Cognitive Thinking: An International Journal of Interdisciplinary Studies
ISSN: 3107-5088, Vol. 2, Issue-3 (July-Sep, 2026), pp. 176-187, www.cognitivethinking.in

Impact of Goods and Services Tax on State Tax Revenue Performance in India: Evidence from Major Indian States

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D.O.I. https://doi.org/10.5281/zenodo.21921549
Article: Received: 20/07/2026, Returned: 31/07/2026, Accepted: 10/08/2026, Published: 12/08/2026.

Abstract: This paper examines changes in state tax revenue performance after the implementation of the Goods and Services Tax (GST) across 18 major Indian states. Using secondary data from the GST portal and the Reserve Bank of India's Handbook of Statistics on Indian States, the study compares the pre-GST period, 2012-13 to 2016-17, with the post-GST period, 2018-19 to 2023-24. The transition year 2017-18 is excluded from the analysis because GST was implemented during that financial year. The study uses three indicators to assess state revenue performance: tax-to-NSDP ratio, compound annual growth rate of tax revenue, and tax buoyancy. It also compares post-GST revenue performance with and without GST compensation in order to understand the role of central support in stabilising state revenues during the transition.

The findings suggest that the post-GST revenue experience has been mixed across states. Some states, such as Maharashtra, Odisha and Madhya Pradesh, show relatively stronger revenue performance in the post-GST period, while others display weaker or more volatile outcomes. GST compensation appears to have played an important stabilising role for states that experienced a decline in tax-to-NSDP ratios after GST implementation. However, the post-GST period was also affected by the COVID-19 shock, which created abnormal movements in revenue growth and tax buoyancy. Therefore, the results are interpreted as descriptive evidence of changing state-level revenue patterns rather than as strict causal estimates of GST's independent effect. The study highlights the need for state-specific fiscal support, improved tax compliance, and continued monitoring of revenue performance under the GST framework.
Keywords: Goods and Services Tax, State Tax Revenue, Tax-to-NSDP Ratio, Tax Buoyancy, GST Compensation, Fiscal Federalism, India.
JEL Codes: H25, H71, H77, E62, O23.

1. Introduction

The implementation of the Goods and Services Tax (GST) on 1 July 2017 marked one of the most important reforms in India's indirect tax system. GST replaced several central and state-level indirect taxes, including excise duty, service tax, value added tax, entertainment tax and luxury tax, with a more unified tax structure. The reform was introduced with the objective of reducing tax cascading, improving compliance, creating a common national market and simplifying the indirect tax system. As a destination-based tax, GST changed the manner in which tax revenue is collected and distributed between the Union and the states.

The introduction of GST had important implications for state governments because indirect taxes had been a major source of revenue for them before the reform. Under the earlier tax system, states had greater control over several tax instruments, especially VAT and other state-level indirect taxes. With the shift to GST, many of these taxes were subsumed under a common framework, reducing the independent taxsetting power of states. This created concerns regarding revenue stability, especially for states that were more dependent on production-based taxation or had weaker consumption bases. To address these concerns, the Union government introduced a GST compensation mechanism, under which states were assured compensation for revenue shortfall during the transition period.

The effect of GST on state revenue performance is not expected to be uniform across all states. Differences in economic structure, consumption patterns, industrial composition, administrative capacity and tax compliance can lead to different revenue outcomes. Some states may adjust better under a destination-based tax system, while others may experience revenue stress or greater volatility. Therefore, a state-wise analysis is necessary to understand how tax revenue performance changed after the implementation of GST.

The present study examines changes in state tax revenue performance across 18 major Indian states. It compares the pre-GST period, 2012-13 to 2016-17, with the post-GST period, 2018-19 to 2023-24, while excluding 2017-18 as a transition year. The study uses three indicators: tax-to-NSDP ratio, compound annual growth rate of tax revenue and tax buoyancy. It also compares post-GST revenue performance with and without GST compensation in order to assess the role of central support in stabilising state revenues. The study follows a descriptive pre-post comparative approach and does not claim to isolate the independent causal effect of GST from all other macroeconomic and state-specific factors. Instead, it identifies broad revenue patterns, state-wise variations and policy concerns emerging from the post-GST period.

