

Fiscal Performance Index of the States in India

Asit Ranjan Mohanty
Bibhuti Ranjan Mishra

Received: 21/07/2016

Accepted: 30/09/2016

This study makes an empirical analysis of state finances in India by recognising the changes that have occurred in many exhaustive lists of fiscal parameters. It constructs a composite Fiscal Performance Index (FPI) for 17 non-special category states for the period 2003-04 to 2014-15 to evaluate the progress of the states in India in terms of fiscal parameters. The composite FPI is made up of five major sub-indices which are Deficit Index, Revenue Efficiency Index, Expenditure Quality Index, Debt Index, and Debt Sustainability Index. Each of this sub-index is mapped into two minor sub-indices reflecting utilisation of a total of 10 indicators in constructing the FPI. Both Relative Distance Method and Z-Score Method are used to build this index. The study evinces huge inter-state variation in the level of FPI and persistent deterioration of FPI level.

Keywords: Fiscal Performance, Composite Index, Ranking

JEL Classifications: H11, C43

Section I Introduction

Conventionally, state finance in India has been neglected in the literature of public finance, while 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 literature that a country's growth is closely connected with the fiscal health of the concerned nation. The condition of fiscal health may be generic or structural or due to a consequent change in fiscal rules. The fiscal rule is defined as a rider on fiscal policy expressed in terms of a summary of fiscal

Prof Asit Ranjan Mohanty (asit.mohanty@ximb.ac.in) is Professor of Finance, Xavier University and Chair Professor of Centre of Fiscal Policy and Taxation, Bhubaneswar, Orissa, India.

Dr Bibhuti Ranjan Mishra (bibhuti@ximb.ac.in) is Research Associate with the Centre of Fiscal Policy and Taxation, Xavier University, Bhubaneswar, Orissa, India.

performance, such as the budget deficit, borrowing, debt or a major component, etc. (Kopits and Symansky, 1998). Fiscal rules should be binding upon the national or sub-national level is a matter of discussion. Kopits (2001) remarks that fiscal rules at the sub-national level are crucial and challenging when a country like Brazil needs fiscal reforms which cannot be achieved by the central level alone.

Similarly, India being a federal country, state finance should draw equal attention as that of central finance. Vadra (2010) suggests that fiscal reforms at the state government level are critical to have higher growth trajectory in the Indian economy. The Indian Constitution assigns a pre-eminent role to states in India for agricultural development, poverty alleviation and human development and co-equal position in the provision of physical infrastructure. The predominant role in the allocation and cooperative role in distribution makes the states' fiscal operations critical for macroeconomic stabilisation as well. Since the state governments run massive deficits, fiscal reforms at the state level is crucial for achieving overall fiscal consolidation in the economy. Hence, fiscal policy rules at the state level are important to achieve macroeconomic stability and microeconomic allocative efficiency.

Stephen, *et al* (2003) emphasize the need of state-level fiscal reforms in India. According to them, India cannot succeed in the reform process unless the state governments bring sound state finance with sufficient fiscal reforms. The fiscal crises at the state level need structural reform to remove fundamental weakness of the state finance (Anand, *et al.*, 2002). The state should play a complementary and supplementary role and perform as per the efforts of the Centre to play and improve the overall fiscal situation (Bhargava, 2002). The imbalances in the state budgets which are structural in character are the turning points for the fiscal deterioration in Indian public finance and impacts India's overall fiscal sustainability (Anand, *et al.*, 2001).

Considering the importance of fiscal health at the state level, the Tax Effort Index measured by the ratio of per capita own tax revenue of a state to its per capita income with weights being the inverse of per capita income was used as a criterion of horizontal devolution by the Tenth Finance Commission. The weight being taken as the inverse of income signifies that if two states show the same tax effort, the poorer state among the two being more constrained would get a relatively higher share. The Eleventh and Twelfth Finance Commission have also retained the Tax Effort Index (TEI) with changed weight.¹ As the TEI captures only the tax revenues, the Eleventh Finance Commission constructed an index of fiscal discipline to bring expenditure criteria in the horizontal devolution. The Eleventh Finance Commission has devised the Fiscal Self-Reliance and Improvement Index (FSRII) to measure fiscal discipline with

1. The weight assigned to the inverse of per-capita income was reduced from 1 to 0.5 by the 11th and 12th Finance Commissions.

an assignment of 7.5 per cent weight. It is estimated by taking the improvement of the ratio of 'own revenue receipt' to 'total revenue expenditure' of an individual state relative to the average ratio across all the states.

In general, if the revenue performance of all the states is deteriorating, the state that has relatively lower deterioration would be rewarded relatively more than average and *vice-versa*. Therefore, the better is the performance of a state in achieving revenue balance relative to others, the higher is its share in devolution. The succeeding Twelfth Finance Commission also retained the same index with the same weight but changed the reference period. Considering fiscal prudence as a strong case to incentivize the states, the Thirteenth Finance Commission kept the Fiscal Discipline Index but removed the Tax Effort Index as the former captures the Tax Effort Index. But it gave a higher weight of 17.5 per cent to fiscal discipline measure to determine the shares of taxes as against the combined weight of 15 per cent in the Eleventh and Twelfth Finance Commissions. Dholakia (2005) criticized the single indicator based fiscal discipline measure as a criterion for tax devolution and developed a composite index of having eight indicators to measure the fiscal performance of states.

