

Macroeconomic Impact of the Goods and Services Tax on the Indian Economy: Fiscal Formalization, Logistics Optimization, and Sectoral Rebalancing

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Abstract

The implementation of the Goods and Services Tax (GST) on July 1, 2017, marked the most comprehensive indirect tax transformation in modern Indian economic history, establishing a unified national market. Evaluating GST's multi-dimensional macroeconomic impact over its octennial lifecycle, this report utilizes fiscal statistics, econometric literature, and firm-level data to analyze revenue buoyancy, supply chain efficiencies, and price dynamics. Findings demonstrate that digital compliance architectures such as e-invoicing and e-way bills helped double gross annual collections to a record ₹22.08 lakh crore in FY25 (averaging ₹1.84–₹2.0 lakh crore monthly) while expanding active taxpayers from 60 lakh to over 1.52 crore. Net GST collections grew from 5.6% of GDP in FY19 to 6.1% in FY24. Econometrically, eliminating state border check posts reduced logistics costs by ~20%, optimizing hub-and-spoke warehousing. Despite brief initial inflationary shocks, the medium-to-long-term trajectory reflects price convergence and improved manufacturing competitiveness. Looking ahead, the structural transition toward "GST 2.0" featuring a streamlined two-tier rate structure (5% and 18%) alongside a 40% de-merit rate is projected to lower household GST liabilities by 10%–16%, cementing macroeconomic stability.

Macroeconomic Foundations and Structural Design

Prior to the rollout of the Goods and Services Tax on July 1, 2017, India's indirect tax regime was characterized by extreme structural inefficiency, high compliance friction, and deep geographical fragmentation. The pre-GST architecture split taxing rights between the Central Government and state governments across disparate taxable events. The Centre levied Central Excise Duty on manufacturing and Service Tax on service provision, while state governments imposed local Value Added Tax (VAT) [1], Central Sales Tax (CST), Entry Tax, Octroi, and luxury taxes[2]. This multi-layered structure lacked cross-crediting mechanisms between central and state levies, creating an acute cascading effect a "tax on tax" that inflated production costs by an estimated 25% across manufacturing supply chains. Moreover, origin-based levies such as the CST incentivized businesses to build fragmented, state-specific warehousing structures designed solely to minimize interstate tax liabilities rather than maximize operational logistics efficiency.

The structural shift from this fragmented, multi-layered framework to a unified, destination-based taxation model represented a paradigm shift in Indian fiscal policy [3]. By replacing over 17 central and

state levies with a single multi-stage tax structure, the GST framework ensures that tax is levied concurrently by both levels of government via Central GST (CGST) and State GST (SGST) on intra-state transactions, and Integrated GST (IGST) on inter-state trade and imports. This dual structure facilitates a seamless, uninterrupted flow of Input Tax Credit (ITC) across the entire value chain, directly mitigating the tax-on-tax distortion that historically suppressed manufacturing margins.

Under this framework, tax liability is generated at each transaction stage in the supply chain, while allowing registered entities to claim Input Tax Credit for taxes paid on inputs[4]. Mathematically, the net tax liability (T_{net}) for a business at any intermediate stage is expressed as [5]:

$$T_{net} = (V_{output} \times r_{output}) - \sum_{i=1}^n (V_{input,i} \times r_{input,i})$$

where V_{output} represents the gross value of output, r_{output} is the applicable tax rate on the final supply, and $V_{input,i}$ and $r_{input,i}$ denote the transaction value and tax rate paid on the i -th intermediate input, respectively. By establishing a continuous credit trail, GST minimizes tax embedded within final retail prices, incentivizing intermediate firms to source from compliant, tax-registered vendors to retain credit eligibility [6].

From a governance perspective, the operational structure of GST established a unique experiment in cooperative fiscal federalism[7]. Established under Article 279A of the Indian Constitution, the GST Council comprising the Union Finance Minister and representative ministers from all states and Union Territories was mandated to negotiate tax rates, exemption thresholds, administrative procedures, and legal frameworks. IGST acts as an intermediate settlement mechanism that routes tax revenue to the destination state where consumption occurs, establishing price convergence across state boundaries[8].

