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Implementing GST in India: Who gained and who lost?

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Abstract

The Goods and Services Tax (GST) in India, implemented on 1st July 2017, is one of the most significant indirect tax reforms since Independence. It subsumed several existing taxes levied by the central and state governments. The simplified tax system is expected to boost the revenues of both the union and state governments on account of increased compliance. The states have surrendered more taxing powers than the Centre, thus raising concerns about the revenue autonomy of states. Sustaining the revenue stream, which is subsumed into GST, is essential for sustainable Public Finance Management (PFM) for states (Mukherjee, 2023). Hence, the GST (Compensation to States) Act was enacted to address concerns about declining revenue in 2017. Since the implementation of the GST reform, several concerns have been raised with respect to revenue neutrality, loss of states' revenue and suffering of producing states as the GST is a destination-based tax. Since six years have passed and it has been more than a year since GST compensation ended, a comprehensive analysis of GST revenue performance at the state level assumes much importance. In this context, this study seeks to address three questions. One, how have states performed with respect to the GST growth performance after its implementation compared to the pre-GST period? Two, whether the GST reform enhanced the tax revenues of states in India? Three, whether GST affected producer states negatively while benefitting the consuming states?

This study uses state-level GST data, which is derived by combining the revenue collection through SGST and IGST settlement from 2017-18 to 2022-23. Further, we use the GST revenue collected estimated through taxes subsumed under the GST period to GST from 2012-13. Our analysis is restricted to eighteen general category states. We use the data on GSDP, per-capita GSDP and sectoral shares published by the MOSPI. The time period of our analysis is from 2012-13 to 2022-23. We analyse the GST revenue performance through three main indicators. One, GST as a percentage of GSDP; two, GST as a percentage of states' own tax revenue; and three, the growth of GST revenues. We also analyse the intensity of the impact on states at the end of the GST compensation era.

Our analysis throws light on the fact that, even though the states recorded higher tax revenues in absolute terms in the GST regime, it is dismaying to note that no states have improved their tax-to-GDP ratio during this period. Therefore, the increased growth rate in tax revenue could be attributed to other economic factors, especially the rebound of the economy after the downfall of the COVID-19 pandemic. Some states like Gujrat, which were lagging in the pre-GST regime, were able to emerge as the top performers in many aspects of the GST. Many states that have performed better in the pre-GST regime have also come down in the GST regime. This necessitates further improvement in the country's tax governance. Besides this, the majority of states' tax buoyancy has decreased after implementing GST. Apart from all these, the actual GST collection by the states is far below the expected revenue. In tandem, these factors lead to increasing fiscal stress on the states on account of the implementation of GST in India.

Keywords: Goods and Services Tax; Tax performance; Tax Buoyancy; Tax to GDP ratio; GST Compensation

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1. Introduction

The Goods and Services Tax (GST) in India, implemented on 1st July 2017, is one of the most significant indirect tax reforms since Independence. The simplified tax system is expected to boost the revenues of both union and state governments on account of increased compliance. It subsumed several existing taxes levied by the Union and State Governments. The states have surrendered more taxing powers than the Centre, thus raising concerns about the revenue autonomy of states. Sustaining the revenue stream which is subsumed into GST is essential for sustainable Public Finance Management (PFM) for states (Mukherjee, 2023). The GST (Compensation to States) Act was enacted to ease concerns about declining revenue in 2017. This act assured all states of an annual growth rate of 14% in their GST revenue compared to the base year of 2015-16, spanning five years from July 2017 to June 2022 (Gupta and Rajaraman, 2020). However, the compensation period ended on 30th June 2022. The hasty GST implementation process was yet to be fully stabilised by the time the COVID-19 pandemic hit the economy, significantly affecting the economy and tax revenues. Hence, some scholars have made a case for extending the compensation period (Rao, 2022).

Meanwhile, it has been more than one year since the compensation is over, and recent reports suggest that the monthly GST collection in India is touching a record high every month, crossing over Rs 1.5 lakh crores. The monthly GST revenue collection in the first quarter of FY 2023-24 is Rs 1.69 lakh crores. In this context, it is important to analyse the state-wise revenue performance of GST over the past six years and compare it with the pre-GST era. Therefore, the main objective of this paper is to provide a comprehensive analysis of state-wise GST performance in India. We try to analyse the state-level performance of GST and the states' tax performance pre- and post-GST. We also try to analyse the intensity of how states were affected by the end of the GST compensation era.