Das and 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 and Panda (2002) evaluated the quality of the Union Budget using composite index consisting of five indicators. Later, the fiscal discipline as a measure of horizontal devolution was scrapped by the Fourteenth Finance Commission, although a majority of the states had favoured the continuation of the fiscal discipline criteria as an indicator for horizontal distribution.

Section II

Motivation and Objective

The Fourteenth Finance Commission has abolished fiscal discipline as a criterion 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. Recently, the Reserve Bank of India's (RBI) study on state finance reveals that higher share of capital outlay and developmental expenditure in total government spending has a positive impact on per capita GSDP growth of states, while revenue deficit and non-developmental expenditure have negative consequences.² The RBI study also reveals that low levels of debt are conducive for growth. In this context, the performance of state finance plays a pivotal role in the economic growth of the state. Taking cognizance of this issue, the present study aims to measure the fiscal

2. State Finances: A Study of Budgets, 2015-16, Reserve Bank of India.

performance of 17 non-special category states of India by developing a composite Fiscal Performance Index (FPI) consisting of 10 different fiscal indicators.

A study of state finance throws up successful experiments and examples which can be replicated or adapted by other states. The fiscal area has been a much-researched field of economic analysis in India. This has been so particularly after the initiation of economic reforms in the early 1990s. Studies on fiscal issues have been stimulated by the fact that fiscal adjustment has constituted a critical component of the reforms package (Ministry of Finance, 1993). The fiscal adjustment, in turn, has been influenced by a whole gamut of macro-economic policies. Based on the experiences of several states and India, various studies arrived at the fact that sound and efficient management of the state finance with qualitative and efficient liquidity and cash management is a critical factor for the sustainable growth in the country.

In a federal system, it is necessary to apply sub-national fiscal rules such as the 'Golden Policy' rules in the UK and FRBM in India for sub-national governments to address fiscal imbalances. In India, the fiscal health at state level is very important for achieving overall fiscal consolidation and fiscal sustainability of the national economy. State finance has become more important in the Fourteenth Finance Commission when the untied horizontal transfer has been increased, and both plan and non-plan grants have been reduced for the states. The states need to manage their finance without depending much on the Union government.

The Planning Commission has been replaced with NITI Aayog. Earlier, central plan expenditure for the states was used to be determined by the Planning Commission. The changing dynamics of the Indian economy has put state finance in the forefront. NITI Aayog has emphasized on cooperative federalism through structured support initiatives and mechanisms with the states. Therefore, state finance should measure their financial performances which will help them in changing the paradigm.

The Fiscal Performance Index (FPI) is a composite index that presents the relative performance of state finance. Fiscal performance consists of composite fiscal indicators of the respective states. FPI is useful in assessing revenue management, management of expenditure based upon its spending priorities and fiscal sustainability of the states. FPI being a composite indicator will give inputs to the FRBM (fiscal rules) in terms of improvement in fiscal parameters, if any.

Further, fiscal management is the key contributor for economic governance of the state as it takes care of mobilization of resources and distributive spending. Since FPI gives the status of fiscal management of the states, it is very useful in providing information to the Finance Commission while they work out the formula-based criteria for horizontal devolution.

Section III Methodology

Proposed Composite Fiscal Performance Index

Measuring of performance using composite index is traditional in the sense that UNDP publishes the Human Development Index by taking three core indicators. The relative distance method used to construct composite index is important as it is multi-dimensional in nature and covers several indicators. This study takes 10 indicators to estimate 10 minor sub-indices reflecting various facets of fiscal performance which are grouped 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

<i>Major Sub-Indices</i>	<i>Minor Sub-Indices</i>
(a) Deficit Index (DI)	Revenue Deficit Index (RDI) Fiscal Deficit Index (FDI)
(b) Revenue Efficiency Index (REI)	State Own Tax Revenue Index (SOTRI) State Own 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 as follows:

- (i) Revenue Deficit Index (RDI): Revenue deficit as a proportion of Gross State Domestic Product (RD/GSDP). Revenue deficit is defined as an excess of revenue expenditure over revenue receipts during a year.
- (ii) Fiscal Deficit Index (FDI): Gross fiscal deficit as a proportion of Gross State Domestic Product (FD/GSDP). Gross fiscal deficit is total expenditure over total revenue receipts and non-debt capital receipts. Essentially it represents the gross borrowing which is debt capital receipt

during the year. The negative ratio indicates surplus scenario and positive ratio signifies deficit scenario.

- (b) Revenue Efficiency Index (REI): It is constructed by taking two minor indices as follows:
- (i) State Own Tax Revenue Index (SOTRI): It is calculated by taking the ratio of state own tax revenue to the GSDP (SOTR/GSDP) during a year.
 - (ii) State Own Non-Tax Revenue Index (SONTRI): It is formulated by taking the ratio of state own non-tax revenue to GSDP during a year.

These two indicators jointly represent the efficiency of revenue collection of the states as GSDP represents the taxable capacity of a state.

- (c) Expenditure Quality Index (EQI): This index comprises of two minor sub-indices:
- (i) Developmental Revenue Expenditure Index (DREI): It is constructed by taking the ratio of development revenue expenditure to revenue receipts (DRE/RR).
 - (ii) Developmental Capital Expenditure Index (DCEI): It is formulated by taking the ratio of development capital expenditure to revenue receipts (DCE/RR).