2. Review of Literature

2.1 GST, VAT and Indirect Tax Reform

The literature on indirect taxation highlights the importance of broad-based consumption taxes in improving revenue mobilisation and reducing inefficiencies in the tax system. Value added tax and GST-type reforms are generally introduced to reduce cascading, simplify tax administration and create a more unified market structure. Keen and Lockwood (2010) argue that value added tax has become one of the most important tax instruments across countries because of its revenue potential and administrative advantages. Bird (2003) and Gupta (2007) also emphasise that broadening the tax base and improving tax administration can strengthen revenue collection, especially in developing economies. In the Indian context, GST was introduced with similar objectives, including simplification of the indirect tax system, reduction of cascading and improvement in tax compliance.

2.2 Tax Buoyancy and Revenue Responsiveness

A major strand of literature focuses on tax buoyancy, which measures the responsiveness of tax revenue to changes in economic activity. Chelliah, Baas and Kelly (1975) examine tax ratios and tax effort in developing countries and show that the capacity to mobilise tax revenue differs across economies depending on income levels, structure of production and administrative capability. Mahdavi (2008) studies the level and composition of tax revenue in developing countries and highlights that tax performance depends not only on economic growth but also on the structure of the tax system. Tanzi and Zee (2000) argue that developing economies often face administrative and structural constraints that limit tax mobilisation. These studies suggest that tax buoyancy is influenced by economic composition, institutional quality, tax design and the effectiveness of revenue administration.

2.3 GST Compensation and Fiscal Federalism

Several studies also point out that tax reforms do not affect all regions or sectors in the same way. Aizenman and Jinjarak (2009) show that globalisation and structural change can influence the tax base, while Das-Gupta (2014) emphasises the role of information systems and administrative reforms in strengthening compliance under value added tax systems. These arguments are relevant for GST because the success of GST depends not only on the design of tax rates but also on digital compliance, invoice matching, administrative coordination and the ability of states to adapt to a common tax framework.

The issue of GST is closely linked with fiscal federalism. Before GST, Indian states had greater autonomy over several indirect taxes, especially value added tax and other state-level levies. With the implementation of GST, many of these taxes were subsumed under a common national framework. This changed the fiscal relationship between the Union and the states and created concerns about revenue stability. The GST compensation mechanism was introduced to address these concerns and to protect states from revenue shortfalls during the transition period. Therefore, any assessment of GST's effect on state revenue performance must consider both revenue without compensation and revenue after including compensation support.

2.4 Research Gap

Existing literature provides important insights into indirect tax reform, tax buoyancy and revenue mobilisation. However, there remains a need for state-wise analysis of post-GST revenue performance in India. Many discussions on GST focus on aggregate national revenue trends, while state-level variations receive less attention. The present study addresses this gap by comparing 18 major Indian states across the pre-GST and post-GST periods using tax-to-NSDP ratio, compound annual growth rate of tax revenue and tax buoyancy. The study also separately examines the role of GST compensation in supporting state revenue performance during the post-GST period.

3. Objectives of the Study

The primary objective of this study is to assess changes in state tax revenue performance after the implementation of GST across 18 major Indian states. The specific objectives are:

1.To compare the tax-to-NSDP ratio of selected states in the pre-GST and post-GST periods.
2.To examine the compound annual growth rate of state tax revenue before and after GST implementation.
3.To analyse tax buoyancy in selected Indian states before and after GST implementation.
4.To compare post-GST revenue performance with and without GST compensation.
5.To identify state-wise variation in revenue performance and derive policy implications for fiscal federalism under GST.

4. Data and Methodology

4.1 Data Sources and Period of Study

The study is based on secondary data collected from official sources, primarily the GST portal of the Government of India and the Reserve Bank of India's Handbook of Statistics on Indian States. The analysis covers 18 major Indian states and compares state tax revenue performance across two periods: the pre-GST period from 2012-13 to 2016-17 and the post-GST period from 2018-19 to 2023-24. The financial year 2017-18 is excluded from the analysis because GST was implemented on 1 July 2017, making it a transition year with only partial-year GST implementation.

The main variables used in the study are state tax revenue, GST compensation, and Net State Domestic Product at current prices. Since tax revenue is reported in nominal terms, NSDP at current prices is used to maintain consistency between the revenue and income variables. The use of current-price NSDP allows the study to assess the relationship between nominal state revenue and the nominal size of the state economy.

Due to data limitations, some state-specific adjustments are necessary. For Goa and Gujarat, limited NSDP data are available for some years, and therefore average values are calculated using the available years. For Telangana, the pre-GST comparison is based on the years available after the state's formation. These limitations are considered while interpreting the results, and the findings are treated as descriptive evidence of broad revenue patterns rather than as strict causal estimates.