Revenue Buoyancy, Tax Base Expansion, and Fiscal Formalization

Over its octennial trajectory, GST has fundamentally altered India's fiscal landscape by deepening revenue collections and accelerating structural formalization across the enterprise sector[9]. In the initial years following implementation (FY18 to FY20), monthly gross revenue collections fluctuated around ₹90,000 crore to ₹1,00,000 crore. However, post-pandemic operational stabilization, coupled with technological enforcement measures, produced an upward step-change in tax mop-ups. By FY25, gross annual GST collections reached a record ₹22.08 lakh crore, marking a 9.4% year-on-year increase and reflecting a doubling of total collections relative to FY21. Average monthly gross collections scaled from ₹95,000 crore in FY21 to ₹1.84 lakh crore in FY25, frequently crossing the ₹2.0 lakh crore threshold in peak demand months.

This revenue growth has outpaced overall economic activity, driving structural improvements in tax buoyancy[10]. The gross GST-to-GDP ratio rose from 6.2% in FY19 to 6.9% in FY24, while the net GST revenue ratio expanded from 5.6% to 6.1% over the same period. The revenue elasticity with respect to nominal gross domestic product ($\varepsilon_{R,Y}$) can be modeled as[11]:

$$\varepsilon_{R,Y} = \frac{\Delta R/R}{\Delta Y/Y}$$

where R is net GST collection and Y is nominal GDP. Empirical estimations indicate that $\varepsilon_{R,Y}$ has risen above unity in the post-FY21 era, signaling that tax collections are growing at a faster rate than underlying nominal output due to administrative compliance gains and formalization.

Fiscal Year / Metric	Gross Annual Collection (₹ Lakh Crore)	Average Monthly Mop-Up (₹ Crore)	Active Taxpayer Base (Millions)	Gross GST-to-GDP Ratio (%)
FY 2018–19	11.77	98,114	11.5	6.2%
FY 2019–20	12.22	1,01,833	12.3	6.3%
FY 2020–21	11.37	95,000	12.8	5.1%
FY 2021–22	14.83	1,23,583	13.4	5.8%
FY 2022–23	18.08	1,50,667	14.0	6.6%
FY 2023–24	20.18	1,68,000	14.6	6.9%
FY 2024–25	22.08	1,84,000	15.1–15.2	~7.0%

The underlying catalyst for this tax buoyancy is the rapid expansion of the active taxpayer base. At the time of transition in mid-2017, approximately 60 lakh (6.0 million) enterprise entities were registered under the legacy tax regimes. By mid-2025, active GST registrations exceeded 1.52 crore (15.2 million), representing a growth of over 150%. Econometric regression studies confirm a statistically significant positive relationship between eligible registered taxpayers and monthly revenue collections[12], proving that widening the tax base rather than increasing effective tax rates has been the primary driver of revenue growth.

Regional revenue distribution analysis shows distinct spatial patterns across Indian states. Six highly industrialized states Maharashtra, Karnataka, Gujarat, Tamil Nadu, Uttar Pradesh, and Haryana consistently contribute approximately 60% of total domestic GST collections[13]. Maharashtra remains the single largest contributor across all fiscal years. However, analyzing active taxpayer density relative to Gross State Domestic Product (GSDP) highlights an ongoing formalization process in developing states. For instance, Uttar Pradesh accounts for 13.2% of total national active taxpayers while contributing 8.4% to national GSDP. This discrepancy indicates significant structural formalization among micro-and-small enterprises in northern and eastern regional hubs that were previously unbanked and informal[14]. Furthermore, social demographic data reveals that over 20% of active GST registrations now feature female business ownership or corporate representation, demonstrating broader demographic participation in formal enterprise networks[15].

