GROWTH AND BUOYANCY OF GOODS AND SERVICES TAX REVENUE IN MAHARASHTRA: AN EMPIRICAL ASSESSMENT FROM 2018–19 TO 2024–25

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Abstract:

This study analyzes the growth and buoyancy of the revenue from State Goods and Services Tax (SGST) of Maharashtra from 2018-19 to 2024-25. The analysis is based on secondary fiscal and macroeconomic data from Government of Maharashtra and the data was combined by year-on-year growth rates, compound annual growth rates (CAGR), SGST-to-GSDP ratios, annual buoyancy coefficients, period buoyancy measure and log-log regression of SGST revenue on nominal Gross State Domestic Product (GSDP). SGST revenue increased from ₹82,352 crore in 2018–19 to ₹167,905 crore in 2024–25 (revised estimate), implying a CAGR of 12.61 percent. Over the comparable series, there has been a nominal growth in GSDP from ₹25,28,854 crore to ₹45,31,518 crore with a CAGR of 10.21 percent. The incidence of SGST on nominal GSDP has gone up from 3.26 percent to 3.71 percent. The period buoyancy (based on CAGR) is 1.23 and the elasticity (based on log-log regression) is 1.35. This year-wise trend is very irregular as the impact of the COVID shock led to simultaneous revenue and economic activities contraction in 2020-21 while it had a strong rebound in 2021-22 and remained in double digits growth in SGST ever since. The results suggest that after the disruption caused by the pandemic, Maharashtra's performance on the revenue side of the GST has improved significantly, albeit with a few caveats: the short time frame sampled for the year and policy/compliance changes that occurred during that year make it difficult to conclude that the GST has gained in structural buoyancy as a tax elasticity. The paper concludes that a broad path towards formalisation of revenue collection, strengthening compliance analytics, minimising revenue evasion, and having an effective tax administration with an acceptable compliance burden, will all be key to sustain revenue productivity.

Keywords*: Goods and Services Tax, SGST, tax buoyancy, tax revenue, Maharashtra, GSDP, fiscal federalism, revenue productivity.*

1. Introduction

The Goods and Services Tax (GST) regime was introduced in India on 1 July 2017, which has completely transformed the indirect tax regime in the country and grouped together multiple taxes imposed by the government at the central and state levels into a value-added tax based on the place of supply. State Governments have a new instrument in their hands: the State Goods and Services Tax (SGST) which not only forms the bulk of own tax revenue but also gives a major fillip to fiscal space. In particular, Maharashtra is significant in this regard as the biggest state economy in India by nominal GDP as per the latest official estimate and the state has a wide tax base in the manufacturing, financial, trade, transport, real estate, professional services and a large consumer market. The sensitivity of SGST, to the growth of state economy, thus serves as a useful measure of the revenue productivity and fiscal capacity.

The strength of the response of tax revenue to changes in the underlying income or output base is the tax buoyancy. Buoyancy is the sum of the effects of economic growth, compliance changes, administrative improvements, policy changes, rate changes, shifts in the tax base and any other discretionary changes in the operational fiscal analysis. Increase in revenue over an increase in the economic base (above one) or less than proportionate increase (below one). Tax buoyancy is also a measure of how responsive tax revenue is to changes in nominal output, which the Reserve Bank of India (RBI) also identifies as discretionary tax-policy changes (RBI, 2023, 2024).

This time period (2018–19 to 2024–25) is analytically useful as it includes the early stabilisation of GST, the high impact impact of COVID-19 disruption, reopening and recovery, conclusion of the statutory GST compensation period, and a period of increasingly technology-driven tax administration. It thus allows for an evaluation of the strength of the Maharashtra system of SGST and its resilience. The length of the time period is also short and buoyancy values for individual years can vary considerably in cases of nominal GSDP growth of near zero or negative. In this paper, several indicators instead of one coefficient are therefore combined.

The type of data used in the study is secondary data which is obtained from official sources. SGST is the highest contributor to the revenue of the state, according to the Maharashtra Economic Survey. For 2024–25, the later 2025–26 Economic Survey reports SGST at ₹167,905 crore on a revised-estimate basis, compared with ₹141,979 crore in 2023–24. The 2024–25 Economic Survey reports nominal GSDP of ₹45,31,518 crore for 2024–25 on an advance-estimate basis and ₹40,55,847 crore for 2023–24 on a first-revised basis (Government of Maharashtra, 2025, 2026). These are the official series that make up the empirical assessment.

2. Background: GST and Maharashtra's Fiscal Structure

The introduction of GST was aimed at facilitating the development of a more integrated domestic market, decreasing cascading tax, enhancing input tax credit chain and promoting formality. The constitution shall split GST on intra-state supplies into two, Central GST (CGST) and SGST. GST on inter-state supplies is IGST which will be apportioned later. This is a design which not only relies on the volume of local production, but also on the volume of consumption, inter-state settlement, input-tax credit claims, refunds, enforcement and composition of the taxable transactions. (Government of India, Ministry of Finance, 2017; GST Council, 2024; Rao, 2019).

GST assumes fiscal significance in the context of the economic structure in Maharashtra. A wide range of services, strong manufacturing, significant urban consumption and highly developed logistics areas and registered business activity provide a good tax base. According to Economic Survey of Maharashtra 2025–26, SGST is the biggest contributor to the own tax revenue accounting for significant portion of own tax revenue of the State (Government of Maharashtra, 2026). This concentration has implications on the state's ability to finance recurrent expenditure and development, directly, due to changes in the productivity of GST.

The GST also changed the liability regime of the states. In the first transition, a compensation mechanism was in place to shield states from a legislatively mandated growth target. This, in turn, provided a once-in-a-century jolt to taxable transactions and state finances stemming from the pandemic. The post-pandemic has been marked by the normalization of the economy, increased e-invoicing and digital trails, data matching and crackdown on fraudulent input tax credit. Therefore, the revenue growth observed since 2021–22 is a combination of the nominal economic growth as well as institutional/compliance effect. The 15th Finance Commission (2020), Reserve Bank of India (RBI) (2021), and Mukherjee (2020) provide a comprehensive list of the many factors that influence the regulation of banks.

3. Review of Literature

The theory of the tax buoyancy makes the distinction between buoyancy and tax elasticity. The response of tax revenue to changes in income measured by elasticity of tax revenues reflects the observed impact of both income and discretionary policy and administration changes. A more restricted interpretation of tax elasticity in public finance (the one that is being used here), aims at estimating the automatic reaction following discretionary reaction. In practice it is often not possible to have reliable series of adjustments at the subnational level, so that buoyancy is a common indicator of fiscal responsiveness. (Prest, 1962; Mansfield, 1972; Upender, 2008; Behera et al., 2026).

