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Goods And Services Tax In India:A Long-Term Trend And Growth Analysis

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Abstract:
Goods and Services Tax (GST) is a comprehensive indirect tax levied on the supply of goods and services in India. This tax reform has been subjected to a diagnostic test for its revenue buoyancy, legislation, administration and compliance, revenue growth, efficiency, uniformity, and balancing federal structure after six years of implementation. The objective of this paper is to evaluate the design, structure, and implementation of GST in India and to contrast it with the practices of various international economies. The design of India's GST was informed by the best practices and experiences of numerous countries that have effectively implemented a VAT or GST system. The paper also analysed the long term trends and growth of the gross domestic GST revenue of selected states in India for the period 2012-2023. The study used the descriptive statistics and regression analysis. The annual linear trend as well as growth rate in the behaviour of included time series variable such as Gross domestic GST is estimated for the selected states with the help of regression analysis. The results have an impact on the relationship between the central and state governments, as well as the impact of GST revenue collection on state finances through the central government's allocation of fiscal resources. It requires a period of time for the benefits of any new reform to be recognised and assimilated.

Key words: VAT, Goods and Services tax, Gross Domestic GST, Trend and Growth

INTRODUCTION

The Goods and Services Tax (GST) was implemented in India on July 1, 2017, marking a significant milestone in its economic history. It is one of the most frequently discussed indirect taxation reforms also known as the One Nation One Tax. Value Added Tax (VAT)/GST has been implemented in over 175 countries worldwide since 1954, with France being the first to introduce it. The common objectives of the enacted GST in Canada, Vietnam, Italy, Nigeria, Brazil, Australia, Singapore, the U.K., Monaco, Spain, and South Korea are to reform the existing tax system with a consolidated system that would facilitate economic integration, mitigate cascading effects, and streamline compliance. The countries cited a variety of reasons for introducing VAT/GST in some form.
According to economic reformists, GST has established the groundwork for a more prosperous India and an economic union. This tax reform has been subjected to a diagnostic test for its revenue buoyancy, legislation, administration and compliance, revenue growth, efficiency, uniformity, and balancing federal structure after six years of implementation.
The objective of this paper is to evaluate the design, structure, and implementation of GST in India and to contrast it with the practices of various international economies. The paper will also analyse the long term trends and

growth of the gross domestic GST revenue of selected states in India for the period 2012-2023.

The significance of this study is to enhance the current body of knowledge and offer valuable insights for policymakers and researchers to make adjustments and improvements in order to achieve the objectives of optimal tax policy.

1.1. GST in India: Genesis

The year 2005 saw the replacement of the intricate multiple indirect tax structure with VAT at the Centre and all states. Despite the fact that VAT was a significant transformation in the Indian fiscal system, it had a few loopholes, such as a fragmented tax base where services were not completely taxed, input credit that was limited to the goods used as input, and a tax on interstate trade that caused numerous economic distortions. The Kelkar Task Force on Indirect Taxes first proposed the idea of instituting a GST in India in 2000. The committee acknowledged the deficiencies of the indirect tax system at both the Centre and State levels and vehemently advocated for the integration of all indirect taxes into GST in 2004 in accordance with the Fiscal Responsibility Bill Act of 2003. The primary goal of this trajectory transition to GST was to establish a tax system that was efficient, effective, and rational in relation to the OECD's guidelines on International VAT/GST for goods and services. However, the government's intention to implement the GST cannot be disputed as a positive reform that eliminates the complexities of the indirect taxation system. The Quasi-Federal Structure of India posed a significant challenge in the passage of the GST law.

The First Discussion Paper was released in 2009 by the Empowered Committee of State Finance Ministers, which established the design and plan. The introduction of the Constitution (122nd Amendment) Bill, 2014, in the Parliament was the result of extensive deliberations and discussions between the Central and State Governments. The Bill was officially approved by the requisite number of states and subsequently received the President's assent on September 8, 2016.

After more than a decade of tumultuous debates, the GST Bill was ratified in the Parliament and enacted as the Constitution (101 Amendment) Act, 2016. One Nation One Tax was the most significant decision on tax reform that India made with the implementation of GST on July 1, 2017.

