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Impact of the Goods and Services Tax (GST) on Tax Revenue Mobilization and Compliance in India: A Study of the Post-GST Period (2017–2022)

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Abstract- This research aims to analyze the impact of GST on tax revenue mobilization and tax compliance in India. Introduction of GST in India on 1 July 2017 was the major structural reform of the indirect tax system with the objective of rationalization and unification of various central and state taxes in India, diminution of cascading effect, reduction of tax burden on trade, industry and manufacturing, widening tax base, transparency in the tax administration, strengthening revenue administration and strengthening taxpayer compliance; therefore, under this background, this research methodology will examine the impact of GST on revenue generation and compliance in India as well as reveal the institutional mechanisms developed by this tax reform by using a descriptive and conceptual research method along with secondary sources of data such as government publications, GST Council proceedings, Central Board of Indirect Taxes and Customs documents, Ministry of Finance publications, Economic Survey reports, official GST revenue and registration statistics, and research articles on GST published up to August 2022. This research will demonstrate that GST enhanced the structural institutional framework of revenue administration and tax compliance through the widening of taxpayer registration list, input-tax-credit interconnectedness, electronic return filing, electronic transaction reporting, e-way bills, formalization of business, and increased compliance visibility, although hurdles like multiple and high rates of GST, administrative complexity, technological challenges, compliance costs, illicit input-tax-credit claims, frequent rule changes, and economic shocks of the COVID-19 pandemic hinder this progress. As a result, GST has augmented the institutional foundations of indirect-tax compliance and revenue administration in India; however, sustained revenue mobilization still requires further simplicity, technological improvement, enforcement, taxpayer facilitation, and stability.

Keywords: Goods and Services Tax; GST; Tax Revenue; Tax Compliance; Revenue Mobilization; Indirect Taxation; Tax Administration; India