The structure of the entire discussion is as follows. First, we shall look at the annual growth rates of tax revenue of the states and compare the growth rates of the pre-GST and post-GST eras to check whether there is any significant improvement/deterioration in the tax revenue growth rates after implementing GST. We shall also see whether the share of indirect tax revenue in Gross State Domestic Product (GSDP) has improved after implementing GST by analysing the tax-to-GDP ratio. In the next section, we shall figure out states' tax buoyancy before and after the implementation of GST to check whether it has improved after implementing GST and finally, we shall try to find how states have been affected by the end of GST compensation to the states.

2. Data and Methodology

We take 16 major states in India for the analysis. Since the scope of our analysis starts from before 2014, the year in which Telangana was separated from Andhra Pradesh to become a separate state, we have combined the data of both those states into 'Andhra Pradesh'. The analysis period is from 2012-13 to 2022-23; i.e., 5 years pre-GST period and 5 years post-GST period. The year 2017-18 has not been considered, as this was the transition year. Further, since both the Union and state governments settled transitional credits of pre-GST taxes with GST liability, GST collection is not likely to reflect actual GST potential in 2017-18 (Mukherjee, 2023). The pre-GST tax collection data for Gujrat and Haryana were unavailable in the GST portal. In this regard, we have used the same estimations from Mukherjee (2020).

States' revenue has been calculated as the sum of State Goods and Services Tax (SGST) and Integrated Goods and Services Tax (IGST) settlement to the states. The GSDP and GST revenue data of the states were collected from the Ministry of Statistics and Programme Implementation (MoSPI) and the GST portal (gst.gov.in), respectively.