1.2. Main Features of GST in India

Goods and Services Tax (GST) is a comprehensive indirect tax levied on the supply of goods and services in India. Here are some of the salient features of GST:

1. Unified Tax System: GST superseded other indirect taxes implemented by Central and State Governments, including excise duty, service tax, and VAT. It standardised India's tax system, avoiding tax cascading.
2. Dual GST Model: GST functions under a dual system, with the Central GST (CGST) imposed by the Central Government and the State GST (SGST) levied by the State Governments. Interstate transactions are subject to Integrated GST (IGST), which is collected by the Central Government and distributed to the State. Imported products and services are considered inter-state supplies and subject to IGST and customs charges.
3. Destination Based Tax: GST is a destination-based tax that is imposed across the supply chain, from producer to consumer. It is applied to value addition at each level, enabling credits to flow smoothly and decreasing consumer taxes.
4. Rate Structure: 5%, 12%, 18% and 28% along with 0.25% and 3%. In addition a cess of 15% on luxury goods and demerit goods would be imposed.
5. Input Tax Credit: GST enables companies to claim input tax credit (ITC) for taxes paid on inputs used in manufacture or supply of goods and services. This avoids double taxation and lowers taxes.
6. Exemptions: Everything except alcohol for human consumption would be subject to GST. GST will be applied on crude, petrol, diesel, ATF, and natural gas. Tobacco items would be exempted. Additionally, the Centre might collect Central Excise tax on certain items. Supply exports are zero-rated. Therefore, exports would not pay input or finished product taxes.
7. Threshold Exemption: Small enterprises with a turnover below a certain level (currently ₹ 20 lakhs for services/both goods & services and ₹ 40 lakhs for intra-state products in India) are exempt from GST. The threshold for suppliers of goods and/or services in special category states ranges from ₹ 10-20 lakhs,

except in Jammu & Kashmir, Himachal Pradesh, and Assam, where the threshold is ₹ 20 lakhs for services/both goods & services and ₹ 40 lakhs for goods (Intra-State). Small enterprises find compliance easier with this level.

8. The Composition Scheme is accessible to small taxpayers having a turnover below a defined amount (currently ₹ 1.5 crores and ₹ 75 lakhs for special category states). Businesses pay a predetermined percentage of their revenue as GST and have easier compliance under this plan.
9. Online compliance: GST established the Goods and Services Tax Network (GSTN) online gateway for registration, return filing, tax payment, and other compliance-related tasks. It simplified tax compliance for taxpayers.
10. Anti-Profiteering: To guarantee GST benefits consumers, the government created the National Anti-Profiteering Authority (NAA). Since GST was implemented, the NAA scrutinised firms for unfair pricing and profiteering. From December 1, 2022, the Competition Commission of India (CCI) handles all GST anti-profiteering charges.
11. Digitalisation: GST intends to improve tax compliance by integrating more enterprises into the formal economy, leading to more transparency and compliance. Digitalising procedures and electronic records makes the tax system transparent and reduces tax avoidance.
12. Sector-specific Exemptions: Healthcare, education, and essential needs like food grains are excluded or have lower GST rates for affordability and accessibility.
13. GST Council: a constitutional federal body that includes the Centre and the finance ministers of the state was a step towards cooperative federalism.
14. GST (Compensation to States) Act: To maintain the state's autonomy and revenue shortfall in relation to 14% revenue growth with implementation of GST, the GST (Compensation to States) Act, 2017 was the integral part in order to cover the loss of revenues and bring the states to build consensus. Compensation cess 28 %would be charged on sin and demerit goods in a separate Consolidated Fund. The GST Council had recommended that the Centre shall make up for any shortfall in the projected revenue to the States for the first five years after the implementation of the GST act till 30th June 2022.

GST legislation has evolved to achieve its goals since its implementation. Significant GST framework improvements are crucial to digitization and assist the government refine rules to simplify, minimise compliance complexity, and close loopholes. The introduction of e-way bills and e-invoicing, changes to return filing and input tax credits, taxation of transactions involving unregistered persons and real estate, and the government's efforts to reduce MSMEs' compliance burden are major distinctions in the evolution process.

2 Review of Literature

The literature review has been divided into two sections one is related to GST in global scenario of selected countries and other relates to GST in India. The literature discusses GST concept and structure, implementation and selected countries GST. Numerous research papers on worldwide GST experience were evaluated to compare with India's GST model.

2.1 GST in Global Scenario

The majority of VAT/GST literature concentrates on its definition, structure, design, and efficacy. The impact of fiscal policy, which encompasses VAT, on a variety of sectors has been the subject of extensive research Levine and Renelt (1992). VAT is implemented in 140 countries and accounts for one-fifth of global tax revenue (Keen and Lockwood, 2007). Over 140 nations have implemented GST due to its advantages, as per Taqvi, Srivastava, and Srivastava (2013).