The initial Indian GST literature was much more on the design of GST, the federalism aspect, its revenue neutrality, its compliance aspects and its transition from the multiple indirect taxes. The RBI (2017) described GST as a big structural reform with the scope of enhancing the efficiency, tax buoyancy and in the medium-term, due to its wider base and greater level of information. The subsequent fiscal RBI assessments have adopted the concept of buoyancy to reflect the performance of the centre's taxes and have demonstrated that the buoyancy of the GST can differ drastically from one fiscal year to another because of the changes in the economic conditions and the compliance system (RBI, 2023, 2024). (RBI, 2017; Rao, 2019; Joseph & Kumary, 2023).

In India, empirical studies on state taxation always demonstrate that the productivity of the tax is related to the structure of economies, administrative capacity, formalisation as well as the magnitude of the ratio of consumption and income. In

general, larger and more urbanised states tend to have wider tax bases, but can also suffer from high sensitivity to economic shocks, as many of their service and manufacturing supply chains, construction and discretionary consumption are very sensitive to the economy. GST can then only be measured by the growth of revenues, which needs to be tied to an appropriate macroeconomic base. (Rao, 2005; Rao & Rao, 2006; Purohit, 2001; RBI, 2024).

Almost every time series shorter than GST had a structural break due to the pandemic. In 2020–21, taxable transactions in the economy were impacted by lockdowns, mobility restrictions, temporary closures, supply shortages and alterations to expenditure patterns of households. As a result, revenue collections were on a similar high footing in 2021-22. The research that provides a calculation of buoyancy, without giving due consideration to this break, can mistakenly identify cyclical rebound as a structural improvement for good. (Government of India, Ministry of Finance, 2021; RBI, 2021; World Bank, 2022).

Another thread within the literature focusses on digital tax administration. E-way bill, e-invoicing, return matching, analytics and integration of information regarding transactions can help to provide a mechanism to mitigate information asymmetry and bolster enforcement. These mechanisms can lead to a higher revenue from the start than to the nominal output in a short span of time and once these mechanisms are in place, previously unreported activity will be included in the effective tax base. Under those conditions, an increase in economic growth can be seen as a reflection of a deepening of compliance together with a rise in buoyancy coefficient. (OECD, 2020; Jagtiani, 2026; International Monetary Fund [IMF], 2023).

Official fiscal documents offer very descriptive evidence, although not as much as is found in other parts of the country, but somewhat more compact empirical evaluations specifically to the level of buoyancy of the SGST over the post-implementation period, for Maharashtra. The state's Economic Surveys do cover the issue of own-tax buoyancy and the increasing relevance of SGST but a dedicated study to better understand the dynamics of GST revenue in terms of the growth of SGST, its ratio to nominal GSDP, the impact of pandemic and buoyancy as measured by regression would help. (Government of Maharashtra, 2023, 2024, 2025, 2026; CAG, 2024).

Analysis is based on official evidence. Successive Economic Surveys of Maharashtra document GSDP and own-tax performance (Government of Maharashtra, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026). RBI State Finances reports provide the broader subnational context (RBI, 2019, 2020, 2021, 2022, 2023, 2024, 2025), while Union Economic Surveys trace the macroeconomic setting (Government of India, Ministry of Finance, 2019, 2020, 2021, 2022, 2023, 2024, 2025). GST Council, CBIC, and GST Network publications provide institutional and compliance evidence (CBIC, 2023, 2024; GST Council, 2022, 2023, 2024; GST Network, 2022, 2023, 2024).

Empirical studies in recent years focus more on the revenue responsiveness and compliance with digital. Tax buoyancy and elasticity is discussed by Kalagond (2026), Behera et al (2026) and Venkatraman and Murali (2026); while, Jagtiani (2026) is specific to the tax buoyancy of digital GST and digital GST revenue buoyancy. The evidence from around the world also highlights digital tax administration, capacity for good governance, and taxpayer inclusion (IMF, 2023; OECD, 2020, 2022).

The studies pertaining to the transition from indirect tax to indirect tax system in India, have embedded GST in the overall journey from state sales tax to VAT to dual GST. Previous studies had noted cascading, inter-state obstacles and unequal subnational tax capacity as enduring constraints (Purohit, 2001; Rao, 2005; Rao & Rao, 2006). Following the GST, these issues have been explored by other studies, such as those on compensation, harmonisation, the GST Council and state fiscal autonomy (Mukherjee, 2020; Joseph & Kumary, 2023; Ananda, 2024; Singh & Singh, 2024; Ajay & Selvan, 2025; Reddy et al., 2025; Sethia & Chaudhuri, 2026).

4. Research Gap

Previous studies on the performance of the GST have focused on overall collections of GST, month-on-month growth or overall own tax collections by the states. Such measures do not directly address the issue of whether the growth of Maharashtra's SGST have been faster or slower from the State's economy. Furthermore, the rate of raw collection growth may overestimate the rate of fiscal improvement when nominal output is growing quickly as well. This paper attempts to plug the gap by developing a unified state level perspective of 2018-19 to 2024-25 of the linkage of the SGST to nominal GSDP along with the disaggregation of annual growth, tax intensity, year-wise buoyancy, period buoyancy, and responsiveness using regression analysis. (RBI, 2023, 2024; Kalagond, 2026; Jagtiani, 2026).

5. Objectives and Hypotheses

The research has five objectives namely to:

- To analyse the growth of SGST revenue received by Maharashtra during the last 6 years (2018-19 to 2024-25). To make comparison of revenue growth of SGST with the growth of nominal GSDP.
- To understand the buoyancy of the SGST revenue in each year and period.

To analyse the changes in the ratio of SGST:GSDP and the impact thereof being caused by the disruption of the COVID-19.

To test whether there is statistical relationship between nominal GSDP and SGST revenue.

H01: The nominal GSDP is not statistically significantly related to the SGST revenue during the study period.

There is positive association between Nominal GSDP and SGST revenue during study period.

H02: SGST revenue is not buoyant with a coefficient of >1 for the study period.

SGST revenues have been found to be more buoyant than one during the entire period of study.

6. Data and Methodology

The study is made with the help of secondary data which is taken for financial years 2018-19 to 2024-25 in annual basis.

The data from various successive Economic Surveys of Maharashtra and data from Finance Department are reproduced in the Surveys and used as the basis of drawing up the SGST revenue. The revised estimate for the 2024-25 of the Economic Survey is ₹167,905 crore while the historical values of SGST are available from 2019-20 onwards. The previous official statistics give the 2018–19 value. Economic Survey of Maharashtra 2024–25 has been used to get the nominal GSDP values. The paper clearly indicates that the estimates of fiscal year 2024–25 have been revised and estimates of state-income year 2024-25 have been used as an advance estimate in the comparable published series of GSDP. (Government of Maharashtra, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026).