State	Share of Total Active Taxpayers (%)	Share of Total National GSDP (%)	IGST Share in Domestic Collection (%)	Revenue Contribution Category
Maharashtra	12.1%	13.3%	>30%	Top Tier (>₹1 Lakh Cr)
Uttar Pradesh	13.2%	8.4%	>30%	High Formalization Expansion
Gujarat	Top 5 Contributor	~8.3%	>30%	Top Tier (>₹1 Lakh Cr)
Karnataka	~6.5%	~8.2%	>30%	Top Tier (>₹1 Lakh Cr)
Tamil Nadu	~6.8%	~8.8%	>30%	Top Tier (>₹1 Lakh Cr)
Haryana	Top 6 Contributor	~3.8%	>30%	High Logistics/Manufacturing Hub

The enforcement backbone facilitating this revenue growth is the digital infrastructure constructed by the Goods and Services Tax Network (GSTN). Key technological innovations driving compliance include[16]:

- **Mandatory E-Invoicing:** Launched in phases for large firms, e-invoicing was iteratively expanded to cover all business-to-business (B2B) transactions for entities with an annual aggregate turnover exceeding ₹5 crore. E-invoicing authenticates invoice details in real-time on government portals, eliminating fake invoice generation and ghost ITC claims.
- **E-Way Bill Integration:** The electronic tracking system for goods movement across state borders integrated logistics tracking with e-invoicing and periodic return filings (GSTR-1 and GSTR-3B).
- **Automated Return Matching:** Systems auto-populate tax liabilities and eligible input tax credits (via GSTR-2B), matching supplier filings against recipient claims to flag discrepancies instantly.
- **Targeted Risk Analytics:** AI-driven fraud analytics allow tax authorities to target tax evasion through network analysis without reintroducing arbitrary physical inspections.

Logistics Efficiency, Supply Chain Rationalization, and Firm Productivity

Beyond direct fiscal metrics, GST altered the real economy by streamlining domestic logistics and freight transport operations[17]. Under the legacy tax structure, commercial trucks in India spent an estimated 60% of their total transit time idling at state border check posts, transit toll gates, and municipal entry points (Octroi). Local officials verified physical waybills, collected local entry taxes, and verified state-specific documentation, capping average daily truck transit distances in India at roughly 225–250 kilometers less than half the global benchmark seen in advanced economies.

The abolition of state-level entry taxes and border check posts following the rollout of GST transformed freight velocity[18]. Coupled with the digital e-Way bill system, interstate freight travel times decreased by 20% to 30% across key national industrial corridors. Corporate survey data indicates that logistics costs for non-bulk manufacturing goods fell by approximately 20% post-implementation, lowering overall national logistics spending relative to GDP.

This transition fundamentally shifted logistics operations from a tax-driven model to an efficiency-driven model. In the pre-GST environment, supply chains were geographically fragmented because companies established small, inefficient state-level warehouses to avoid interstate tax liabilities like the Central Sales Tax. Post-GST logistics networks transitioned to centralized, automated regional fulfillment centers operating under a hub-and-spoke distribution model[19]. By routing interstate freight through major logistics hubs equipped with direct corridor transport links, enterprises achieved significant economies of scale, reduced inventory holding costs, and optimized working capital requirements.

At the firm level, removing cascading tax burdens improved operating profit margins, though these gains varied significantly depending on enterprise scale[20]. Panel studies analyzing listed manufacturing enterprises (such as NIFTY constituents) from pre-GST (2014–2017) to post-GST (2018–2021) periods confirm a statistically significant positive effect on post-GST operating profit margins. This expansion was particularly pronounced among mid-to-large-cap firms. Larger corporations possessed the organizational capacity to absorb initial compliance setup costs, re-engineer supply chain configurations, negotiate price adjustments with suppliers based on ITC flows, and optimize their working capital management.

Conversely, informal micro-and-small enterprises experienced transitional liquidity pressures. In the legacy system, unorganized small manufacturers operated below tax thresholds or relied on unrecorded cash transactions[21]. Under GST, the requirement to pay tax on advances, stock transfers across state lines, and tax charges on purchases from unregistered vendors (Reverse Charge Mechanism) created early working capital bottlenecks. Over time, systematic rate rationalization, increased exemption thresholds, and automated refund systems helped mitigate these transitional pressures.