As part of recent tax reform, the majority of countries have implemented VAT or GST taxes. VAT endeavours to supplant cascading sales tax, excise duty, service tax, and other forms of taxation with an efficient taxing framework in the majority of these economies. Bird (2005) maintains that VAT is the most effective method of compensating for revenue losses as a result of trade liberalisation, despite the fact that it is not a revenue-enhancing instrument when implemented correctly. The design and structure of VAT/GST have been the subject of extensive investigation by a multitude of researchers. The studies have investigated the GST structure (single, dual, or multiple GST), GST rates, GST exemption lists in various countries, threshold turnover limits of commodities and services, and more, Bagchi, (2005). The researchers have studied design and structure of VAT/GST various countries. Following the literature review, this study has examined the design and structure in selected countries.

2.1.1 GST Design in Selected Countries

European Union (EU)

The European Union implemented Value Added Tax (VAT) across Europe, therefore replacing the previous cascading multi-stage turnover tax. It served to promote the growth of the common market. The VAT Directive is a regulatory framework specifying the structure of Value Added Tax (VAT) in the European Union (EU). It establishes principles and rules for the application and collection of VAT by member states. The Directive grants national governments the autonomy to determine the quantity and magnitude of VAT rates desired, while adhering to specific limits and fundamental regulations. In accordance with the VAT Directive, member states can choose to implement lower VAT rates, not below 5%, for the provision of goods or services including food, water, pharmaceuticals, books, admission to cultural/amusement/sporting services, social services, medical services and equipment, and agricultural goods. Consequently, in some European Union nations, consumers may be subject to a reduced value-added tax (VAT) rate on these particular products. For example, in Country X, medical services are subjected to a lower Value Added Tax (VAT) rate of 5%, which enhances the affordability of healthcare for the resident population.

An important feature of the VAT directive is the provision that exempts VAT on products supplied within the European Union. Therefore, when commodities are moved between European Union member states, they are exempt from Value Added Tax (VAT). The objective of this exemption is to streamline commerce and lower obstacles for enterprises that operate across national boundaries inside the European Union. For instance, a German firm can sell products to a French company without the need to levy VAT on the transaction, therefore facilitating and enhancing the cost-efficiency of corporate participation in international commerce.

New Zealand

The GST was implemented in New Zealand in 1988 to levy taxes on a range of difficult-to-tax goods and services. In order to assess the European VAT Directives, the UK Institute of Fiscal Studies employed the New Zealand GST model. New Zealand levies a 15% tax on most indigenous, imported, and specifically defined imported goods and services under the GST Act of 1985.

Products include all tangible and intangible assets, with the exception of legally actionable claims, currency, and objects transmitted by non-residents through wire, cable, radio, and other technological means. With the exception of commodities and currency, services encompass all other things. Exporting products and services, communications services, procurement by a territorial body using funds from local authorities, sales of a going company (slump sale), and property transactions are all subject to a 0% products and Services Tax (GST). GST-exempt goods and services encompass private property (consisting of cars or homes not used for business), financial services such as loan interest or bank fees, donated products and services offered by non-profit organisations, rental of residential properties, penalty interest, and so on.

New Zealand ranks among the most tax productive nations in the OECD, with the greatest GST revenue GDP ratio IMF, (2015).

Australia

In Australia, the New Tax System package, which includes the New Tax System (Goods and Services Tax) Act, 1999, is a significant and groundbreaking tax reform. Exceptions notwithstanding, the GST replaced the federal wholesale sales tax and other state and territory levies with a 10% tax on most goods and services. The Goods and Services Tax (GST) in Australia is a destination-based consumption tax with limited tax base exemptions. Certain food items, the majority of medical and health services, pharmaceuticals, medical equipment and appliances, educational courses, childcare services, exports, religious services, overseas transportation, and other similar items are exempt from GST requirements. Financial supplies, residential rent, residential premises, precious metals, school tuck shops and canteens, and charity fundraising events are categorised as input-taxed supplies (referred to as exempt in other countries) and are excluding from the application of GST. Australian authorities implemented several initiatives to alleviate the additional financial strain of GST, with the aim of enhancing its popularity. However, the low baseline GST rate of 10 percent and certain exemptions (such as basic goods, certain education and health services, childcare, and religious and charitable activities) have resulted in low GST revenue productivity from a tax collecting perspective IMF, (2015).

