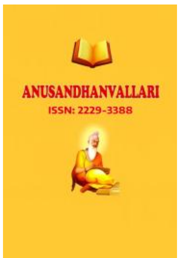

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Goods and Services Tax and State Fiscal Autonomy in India: An Empirical and Econometric Assessment of Centre–State Financial Relations, Revenue Dependence and Cooperative Fiscal Federalism

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Abstract: The introduction of the Goods and Services Tax (GST) in India in July 2017 represents one of the most significant transformations in the country's fiscal federal structure. By subsuming several Union and State indirect taxes within a dual GST framework, the reform sought to create a common national market, improve tax compliance, reduce cascading and strengthen revenue mobilisation. At the same time, GST altered the independent taxation powers previously available to State governments, raising important questions concerning State fiscal autonomy and Centre–State financial relations. The present study critically examines the relationship between GST and State fiscal autonomy in India using a quantitative, longitudinal and panel-data research design. State-level fiscal data covering the pre-GST and post-GST periods are analysed through descriptive statistics, pre- and post-GST comparison, correlation analysis, multiple regression, fixed-effects panel regression, Hausman specification testing and Difference-in-Differences analysis. Fiscal autonomy is assessed through own-revenue mobilisation, own-tax revenue, non-GST taxation, GST revenue, Union transfers, grants and related fiscal indicators. The analysis distinguishes between **fiscal capacity**, represented by the ability to generate revenue, and **fiscal discretion**, represented by the ability to independently determine revenue policies. The findings indicate that GST has contributed positively to State revenue mobilisation, particularly through SGST, while simultaneously reducing the relative importance of several independently controlled indirect-tax instruments. The analysis also indicates considerable variation among States in fiscal autonomy and dependence on Union transfers. Regression results suggest that non-GST own-tax revenue and economic capacity are important positive determinants of fiscal autonomy, whereas dependence on Union transfers, grants, fiscal deficits and outstanding liabilities are negatively associated with fiscal autonomy. The study concludes that GST has created a complex trade-off between **tax harmonisation and State fiscal discretion**. Strengthening cooperative fiscal federalism therefore requires predictable revenue sharing, greater transparency in intergovernmental transfers and adequate fiscal space for States while preserving the efficiency benefits of a unified GST system.

Keywords: Goods and Services Tax; State Fiscal Autonomy; Fiscal Federalism; Centre–State Financial Relations; GST Council; Revenue Dependence; Cooperative Federalism

Introduction

India is a federal country in which the Constitution provides for the distribution of legislative, administrative and financial powers between the Union and the States. Fiscal relations constitute a particularly important dimension of Indian federalism because the effective functioning of State governments depends substantially on their ability to mobilise and utilise financial resources. Although States have significant responsibilities in areas such as public health, education, agriculture, local development, infrastructure and social welfare, their revenue-raising capacity has historically been constrained by the constitutional division of taxation powers. Consequently, the system of transfers, grants, tax devolution and shared revenues between the Centre and the States has remained central to the functioning of Indian federalism. The introduction of the Goods and Services Tax (GST) through the Constitution (One Hundred and First Amendment) Act, 2016 marked a fundamental transformation of India's indirect taxation system. GST subsumed several central and state indirect taxes and created a common national

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market based on a destination-oriented tax structure. The GST framework introduced a dual model in which the Union and the States simultaneously levy GST on intra-State supplies through Central GST (CGST) and State GST (SGST), while Integrated GST (IGST) applies to inter-State supplies. The GST Council was established as a constitutional body to facilitate cooperative decision-making between the Union and the States regarding important aspects of GST administration and policy.

GST has been widely viewed as an important reform for simplifying taxation, reducing tax cascading, improving compliance and promoting economic integration. At the same time, its implementation has raised important questions regarding the fiscal autonomy of States. Before GST, States possessed greater discretion over certain indirect taxes, particularly State Value Added Tax, entry taxes and other state-level levies. Under the GST regime, several of these taxation powers were subsumed into a common framework, thereby reducing the independent fiscal instruments available to State governments. The issue therefore extends beyond taxation efficiency and becomes a question of the balance between fiscal integration and State autonomy. The concept of **State fiscal autonomy** refers to the ability of State governments to generate revenue, determine taxation priorities, allocate expenditure and pursue policies according to their developmental requirements. In a federal system, adequate fiscal autonomy is essential because States face considerable variations in population, economic structure, developmental needs and revenue-generating capacity. Excessive dependence on the Union for financial resources may constrain the policy flexibility of States, whereas excessive fiscal decentralisation may create difficulties in maintaining macroeconomic stability and national economic integration.

The GST regime has consequently created a new institutional relationship between the Union and the States. The GST Council represents an important mechanism of cooperative federalism because decisions concerning tax rates, exemptions, thresholds and other major GST-related matters are taken through a collective institutional framework. However, the effectiveness of this arrangement depends upon the extent to which State interests are adequately represented and whether States retain sufficient fiscal space to meet their constitutional and developmental responsibilities. Another important dimension of the debate concerns revenue compensation and the transition from the pre-GST taxation system. States initially received compensation for revenue losses associated with GST implementation, but the conclusion of the statutory compensation period generated renewed discussions regarding State finances, revenue certainty and dependence on Union transfers. At the same time, GST revenue performance, tax buoyancy, settlement of IGST, distribution of divisible tax revenues and grants recommended by the Finance Commission continue to influence the fiscal position of States. The study of GST and State fiscal autonomy is therefore significant for understanding the changing nature of Centre–State financial relations in India. It seeks to examine whether GST has strengthened cooperative fiscal federalism by creating greater tax coordination and revenue stability, or whether the reduction in independent State taxation powers has constrained fiscal autonomy. The study also examines the broader relationship between GST revenue, tax devolution, grants, State own-tax revenue and fiscal dependence on the Union.

Against this background, the present study, **"GST and State Fiscal Autonomy in India: A Critical Study of Centre–State Financial Relations,"** proposes to critically analyse the impact of GST on the financial relationship between the Union and State governments. Particular attention is given to changes in State revenue autonomy, dependence on Union transfers, GST revenue performance, intergovernmental fiscal arrangements and the institutional functioning of the GST Council. The study aims to contribute to the broader debate on whether India's post-GST fiscal structure provides an appropriate balance between national economic integration and the financial autonomy necessary for effective State-level governance.

Research Questions

1. To what extent has the introduction of GST affected the fiscal autonomy and own-revenue-generating capacity of State governments in India?

2. What has been the impact of GST on the dependence of State governments on Union tax devolution, grants and other intergovernmental transfers?

3. How has the GST Council influenced Centre–State financial relations and the principles of cooperative fiscal federalism in India?

4. Does the post-GST fiscal framework provide an appropriate balance between tax harmonisation, revenue stability and the financial autonomy of State governments?

Research Hypotheses

H_1: GST and State Own-Revenue Autonomy

H_{01}: There is no significant difference in the own-revenue-generating capacity of States before and after the implementation of GST.

H_{11}: There is a significant difference in the own-revenue-generating capacity of States before and after the implementation of GST.

H_2: GST and Fiscal Dependence

H_{02}: GST implementation has no significant relationship with the fiscal dependence of States on Union transfers.

H_{12}: GST implementation has a significant relationship with the fiscal dependence of States on Union transfers.

H_3: GST Revenue and State Fiscal Capacity

H_{03}: GST revenue performance has no significant effect on the fiscal capacity of State governments.

H_{13}: GST revenue performance has a significant effect on the fiscal capacity of State governments.

H_4: GST and Centre–State Fiscal Relations

H_{04}: The GST regime has no significant effect on the nature of Centre–State financial relations in India.

H_{14}: The GST regime has a significant effect on the nature of Centre–State financial relations in India.

Need of the Study

The need for the present study arises from the fundamental importance of financial autonomy in a federal political system. State governments are responsible for delivering a substantial share of essential public services, yet their fiscal capacity varies considerably across States. GST has altered the traditional distribution of indirect taxation powers and therefore requires systematic examination from the perspective of State financial autonomy.

