The Nexus between Fiscal Decentralization and Economic Growth: Evidence from Sub-National Governments in India

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Abstract: Panel Vector Auto Regression is used to examine the impact of financial decentralization on economic growth in seventeen sub-national governments (SNGs) in India taking data from 2000-01 to 2014-15. We find the positive impact of decentralization on the economic growth of SNGs with feedback effect.

Key Words: Financial decentralization, State Own Revenue, Total Expenditure, Fiscal Autonomy, Panel VAR

JEL Classifications: H77, 047, C5

I. INTRODUCTION

Fiscal decentralization has assumed importance in both developed and developing countries as an increasing number of nations are turning to devolution for improving the performance of the public services. Fiscal transfers are deemed to correct not only the asymmetries in the decentralization of expenditure to the States and the revenue raising authority of the Centre (vertical imbalances) but also to equalize the differences in fiscal capacities across States (horizontal imbalances). However, the mechanisms to achieve these goals have varied across countries (Reserve Bank of India, 2010-11). The analytical literature on fiscal federalism, right from the seminal paper by Charles Tiebout (1959) has emphasized on the gains from fiscal decentralization. Fiscal decentralization is likely to raise the efficiency of the Sub-National Governments (SNGs) in terms of revenue and spending activities according to their priorities. Hence, it is the potential to reduce revenue deficit, fiscal deficit and thereby achieve fiscal sustainability of the SNGs. As a result, it leads to high level of economic growth through channelizing resources by prioritizing its outlay. This is because of the fact that the SNGs are better equipped to provision public goods and services, as per the local needs and priorities, than the Union Government (Oates, 1972). The debate of fiscal decentralization through both vertical and horizontal devolution is a major aspect of many developing countries such as China, Colombia, Brazil, and Argentina as well as developed countries like the United States, the United Kingdom, and Canada. However, the pieces of literature such as Davoodi and Zou (1998); Zhang and Zou (1998), Xie et al. (1999), and Bradbury et al. (1984) acknowledged that the fiscal decentralization index (FDI) negatively affects the economic growth. On the contrary, Oates (1977; 1993), Bird (1993), Akai and Sakata (2002), Kim (1995), Huther and Shah (1996) and Lin and Liu (2000), show FDI raises the efficiency and welfare gains and thereby boosts the economic growth. Therefore, with these controversial views of Fiscal decentralization on economic growth, this study examines the impact of fiscal decentralization on economic growth in the case of SNGs in India, the second largest federal state in terms of population in the world.

In accordance with the article 280 of the Constitution, and the Finance Commission (Miscellaneous Provisions) Act, 1951 the Finance Commission in India has been constituted as a constitutional body for making recommendations on matters concerning sharing of central revenue between the Central Government and SNGs, which makes the decentralization framework as constitutional.

The analysis of fiscal decentralization, particularly in India, assumes particular importance as the inter-governmental transfer in India to the sub-national governments’ essential supplements the expenditure of the subnational governments. However, the amount of transfer differs from one sub-national government to another because the transfer mechanism is formula based that captures various criteria. Basically, it determines the eligibility of the sub-national government to receive funds from the finance commission. This plays an important role in deciding the expenditure of the sub-national governments, hence, the fiscal autonomy. The basic ideas are the subnational governments should raise the revenue efficiency and finance higher level of expenditure in order to induce higher growth.

The novelty of this paper can be narrated in four ways. First, a detailed analysis is lagging in the literature and in particular, not a single study has been analyzed in the context of subnational governments in India in terms of fiscal autonomy and its impact on economic growth. Hence, this study fills this research gap. Second, we construct an index of fiscal decentralization for each SNG in India. Specifically, the own revenue receipts of the SNGs are described as the combination of both own tax and non-tax revenue which

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combine together as Own Revenue (OR). The OR to Total Expenditure ratio of a subnational government shows its fiscal autonomy. This fiscal autonomy ratio manifests how much of expenditure is financed by own revenue. Since, own revenue is untied in nature, it gives autonomy of the state to finance its expenditure based upon its priorities. This indicates how large a subnational government’s participation through its expenditure in the aggregate expenditure of the states and this measures the fiscal decentralization. Secondly, our study considers the expenditure of a subnational government as the proportion of total expenditure level of the all seventeen subnational governments to measure the fiscal importance of the subnational Governments. The Fiscal decentralization index is formulated from the above two ratios and its impact on the economic growth is examined through panel VAR framework.

