

Assessing the Inclusivity of India's Multi-Tiered GST Regime: A Distributional and Structural Analysis

Dr. Renu Rathi¹

¹School of Commerce, JAIN Deemed-to-be University, Jamnagar 9th block, Bangalore
r.renu@jainuniversity.ac.in



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Abstract

The Goods and Services Tax (GST), which was implemented in India in 2017, was a significant reform in the country's indirect tax regime and was introduced to broaden the tax base and formalize the Indian economy. But its effect on economic equity, that is, whether it is an inclusive tax or imposes a disproportionate burden on lower income groups and small businesses is still a live issue. This paper examines the progressivity of India's multi-layered Goods and Services Tax (GST) regime and its impact on operation of Micro, Small and Medium Enterprises (MSMEs).

This study uses secondary data provided by the Household Consumption Expenditure Survey (HCES), NIPFP datasets, and data from the Ministry of Finance and assesses the extent of compliance using descriptive incidence measures, Multiple Linear Regression and a Chi-Square test for compliance constraints. Higher consumption shares in these two tax brackets are associated with higher upper-income fractals, indicating that the multi-tiered tax structure is progressive across consumer classes. On the other hand, the Chi-Square test shows an imbalance in the burden of operations with a considerable impact of compliance costs on the Micro-enterprise. The paper concludes with policy recommendations for enhancing inclusive taxation through minimizing systemic compliance costs for small-scale operators.

Keywords: Inclusive Taxation, GST Reforms, Progressivity, Multiple Linear Regression, MSME Sustainability, Structural Equity.

1. Introduction

Historically, consumption taxes have been an important element of fiscal equity since they have constituted over half of India's overall tax revenues. The Goods and Services Tax (GST) regime was introduced in July 2017 to replace a complex network of cascading state and central taxes to make the tax regime more uniform. One of the main goals of public finance is to deliver the "Inclusive Taxation" principle, meaning that tax reforms must not disproportionately affect

vulnerable demographic groups and/or lack of fairness in how they affect the operation of small and informal livelihoods.

In addition to macro-level numbers, which show an increase in revenue collection from around ₹5.39 lakh core in FY 2017-18 to more than ₹11.69 lakh core by FY 2025-26, the allocation of the tax burden among various socio-economic groups remains to be explored. A typical developing economy with a high share of the informal sector and rural-urban income gaps may face the challenge that a flat consumption tax could turn out to be regressive. To curb this, a multi-tiered rate structure (0%, 5%, 12%, 18%, and 28%) was introduced in India, with lower rates applicable to essential items and higher rates for luxury items.

This paper is an assessment of the effectiveness of this design. It analyzes the effects of the multi-tiered structure on its distributional objectives by income level and evaluates operational effects and compliance differentials faced by small businesses in a digital tax network using secondary data.

2.1 Theoretical Framework of Indirect Tax Inclusivity

Based on public finance theory, especially the Ramsey optimal taxation framework, it is possible to have an inherently regressive uniform commodity tax if lower income households have a higher marginal propensity to consume than higher income households. Developing economies may take recourse to a different level of taxes on commodities to tackle this vertical inequality. The tax system strives to follow the "ability to pay" principle by taxing certain items at low rates and other items at higher rates. Consumer incidence and producer compliance costs in the domestic market are two aspects of taxation that need to be considered for inclusive taxation.

Empirical Studies on the Distributional Impacts of GST are categorized under this section. This section classifies the Empirical Studies on the Distributional Impacts of GST.

A number of domestic and foreign research studies have investigated the equity impacts of consolidated indirect taxes:

Bird and Dendron (2007) point out those dual VAT/GST systems can be progressive if they are strictly based on consumption of basic goods and un-processed food by the poor.

India's GST did away with the cascading effect of "tax on tax" in India, but its introduction in the initial stages introduced cash flow problems in informal supply chains as a result of input tax credit matching requirements (Rae, 2019).

Historical consumer expenditure data analysis by NIPFP (2023) shows that the effective tax rates under GST rise with an increase in incomes of the household, which shows that the multi-rate structure is a progressive one.

The business risk of non-compliance and the enterprise asymmetry.

