

Top-Performing Indian States in Revenue Generation: A Comprehensive Analysis

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Abstract:

India has one of the fastest-growing economies in the world and most of the state in the country has a significant contribution to the economy. Therefore, this study encompasses the five major revenue-generating states in India during the period from 2004 to 2022. These states are Maharashtra, Tamil Nadu, Uttar Pradesh, Karnataka, and Gujarat. The assessment of revenue performance has been quantified utilizing the improvement index formula, as outlined by Morris and Alpine in 1982. The estimation of revenue performance has been derived from four primary sources of income, namely, own tax revenues, non-tax revenues, the share in central taxes, and grants-in-aid from the central government. Out of the states chosen for the study, Uttar Pradesh turned out to be the one with the greatest revenue-generating state. While revenue growth was constantly observed in Tamil Nadu, Maharashtra, and Karnataka between 2004–05 and 2019–20, the COVID-19 epidemic caused a notable fall in these states during 2020–21. Gujarat State, on the other hand, had a slow revenue performance. Based on the findings of the study, it is recommended that the main sources of revenue should be tax revenue and non-tax revenue. The state government should place greater emphasis on these sources.

Keywords: *Revenue Efficiency, State Own Tax Revenue, State Own Non-Tax Revenue, Ranking.*

Introduction

This study examines the situation of revenue performance in selected states, emphasizing noteworthy progress across diverse sectors, including agriculture, manufacturing, and services. The Indian government has undertaken significant tax reforms over the past few decades. These changes have been driven by various reasons, including economic reforms, globalization, changes in government policies, and the need to boost revenue collection. In the 1980s, India saw a rapid

fall in its fiscal situation, which finally out come in the 1991 balance of payments (BOP) crisis. After a decade of economic liberalization, the public debt and fiscal deficit increased, and the situation again began to move towards volatile levels around 2000. So, at that time, the need to institutionalize some kind of fiscal discipline framework was felt. FRBM was proposed in Parliament as the FRBM Bill in December 2000 by the Finance Minister of India, Mr. Yashwant Sinha, with the target of encouraging fiscal discipline, achieving a balanced budget, and efficient

management of revenue, expenditure, and debt. The Act was passed on August 26, 2003, and the FRBM Act took effect on July 5, 2004. The goals of the Fiscal Responsibility and Budget Management Act were to eliminate the revenue deficit by 2008–09 and reduce the fiscal deficit to not more than 3 percent of GDP by the end of March 2008. Every year, a reduction of 0.3 percent in the fiscal deficit and 0.5 percent in the revenue deficit must be achieved.

Because of the worldwide economic downturn, the FRBM Act was prolonged, and the 2012 Amendment relaxed the targets. It mandated reducing the effective revenue deficit to 0% by March 31, 2015. Subsequently, goals were further eased; aiming for a 2% revenue deficit by 2015 and a 3 percent fiscal deficit by 2017. The 14th Finance Commission advocated replacing effective revenue deficits with revenue deficits. It aimed for a zero percent revenue deficit of GDP by April 1, 2015. In 2016–17, India's Finance Minister announced the FRBM Review Committee to assess the 2003 FRBM Act's features over the past twelve years. This committee will also consider replacing the complete fiscal deficit target with a target range that can be adapted to fit general economic loan patterns.

The major recommendation of this committee is (a) Achieve a fiscal deficit target of 2.8 percent in 2020–21 (b) 2.6% in subsequent years, and 2.5% in 2022–23. (c) Provision of an "Escape Clause" with an upper ceiling of 0.5 percent of GDP (d) Involved in matters of national security issues, acts of war, domestic disasters, the collapse of the agricultural sector, and far-reaching structural reforms with

unforeseeable economic consequences (e) A comparable buoyancy clause has been suggested to reduce the fiscal deficit by at least 0.5 per cent below the target if actual production is three percent quicker than the average. (f) Existing FRBM legislation and regulations will be scrapped, and a fresh debt and fiscal responsibility act will be adopted. (g) Optimum debt GDP ratio for India of 60 per cent consisting of 20 per cent for state governments and 40 per cent for central governments (h) Recommend reducing the revenue-fiscal deficit ratio from 66 percent to 28 percent.