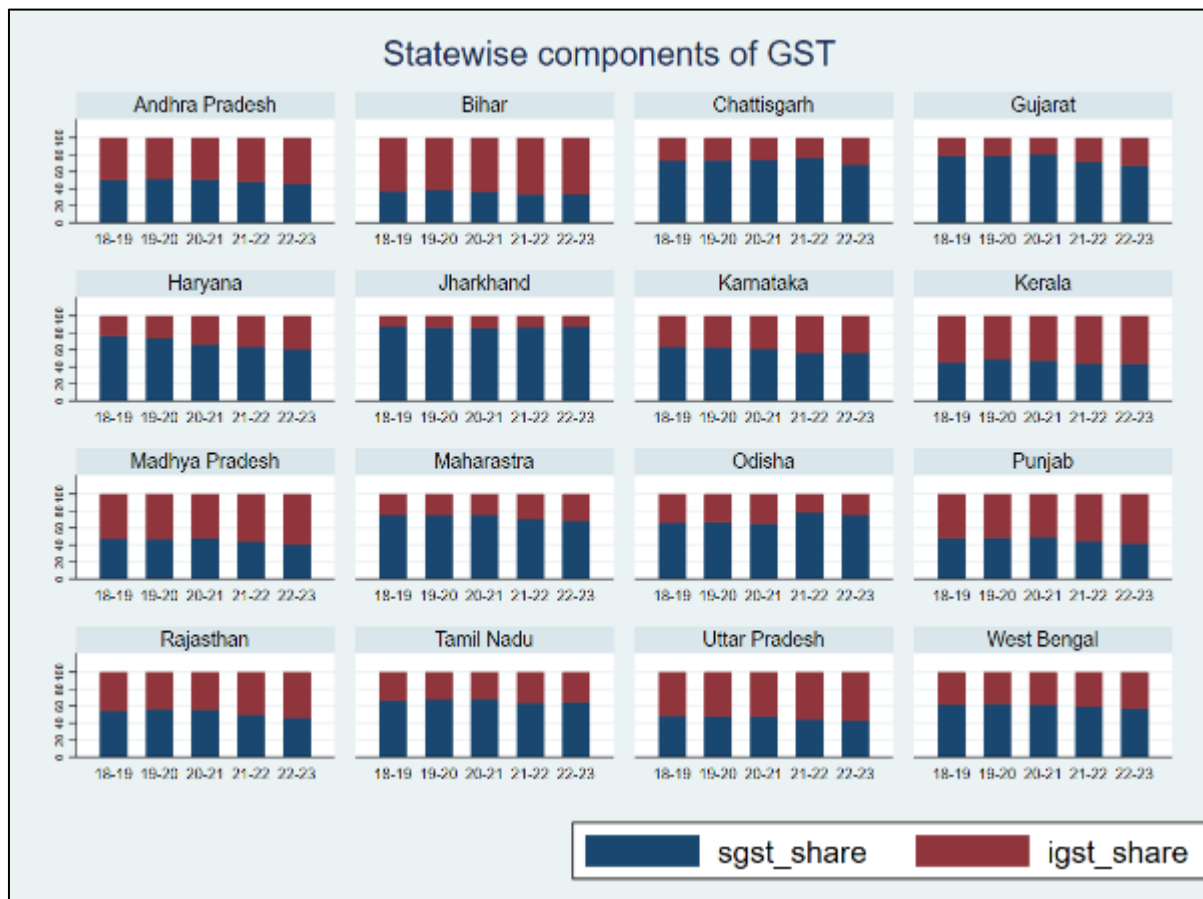
3. Analysis

3.1. The Composition of GST revenue collection across states

The states' GST revenue includes two components. State Goods and Services Tax (SGST) and settlement of Integrated Goods and Services Tax (IGST) by the Centre. For any intra-state transactions, 50 percent of revenue is collected by the state (SGST) and the remaining by the Union (Central Goods and Services Tax). In the case of interstate transactions, the entire GST will go to the IGST account and then will be apportioned equally among the Union and the destination state. The amount which will be apportioned to the states on account of interstate transactions is the IGST settlement.

A state with a high share of SGST implies that the state has more intrastate transactions. On the other hand, a state with a greater share of IGST settlement in its revenue will be a state whose revenue is dependent mainly on inter-state transactions. Since GST is a destination-based tax, it was anticipated that primarily consuming states would benefit

compared to the producing states. Figure 1 illustrates the relative share of SGST and IGST in the total revenue collection of the states over the years.



Source: Authors' own calculation using data from the GST Portal

Figure 1 Components of States' GST Revenue

The states could be organised into those with a higher relative share of IGST settlement and those with a higher share of SGST settlement. Chhattisgarh, Gujrat, Haryana, Jharkhand, Maharashtra, Odisha, Tamil Nadu, and West Bengal have a larger share of SGST in their GST revenue, implying that they have a large amount of intra-state transactions. In other words, these states are less dependent on other states for their consumption. On the other hand, states like Bihar, Kerala, Madhya Pradesh, Rajasthan, Punjab, and Uttar Pradesh have a larger share of IGST settlement. These states depend largely on interstate transactions. Figure 1 indicates that states with relatively higher share of IGST settlement are low-income states except Kerala and Punjab.

3.2. GST Revenue Growth

Simplifying the tax structure after implementing GST is expected to enhance tax revenue collections. However, studies have shown significant variation in GST revenue collection across states (Dash & Kakarlapudi, 2022). Further, the pandemic has disproportionately affected the GST revenue of some states (Dash & Joseph, 2022). To assess whether states have really gained after GST implementation, Table 1 compares the growth of taxes subsumed under GST and GST revenue collection before and after the reform. Since the tax reform was implemented in 2017-18, this analysis considers data from 2018-19. The average growth of yearly GST collections from 2013-14 to 2016-17 (pre-GST period) is compared with the average growth of 2019-20 to 2022-23 (post-GST period).