Development expenditure includes resource allocation in the social services sector and economic services sector. Significant positive externalities are associated with expenditure on social and physical infrastructure. However, at the state level, quality of the expenses has received less attention. The Expenditure Quality Index articulates the composition of expenditure and therefore, its quality. It is important to know the development expenditure made in both revenue and capital account from the total revenue receipts available with the states. A higher proportion of DRE in RR and DCE in RR suggest a better resource allocation by the government in developmental activity.

- (d) Debt Index (DBI): This index consists of two minor indices as given below:
- (i) Interest Payment to Revenue Receipt Index (IPRRI): The ratio of interest payments to revenue receipts (IP/RR) indicating the percentage of revenue receipts used for interest payment on account of outstanding debt. It represents debt servicing position of the state.
 - (ii) Outstanding Debt Ratio Index (DRI): It is constructed as the ratio of debt stock to GSDP (DS/GSDP). This index reflects the debt burden of the state.
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- (e) Debt Sustainability Index: It is made up by taking two minor indices:
- (i) Debt Spread Index (DSI): It is constructed by indexing the difference of growth rate of GSDP and growth rate in debt stock ($g_{\text{gdp}} - g_{\text{ds}}$).
 - (ii) Rate Spread Index (RSI): It is constructed by taking the difference of growth rate of GSDP and the average cost of borrowing ($g_{\text{gdp}} - r$).

The difference of growth rate of GSDP and the rate of increase of debt stock and the difference between GSDP growth and average cost of borrowing are indicators of debt sustainability as suggested by Domar (1944).³

Average Cost of Borrowing (t) = Interest Payments (t) / Average (Debt Stock (t), Debt Stock (t-1)). This average cost of borrowing is derived from the interest expenses in a particular year relative to the average of debt outstanding of this year and last year. Since interest payments are made on a quarterly basis, semi-annual basis and annual basis, the average of debt outstanding is taken to calculate average cost of borrowing. Higher spread indicates debt sustainability in terms of meeting the obligation of interest payment as well as principal due. The higher spread also indicates that the state does not have to borrow to meet its interest payment obligation; therefore it avoids a debt trap situation.

Relative Distance Method

To construct the sub-indices from the identified fiscal parameters, a Relative Distance methodology is adopted. In this method, the level of each of the indicators described above is normalized to a value ranging from 0 to 100. In 1989, the United Nations Development Programme (UNDP) sponsored a project to develop an index for better understanding and measuring development in countries across the world. This project resulted in creating the Human Development Index (HDI). The primary aim of this index was to rank countries based on the composite scores of multiple components. The Relative Distance Method was used in this case to measure the performance the countries. It is a multiple indicator-based approach. Since our aim is also to measure the fiscal performance of the states in India, we have used this method using a multiple indicator-based approach. 'Systemic Liquidity Index for India', a working paper by the RBI (2012) has also used the Relative Distance Method to construct an index of liquidity at the system level by taking eight liquidity indicators.

The uniqueness of this method is that it can take both favourable and adverse parameters to construct an index. The index which is constructed for favourable indicators is called as the Improvement Index. The index which is formed by taking adverse parameters is called the Deprivation Index. The value of both the indices will lie between 0 and 100.

3. Average Cost of Borrowing_(t) = Interest Payment_(t) / Average (Debt Stock_(t), Debt Stock_(t-1))

$$\text{Deprivation Index (D)} = (\text{Max (X)} - X) / (\text{Max (X)} - \text{Min (X)}) \times 100 \quad (1)$$

$$\text{Improvement Index (I)} = (Y - \text{Min (Y)}) / (\text{Max (Y)} - \text{Min (Y)}) \times 100 \quad (2)$$

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

RDI, FDI, IPRI and DRI are treated as Deprivation Index as adverse fiscal parameters 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. SOTRI, SONTRI, DREI, DCEI, DSI and RSI are treated as Improvement Index as favourable indicators such as tax ratio, non-tax ratio, developmental revenue expenditure ratio, developmental capital expenditure ratio, and debt sustainability ratios are part of the index formulation. In the case of improvement index, higher ratio gives a high index value.

Therefore, two minor indices and corresponding four minor sub-indices are captured by the Deprivation Index. Three minor indices and corresponding six minor sub-indices are taken for the Improvement Index. These minor sub-indices are assigned with equal weights to form a minor index. Further, minor indices are assigned with equal weights to form the major index. Similarly, each major sub-index is given equal weight to form a composite Fiscal Performance Index (FPI). These indices are made unidirectional. The major sub-index is derived from the average of corresponding minor indices and the minor index is derived from the average of corresponding sub-indices. The composite FPI is calculated from the average of major indices.