According to the RBI data base report, Maharashtra, Tamil Nadu, Gujarat, Karnataka, and Uttar Pradesh are the top five states in GSDP (Gross State Domestic Product) and contribute significantly to India's economy. These states are selected based on their high GSDP (Gross State Domestic Product). Maharashtra has the highest GSDP among the 28 Indian States and nine Union Territories. Maharashtra contributes 13.88 percent of India's GDP at current prices for 2020–21, followed by Tamil Nadu (8.59 percent), Uttar Pradesh (8.35 percent), Gujarat (7.92 percent), and Karnataka (7.87 percent).¹ These states are the backbone of India's economic prowess, and their significance cannot be overstated.

Review of Literature

Bhide and Panda (2002) conducted a study on "Evaluating Quality of Budgets with a Composite Index," spanning the time period from 1980-81 to 2002-03. In their research, the authors employed five indicators to assess budget quality, adopting a methodology akin to the Human Development Index. A notable strength of this approach lies in the normalization of

each indicator to a scale between 0 and 100, with due consideration given to the direction of the indicators. However, a significant drawback is observed in the equal weighting assigned to all indicators, a practice common among various authors, potentially stemming from the intricate nature of constructing weights. Mohanty and Mishra (2016) attempted to measure the composite Fiscal Performance Index (FPI) of 17 major non-special category states in India. Five major sub-indices (minor sub-indices) that are derived from ten fiscal indicators make up the FPI. The study uses the Z-Score Method and the Relative Distance Method to create an index covering the years 2003–04 to 2014–15. It is observed that there are significant inter-state variations in the Fiscal Performance Index (FPI). According to the results, the states with the lowest Fiscal Performance Index (FPI) during the study period are Kerala, Punjab, and West Bengal, while the highest performing states are Chhattisgarh, Odisha, and Madhya Pradesh.

One more study to measure the fiscal performance of states using an alternative approach by Dholakia Archana (2005). The three sub-indices are used, and their mean is used as the composite index; this methodology is more or less similar to that of Bhide and Panda (2002). The researcher attempted to calculate the Disparity Reduction Rate (DRR), which was initially used to measure changes in PQLI. In essence, the Disparity Reduction Rate (DRR) measures how quickly the difference between the index's real and ideal values grows or shrinks. In terms of the state's fiscal performance, a positive Disparity Reduction Rate (DRR) denotes

improvement, while a negative DRR denotes a decline. Four indicators have been used by Das and Baig (2014) in an effort to measure the states' fiscal performance and recognize the importance of a multidimensional approach for assessing fiscal performance. Agarwal and Malik (2021) study the revenue performance of major north Indian states. It uses four indicators, such as major sources of revenues: own tax revenues, non-tax revenues, shares in central taxes, and grants in aid from the centre. They found that Bihar is the best performer in terms of revenue mobilization, given its tax base and tax efforts. One of the major reasons for the improved performance of Bihar is greater tax revenue and a higher share of grants in aid. Even though Uttar Pradesh and Rajasthan are usually considered to be strong performers in terms of mobilizing tax revenue, Madhya Pradesh is ahead of them.

One more researcher conducted a study on an analysis of public finance management in Indian states from 2003–04 to 2007–08 by **N. B. Verma (2009)**. The Social Development Index, the Deficit Index, the Own Revenue Effort Index, and the Expenditure and Debt Servicing Index were the four indicators that the researcher used to create a Fiscal Performance Index. It found that Tamil Nadu and Chandigarh are the best managers, while Andhra Pradesh, Gujarat, and Haryana also show fairly good public finance management. On the other hand, Punjab, West Bengal, and Uttar Pradesh are identified as the worst managers in this area.

Emes (1999) presents a fiscal performance index comprising two sub-indices. The first

sub-index assesses the extent of government control over spending, while the second sub-index examines changes in taxes and revenues during the same period. Each variable within a sub-index is standardised, with a range from 0 (the lowest score) to 100 (the highest score). All variables are assigned a weight of one, except for "top income tax rates" and "change in gas tax rate," which each carry a weight of half. Consequently, the sub-indices are calculated as weighted sums of variables, and the composite index is simply the mean of these two indices. Notably, this index focuses exclusively on changes rather than absolute levels of spending and revenue, posing challenges for state-to-state comparisons.

In summary, we have seen in the empirical literature that different researchers have used numerous methods to evaluate the fiscal performance of Indian states. Most of the studies employed techniques like the Relative Distance Method and the Z-Score Method. These techniques have a performance range of 0 to 100, where 0 represents the lowest performance and 100 represents the highest performance.