Canada

Canada, like India, is a federal country. Goods and Services Tax (GST) is levied on the majority of good and service supplies. The tax is regulated by the Excise Tax Act. Implemented in Canada on January 1, 1991, the Goods and Services Tax (GST) is a levies imposed on consumption. The current system supersedes the former manufacturer sales tax and operates under a dual framework including both the federal government and the provinces. While the introduction of GST in Canada was not devoid of controversy, it has consistently demonstrated its efficacy in increasing tax revenues and has yielded some beneficial outcomes for the economy. Canada implements three different forms of Goods and Services Tax (GST): Federal GST and provincial retail sales taxes (PST), Joint federal and provincial VATs (Harmonised Sales Tax or HST), and Separate federal and provincial VATs (Quebec Sales tax or QST). Each variety is handled and regulated in a unique manner, and it is crucial to comprehend the differences among them. Although there were apprehensions over the expanded tax base of GST leading to an increased tax burden for consumers, research has demonstrated that the advantages of GST surpass these fears. Research has demonstrated that the expansion of the tax base under GST enables the implementation of reduced tax rates, therefore mitigating any possible rise in the tax burden. Moreover, the implementation of GST has proven to be effective in mitigating tax evasion and enhancing tax compliance, therefore promoting a more equitable distribution of the tax burden. Moreover, the Goods and Services Tax (GST) has guaranteed a consistent and dependable means of financing for government initiatives, therefore yielding favourable impacts on the economy and the welfare of Canadian citizens. The federal Goods and Services Tax maintains a uniform rate of 5%. Nevertheless, each province in Canada has its own sales taxes. Included in the categories of goods and services liable to GST or HST include real property, intangible personal property, pharmaceuticals and biological, medical and assistive devices, essential groceries, agriculture and fishing, transportation and travel, among others. In general, these commodities and services are subject to a tax rate of 5% or a Harmonised Sales Tax (HST) ranging from 13% to 15%, with specific exemptions determined by policy choices.

Zero-rated supplies are subject to a tax rate of 0%, whereas some goods are exempt from GST/HST altogether. The implementation of GST in Canada has had both advantageous and detrimental consequences. Indeed, the GST has simplified the tax framework by substituting several indirect taxes. This has increased the efficiency of corporate administration and tax compliance. The Goods and Services Tax (GST) guarantees equitable tax payments according to consumption, therefore enhancing tax equity. Critical analysis of GST has also emerged. Critics argue that it disproportionately affects individuals and families with lower incomes as they allocate a greater portion of their money towards taxed goods and services. The Goods and Services Tax Credit (GSTC) was established by the Canadian government to help low-income people manage the GST liabilities.

2.2. GST in India

Globally, a number of GST structures have been formed for various kinds of economies. For India, Poddar and Ahmad (2009) illustrated the following three main options for the GST structure

1. Dual GST with concurrent jurisdiction,
2. National GST
3. State GST

Within the framework of concurrent taxation, both the States and Centre impose taxes concurrently. Sijbern (2013) said that India might adopt a modern Goods and Services Tax (GST). It facilitates the establishment of a unified market in India. The states expressed concerns that the Union may not provide them with the same level of compensation for revenue loss as it did for VAT and CST. Consequently, Union-State confidence was undermined.

According to Poddar and Ahmad (2009), GST/VAT can be assessed either at the source or the destination state.

The Goods and Services Tax (GST) is imposed on imports and does not apply to exports, rather than being deductible on imports and included in exports. Furthermore, no country imposes tariffs on exports. This provision is included in the Indian Constitution.

Rao and Chakraborty (2010) argue that accurately determining the extent of the taxable base for GST is crucial in order to attain revenue neutrality. Nevertheless, several factors would determine the neutrality of the GST rate. Among the few instances of subnational levy of invoice-credit, destination based subnational VAT on goods and services, the GST introduced by India stands out. This implementation was preceded by extensive discussions and consensus was established over a period of 17 years.

In the study, Mukherjee and Rao (2019a, 2019b) discovered that the previous sales tax system in India did not adequately standardise tax regulations, rates, thresholds, exemptions, and other related aspects among different states. The system had two significant disadvantages. Initially, there was no mechanism in place to include incremental value beyond the initial sale of a product within the scope of taxation. Secondly, there was no mechanism in place to confirm the payment of proper taxes at the initial point sale. Without the requirement of input tax credit (ITC) adjustment, there was no mechanism in place to record paper trails or transaction history to authenticate the tax payment claims made by taxpayers. Consequently, the system was susceptible to tax evasion.

Rao (2011) conducted a study to determine if GST may be classified as a gorilla, chimpanzee, or primate. His quest for the solution demonstrated that the implementation of GST was necessary as it may effectively reduce the expenses associated with compliance, collection, and resource allocation. The implementation of GST can also contribute to the generation of supplementary tax income in the medium term. His conclusion was that GST is a highly intelligent entity, comparable to a monkey rather than a gorilla or chimpanzee.

