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Structural and Macroeconomic Footprints of GST on MSMEs in Telangana: An Empirical Study on Compliance Costs, Credit Access, and Market Integration

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Abstract

One of the most profound tax reform measures in India's economic history is the Goods and Services Tax (GST), which seeks to eliminate internal trade barriers and establish a single national market. Its macro-level fiscal impacts are extensively researched but its sub-national localized impact on micro, small and medium enterprises (MSMEs) in a highly progressive economy such as Telangana requires a detailed academic study. This study is an empirical study that examines, based on the primary data, how the GST regime has impacted MSMEs in Telangana from various operational and socioeconomic perspectives, particularly on the compliance cost, digital readiness, credit access, and competitiveness of the market. The study uses a mixed-methods approach, leveraging secondary fiscal data and a primary survey of 150 MSMEs in important industrial clusters in Telangana (Hyderabad, Medchal-Malkajgiri and Warangal). The empirical results indicate that the Goods and Services Tax Network (GSTN) has indeed eliminated the cascade effect 'tax on tax' and enhanced the supply chain efficiency but it has also imposed a tremendous compliance burden and working capital lockups for smaller businesses. The paper ends with focussed policy recommendations for the GST council and the state administrations to make tax governance more optimal and promote inclusive economic development.

Keywords: Goods and Services Tax (GST), MSMEs, Telangana Economy, Compliance Costs, Input Tax Credit, Economic Formalization.

1. Introduction

Goods and Services Tax (GST) has been made effective on July 1st, 2017, bringing a significant change in the fiscal federal system of India. The aim of GST was to bring together a tangled tax structure of central and sub-national indirect taxes including Central Excise Duty, Service Tax, State Value Added Tax (VAT), Central Sales Tax (CST), Entry Tax and Octroi in a single consumption tax system with a principle of "One Nation, One Tax, One Market". The structural reform efforts aimed at reducing the cascading tax effect, reducing logistics costs, simplifying compliance by broadening the national tax base into a single digital platform and increasing the formal national tax base.

Telangana is a special case study at the sub-national level to measure these fiscal reforms. It has been able to create a solid economic base with progressive industrial policies, such as TS-iPASS, a booming information technology

industry, dynamic service industries, and close concentration of MSMEs since its inception in 2014. MSMEs are the backbone of Telangana's economy, have millions of employees and contribute to the development of industries connected with the rural population which help bridge development gaps.

The transition of a diverse and sectorally complex economy from the traditional tax regime to a fully-fledged multi-level, digitalized Goods and Services Tax (GST) framework has, however, also raised unique structural issues and provided fresh opportunities. Small businesses are likely to have a steep learning curve when it comes to digital compliance, transitional liquidity concerns because of the Input Tax Credit (ITC) mechanism, and a sudden push to formalization. This study focuses on the localized effect of GST on the MSME in Telangana. This paper examines the impact of tax policy on the practice of everyday business in an effort to offer empirical insights that will help inform academic research and evidence-based tax policy for a balanced approach to tax governance.

2. Research Objectives

1. To study the impact of removal of internal check-posts and implementation of e-way bills on logistics and competitiveness in the supply chain of local businesses.
2. To Identify the contribution of GST in promoting economic formalization and access to formal bank credit for unregistered businesses.
3. To analyse the impact of Input Tax Credit (ITC) mechanism on working capital cycles and cash flow management of the small traders.
4. To evaluate the effect of the requirement of compliance of GST and costs of digital infrastructure on MSMEs in Telangana.

3. Review of Literature

3.1 The Optimal Taxation Framework and Value-Added Taxes

The economic rationale for a harmonised consumption tax is based on the Ramsey theory of optimal taxation (1927) and subsequent studies of multi-stage value-added tracking by Ahmad and Stern (1984). These frameworks imply a desire for a system of indirect taxes that is least economically distorting, not taxes on production factors, and does not result in cascading taxes along supply chains. Bird (2012) pointed out that a consistent VAT regime promotes the integration of the internal market in federal systems, but requires a high degree of digital capacity on the part of tax collectors and a high degree of compliance on the part of taxpayers in order to be administered successfully.