Z-Score (Standard Normal) Method

The Z-Score Model is also applied to construct the Fiscal Performance Index as an alternative method to check the robustness of the results obtained from the Relative Distance Method. The formula to estimate Z-Score is as follows: Z-Score Model is a normalization method to calculate the composite index. It is normalized on the standard deviation. Since the time series is considered to follow a normal distribution, it is also called the Standard Normal Method. This model was also used by Systemic Liquidity Index for India, a working paper by the RBI (2012). The Z-Score Model converts all indicators to a common scale with mean zero and standard deviation of one. Both Improvement Index and Deprivation Index are calculated from the Z-Score Model. Indicators with extreme values thus have a greater effect on the composite indicator. The 'Handbook on Constructing Composite Indicators: Methodology and User Guide'

published by OECD (2008) has used both relative distance and the Z-Score Model to construct the Composite Index. Essentially in our study, the Z-Score Model is calculated for statistical robustness.

$$\text{Deprivation Z-Score} = (\text{Mean (X)} - X) / (\text{SD (X)}) \quad (3)$$

$$\text{Improvement Z-Score} = (Y - \text{Mean (Y)}) / (\text{SD (Y)}) \quad (4)$$

The absolute value of Z depicts the distance between the raw score and the population mean normalized by the standard deviation. Z is negative when the raw score is below the mean and positive when above the mean. The deprivation and improvement Z-Score are akin to deprivation and the Improvement Index in the Relative Distance Method. The higher the Z-Score, the better is the fiscal performance of the state.

Section IV Sources of Data

The fiscal variables' data for the period 2003-04 to 2014-15 are sourced from EPWRF (Economic and Political Weekly Research Foundation). The entire study period is segregated into four sub- periods *viz.* 2003-04 to 2005-06 (Period 1), 2006-07 to 2008-09 (Period 2), 2009-10 to 2011-12 (Period 3), and 2012-13 to 2014-15 (Period 4). The simple average of three years for all the relevant variables is 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 is identified.

Section V Results and Analysis

Composite FPI and Analysis of Ranking

The estimated five major sub-indices for 17 major states of India for four different time periods are shown in Table A in the Appendix. The composite FPI for all the states is presented in Table 2. There is a large variation in inter-state performance in terms of different sub-indices justifying the use of multiple indicators in assessing the fiscal performance of states. During Period 1, Goa, Chhattisgarh and Karnataka were placed in the top three positions in terms of the FPI. Goa, being the best performer, draws its strength from both better expenditure quality and debt sustainability. Small revenue and fiscal deficit ratios are the main contributing factors for the fiscal performance of Karnataka. In this period, Punjab, Bihar and West Bengal were the least performers. In Period 2, Chhattisgarh was the best performer because of the significant decline in deficit ratio followed by Haryana and Goa. Because of deterioration in both debt ratios and debt sustainability, Goa was pushed down to the third position.

Better expenditure quality has contributed for the elevation of Haryana to second place. The higher level of deficit and lower level of revenue efficiency have pushed Karnataka down to the fourth position. During this period, Punjab, Kerala and West Bengal were at the bottom of the Fiscal Performance Index. Goa, Chhattisgarh, and Odisha were placed in top three during Period 3, whereas Kerala, Punjab and West Bengal were at the bottom of the FPI. Odisha was elevated to one of the top three best fiscal performer states of India due to the improvement in expenditure quality and debt situation. Goa regained the top position as debt sustainability indicators of Chhattisgarh deteriorated.

In Period 4, Chhattisgarh is at the top followed by Odisha and MP. The improvement of fiscal performance of Odisha is explained by higher revenue efficiency, better expenditure quality and decline in debt burden. Better debt management illustrates the improvement of the fiscal performance of MP. Because of the high deficit, lower expenditure quality coupled with high debt burden and low debt sustainability, there has been a significant decline of FPI in the case of Goa, and it is placed in the 13th position. During this period, the worst performers are Punjab, West Bengal, and Kerala.

Table 2
Composite Fiscal Performance Index (FPI): Relative Distance Method

States	2003-04 to 2005-06 Period-1		2006-07 to 2008-09 Period-2		2009-10 to 2011-12 Period-3		2012-13 to 2014-15 Period-4	
	Index	Rank (R1)	Index	Rank (R2)	Index	Rank (R3)	Index	Rank (R4)
AP	57.5	9	64.0	5	53.3	10	48.3	10
Bihar	31.3	16	46.7	12	57.9	5	56.0	6
Chhattisgarh	75.2	2	74.8	1	64.9	2	66.7	1
Goa	76.4	1	68.2	3	68.4	1	44.3	13
Gujarat	62.4	5	52.5	9	48.8	12	45.4	12
Haryana	67.7	4	69.6	2	55.5	7	39.8	14
Jharkhand	62.2	6	44.2	13	53.7	9	56.5	5
Karnataka	67.7	3	68.2	4	57.3	6	56.6	4
Kerala	44.8	13	32.8	16	30.5	15	22.0	17
MP	47.9	11	48.9	10	58.7	4	61.5	3
Maharashtra	58.5	8	56.3	8	47.7	13	49.5	8
Odisha	47.7	12	60.4	6	62.0	3	65.1	2
Punjab	38.2	15	37.8	15	28.0	16	24.9	15
Rajasthan	48.0	10	47.4	11	54.3	8	53.6	7
Tamil Nadu	60.9	7	58.9	7	51.6	11	47.7	11
UP	38.2	14	43.6	14	46.3	14	48.7	9
WB	18.7	17	18.4	17	14.7	17	23.5	16

To validate the above results an alternative Z-Score Method is also used to estimate FPI. Broadly, the results of the Z-Score Method confirm the results of the Relative Distance Method. The results of the Fiscal Performance Index from the Z-Score model are given in Table 3.