Research Gap

There are numerous empirical studies available on a national and international level. However, there is currently no study available in five states: Maharashtra, Uttar Pradesh, Gujarat, Tamil Nadu, and Karnataka. This study makes an effort to bridge the existing research gap and measure the revenue efficiency in selected states of India.

Research Methodology

This study employed the revenue efficiency index and it has been determined by the relative distance method, which was first presented by Morris and Alpine in 1982.

Deprivation Index

$$(D) = \frac{(\text{Max}(X) - X)}{(\text{Max}(X) - \text{Min}(X))} * 100$$

Improvement Index (I)

$$= \frac{(Y - \text{Min}(Y))}{(\text{Max}(Y) - \text{Min}(Y))} * 100$$

Where, X, Y refers to the actual value of the Indicator for a given state.

The highest and minimum values of a particular indicator throughout the states during a given time frame are represented by the variables Max (X), (Y), and Min (X), (Y). Both the Deprivation Index and the Improvement Index have values between 0 and 100, where 0 represents the worst performance and 100 indicate the highest performance.

Least Squares growth rate:

The following formula was used to calculate the growth rate: -

$$Y_t = Y_0 (1+r)^t \dots\dots\dots (1)$$

Where,

Y_t= represent the value in the current year.

Y₀ =represent the value in the base year.

t = time period, t=1, 2, 3, -----t.

r = represent the least square growth rate.

Putting log on both sides of equation 1, we have

$$\log Y_t = \log Y_0 + t \log b$$

$$b = (1+r)$$

$$Y_t^* = Y_0^* + tB^*$$

$$Y_t^* = \log Y_t$$

$$Y_0^* = \log Y_0$$

$$B^* = \log b$$

$$B^* = \log (1+r)$$

After estimating the B* using OLS method r can be calculated using the following formula:

Taking antilog

$$\text{Antilog} B^* = (1+r)$$

$$r = \text{Antilog} B^* - 1$$

Many eminent researchers have used various indicators to assess the revenue performance of a different state. There are four primary sources that are used to determine the revenue performance these are own tax revenue, own non-tax revenue, share in central taxes, and grants from the centre.

Revenue Efficiency Index

The Revenue Efficiency Index (REI) is formulated by considering four sub-indices:

1. State Own Tax Revenue Index (SOTRI):

This index is calculated by determining the ratio of state-owned tax revenue to the Gross State Domestic Product (GSDP) during a specific year. i.e. (SOTR/GSDP).

2. State Own Non-Tax Revenue Index (SONTRI):

This index is derived by calculating the ratio of state-owned non-tax revenue to the Gross State Domestic Product (GSDP) for a given year, i.e. (SONTR/GSDP).

3. Share in the Central Tax Revenue Index:

The construction of this index involves determining the proportion of the share in central tax revenue to the Gross State Domestic Product (GSDP) for a given year.

4. Grants in the Aid Revenue Index:

This index is derived by computing the ratio of grants in aid received from the Centre to the Gross State Domestic Product (GSDP) for a given year.

By combining these indices, the Revenue Efficiency Index is created, and it providing a comprehensive and multi-dimensional perspective on the efficiency of revenue generation. Revenue efficiency clarifies the state government's robustness in revenue collection when the state's GDP rises. The efficiency index was constructed using the improvement index of own tax revenues, non-tax revenues, the share of central taxes, and grants in aid from the central government. A state's index values rise in proportion to its ratio. The final revenue performance index was obtained by averaging the individual index scores of the defined variables for each state.

Table 1 is described below, and it presents the sub-indices and major indicators as determined by the critical values.

Table 1: Sub-index framing formula and critical values of variables

Indicator	Worst value	Best value	Formula
Own Tax Revenues	0.033762 (2004-05) Gujarat	0.111919 (2018-19) Uttar Pradesh	$= \frac{V - 0.033762}{0.111919 - 0.033762} * 100$
Non tax revenues	0.005668 (2013-14) Karnataka	0.071653 (2019-20) Uttar Pradesh	$= \frac{V - 0.005668}{0.071653 - 0.005668} * 100$
Share in central Taxes	0.005241 (2004-05) Maharashtra	0.032502 (2018-19) Karnataka	$= \frac{V - 0.005241}{0.032502 - 0.005241} * 100$
Grants In Aid from Centre	0.003927 (2004-05) Maharashtra	0.053597(2020-21) Uttar Pradesh	$= \frac{V - 0.003927}{0.053597 - 0.003927} * 100$

Note: The letter 'V' represents the actual value of that indicator for a particular state.