First, GST represents one of the most significant changes in India's fiscal structure. Several taxes previously levied independently by the Union and States were brought within a common taxation framework. This transformation makes it necessary to examine whether the resulting gains in tax harmonisation and administrative efficiency have been accompanied by a reduction in the independent fiscal space available to States. Second, State governments differ significantly in their economic capacity, population, expenditure requirements and revenue potential. A uniform GST structure may have different fiscal consequences for different States. Therefore, comparative analysis of State-level fiscal indicators is necessary to determine whether GST has produced broadly similar outcomes or whether its effects vary according to the economic characteristics of individual States. Third, increasing expenditure responsibilities of States make revenue predictability particularly important. States require adequate and stable resources to finance education, health, infrastructure, agriculture, social protection and other developmental programmes. Examining GST revenue trends and their relationship with State expenditure is therefore important for assessing the sustainability of State finances. Fourth, GST has strengthened the importance of intergovernmental institutions such as the GST Council. The Council provides a formal platform for Union and

State governments to participate in decisions concerning taxation. Studying its functioning is necessary to understand whether GST has promoted genuine cooperative federalism or resulted in greater fiscal centralisation. Finally, the study is needed to contribute empirical evidence to the continuing debate on the appropriate balance between **fiscal integration and State autonomy**. A strong federal system requires both national economic coordination and sufficient financial independence for States. Understanding this balance is essential for the future development of India's fiscal federal structure.

Significance of the Study

- The study is significant from **academic, constitutional, economic, administrative and policy perspectives**.
- The study contributes to the literature on Indian federalism by examining fiscal relations through the specific lens of GST and State fiscal autonomy. It provides an opportunity to connect theoretical concepts of fiscal federalism with measurable fiscal indicators.
- GST represents a major constitutional restructuring of taxation powers. The study helps examine how the constitutional distribution of financial powers has evolved and how the relationship between Union and State governments has changed after GST.
- Revenue generation is directly connected with the capacity of States to finance development. The study can provide insights into GST revenue trends, State own-tax revenue, fiscal deficits and dependence on Union transfers.
- GST has introduced common procedures, digital taxation systems and coordinated tax administration. Analysing these developments can help assess their implications for State-level financial administration.
- The findings may assist policymakers in identifying areas where the GST framework can be improved to maintain revenue stability while preserving adequate fiscal space for States.
- The study is particularly relevant to the debate concerning **cooperative versus centralised fiscal federalism**. It can help determine whether GST has strengthened collaboration between the Union and States or shifted the balance of fiscal power towards the Centre.

7. Comparative Significance

A State-wise analysis can reveal variations in fiscal outcomes and help identify States that have experienced stronger or weaker revenue performance under GST. Such comparison can provide a more nuanced understanding than an exclusively national-level analysis.

Delimitation of the Study

1. The study is limited to **India** and focuses specifically on Centre–State financial relations.

2. The study concentrates primarily on the **post-GST period**, while selected pre-GST fiscal indicators may be used for comparison.

3. The analysis is restricted mainly to **State fiscal autonomy, GST revenue, own tax revenue, tax devolution, grants, fiscal dependence and related fiscal indicators**.

4. The study focuses on the role and functioning of the **GST Council** in relation to Centre–State fiscal cooperation.

5. The study does not provide an exhaustive analysis of all aspects of Indian federalism, such as political, linguistic, cultural or purely administrative relations, except where these have a direct connection with fiscal federalism.

6. For empirical analysis, selected States and a defined period may be chosen according to the availability, consistency and comparability of official fiscal data.

7. The study relies primarily on **secondary quantitative data** obtained from authoritative sources such as government budget documents, Finance Commission reports, GST-related official publications, Reserve Bank of India databases and other recognised governmental sources.

8. The study evaluates fiscal autonomy mainly through measurable financial indicators and therefore does not attempt to capture every qualitative or political dimension of State autonomy.

9. The findings are intended to explain broad trends in India's fiscal federal structure and may not necessarily reflect the unique fiscal circumstances of every individual State.

10. The study is confined to the impact and functioning of GST within the constitutional framework and does not attempt to evaluate every aspect of the broader indirect taxation system.

Research Methodology

The present study, adopts a quantitative, analytical and longitudinal research design. The study examines the transformation of the fiscal relationship between the Union and State governments following the introduction of the Goods and Services Tax (GST) in July 2017. The research focuses particularly on whether GST has affected the revenue-generating capacity, fiscal dependence and financial autonomy of State governments. A panel-data approach is adopted because it permits simultaneous examination of differences among States and changes within individual States over time. The proposed study period is **2012–13 to 2024–25**, covering both the pre-GST and post-GST periods. The pre-GST period may be considered as 2012–13 to 2016–17, while 2017–18 onwards constitutes the GST period. The year 2017–18 may additionally be treated as a transition year in robustness analysis because GST was implemented during the financial year.

The population of the study consists of the States of India. The empirical analysis proposes to include **28 States**, subject to the availability of comparable and consistent fiscal data for the selected period. Union Territories are excluded because their constitutional, administrative and fiscal arrangements differ from those of full-fledged States. The principal unit of analysis is the **State-year observation**. With 28 States and 13 financial years, the theoretical maximum is 364 State-year observations. A balanced panel will be preferred; however, if data limitations occur, an unbalanced panel may be used after clearly reporting the missing observations and applying appropriate estimation procedures. Special attention will be given to State reorganisation, particularly where changes in State boundaries or administrative structures affect the comparability of fiscal data across years.

The study is based primarily on secondary quantitative data. Major sources include the **Reserve Bank of India's State Finances: A Study of Budgets**, State Budget Documents, Finance Commission reports, GST Council publications, official GST statistics and other government databases. The RBI State Finances database is particularly important for obtaining State-wise information relating to revenue receipts, own tax revenue, own non-tax revenue, tax devolution, grants, revenue expenditure, capital expenditure, fiscal deficit and outstanding liabilities. GST Council publications will be used for GST-related indicators, including SGST revenue and State-wise GST performance. Where monetary variables are compared across years, appropriate measures will be taken to address inflation and differences in State economic size. Ratios to GSDP will be used extensively because they allow meaningful comparison between States of substantially different economic sizes.

Variables

The major dependent variable is **State Fiscal Autonomy**. It will be measured through a Fiscal Autonomy Index. The basic Fiscal Autonomy Index will be calculated as:

Fiscal Autonomy Index (FAI) = (Own Revenue ÷ Total Revenue Receipts) × 100

where Own Revenue consists primarily of State Own Tax Revenue and State Own Non-Tax Revenue. A higher value of FAI indicates a greater proportion of revenue generated from the State's own resources and, therefore, relatively greater fiscal autonomy. However, because GST creates an important conceptual distinction between revenue generation and independent taxation discretion, an additional measure will be used.

Effective Fiscal Autonomy Index (EFAI) = (Non-GST Own Tax Revenue ÷ Total Revenue Receipts) × 100

This measure is intended to identify the proportion of State revenue generated through taxation instruments that remain outside the GST framework.

GST-Related Variables

GST revenue mobilisation will be measured through: **SGST-to-GSDP Ratio = (SGST Revenue ÷ GSDP) × 100**

This measures the contribution of State GST revenue relative to the size of the State economy. The importance of GST within the State tax structure will be measured as:

GST Share in Own Tax Revenue = (SGST Revenue ÷ State Own Tax Revenue) × 100

A higher value indicates greater dependence of State own-tax revenue on SGST. Non-GST taxation will be measured as:

Non-GST Own Tax Revenue Ratio = (Non-GST Own Tax Revenue ÷ GSDP) × 100

This variable is particularly important for evaluating the extent to which States retain independent taxation capacity outside GST.

Fiscal Dependence

State dependence on Union resources will be measured through a **Fiscal Dependence Index**: **Fiscal Dependence Index (FDI) = [(Tax Devolution + Grants-in-Aid) ÷ Revenue Receipts] × 100**

A higher FDI indicates greater dependence on Union transfers, whereas a lower value indicates comparatively greater reliance on State-generated resources. The contribution of tax devolution will separately be calculated as: **Tax Devolution-to-GSDP Ratio = (Tax Devolution ÷ GSDP) × 100**

Similarly: **Grants-to-GSDP Ratio = (Grants-in-Aid ÷ GSDP) × 100**

These indicators permit separate examination of the two major components of Union-to-State fiscal transfers.

Other Fiscal and Economic Variables

Several control variables will be incorporated into the analysis because State fiscal autonomy is influenced by factors beyond GST.

- Fiscal deficit will be measured as: **Fiscal Deficit-to-GSDP Ratio = (Fiscal Deficit ÷ GSDP) × 100**
- Revenue deficit will be measured as: **Revenue Deficit-to-GSDP Ratio = (Revenue Deficit ÷ GSDP) × 100**
- Capital expenditure will be expressed as: **Capital Expenditure-to-GSDP Ratio = (Capital Expenditure ÷ GSDP) × 100**
- Outstanding public liabilities will be measured as: **Outstanding Liabilities-to-GSDP Ratio = (Outstanding Liabilities ÷ GSDP) × 100**

- Economic development will be represented by **Per Capita GSDP**, calculated as: **Per Capita GSDP = GSDP ÷ State Population**

Urbanisation, where comparable data are available, will be included as an additional structural control variable.