Rao (2017), Mehta and Mukherjee (2021) elucidated the economic and financial consequences of the tax and highlighted further obstacles and opportunities for change to streamline it, in order to decrease administrative and compliance expenses, enhance revenue generation, and mitigate distortions. To maximise the advantages of reform, it is necessary to decrease the number of tax rates in order to streamline the system, reassess the rate structure to avoid irregularities, decrease exemptions, strengthen the technological foundation, and broaden the tax base by include excluded commodities such as petroleum products.

Rao K. (2022) analysed the disparities in the revenue performance of states before and after the implementation of the Goods and Services Tax (GST), as well as the reported GST compensation claims by the states throughout the period of 2017-21.

Mukherjee (2019) examined the discussions surrounding compliance audits of the Goods and Services Tax (GST) in relation to the Corporate Auditor General's (CAG) initial assessment report for the fiscal year 2018-19. Critical examination of CAG's report on GSTR filing and tax collection revealed significant systemic shortcomings. A study conducted by Rao K and Mukherjee (2019) examined the financial consequences of the GST. An analysis was conducted on several data sources to determine revenue growth, GST buoyancy, compliance, quarterly, and alternative approaches for the same purpose.

In a separate analysis, Mukherjee (2020, 2022) determined that the elimination of GST compensatory cess (GSTCC) will have diverse effects on different states. In the event that the GST compensation is discontinued in 2022, the government must establish a suitable structure to enhance several elements of GST. In addition, he investigated potential factors contributing to the income deficit from GST and evaluated the potential consequences of this shortage on the budgets of both the Union and State governments.

Rao (2009) proposed that the Indian government should decrease compliance, collection, and economic costs in order to enhance tax revenue. Pandey (2017) said that the government should seek widespread authorisation for the GST threshold limit, revenue rate, and expanding the scope to include alcohol, petroleum products, real estate, and electricity. The study conducted by Mukherjee (2021, 2022) critically examined the deficiencies in the GST compensation cess and conducted a comparative analysis of the revenue performance of GST and the extent to which the compensation would contribute to servicing the debt cost. Furthermore, it examined the evaluation of predicting the levels of stress experienced after the compensatory period.

2.3 GST: An international comparison

After reviewing the literature and design of VAT/GST laws and rules in the aforementioned countries, comparable concepts have emerged. VAT/GST is destination-based and applies to consumption in the country/region, exempting exports and taxing imports. In addition, zero-rated goods may claim input tax credit for acquiring and manufacturing, while exempted supplies cannot. In all countries, VAT/GST reform has generated significant tax revenue. India's dual GST model with central GST (CGST) and state GST (SGST) shows similarity to the structure of the system existing in the Canadian province of Quebec where independent federal (GST) and provincial (QST) VATs are operative simultaneously. Bird and Gendron (1998).

India has the highest GST rate, followed by Canada at 15%, New Zealand at 12.5%, and Australia at 10%. Tax instruments should be impartial with respect to economic sectors, production factors, and commodities and services. Australia was the least neutral, with numerous exemptions, while New Zealand was the most economically neutral, with a low threshold and limited exemptions. India's tax rate was the highest in the world, with four non-zero rate categories, while other countries had a single rate or two rate structure. Exemptions and zero-rate transactions are additional parameters that are crucial for the GST design. The GST system is challenged by the inclusion of exemptions, as it can reduce the tax base and reintroduce the cascading effect, in which the exempted product can be the input of the taxed commodity and service. New Zealand had the largest GST base, while Australia and India had the harshest.

The lesser threshold is consistent with states within the European Union. Nevertheless, the European Union system will impose a full GST, in contrast to India, where the lower threshold is exclusively intended for the composition scheme. The impact of the introduction of a VAT/GST on inflation is not uniform, as indicated by cross-country evidence. The introduction of the GST in Canada, which supplanted the manufacturer's sales tax, resulted in inflation pressures (Gelardi, 2014). The fact that Canadian provinces were able to implement their own sales tax may have been the reason why inflation in Canada did not have any impact from the GST rate reductions of 2006 (7 to 6%) and again in 2008 (5 to 5%) (Gelardi, 2014).