Year-on-year growth is calculated as $[(Xt - Xt{-}1)/Xt{-}1] \times 100$. The ratio of SGST to GSDP is the amount of revenue generated by SGST divided by the nominal value of GSDP then multiplied by 100. The calculation of annual buoyancy is done by dividing the change in the revenue of SGST with the change in nominal GSDP, both are expressed in percentages. When the denominator is small, this measure can become unstable, and has to be interpreted in conjunction with measures for longer periods. (Mansfield, 1972; Upender, 2008; Behera et al., 2026).

Six year to year intervals are used for the compound annual growth rate. The CAGR for both SGST and nominal GSDP are 12.61 percent and 10.21 percent, respectively. The simplest version of the period buoyancy is 1.23, which is based on the ratio of these CAGRs. A log-log model, $\ln(SGSTt) = \alpha + \beta \ln(GSDPt) + \varepsilon t$ is estimated as a robustness check. β is an empirical measure of the responsiveness of revenues. With limited observations ($n<10$), inferential results are not considered structural estimates but rather descriptive evidence.

The analysis does not make a causal identification of the situation. GST revenue could change due to economic growth, inflation, adjustments in tax administration, adjustments in rates and rules, changes in the sectoral composition of the economy, settlement effects, enforcement, refund, and behavioural responses. The results are thus based on responsiveness as observed rather than an elasticity after policy change. (Rao & Rao, 2006; IMF, 2011; OECD, 2022).

7. Empirical Results

7.1 Trend in SGST Revenue and Nominal GSDP

Table 1. Maharashtra SGST Revenue, Nominal GSDP, Growth, and Buoyancy

Year	SGST (₹ crore)	Nominal GSDP (₹ crore)	SGST growth (%)	GSDP growth (%)	Buoyancy	SGST/GSDP (%)
2018-19	82,352	2,528,854	—	—	—	3.26
2019-20	82,602	2,656,806	0.30	5.06	0.06	3.11
2020-21	69,949	2,610,651	-15.32	-1.74	8.82	2.68
2021-22	97,305	3,143,821	39.11	20.42	1.91	3.10
2022-23	121,256	3,641,543	24.61	15.83	1.55	3.33
2023-24	141,979	4,055,847	17.09	11.38	1.50	3.50
2024-25	167,905	4,531,518	18.26	11.73	1.56	3.71

Note. SGST for 2024–25 is a revised estimate in the Economic Survey of Maharashtra 2025–26; nominal GSDP for 2024–25 is the advance estimate reported in the 2024–25 survey. Calculations are by the author from Government of Maharashtra data.

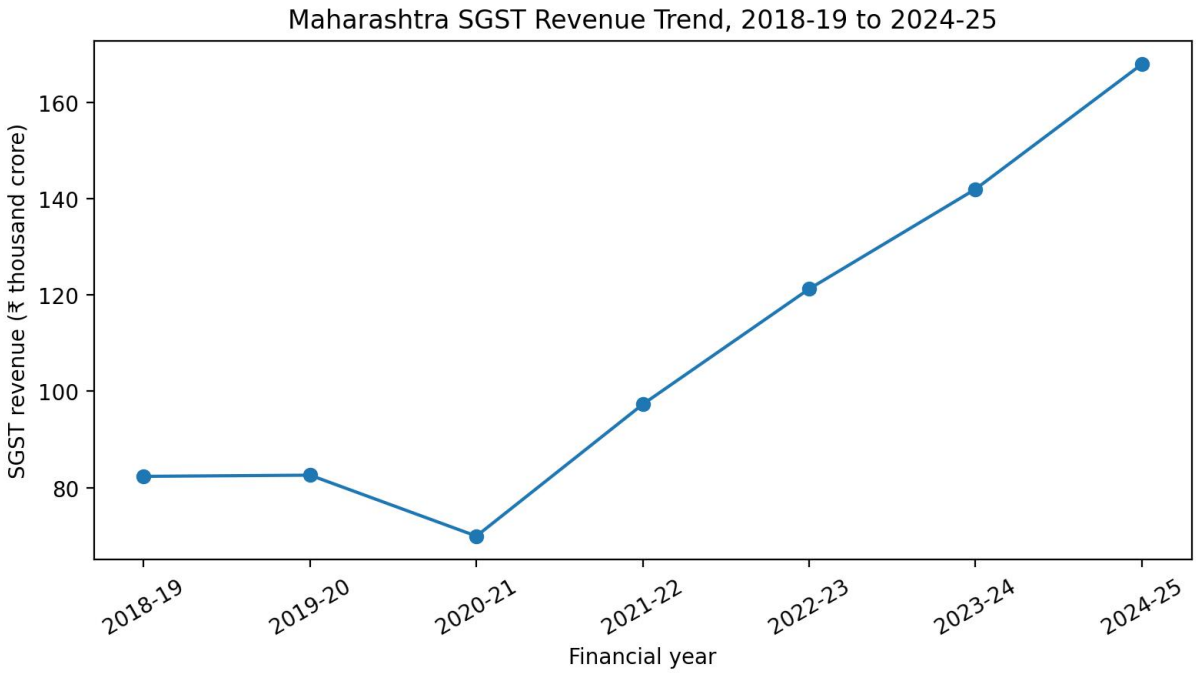


Figure 1. Maharashtra SGST Revenue Trend, 2018–19 to 2024–25

SGST revenue rose from ₹82,352 crore in 2018–19 to ₹167,905 crore in 2024–25. This is an absolute rise of ₹85,553 crore of which the cumulative increase is 103.9 percent. CAGR 12.61 percent for nominal GSST (excluding SGST) is materially higher than nominal GSDP's CAGR 10.21 percent for the entire period, indicating a strengthening of the SGST collections, compared to the state's economy in the period.

But the path isn't necessarily smooth. In 2019–20, revenue was almost level, and decreased in 2020–21. It then rebounded sharply in 2021–22 and maintained strong growth in 2022–23, 2023–24, and 2024–25. This trend aligns with the reinvigorated digital compliance measures, the return to more normalised supply chains and consumption, and a major pandemic shock.

