Measuring Fiscal Performance of Indian States with Special Reference to Odisha

Bibhuti Ranjan Mishra and Asit Ranjan Mohanty[1]

1. Introduction:

Conventionally the state finance in India has been neglected in literature of public finance, while the union finance has drawn a great deal of attention by researchers and policy makers. However, in recent years, research on state finance is gaining momentum due to the mounting importance of the states' fiscal operations relative to the size of central finances. It is well documented in the literature that a country's growth is closely connected with the fiscal health of the concerned nation. Considering the importance of fiscal health at the state level Dholakia (2005) developed a composite index of having eight indicators to measure fiscal performance of states. Das & Baig (2014) have also attempted to measure the fiscal performance of states by considering four indicators. Recognising the importance of multi-dimensional approach in measuring fiscal performance, Bhide & Panda (2002) evaluated the quality of Union Budget using composite index consisting of five indicators.

2. Motivation and Objective:

Fourteenth Finance Commission has abolished fiscal discipline as a criteria for central transfer to the states. But, it is still important to diagnose the fiscal health of the states. The growth inducing properties, efficiency gains and social welfare of the states in India require a shift in expenditure patterns with fiscal prudence. In this context, performance of state finance plays a pivotal role. Taking cognizance of this issue the present study aims to measure the fiscal discipline of seventeen non-special category states of India by developing a composite Fiscal Performance Index (FPI) consisting of ten diverse fiscal indicators.

3. Methodology and Data:

Measuring of performance using composite index is traditional in the sense that UNDP publishes the Human Development Index by taking three basic indicators. The relative distance method used to construct composite index is important because it is multi-dimensional in nature and covers various aspects of quantity as well as quality of diverse indicators. This study takes ten indicators

[1] Dr. Bibhuti Ranjan Mishra is working as a Research Associate in Centre of Excellence in Fiscal Policy and Taxation (CEFT), Xavier University, Bhubaneswar, email: bibhuti@ximb.ac.in.
Prof. Asit Ranjan Mohanty is Professor in Finance, Xavier University and Chair Professor at CEFT, email: asit.mohanty@ximb.ac.in.

in order to estimate ten minor sub-indices reflecting various facets of fiscal performance which are combined into five major sub-indices viz. Deficit Index, Revenue Efficiency Index, Expenditure Quality Index, Debt Index and Debt Sustainability Index. These five major sub-indices are combined to shape the Fiscal Performance Index. Each major sub-index is mapped by taking two minor-sub indices. The structure of FPI is depicted in the following table.

Table 1. Structure of Fiscal Performance Index

	Major Sub-indices	**Minor Sub-Indices**
Fiscal Performance Index (FPI)	a. Deficit Index (DI)	Revenue Deficit Index (RDI) Fiscal Deficit Index (FDI)
	b. Revenue Efficiency Index (REI)	State Own Tax Revenue Index (SOTRI) Non Tax Revenue Index (SONTRI)
	c. Expenditure Quality Index (EQI)	Developmental Revenue Expenditure Index (DREI) Developmental Capital Expenditure Index (DCEI)
	d. Debt Index (DBI)	Debt Servicing Index (DSI) Outstanding Debt Ratio Index (DRI)
	e. Debt Sustainability Index(DSI)	Debt Spread Index (DSI) Rate Spread Index(RSI)

Major Sub-Indices of FPI:

a) Deficit Index (DI): It consists of two minor indices, (i) Revenue Deficit Index (RDI) calculated by the ratio of Revenue deficit to Gross State Domestic Product and (ii) Fiscal Deficit Index (FDI) represented by Gross Fiscal Deficit as a proportion of Gross State Domestic Product (FD/GSDP).

b) Revenue Efficiency Index (REI) is constructed by taking two minor indices i) State Own Tax Revenue Index (SOTRI), calculated by taking the ratio of State Own Tax Revenue to the GSDP and ii) State Own Non Tax Revenue Index (SONTRI), formulated by taking the ratio of State Own Non-Tax Revenue to GSDP.

c) Expenditure Quality Index (EQI): This index comprises of two minor sub-indices, viz. i) Developmental Revenue Expenditure Index (DREI), constructed by taking the ratio of Development Revenue Expenditure to GSDP and ii) Developmental Capital Expenditure Index (DCEI) formulated by taking the ratio of Development Capital Expenditure to GSDP.

d) Debt Index (DBI) consists of two minor indices that are, i) Interest Payment to Revenue Receipt Index (IPRRI) represented by the ratio of Interest Payments to Revenue Receipts and ii) Outstanding Debt Ratio Index (DRI) constructed by taking the ratio of Debt Stock to GSDP.

e) Debt Sustainability Index (DSI) made up of two minor indices, viz. i) Debt Spread Index (DSI) constructed by indexing the difference of Growth Rate of GSDP and growth rate in debt stock and ii) Rate Spread Index (RSI) measured by the difference of Growth Rate of GSDP and average cost of borrowing.