Following the implementation of the GST, inflation in Australia and New Zealand experienced one-time increases that returned to normalcy within a year. After its implementation in July 2000, the GST in Australia had a substantial but temporary effect on inflation, with a one-quarter postponement. The average increase in inflation during the quarter was 2.6%, which was attributed to a surge in domestic consumption in the months leading up to the implementation of VAT/GST. Consumers made purchases in anticipation of the new tax. The economy contracted during the first quarter of 2001 as a consequence of the decline in domestic consumption and economic activity following the implementation of VAT/GST. The pass-through of VAT to inflation in the 17 Eurozone countries from 1999 to 2013 was found to be sensitive to the type of VAT change and substantially different between durables and non-durables. This was attributed to differences in storability and other features. A Green Paper on the future of VAT was published by the European Commission in December 2010. The paper argued that the current VAT system had "numerous shortcomings" that impeded the Internal Market, burdened businesses, and prevented Member States from benefiting. The European VAT model is complex due to the significant variation in exemptions and reduced rates among member states, which results in a distortion in competitiveness and additional compliance costs (reported to be approximately 11%) for cross-border traders in comparison to domestic merchants. Canadian businesses are experiencing complications as a result of the tax rates of various provinces and the interpretation of GST/HST. British Columbia reinstated its PST in 2013, following its alignment with the GST in July 2010. As in all other countries, VAT/GST compliance costs are higher for small enterprises in New Zealand and Australia. In Canada, businesses encounter difficulties in navigating the diverse tax rates imposed by numerous provinces, in addition to interpreting issues. This results in a compliance procedure that is both complex and burdensome for businesses that operate in multiple regions. Furthermore, small businesses in New Zealand and Australia have reported increased compliance costs under the VAT/GST system, which has a negative impact on their competitiveness in the market and places a strain on their resources. The Goods and Services Tax (GST) system of India is not explicitly modelled after any specific country. Nevertheless, it was influenced by the value-added tax (VAT) systems that have been implemented in a variety of countries worldwide. The design of India's GST was informed by the best practices and experiences of numerous countries that have effectively implemented a VAT or GST system.

Some of the countries that influenced India's GST model include:

Canada: The taxation system in Canada is federal, with both federal and provincial levels. India also implemented a dual GST structure, in which the central government and state governments imposed distinct GSTs.

Australia: The GST system of Australia had an influence on the GST system of India. The multi-tier rate structure of the Australian GST is comparable to that of India, with varying rates for various products and services.

European Union: The European Union's value-added tax system, which was implemented in all of its member states, was another source of inspiration. India adopted certain components of the European Union's VAT system, including the concept of input tax credits.

It is crucial to acknowledge that India's GST was influenced by these and other international models; however, it has its own distinctive features and structure that are specifically tailored to the Indian context. The introduction of the GST system in India was intended to simplify the nation's intricate tax structure and establish a unified indirect tax regime.

3. Long term trends and growth of Gross domestic GST in India

The gross domestic Goods and Services Tax (GST) Collection has subsumed both Central and State indirect taxes and levies. The total GST revenue collected consists of Centre GST, States GST, Integrated GST and Cess for the period 2012 to 2023. For the period 2012-13 to 2016-17 shows revenue of the taxes subsumed in the GST as computed by the GST Council and available in GST portal. The research study collected secondary data from GST portal for all 15 states.

The study used the Descriptive statistics and regression analysis. The descriptive analysis explains about the central tendency of the responses estimated by the mean, dispersion of the data as estimated by the standard deviation and the distribution analysis examined with the help of skewness and kurtosis of the collected data.

The annual linear trend as well as growth rate in the behaviour of included time series variable such as Gross domestic GST is estimated for the selected states with the help of regression analysis. The variable is used as the dependent variable, whereas the time is assumed as independent variable. The regression equation for the trend analysis and growth analysis is shown below:

Trend regression equation: $\mathrm{GSDP_I} = \alpha_I + \beta_I * \mathrm{TIME} + \varepsilon_I$

Semi-log model for growth rate estimation: $\mathrm{log\_GSDP_I} = \alpha_I + \gamma_I * \mathrm{TIME} + \varepsilon_I$

Where, α is the intercept, β and γ are representing the regression slope coefficients for the above two regression equations and ε indicates the residual.

3.1 Descriptive analysis

The descriptive analysis on gross domestic GST collection annual data as reported in the table 1.