Table 1 Pre and Post-GST Revenue Growth Rates of States

Name of State	Pre GST					Post GST				
	13-14	14-15	15-16	16-17	Avg	19-20	20-21	21-22	22-23	Avg
Andhra Pradesh	5.6	-1.1	6.9	17.7	7.3	8.1	-7.1	30.7	23.4	13.8
Bihar	23.8	4.0	27.8	15.5	17.8	15.6	-2.2	22.8	23.2	14.9
Chhattisgarh	8.5	5.1	7.6	9.7	7.7	8.6	-3.4	21.3	22.7	12.3
Gujarat	4.4	6.9	-0.3	4.2	3.8	8.4	-11.7	49.3	22.9	17.2
Haryana	7.5	14.8	10.7	12.1	11.3	13.8	-4.2	31.8	25.9	16.8
Jharkhand	9.2	11.9	2.4	25.7	12.3	14.8	-10.5	20.3	18.2	10.7
Karnataka	13.8	13.9	9.8	9.3	11.7	13.9	-9.4	33.7	24.1	15.6
Kerala	9.8	9.2	6.6	10.3	9.0	5.5	-8.9	27.8	24.9	12.3
Madhya Pradesh	5.8	9.0	8.3	13.3	9.1	10.6	-7.8	24.4	25.1	13.1
Maharashtra	2.5	5.4	1.4	11.5	5.2	9.2	-14.6	41.8	24.7	15.3
Odisha	8.7	7.2	2.7	14.8	8.3	22.9	-1.8	27.6	16.2	16.2
Punjab	13.1	7.1	-18.2	27.4	7.4	13.2	-11.5	38.3	19.1	14.8
Rajasthan	10.1	20.6	9.0	3.1	10.7	5.2	-7.4	35.5	25.3	14.6
Tamil Nadu	3.3	7.4	7.2	5.1	5.8	8.7	-12.7	32.2	21.7	12.5
Uttar Pradesh	1.1	9.0	8.3	9.2	6.9	12.7	-11.0	29.9	19.4	12.7
West Bengal	17.8	8.4	2.8	12.7	10.4	11.5	-9.8	25.7	24.0	12.9

Source: Own calculation using data from the GST portal.

Notwithstanding the absolute decline in GST revenues in the pandemic year (2020-21), states on average, recorded higher revenue growth after GST implementation with the exception of Bihar and Jharkhand.

It is important to note that Bihar and Jharkhand were the top-performing states in terms of growth prior to GST implementation. Significant changes in growth performance have occurred before and after the policy reform. Except for Haryana and Karnataka, low-income states such as Bihar, Jharkhand, Rajasthan, and West Bengal have registered double-digit growth rates before GST. However, post-GST reform, the top performers are Gujarat (17.2%), Haryana (16.8%), Odisha (16.2%), Karnataka (15.6%) and Maharashtra (15.3%). The comparison of growth differences between pre and post GST reveals that Gujarat, Maharashtra, Odisha, Punjab and Tamil Nadu have experienced the highest increase. Interestingly, Gujarat, Maharashtra and Tamil Nadu are the top-producing states in the country. This result negates the argument that producing states will be the net losers as GST is a destination-based tax.

On the other hand, the states with the lowest growth rates in the GST regime are Jharkhand (10.7 %), followed by Kerala and Chhattisgarh (both with a growth rate of 12.3 percent). This finding runs counter to the argument that consumption states benefit from the GST. In fact, Kerala's rank in the growth of GST revenue decelerated from the 8th position before the implementation to the 14th position after GST. Among the states that showed lower GST growth than their pre-GST period growth, Kerala ranks among the bottom five states, along with Bihar, Jharkhand, West Bengal, and Rajasthan. Interestingly, Kerala is the only high-income state to have experienced the lowest GST increase after the GST implementation.

3.3. Tax-GDP Ratio

The tax to gross domestic product (GDP) ratio is total tax revenue as a percentage of GDP, which indicates the share of a country's output that the government collects through taxes. It can be regarded as one measure of the degree to which the government controls the economy's resources (Asian Development Bank, 2021). The tax-to-GDP ratio is a standard indicator of the tax base. A higher tax-GDP ratio is always desirable, indicating that more tax is collected for a fixed GDP.

Table 2 compares the GST to GSDP ratio between the pre- and post-GST periods. Jharkhand was the only state that managed to improve its tax-to-GDP ratio (3.1 to 6 per cent) following the implementation of GST, thereby attaining the highest tax-to-GDP ratio in the GST regime. All other states have shown a decline in the share of GST to GSDP ratio. However, it is encouraging to note that the ratio has shown an increasing trend from 2020-21 onwards in almost all states. Among others, Maharashtra and Punjab experienced the highest increase in the ratio, from 2.7 and 2.1 per cent in 2020-21 to 3.5 and 2.9 per cent in 2022-23, respectively, followed by Gujarat, Haryana and Uttar Pradesh.