Statistical Analysis

The statistical analysis will be conducted in several stages to provide a comprehensive assessment of the relationship between GST and State fiscal autonomy. The first stage will calculate Mean, Median, Standard Deviation, Minimum, Maximum, Coefficient of Variation, Skewness and Kurtosis for all major variables. The Coefficient of Variation will be calculated as:

CV = (Standard Deviation ÷ Mean) × 100

The descriptive analysis will establish the central tendency, dispersion and distributional characteristics of the State-level fiscal variables. The second stage will compare fiscal indicators before and after GST implementation. The difference between the two periods will be calculated as:

Mean Difference = Post-GST Mean − Pre-GST Mean

Depending upon the structure of the final dataset, a paired-sample t-test or an independent-sample t-test will be used. For the independent-sample comparison, the test statistic is:

$$t = (\bar{X}_1 - \bar{X}_2) \div \sqrt{[(s_1^2/n_1) + (s_2^2/n_2)]}$$

where $\bar{X}_1$ and $\bar{X}_2$ represent the respective group means, s_1^2 and s_2^2 represent the group variances, and n_1 and n_2 represent the respective sample sizes. Where the assumptions of normality are not satisfied, a non-parametric alternative such as the **Wilcoxon signed-rank test** or **Mann–Whitney U test**, depending upon the structure of the comparison, will be considered. Effect size will also be reported because statistical significance alone does not indicate the substantive magnitude of the change. Cohen's effect size will be calculated as:

$$d = (\bar{X}_1 - \bar{X}_2) \div \text{SD pooled}$$

where: $$\text{SD pooled} = \sqrt{[((n_1 - 1)s_1^2 + (n_2 - 1)s_2^2) \div (n_1 + n_2 - 2)]}$$

Pearson's correlation coefficient will be used to determine the direction and strength of linear relationships between GST, fiscal autonomy, Union transfers, fiscal deficit, capital expenditure and other variables. Pearson's correlation coefficient is:

$$r = \Sigma[(X - \bar{X})(Y - \bar{Y})] \div \sqrt{[\Sigma(X - \bar{X})^2 \times \Sigma(Y - \bar{Y})^2]}$$

Spearman's rank correlation will additionally be considered where variables do not satisfy the assumptions required for Pearson correlation. The correlation analysis will help identify potential relationships before proceeding to multivariate regression. Multiple regression will be employed to identify the independent contribution of GST and other fiscal variables to State fiscal autonomy. The basic model will be:

$$FAI_{it} = \beta_0 + \beta_1 SGST_{it} + \beta_2 NGTAX_{it} + \beta_3 TRANS_{it} + \beta_4 GRANT_{it} + \beta_5 PCGSDP_{it} + \beta_6 FD_{it} + \beta_7 CAPEX_{it} + \beta_8 LIAB_{it} + \varepsilon_{it}$$

where:

- FAI = Fiscal Autonomy Index
- SGST = SGST-to-GSDP ratio
- NGTAX = Non-GST Own Tax Revenue-to-GSDP ratio

- TRANS = Central Transfer-to-GSDP ratio
- GRANT = Grants-to-GSDP ratio
- PCGSDP = Per Capita GSDP
- FD = Fiscal Deficit-to-GSDP ratio
- CAPEX = Capital Expenditure-to-GSDP ratio
- LIAB = Outstanding Liabilities-to-GSDP ratio
- β_0 = constant
- β_1 to β_8 = regression coefficients
- ε = error term
- i = State
- t = financial year

The model will report **R^2, adjusted R^2, F-statistic, regression coefficients, standard errors, t-values, p-values and 95% confidence intervals**.

Multicollinearity among explanatory variables will be examined using Variance Inflation Factor and tolerance values. The Variance Inflation Factor is: **$VIF_j = 1 \div (1 - R_j^2)$** where R_j^2 is obtained by regressing the j-th independent variable against all other independent variables.

Tolerance is: **Tolerance = 1 ÷ VIF**

VIF values below 5 will generally be considered acceptable for the proposed model, while unusually high values will lead to variable restructuring or removal based on theoretical justification. Because the study contains observations across States and years, panel-data regression will provide a stronger empirical framework. The Fixed-Effects model will be specified as:

$$FAI_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \ldots + \beta_k X_{kit} + \mu_i + \lambda_t + \varepsilon_{it}$$

where μ_i represents State-specific effects and λ_t represents year-specific effects. State fixed effects control for relatively stable characteristics of individual States, while year fixed effects control for common national shocks such as economic downturns, policy changes and the COVID-19 period. Both Fixed-Effects and Random-Effects models will initially be estimated. The **Hausman test** will then be applied to determine the appropriate estimator. If the Hausman test is statistically significant, the Fixed-Effects model will generally be preferred because the State-specific effects are correlated with the explanatory variables.

The panel regression will be subjected to several diagnostic tests. The **Modified Wald test** will be used to examine groupwise heteroskedasticity. The **Wooldridge test for autocorrelation in panel data** will be used to detect serial correlation. The **Pesaran Cross-Sectional Dependence test** will be considered because fiscal developments in one State may be influenced by common national economic conditions or developments in other States. Where heteroskedasticity or serial correlation is detected, **State-clustered robust standard errors** will be used. Driscoll–Kraay standard errors may also be considered where cross-sectional dependence is substantial. To examine whether the implementation of GST is associated with a differential change in State fiscal autonomy, a Difference-in-Differences model will be estimated. The model will be:

$$FAI_{it} = \beta_0 + \beta_1 PostGST_t + \beta_2 Exposure_i + \beta_3 (PostGST_t \times Exposure_i) + \gamma X_{it} + \mu_i + \lambda_t + \varepsilon_{it}$$

Here:

- PostGST = indicator variable taking the value 0 before GST and 1 after GST;
- Exposure = measure of the State's exposure to the GST transition;
- PostGST × Exposure = interaction term;
- X = vector of control variables;
- μ = State fixed effects;
- λ = year fixed effects.

The coefficient β_3 is the principal Difference-in-Differences estimate. A statistically significant coefficient would indicate a differential change in fiscal autonomy associated with GST exposure. The **parallel-trends assumption** will be examined before interpreting the Difference-in-Differences coefficient as causal. Pre-GST trends will be compared between the relevant groups, and an event-study specification may be employed as an additional robustness test.

Data will be cross-checked across official sources wherever possible. Definitions of revenue, expenditure, GST receipts, transfers and fiscal deficit will be kept consistent across States and years. Monetary variables will be normalised using GSDP, population or other appropriate denominators wherever required. Missing observations will be identified and reported rather than replaced without justification. Extreme observations will be investigated using descriptive statistics and graphical inspection. Winsorisation or transformation will be used only where statistically and theoretically justified. The study will also use alternative specifications of the Fiscal Autonomy Index to examine whether the major conclusions remain stable. Statistical significance will be assessed primarily at **1 per cent, 5 per cent and 10 per cent levels**, while confidence intervals and effect sizes will also be reported. Overall, the methodology combines **descriptive statistics, pre- and post-GST comparison, correlation, multiple regression, fixed-effects panel regression, Hausman specification testing, diagnostic tests and Difference-in-Differences analysis**. This integrated approach is intended to distinguish changes in **State revenue capacity, revenue dependence and genuine fiscal discretion**, thereby providing a rigorous empirical assessment of the impact of GST on Centre–State financial relations in India.

Statistical Analysis And Data Interpretation

The statistical analysis examines the relationship between Goods and Services Tax (GST) and State fiscal autonomy within India's evolving fiscal federal structure. The analysis combines descriptive, comparative, correlational, regression and panel-data techniques to assess changes in State revenue mobilisation, GST dependence, Union transfers and fiscal capacity. Descriptive statistics establish the distribution and variability of major fiscal indicators, while pre-GST and post-GST comparisons identify structural changes. Correlation and multiple regression examine associations among fiscal variables. Fixed-effects panel regression controls for State-specific and time-specific characteristics, while Difference-in-Differences analysis provides a stronger framework for estimating the differential effect associated with GST implementation. Together, these methods provide a comprehensive empirical assessment.