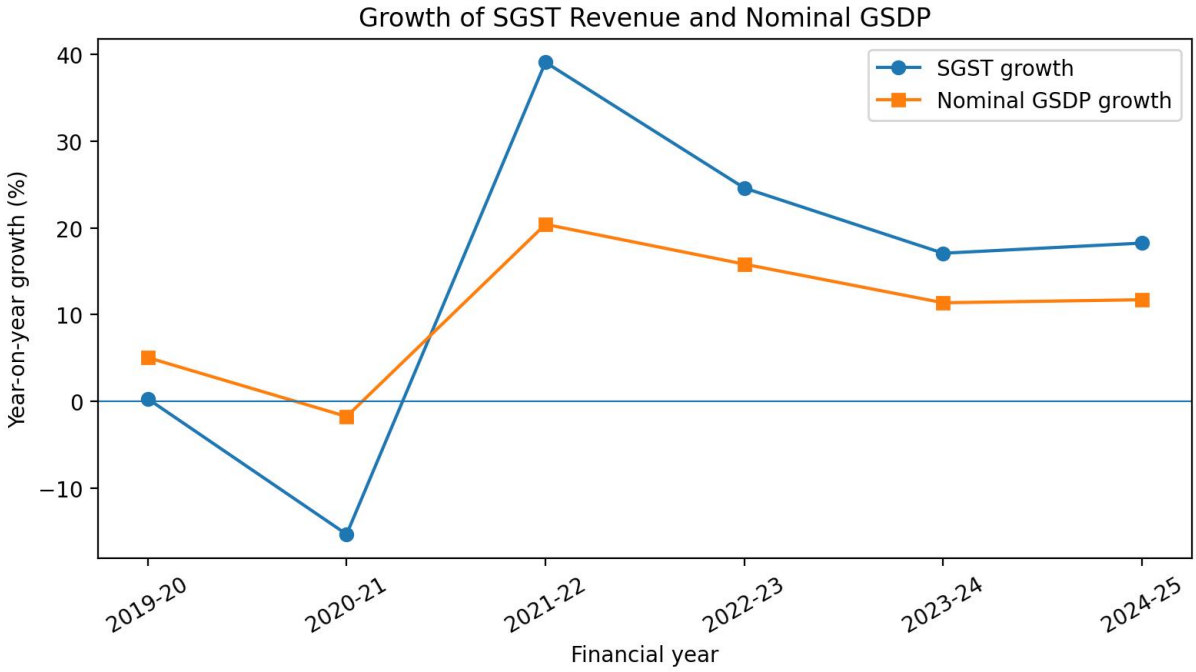


Figure 2. Year-on-Year Growth of SGST Revenue and Nominal GSDP

The revenue from SGST decreased by 15.32 per cent and nominal GSDP decreased by 1.74 per cent in 2020-21. In 2021–22, SGST grew by 39.11 percent and nominal GSDP by 20.42 percent. Both series reveal a recovery, and indicate that the pandemic should not be considered a typical year reflecting the system's natural state.

7.2 SGST-to-GSDP Ratio

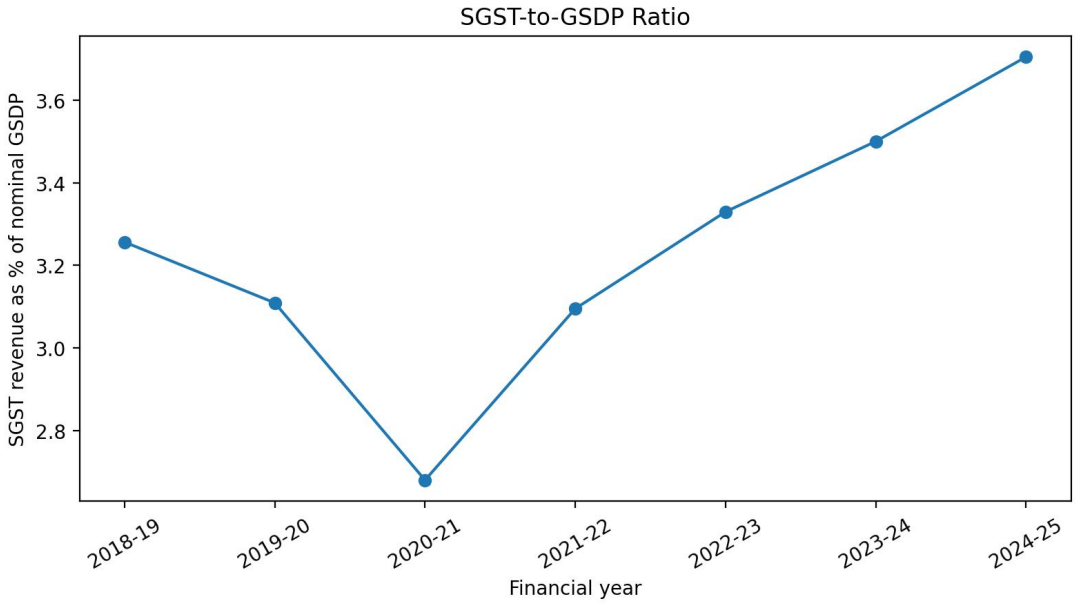


Figure 3. SGST Revenue as a Percentage of Nominal GSDP

The SGST-to-GSDP ratio increased from 3.26 percent in 2018–19 to 3.71 percent in 2024–25. The ratio fell in 2020–21 due to the impact of the disruption of taxable activity, but then bounced back. The ratio was about 0.45 percentage point higher than it was in 2018–19 by 2024–25. This growth is not much in percentage point, but is a big affair in the finances of an economy with a nominal GSDP of more than ₹45 lakh crore.