Prior to GST, Punjab (4.6%), Karnataka (3.5%), and Odisha (3.4%) were the top states with the highest GST to GSDP ratio. Similarly, Rajasthan (2.4%), West Bengal (2.6%) and Tamil Nadu (2.6%) are at the bottom. States' relative position has changed substantially from 2018-19 to 2022-23. Punjab, which had the highest tax GDP ratio in the pre-GST regime, was unable to maintain the momentum under the GST regime, experiencing a significant decline from 4.6 to 2.4 per cent. Jharkhand, Maharashtra, and Uttar Pradesh have emerged as the top-performing states post-GST implementation, while West Bengal and Rajasthan remain in the bottom three, along with Madhya Pradesh. Due to improvements in the last three fiscal years, Kerala's position marginally improved from 9th position to 8th position.

Table 2 Pre- and Post-GST Tax to GDP Ratio of States

State	12-13	13-14	14-15	15-16	16-17	Avg	18-19	19-20	20-21	21-22	22-23	Avg
Andhra Pradesh	3.3	3.1	2.7	2.5	2.6	2.9	2.3	2.3	2.1	2.3	2.5	2.3
Bihar	2.7	3.0	2.9	3.4	3.5	3.1	2.5	2.6	2.5	2.7	2.6	2.6
Chhattisgarh	3.4	3.1	3.1	3.3	3.1	3.2	2.1	2.2	2.1	2.2	2.4	2.2
Gujarat	3.6	3.4	3.1	2.8	2.6	3.1	2.1	2.1	1.9	2.3	2.6	2.2
Haryana	3.2	3.0	3.1	3.1	3.0	3.1	2.4	2.6	2.4	2.7	3.0	2.6
Jharkhand	2.9	3.0	2.9	3.1	3.4	3.1	5.6	6.3	5.8	6.1	6.2	6.0
Karnataka	3.7	3.5	3.6	3.5	3.3	3.5	2.5	2.6	2.4	2.6	2.8	2.6
Kerala	3.2	3.1	3.1	3.0	2.9	3.1	2.3	2.4	2.3	2.5	2.8	2.5
Madhya Pradesh	3.2	3.0	3.0	2.8	2.7	2.9	2.0	2.0	1.8	1.9	2.0	2.0
Maharashtra	3.8	3.4	3.4	3.1	3.1	3.3	3.0	3.1	2.7	3.2	3.5	3.1
Odisha	3.5	3.4	3.4	3.4	3.2	3.4	2.1	2.4	2.4	2.5	2.5	2.4
Punjab	4.9	5.0	5.0	3.7	4.3	4.6	2.2	2.4	2.1	2.7	2.9	2.4
Rajasthan	2.4	2.4	2.6	2.5	2.3	2.4	2.3	2.2	2.0	2.2	2.4	2.2
Tamil Nadu	2.9	2.7	2.6	2.5	2.4	2.6	2.3	2.3	1.9	2.2	2.4	2.2
Uttar Pradesh	3.4	3.0	3.0	2.9	2.8	3.0	2.6	2.7	2.5	2.8	3.1	2.8
West Bengal	2.6	2.7	2.7	2.5	2.6	2.6	2.2	2.3	2.1	2.2	2.4	2.2

Source: Authors' own calculation using data from the GST portal and MoSPI

The improvement in the GST-GSDP ratio over the last three years could result from initiatives such as introducing e-invoicing and increased consumption post-pandemic recovery. However, lower average ratio post-GST implementation compared to its pre-GST average indicates potential for increasing the tax base further. All the states could further increase the tax base and augment state revenues.