Source: Authors Own Calculations

As can be seen in Table 1 above, the state of Uttar Pradesh performs both in terms of its own tax revenues and its own non-tax revenues, while the state of Gujarat performs the least favourably in terms of its own tax revenues and Karnataka's non-tax revenue creation. Karnataka contributes the

greatest share to central taxes, while Maharashtra has the least contribution. The central government offers grants-in-aid to Uttar Pradesh in the largest amount, whereas Maharashtra receives the least grants-in-aid.

Table: 2 Revenue Efficiency Index scores of selected states

Year	Uttar Pradesh	Maharashtra	Gujarat	Karnataka	Tamil Nadu
2004-05	8.33	5.97	5.28	7.43	7.48
2005-06	9.43	6.23	6.13	7.68	7.84
2006-07	11.66	7.04	7.01	8.65	8.20
2007-08	12.31	8.10	7.52	8.41	8.97
2008-09	13.04	8.06	7.62	8.26	9.86
2009-10	15.16	7.89	7.70	9.26	9.02
2010-11	16.21	8.64	8.98	9.95	10.03
2011-12	18.07	9.47	10.22	11.51	11.33
2012-13	19.24	10.52	11.02	12.03	12.48
2013-14	20.97	10.32	10.89	12.58	12.68
2014-15	23.18	10.71	11.33	13.91	13.69
2015-16	25.00	11.18	10.89	14.29	13.33
2016-17	25.39	11.32	11.19	14.14	13.52
2017-18	26.38	12.90	11.34	14.41	12.99
2018-19	30.07	14.14	11.49	15.23	14.42
2019-20	32.13	13.85	11.28	15.25	14.03
2020-21	27.49	14.26	10.26	13.70	13.97
Average	19.65	10.03	9.42	11.57	11.40
LSGR*	8%	6%	4%	5%	4%

Source: Authors Own Calculations LSGR*: Least Square growth rate.

Table 2 reveals the revenue efficiency index scores of selected states and their range from 1 to 100, where 1 indicates the worst performance and 100 indicates the best performance. Based on the results displayed in Table 2, it is apparent that Uttar Pradesh stands out as the most efficient state in the study's period. Uttar Pradesh's Revenue Efficiency Index score is 19.65, which is higher than the scores of all other states that were examined during the study period. Revenue has consistently increased since the FRBM Act of 2003 was put into effect. The table illustrates a consistent upward trend from the fiscal year 2004–05 to 2019–20, with a subsequent decline of 4.97 points observed in the fiscal year 2020–21. The least square growth rate is 8 percent, and it is the highest among all states.

With an average revenue-efficiency score of 11.57 and a growth rate of 5 percent from 2004–05 to 2020–21. Karnataka is the second most efficient revenue-efficiency state. Karnataka's index score rose from 7.43 in 2004–05 to 15.25 in 2019–20. The greater index value of Karnataka's own tax and non-tax revenue is the main driver of the state's improved performance. However, Karnataka's index score was reduced in 2020–21 to 13.70 as a result of a reduction in its own tax revenue.

Tamil Nadu is the third most efficient state in revenue performance according to the Revenue Efficiency Index, which has an average index score of 11.40 over the period of study. The index score of Tamil Nadu in 2004–05 was 8.6, which was the lowest among all in that year. However, the state managed to increase its revenue