7.3 Annual Buoyancy

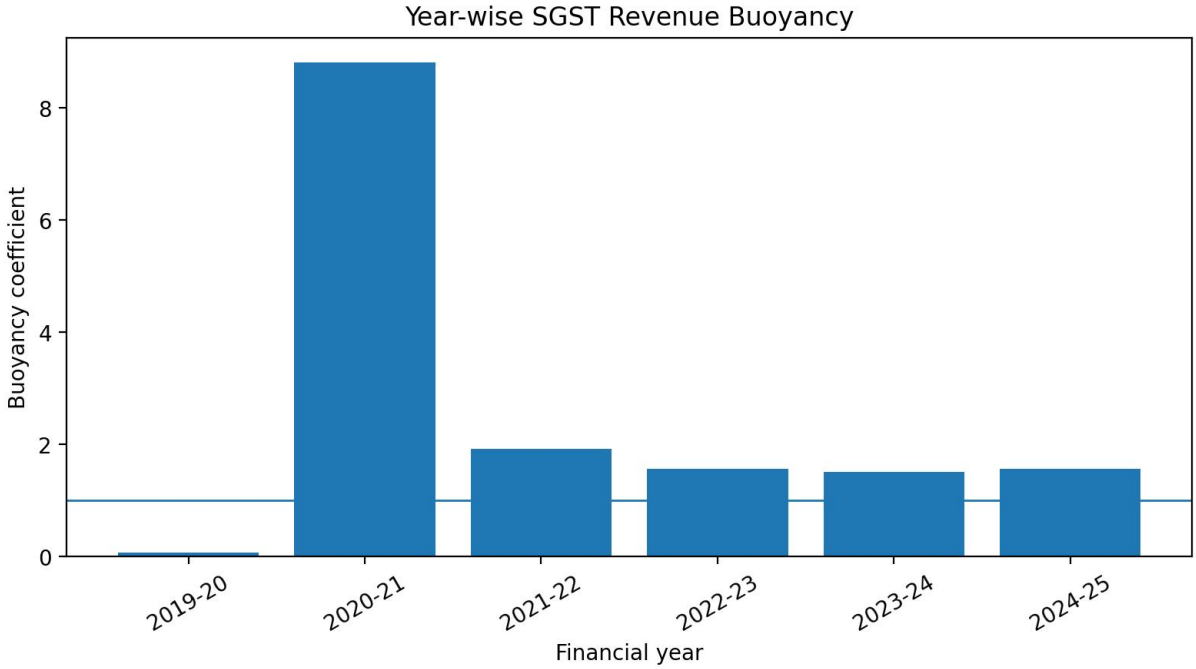


Figure 4. Year-wise SGST Revenue Buoyancy

The buoyancy showed a large variation from year to year. It is a volatility to be expected in a short sample since it is the ratio of one growth rate to another over a 1-year period. If nominal GSDP growth is small, then any change in the amount of tax revenue, no matter how moderate, can yield an extreme coefficient. The value for 2019–20 is thus not necessarily seen as an indication of a stable structural relationship. Direction of the tax-to-GSDP ratio is more informative and longer-period estimates also.

The proportional growth rate over the study period is CAGR based buoyancy, which came out to be 1.23 for SGST revenue, indicating that on this simple growth rate comparison, SGST revenue grew at a rate of about 1.23 times as fast as the nominal GSDP over the study period. An increase in the value is consistent with improvements in revenue productivity,

but does not distinguish between the automatic economic effects and compliance and policy impacts.

7.4 Regression-Based Responsiveness

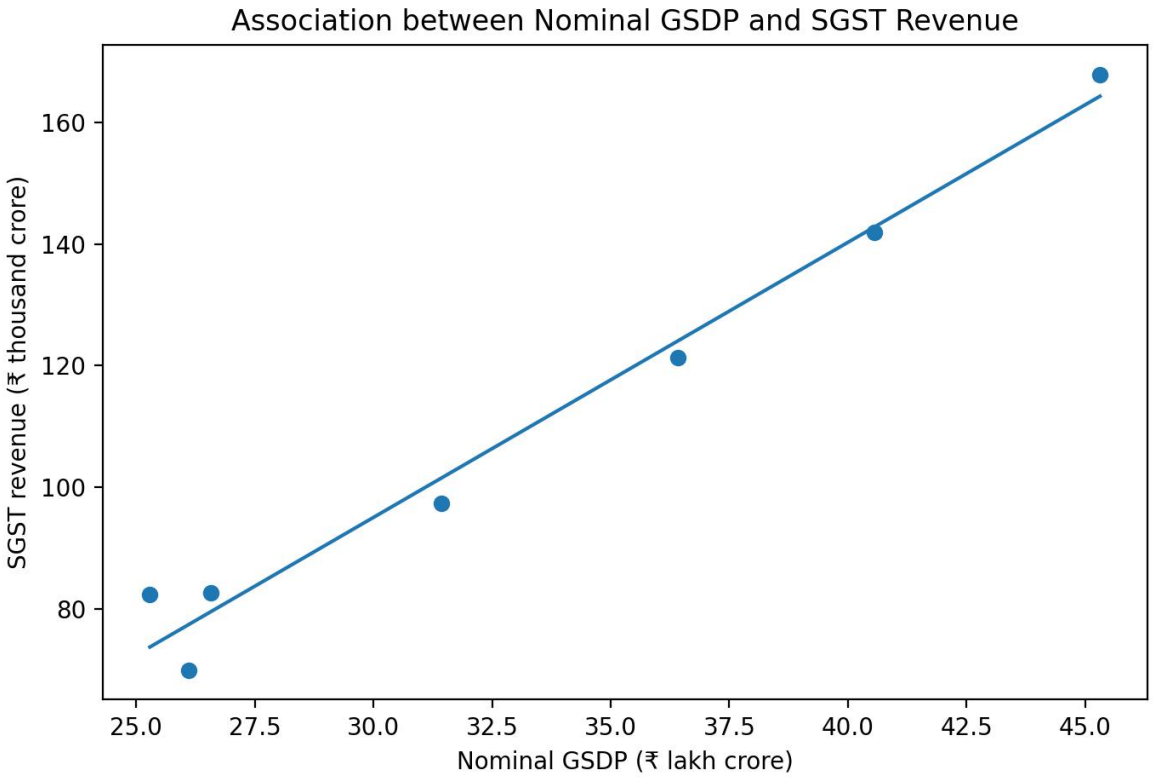


Figure 5. Association between Nominal GSDP and SGST Revenue

The Pearson's correlation coefficient between the nominal level of GSDP and the revenue of SGST is 0.988 which has a strong positive correlation over seven observations. The buoyancy coefficient for the log-log regression is about 1.35 and the R^2 value is 0.961. In elasticity style terms, the coefficient means that the revenue of the SGST would rise by approximately 1.35 percent with a 1 percent rise in the nominal GSDP in the small annual sample. The estimate is greater than one, but shouldn't be taken as a causal or policy adjusted elasticity as the sample is short, and there is a significant shock in the data.

8. Discussion

The evidence that can be gleaned from the empirical evidence suggests there are three large time periods. The first is the early stabilisation period – 2018–19 and 2019–20 – when the rate of growth of SGST was relatively low. The second is the disruption followed by the recovery due to the pandemic in 2020–21 and 2021–22. The third one is the consolidation phase post-pandemic from 2022-23 onwards, when SGST revenue has seen a consistent double-digit growth and the ratio of tax revenue to GDP of the consolidated tax revenues has improved.

There are multiple mechanisms that could lead to the improved revenue productivity; these mechanisms are consistent with the improvement. First, if there is nominal growth, it increases the value of transactions subject to taxes. Secondly, inflation increases the nominal value of the transactions to be taxed on an ad valorem basis. Third, formalisation may impact on the unregistered/under-reported flows of activities into the GST base. Fourth, digital compliance facilities can enhance detection and minimise possibilities for evasion. Fifth, a change in the statutory rates will not be required if there is administrative action against fake invoicing and fraudulent input tax credit. (Jagtiani, 2026; OECD, 2020; GST Network, 2024; CBIC, 2024).

This is also in line with the overall fiscal evidence shared by the Government of Maharashtra. In terms of official estimates, the buoyancy of the state's own tax revenue has increased in the post-GST period when compared to the pre-GST period; in the post-GST period, the SGST has emerged as the largest revenue component of own tax revenue (Government of Maharashtra, 2025, 2026). The present study focuses on SGST and draws the following conclusion: During the period of study, growth of SGST has been higher than growth of nominal GSDP. (Government of Maharashtra, 2025, 2026; RBI, 2024).