3.4. Tax buoyancy

The buoyancy of a tax system measures the total response of the revenue both to changes in national income and to discretionary changes in tax policies over time, and it is traditionally interpreted as the percentage change in revenue associated with a one per cent change in income. (Dudine and Jalles, 2017)

A buoyancy of one would imply that an extra one per cent of GDP would increase tax revenue by one per cent, thus leaving the tax-to-GDP ratio unchanged. When tax buoyancy exceeds one, however, tax revenue increases more than GDP, which could lead to a reduction in government debt and deficit (Blanchard, Dell' Aricia and Mauro, 2010). In

contrast, when tax buoyancy is less than one, tax revenues are structurally decreasing, and weak taxes pose a risk to fiscal sustainability in the absence of spending cuts. Finally, a buoyancy of one implies that tax revenues are structurally stable, rising in tandem with GDP. (Hill, Jinjark, and Park, 2022)

Table 3 illustrates the average tax buoyancy (Tax buoyancy = % change in tax revenue/ % change in GDP) for 4 years before and after GST.

Table 3 Pre- and Post-GST Tax buoyancy of States

Name of State/UT	Pre GST					Post GST				
	13-14	14-15	15-16	16-17	Avg	19-20	20-21	21-22	22-23	Avg
Andhra Pradesh	0.4	-0.1	0.5	1.3	0.53	0.96	-5.93	1.67	1.44	-0.46
Bihar	1.9	0.5	3.3	1.2	1.73	1.51	-2.71	1.52	0.85	0.29
Chhattisgarh	0.5	0.7	4.1	0.6	1.49	1.60	-3.82	1.26	1.80	0.21
Gujarat	0.4	0.5	0.0	0.3	0.29	1.00	-9.62	2.51	1.82	-1.07
Haryana	0.5	1.6	0.8	0.9	0.94	2.90	-3.16	1.83	1.82	0.85
Jharkhand	1.2	0.7	-0.4	1.8	0.82	9.81	3.39	1.44	1.06	3.93
Karnataka	0.8	1.2	0.7	0.6	0.81	1.56	-10.88	1.62	1.70	-1.50
Kerala	0.8	0.9	0.7	0.8	0.78	1.75	1.72	1.58	2.43	1.87
Madhya Pradesh	0.4	1.0	0.6	0.7	0.67	0.90	-2.15	1.34	1.53	0.41
Maharashtra	0.2	0.7	0.1	1.0	0.49	1.80	12.99	2.28	1.62	4.67
Odisha	0.7	1.2	0.6	0.8	0.80	2.89	4.31	1.18	1.02	2.35
Punjab	1.1	1.0	-1.8	2.9	0.81	2.76	9.21	3.79	2.06	4.45
Rajasthan	0.9	1.8	0.8	0.3	0.93	0.54	-3.58	1.82	1.58	0.09
Tamil Nadu	0.3	0.7	0.7	0.5	0.54	1.26	-3.41	2.27	1.58	0.42
Uttar Pradesh	0.1	1.2	0.7	0.7	0.66	1.70	3.19	1.79	2.83	2.38
West Bengal	1.2	1.4	0.3	1.3	1.05	1.65	4.95	1.43	1.72	2.43

Source: Authors' own calculation using data from the GST portal and MoSPI

Seven out of sixteen states under study (Jharkhand, Kerala, Maharashtra, Odisha, Punjab, Uttar Pradesh, and West Bengal) made an improvement in terms of tax buoyancy in the GST regime, while the remaining nine states exhibited a higher tax buoyancy in the pre-GST regime. During the pre-GST regime, Bihar (1.73%), Chhattisgarh (1.49%) and West Bengal (1.05%) depict the highest buoyancy, while Gujarat (0.29%), Maharashtra (0.49%) and Andhra Pradesh (0.53%) are the states with lowest buoyancy. During the post-GST period, there has been a drastic shift in tax buoyancy of the states. Maharashtra (4.67) recorded the highest tax buoyancy in the GST regime, followed by Punjab (4.45) and Jharkhand (3.93). It is interesting to note that Maharashtra, which recorded one of the lowest buoyancy in the pre-GST regime, became the state with the highest buoyancy. On the other hand, Karnataka (-1.5), Gujarat (-1.07), and Andhra Pradesh (-0.46) recorded negative tax buoyancy during the period. Kerala's GST buoyancy increased from 0.78 during the pre-GST regime to 1.87 during the post-GST regime (Table 3).