A progressive tax is one that imposes a greater proportionate tax on the rich than on the poor, but a regressive tax is one that imposes a greater proportionate tax on the poor than on the rich.

A fixed compliance cost also gives an economy of scale, favoring large corporations over small ones (Keen and Mints, 2004).

According to Mukherjee (2021), digital compliance measures like e-invoicing and filling the monthly GSTR is a challenge for the micro retailers, which might not have a dedicated accounting infrastructure. This can create a segregation of the supply chain, with the larger companies preferring registered suppliers for the certainty of the input tax credit being received, thus leaving micro-enterprises without a registered supplier in the system or without an input tax credit.

2.4 Research Gap Addressed

There is much existing literature that focuses on either the consumer side of progressivity or the compliance costs faced by the firms. This paper brings these two together within one lens: Inclusive Taxation, presenting recent empirical evidence and statistically testing the functioning of the tax system for lower income consumers and small-scale producers.

3. Research Methodology & Hypotheses

3.1 Data Sources

The data used in this study are secondary data obtained from the following:

1. The NSSO Household Consumption Expenditure Survey (HCES) 2022–23 datasets are available with consumption baskets for rural and urban fractal classes.
2. Revenue Reports of Ministry of Finance (2018-2026) on aggregate and category-wise collection of GST.

Empirical Micro-Enterprise Survey Data abstracts are for compliance costs for 500 small entities sampled.

3.2 Hypothesis Formulation

To assess inclusiveness of the tax system, two hypotheses are set:

Hypothesis 1: No significant relationship between household per capita monthly expenditure (MPCE) and incidence share of GST tax in standard tax slabs.

Hypothesis 2: The burden of compliance with operations (measured as a percentage of total turnovers) is not dependent on the scale of the enterprise.

4.1 Descriptive Analysis

Table 1 shows the percentage of allocated household expenditure by different rate slabs of the GST, based on the compiled data of the HCES (2022–23).

Table 1: Consumption Basket Allocation by Income Quintiles

A. Expenditure Quintile (MPCE) B.	C. Exempt/Zero Rate (0%) D.	E. Low Rate (5%) F.	G. Standard Rate (12%& 18%) H.	I. High/Demerit (28%) J.
K. Quintile 1 (Lowest 20%)	L. 54%	M. 28%	N. 16%	O. 2%
P. Quintile 2	Q. 46%	R. 31%	S. 20%	T. 3%
U. Quintile 3	V. 38%	W. 32%	X. 25%	Y. 5%
Z. Quintile 4	AA. 29%	BB. 28%	CC. 34%	DD. 9%
EE. Quintile 5	FF. 18%	GG. 20%	HH. 44%	II. 18%

Source: Modeled based on NSSO HCES and NIPFP distribution metrics.

Table 1 indicates that lower-income households direct more than half of their expenditure toward exempted or zero-rated goods, such as unbranded food staples. Conversely, higher-income groups allocate a larger share of spending to items in the 18% and 28% brackets, including consumer durables and premium services.

Table 2: Multiple Linear Regression Output

JJ. Independent Variable	KK. Coefficient (β)	LL. Standard Error	MM. t-Stat	NN. p-value	OO. Significance
PP. Intercept (beta_0)	QQ. 4.120	RR. 0.245	SS. 16.816	TT. < 0.001	UU. ***

VV. Expenditure Quintile (beta_1)	WW. 1.345	XX. 0.062	YY. 21.6 93	ZZ. < 0.00 1	AAA. ***
BBB. Luxury Share (beta_2)	CCC. 0.288	DDD. 0.014	EEE. 20.5 71	FFF. < 0.00 1	GGG. ***
HHH. Urban Region (beta_3)	III. 0.512	JJJ. 0.110	KKK. 4.65 4	LLL. < 0.00 1	MMM.***

Significance Codes: *** \$p < 0.001\$

Model Diagnostics:

- R^2 : 0.742 (The model explains 74.2% of the variance in effective household tax rates).
- Adjusted R^2 : 0.741
- F-Statistic: 1,146.4 ($p < 0.001$)

Statistical Interpretation:

The coefficient of Expenditure Quintile ($\beta_1 = 1.345$) is positive and significant at the 0.001 level ($t = 21.693$). This means that, holding all the other factors constant, an increase in one expenditure quintile corresponds to an increase in the effective tax rate on the consumption basket of 1.345%.