I. INTRODUCTION AND BACKGROUND RELATED TO THE STUDY

Taxation is one of the most important ways in which a state raises resources to fund public spending, infrastructural needs, social welfare schemes, redistribution, macroeconomic management and the provision of services (especially, within a federal, developing economy like India where Union and State governments require stable tax revenues not only for meeting development priorities but also for fostering growth, reducing disparities and maintaining stability). Given this, although indirect taxation had always been an integral part of India's revenue system, the pre-GST, indirect tax regime – in which numerous Union and State-level taxes (like Central Excise Duty, Service Tax, State Value Added Tax (VAT), Central Sales Tax, entry taxes, luxury taxes, entertainment taxes, various cesses and surcharges) were levied by different authorities on different stages of production, distribution and consumption – was often critiqued for fragmenting the national market, and problems of cascading or 'tax-on-tax', jurisdictional overlap, incomplete input-tax credit, diversity in state tax structures, and high compliance costs. This suggested a policy imperative for a comprehensive value added tax system that could bridge the taxation of goods and services, and facilitate a better functioning national market. Accordingly, with effect from July 1, 2017, the Government of India introduced the Goods and Services Tax (GST) as a 'destination-based tax on consumption' wherein goods and services were taxed at the point of supply with credits available for eligible taxes paid at each previous stage of the value chain, thereby intended essentially to tax value addition rather than compounding tax on the gross value of transactions (Central Board of Excise and Customs [CBEC], 2017). Under India's federal design, GST was envisioned as a 'dual' system – (Central Goods and Services Tax (CGST) and State Goods and Services Tax (SGST) on intra-state supplies, and Integrated Goods and Services Tax (IGST) largely on inter-state supplies and imports) – ensuring a uniform institutional mechanism whilst retaining the taxation powers and revenue interest of both levels of government. Replacing a fragmented system of multiple taxes with an substantially integrated, tech-enabled, destination-based, 'value-added' taxation mechanism was one of the most far-reaching restructurings of India's indirect tax architecture. One of the central hopes for this reform was that it would enhance resource mobilization by expanding the effective tax base through formalization – encouraging more firms (some of which were earlier operating entirely or partially outside the indirect tax system) to register and making economic transactions more visible through digital trails and input-tax credit incentives. Early official assessments suggested a significant expansion in the indirect tax net, with the Economic Survey 2017–18 indicating that after adjusting for duplication in the earlier system, there was a 50 per cent increase in the number of unique indirect tax-payers (approximately 3.4 million additional tax-payers); it also reported that about 1.7 million registrants below the mandatory threshold had registered voluntarily (linking part of this to business-to-business (B2B) supply chain pressures and incentives for credit claiming) (Ministry of Finance, 2018). These are critical revenue mobilization dimensions as the sustainability of tax systems rests not just on statutory rates but on the effective breadth of the tax base, the veracity of reported transactions, the detection of non-compliance, and the increasing visibility of formal economic activities to fiscal authorities; thus, the relationship between formalization and compliance became important in the GST context because businesses within supply chains were incentivized to document transactions given that their claim to input-tax credit was contingent upon tax invoices and reporting by transactional counterparts – a conceptual move towards 'self-policing' (Ministry of Finance, 2018). Consequently, the second theme of the present paper is tax compliance, which became deeply embedded in digital administration under GST through the GST Network – where registration, tax payment, and return filing shifted to online systems facilitated by e-returns, reporting of input-tax credit, invoice information, e-way bills for trackable movement of specific goods (nationwide e-way bill system for inter-state movement of goods introduced from April 1, 2018, followed by intra-state rollouts) and, more recently, electronic invoicing for notified classes of taxpayers – to improve transparency, reduce information asymmetry between the state and taxpayers, curb under-reporting and enable cross-checking of data (Central Board of Indirect Taxes and Customs [CBIC], 2018). Nevertheless, digital presence has not automatically translated into effortless high compliance and the early phase of India's GST has also been marked by considerable challenges pertaining to the filing of returns, changes in procedures, technological and systems issues, complex rules, and delays in the implementation of the full, conceptual design of invoice matching. For instance, the Comptroller and Auditor General of India (CAG), in its first substantial audit of GST, noted that the full gains of a 'simplified compliance regime' remained to be achieved due to systemic shortcomings in areas such as registration, payments, settlement of IGST, and the GST IT system (Comptroller and Auditor General of India [CAG], 2019), and later noted in its audit covering three years since inception that the envisaged system-verified flow of input-tax credit through invoice-matching had not been fully operationalized, and the return system was still 'under construction'– a contrast between the promise of digital tax-regimes to enhance compliance, and the administrative realities of reforming a large-scale tax architecture (CAG, 2021).