Table 1: Descriptive Statistics-Gross GST Collection for selected states in India

State	Mean (Rs. Crores)	Std. Deviation	Skewness	Kurtosis	Minimum	Maximum
Maharashtra	185826.33	55396.74	0.18	0.78	105211.00	270346.00
Karnataka	84111.33	24626.59	0.25	1.25	48160.00	122822.00
Gujarat	80655.33	23242.25	-0.01	0.47	45924.00	114221.00
Tamil Nadu	74864.83	19543.35	0.03	1.11	45322.00	104377.00
Uttar Pradesh	64163.67	16935.67	-0.37	1.27	36894.00	87970.00
Haryana	60215.83	16513.01	0.40	1.23	36829.00	86668.00
West Bengal	42019.83	11427.67	-0.44	1.51	23349.00	58060.00

Rajasthan	32955.00	8979.82	-0.39	1.23	18465.00	45458.00
Odisha	32514.50	12526.34	0.12	-0.56	14849.00	49442.00
Andhra Pradesh	27636.67	8595.91	-0.12	1.09	14327.00	40232.00
Madhya Pradesh	27343.00	6891.11	-0.81	1.78	15544.00	36232.00
Kerala	18901.17	5597.50	0.18	0.51	10872.00	27371.00
Punjab	15352.50	3928.96	0.06	0.02	9650.00	20949.00
Bihar	11773.17	3651.60	-0.80	1.82	5531.00	16548.00
Goa	4050.50	955.64	0.22	0.24	2772.00	5520.00

The results reported in table 1 that the Maharashtra has the highest Gross domestic GST collection. This is followed by the states of Karnataka, Gujarat and Tamil Nadu due to better compliance and expansion of the economy. The lowest GST collection is found in case of Punjab indicating adverse impact of GST implementation and dependence on the compensation Cess to meet the protected revenue of 14% under GST or fiscal resources from the Centre. The descriptive analysis also reported the variations in GST collection by standard deviation, the distribution of the GST values is reported with the help of skewness and kurtosis. The state with minimum average gross GST is Goa in comparison to maximum state of Maharashtra as given in table 1.

3.2 Annual trend and Growth rate – Gross GST Collection for selected fifteen states in India

The annual linear trend as well as growth rate in the behaviour of GST collection is estimated for the selected states with the help of regression analysis. The GST collection values for the time period of 2012-13 to 2022-23 is assumed as the dependent variable, whereas the time is assumed as independent variable. The annual trend is estimated with trend regression equation and growth rate is estimated with semi lag model. The slope coefficient β indicates the linear trend in the long-term behaviour of GST collection for different selected states, whereas the γ* time represents the annual growth rate in the long-term behaviour of GST for different selected states.

Hypothesis (H_1): "There exists significant positive trend and growth in Gross domestic Goods and services tax of selected fifteen states in India."

The results of trend analysis and growth estimation is reported in table 2 below:

Table 2: Annual linear trend & Growth rate estimation for Gross domestic GST Collections for selected states in India

State	Annual Trend	t stats	F stats (R square)	Annual Growth rate	t stats	F stats (R square)	Remark
Odisha	6436.71	6.98**	48.74(92%)	21.47%	5.64**	31.84(89%)	Sig annual trend and growth rate
Bihar	1783.11	4.49**	20.18(84%)	17.39%	3.48**	12.12(75%)	Sig annual trend and growth rate
Andhra Pradesh	4304.74	5.36**	28.72(88%)	16.83%	4.38**	19.15(83%)	Sig annual trend and growth rate
Kerala	2809.91	5.47**	29.89(88%)	15.54%	5.02**	25.23(86%)	Sig annual trend and growth rate
Maharashtra	27087.31	4.53**	20.51(84%)	15.26%	4.16**	17.34(81%)	Sig annual trend and growth rate
Gujarat	11656.17	5.43**	29.41(88%)	15.24%	4.69**	22.01(85%)	Sig annual trend and growth rate
Karnataka	11913.66	4.26**	18.12(82%)	14.78%	3.99**	15.90(80%)	Sig annual trend and growth rate

Rajasthan	4491.49	5.31**	28.16(88%)	14.71%	4.27**	18.22(82%)	Sig annual trend and growth rate
West Bengal	5547.69	4.34**	18.84(83%)	14.35%	3.68**	13.53(77%)	Sig annual trend and growth rate
Haryana	8092.14	4.59**	21.08(84%)	13.79%	4.47**	19.95(83%)	Sig annual trend and growth rate
Uttar Pradesh	8214.46	4.32**	18.65(82%)	13.76%	3.72**	13.86(78%)	Sig annual trend and growth rate
Madhya Pradesh	3394.06	4.74**	22.49(85%)	13.63%	3.79**	14.39(78%)	Sig annual trend and growth rate
Tamil Nadu	9561.17	4.54**	20.65(84%)	13.35%	4.14**	17.12(81%)	Sig annual trend and growth rate
Punjab	1956.26	5.12**	26.23(87%)	13.18%	4.69**	22.05(85%)	Sig annual trend and growth rate
Goa	385.91	2.31**	5.32(57%)	9.59%	2.22**	4.94(55%)	Sig annual trend and growth rate