In the next section, we present data and methodology. In Section 3, we present our main results and analysis. Section 4 concludes with policy implications.

II. DATA AND METHODOLOGY

All data are sourced from Reserve Bank of India (RBI) database on “State Finance”. Data on 17 SNGs are taken for the analysis. Our data set comprises annual data from seventeen SNGs of India over the period 2000-2001 to 2014-15. This panel data set consists of 15 cross sections with 16 years data points.

We have chosen the period 2000-2001 as the Eleventh FC recommended (2000-205) created a scheme of States’ Fiscal Reform Facility (FRF) backed by a Fiscal Reform Facility Incentive Fund to incentivize States to collectively eliminate revenue deficits by augmenting its own resources. Besides, it made the devolution more broad-based by clubbing all the taxes of central governments so that the sub-national governments spend more. Therefore, the year 2000-2001 is a paradigm shift for the subnational governments to impart more fiscal autonomy. The Year-end 2014-15 is because of the availability of official data.

2.1  Fiscal Decentralization Index (FDI) of subnational governments

2.1.1  Fiscal Autonomy Index

The core issue in the fiscal autonomy of the SNGs depends on its gap between own-revenue (both tax and non-tax) and its total expenditure. In view of this, SNGs’ fiscal autonomy is, in the first instance, represented by the ratio of SNGs’ own-revenue (OR) to SNGs’ Expenditure (TE). This implies less fiscal autonomy as it has less unties revenue to meet its expenditure. For an SNG, the low SOR as a proportion of its total expenditure indicates the intensity of deficit of the SNG.

Therefore, we have defined, the fiscal autonomy of a subnational government in terms of own revenue with respect to its expenditures. This is named as “Fiscal Autonomy” index. Higher the ratio, higher is the autonomy. The “fiscal Autonomy Index” is measured as

$$ \text{FAI} = \frac{\text{SOR}}{\text{TE}} , \quad 0 \leq \text{FAI} \leq 1 $$ \hspace{1cm} (1)

Where, TE indicates the total expenditure and SOR represents own revenue of a particular SNG.

2.1.2  Fiscal Importance Index (FII)

The outlay (public expenditure) of an SNG is the major activity of SNGs. This outlay is a catalyst for growth. The relative share of the outlay of a particular SNG among all SNGs reflects its autonomy. On this basis, “fiscal importance index” is measured as:

$$ \text{FII} = \frac{\text{TE}}{\sum \text{ATE}} , \quad 0 \leq \text{FII} \leq 1 $$ \hspace{1cm} (2)

Where TE is the total expenditure of a particular SNG and ATE is the total expenditure of all SNGs

Equations (1) and (2) provide measures of two distinct parameters of fiscal decentralization. The fundamental index of fiscal decentralization (FDI) proposed in this study is the geometric mean of the measures of the two elements:

$$ \text{FDI} = \sqrt{\text{FAI} \times \text{FII}} , \quad 0 \leq \text{FDI} \leq 1 $$ \hspace{1cm} (3)

2.2  Descriptive Statistics

For the brevity of the analysis, the descriptive statistics of both FDI and economic growth of the sub-national governments are presented below.

<table>
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<th>Table.1: Descriptive Statistics</th>
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<td>GROWTH</td>
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<td>Skewness</td>
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The descriptive statistics presents the fact that the average growth of these seventeen states during the period of our study have witnessed 7.03% economic growth and the corresponding FDI is calculated at 18.80%. If we analyze minimum and maximum, the co-movement between FDI and economic growth is observed. This implies that there is positive relationship exists between FDI and economic growth. This has motivated us to use Panel VAR model to  

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1 Total Non-Special category states are seventeen in India exists in India, declared by Planning Commission. These states are more important to the national economy as compared to the Special Category States.
2 SOR: State own Revenue which consists of tax and non-tax revenue
3 It can’t be more than one as a budget is always balanced at SNGs level in India.
4 (Duck Vo, 08.14)
capture the linear inter dependencies between economic growth and fiscal decentralization.