3.2 Relative Distance Method

To construct the sub-indices, from the identified fiscal parameters, Relative Distance methodology is adopted.

$$\boldsymbol{Deprivation\ Index\ (D) = \frac{Max\ (X) - X}{Max\ (X) - Min\ (X)} \times 100\ \ldots\ldots\ldots\ldots Eq\ (1)}$$

$$\boldsymbol{Improvement\ Index\ (I) = \frac{Y - Min\ (Y)}{Max\ (Y) - Min\ (Y)} \times 100\ \ldots\ldots\ldots\ldots Eq\ (2)}$$

Where, X refers to the actual value of the indicator for a given state. Max (X) and Min (X) are maximum and minimum value of the particular indicator across the states in a specified period. Similarly, Y can be interpreted like X with the condition $X \neq Y$. The value of “D & I” will lie in a 0 to 100 scale where 0 depicts worst performance and 100 implies the best performance.

RDI, FDI, IPRRI and DRI are treated as “deprivation index” as adverse fiscal indicators such as revenue deficit ratio, fiscal deficit ratio, interest payment ratio and debt stock ratio are part of the index formulation. The Deprivation Index is constructed in such a way that, the lower the ratio for a state, a higher index value will be assigned to it. The Deprivation Index is constructed in such a way that, lower the ratio for a state; a higher index value will be assigned to it. For the rest of the indices constructed out of various ratios, we followed “improvement index” which gives a high index value to a higher ratio. Therefore, four minor sub-indices and six minor sub-indices are taken for deprivation index and improvement index respectively. These minor sub-indices are assigned equal weights to form major sub-indices. Similarly, each major sub-index is given equal weight to form composite Fiscal Performance Index (FPI).

We collected data of the required fiscal variables for the period 2009-10 to 2014-15 from EPWRF (Economic and Political Weekly Research Foundation).[2] The entire study period is segregated into two sub- periods viz. 2009-10 to 2011-12 (Period 1), and 2012-13 to 2014-15(Period 2). The simple average of three years for all the relevant variables are taken to compute the ratios for minor sub-indices. The maximum and minimum value of all the ratios across the states in a specified period are identified.

4. Results and Analysis:

The estimated five major sub-indices for seventeen major states of India for two different time periods are shown in Table-2 as follows.

Table 2. Major Sub-Index

States	2009-10 to 2011-12					2012-13 to 2014-15				
	DI	REI	EQI	DBI	DSI	DI	REI	EQI	DBI	DSI
A.P	57.6	43.4	49.7	70.4	33.0	59.5	48.6	22.6	76.0	43.7
Bihar	70.8	6.0	100.0	63.5	99.5	50.2	11.5	100.0	67.1	100.0
Chhattisgarh	92.1	51.5	78.4	97.7	34.8	78.8	62.0	78.3	100.0	48.8
Goa	58.6	65.3	62.0	66.4	81.2	57.6	76.9	44.8	71.6	10.8
Gujarat	47.0	28.6	28.8	53.0	35.6	77.6	41.0	36.9	44.2	13.0
Haryana	37.4	27.4	30.6	77.0	50.4	47.4	29.1	11.5	56.8	19.3
Jharkhand	63.1	24.3	71.5	82.5	36.3	92.0	35.2	56.3	70.3	31.8
Karnataka	55.9	54.1	69.8	81.4	14.5	67.7	54.8	46.8	73.8	46.6
Kerala	25.2	37.8	13.7	41.4	17.9	15.3	57.2	15.9	23.7	4.3
MP	78.4	54.9	75.8	69.3	49.1	45.1	47.8	59.5	71.8	87.1
Maharashtra	55.3	29.7	23.4	70.0	15.6	76.2	28.1	7.0	64.5	42.4
Odisha	92.8	30.9	55.6	80.1	68.2	96.4	42.2	60.4	83.5	57.6
Punjab	25.4	49.4	4.1	37.0	23.5	40.4	35.9	0.1	15.4	22.8
Rajasthan	53.6	29.7	39.8	51.8	87.5	61.9	42.8	50.7	52.4	61.3
Tamil Nadu	49.4	41.2	32.3	79.0	34.8	68.0	47.2	21.4	67.2	32.0
UP	56.3	38.5	71.7	52.9	39.1	86.3	46.8	68.2	53.0	48.7
WB	0.0	0.0	15.3	0.0	21.1	38.1	0.0	8.5	0.0	53.4

Notes: 1. DI- Deficit Index, REI- Revenue Efficiency Index, EQI-Expenditure Quality Index, DBI- Debt Index, DSI-Debt Sustainability Index. 2. Basic data is collected from EPWRF.