4.2 Definition and Treatment of Revenue Variable

A clear distinction is made between tax revenue excluding GST compensation and revenue including GST compensation. In this study, the main revenue variable refers to state-level tax revenue excluding GST compensation, unless otherwise stated. This series is used to assess the revenue performance of states under the GST framework. The tax-to-NSDP ratio, CAGR and tax buoyancy are first calculated using this revenue series.

GST compensation is treated separately because it is not tax revenue directly generated by the state. It is a fiscal transfer provided by the Union government to compensate states for revenue shortfalls during the GST transition period. Therefore, compensation is not merged with the main tax revenue variable for the primary interpretation. Instead, a separate compensation-adjusted series is constructed by adding GST compensation to state tax revenue. This series is used only to examine the extent to which compensation helped stabilise state revenues after GST implementation.

Accordingly, the study uses two revenue series:

- Tax revenue without compensation: state tax revenue excluding GST compensation.
- Tax revenue with compensation: state tax revenue plus GST compensation received from the Union government.

The distinction between these two series is important because the first reflects the state's revenue performance from taxation, while the second reflects the combined effect of tax revenue and central fiscal support. Therefore, the compensation-adjusted results are interpreted as evidence of fiscal support, not as evidence of tax revenue generation by the state.

4.3 Variables Used in the Study

Variable / Indicator	Meaning	Source / Calculation
State Tax Revenue	Tax revenue collected by the state, excluding GST compensation unless stated otherwise.	GST portal / RBI Handbook
GST Compensation	Compensation received by states from the Union government for GST-related revenue shortfall.	GST portal / Government sources
Tax Revenue with Compensation	State tax revenue plus GST compensation.	Author's calculation
NSDP at Current Prices	Net State Domestic Product measured at current prices.	RBI Handbook of Statistics on Indian States
Tax-to-NSDP Ratio	State tax revenue as a percentage of NSDP.	Author's calculation
CAGR of Tax Revenue	Compound annual growth rate of tax revenue over the selected period.	Author's calculation
Tax Buoyancy	Ratio of percentage change in tax revenue to percentage change in NSDP.	Author's calculation

4.4 Tax-to-NSDP Ratio

The tax-to-NSDP ratio measures the share of state tax revenue in the size of the state economy. It reflects the relative tax revenue performance of a state in relation to its Net State Domestic Product. A higher ratio indicates that the state collects a larger share of tax revenue relative to its economic output.

Tax-to-NSDP Ratio = (State Tax Revenue Excluding GST Compensation / NSDP at Current Prices) × 100

A separate compensation-adjusted ratio is also calculated for the post-GST period:

Compensation-adjusted Revenue-to-NSDP Ratio = [(State Tax Revenue + GST Compensation) / NSDP at Current Prices] × 100

The compensation-adjusted ratio is not interpreted as a pure tax-to-NSDP ratio because GST compensation is a fiscal transfer from the Union government rather than tax revenue directly collected by the state. It is used only to assess the extent to which compensation supported state revenue performance during the post-GST transition.

4.5 Compound Annual Growth Rate of Tax Revenue

The compound annual growth rate, or CAGR, is used to measure the average annual growth rate of tax revenue over a specific period. It helps compare the pace of revenue growth before and after GST implementation.

$$\text{CAGR} = \left[\left(\frac{Y_{\text{t}}}{Y_0}\right)^{\frac{1}{n}} - 1\right] \times 100$$

where Y_0 is the tax revenue in the initial year, Y_t is the tax revenue in the final year, and n is the number of years between the initial and final observations.

Alternatively, CAGR may be estimated using a semi-log trend equation:

$$\ln(Y_t) = \alpha + \beta_t + u_t$$

where Yt represents tax revenue, t represents time, α is the intercept, β is the estimated growth coefficient, and ut is the error term. The estimated growth rate is calculated as:

$$\text{CAGR} = (e^{\beta} - 1) \times 100$$

4.6 Tax Buoyancy

Tax buoyancy measures the responsiveness of tax revenue to changes in NSDP. It shows whether tax revenue grows faster or slower than the state economy.

Tax Buoyancy = Percentage Change in Tax Revenue / Percentage Change in NSDP

A buoyancy value greater than 1 indicates that tax revenue is growing faster than NSDP. A value below 1 indicates that tax revenue is growing more slowly than NSDP. A negative value indicates that tax revenue and NSDP are moving in opposite directions.