2.3 Panel VAR

To estimate the dynamic relationship between decentralization index and economic growth of SNGs, we compute the impulse response functions from an estimated PVAR. The nominal economic growth (ΔG) and the decentralization index as our variables of interest, we estimate the following PVAR:

\[ g_{it} = \mu_i + A g_{it-1} + \epsilon_{it} \]  

Where, \( g_{it} = (\Delta \text{FDI}_t, \Delta G_t)' \) and \( \mu_i \) is 2×1 SNG specific fixed effect intercept term, \( A \) is 2×2 coefficient matrix and \( \epsilon_{it} \) is the 2×1 residual term. The subscripts \( i \) and \( t \) represent subnational government and year, respectively. The VAR includes only first-order lags, which is selected using the Bayesian Information Criterion (BIC) as well as Akaike information criterion (AIC). Stability of the model is also checked.

The PVAR estimation procedure is used for the analysis. To avoid inconsistency of the FE estimator (Nickel, 1981), dynamic panel models are often first-differenced to eliminate the fixed effect (See, e.g. Baltagi, 2008, Chapter 8). In our case, our sample size seems sufficiently large (\( N = 255 \)), to apply the FE estimator. Besides the fixed effects, the coefficient matrix \( A \), and the covariance matrix of the residuals are assumed homogeneous across the SNGs. Under this assumption, the pooled estimates can be used to compute the impulse response functions. In this study, we have used nonparametric methods for confidence bands for impulse responses based on the bootstrap simulation. To identify the shocks, we impose a recursive structure, which makes the order of the variables relevant. As a robustness check, we consider the VAR in the reverse recursive order and find that the imposed order has no substantial effect on the results.

III. RESULTS AND ANALYSIS

Fig. 1 depicts the impulse-response functions derived from the estimated VAR (Eq. (1)). The figure shows the impact of the economic growth (left column) and decentralization index (right column) for the period of 8 years. Here, the first difference of both economic growth and decentralization index are taken to examine the incremental impact. The impact is shown after giving a positive shock to either to economic growth (top row) or FDI (bottom row). From the diagonal panels (top left and bottom right), it appears that shocks to both economic growth and FDI are transitory: the effects of a shock die out within a couple of years.

The off-diagonal panels show the impact on the economic growth, after a shock to FDI (bottom-left) and the reverse impact on FDI, after a shock to economic growth (top-right) is our main objective. The top right impulse response shows the impact of economic growth on decentralization index has a significant positive effect. A shock to economic growth has the highest impact in the next period (year) after that it gradually declined and becomes convergent in the period eight. A positive shock to FDI has a favorable effect on the economic growth (bottom left) in next period. However, this impact in next year is higher than the reverse impact. Based on these figures, it seems that a positive correlation with feedback effect is established between decentralization index and economic growth in SNGs in India.
IV. CONCLUSION

From the empirical results of this study it clearly emerges that 1) The sub-national governments should generate more of their own resources by raising the revenue efficiency for financing expenditures; as a result their fiscal autonomy will go up 2) Both from the own resources and financial transfers by the centre should be used to finance more expenditures; as a result, their fiscal importance will be enhanced. This will lead to higher Fiscal decentralization for inducing more economic growth.

Further, the higher growth because of higher decentralization will help the sub-national governments to mobilize more own resources that will additionally finance expenditure of the SNGs. Keeping in view both the fiscal autonomy and fiscal importance, “Unified tax structure on Goods and Services” will be rolled out on 1st April 2017 in India which will enhance the buoyancy of revenues of the sub-national governments to finance higher level expenditure.

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