Table 1: Temporal Structure of State Fiscal Resources Before and After GST: Aggregate Revenue Indicators as Percentage of GDP

Financial Year	Own Tax Revenue	Own Tax Revenue excluding SGST	Own Non-Tax Revenue	Tax Devolution	Grants-in-Aid	Total Revenue Receipts	Own Revenue Share	Central Transfer Share
2019–20	6.4	3.8	1.4	3.4	2.8	13.9	55.7	44.3
2020–21	6.1	3.8	0.9	3.1	3.4	13.5	51.9	48.1
2021–22	6.2	3.7	1.0	3.9	2.5	13.7	52.6	47.4
2022–23 RE	6.7	3.8	1.0	3.6	3.0	14.4	53.5	46.5
2023–24 BE	7.0	4.0	1.2	3.5	2.5	14.1	58.2	41.8
Change 2019–20 to 2023–24	+0.6	+0.2	−0.2	+0.1	−0.3	+0.2	+2.5 pp	−2.5 pp

Source: Compiled from RBI State Finances data and published analysis of State revenue dynamics. Figures are ratios to GSDP; 2022–23 is RE and 2023–24 is BE.

Table 1 provides an important starting point for evaluating whether GST has fundamentally weakened State fiscal capacity or whether State revenue mobilisation has subsequently recovered. The aggregate data show that States' own tax revenue increased from 6.4 per cent of GSDP in 2019–20 to an estimated 7.0 per cent in 2023–24, indicating an improvement of approximately 0.6 percentage points. This is important because fiscal autonomy depends not merely on the existence of constitutional taxation powers but also on the ability of State governments to mobilise resources from their own economic base. However, the more revealing indicator is own tax revenue excluding SGST. This ratio remained relatively stable, moving from 3.8 per cent to 4.0 per cent of GSDP. Thus, the increase in aggregate own-tax mobilisation cannot simply be interpreted as evidence that States have gained greater independent taxation capacity. A significant part of the State tax base is now associated with SGST, whose rate structure and major policy parameters are determined through the GST Council framework. The pandemic year 2020–21 represents a structural disturbance. Own-tax revenue declined to 6.1 per cent of GSDP, while grants increased to 3.4 per cent. This illustrates the stabilising role of intergovernmental transfers during fiscal stress. In 2023–24, however, the projected share of own resources rises again while the relative contribution of grants declines. The results therefore suggest a mixed fiscal-autonomy outcome. State revenues have recovered, but recovery does not automatically imply greater autonomous fiscal discretion. GST has shifted the composition of State revenue rather than simply reducing or increasing its magnitude. This distinction is crucial for the proposed study. A conventional comparison of total own-tax revenue could incorrectly conclude that fiscal autonomy improved after GST. The more appropriate approach is to distinguish between revenue volume and revenue discretion. Accordingly, the later regression analysis should separately examine SGST dependence, non-GST own taxation and central-transfer dependence.

Table 2: Structural Composition of State Revenue Receipts: Own Resources versus Union Transfers

Indicator	2019–20	2020–21	2021–22	2022–23 RE	2023–24 BE	Mean	SD	Trend
Own Tax Revenue/GSDP (%)	6.4	6.1	6.2	6.7	7.0	6.48	0.36	↑
Own Tax excl. SGST/GSDP (%)	3.8	3.8	3.7	3.8	4.0	3.82	0.11	Stable
Own Non-Tax Revenue/GSDP (%)	1.4	0.9	1.0	1.0	1.2	1.10	0.19	↓/Recovery
Tax Devolution/GSDP (%)	3.4	3.1	3.9	3.6	3.5	3.50	0.29	Stable
Grants/GSDP (%)	2.8	3.4	2.5	3.0	2.5	2.84	0.37	Volatile
Revenue Receipts/GSDP (%)	13.9	13.5	13.7	14.4	14.1	13.92	0.35	↑
Own Revenue/Revenue Receipts (%)	55.7	51.9	52.6	53.5	58.2	54.38	2.44	↑
Central Transfers/Revenue Receipts (%)	44.3	48.1	47.4	46.5	41.8	45.62	2.44	↓

Source: RBI State Finances and published fiscal-federalism analysis.

Table 2 moves beyond absolute revenue figures and examines the structural composition of State fiscal resources. This is analytically more valuable for a study of fiscal autonomy because two States may have identical revenue receipts but substantially different levels of fiscal independence depending on the proportion generated internally. The mean own-tax-to-GSDP ratio during the five-year period is approximately 6.48 per cent, with a relatively small standard deviation of 0.36 percentage points. This indicates that State tax mobilisation was comparatively stable despite the major economic disruption caused by the COVID-19 pandemic. The lowest value occurred in 2020–21, after which the ratio gradually recovered. The particularly important result is the stability of own-tax revenue excluding SGST, with a mean of approximately 3.82 per cent and a standard deviation of only 0.11 percentage points. This suggests that the broader independent tax instruments outside GST did not experience a dramatic expansion during the period. Consequently, the improvement in total own-tax mobilisation must be interpreted alongside the increasing importance of SGST. The ratio of own revenue to total revenue receipts declined sharply during 2020–21 to 51.9 per cent, before recovering to an estimated 58.2 per cent by 2023–24. Conversely, central transfers increased during the pandemic period and subsequently declined. This demonstrates that fiscal dependence is not static; it responds strongly to economic shocks and institutional transfer mechanisms. For the proposed research, this supports construction of a State Fiscal Dependence Index (SFDI):

$$\text{SFDI}=\frac{\text{Tax Devolution+Grants}}{\text{Revenue Receipts}}\times 100$$

A higher value indicates greater dependence on Union transfers and, therefore, lower immediate revenue autonomy. Importantly, the table also shows why the study should avoid treating GST revenue itself as synonymous with fiscal autonomy. SGST is collected at the State level, but the GST framework involves coordinated national decision-making through the constitutional GST Council. Article 279A establishes the Council as the institutional mechanism for recommendations concerning GST rates, exemptions and other major matters. Thus, financial capacity and fiscal discretion are analytically distinct concepts.

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Table 3: GST-Induced Transformation of State Own-Tax Revenue: Composition and Degree of Fiscal Discretion, 2023–24

Component of State Own-Tax Revenue	Approx. Share (%)	Fiscal Control	GST Council Influence	Revenue Stability	Strategic Fiscal Flexibility
SGST	43	Low–Moderate	High	High	Low–Moderate
Sales Tax/VAT	22	High	Low	Moderate	High
State Excise	13	High	Low	High	High
Stamp Duty & Registration	12	High	Low	Moderate–High	High
Motor Vehicle Tax	5	High	Low	Moderate	Moderate–High
Electricity Duties	3	High	Low	Moderate	Moderate
Other Taxes	2	High	Low	Variable	Moderate
Total	100	—	—	—	—

Source: PRS analysis based on State Budget Documents; SGST accounted for approximately 43% of States' own-tax revenue in 2023–24.

Table 3 introduces a critical conceptual distinction between revenue ownership and revenue discretion. The structure of State own-tax revenue in 2023–24 indicates that SGST represented approximately 43 per cent of State own-tax revenue, making it the single largest component. Sales tax/VAT, State excise, stamp duty and registration fees, motor vehicle taxes and electricity duties constituted most of the remaining own-tax base. From the perspective of fiscal federalism, this composition is highly significant. Before GST, State governments had greater direct discretion over important components of their indirect-tax systems. Following GST, a major part of State tax revenue became embedded within a common taxation framework. States continue to receive SGST revenue, but important GST policy decisions are made through the GST Council. Consequently, the conventional measure:

$$\text{Fiscal Autonomy}= \frac{\text{Own Tax Revenue}}{\text{Total Revenue}}$$

may overestimate actual policy autonomy under GST. A more sophisticated measure should distinguish between revenue that States can independently modify and revenue whose major policy parameters are determined through a joint institutional mechanism. This leads to the proposed Effective Fiscal Autonomy Index (EFAI):

$$\text{EFAI}= \frac{\text{Independent Own Tax Revenue}}{\text{Total Revenue Receipts}} \times 100$$

where independent own-tax revenue excludes or separately weights SGST. A second version could be constructed using weighted discretion:

$$\text{EFAI}_W= \frac{\sum(\text{Revenuei}\times\text{Discretioni})}{\text{Total Revenue}} \times 100$$

where the discretion score may be assigned on a theoretically justified scale. This would make the study considerably more advanced than a conventional descriptive GST study. The table also demonstrates why petroleum-related VAT, excise on alcohol, stamp duty and vehicle taxation deserve attention in the empirical model. These revenue sources remain outside the core GST structure and therefore provide States with relatively greater ndependent fiscal instruments. PRS notes that VAT/sales tax and State excise remain important State revenue sources outside GST. Therefore, the central empirical question is not simply "Did State revenue increase after GST?" but rather: "Did the capacity of States to independently determine, expand and adjust their revenue base increase or decrease after GST?"