However, annual buoyancy values must be interpreted carefully. When NSDP growth is very low, negative, or affected by abnormal shocks, the buoyancy ratio can become extremely large or negative. This is particularly important for the post-GST period because the COVID-19 shock affected both tax revenue and NSDP growth. Therefore, very high or very low annual buoyancy values are treated as signs of volatility rather than as direct evidence of strong or weak tax performance.

4.7 Method of Analysis

The analysis is carried out using a descriptive pre-post comparative approach. First, the tax-to-NSDP ratio is calculated for each selected state in the pre-GST and post-GST periods. Second, the compound annual growth rate of tax revenue is computed to compare the pace of revenue growth before and after GST implementation. Third, annual tax buoyancy is calculated to examine the responsiveness of tax revenue to changes in NSDP.

For the post-GST period, the analysis is conducted under two conditions: excluding GST compensation and including GST compensation. The comparison excluding compensation reflects the tax revenue performance of states under the GST framework, while the compensation-adjusted comparison shows the role of Union government support in stabilising state revenues during the transition period. Since the study is based on descriptive comparison rather than formal causal estimation, the findings are interpreted as evidence of broad revenue patterns and state-wise variation rather than as strict causal estimates of GST's independent impact.

5. Results and Discussion

5.1 State-wise Tax-to-NSDP Ratio before and after GST

Figure 1 presents the average tax-to-NSDP ratio for 18 major Indian states across three series: the pre-GST period, the post-GST period excluding GST compensation, and the post-GST period including GST compensation. This comparison helps examine how state tax revenue performance changed after GST implementation and how far compensation support helped reduce revenue stress during the transition period.

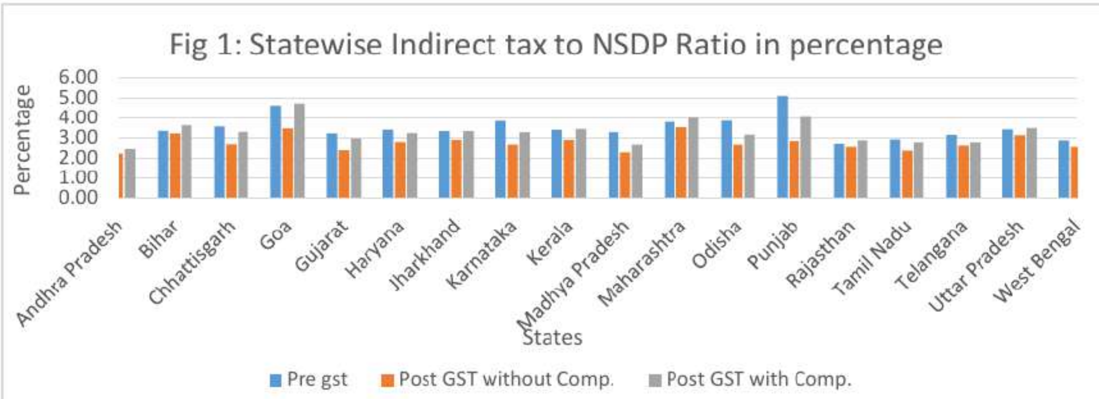

Figure 1: State-wise Tax-to-NSDP Ratio before and after GST

Source: Author's calculation based on data from the GST portal, Government of India, and the Reserve Bank of India's Handbook of Statistics on Indian States.

Note: Due to data limitations, the pre-GST average for Goa and Gujarat is based on available years only. For Telangana, the pre-GST average is based on the years available after the formation of the state. The compensation-adjusted ratio includes GST compensation and should be interpreted as a supplementary measure of fiscal support, not as pure tax revenue.

The figure shows that several states recorded higher tax-to-NSDP ratios in the pre-GST period than in the post-GST period when compensation is excluded. For example, Andhra Pradesh and Punjab reported pre-GST ratios of 5.04 percent and 5.10 percent, respectively. These ratios declined to 2.25 percent and 2.85 percent in the post-GST period without compensation. This indicates that, for some states, tax revenue performance weakened after the transition to GST when central compensation is not considered.

The compensation-adjusted series shows that GST compensation played an important stabilising role for many states. In states such as Goa and Maharashtra, the ratio improved noticeably after including compensation, reaching 4.73 percent and 4.01 percent, respectively. This suggests that compensation helped reduce the gap between pre-GST and post-GST revenue performance. However, the compensation-adjusted ratio should not be interpreted as a pure tax-to-NSDP ratio because GST compensation is a fiscal transfer from the Union government and not tax revenue directly collected by the state.