Note: **significant at 5% level

Conclusion (H_1)

1. **Trend analysis**: The result reported in table 2 that the t-stats for all the selected states is found statistically significant indicating that the GST collection for all the states has significant annual linear trend in the last 10 years. The all the slope coefficient (annual trend) are also found positive in nature indicating that the GST collection for all the selected state in India has positive trend. The top five states with respect to highest linear trend in annual gross GST in Rs. crores are found to be Maharashtra (27087.31), Karnataka (11913.66), Gujarat (11656.17), Tamil Nadu (9561.17) and Uttar Pradesh (8214.46). The states with lowest linear trend in annual gross GST are found to be Punjab (1956.26), Bihar (1783.11) and Goa (385.91). Notably, Maharashtra, Gujarat and Tamil Nadu are the top-producing states in the country and better compliance. The lowest GST collection is found in case of Punjab, Bihar and Goa indicating adverse impact of GST implementation on the agrarian states and dependence on the GST compensation cess or other fiscal sources to meet the protected revenue of 14% under GST regime.

Growth analysis: The selected states were arranged in descending order according to the annual growth rates. The result reported that the t-stats for the growth component for all the selected states is found statistically significant indicating that the GST collection annual growth rate for all the states has is significant in the last 10 years. The slope coefficient (annual growth rate) are also found positive in nature for all the selected states indicating that the GST collection for all the selected state in India is growing in the last ten selected financial years. The top five states with respect to highest and double-digit annual growth rate annual gross GST are found to be Odisha (21.47%), Bihar (17.39%), Andhra Pradesh (16.83%), Kerala (15.54%) and Maharashtra (15.26%). This is due to high performance in economic activities and economic maturity of high performing states and also increase in consumption expenditure. The state with respect to lowest annual growth rate in gross GST is Goa (9.59%). The Goa has low GSDP that shows its low tax potential and consumption intensity.

4. Findings and Conclusions

The total Gross GST collection includes CGST, SGST, IGST, and Cess derived from domestic supplies. Maharashtra exhibits the highest Gross GST collection among the states. The subsequent states are Karnataka, Gujarat, and Tamil Nadu, attributed to superior compliance and economic expansion. Maharashtra, Gujarat, and Tamil Nadu emerge as the leading states in terms of production within the nation. This finding challenges the assumption that producing states will experience net losses due to the destination-based nature of GST. The minimal GST collection observed in Punjab suggests a negative effect of GST implementation on agrarian states, highlighting their reliance on GST compensation cess or alternative fiscal sources to achieve the guaranteed revenue of 14% within the GST framework.

The leading five states exhibiting the highest double-digit annual growth rate in gross GST are Odisha, Bihar, Andhra Pradesh, Kerala, and Maharashtra. This observation contradicts the hierarchy of states based on the average GST collection. This can be attributed to robust performance in economic activities and the economic maturity of high-performing states, alongside a rise in consumption expenditure. Goa exhibits the lowest annual growth rate in gross GST among the states. The GSDP of Goa is relatively low, indicating limited tax potential, a constrained economic base, and lower consumption intensity.

To conclude, the Goods & Services Tax (GST) is a substantial reform of India's indirect taxation system, with the objective of creating a unified, transparent, and integrated framework. Although the adjustment process has the potential to impact economic activity for several months, the GST's advantages are expected to surpass its expenses in the long term, as indicated by international experience. The GST has been subjected to extensive testing in order to evaluate its influence on the maintenance of a balanced federal system, efficiency, consistency, and revenue growth. These implications have an impact on the relationship between the central and state governments, as well as the impact of GST revenue collection on state finances through the central government's allocation of fiscal resources. It requires a period of time for the benefits of any new reform to be recognised and assimilated. Nevertheless, a system of this magnitude and complexity requires continuous improvements, with a focus on reducing prices and increasing production. The GST Council has convened 49 meetings through March 2023 to address the demands of stakeholders, including changes to tax rates, administrative and operational details, and digitalisation.

5. Recommendations

This research reveals the intricate patterns of GST contributions among states, emphasizing the need for nuanced policy actions to address a variety of economic environments. The variances also underscore the potential impact of state-specific factors, such as economic activities, on GST revenue. In order to establish effective strategies for ensuring consistent revenue growth across all states, policymakers must consider these disparities. Mukherjee (2023) offers policymakers and stakeholders critical information for informed decision-making in the areas of taxation and fiscal planning, providing valuable insights into the impact of the GST on the revenue dynamics of Indian states. The study also provides a nuanced perspective on the challenges and opportunities associated with the GST framework.

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