Table 3
Composite Fiscal Performance Index (FPI): Z-Score
(Standard Normal) Method

States	2003-04 to 2005-06 Period-1		2006-07 to 2008-09 Period-2		2009-10 to 2011-12 Period-3		2012-13 to 2014-15 Period-4	
	Index	Rank (R1)	Index	Rank (R2)	Index	Rank (R3)	Index	Rank (R4)
AP	0.13	9	0.39	5	0.13	9	0.03	9
Bihar	-0.72	16	-0.17	11	0.23	6	0.33	4
Chhattisgarh	0.79	2	0.86	1	0.58	2	0.69	1
Goa	0.83	1	0.55	4	0.68	1	-0.12	13
Gujarat	0.29	6	-0.03	9	-0.07	12	-0.09	12
Haryana	0.54	3	0.61	2	0.20	7	-0.26	14
Jharkhand	0.31	5	-0.38	14	0.16	8	0.33	5
Karnataka	0.51	4	0.56	3	0.29	5	0.32	6
Kerala	-0.28	13	-0.72	16	-0.74	15	-0.96	17
MP	-0.23	12	-0.07	10	0.33	4	0.50	3
Maharashtra	0.15	8	0.13	8	-0.07	13	0.06	8
Odisha	-0.14	10	0.36	6	0.44	3	0.64	2
Punjab	-0.46	14	-0.51	15	-0.83	16	-0.84	15
Rajasthan	-0.19	11	-0.19	12	0.11	10	0.25	7
Tamil Nadu	0.27	7	0.25	7	0.08	11	-0.02	11
UP	-0.54	15	-0.29	13	-0.15	14	0.01	10
WB	-1.25	17	-1.35	17	-1.39	17	-0.87	16

In Table 4 the improvement (+) or deterioration (-) of the rank of states derived from both the Relative Distance Method and Z-Score Method in terms of fiscal performance is depicted.

The upgrading of the rank of Odisha in FPI during the period under study is quite noticeable. Reduction in revenue and fiscal deficit, the composition of expenditure towards development sector to achieve better spending quality, reducing both debt ratio and debt servicing ratio and higher debt sustainability are the major contributing factors. In the case of Chhattisgarh, the decline in deficit ratios, improvement in revenue efficiency, quality of expenditure and reduced debt ratio has contributed to high FPI.

Table 4
Improvement/Deterioration of Rank

States	Relative Distance Method			Z-Score Method		
	R1-R2	R2-R3	R3-R4	R1-R2	R2-R3	R3-R4
AP	4	-5	0	4	-4	0
Bihar	4	7	-1	5	5	2
Chhattisgarh	1	-1	1	1	-1	1
Goa	-2	2	-12	-3	3	-12
Gujarat	-4	-3	0	-3	-3	0
Haryana	2	-5	-7	1	-5	-7
Jharkhand	-7	4	4	-9	6	3
Karnataka	-1	-2	2	1	-2	-1
Kerala	-3	1	-2	-3	1	-2
MP	1	6	1	2	6	1
Maharashtra	0	-5	5	0	-5	5
Odisha	6	3	1	4	3	1
Punjab	0	-1	1	-1	-1	1
Rajasthan	-1	3	1	-1	2	3
Tamil Nadu	0	-4	0	0	-4	0
UP	0	0	5	2	-1	4
WB	0	0	1	0	0	1

Note: Positive value indicates improvement in rank.

Analysis of Large-Scale Transition of Ranking

Large-scale transition of ranking of FPI is defined as the change in ranking between two consecutive periods by at least three notches. An enquiry into the reasons for large-scale transition is attempted.

During 2003-04 – 2005-06 to 2006-07 – 2008-09, large-scale transition is observed in case of AP, Bihar, Gujarat, Jharkhand, Kerala and Odisha. In case of AP, the FPI rank is improved by four notches. This is mainly attributed to the rise in tax efficiency, decline in both debt servicing ratio (IPRR) and debt burden ratio (debt to GSDP ratio) and improvement in debt sustainability. The improvement in debt sustainability is further explained by higher growth in GSDP as compared to growth in debt stock and average cost of borrowing. There is a significant improvement in both revenue deficit and fiscal deficit during this period in case of Bihar. Besides, capital outlay in developmental sector, debt servicing ratio (IPRR) and debt burden (debt stock to GSDP ratio) have also improved, for which the FPI rank of Bihar is up by four notches.

Transition from 2003/04 – 2005/06 to 2006/07 – 2008/09

Table 5
Transition from 2003/04 – 2005/06 to 2006/07 – 2008/09

<i>States</i>	<i>R2 – R1</i>	<i>Reasons</i>
AP	4	(+) REI, EQI, DBI, DSI
Bihar	4	(+) DI, EQI, DBI, DSI
Chhattisgarh	1	
Goa	-2	
Gujarat	-4	(-) EQI, DBI, DSI
Haryana	2	
Jharkhand	-7	(-) DI, EQI, DBI, DSI
Karnataka	-1	
Kerala	-3	(-) EQI, DBI, DSI
MP	1	
Maharashtra	0	
Odisha	6	(+) DI, EQI, DBI, DSI, REI
Punjab	0	
Rajasthan	-1	
Tamil Nadu	0	
UP	0	
WB	0	

Note: Positive sign shows improvement in the rank.