The figure also shows that the effect of compensation was not uniform across states. In some states, the difference between post-GST revenue excluding compensation and revenue including compensation is relatively small. For example, Tamil Nadu's ratio increased from 2.39 percent without compensation to 2.79 percent with compensation. This suggests that some states were less dependent on compensation support than others, possibly because of differences in economic structure, consumption base, administrative capacity and tax compliance.

Overall, Figure 1 indicates that the post-GST revenue experience varied across states. While compensation helped reduce revenue pressure in several cases, it did not completely restore the pre-GST position for all

ISSN: 3107-5088, Vol. 2, Issue-3 (July-Sep, 2026), pp. 176-187, www.cognitivethinking.in

states. Therefore, the figure should be interpreted as descriptive evidence of state-wise variation in tax revenue performance after GST implementation rather than as proof of GST's independent causal effect.

5.2 Tax Buoyancy before and after GST

Table 1 presents annual tax buoyancy values for 18 major Indian states before and after the implementation of GST. Tax buoyancy measures the responsiveness of tax revenue to changes in NSDP. A buoyancy value greater than one indicates that tax revenue is growing faster than NSDP, while a value below one indicates that tax revenue is growing more slowly than NSDP. However, annual buoyancy values must be interpreted carefully because they can become unstable when NSDP growth is very low, negative, or affected by abnormal shocks.

Table 1: Tax Buoyancy for Indian States before and after GST

S. No.	State	2013-14	2014-15	2015-16	2016-17	2019-20	2020-21	2021-22	2022-23	2023-24
1	Andhra Pradesh	0.48	-0.08	-3.22	1.20	-1.12	-1.62	1.28	0.99	1.55
2	Bihar	2.02	0.49	3.60	1.13	-0.04	-1.79	1.45	1.40	1.28
3	Chhattisgarh	0.51	0.84	4.46	0.61	-1.08	2.83	1.10	1.46	2.60
4	Goa	-2.33	0.17	0.84	0.71	-1.56	12.95	4.93	3.40	-
5	Gujarat	-	-	-	-	-0.44	-200.24	2.38	1.18	-
6	Haryana	-	-	-	-	0.06	6.60	1.29	2.01	0.61
7	Jharkhand	1.26	0.72	-0.37	1.65	0.56	0.74	0.73	1.80	0.87
8	Karnataka	0.79	1.31	0.65	0.58	-0.06	-36.88	1.61	1.61	1.26
9	Kerala	0.79	0.89	0.67	0.80	-3.57	0.35	1.15	2.23	0.42
10	Madhya Pradesh	0.33	0.98	0.62	0.62	-0.30	-3.52	1.36	1.52	2.41
11	Maharashtra	0.19	0.74	0.12	0.91	-0.38	6.47	1.65	1.53	1.54
12	Odisha	0.73	1.34	0.83	0.72	0.87	5.11	0.58	0.97	2.54
13	Punjab	1.14	1.13	-1.73	2.81	-1.19	7.00	2.11	1.82	1.67
14	Rajasthan	0.94	1.78	0.83	0.26	-0.71	-6.66	1.73	1.63	1.00
15	Tamil Nadu	0.28	0.64	0.69	0.47	-0.45	-9.57	1.93	1.15	1.23
16	Telangana	-	-	-	1.40	-0.24	8.31	1.32	1.72	0.49
17	Uttar Pradesh	0.08	1.29	0.63	0.68	-0.14	1.74	1.25	1.17	1.35
18	West Bengal	1.23	1.53	0.24	1.36	-0.18	1.74	1.32	1.39	0.67

Source: Author's calculation based on data from the GST portal, Government of India, and the Reserve Bank of India's Handbook of Statistics on Indian States.

Note: Extreme values in 2020-21 should be interpreted cautiously because pandemic-related contraction and recovery affected both tax revenue and NSDP growth.

The pre-GST period shows considerable variation in tax buoyancy across states. Some states, such as Bihar and Chhattisgarh, recorded high buoyancy in certain years, while others, such as Andhra Pradesh and Goa, recorded negative values in some years. This variation suggests that state tax revenue responsiveness differed significantly before GST, possibly due to differences in economic structure, tax administration, sectoral composition and the nature of taxable activity in each state. However, because the values fluctuate sharply from year to year, the results should be interpreted as indicators of revenue volatility rather than as permanent state-level characteristics.