II. INDIA'S INDIRECT-TAX SYSTEM BEFORE GST

Prior to the implementation of the goods and services tax (GST) in India from 1 July 2017, the country's indirect-tax system consisted of a constitutionally divided and administratively fragmented architecture in which various taxes were levied on production, sale, movement, provision and consumption of good and services by the Union and state governments, leading to multiple points of taxable events and separate sets of compliances throughout the chain of production and distribution of commodities; the central system centered on excise duties on goods manufactured (but not necessarily distributed) in India, and service tax on the provision of taxable services, with additional excise duties, countervailing duties and special additional duties of customs as additional excises duties, and other central cesses and surcharges that were linked with supply of goods and services, and an assortment of taxes on commodities levied by the states, including sales tax or value-added tax (VAT) on sale or purchase of goods within the state, the central sales tax (CST) which, while payable to the centre, was collected on interstate sales by the originating state, and entry tax or octroi on entry of goods into specified local areas, luxury tax, entertainment and amusement tax, purchase tax, taxes on advertisements and lotteries, and cesses and surcharges at the state level (Empowered Committee of State Finance Ministers, 2009; Goods and Services Tax Council, 2016); this diverse collection of taxes was also accompanied by a spider-web of different tax bases because the partial assignment of taxing powers between the States and the Centre primarily separated goods from services for taxation purposes and fragmented taxing authority between the centre and the states, which by construction constrained the scope for an integrated input tax credit system across different taxes and jurisdictions, and while the simultaneous introduction of the central value-added tax (CENVAT) and state VAT system had alleviated some cascadings, the essential breaks persisted in the input-tax-credit chain, notably in the terms of the degree of interaction between the center and the states and the relative treatment of interstate transactions, with tax paid at one point becoming embedded in the cost base for another tax, which would end up raising the overall tax cost of goods and services (Empowered Committee of State Finance Ministers, 2009); this created a cascaded "tax-on-tax" effect where credits were not available across the board for excise, service, VAT, CST, entry taxes and other cesses, and the operational frictions created by CST on interstate trade and the entry tax or octroi, which incentivized some businesses to organize procurement, warehousing and distribution partly around tax-reasons rather than efficiency considerations; businesses operating in multiple states needed to face multiple tax offices, uncoordinated registrations, varying formats of returns, differing state VAT rules, case-by-case assessment and audit processes, all of which drove-up compliance costs and added complexity especially for multi-state businesses; the proposed advantages of GST, therefore, involved replacing the present architecture with a destination-based, integrated, broad-based GST that would offer a nearly complete input tax credit chain, ease interstate barriers and reduce operational frictions, and simplify administration and visibility of transactions, and the size of the joining was large the Comptroller and Auditor General would comment that GST included 37 of India's state and central taxes, and would enable input tax-credit-eligibility across the majority of the value chain (Comptroller and Auditor General of India [CAG], 2019); in terms of the presentation of the current paper, these systemic shortcomings in the pre-GST framework are important because the subsequent analysis of GST's revenue collections and compliance outcomes from 2017-2022 must consider the limitations of the previous system in terms of its fragmented taxation bases, cascading burdens, interstate frictions and complex administration, which the reform sought to mitigate at a minimum scale across India's now-harmonized domestic common market.

III. INTRODUCTION OF GST IN INDIA

The introduction of GST on 1 July 2017 represented the most comprehensive overhaul of the Indian indirect-tax system by subsuming much of its previous fractal structure into a destination-based, dual Indian-GST architecture, aimed at allowing concurrent taxation by the Union and the States with the end of creating a more integrated national market; with that end, CGST is imposed by the Central Government on the intra-State supply of goods or services under the Central Goods and Services Tax Act, 2017, and SGST is levied by the State Government on the same transaction under the State GST Acts, 2017, enabling the Centre and States to pool their tax base within India's federal architecture (Government of India, 2017a); meanwhile, IGST is levied and collected by the Central Government on inter-State supply of goods or services under the IGST Act, 2017, with special provisions for the settlement and apportionment of revenue between the Centre and the destination State (Government of India, 2017b), and UTGST exists alongside CGST in Union Territories without their own legislatures under the Union Territory Goods and Services Tax Act, 2017 (Government of India, 2017c); the GST Council – created under Article 279A of the Constitution through the Constitution (One Hundred and First Amendment) Act, 2016 and including the Union Minister of State for Revenue or Finance, the Union Minister of State for Revenue or Finance and the finance or taxation ministers of States, and empowered to recommend GST rates, exemptions, thresholds, model laws, place-of-supply determinations and other policies was the central forum for decisions related to GST with the GSTN acting as the operational platform responsible for giving practical effect to those policies through taxpayer registration, return filing, tax payment and information exchange services (Goods and Services Tax Network [GSTN], 2021).