3.2 Macro and Micro Perspectives on India's GST

Earlier, the economic models by Poddar and Ahmad, (2009) pointed out that a single GST regime would boost real GDP growth in India by 1.0% – 2.0% as it would eliminate the internal barriers to trade and optimise the allocation of resources. But empirical research after the implementation shows a more complex result. Financial studies by the Reserve Bank of India (RBI 2022) showed that while the abolition of state-level border barriers enabled national freight logistics to improve, the multi-tiered tax structure (5%, 12%, 18% and 28%) resulted in disputes over the classification of products and increased accounting costs.

3.3 Localized impact on MSMEs and informal sector

Major tax transitions are unique challenges for small businesses. According to Mukherjee's research (2020), large businesses were able to adapt to the automated GST Network (GSTN) quickly, while small and medium businesses or MSMEs experienced a dramatic increase in their operational costs, particularly because they needed digital billing software, filing monthly returns, and professional accounting services to handle this change. DPI has played a role in easing the initial transition, according to specific regional assessments in Telangana. Specialized manufacturing zones, such as Medchal, Warangal and undivided Mahbubnagar, did, however, suffer liquidity issues in the short term, as revenue data from the Telangana Department of Commercial Taxes (2024) pointed out. These frequently related to the issue of delayed input credit matchings with upstream suppliers, which further underscores the need for further empirical studies at the field level across the state.

4. Research Methodology

The study is of a mixed method design, secondary macro-economic indicators and primary empirical surveys to cover both the systemic trends and ground level business experience.

4.1 Data Sources

Secondary Data: These are collected from the official statistical reports published by the Ministry of Finance (Government of India), the GST Council database, the Handbooks of Statistics on the Indian Economy (RBI) and from the Government of Telangana's economic publications.

Primary Data: Collected through a structured questionnaire from the MSME owners and retail traders and local manufacturing entrepreneurs from three economic zones of Telangana namely, Hyderabad metropolitan area, Medchal-Malkajgiri industrial corridor and Warangal commercial zone.

4.2 Sampling Design

To obtain broad sectoral coverage of the small business community throughout the state, a purposive, stratified random sampling approach was adopted. A total of 150 MSME Units were sampled. To ensure that the sample offered an overall picture of the state's economy, the sample was divided among manufacturing, service, and retailing functions, with each function having approximately the same number of Units (50, 45, and 55, respectively).

4.3 Mathematical Framework for Analyzing Tax Compounding

To measure how the Input Tax Credit (ITC) mechanism reduces price distortions compared to the legacy tax structure, we use a standard multi-stage supply chain model. Let V_n represent the raw value added at production stage n , C_n represent the total pre-tax production cost at stage n , and t represent the statutory tax rate.

Pre-GST Cascading Regime:

$$\text{Tax}_n = t \times (C_{n-1} + \text{Tax}_{n-1} + V_n)$$

Post-GST Integrated ITC Regime:

$$\text{Tax}_n = [t \times (C_{n-1} + V_n)] - \text{Input Tax Credit}$$

Given that the Input Tax Credit = $t \times C_{n-1}$, the equation simplifies directly to:

$$\text{Tax}_n = t \times V_n$$

5. Data Analysis and Interpretation

5.1 Analysis of Secondary Macroeconomic Trends in Telangana

State-level revenue data shows that Telangana has maintained a strong fiscal position under the GST framework. The state's broad economic base has helped it achieve consistent growth in gross SGST and IGST settlement allocations.

Fiscal Year	Average Monthly GST Collection (INR Cr)	Year-on-Year Growth Rate (%)	Active Registrations
2020-21	3,450	4.2%	3,10,000
2021-22	4,120	19.4%	3,45,000
2022-23	4,890	18.6%	3,82,000
2023-24	5,620	14.9%	4,15,000
2024-25	6,340	12.8%	4,48,000
2025-26	7,120	12.3%	4,85,000

Interpretation: The steady growth in monthly collections and active registrations indicates ongoing formalization within Telangana's business community. This expansion reflects a widening tax net, driven in part by the automated compliance structure of the GSTN, which encourages unregistered suppliers to formalize their operations to remain viable partners for larger corporate buyers.