The post-GST period also shows considerable fluctuation, especially during the COVID-19 years. For example, Goa records a very high buoyancy value of 12.95 in 2020-21, while Gujarat and Karnataka record very large negative values in the same period. These extreme figures should be interpreted cautiously. They may reflect abnormal movements in tax revenue and NSDP during the pandemic rather than a direct effect of GST alone. When the denominator of the buoyancy formula, that is the percentage change in NSDP, becomes very small or negative, the buoyancy value can become unusually large or negative.

After the pandemic-related disruption, buoyancy values appear to become more moderate for several states. In 2021-22, many states record positive buoyancy values, suggesting recovery in tax revenue responsiveness as economic activity normalised. Maharashtra, Karnataka, Tamil Nadu, Punjab and Rajasthan show buoyancy above one in 2021-22. Odisha records a buoyancy value below one in 2021-22, indicating weaker revenue responsiveness in that year.

The 2023-24 values suggest a more mixed but relatively stable pattern compared with the COVID-affected years. Andhra Pradesh, Bihar, Chhattisgarh, Madhya Pradesh, Maharashtra, Odisha, Punjab, Tamil Nadu and Uttar Pradesh record buoyancy above one, indicating that tax revenue grew faster than NSDP in these states. In contrast, states such as Kerala, Haryana, Telangana, Jharkhand and West Bengal record buoyancy below one, indicating weaker tax revenue responsiveness relative to economic growth.

Overall, Table 1 suggests that tax buoyancy remained uneven across states in both the pre-GST and post-GST periods. The post-GST period does not show a uniform pattern of improvement or decline across all states. Instead, the results indicate state-wise variation and short-term volatility, especially during the COVID-19 period. Therefore, the buoyancy results should be interpreted as descriptive evidence of changing revenue responsiveness, not as conclusive proof of GST's independent causal impact on state tax performance.

5.3 State-wise CAGR of Tax Revenue before and after GST

Figure 2 presents the compound annual growth rate of tax revenue for selected Indian states across three series: the pre-GST period, the post-GST period excluding GST compensation, and the post-GST period including GST compensation. CAGR is used to compare the average annual growth of tax revenue across the two periods and to assess whether the post-GST period shows stronger or weaker revenue growth relative to the pre-GST period.

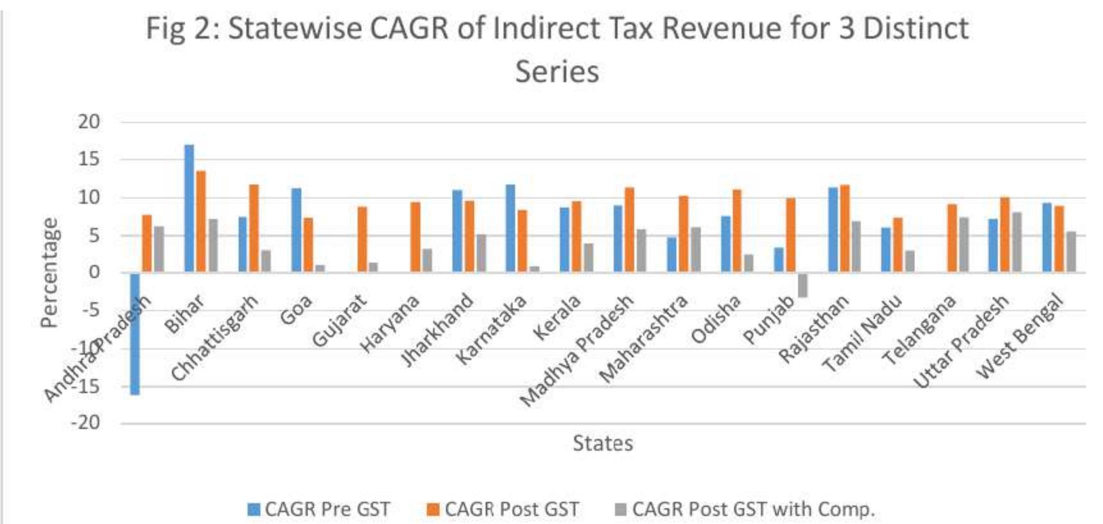

Figure 2: State-wise CAGR of Tax Revenue before and after GST

Source: Author's calculation based on data from the GST portal, Government of India, and the Reserve Bank of India's Handbook of Statistics on Indian States.
Note: CAGR is calculated separately for the pre-GST and post-GST periods. The post-GST series is shown both excluding and including GST compensation. The compensation-adjusted CAGR should be interpreted as a supplementary indicator of revenue support, not as pure tax revenue growth. The post-GST period includes COVID-19 years, so the results should be interpreted cautiously.