Sectoral Impact Dynamics and Structural Rate Rationalization

The economic impact of GST varies significantly across major economic sectors due to structural differences in supply chain complexity, rate structures, and compliance rules[22].

Micro, Small, and Medium Enterprises (MSMEs) and startups represent a crucial test case for GST efficacy, given that the sector accounts for 30.1% of India's GDP, 35.4% of manufacturing output, and 45.73% of national exports. To ease compliance burdens for small businesses, the GST regime introduced several structural relief measures. Exemption thresholds were raised from legacy levels (₹5–10 lakh) to ₹20 lakh for services and ₹40 lakh for suppliers of goods in most states. A simplified Composition Scheme was made available for small businesses with annual turnovers up to ₹1.5 crore (and ₹50 lakh for service providers), allowing them to pay tax at a low flat rate (1% for manufacturers/traders, 6% for service providers) with quarterly filing requirements. Furthermore, the Quarterly Return Monthly Payment (QRMP) scheme permitted businesses with turnover up to ₹5 crore to file returns quarterly while depositing tax monthly, substantially reducing operational overhead.

Despite these relief mechanisms, micro-enterprises initially experienced digital compliance friction, tax code classification disputes, and working capital lockups stemming from supplier credit reconciliations[23]. However, formalization under GST expanded credit accessibility. Verified GST return filings provided financial institutions with transparent, cash-flow-based underwriting metrics, allowing small firms to secure formal credit without relying exclusively on physical collateral.

In the Fast-Moving Consumer Goods (FMCG) and manufacturing sectors, the elimination of cascading taxes and logistics bottlenecks generated noticeable cost savings[24]. Pre-GST, the effective indirect tax burden on daily staple goods ranged between 25% and 30%. Lowering effective tax rates on essential items to 0% and 5% directly reduced retail prices, driving volume growth for manufacturers. Empirical studies by the Ministry of Finance indicate that GST implementation helped Indian households save at least 4% on their monthly consumption expenditure due to lower tax incidence on food, cereals, edible oils, and personal care products.

Additionally, the GST Council addressed long-standing Inverted Duty Structures, where raw materials and intermediate inputs were taxed at higher rates than finished products[25]. In sectors such as textiles, footwear, fertilizer, and consumer electronics, this inversion had historically blocked input tax credits, locking up working capital and reducing domestic cost competitiveness. Rebalancing input and output rates freed up cash flow and encouraged domestic manufacturing under the "Make in India" initiative.

To address multi-slab tax distortions, the government launched next-generation reforms, termed "GST 2.0". This reform simplified the legacy four-tier tax structure (5%, 12%, 18%, and 28%) into a streamlined framework. The 12% and 28% slabs were eliminated, creating a core two-tier structure consisting of a 5% Merit/Essential Rate for basic staples and priority goods, alongside an 18% Standard Rate covering most manufactured goods, electronics, and commercial services. A separate 40% De-Merit Rate was established for "sin" items (tobacco, carbonated drinks) and luxury goods, consolidating

legacy compensation cesses into a single rate line. Taxes on compact vehicles, two-wheelers, auto components, tractors, and home durables were reduced from 28% to 18%, lowering consumer acquisition costs.

Commodity / Sector Group	Legacy Tax Slabs (Pre-GST 2.0)	Revised GST 2.0 Framework	Key Economic Objective
Unprocessed Food & Staples	Exempt (0%)	Exempt (0%)	Protect basic nutrition & lower-income baskets
Processed Packaged Staples	5% / 12%	5%	Lower staple costs; boost agricultural processing
Apparel & Footwear (<₹2,500)	5% / 12% (Inverted)	5%	Correct inverted duty structures & lower costs
Consumer Electronics & FMCG	12% / 18% / 28%	18%	Stimulate urban consumption & industrial demand
Automobiles & Auto Components	28% + Cess	18% (Standard)	Boost automotive manufacturing & freight transit
Sin Goods & Luxury Vehicles	28% + Compensation Cess	40% (Dedicated)	Fiscal revenue retention & luxury consumption taxation

Empirical assessments by the National Institute of Public Finance and Policy (NIPFP) using Household Consumption Expenditure Survey (HCES) data indicate that the GST 2.0 restructuring will reduce average household GST liabilities by 10% to 16%. Under this simplified structure, the average effective GST liability on total monthly per capita consumption expenditure (MPCE) decreases from 5–7% under the legacy structure to 4–6%, shifting roughly 75% of total household spending into the exempt-to-5% tax category.