5.2 Primary Data Analysis: Impact on Business Operations

The primary field survey of 150 MSME units focused on four operational metrics: Compliance Burden, Capital Liquidity, Bank Credit Access, and Logistics Efficiency. Participants rated their experiences on a 5-point Likert Scale (ranging from 1 = Strongly Disagree to 5 = Strongly Agree).

Metric 1: Digital Compliance and Overhead Costs (Mean Score: 4.4 / 5.0)

Small business owners reported a notable increase in ongoing compliance costs. This trend is driven by the need to upgrade to digital billing systems, manage multiple monthly return filings (GSTR-1, GSTR-3B), and retain professional accounting or legal services to manage the automated system.

Metric 2: Working Capital and Input Tax Credit (ITC) Management (Mean Score: 3.9 / 5.0)

Respondents reported ongoing liquidity challenges tied to the input tax credit system. In multi-tiered manufacturing supply chains, small vendors often must remit tax liabilities when they issue an invoice, but face payment delays from larger clients. This lag can lock up working capital and strain short-term operating cash flows.

Metric 3: Economic Formalization and Formal Credit Access (Mean Score: 3.6 / 5.0)

On the positive side, maintaining a verified digital tax history has made it easier for small businesses to secure formal financing. Commercial banks and non-banking financial companies (NBFCs) can directly review a firm's verified GSTN return data, reducing documentation hurdles and streamlining the underwriting process for working capital loans.

Metric 4: Logistics Performance and E-Way Bill Adoption (Mean Score: 4.1 / 5.0)

The operational impact on transport and logistics has been highly positive. The removal of traditional state-line check-posts and the transition to digital e-way bills have reduced transit times for commercial trucks across Telangana, allowing firms to lower inventory holding costs and consolidate warehousing networks.

6. Discussions and Critical Challenges

The empirical data highlights a clear structural tension within the sub-national GST framework: it provides significant macroeconomic efficiencies while creating noticeable operational friction for smaller, localized enterprises.

6.1 The Compliance Asymmetry

While large corporations have the administrative resources and specialized IT departments needed to manage shifting tax codes, MSMEs often experience compliance challenges. The requirement for invoice matching creates an interdependent ecosystem; if a micro-supplier fails to file on time, their corporate client faces a delayed input credit. This dynamic can cause larger firms to shift their business toward larger, more established vendors, unintentionally sidelining smaller market players.

6.2 Sectoral and Structural Disconnects

A major challenge for Telangana's industrial economy is the exclusion of key sectors—such as petroleum products, natural gas, electricity, and real estate—from the unified GST net. Manufacturing operations that rely heavily on power and fuel must pay legacy central and state excise taxes on those inputs but cannot claim input tax credits against their final GST liabilities. This break in the credit chain creates residual cascading costs that can impact the cost-competitiveness of manufacturing hubs like Medchal and Warangal.

7. Conclusion and Policy Recommendations

7.1 Conclusion

The introduction of the Goods and Services Tax has reshaped Telangana's economic landscape. It has eliminated the cascading tax trap, improved supply chain logistics, and created transparent digital footprints that make it easier for small businesses to access formal credit. At the same time, the transition has introduced structural hurdles, including increased administrative compliance costs and capital constraints for smaller firms. Overall, the stabilization of monthly tax revenues and the steady rise in active registrations show that Telangana's business community is successfully adapting to the formal system. This ongoing integration positions the state to leverage a more transparent, efficient, and interconnected domestic market.

7.2 Policy Recommendations

- **Simplify the Rate Framework:** Smoothen the existing multi-tiered rate structure and make it a three-band system to reduce the administrative burden of small traders and minimise issues with product classification.
- **Registered MSMEs Taxpayers** to be able to avail input tax credit on purchase invoice on the basis of verified purchase invoices instead of waiting for the completion of cash clearance from the upstream suppliers. This adjustment would help alleviate the need for short-term liquidity.
- **Extend the Tax Net:** Craft a transparent pathway to integrate petroleum products, natural gas and electricity into the main GST system. Baseline operational costs would be reduced for capital intensive manufacturing units if the input credit chain could be made continuous across these inputs.
- **Improve Local Compliance Support:** Create dedicated, state assisted digital help desks and training centers in industrial clusters in rural and semi-urban areas. Such centers can offer free access to digital billing tools and technical support for small business owners to help narrow digital divides across the region.

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