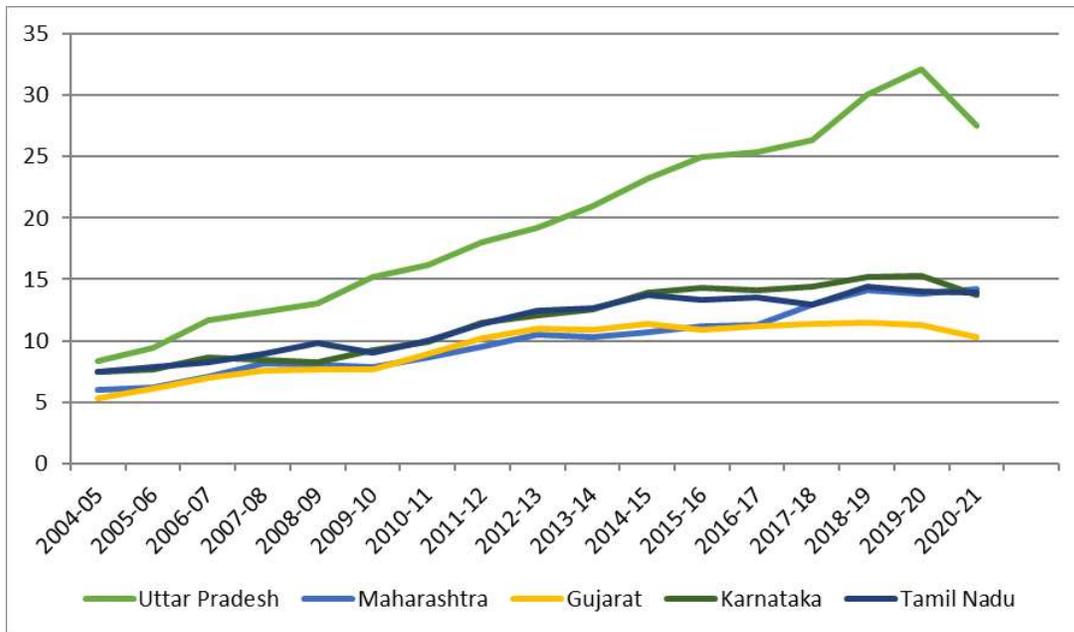
performance, and its score increased to 14.42, which was the highest score it could achieve in 2018–19. The trend of the revenue efficiency index was fluctuating during the study period. The growth rate recorded during the study period was 4 percent.

With an average revenue efficiency index score of 10.03, Maharashtra ranks as the fourth-most efficient state. It displayed the highest least squares growth rate among all these states. The state recorded a minimum index score of 5.97 in 2004–05 and reached its peak at 14.26 in 2020–21. The trend of the index score fluctuated during the study period.

Gujarat is identified as the least efficient state, with an average revenue efficiency score of 9.42 percent during the study period. It recorded the minimum least squares growth rate of 4 percent among all these states. The government of India implemented the FRBM Act 2003, and the revenue efficiency score demonstrated a continuous increase from 2004–05 to 2012–13. After a decline for one year, the index score recovered from 2014–15, reaching 11.33 and further rising to 11.49 in 2018–19. Subsequently, the revenue efficiency score was declined due to the impact of COVID-19. During COVID-19, the state's government-owned tax revenue and its own non-tax revenue declined. The revenue efficiency index score reached its maximum in 2018–19 at 11.49 and its lowest in 2004–05 at 5.28. The trend of revenue efficiency exhibited fluctuations throughout the study period.

Trend of Revenue Efficiency Index scores in selected states

Graph: 2.1



Source: Authors Own Calculations

Graph 2.1 elucidates the performance trend of selected states. Especially, Uttar Pradesh has exhibited remarkable improvement on the revenue front, consistently meeting the targets outlined by the Fiscal Responsibility and Budget Management (FRBM) Act. Tamil Nadu, Maharashtra, and Karnataka have shown a consistent upward trend from 2004–05 to 2019–20, with a noticeable dip in revenue during 2020–21 due to the impact of the COVID-19 pandemic. Conversely, Gujarat has demonstrated a slow performance in revenue.

Conclusion

This study attempts to measure the revenue performance of major selected states in India. The relative distance method is used for determining the revenue efficiency index. The revenue

efficiency index is constructed by considering four significant sub-indices: state-owned tax revenue, non-tax revenues, grants-in-aid from the centre, and the share in central taxes. It is observed that Uttar Pradesh has demonstrated a noteworthy advancement in revenue, reliably fulfilling the goals delineated by the Fiscal Responsibility and Budget Management (FRBM) Act. From 2004–05 to 2019–20, Tamil Nadu, Maharashtra, and Karnataka all showed a steady increase in revenue; however, in 2020–21, there was a discernible decline because of the COVID-19 pandemic. In contrast, Gujarat has exhibited a slow performance in revenue.

Based on the above analysis of the revenue performance index, own tax revenues and non-tax revenues are the main drivers of higher index scores. Conversely, grants

and the central tax share have not made a substantial impact on improving revenue performance. As a result, researchers suggest that the best way to boost revenue performance is to increase own tax and non-tax revenues, as states possess a higher degree of autonomy in mobilizing these resources. This strategic approach can play a key role in maintaining and improving the government's financial health.

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