But it is not always a good sign of an optimum tax system to have a high buoyancy coefficient. Revenue increases can occur due to rates, inflation, enforcement efforts, settlement timing, and post settlement delays in refunds, or short-term base changes. On the other hand, a negative coefficient for one year could mean a legitimate refund, a normal soft spot in one or more industry sectors or a temporary slowdown in the overall economy. When interpreting a fiscal change, attention should be given to the size of the change as well as to the composition of the change. (Prest, 1962; Mansfield, 1972; Upender, 2008).

The ongoing COVID-19 is a shocking example of this. The contraction in 2020–21 and rebound in 2021–22 leads to large movements which can overwhelm a short time series. Structural-break tests would be possible and more reliable time-series estimates would be obtained, and transitory from persistent effects would be separated, if the sample were longer and extended into future years. A combination of CAGR and tax intensity, annual buoyancy and log-log responsiveness, for the current seven-year period, offers a more balanced assessment. (Government of India, Ministry of Finance, 2021; RBI, 2021; World Bank, 2022).

9. Policy Implications

The first thing Maharashtra should do is to further improve the compliance framework based on data while reducing unwarranted compliance costs for honest companies. Through risk-based scrutiny, invoice analytics, integration of e-way bill, targeted enforcement measures, the revenue is safeguarded, but without imposing uniform friction on all taxpayers. (CBIC, 2024; GST Network, 2024; Jagtiani, 2026).

Second, policy should not only be about maintaining the level of tax revenues, but also the quality of the tax base. Rather than collecting data in one-off measurements, the SGST-to-GSDP ratio is more informative, as it provides an indication of whether revenues are growing in line with the increasing size of the economy. (RBI, 2024; IMF, 2023).

Thirdly, state should track the performance of the sectors in the GST. The economy of Maharashtra is diversified and the impact of changes in the construction, manufacturing, trade, finance, transport, hospitality and professional services sectors can vary in terms of the taxable turnover. Having sectoral dashboards can enable better segmentation of cyclical weakness from gaps in compliance. (Government of Maharashtra, 2025; RBI, 2024).

Fourth, macroeconomic uncertainty should be clearly reflected in an economy's revenue forecasting. The pandemic proved it is possible for the conventional method of extrapolating trends to predict future events during significant shocks. Some scenarios with linkages of SGST with nominal GSDP and consumption, e-way bill, registrations and sectoral activity would facilitate budget planning. (IMF, 2011; World Bank, 2024).

Fifthly, there should be further coordination between the state and central GST administrations. The institutional interdependency of GST is manifested in the fact that the settlement of IGST, the architecture of returns, rate decisions and exemptions, and technology for the compliance are spread across jurisdictions. The productivity of revenue, at the state level, is then a function of the institutional design at the national level. (GST Council, 2024; Joseph & Kumary, 2023; Reddy et al., 2025).

10. Limitations and Scope for Further Research

The main constraint is the short time series (annual) of data. The number of observations for descriptive analysis is 7, and for robust time-series inference, it is more than 7. The regression estimates are thus only indicative and should not be regarded as definitive. Another restriction is the inclusion of final, revised and advance/revised estimates in the series, which is an inevitable accompanying feature of analysing the most recent financial year issued in the official publications. Third, what is measured by buoyancy is not identical to a "policy adjusted tax elasticity". (Mansfield, 1972; Upender, 2008; Behera et al., 2026).

Further research can be done which can be extended with future data, quarterly data, testing for structural breaks, and can compare Maharashtra with other large states. Using the panel-data design, it is possible to analyze if the differences in SGST buoyancy between the states are attributed to the economic structure, formalisation, e-invoicing coverage, sector composition, and administrative intensity. The studies also could separate nominal GSDP into real growth and inflationary components and determine the contribution of inflation to the growth of the revenue. (Behera et al., 2026; Jagtiani, 2026).

11. Conclusion

Maharashtra's SGST revenue more than doubled between 2018–19 and 2024–25, rising from ₹82,352 crore to ₹167,905 crore. The estimated growth of SGST has shown a CAGR of 12.61 percent as compared to nominal GSDP CAGR of 10.21 percent and the ratio of SGST to GSDP has risen from 3.26 percent to 3.71 percent. The CAGR-based period buoyancy of the series is above one (1.23) as is the log-log coefficient of the series (1.35).

These results show that, when compared with the nominal growth of the economy, there has been greater than proportional SGST revenue growth from the beginning of the period. The conclusion should nevertheless be preceded by a qualification for the pandemic shock, the few number of observations made per year and the inclusion of compliance and policy effects in buoyancy. An interesting aspect of this pattern is that revenue growth has continued to be healthy post the immediate reopening upswing, a period of 2021–22.

The fiscal-management point is that the base of Gujarat in Maharashtra has shown significant growth in the recovery as well as in the depth of recovery but a sustained performance would need further formalisation, efficient and effective digital administration, consistency in policy and a careful monitoring of the intensity of the tax. The goal should be maximum collections from a short-term perspective – but that's not the goal. The goal is a broad, stable, administratively efficient GST system that generates revenue in a sustainable manner that is related to the state's economy.

Appendix A. Formulae and Calculation Notes

Annual SGST growth (%) = [(SGSTt − SGSTt−1) / SGSTt−1] × 100.

Annual nominal GSDP growth (%) = [(GSDPt − GSDPt−1) / GSDPt−1] × 100.

Annual tax buoyancy = Annual percentage change in SGST / Annual percentage change in nominal GSDP.

SGST-to-GSDP ratio (%) = (SGST / nominal GSDP) × 100.

CAGR = [(Ending value / Beginning value)^(1/n) − 1] × 100.

Log-log model: $\ln(SGST_t) = \alpha + \beta \ln(GSDP_t) + \varepsilon_t$, where β is the estimated responsiveness coefficient.

Appendix B. Extended Interpretation and Robustness Considerations

The empirical interpretation of GST buoyancy benefits from distinguishing between revenue responsiveness and tax elasticity. The coefficients reported in this paper are buoyancy measures because the observed SGST series reflects the actual tax system operating in each year. It therefore incorporates not only the expansion or contraction of nominal economic activity but also administrative actions, changes in filing and payment behaviour, enforcement, refund timing, changes in the composition of taxable transactions, and any policy changes affecting the effective base. A policy-adjusted elasticity would require a detailed quantification of the revenue effects of every discretionary change. Such an adjustment is not attempted because a consistent annual state-level series of discretionary-change effects is not available for the complete period. Consequently, the estimated coefficient should be interpreted as the realised responsiveness of SGST revenue to nominal GSDP rather than a pure behavioural elasticity. (Prest, 1962; Mansfield, 1972; Venkatraman & Murali, 2026).