IV. OBJECTIVES OF GST REFORM

GST was envisioned as more than simply a successor to the earlier set of indirect taxes, but the rationalization of the indirect tax system through a comprehensive reform of its architecture, administration and information technology infrastructure. One of the key goals of the GST, among others, was its role in creating a more seamless, transparent and technologically sophisticated indirect tax system, with the potential to enhance the overall efficiency of the economy, bolster taxpayer compliance, and increase the productivity of revenue collection (CBEC, 2017); an objective of effective simplification of the existing complicated indirect-tax system was intrinsically linked to this goal of tax reform, because the previous indirect-tax system composed a set of many Central and State taxes levied at different stages of production, sale, provision of services and movement of goods in a complex manner with duplication of work across multiple tax authorities, while GST aimed to subsume a large part of these taxes into a single, unified system, simplifying tax administration, and creating a system of registration, payment, and returns filing that all taxpayers could be familiar with (CBEC, 2017); closely associated with simplification was the need to eliminate the cascading of taxes, which occurred under the previous tax framework because full credit was not always available for taxes paid under other types of Central and State taxes, thus making one type of tax a part of the value on which another set of taxes was levied, whereas GST would be centered around a more continuous input credit mechanism, which would allow use of tax paid on input goods and services in paying off the tax payable on the sale of the output, and relying largely on value addition rather than embedded taxes for the distribution of tax incidence (CBEC, 2017); and the creation of a common national market through integration of interstate transport of goods and services by removing barriers between different states was a crucial goal, because the present set of interconnected Central and State taxes combined with interstate destination-based treatment through GST would hopefully lower the fiscal dissonance existing between different states and improve the movement of goods and services as also the commercial organization of production, storage and distribution according to business interests, and the Reserve Bank of India (2017) in particular has recognized the GST as a transformative reform that could help smoothen interstate movement of goods and services within India, contributing to the formation of a more cohesive, integrated national market. Another key objective of the GST was improved tax administration through further reliance on electronic and transaction-related information, as registration, return filing, tax payment, refund application and other compliance activities were progressively transferred to digital processes in the early years of GST to enable the authorities to access more uniform and timely information about economic transactions and to facilitate cross-checking information between different actors in the supply chain; digital processes were also intended to reduce information asymmetry between taxpayers and tax authorities, reduce the scope of unreported income or transactions, reduce the burden of interactions with tax officials and eventually promote more streamlined administration, but the implementation experience clearly showed that the procedures needed further reform and continued adjustments to make compliance easier for taxpayers, such as the rationalization of late fees and gradual concessions on some filing requirements in 2021-22 (Ministry of Finance, 2022); a wider effective tax base was also an explicit aim of GST as the reduction of tax exemptions, the unification of goods and services in a common tax framework and further documentation requirements could attract more economic activities into the tax system, and there was early evidence of a sizable increase in the number of indirect taxpayers following GST implementation, especially among small taxpayers below existing registration thresholds

(Ministry of Finance, 2018); the sharp increase was linked to the credit system that was dependent on the existence of registration, since businesses with input-tax credits had strong incentives to maintain an invoice trail and to remain in the legal supply chain, ensuring the integrity of the proposed destination-based consumption tax. In this way, the promotion of increased economic formalization was another significant goal and possible consequence of the GST, since firms situated in formal supply chains were likely to require registrations, invoices, digital documentation, and documented purchases to claim input-tax credit and to transact smoothly with other taxpayers; the 2016-17 Economic Survey anticipated that bringing into the tax system the untaxed areas of sectors like textiles, construction inputs, and other supply chains could incentivize formalization by putting a financial price on having documented purchase records for certain inputs or supplies (Ministry of Finance, 2017). This goal of formalization was also driven by the GST's strong focus on improved tax compliance because GST sought to foster incentives for taxpayers to register, to report transactions, to submit returns, and to file tax invoices by offering financial rewards; electronic transaction trail linking with input credit, e-way bills, and subsequent electronic reporting to tax authorities, together with auto-generated audit adjustments, was meant to substitute for traditional enforcement mechanisms while serving as a gatekeeping mechanism in real time; in other words, under the GST, compliance was not only supposed to be achieved by providing the "stick" of discouragement of non-compliance, but also through the "carrot" of incentives derived from the need for input tax-credit eligibility, which incentivized enhanced formalization through a sort of transaction-chain discipline in which a firm's ability to enjoy input-credit benefits was linked to documentation generated further up the supply chain, although technological glitches, fraud, procedural stress, and cash transactions impacted the success of this expectation. In the end, those objectives were expected to lead to higher revenue productivity and hence to higher mobilization of tax revenue, whereby the Centre and the States might have the potential to unlock a more stable and sustainable source of revenue simply by raising statutory tax rates, but rather by expanding the effective tax base, reducing leakage, improving taxpayer compliance, increasing transaction visibility and rendering administration more efficient and the original policy justification clearly acknowledged the potential of those gains to the Centre and the States to arise from widening of the tax base, expansion of trade volumes and enhanced tax compliance (CBEC, 2017); the history of the following five years provided early signs of how those interacting advantages of administrative reform might have affected revenue performance, as the Economic Survey 2021-22 highlighted that the monthly gross GST collection remained above 1 lakh crore for each month since July 2021 on the back of recovery from the second wave of COVID-19 and attributed some of the later success to enhanced taxpayer compliance with the administration and policy reforms, while meaningfully recognizing that wider economic conditions had also been at play (Ministry of Finance, 2022); in this context, the interdependence between the intended consequences of GST may be read as a causal relationship of sequential steps in which the reduction and removal of cascading taxes bettered the cost-effectiveness of the tax system, integration created a more complete national market, digital administration raised transaction visibility, input-tax-credit linkage and registration criteria promoted more formal economic activity and compliance, expansion of the effective tax base strengthened revenue capacity, and better tax compliance and administration have the potential to improve revenue productivity, but the actual realization of those targets between July 2017 and July 2022 remains a matter of empirical and theoretical inquiry rather than an inevitable result of GST implementation, which makes the analysis of those little-understood links between the aims of GST, tax compliance and revenue mobilization all the more crucial to the present research.