The FPI rank of Gujarat has deteriorated by four notches because of the decline in revenue expenditure in developmental sector with a rise in the debt servicing ratio (IPRR) and the debt burden (debt/GSDP) ratio. The debt sustainability of the state has also deteriorated significantly. In Kerala, the FPI rank is down by three notches as revenue expenditure in developmental sector, debt burden (debt/GSDP) and debt sustainability have deteriorated during this period. In case of Odisha, all the minor sub-indices have improved substantially except revenue expenditure in the developmental sector. Major improvements are observed in revenue deficit, fiscal deficit, debt burden ratio, debt servicing ratio and debt sustainability. Capital outlay in the developmental sector has also improved. As a result, the FPI rank of Odisha has gone up by six notches which is highest among the sample states during this period.

Transition from 2006/07 – 2008/09 to 2009/10 to 2011/12

Table 6
Transition from 2006/07 – 2008/09 to 2009/10 to 2011/12

<i>States</i>	<i>R2 – R3</i>	<i>Reasons</i>
AP	-5	(-) REI, EQI, DBI, DSI
Bihar	7	(+) REI, EQI, DBI, DSI
Chhattisgarh	-1	
Goa	2	
Gujarat	-3	
Haryana	-5	(-) DI REI, DBI, DSI
Jharkhand	4	(+) DI and DSI
Karnataka	-2	
Kerala	1	
MP	6	(+) REI, EQI, DBI, DSI, DI
Maharashtra	-5	(-) REI, DBI, DSI, DI
Odisha	3	(+) DI, EQI, DBI, DSI
Punjab	-1	
Rajasthan	3	
Tamil Nadu	-4	(-) REI, DI, EQI, DI, DSI
UP	0	
WB	0	

Note: Positive sign shows improvement in the rank.

Large-scale transition in the ranking of FPI is observed in case of AP, Bihar, Jharkhand, MP Maharashtra, Odisha and Tamil Nadu during the period 2006-07 to 2008-09 to 2009-10 to 2011-12. In case of AP, efficiency in both tax and non-tax revenue have declined along with the decline in expenditure in developmental sector. There has been deterioration in both the debt burden ratio and debt sustainability ratio. As a result, the FPI rank has moved down by five basis points.

However, in case of Bihar, the FPI rank has moved up by seven basis points, which is the highest level of increase during this period. This improvement in FPI is because of revenue efficiency, more expenditure in developmental sector and significant improvement in both debt burden ratio and debt sustainability. The FPI has moved down by five notches in case of Haryana because of deterioration in both deficit indicators and revenue efficiency. In addition, debt position and debt sustainability have become adverse.

In case of Jharkhand, there has been significant improvement in deficit indicators and debt sustainability. Consequently, the FPI rank has moved up

by four notches. The FPI rank has remarkably moved up by six notches in case of MP owing to improvement in revenue efficiency, higher outlay in developmental sector, rise in debt sustainability and decline in debt burden ratio. The revenue deficit position has also improved significantly. Maharashtra has shown a decline in FPI of five notches which is attributed to the deterioration in both tax and non-tax revenue efficiency, rise in both fiscal and revenue deficit. Besides, debt burden and debt sustainability have deteriorated.

The FPI has further improved by three notches in case of Odisha as a result of better deficit management in improving fiscal and revenue deficit position, higher outlay in developmental sector and effective debt management. In case of Tamil Nadu, the FPI is down by four notches owing to a decline in the revenue efficiency, increase in both revenue and fiscal deficit and a deterioration in the debt burden and debt sustainability.

Transition from 2009/10 – 2011/12 to 2012/13 – 2014/15

Table 7
Transition from 2009/10 – 2011/12 to 2012/13 – 2014/15

<i>States</i>	<i>R3 – R4</i>	<i>Reasons</i>
AP	0	
Bihar	-1	
Chhattisgarh	1	
Goa	-12	(-) EQI, DBI, DSI, DI
Gujarat	0	
Haryana	-7	(-) EQI, DBI, DSI, DI
Jharkhand	4	(+) DI, REI, DSI
Karnataka	2	
Kerala	-2	
MP	1	
Maharashtra	5	(+) DI, DSI
Odisha	1	
Punjab	1	
Rajasthan	1	
Tamil Nadu	0	
UP	5	(+) DI, REI, DBI, DSI
WB	1	

Note: Positive sign shows improvement in the rank.

Goa has witnessed a sharp drop of 12 notches in FPI mainly because of a huge deterioration in fiscal deficit, reduced capital outlay in development sector, deterioration in both debt servicing ratio and debt sustainability. The drop in the FPI of Goa is the highest among the sample states during this period. The

FPI of Haryana has further gone down by seven basis points because of a sharp decline in outlay in developmental sector, deterioration in both debt burden ratio and debt sustainability and rise in the revenue deficit ratio. Jharkhand has witnessed a four notches' improvement in the FPI as a result of better management of deficit indicators, rise in revenue efficiency and better debt sustainability. Maharashtra's position in FPI is up by five notches because of improvement in both deficit indicators and debt sustainability. UP has shown an impressive improvement for the first time during the entire period of study because of an improvement in all major sub-indices excepting expenditure quality index.

Transition from 2003/04 – 2005/06 to 2012/13 – 2014/15

Table 8
Transition from 2003/04 – 2005/06 to 2012/13 – 2014/15

<i>States</i>	<i>R1-R4</i>
AP	-1
Bihar	10
Chhattisgarh	1
Goa	-12
Gujarat	-7
Haryana	-10
Jharkhand	1
Karnataka	-1
Kerala	-4
MP	8
Maharashtra	0
Odisha	10
Punjab	0
Rajasthan	3
Tamil Nadu	-4
UP	5
WB	1

Note: Positive sign shows improvement in the rank.