Inflationary Dynamics and Macroeconomic Price Transmission

The introduction of GST altered price index trajectories and consumer inflation dynamics across India. International experience suggests that introducing value-added consumption taxes often triggers temporary price increases due to tax rate adjustments and business compliance costs.

In India, structural break vector autoregression (VAR) analyses conducted by NIPFP demonstrate that GST caused a transient positive spike in headline Consumer Price Index (CPI) inflation[26], which persisted for approximately eight quarters (two years) post-rollout. This short-term inflationary pressure was primarily driven by the retail food component of the CPI basket. While basic, unprocessed food items remained fully exempt from GST, the application of a 5% GST rate to branded, pre-packaged essentials (such as packaged wheat flour, paneer, and curd) raised retail food prices in the short term, impacting lower-income household consumption.

In contrast to these short-term shocks, medium-to-long-term price transmission dynamics demonstrated a clear disinflationary path. As logistics costs fell by roughly 20%, cascading tax penalties were removed, and GST 2.0 rate rebalancing took effect, market competition accelerated price convergence

across regional markets. Empirical price monitoring reveals asymmetric tax pass-through across different product categories. In market sectors characterized by high consumer price sensitivity and competitive market structures such as consumer durables, automobiles, electronics, and personal care products rate reductions and ITC savings were quickly passed on to final consumers via lower retail prices. Conversely, in essential commodity markets, price adjustments were slower, resulting in incomplete short-term pass-through of rate cuts. Over the long term, supply chain efficiencies, lower freight costs, and the elimination of cascading taxes offset initial transitional price spikes, helping stabilize core CPI and Wholesale Price Index (WPI) inflation.

Conclusions and Strategic Policy Recommendations

Eight years after its rollout, the Goods and Services Tax has established itself as an essential structural pillar of India's macroeconomic landscape. By replacing a fragmented, cascading indirect tax architecture with a unified, destination-based tax system, GST has driven business formalization, logistics efficiency, and fiscal resilience. The expansion of gross annual revenue collections to ₹22.08 lakh crore, alongside a broader taxpayer base of 1.52 crore entities, underscores its role in strengthening national revenue buoyancy and tax-to-GDP ratios. The transition to "GST 2.0" promises to address remaining rate distortions, resolve inverted duty structures, lower household compliance burdens, and stimulate consumer demand.

To maximize the long-term economic gains of GST, policy efforts should focus on several key priorities:

- **Unlocking Small Business Working Capital:** Automate and streamline input tax credit matching for micro-and-small enterprises. Establishing instant refund mechanisms for low-risk MSMEs would mitigate cash flow constraints and reduce compliance friction.
- **Expanding the Tax Base to Excluded Sectors:** Gradually bring excluded sectors—such as petroleum products (petrol, diesel, aviation turbine fuel), natural gas, electricity, and real estate land transfers into the GST framework. Excluding these sectors creates broken ITC chains, reintroducing tax cascading back into power generation, transport freight, and construction operations.
- **Operationalizing the GST Appellate Tribunal (GSTAT):** Accelerate the deployment of regional GSTAT benches nationwide to resolve tax disputes, reduce backlogged tax litigation in High Courts, and provide standardized legal interpretations across states.
- **Institutionalizing Rate Stability:** Preserve the simplified two-tier tax structure (5% and 18%) under GST 2.0 and avoid introducing administrative ad-hoc rate revisions. Stable, predictable tax slabs allow enterprises to make long-term capital expenditure commitments, support supply chain integration, and maintain macroeconomic price stability.

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