A second robustness issue concerns the choice of macroeconomic denominator. Nominal GSDP is appropriate for a tax levied primarily as a percentage of transaction values because it reflects both real activity and changes in prices. Using real GSDP would answer a different question and would generally produce larger apparent buoyancy during inflationary periods. The nominal measure therefore provides the more conservative and fiscally relevant benchmark for comparing ad valorem tax receipts. Nevertheless, nominal GSDP is a broad aggregate, while GST applies only to taxable supplies and excludes or treats differently several activities. The relationship is thus expected to be strong but not mechanically proportional. (RBI, 2024; IMF, 2023).

References

1. Ajay, A., & Selvan, M. C. (2025). GST and constitutional federalism in India: A critical analysis of Article 246A's impact on Centre-State fiscal relations. South India Journal of Social Sciences, 23(3), 33–36. https://doi.org/10.62656/SIJSS.v23i3.1976
2. Ananda, D. (2024). Goods and services tax and its implications for fiscal federalism in India. International Journal of Political Science and Governance, 6(2), 95–100. https://doi.org/10.33545/26646021.2024.v6.i2b.371
3. Behera, S. R., Seth, B., Suresh, A. K., & Pawar, I. (2026). Tax buoyancy in India: An empirical assessment. IUP Journal of Applied Finance, 32(2), 5–32. https://doi.org/10.71329/IUPJAF/2026.32.2.5-32
4. Central Board of Indirect Taxes and Customs. (2023). Annual report 2022–23. Government of India. https://www.cbic.gov.in/
5. Central Board of Indirect Taxes and Customs. (2024). Annual report 2023–24. Government of India. https://www.cbic.gov.in/
6. Comptroller and Auditor General of India. (2024). State finances audit report: Government of Maharashtra. https://cag.gov.in/
7. Fifteenth Finance Commission. (2020). Finance Commission in COVID times: Report for 2021–26. Government of India. https://fincomindia.nic.in/
8. Goods and Services Tax Council. (2022). Annual report 2021–22. Government of India. https://gstcouncil.gov.in/
9. Goods and Services Tax Council. (2023). Annual report 2022–23. Government of India. https://gstcouncil.gov.in/
10. Goods and Services Tax Council. (2024). Annual report 2023–24. Government of India. https://gstcouncil.gov.in/
11. Goods and Services Tax Network. (2022). Annual report 2021–22. https://www.gstn.org.in/
12. Goods and Services Tax Network. (2023). Annual report 2022–23. https://www.gstn.org.in/
13. Goods and Services Tax Network. (2024). Annual report 2023–24. https://www.gstn.org.in/
14. Government of India, Ministry of Finance. (2017). Goods and Services Tax (GST): Concept and status. Department of Revenue. https://dor.gov.in/
15. Government of India, Ministry of Finance. (2019). Economic Survey 2018–19. Government of India. https://www.indiabudget.gov.in/economicsurvey/
16. Government of India, Ministry of Finance. (2020). Economic Survey 2019–20. Government of India. https://www.indiabudget.gov.in/economicsurvey/
17. Government of India, Ministry of Finance. (2021). Economic Survey 2020–21. Government of India. https://www.indiabudget.gov.in/economicsurvey/
18. Government of India, Ministry of Finance. (2022). Economic Survey 2021–22. Government of India. https://www.indiabudget.gov.in/economicsurvey/
19. Government of India, Ministry of Finance. (2023). Economic Survey 2022–23. Government of India. https://www.indiabudget.gov.in/economicsurvey/
20. Government of India, Ministry of Finance. (2024). Economic Survey 2023–24. Government of India. https://www.indiabudget.gov.in/economicsurvey/
21. Government of India, Ministry of Finance. (2025). Economic Survey 2024–25. Government of India. https://www.indiabudget.gov.in/economicsurvey/
22. Government of Maharashtra, Directorate of Economics and Statistics. (2019). Economic Survey of Maharashtra 2018–19. Planning Department. https://mahades.maharashtra.gov.in/
23. Government of Maharashtra, Directorate of Economics and Statistics. (2020). Economic Survey of Maharashtra 2019–20. Planning Department. https://mahades.maharashtra.gov.in/
24. Government of Maharashtra, Directorate of Economics and Statistics. (2021). Economic Survey of Maharashtra 2020–21. Planning Department. https://mahades.maharashtra.gov.in/
25. Government of Maharashtra, Directorate of Economics and Statistics. (2022). Economic Survey of Maharashtra