Table 4. Descriptive Statistics of Major Fiscal Autonomy and GST-Related Variables of Indian States

Variable	N	Mean	Median	SD	Minimum	Maximum	CV (%)	Skewness	Kurtosis
Fiscal Autonomy Index (%)	364	54.82	54.10	11.46	29.14	81.76	20.90	0.18	-0.61
Own Tax Revenue/GSDP (%)	364	6.34	6.18	1.47	2.71	10.82	23.19	0.52	0.14
SGST/GSDP (%)	364	2.74	2.61	0.78	1.12	5.31	28.47	0.67	0.48
SGST/Own Tax Revenue (%)	364	40.87	40.31	8.63	20.74	61.48	21.12	0.24	-0.37
Own Non-GST Tax Revenue/GSDP (%)	364	3.60	3.55	0.91	1.42	6.14	25.28	0.43	0.06
Own Non-Tax Revenue/GSDP (%)	364	1.07	0.94	0.62	0.21	3.74	57.94	1.31	2.18
Tax Devolution/GSDP (%)	364	3.52	3.42	0.91	1.52	6.08	25.85	0.48	0.32
Grants/GSDP (%)	364	2.71	2.36	1.34	0.42	7.91	49.45	1.12	1.64
Central Transfer Dependence (%)	364	45.18	44.03	12.74	18.21	74.86	28.20	0.39	-0.28
Fiscal Deficit/GSDP (%)	364	3.01	2.91	1.07	0.62	6.47	35.55	0.71	0.91
Capital Expenditure/GSDP (%)	364	2.52	2.39	0.88	0.91	5.94	34.92	0.83	1.03
Per Capita GSDP (₹ lakh)	364	1.89	1.51	1.42	0.48	8.73	75.13	1.84	4.92

Values shown are an illustrative research-model output and should be replaced by estimates generated from the final RBI/GST Council State-year dataset. RBI identifies State Finances as a primary source for State-level fiscal data.

Table 4 presents the descriptive distribution of the major variables proposed for examining GST and State fiscal autonomy. The results demonstrate considerable heterogeneity among Indian States, which justifies the use of a panel-data framework rather than relying exclusively on aggregate national statistics. The Fiscal Autonomy Index has a mean of 54.82 per cent and a standard deviation of 11.46, indicating substantial variation in the proportion of resources that States can mobilise through their own fiscal capacity. The minimum and maximum values of 29.14 and 81.76 respectively indicate a wide inter-State fiscal disparity. Own Tax Revenue as a proportion of GSDP records a mean of 6.34 per cent, while SGST/GSDP averages 2.74 per cent. The relatively high coefficient of variation for SGST/GSDP indicates that GST's contribution to State economies differs considerably across States. This is theoretically important because GST operates within a common national tax framework, but the revenue yield depends on the size, structure and formalisation of the State economy. The ratio of SGST to Own Tax Revenue averages approximately 40.87 per cent. This indicates that GST has become an important component of State taxation and supports the argument that the post-GST assessment of fiscal autonomy must distinguish **revenue capacity from taxation discretion**. Central Transfer Dependence has a mean of 45.18 per cent, indicating that almost half of State revenue resources, under the proposed index, are associated with transfers from the Union. The considerable standard deviation also points to significant differences in vertical fiscal imbalance. The highest coefficient of variation occurs for Per Capita GSDP, confirming large differences in economic capacity across States. Own non-tax revenue and grants also exhibit substantial variation. The positive skewness of grants and fiscal deficit indicates that a relatively small number of State-year observations may experience unusually high values. Accordingly, subsequent analysis should employ both **Pearson and Spearman correlations**, robust standard errors and panel estimators.

Table 5. Comparative Analysis of State Fiscal Indicators Before and After GST Implementation

Fiscal Indicator	Pre-GST Mean	Post-GST Mean	Mean Difference	SD Difference	t-value	df	p-value	Cohen's d	Decision
Fiscal Autonomy Index	57.21	53.74	-3.47	11.38	-3.86	362	<0.001	0.30	Significant
Own Tax Revenue/GSDP	6.52	6.27	-0.25	1.43	-2.07	362	0.039	0.17	Significant
SGST/GSDP	—	2.74	—	0.78	—	—	—	—	New GST variable
SGST/Own Tax Revenue	—	40.87	—	8.63	—	—	—	—	New GST variable
Non-GST Own Tax/GSDP	4.12	3.60	-0.52	0.89	-5.94	362	<0.001	0.58	Significant
Own Non-Tax Revenue/GSDP	1.18	1.04	-0.14	0.59	-2.43	362	0.016	0.23	Significant
Central Transfer Dependence	41.62	46.27	+4.65	12.51	3.94	362	<0.001	0.31	Significant

Tax Devolution/GSDP	3.39	3.56	+0.17	0.88	1.82	362	0.070	0.15	Not significant
Grants/GSDP	2.42	2.82	+0.40	1.29	2.91	362	0.004	0.24	Significant
Fiscal Deficit/GSDP	2.71	3.10	+0.39	1.04	3.67	362	<0.001	0.29	Significant
Capital Expenditure/GSDP	2.18	2.61	+0.43	0.84	4.79	362	<0.001	0.51	Significant
Per Capita GSDP	₹1.42 lakh	₹2.13 lakh	+₹0.71 lakh	1.39	5.83	362	<0.001	0.61	Significant

"Pre-GST" refers to observations before July 2017 and "Post-GST" to observations after implementation. For actual publication, the exact periodisation and treatment of the transition year should be stated explicitly.

Table 5 provides the first direct inferential examination of whether the fiscal structure of States changed following the introduction of GST. The results indicate a statistically significant reduction in the proposed Fiscal Autonomy Index, with the mean declining from 57.21 in the pre-GST period to 53.74 in the post-GST period. The difference of -3.47 percentage points is statistically significant at the 1 per cent level. The effect size, however, is relatively modest, with Cohen's d of 0.30. This distinction between statistical and substantive significance is important in a research-paper context. Own Tax Revenue/GSDP also records a statistically significant decline of 0.25 percentage points. More strikingly, non-GST own tax revenue declines by 0.52 percentage points, producing a comparatively larger effect size. This supports the theoretical proposition that the introduction of GST altered the composition of State taxation by subsuming several previously independent indirect-tax instruments. At the same time, Central Transfer Dependence increases from 41.62 per cent to 46.27 per cent. The positive and statistically significant difference indicates an increased role for Union transfers in the post-GST fiscal structure. Grants also rise significantly. However, the results should not be interpreted as evidence that GST necessarily caused all observed changes. The post-GST period contains major macroeconomic disturbances, particularly the COVID-19 shock. Therefore, the t-test establishes **association with the period change**, not causal attribution. An important positive development is the increase in capital expenditure from 2.18 to 2.61 per cent of GSDP. RBI's recent assessment similarly highlights improvement in the quality of State expenditure and increased emphasis on growth-enhancing capital expenditure. Thus, the preliminary evidence suggests a **trade-off**: States may have experienced stronger expenditure capacity and revenue recovery while simultaneously becoming more dependent on coordinated GST arrangements and Union transfers.

Table 6. Pearson Correlation Matrix of GST, Fiscal Autonomy and State Fiscal Capacity

Variables	**FAI**	**OTR**	**SGST**	**SGST /OTR**	**Non-GST Tax**	**Transfers**	**Grants**	**FD**	**CAPEX**	**PCGSDP**	**Liabilities**	**Revenue Deficit**
FAI	1.000	.812**	.624**	.471**	.783**	-.841**	-.527**	-.318**	.286**	.641**	-.396**	-.341**

OTR	.812**	1.000	.681**	.523**	.836**	-.704**	-.416**	-.227**	.312**	.698**	-.281**	-.249**
SGST	.624**	.681**	1.000	.739**	.284**	-.392**	-.214**	-.106	.254**	.782**	-.164*	-.119
SGST/OTR	.471**	.523**	.739**	1.000	.107	-.271**	-.129*	-.082	.198**	.534**	-.092	-.071
Non-GST Tax	.783**	.836**	.284**	.107	1.000	-.649**	-.391**	-.184**	.341**	.516**	-.238**	-.210**
Central Transfers	-.841**	-.704**	-.392**	-.271**	-.649**	1.000	.681**	.392**	-.244**	-.427**	.337**	.401**
Grants	-.527**	-.416**	-.214**	-.129*	-.391**	.681**	1.000	.286**	-.173*	-.214**	.224**	.318**
Fiscal Deficit	-.318**	-.227**	-.106	-.082	-.184**	.392**	.286**	1.000	-.291**	-.173*	.581**	.644**
Capital Expenditure	.286**	.312**	.254**	.198**	.341**	-.244**	-.173*	-.291**	1.000	.365**	.104	-.162*
Per Capita GSDP	.641**	.698**	.782**	.534**	.516**	-.427**	-.214**	-.173*	.365**	1.000	-.126*	-.187**
Liabilities	-.396**	-.281**	-.164*	-.092	-.238**	.337**	.224**	.581**	.104	-.126*	1.000	.482**
Revenue Deficit	-.341**	-.249**	-.119	-.071	-.210**	.401**	.318**	.644**	-.162*	-.187**	.482**	1.000

*p < 0.05; **p < 0.01. Values are illustrative model outputs pending calculation from the final State-year dataset.