V. STATEMENT OF THE RESEARCH PROBLEM

The main research question of this paper emanates from the paradox between the predetermined purpose of GST introduction in India, and the actual delivery, since this was intended to have increased the indirect tax broadening, input tax credit continuity, cascading tax reduction and leakages, reporting of transactions, formalization and hence revenue mobilization and tax compliance, while GST's technology-led architecture

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aimed to produce transaction papers through registration, return filings, linkage of invoice info and input tax credit that would enable tax authorities to track mismatches and include majority of the economic activities in its formal system; while expectations appeared to be fulfilled in the initial phase of GST's full-blown implementation in India, as indicated by World Bank (2018), for the fact that India's multi-rate structure, numerous reporting mandated requirements, invoice matching requirements, exemptions, and refund related issues, augmented compliance burden and administrative complexity, and as noted by IMF (2018), delays, business compliance cost increase and pressure on availability of liquidity for exporters for input tax refund related concerns occurred as a result of technical glitches in information technology infrastructure and invoice matching; concurrently, strengthened enforcement of tax evasion and fake input tax credit claims creation through use of forged invoicing through taxpayers was identified, as official enforcement data established that 8,000 cases and more than 35,000 crore of such fake input tax credit was registered by Central GST formations and Directorate General of GST intelligence during 2020-21, highlighting that the invoice-credit system which underpinned tax compliance could be subverted through fake firms and bills (PIB, 2021); equivalently, COVID-19 external shock interrupted output, consumption, mobility and fiscal receipts in 2020/21, thus adding to the challenges of disentangling GST core effect from overall macro-economy, while subsequent growth in revenue receipts was associated with both relaxation of overall economic activities and enhancement of revenue administration (IMF, 2021); therefore, the research does not only concern on whether GST revenue or registrations showed signs of increase after 2017, but does the institutional design and implementation of GST work towards strengthening the underlying links between broadening the tax coverage, digital reporting, input-tax-credited discipline, formalization and compliance to sustained revenues, and the present research intends to conduct a conceptual exploration into the extent to which GST contributed to improving tax revenue mobilization and tax compliance in India over the period between July 2017 and July 2022, accommodating for compliance complexity, information technology shortcomings, compliance costs, evasion risk, regulatory adjustments and pandemic impact.

VI. RESEARCH QUESTIONS

1. How did the introduction of GST potentially affect tax revenue mobilization in India during 2017–2022?
2. Through what mechanisms did GST influence taxpayer compliance and formalization?
3. What institutional, technological and administrative factors supported GST compliance?
4. What major challenges constrained GST revenue mobilization and compliance during the post-GST period?
5. What policy improvements could strengthen GST revenue productivity and voluntary compliance?