There is large variation in inter-state performance in terms of different sub-indices justifying the use of multiple indicators in assessing fiscal performance of states. For instance during 2012-13 to 2014-15, while Odisha is better off in controlling its deficit indicators and debt burden,

[2] The data of some variables like Debt stock, GSDP and interest payment is collected from 2006-07.

Chhattisgargh performed well in revenue generation, allocation of development expenditure and reduced debt burden.

The composite FPI for all the states prepared by taking the simple average of the major sub-indices is presented in Table 3.[3]

Table 3. Composite Fiscal Performance Index (FPI)

States	2009-10 to 2011-12		2012-13 to 2014-15	
	Index	Rank (P1)	Index	Rank (P2)
A.P	50.8	10	50.1	10
Bihar	67.9	2	65.8	3
Chhattisgarh	70.9	1	73.6	1
Goa	66.7	3	52.3	9
Gujarat	38.6	14	42.5	13
Haryana	44.5	12	32.8	14
Jharkhand	55.5	6	57.1	7
Karnataka	55.1	7	57.9	6
Kerala	27.2	16	23.3	15
MP	65.5	5	62.2	4
Maharashtra	38.8	13	43.6	12
Odisha	**65.5**	**4**	**68.0**	**2**
Punjab	27.9	15	22.9	16
Rajasthan	52.5	8	53.8	8
Tamil Nadu	47.3	11	47.2	11
UP	51.7	9	60.6	5
WB	7.3	17	20.0	17

The above table suggests that during 2009-10 to 2011-12, Chhatisgargh, Bihar and Goa were the top three performers in terms of FPI, while Punjab, Kerala, and West Bengal remained at the bottom. During the recent period, i.e. 2012-13 to 2014-15, Chattisgargh retained its No. 1 spot, Odisha took the second position and Bihar placed in No. 3 position. Kerala, Punjab and West Bengal continued to remain in the bottom three. It can be seen that the rank of Odisha in terms of FPI has improved from 4 in period-1 to 2 in period-2. The improvement of fiscal performance of Odisha is explained by higher revenue efficiency, better expenditure quality and decline in deficit

[3] The major sub-indices are in turn made from minor sub-indices.

and debt burden. The most significant contribution came from the rapid increase of revenue efficiency index which grew at about 36.8% between this two periods. But there is a decrease in Debt Sustainability index. Chhattisgarh remained at the top due to its continuous progress in raising the revenue, quality spending and reducing the debt burden. Though taking the No.2 spot for our economy is a happy movement for us, we are continued to lag behind in many respects. For instance in Period-2, the top performer in terms of revenue is Goa with 76.9 as index value, while Odisha has only an index value of 42.2. In terms of quality spending and Debt sustainability Bihar is at the top with an index value of 100.0 each, while it stands 60.4 and 57.6, respectively for Odisha.

Conclusion:

This study attempts to measure the composite fiscal performance index of seventeen major non-special category states of India. The FPI is constructed by taking five major sub-indices made up of ten fiscal indicators (minor sub-indices). It is observed that there are large inter-state variations in FPI. During 2012-13 to 2014-15, Chattisgargh, Odisha and Bihar took the top three position in ascending order. Kerala, Punjab and West Bengal are found to be low performers in terms of FPI. The study evinces that the combined FPI of all the states have remained constant during the two periods. Though Odisha is ranked 2, in its fiscal performance, it has to strive for better outcomes in raising revenue and spending it in developmental activity.

References:

Bhide, S. and Panda, M. (2002), "Evaluating Quality of Budgets with a Composite Index', *Economic and Political Weekly*, March 30.

Das & Baig (2014), "India's state finances; declining debt but weak fundamentals", *Deutsche Bank Research*, January 30.

Dholakia, A. (2005), 'Measuring Fiscal Performance of States, an Alternative Approach', *Economic and Political Weekly*, July 30.