The figure shows that post-GST revenue growth varied considerably across states. Some states recorded stronger revenue growth during the post-GST period, while others experienced a moderation in growth. For example, Odisha and Madhya Pradesh show relatively stronger CAGR in the post-GST period compared with the pre-GST period, suggesting improved revenue performance during the post-GST years. Maharashtra also shows comparatively stable revenue growth, indicating that its large consumption base and diversified economy may have helped maintain revenue performance under the GST framework.

At the same time, some states show weaker or more volatile growth patterns after GST implementation. States such as Goa and Punjab appear to have faced revenue-growth challenges in the post-GST period, especially when compensation is considered separately. These variations suggest that the revenue experience under GST was not uniform across states. Differences in economic structure, consumption base, sectoral composition, tax compliance and administrative capacity may have influenced state-level outcomes.

The compensation-adjusted CAGR series shows that GST compensation provided support to states during the transition period, but it did not uniformly restore revenue growth to pre-GST levels. In some states, compensation helped reduce the revenue gap, while in others the compensation-adjusted growth remained weaker. This indicates that compensation acted as a stabilising mechanism, but it could not fully eliminate state-wise differences in revenue performance.

The interpretation of CAGR must also consider the effect of the COVID-19 period. Since the post-GST period includes 2020-21 and the subsequent recovery years, revenue growth was influenced not only by GST but also by pandemic-related disruption, economic contraction, reopening effects and changes in consumption activity. Therefore, lower or higher CAGR in the post-GST period should not be attributed entirely to GST.

Overall, Figure 2 suggests that the post-GST period produced mixed revenue-growth outcomes across states. Some states adapted relatively better, while others experienced slower or more volatile growth. The results should therefore be interpreted as descriptive evidence of state-wise variation in tax revenue growth after GST implementation rather than as conclusive evidence of GST's independent causal effect.

5.4 Role of GST Compensation in State Revenue Performance

GST compensation is an important part of the post-GST revenue assessment because it was designed to protect states from revenue shortfalls during the transition to the new tax regime. The compensation mechanism helped states manage the immediate fiscal adjustment created by the shift from independent state-level indirect taxes to the common GST framework. The comparison between revenue excluding compensation and revenue including compensation therefore provides useful information about the degree of support received by states.

The results show that compensation helped improve revenue indicators for several states, particularly where tax-to-NSDP ratios declined after GST implementation. However, the role of compensation was not identical across states. Some states experienced a noticeable improvement in the compensation-adjusted ratio, while others showed relatively small differences between the two post-GST series. This suggests that the dependence on compensation varied across states depending on their revenue structure, consumption base and administrative capacity.

It is important to emphasise that GST compensation is not tax revenue directly collected by states. It is a fiscal transfer from the Union government. Therefore, compensation-adjusted indicators should be interpreted as measures of revenue support rather than as measures of pure tax performance. This distinction is important for understanding the long-term implications of GST. Once the regular compensation period ended, states needed to rely more heavily on their own revenue capacity and on the stability of GST collections under the new framework.

6. Limitations of the Study

The study has certain limitations that should be considered while interpreting the findings. First, the analysis follows a descriptive pre-post comparative approach. It compares revenue indicators before and after GST implementation, but it does not isolate the independent causal effect of GST from other macroeconomic and state-specific factors. Therefore, the results should be interpreted as evidence of changes in state tax revenue patterns rather than as strict causal estimates of GST's impact.

Second, the post-GST period includes the COVID-19 years, especially 2020-21 and the subsequent recovery period. The pandemic affected both tax revenue and NSDP growth, leading to unusually high or negative tax buoyancy values for some states. Such extreme values may reflect temporary economic disruption, contraction and rebound effects rather than long-term revenue performance under GST.

Third, the study uses nominal tax revenue and NSDP at current prices. This is appropriate for comparing revenue with the nominal size of the state economy, but it does not separately account for inflation. As a result, part of the observed revenue growth may reflect price-level changes rather than real expansion in economic activity or improvement in tax performance.