3.5. How can the end of GST compensation affect the states?

The GST compensation scheme was a system designed to bestow compensation to the states for five years to surpass the revenue loss on account of the implementation of GST. This provision of compensation has been enacted through the 101 Constitution Amendment Act, 2016. Section 7 of the GST Compensation Cess Act determines the calculation of the compensation amount payable to the states. Compensation payable to the states is calculated as the difference between actual GST collection and protected revenue. The projected revenue for any year in a State shall be calculated by applying the projected growth rate of 14 percent over that State's base year (2015-16) revenue. If the base year revenue for 2015-16 for a concerned State is 100, then the projected revenue for the financial year 2018-19 shall be as follows— Projected Revenue for 2018-19=100 (1+14/100)³.

GST compensation was a huge relief to the states, whose revenue shrunk significantly post-GST implementation. However, the tenure of GST compensation, which was five years, ended in June 2022.

Table 4 The protected and actual revenues for 2021-22

Name of State	15-16	2022-23			
		Protected Revenue	Actual Revenue	Difference	%
Andhra Pradesh	29982	75023	64763	-10260	-13.7
Bihar	12621	31580	22649	-8931	-28.3
Chhattisgarh	7357	18409	10960	-7449	-40.5
Gujarat	28856	72206	56235	-15971	-22.1
Haryana	15231	38111	29972	-8140	-21.4
Jharkhand	6411	16041	24798	8757	54.6
Karnataka	36144	90442	63406	-27036	-29.9
Kerala	16821	42092	28197	-13895	-33.0
Madhya Pradesh	15329	38358	26912	-11446	-29.8
Maharashtra	60505	151399	125258	-26140	-17.3
Odisha	11049	27648	18927	-8721	-31.5
Punjab	14472	36212	18506	-17707	-48.9
Rajasthan	17159	42935	33978	-8958	-20.9
Tamil Nadu	29786	74533	56361	-18172	-24.4
Uttar Pradesh	33388	83545	64041	-19505	-23.3
West Bengal	20098	50290	37815	-12475	-24.8

Source: Authors' own calculation using data from GST Portal

Apart from Jharkhand, no states were able to achieve the protected revenue target of 14 percent in 2022-23. Furthermore, there has been a huge disparity between the protected revenue and actual revenue generated by the states. The states who came closer to the protected revenue figures are Andhra Pradesh (-13.7), Maharashtra (-17.3), and Rajasthan (-20.9).

If compensation had been provided in the fiscal year 2022-23, the majority of states would have received a substantial increase of at least 20 percent in their actual revenue collections. For instance, states like Punjab and Chhattisgarh could have received an additional 48.9 percent and 40.5 percent, respectively, above their actual revenue collections. This highlights the potential impact that compensation could have had on the financial position of states.

4. Conclusion

Not as a mere part, but being the major component of a tax system, revenue is a matter of interest to the government and policymakers. Therefore, analysis of revenue is one of the best ways of measuring the efficiency of the tax system.

Even though most states have a higher growth rate in their tax revenue after the implementation of GST, no states have improved their tax-to-GDP ratio in the GST era. Therefore, the increased growth rate in tax revenue could be attributed to other economic factors, especially the rebound of the economy after the downfall of the COVID-19 pandemic and the penetration of digital payments (Joseph, 2023). This is more evident from the tax buoyancy of the states. Even though many of the states have improved their buoyancy in the GST regime, many states still have a buoyancy of less than one. This necessitates further improvement in the country's tax governance.

Some states like Gujrat, which were lagging behind in the pre-GST regime, were able to emerge as the top performers in many aspects of the GST. Many states that have performed better in the pre-GST regime have also come down in the

GST regime. Therefore, it is certain that there has been a structural change in the tax-earning capacity of the states after implementing a destination-based tax. Therefore, compensation was a necessity for a majority of the states. No states have achieved the protected growth rate of 14 percent per annum in 2021-22, when the GST compensation was ended. This is going to adversely affect the financial position of the states seriously.

Compliance with ethical standards

Disclosure of conflict of interest

The Authors have no conflict of interest to declare.

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