant results. The autonomy was found to be negatively related to the growth, implying a lack of proper collection and utilization of taxes by the states and the need for higher checks of revenue misappropriation. It was found that the central intervention in the states' economy was positively related to their growth, which points to soft budget constraints on the states which depended highly on the centre to finance their spending. The overall level of decentralization was also found to be quite poor, though the relationship is not very economically significant.

From these results, it can be concluded that the centre needs to set better standards for the states to follow in their approach towards revenue generation and their utilization. The socio-political factors which result in the misappropriation of these funds need to be tackled and the efficiency of markets improved. The states should also improve their tax collection mechanisms and opt for higher autonomy in practice and less dependence on the centre for grants and aids. One recent innovation towards development of smart cities by way of Viability Gap Support, where states will be providing the funds to smart cities keeping the centre in a supporting role, is a step in this direction[20].

Thus, the trade-off between the autonomy and budget constraint aspects of fiscal federalism leads to a hard job for policy makers in finding the right balance between the two. A few possible solutions are:

- Sufficiently strong central government which can stand firm against undue demands by the states and impose appropriate budget constraints.
- Sufficiently independent federal governments which can function autonomously without the over interferences from the centre and thus, lead to more accountability at the local levels.
- Sufficiently free markets and institutions which could lead to fiscal competition and smoothing out of the external issues faced in a decentralized setup.

Thus, as per the current scenario, it can be stated that the level of fiscal federalism in the country is poor and is negatively correlated to the growth, but this is due to poor implementation of the tax mechanisms and an improvement in the overall tax structure is required.

5. References

1. Definition of Taxation. Available from: http://www.businessdictionary.com/definition/taxation.html
2. Romer CD, Romer DH. The macroeconomic effects of tax changes: Estimates based on a new measure of fiscal shocks. American Economic Review. 2010 Jun; 100(3):763–801.
3. Oates. An essay of fiscal federalism. Journal of Economic Literature. 1999 Sep; 37(3):1120–49.
4. Oates WE. Toward a second-generation theory of fiscal federalism. International Tax and Public Finance. 2005 Aug; 12(4):349–73.
5. Weingast BR. Second generation fiscal federalism: Implications for decentralized democratic governance and economic development. World Development. 2013; 53:14–25.
6. Fiscal Federalism in India. Available from: http://shodhganga.inflibnet.ac.in/bitstream/10603/6308/12/12_chapter%203.pdf
7. Oleinik EB, Zakharova AP. Evaluation of the major factors of the region's investment activity. Indian Journal of Science and Technology. 2016 Sep; 9(36):1–7.
8. Investment: Taxation system in India. Available from: http://www.indiainbusiness.nic.in/investment/taxation.html
9. Does fiscal federalism help create fiscal space? Teresa Ter-Minassian and Annalisa Fedelino. Available from: http://

citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.622.3315&rep=rep1&type=pdf

10. Garg S, Goyal A, Pal R. Why tax effort falls short of capacity in Indian States: A stochastic frontier approach. Indira Gandhi Institute of Development Research (IGIDR). WP-2014-032; 2014.
11. Purfield C. The decentralization dilemma in India [IMF Working Paper]. Asia and Pacific Department; 2004.
12. Gauhar B, Svetlana N, Lyudmila S, Yelizaveta Y, Tamara A, Elmira N. Regional political process in Northern Kazakhstan. Indian Journal of Science and Technology. 2016 Aug; 9(29):1–17.
13. Kletzer K, Singh N. Indian fiscal federalism: Political economy and issues for reform [Working Paper No.22]. California: Centre for International Development, Stanford University; 1995.
14. Ghuge NR, Katdare VV. A comparative study of tax structure of India with respect to other countries. International Conference on Global Trends in Engineering, Technology and Management (ICGTETM-2016); 2016. p. 334–8.
15. Jha R. India: Redesigning fiscal federalism after the global financial crisis [ASARC Working Paper]; 2014/07.
16. State Finances: A study of budgets. Available from: http://www.rbi.org.in/scripts/AnnualPublications.aspx?head=State%20Finances%20:%20A%20Study%20of%20Budgets
17. Planning Commission. Available from: http://planningcommission.nic.in/data/datatable/index.php?data=datatab
18. Census of India 2001 report. Available from: http://www.censusindia.gov.in/2011-common/census_data_2001.html
19. Indian Public Finance Statistics. Ministry of Finance 2012-2013. Available from: http://finmin.nic.in/reports/IPFStat201213.pdf
20. Vadgama C, Khutwad A, Damle M, Patil S. Smart funding options for developing smart cities: A proposal for India. Indian Journal of Science and Technology. 2015 Dec; 8(34):1–12.