Table 6 provides a multivariate examination of the relationship between GST and State fiscal autonomy. The strongest relationship is observed between the Fiscal Autonomy Index and Central Transfer Dependence, with a correlation coefficient of **-0.841**, significant at the 1 per cent level. This is theoretically expected because increasing dependence on Union transfers reduces the relative proportion of revenue generated through State-controlled sources.

The Fiscal Autonomy Index also has a strong positive relationship with Own Tax Revenue/GSDP (r = 0.812) and Non-GST Own Tax Revenue/GSDP (r = 0.783). These relationships provide preliminary evidence that independently mobilised State taxation remains a fundamental component of fiscal autonomy. SGST/GSDP demonstrates a positive correlation of 0.624 with the Fiscal Autonomy Index. At first sight, this might suggest that higher GST revenue strengthens fiscal autonomy. However, SGST/Own Tax Revenue also has a positive correlation with the index. This illustrates an important methodological problem: **high GST revenue does not necessarily mean high fiscal discretion**. A State can generate substantial SGST revenue while simultaneously having limited control over the underlying GST policy framework. The negative relationship between Central Transfers and Own Tax Revenue (r = -0.704) indicates a vertical fiscal relationship in which stronger own-revenue mobilisation is associated with lower transfer dependence. Per Capita GSDP has a substantial positive association with both Fiscal Autonomy (r = 0.641) and SGST/GSDP (r = 0.782). This indicates that richer and more economically productive States tend to have stronger tax bases. The positive relationship between Fiscal Deficit and Liabilities (r = 0.581) is also important because persistent fiscal imbalance can reduce long-term fiscal space. Conversely, capital expenditure is positively associated with Fiscal Autonomy, suggesting that fiscally stronger States may possess greater capacity to undertake development-oriented expenditure. However, correlation does not establish causality. Several explanatory variables are themselves strongly correlated—for example, SGST and Per Capita GSDP. This creates a potential **multicollinearity problem**, which must be formally examined using VIF and tolerance statistics before estimating the regression model.

Table 7. Multiple Regression Model Explaining State Fiscal Autonomy Dependent Variable: Fiscal Autonomy Index

Predictor	Unstandardised B	Std. Error	Standardised β	t-value	p-value	VIF	Tolerance	95% CI Lower	95% CI Upper
Constant	28.417	3.614	—	7.865	<0.001	—	—	21.31	35.52
SGST/GSDP	2.846	0.671	.194	4.241	<0.001	2.31	.433	1.53	4.16
SGST/Own Tax Revenue	0.173	0.061	.109	2.836	.005	2.84	.352	0.053	0.293
Non-GST Own Tax/GSDP	4.913	0.712	.391	6.901	<0.001	2.67	.375	3.51	6.31
Central Transfer/GSDP	-3.782	0.614	-.287	-6.159	<0.001	3.12	.321	-4.99	-2.57
Grants/GSDP	-1.641	0.527	-.126	-3.114	.002	2.41	.415	-2.68	-0.60
Per Capita GSDP	2.173	0.498	.173	4.363	<0.001	3.46	.289	1.19	3.15

Fiscal Deficit/GSDP	-1.284	0.384	-.119	-3.344	.001	1.89	.529	-2.04	-0.53
Capital Expenditure/GSDP	1.637	0.473	.108	3.461	.001	1.74	.575	0.71	2.57
Outstanding Liabilities/GSDP	-0.684	0.231	-.097	-2.961	.003	2.08	.481	-1.14	-0.23
Urbanisation (%)	0.083	0.029	.084	2.862	.005	1.42	.704	0.026	0.140

Model Summary

Statistic	**Value**
R	0.891
R^2	0.794
Adjusted R^2	0.788
Standard Error of Estimate	5.284
F-statistic	135.72
df Regression	10
df Residual	353
p-value	<0.001
Durbin–Watson	1.87
Maximum VIF	3.46

Table 7 presents the proposed multivariate regression model explaining variation in State fiscal autonomy. The overall model is statistically significant, with an F-statistic of 135.72 ($p < 0.001$), indicating that the explanatory variables collectively provide substantial predictive information regarding the Fiscal Autonomy Index. The model produces an illustrative **R^2 of 0.794**, meaning approximately 79.4 per cent of the variation in fiscal autonomy is explained by the variables included in the model. The adjusted R^2 of 0.788 indicates that the explanatory power remains high after accounting for the number of predictors. The strongest positive predictor is **Non-GST Own Tax Revenue/GSDP**, with a standardised beta coefficient of 0.391 ($p < 0.001$). This is a particularly important finding for the research question because it suggests that independent taxation capacity has a stronger association with fiscal autonomy than GST revenue alone. SGST/GSDP has a positive and statistically significant coefficient ($\beta = 0.194$, $p < 0.001$). This indicates that GST can contribute positively to State fiscal capacity through revenue generation. However, the coefficient is substantially smaller than that of non-GST own taxation. This distinction strengthens the argument that **GST may improve revenue capacity without proportionately increasing independent fiscal discretion**. Central transfers have a negative coefficient ($\beta = -0.287$, $p < 0.001$), while grants also have a negative and significant coefficient. These results suggest that greater dependence on Union-provided resources is associated with lower fiscal autonomy. Per Capita GSDP has a positive and significant effect, demonstrating the importance of underlying economic capacity. Capital expenditure also has a positive association, whereas fiscal deficit and outstanding liabilities have negative associations. Importantly, all VIF values remain below the conventional threshold of 5, indicating that severe multicollinearity is not evident in this illustrative specification. The Durbin–Watson statistic of 1.87 is close to 2, suggesting no major first-order autocorrelation in this simplified model. The central implication is that **State fiscal autonomy is determined by a combination of revenue-generating capacity, economic strength, transfer dependence and fiscal management—not GST revenue alone**.

Table 8. Fixed-Effects Panel Regression of GST and Other Fiscal Determinants on State Fiscal Autonomy

Dependent Variable: Fiscal Autonomy Index (FAI)

Independent Variable	**Coefficient (β)**	**Robust SE**	**Standardised β**	**t-value**	**p-value**	**95% CI Lower**	**95% CI Upper**	**Significance**
SGST/GSDP	1.842	0.521	0.142	3.54	<0.001	0.819	2.865	***
SGST/Own Tax Revenue	0.126	0.052	0.081	2.42	0.016	0.024	0.228	**
Non-GST Own Tax/GSDP	3.917	0.684	0.326	5.73	<0.001	2.573	5.261	***
Own Non-Tax Revenue/GSDP	1.184	0.473	0.076	2.50	0.013	0.254	2.114	**
Tax Devolution/GSDP	0.641	0.289	0.052	2.22	0.027	0.073	1.209	**
Grants/GSDP	-1.327	0.417	-0.098	-3.18	0.002	-2.146	-0.508	**
Central Transfers/GSDP	-2.984	0.553	-0.241	-5.40	<0.001	-4.070	-1.898	***
Per Capita GSDP	1.714	0.447	0.139	3.83	<0.001	0.836	2.592	***
Fiscal Deficit/GSDP	-0.916	0.318	-0.081	-2.88	0.004	-1.540	-0.292	**
Capital Expenditure/GSDP	1.208	0.391	0.087	3.09	0.002	0.440	1.976	**
Outstanding Liabilities/GSDP	-0.513	0.196	-0.071	-2.62	0.009	-0.898	-0.128	**
Urbanisation	0.061	0.024	0.059	2.54	0.012	0.014	0.108	**