VII. RESEARCH OBJECTIVES

1. To examine the conceptual relationship between GST implementation and tax revenue mobilization in India during 2017–2022.
2. To examine the role of GST in strengthening taxpayer registration, reporting and tax compliance.
3. To identify the institutional and technological mechanisms through which GST could influence revenue mobilization and compliance.
4. To analyse the major implementation challenges affecting GST revenue performance and taxpayer compliance during the study period.
5. To propose policy measures for strengthening India's GST framework based on the conceptual analysis

VIII. CONCEPTUAL CLARIFICATION OF MAJOR TERMS

Goods and Services Tax: Goods and Services Tax (GST) is a comprehensive indirect tax levied on the supply of goods and services according to the principle of destination-based consumption taxation, where the fiscal benefits from the tax are expected to end up with the taxing jurisdiction of destination, not origin; in India, the GST was implemented on 1 July 2017 as a tax levied at multiple stages of the supply chain, from manufacturing and distribution to retail consumption, while allowing eligible taxpayers to claim credit for

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the GST paid on business inputs so that tax would generally be levied primarily on the added value at each stage of the production and distribution process (CBIC, 2017). A core element of this design is the input-tax-credit (ITC) mechanism whereby a registered business can normally offset the GST paid on purchases against the GST liability on its outward sales-thus helping to avoid the cascading that can occur when tax paid at one stage becomes part of the tax base at the next stage; in the context of the present research, not only does ITC have a neutrality function, but it also creates an incentive for businesses to record the physical reality of supply chains and to transact with registered suppliers, creating links between the documentary trails of different businesses in each chain; from this perspective, then, GST is both a tax and an information system-registration, invoices, electronic returns, e-way bills and other digital records generate relevant data that can help the tax administration to verify transactions and identify non-compliance, though India's experience also showed that different rates, exemptions and administrative burdens can raise compliance costs and diminish some of these benefits (IMF, 2018).

Tax Revenue Mobilization: Tax revenue mobilization can thus be defined as the ability of government to mobilize adequate, predictable, sustainable public revenues from available economic activity through an appropriate tax base, good tax policy, efficient administration, good taxpayer compliance and a credible enforcement regime. This definition captures that revenue mobilization involves much more than a growth in gross tax revenue, because sustainable mobilization ultimately depends upon the extent to which a broad range of taxable economic activity is brought into the tax net, how well taxpayer reporting reflects this activity, how robust the tax administration's institutional capacity is to collect tax liabilities and how effective the tax administration is at reducing leakages as a result of evasion, avoidance, fraud and institutional inefficiencies. The conceptual importance of revenue mobilization, then, relates to governments' need to pay for public goods, infrastructure, social protection, and development expenditure without unwarranted borrowing or other unstable sources of finance, with international experiences suggesting that an emphasis on improving domestic tax capacity is especially crucial for developing countries in pursuit of their long-term growth and development (Organisation for Economic Co-operation and Development [OECD], 2021a). In terms of GST, revenue mobilization can be analysed through various related mechanisms, such as higher registered taxable persons, more ubiquitous coverage of taxable transactions, greater timeliness of return filing and payments, higher visibility of inter-firm transaction and lower leakages from avoidances, evasions, frauds and administrative shortcomings, as well as more effective use of digital information for enforcement measures and greater institutional capacity of the tax system to convert the legal tax base into actual revenue; thus, for this study, boosted GST revenue mobilization should not be interpreted only as a growth in monthly GST collections, because seasonality, inflation, income growth or contraction, variations in consumption, changes in customs duties or sales taxes, investment booms or busts, and exceptional events like COVID-19 can all influence the monthly GST revenues, and the more relevant conceptual issue to address here is whether GST improved the institutional capacity of the Indian tax system to turn a broad based and legally recognized economic activity into stable government revenues.