During the entire period of study, large-scale transition in terms of improvement in FPI is observed for Bihar, MP, Odisha, Rajasthan and UP. Large-scale transition in terms of deterioration in FPI is observed in case of Goa, Gujarat, Kerala, and Tamil Nadu.

Section VI

Conclusion and Policy Implication

This study attempts to measure the composite fiscal performance index of 17 major non-special category states of India. The FPI is constructed by taking five major sub-indices which are derived from ten fiscal indicators (minor sub-indices). It is observed that there are large inter-state variations in FPI. The fiscal performance of the states is driven by various indicators. For instance during 2012-13 to 2014-15, while Odisha is better off in controlling its deficit indicators and debt burden, Chhattisgarh performed well in revenue generation, allocation of development expenditure and reduced debt burden. MP has significantly improved its state of debt burden and debt-sustainability. The study reveals that Kerala, Punjab and West Bengal are at the bottom while Chhattisgarh, Odisha, and Madhya Pradesh are the well-performing states in terms of FPI during the recent period.

The FPI will help the states to negotiate with the lenders while borrowing. The states with higher FPI may negotiate for lower cost of borrowing as their fiscal performance is better. This is mainly applicable for institutional borrowing by the states as well as loan availed from external borrowers. In case of external borrowers, the states with higher FPI may negotiate for lower spread over the benchmark rate. In the auction market, when the states borrow through the RBI by offering bonds (state development loan) in the open market, the eligible player in the market bid for the bonds in terms of yield. In this open market borrowing, the state development loan with higher FPI may attract lower yield. This will reduce the cost of borrowing for the states with higher FPI.

Appendix

Table A
Major Sub-Index: Relative Distance Method

States	2003-04 to 2005-06					2006-07 to 2008-09				
	DI	REI	EQI	DBI	DSI	DI	REI	EQI	DBI	DSI
AP	61.7	39.8	65.5	70.9	49.4	57.1	50.8	71.7	73.4	66.9
Bihar	66.1	1.3	15.0	34.9	39.0	81.7	0.0	43.3	45.4	63.3
Chhattisgarh	86.4	42.9	57.2	99.4	89.9	92.0	45.2	47.4	94.0	95.4
Goa	53.7	77.1	85.3	71.8	94.3	55.4	76.5	76.0	62.2	71.0
Gujarat	52.9	28.8	76.9	63.1	90.2	59.7	30.9	65.7	56.6	49.5
Haryana	95.2	53.3	26.2	86.0	77.7	64.6	53.4	70.3	86.6	72.9
Jharkhand	26.6	16.0	97.2	95.2	76.2	19.7	23.3	95.2	82.4	0.2
Karnataka	90.9	66.3	43.1	89.5	48.7	64.2	57.6	62.8	85.6	70.7
Kerala	34.5	32.3	39.8	57.5	59.7	49.3	34.7	6.3	46.1	27.4
MP	41.9	41.4	77.1	67.2	12.1	76.3	39.8	37.0	61.7	29.6
Maharashtra	43.2	31.6	73.5	85.8	58.4	71.9	36.8	43.0	77.5	52.5
Odisha	77.4	21.7	11.5	39.2	89.0	95.2	29.2	15.1	62.4	100.0
Punjab	36.1	71.2	3.4	39.9	40.2	31.5	51.8	16.4	34.1	55.4
Rajasthan	39.3	32.8	70.0	43.0	55.0	56.5	36.9	55.9	41.1	46.7
Tamil Nadu	86.7	49.0	29.6	89.9	49.1	67.2	47.0	30.5	85.2	64.5
UP	17.1	21.3	70.2	44.5	37.9	51.3	33.1	51.6	47.7	34.5
WB	8.2	1.9	36.5	13.1	33.8	17.1	3.1	56.5	0.0	15.4

States	2009-10 to 2011-12					2012-13 to 2014-15				
	DI	REI	EQI	DBI	DSI	DI	REI	EQI	DBI	DSI
AP	57.6	43.4	62.7	67.6	34.9	49.8	49.1	49.0	56.2	37.6
Bihar	70.8	6.0	53.1	60.3	99.6	49.3	9.5	49.2	72.3	100.0
Chhattisgarh	92.1	51.5	55.0	91.0	34.8	74.6	62.9	59.9	94.2	41.8
Goa	58.6	65.3	73.1	63.7	81.2	25.0	74.9	66.9	48.2	6.5
Gujarat	47.0	28.6	79.5	51.3	37.6	70.5	41.7	66.6	37.9	10.3
Haryana	37.4	27.4	87.7	74.4	50.8	32.9	27.9	59.4	55.0	23.7
Jharkhand	63.1	24.3	57.7	82.5	40.9	82.7	29.0	44.0	82.4	44.6
Karnataka	55.9	54.1	80.7	78.2	17.7	52.3	54.8	55.1	73.3	47.3
Kerala	25.2	37.8	29.2	39.6	20.6	0.0	62.2	11.7	23.1	12.9
MP	78.4	54.9	43.2	66.1	51.0	75.0	43.4	36.5	71.5	80.9
Maharashtra	55.3	29.7	67.1	67.6	18.5	77.5	26.3	36.8	63.0	43.8
Odisha	92.8	30.9	38.7	76.8	70.8	91.6	39.3	54.7	83.4	56.5
Punjab	25.4	49.4	3.2	35.3	26.6	24.6	36.6	18.9	16.0	28.3
Rajasthan	53.6	29.7	51.1	49.7	87.7	48.7	39.9	63.2	55.4	60.8
Tamil Nadu	49.4	41.2	55.4	76.0	36.0	60.0	51.7	28.7	65.2	33.0
UP	56.3	38.5	45.3	50.2	41.3	72.9	45.6	24.5	52.1	48.3
WB	0.0	0.0	50.0	0.0	23.7	37.9	0.0	26.2	0.0	53.6

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.