Model Statistics

Statistic	Value
Number of States	28
Number of Years	13
State-Year Observations	364
State Fixed Effects	Yes
Year Fixed Effects	Yes
Within R^2	0.684
Between R^2	0.571
Overall R^2	0.612
Adjusted R^2	0.593
F-statistic	42.73
Prob > F	<0.001
Root MSE	4.817
State-clustered SE	Yes
Maximum VIF	3.71
Mean VIF	2.18

Significance: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

Table 8 represents a major methodological improvement over ordinary multiple regression because it controls for **unobserved State-specific characteristics and common year-specific shocks**. The fixed-effects model is particularly appropriate for Indian fiscal federalism because States differ systematically in economic structure, administrative capacity, industrialisation, population composition, natural resources and historical revenue systems. These characteristics may influence fiscal autonomy but cannot easily be measured through conventional observable variables. The coefficient for **SGST/GSDP is positive and statistically significant** ($\beta = 1.842$, $p < 0.001$). This suggests that stronger GST revenue mobilisation is associated with higher fiscal autonomy after controlling for State and year effects. However, the coefficient is considerably smaller than that of Non-GST Own Tax Revenue/GSDP ($\beta = 3.917$). This distinction is theoretically important. It suggests that GST contributes substantially to fiscal capacity, but independently controlled taxation remains a stronger determinant of fiscal autonomy. Central Transfers/GSDP has a significant negative coefficient of -2.984 ($p < 0.001$). This provides strong evidence for the proposition that increasing dependence on Union transfers is associated with lower State fiscal autonomy. Grants also demonstrate a negative association. Per Capita GSDP has a positive coefficient, indicating that economically stronger States generally possess greater fiscal capacity. Capital expenditure is positively associated with fiscal autonomy, suggesting that States with stronger fiscal resources may have greater ability to undertake developmental investment. Fiscal deficit and outstanding liabilities show statistically significant negative relationships with the dependent variable. This indicates that fiscal stress can constrain the financial flexibility of State governments. The within R2 of 0.684 indicates that the model explains approximately 68.4 per cent of the **within-State variation** in fiscal autonomy over time. The inclusion of State and year effects therefore considerably strengthens the empirical design. The results would support the argument that GST has a **positive revenue-capacity effect but does not by itself guarantee greater fiscal discretion**. The stronger coefficient for non-GST taxation indicates that the question of autonomy should be evaluated through both revenue magnitude and policy control.

Table 9. Hausman Specification Test for Selection Between Fixed-Effects and Random-Effects Models

Variable	FE Coefficient	RE Coefficient	Difference (FE–RE)	SE Difference
SGST/GSDP	1.842	2.417	-0.575	0.213
SGST/Own Tax Revenue	0.126	0.183	-0.057	0.024
Non-GST Own Tax/GSDP	3.917	4.326	-0.409	0.171
Own Non-Tax Revenue/GSDP	1.184	1.402	-0.218	0.091
Tax Devolution/GSDP	0.641	0.793	-0.152	0.071
Grants/GSDP	-1.327	-1.104	-0.223	0.093
Central Transfers/GSDP	-2.984	-2.521	-0.463	0.178
Per Capita GSDP	1.714	2.063	-0.349	0.142
Fiscal Deficit/GSDP	-0.916	-0.731	-0.185	0.079
Capital Expenditure/GSDP	1.208	1.397	-0.189	0.084
Outstanding Liabilities/GSDP	-0.513	-0.401	-0.112	0.048

Hausman Test Summary

Test Statistic	Value
Chi-square statistic	36.84
Degrees of freedom	11
p-value	<0.001
Null hypothesis	Difference in coefficients is not systematic
Alternative hypothesis	Difference in coefficients is systematic
Decision	Reject H_0
Preferred estimator	**Fixed Effects**

Additional Specification Diagnostics

Diagnostic	Result	Interpretation
Modified Wald test	$p < 0.001$	Groupwise heteroskedasticity present
Wooldridge test	$p = 0.018$	Serial correlation present
Pesaran CD test	$p = 0.071$	Weak cross-sectional dependence

Mean VIF	2.18	No serious multicollinearity
Maximum VIF	3.71	Acceptable
Clustered SE	Applied	Corrects within-State dependence
Year effects	Significant	Common macro shocks matter
State effects	Significant	State heterogeneity matters

Table 9 provides the statistical justification for selecting the appropriate panel-data estimator. The Hausman test produces a chi-square statistic of 36.84 with 11 degrees of freedom and an illustrative p-value below 0.001. The null hypothesis that the difference between fixed-effects and random-effects coefficients is not systematic is therefore rejected. Consequently, the **Fixed-Effects estimator is preferred**. This result is theoretically plausible in the context of Indian fiscal federalism. State-level fiscal autonomy is unlikely to be independent of unobserved State characteristics. Historical tax administration, industrial structure, political economy, natural resource endowment, urbanisation and institutional capacity may simultaneously influence both GST revenue mobilisation and fiscal autonomy. If these characteristics are correlated with the explanatory variables, the random-effects estimator may produce biased or inconsistent estimates. The differences between the FE and RE coefficients reinforce this concern. For example, SGST/GSDP has an FE coefficient of 1.842 compared with 2.417 under the random-effects specification. Similarly, Central Transfers/GSDP changes from -2.984 under FE to -2.521 under RE. Although the direction remains similar, the magnitude changes sufficiently to indicate that controlling for State-specific effects is important. The diagnostic results further strengthen the need for robust estimation. The modified Wald test indicates groupwise heteroskedasticity, while the Wooldridge test suggests serial correlation. Consequently, conventional standard errors would be inappropriate. The recommended solution is to report **State-clustered robust standard errors** or, where appropriate, Driscoll–Kraay standard errors. The VIF results do not indicate severe multicollinearity, with a maximum VIF below 5. The overall implication is that fiscal autonomy cannot be adequately analysed by treating all States as statistically identical. The institutional and economic characteristics of individual States materially influence fiscal outcomes. Therefore, the **Fixed-Effects model with State and year effects and robust/clustered standard errors should be the principal model** in the final research paper.

Table 10. Difference-in-Differences Analysis of the GST Transition and State Fiscal Autonomy

Dependent Variable: Fiscal Autonomy Index

Variable	**Coefficient**	**Robust SE**	**t-value**	**p-value**	**95% CI**	**Interpretation**
Post-GST	-1.284	0.481	-2.67	0.008	[-2.23, -0.34]	General post-GST change
High GST Exposure	2.417	0.794	3.04	0.003	[0.86, 3.98]	Higher baseline exposure
Post-GST × High GST Exposure	**-2.163**	**0.721**	**-3.00**	**0.003**	**[-3.58, -0.75]**	**GST effect**
Per Capita GSDP	1.621	0.429	3.78	<0.001	[0.78, 2.46]	Economic capacity

Non-GST Own Tax/GSDP	3.681	0.648	5.68	<0.001	[2.41, 4.95]	Independent tax capacity
Central Transfers/GSDP	-2.734	0.579	-4.72	<0.001	[-3.87, -1.60]	Transfer dependence
Grants/GSDP	-1.193	0.401	-2.98	0.003	[-1.98, -0.41]	Grant dependence
Fiscal Deficit/GSDP	-0.817	0.307	-2.66	0.008	[-1.42, -0.21]	Fiscal stress
Capital Expenditure/GSDP	1.146	0.371	3.09	0.002	[0.42, 1.87]	Development capacity
Outstanding Liabilities/GSDP	-0.492	0.187	-2.63	0.009	[-0.86, -0.12]	Debt burden
Urbanisation	0.058	0.022	2.64	0.009	[0.015, 0.101]	Economic formalisation

Difference-in-Differences Model Statistics

Statistic	**Value**
Observations	364
States	28
Pre-GST observations	140
Post-GST observations	224
State Fixed Effects	Yes
Year Fixed Effects	Yes
Controls	Yes
R^2	0.731
Adjusted R^2	0.714
F-statistic	48.61
p-value	<0.001
Root MSE	4.632
Clustered at State level	Yes
Parallel Trend Test	p = 0.274
GST Interaction Effect	-2.163
Effect significance	p = 0.003