Fourth, data availability differs across some states. For example, Goa and Gujarat have limited NSDP data for some years, while Telangana has a shorter pre-GST period because the state was formed in 2014. These data limitations affect the comparability of average values across states and should be kept in mind while interpreting state-wise results.

Fifth, GST compensation is treated separately from tax revenue because it is a fiscal transfer from the Union government and not tax revenue directly collected by the state. Therefore, compensation-adjusted indicators should not be interpreted as pure measures of tax performance. They are used only to understand the role of central support in stabilising state revenues during the GST transition.

Finally, the study does not include a full econometric model with state fixed effects, year fixed effects or control variables such as sectoral composition, inflation, compliance intensity, consumption base, or administrative capacity. Future research can extend this analysis by using panel-data methods and longer post-GST time series to provide stronger evidence on the long-term revenue implications of GST for Indian states.

7. Conclusion and Policy Suggestions

The present study examined changes in state tax revenue performance after the implementation of the Goods and Services Tax across 18 major Indian states. Using tax-to-NSDP ratio, compound annual growth rate of tax revenue and tax buoyancy, the study compared the pre-GST period, 2012-13 to 2016-17, with the post-GST period, 2018-19 to 2023-24. The analysis also considered post-GST revenue performance with and without GST compensation in order to understand the role of central support during the transition.

The findings suggest that the post-GST revenue experience has been mixed across states. Several states recorded a decline in tax-to-NSDP ratios when GST compensation is excluded, indicating that their own tax revenue performance weakened relative to the size of their economies. However, the compensation-adjusted results show that GST compensation played an important stabilising role for many states by reducing the gap between pre-GST and post-GST revenue performance. Since compensation is a fiscal transfer from the Union government and not tax revenue directly generated by states, the compensation-adjusted results should be interpreted as evidence of revenue support rather than as pure tax performance.

The CAGR results also show state-wise variation. Some states, such as Odisha, Madhya Pradesh and Maharashtra, show relatively stronger or more stable revenue growth in the post-GST period, while others display weaker or more volatile outcomes. This variation suggests that the revenue effects of GST cannot be understood through a single national pattern. Differences in economic structure, consumption base, sectoral composition, administrative capacity and compliance systems appear to have influenced state-level revenue performance.

The buoyancy results further indicate that tax revenue responsiveness remained uneven across states. The COVID-19 period created unusually high or negative buoyancy values in some cases, making year-wise interpretation difficult. Therefore, extreme buoyancy values should be treated as signs of short-term volatility rather than as direct evidence of long-term revenue strength or weakness. In the recovery years, several states recorded buoyancy values close to or above one, suggesting some stabilisation in revenue responsiveness after the initial disruption.

Overall, the study finds that GST has been associated with uneven changes in state tax revenue performance. The post-GST period does not show a uniform improvement or decline across all states. Instead, the results point to mixed outcomes, where some states adjusted relatively better while others remained more dependent on compensation support or experienced revenue volatility. Since the analysis is descriptive, the findings should not be interpreted as strict causal estimates of GST’s independent effect. A clearer assessment of GST’s long-term revenue implications will require more years of post-compensation data and stronger econometric analysis.

From a policy perspective, the results suggest that a uniform approach may not be sufficient for all states under the GST framework. States showing weaker tax-to-NSDP ratios or volatile buoyancy require closer monitoring and targeted administrative support. The Union and state governments should strengthen coordination in GST settlement, invoice matching, e-way bill verification and return compliance so that revenue leakages can be reduced. States with weaker revenue performance should also improve their own tax administration in non-GST revenue sources such as state excise, stamp duty, registration fees, motor vehicle tax and property-related taxes. This is important because GST compensation was a transitional support mechanism and cannot be treated as a permanent substitute for state revenue capacity. In addition, state-wise GST performance reviews should be carried out regularly to identify whether revenue weakness is due to structural economic factors, compliance gaps, sectoral dependence or temporary shocks. Such a targeted approach would help protect the fiscal stability of states while preserving the principles of cooperative fiscal federalism under GST.

The study also highlights the need for continued evaluation of GST after the end of the compensation period. As the regular compensation mechanism was transitional, future policy should focus on improving the structural revenue capacity of states rather than relying on temporary fiscal support. A more transparent and predictable framework for Centre-state fiscal coordination would help strengthen revenue stability and preserve the principles of fiscal federalism under the GST regime.

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