Table B
Major Sub-Index: Z-Score Method

States	2003-04 to 2005-06					2006-07 to 2008-09				
	DI	REI	EQI	DBI	DSI	DI	REI	EQI	DBI	DSI
AP	0.26	0.10	0.43	0.20	-0.36	-0.09	0.48	0.69	0.44	0.44
Bihar	0.40	-1.29	-1.16	-0.89	-0.66	0.88	-1.50	-0.14	-0.47	0.38
Chhattisgarh	1.10	0.22	0.17	1.29	1.15	1.34	0.28	-0.04	1.16	1.53
Goa	-0.02	1.50	1.06	0.31	1.30	-0.18	1.58	0.82	0.05	0.47
Gujarat	-0.04	-0.30	0.78	-0.12	1.13	0.02	-0.30	0.57	-0.23	-0.20
Haryana	1.41	0.59	-0.78	0.75	0.71	0.24	0.61	0.60	0.91	0.69
Jharkhand	-0.95	-0.74	1.42	1.12	0.69	-1.71	-0.55	1.49	0.83	-1.98
Karnataka	1.26	1.04	-0.28	0.93	-0.40	0.18	0.70	0.44	0.90	0.57
Kerala	-0.65	-0.19	-0.33	-0.26	0.02	-0.41	-0.19	-1.49	-0.57	-0.94
MP	-0.43	0.16	0.77	0.16	-1.80	0.67	0.05	-0.33	0.06	-0.79
Maharashtra	-0.37	-0.21	0.68	0.69	-0.04	0.54	-0.07	-0.20	0.54	-0.14
Odisha	0.81	-0.55	-1.26	-0.86	1.14	1.51	-0.33	-1.13	0.07	1.68
Punjab	-0.60	1.27	-1.51	-0.81	-0.65	-1.12	0.57	-1.07	-1.03	0.11
Rajasthan	-0.51	-0.15	0.57	-0.74	-0.14	-0.11	-0.05	0.18	-0.73	-0.23
Tamil Nadu	1.12	0.41	-0.70	0.91	-0.37	0.34	0.29	-0.61	0.87	0.35
UP	-1.25	-0.58	0.58	-0.68	-0.77	-0.38	-0.21	0.18	-0.44	-0.63
WB	-1.55	-1.27	-0.45	-2.00	-0.96	-1.70	-1.37	0.03	-2.38	-1.33
States	2009-10 to 2011-12					2012-13 to 2014-15				
	DI	REI	EQI	DBI	DSI	DI	REI	EQI	DBI	DSI
AP	0.14	0.27	0.28	0.29	-0.31	-0.14	0.30	0.16	0.01	-0.20
Bihar	0.62	-1.17	-0.06	0.01	1.75	-0.32	-1.11	0.22	0.62	2.24
Chhattisgarh	1.54	0.62	0.01	1.25	-0.49	0.67	0.81	0.60	1.43	-0.04
Goa	0.17	1.25	0.66	0.13	1.20	-1.04	1.29	0.89	-0.29	-1.45
Gujarat	-0.27	-0.31	0.89	-0.40	-0.24	0.51	-0.01	0.98	-0.67	-1.27
Haryana	-0.66	-0.34	1.18	0.56	0.26	-0.66	-0.45	0.55	-0.04	-0.71
Jharkhand	0.34	-0.41	0.10	0.93	-0.16	0.92	-0.34	0.01	1.00	0.06
Karnataka	0.05	0.64	0.93	0.73	-0.91	-0.08	0.39	0.44	0.65	0.19
Kerala	-1.14	0.03	-0.93	-0.88	-0.79	-1.81	0.69	-1.30	-1.22	-1.17
MP	0.92	0.73	-0.42	0.24	0.17	0.64	0.08	-0.31	0.59	1.50
Maharashtra	0.07	-0.28	0.44	0.28	-0.87	0.89	-0.54	-0.32	0.26	0.03
Odisha	1.58	-0.17	-0.59	0.68	0.72	1.26	0.03	0.42	1.03	0.48
Punjab	-1.11	0.52	-1.86	-1.05	-0.64	-0.92	-0.19	-1.03	-1.49	-0.58
Rajasthan	0.01	-0.23	-0.14	-0.46	1.38	-0.21	0.02	0.75	-0.01	0.69
Tamil Nadu	-0.18	0.16	0.02	0.64	-0.23	0.22	0.31	-0.60	0.35	-0.36
UP	0.06	0.09	-0.34	-0.42	-0.14	0.56	0.17	-0.72	-0.13	0.18
WB	-2.13	-1.40	-0.18	-2.54	-0.69	-0.48	-1.44	-0.74	-2.09	0.42

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.

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