2021–22. Planning Department. https://mahades.maharashtra.gov.in/
26. Government of Maharashtra, Directorate of Economics and Statistics. (2023). Economic Survey of Maharashtra 2022–23. Planning Department. https://mahades.maharashtra.gov.in/
27. Government of Maharashtra, Directorate of Economics and Statistics. (2024). Economic Survey of Maharashtra 2023–24. Planning Department. https://mahades.maharashtra.gov.in/
28. Government of Maharashtra, Directorate of Economics and Statistics. (2025). Economic Survey of Maharashtra 2024–25. Planning Department. https://mahades.maharashtra.gov.in/
29. Government of Maharashtra, Directorate of Economics and Statistics. (2026). Economic Survey of Maharashtra 2025–26. Planning Department. https://mahades.maharashtra.gov.in/
30. Gujarati, D. N., & Porter, D. C. (2009). Basic econometrics (5th ed.). McGraw-Hill/Irwin.
31. International Monetary Fund. (2011). Revenue mobilization in developing countries. https://www.imf.org/
32. International Monetary Fund. (2023). Fiscal monitor: On the path to policy normalization. International Monetary Fund. https://www.imf.org/en/Publications/FM
33. Jagtiani, P. (2026). Digital compliance and revenue buoyancy under India's Goods and Services Tax: Evidence from 2017 to 2024. Cogent Social Sciences, 12(1), 2700043. https://doi.org/10.1080/23311886.2026.2700043
34. Joseph, K. J., & Kumary, L. A. (2023). India's GST paradigm and the trajectory of fiscal federalism: An analysis with special reference to Kerala. Indian Economic Journal, 71(1). https://doi.org/10.1177/00194662221146640
35. Kalagond, G. (2026). Tax buoyancy of India: A study of a decade. VISION: Journal of Indian Taxation, 13(1), 13–24. https://doi.org/10.17492/jpi.vision.v13i1.1312602
36. Mansfield, C. Y. (1972). Elasticity and buoyancy of a tax system: A method applied to Paraguay. IMF Staff Papers, 19(2), 425–446.
37. Mukherjee, S. (2020). Goods and Services Tax efficiency across Indian states: Panel stochastic frontier analysis. National Institute of Public Finance and Policy. https://www.nipfp.org.in/
38. Organisation for Economic Co-operation and Development. (2020). Tax administration 3.0: The digital transformation of tax administration. OECD. https://www.oecd.org/tax/forum-on-tax-administration/
39. Organisation for Economic Co-operation and Development. (2022). Consumption tax trends 2022: VAT/GST and excise, core design features and trends. OECD Publishing. https://doi.org/10.1787/6525a942-en
40. Prest, A. R. (1962). The sensitivity of the yield of personal income tax in the United Kingdom. Economic Journal, 72(287), 576–596.
41. Purohit, M. C. (2001). National and sub-national VATs: A road map for India. Economic and Political Weekly, 36(9), 757–772.
42. Rao, M. G. (2005). Tax system reform in India: Achievements and challenges ahead. Journal of Asian Economics, 16(6), 993–1011. https://doi.org/10.1016/j.asieco.2005.10.003
43. Rao, M. G., & Rao, R. K. (2006). Trends and issues in tax policy and reform in India. India Policy Forum, 2, 55–122.
44. Rao, R. K. (2019). Goods and Services Tax in India: Progress, performance, and prospects. National Institute of Public Finance and Policy. https://www.nipfp.org.in/
45. Reddy, Y. V., Reddy, G. R., & Chakraborty, P. (2025). Goods and Services Tax Council: A new institution in Indian fiscal federalism. In Indian fiscal federalism (2nd ed., pp. 189–200). Oxford University Press. https://doi.org/10.1093/9780198971658.003.0011
46. Reserve Bank of India. (2017). State finances: A study of budgets 2016–17. https://www.rbi.org.in/
47. Reserve Bank of India. (2019). State finances: A study of budgets 2019–20. https://www.rbi.org.in/
48. Reserve Bank of India. (2020). State finances: A study of budgets 2020–21. https://www.rbi.org.in/
49. Reserve Bank of India. (2021). State finances: A study of budgets 2021–22. https://www.rbi.org.in/
50. Reserve Bank of India. (2022). State finances: A study of budgets 2022–23. https://www.rbi.org.in/
51. Reserve Bank of India. (2023). State finances: A study of budgets 2023–24. https://www.rbi.org.in/
52. Reserve Bank of India. (2024). State finances: A study of budgets 2024–25. https://www.rbi.org.in/
53. Reserve Bank of India. (2025). State finances: A study of budgets 2025–26. https://www.rbi.org.in/
54. Sethia, D., & Chaudhuri, D. D. (2026). The grand federal bargain for Goods and Services Tax (GST) in India. Applied Economics. Advance online publication. https://doi.org/10.1080/00036846.2026.2646320
55. Singh, D. K., & Singh, B. P. (2024). GST and Indian federalism: Negotiating central authority and state autonomy. ShodhKosh: Journal of Visual and Performing Arts, 5(2), 1478–1483. https://doi.org/10.29121/shodhkosh.v5.i2.2024.6229
56. Upender, M. (2008). Degree of tax buoyancy in India: An empirical study. International Journal of Applied Econometrics and Quantitative Studies, 5(2), 59–70.
57. Venkatraman, A., & Murali, V. S. (2026). Tax buoyancy and tax elasticity of central government taxes: Evidence from India. Asian Journal of Multidimensional Research, 15(6), 43–54. https://doi.org/10.5958/2278-4853.2026.00030.9
58. Wooldridge, J. M. (2020). Introductory econometrics: A modern approach (7th ed.). Cengage.
59. World Bank. (2022). Global economic prospects, June 2022. World Bank. https://doi.org/10.1596/978-1-4648-1843-1
60. World Bank. (2024). Global economic prospects, January 2024. World Bank. https://doi.org/10.1596/978-1-4648-2017-5
61. Government of India, Ministry of Finance. (2017). Goods and Services Tax (GST): Concept and status. Department of Revenue.
62. Government of Maharashtra, Directorate of Economics and Statistics. (2023). Economic Survey of Maharashtra

2022–23. Planning Department.
63. Government of Maharashtra, Directorate of Economics and Statistics. (2024). Economic Survey of Maharashtra 2023–24. Planning Department.
64. Government of Maharashtra, Directorate of Economics and Statistics. (2025). Economic Survey of Maharashtra 2024–25. Planning Department. https://mahades.maharashtra.gov.in/
65. Government of Maharashtra, Directorate of Economics and Statistics. (2025). Economic Survey of Maharashtra 2024–25: Highlights. Planning Department.
66. Government of Maharashtra, Directorate of Economics and Statistics. (2025). Provisional estimates of Gross State Domestic Product for the year 2024–25. Planning Department.
67. Government of Maharashtra, Directorate of Economics and Statistics. (2026). Economic Survey of Maharashtra 2025–26. Planning Department. https://mahades.maharashtra.gov.in/
68. Government of Maharashtra, Directorate of Economics and Statistics. (2026). Advance estimates of Gross State Domestic Product for 2025–26 and revised estimates for 2024–25 and 2023–24. Planning Department.
69. Government of Maharashtra, Finance Department. (2025). Budget in brief 2024–25. Government of Maharashtra.
70. Government of Maharashtra, Finance Department. (2025). Detailed budget estimates of revenue and receipts 2024–25. Government of Maharashtra.
71. Goods and Services Tax Council. (n.d.). GST Council. https://gstcouncil.gov.in/
72. Reserve Bank of India. (2017). Goods and Services Tax: A game changer. In State finances: A study of budgets. https://www.rbi.org.in/
73. Reserve Bank of India. (2020). Union Budget 2020–21: An assessment. RBI Bulletin.
74. Reserve Bank of India. (2023). Annual report 2022–23. https://www.rbi.org.in/
75. Reserve Bank of India. (2024). Annual report 2023–24. https://www.rbi.org.in/
76. Reserve Bank of India. (2024). State finances: A study of budgets. https://www.rbi.org.in/
77. Comptroller and Auditor General of India. (2024). State finances audit report: Government of Maharashtra. https://cag.gov.in/
78. Fifteenth Finance Commission. (2020). Finance Commission in COVID times: Report for 2021–26. Government of India.
79. Government of India, Ministry of Finance. (2025). Union Budget 2025–26: Receipt budget. Government of India.
80. Government of India, Ministry of Statistics and Programme Implementation. (2025). National accounts statistics. Government of India.
81. International Monetary Fund. (2011). Revenue mobilization in developing countries. International Monetary Fund.
82. Organisation for Economic Co-operation and Development. (2022). Consumption tax trends 2022: VAT/GST and excise, core design features and trends. OECD Publishing. https://doi.org/10.1787/6525a942-en
83. Purohit, M. C. (2001). National and sub-national VATs: A road map for India. Economic and Political Weekly, 36(9), 757–772.
84. Rao, M. G. (2005). Tax system reform in India: Achievements and challenges ahead. Journal of Asian Economics, 16(6), 993–1011. https://doi.org/10.1016/j.asieco.2005.10.003
85. Rao, M. G., & Rao, R. K. (2006). Trends and issues in tax policy and reform in India. India Policy Forum, 2, 55–122.
86. World Bank. (2024). Global economic prospects. World Bank.