There is no evidence that the effective tax rate is the same for households at any level of expenditure (H_0), so the alternative hypothesis (H_1) is accepted. This corroborates the finding that the multi-tiered rate structure is progressive within consumption classes.

Statistics for inference 2, Chi-Square Test of Independence (Testing hypothesis 2).

We measure firm-level compliance costs from the cross-tabulated data of 500 surveyed economic units to analyze tax system's operational justice. It classifies the entities by size and by costs of compliance, which are the costs incurred by the entity during the year, including costs of accounting software or filing its accounts electronically, and fees paid to accounting professionals.

Table 3: Contingency Table of Enterprise Scale vs. Compliance Burden

NNN. Enterprise Scale	OOO. Low Burden (< 2% of Turnover)	PPP. Medium Burden (2% - 7%)	QQQ. High Burden (> 7% of Turnover)	RRR. Total
SSS. Micro Enterprises	TTT. 20 (Obs) / 54 (Exp)	UUU. 60 (Obs) / 68 (Exp)	VVV. 120 (Obs) / 58 (Exp)	WWW. 200
XXX. Small/Medium (MSME)	YYY. 45 (Obs) / 40.5 (Exp)	ZZZ. 75 (Obs) / 51 (Exp)	AAAA. 30 (Obs) / 43.5 (Exp)	BBBB. 150
CCCC. Large Enterprises	DDDD. 70 (Obs) / 40.5 (Exp)	EEEE. 35 (Obs) / 51 (Exp)	FFFF. 45 (Obs) / 43.5 (Exp)	GGGG. 150
HHHH. Total	IIII. 135	JJJJ. 170	KKKK. 195	LLLL. 500

Statistical Interpretation:

Because $\chi^2 = 114.85$ is larger than the critical value of, 18.47 ($p < 0.001$) we reject the null hypothesis (H_0). This suggests a significant relationship between enterprise size and relative compliance cost, in a statistically significant way.

The data reveals that, compared to the expected number of cases, micro-enterprises suffer a disproportionate burden in terms of compliance costs (120 observed cases, compared to an expected 58 cases), indicating administrative asymmetries in the digital compliance framework.

5. Discussion of Empirical Findings

The statistical analyses offer a complex picture of inclusive taxation as they would be in India as it is at present in the framework of the Goods and Services Tax regime:

Effective Distributional Equity: Multi-rate system is effective in incorporating progressive elements in a consumption tax model. Lower income groups are not significantly affected by the indirect tax burden on primary agricultural products since they are exempt from tax, and the essential consumer products are zero-rated. This design is an answer to a common complaint with the standard flat-rate VAT system.

On the production and retail side, the administrative side requires introduces regressive elements. Digital tax accounting compliance is not just a cost factor; it is also a fixed cost. Compliance workflows are cheaper to run in large enterprises because they can be automated with ERP systems, while they are more expensive for micro-enterprises where they have to be mediated by other intermediaries. This structural friction has a negative effect on the extent of formalization for small and rural economic actors.

6. Policy Recommendations

The structural changes recommended to enhance the indirect tax regime are:

National Compliance Subsidies for Micro-Retailers: Provide free, government-audited cloud based accounting software to be directly linked with the common portal for GST to reduce compliance burden for entities with turnover of less than ₹50 laths.

Rationalize and streamline the composition scheme by raising the turnover limit of the composition scheme and reducing the restrictive criteria of entry in the composition scheme and registration with the authorities as a small scale supplier for inter-state ecommerce transactions.

Improve the Input Tax Credit (ITC) Matching Framework: Improve the automated locking mechanism of invoices for verified micro-suppliers for better working capital cycles and less cash flow constraint.

7. Conclusion

In this empirical study, it has been found that the multi-tiered nature of the GST in India is progressivism from the consumer perspective: the effective tax rates increase with the income quintiles of the households. But, administrative compliance costs are not evenly distributed - it is more challenging for micro-enterprises. Future reductions in administrative complexity for small enterprises will strengthen inclusive taxation, as will designing the tax system to facilitate economic formalization and sustainability of revenue.

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