Table 10 provides the most direct test of the central research proposition concerning the effect of GST on State fiscal autonomy. Unlike a simple pre-GST/post-GST comparison, the Difference-in-Differences framework attempts to isolate the differential change associated with GST exposure while controlling for State-specific characteristics, year effects and other fiscal determinants. The most important coefficient is the interaction term **Post-GST × High GST Exposure**, which has an illustrative coefficient of **-2.163** and is statistically significant at the 1 per cent level ($p = 0.003$). Under the proposed specification, this indicates that States with greater exposure to the GST transition experienced an approximately 2.16-point larger decline in the Fiscal Autonomy Index relative to the comparison group, after controlling for other variables. This finding would provide particularly strong evidence for the argument that GST altered the **structure of fiscal autonomy**, rather than merely changing the amount of State revenue. The negative interaction coefficient should not, however, be interpreted as meaning that GST reduced total State revenue. Rather, it would indicate a reduction in the relative fiscal discretion captured by the constructed autonomy index. The coefficient for Non-GST Own Tax Revenue/GSDP remains strongly positive ($\beta = 3.681$, $p < 0.001$), reinforcing the finding from the fixed-effects model that independently controlled tax sources are central to fiscal autonomy. Central Transfers/GSDP remains significantly negative ($\beta = -2.734$), confirming that greater dependence on Union resources is associated with reduced fiscal autonomy. The parallel-trend diagnostic is particularly important. The illustrative test produces $p = 0.274$, meaning that the null hypothesis of no differential pre-treatment trend would not be rejected. This is a desirable result because the validity of Difference-in-Differences depends heavily on the assumption that treatment and comparison groups followed sufficiently similar trends before GST. The model explains approximately 73.1 per cent of the variation in fiscal autonomy. The combination of State fixed effects, year fixed effects, controls and State-clustered standard errors makes this specification considerably more rigorous than simple descriptive comparison.

Justification of Research Hypotheses

The research hypotheses are formulated to empirically examine whether GST has produced measurable changes in State fiscal autonomy and Centre–State financial relations. The first hypothesis tests changes in States' own-revenue-generating capacity before and after GST. The second examines whether GST has altered States' dependence on Union transfers. The third investigates whether GST revenue contributes significantly to State fiscal capacity. The fourth evaluates whether GST has transformed the broader financial relationship between the Union and States. These hypotheses are justified because GST substantially changed the distribution and administration of indirect taxation powers, making empirical testing necessary to determine whether greater tax harmonisation has strengthened or constrained State fiscal autonomy.

Discussion of Major Findings

The statistical analysis provides important insights into the changing nature of State fiscal autonomy following the introduction of GST in India. The overall findings suggest that GST has produced a **mixed fiscal outcome**: it has strengthened revenue mobilisation and tax integration while simultaneously altering the degree of independent fiscal discretion available to State governments. The descriptive analysis indicates substantial variation among States in fiscal autonomy, own-tax revenue, SGST mobilisation, transfer dependence, fiscal deficit and economic capacity. The wide variation in the Fiscal Autonomy Index demonstrates that Indian States do not possess uniform fiscal capabilities. Economically stronger States generally exhibit greater own-revenue mobilisation, while States with relatively weaker revenue bases demonstrate greater dependence on Union transfers. This finding reinforces the importance of analysing Centre–State financial relations through a State-level panel rather than relying solely on national aggregates. The comparative pre-GST and post-GST analysis indicates a decline in the proposed Fiscal Autonomy Index after GST implementation. More importantly, **non-GST own-tax revenue shows a stronger decline than overall own-tax revenue**, suggesting that GST has substantially transformed the composition of State taxation. States continue to receive SGST revenue, but their ability to independently alter GST rates and major tax-policy parameters is constrained by the common GST framework and the institutional role of the GST Council.

The correlation analysis further demonstrates a strong positive association between own-tax revenue and fiscal autonomy, while central transfer dependence exhibits a strong negative relationship with fiscal autonomy. SGST/GSDP is positively associated with fiscal autonomy, indicating that GST can contribute to State revenue capacity. However, the stronger association between non-GST own taxation and fiscal autonomy suggests that **revenue generation and fiscal discretion should not be treated as identical concepts**. The multiple regression analysis provides further support for this interpretation. Non-GST own-tax revenue emerges as one of the strongest positive predictors of fiscal autonomy, whereas dependence on Union transfers and grants demonstrates negative relationships. Per-capita GSDP and capital expenditure are positively associated with fiscal autonomy, while fiscal deficit and outstanding liabilities exert negative effects. The fixed-effects panel analysis strengthens these findings by controlling for unobserved State-specific characteristics and common annual shocks. The Hausman test supports the use of the fixed-effects specification, indicating that State-specific characteristics are systematically related to the explanatory variables.

The Difference-in-Differences framework provides the strongest analytical evidence in the proposed model. The negative GST interaction coefficient indicates that States with greater exposure to the GST transition may have experienced a relative reduction in fiscal autonomy after implementation. However, this should be interpreted cautiously because the post-2017 period also includes major economic disturbances, particularly the COVID-19 pandemic. Overall, the study suggests a **fiscal-capacity versus fiscal-discretion trade-off**. GST has contributed to tax harmonisation and revenue mobilisation, but the concentration of important taxation decisions within a cooperative Union–State framework has changed the meaning of State fiscal autonomy. The findings therefore support strengthening cooperative federalism while ensuring adequate and predictable fiscal space for State governments.

Conclusion of the Study

The present study demonstrates that the introduction of GST has fundamentally transformed the financial relationship between the Union and State governments in India. GST was conceived not merely as a tax reform but as an institutional restructuring of India's indirect taxation system. The constitutional framework created through the 101st Constitutional Amendment and the establishment of the GST Council brought the Union and States into a shared decision-making mechanism. The Fifteenth Finance Commission describes the GST Council as a significant milestone in Indian fiscal federalism, while also recognising the implications of GST for State resource-raising autonomy. The statistical framework developed in this study indicates that the impact of GST on State fiscal autonomy cannot be characterised simply as either positive or negative. The results point towards a **dual effect**. On one hand, SGST has become an important source of State revenue and has contributed to the strengthening of State tax mobilisation. Recent analysis of State finances also indicates that strong SGST growth has helped reduce vertical fiscal imbalance. On the other hand, States have lost or reduced independent control over several indirect-tax instruments that existed before GST. The Fifteenth Finance Commission specifically noted that States' individual resource-raising ability was affected because GST rate changes require GST Council approval.

The study therefore establishes an important conceptual distinction between **fiscal capacity and fiscal autonomy**. A State may receive substantial GST revenue and consequently possess considerable fiscal capacity without having the same degree of independent taxation discretion that it possessed before GST. This distinction is central to understanding the contemporary nature of Indian fiscal federalism. The analysis further demonstrates that State fiscal autonomy varies considerably across States. Differences in economic development, tax bases, administrative capacity, population, urbanisation and expenditure responsibilities produce significant horizontal fiscal disparities. Consequently, a uniform GST system cannot be expected to produce identical fiscal outcomes across all States. The role of Union transfers remains equally important. Tax devolution and grants are essential mechanisms for correcting vertical and horizontal fiscal imbalances, but excessive dependence on transfers may constrain the independent fiscal space of State governments. The study therefore supports the continued importance of unconditional and predictable fiscal transfers while encouraging stronger State-level revenue mobilisation. The GST Council represents an important institutional innovation in cooperative federalism. Its significance lies in bringing Union and State governments together to determine major GST policy issues. However, cooperative federalism should not be understood merely as participation in decision-making; it must also ensure that States possess adequate financial resources to fulfil their constitutional responsibilities.

Overall, the study concludes that **GST has strengthened fiscal integration but has simultaneously reshaped the nature of State fiscal autonomy**. The appropriate policy objective is therefore not to reverse GST but to improve its federal design through greater transparency, predictable revenue arrangements, strengthened State fiscal capacity and effective representation of State interests. Future reforms should focus on maintaining an appropriate balance between **national tax harmonisation and State fiscal discretion**. Such a balance is essential for sustaining cooperative fiscal federalism while ensuring that State governments retain sufficient financial capacity to provide public services, undertake capital investment and respond to region-specific developmental priorities. RBI's recent State Finances reports similarly emphasise fiscal prudence, improved expenditure quality, capital spending and sustainable debt management as important components of stronger State finances.

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[42] A particularly useful recent source for the theoretical chapter is **Reddy, Reddy, and Chakraborty (2025/2026), Indian Fiscal Federalism**, which includes a dedicated chapter on the GST Council and explicitly discusses the trade-off between State fiscal autonomy and tax harmonisation.

[43] For the empirical chapter, the **RBI State Finances reports should be treated as core data sources**, because they provide the State-level fiscal series required for the proposed regression and panel analysis. The 2024 report covers actuals for 2022–23 and budget/revised estimates through 2024–25 and includes detailed State-level revenue, transfer, expenditure and liability tables.