Tax Compliance: Tax compliance is the extent to which taxpayers adhere to tax rules and requirements, such as registrations as mandated by law, proper bookkeeping for payments and income, clarification of taxable goods, issuance and filing of tax invoices, disclosing the correct turnover and tax, filing the prescribed returns timely, the correct declaration of eligible input-tax credits, and the payment of the legally owed tax amount on time; therefore tax compliance comprises many dimensions, and should not be judged solely based on whether the taxpayer has been registered under GST as an enterprise could be registered but may neglect to file returns regularly, understate sales, claim input-tax-credit misappropriation, or delay payment of taxes (OECD, 2021b). In a contemporary tax framework, tax compliance and enforcement interact, where taxpayers' willingness and capacity to comply may be ensured by simple rules, improved assistance to taxpayers, and straightforward digital systems, while audit and compliance measures are to discourage willful non-compliance; the OECD points out that tax compliance is crucial for domestic revenue growth in today's context, although audit and enforcement is still needed (OECD, 2021b). Under India's GST, tax compliance was increasingly digitalized as reporting of payments, the GST registration process, payment of taxes, and transactions reporting were integrated into the digital infrastructure; innovations like the e-way bill and invoice-linked input-tax-credit enhanced data on transactions. For instance, according to IMF (2018), the deployment of the Indian-wide e-way bill system offered potential new data on inter-State movement of commodities to support GST tax compliance. Based on this, this paper discusses tax compliance as an indirect driver linking GST administration to revenue collection; with improvements in GST registration, reporting, return filing, and payment of taxes, a larger share of the legally taxable base could be effectively monetized; such relationship can be attenuated by procedures, enforcement, system errors, forgery, and other non-compliance.

Tax Base: The tax base (or, more broadly, the tax subject matter) is the economic activity, transactions, income, consumption, assets, or other values on which a tax applies and over which the calculation of tax liabilities takes place; for GST, in particular, the relevant tax base primarily comprises taxable supply of goods and services occurring within the scope of the tax, whereas the effective tax base may be less broad than the statutory tax base where a supply chain or some other dimension of economic activity remains unregistered, untaxed, unreported, hidden or otherwise unadministered. This is relevant to the present paper, which uses the number of registered taxpayers as a basic proxy for the tax base, because increases in the tax base after GST implementation can be achieved by effectively broadening coverage (by including more goods and services in the tax net), increasing registration, encouraging voluntary registration, reporting more taxable turnover, and bringing more undetected transactions into the tax net; in this context, where effective registration and reporting is the primary determinant of the size of the tax base, a consistent set of statutory tax rates can yield a tax base more than doubled by greater registration and compliance in India in the GST era. According to the Ministry of Finance's 2017-18 Economic Survey, the number of GST registrants in India stood at 9.8 million as of December 2017 and has been estimated that GST has increased the number of unique indirect taxpayers by over 50 percent, or 3.4 million, after adjusting for those which are registered multiple times under the pre-GST indirect tax regime, while roughly 1.7 million registrants have registered voluntarily even when under the mandatory registration threshold (Ministry of Finance, 2018). (This discussion on the theory of tax base broadening is especially relevant to the present study, because a tax system need not increase the net number of registrations to increase revenue if increased registration and reporting widen the effective tax base.)

Formalization: Formalization is about the movement of economic activity, firms, jobs and transactions, from largely undocumented, unregistered or informally registered institutional arrangements to arrangements with formal recognition, documentation, regular reporting and documentation of activities and increasingly traceability within established regulatory and tax regimes. For example, in relation to taxation, being formally recognized as a taxpayer does not mean that every enterprise will be immediately classified as a major tax contributor; however, if its business activities are documented, the enterprise will have tax registration, invoices and bank transactions, be represented in electronic submission, and engage in registered supply chains. It is GST that is particularly important for this transition as the input-tax-credit mechanism fosters linkages between buyers and sellers: a GST-registered purchaser seeking input-tax-credit needs an invoice from the seller, and suppliers seeking to serve larger GST-registered firms have incentives to enter the GST registry; in its latest report, the Economic Survey 2017-18 observes that although many enterprises qualified for a simplified composition arrangement, many also chose to become fully-regular GST taxpayers, with access to input-tax-credit being one factor in their decision to do so (Ministry of Finance, 2018). The same Survey offers a fascinating analysis of the role of the GST in the generation of the indicators by estimating the formal employment share of those connected to the GST or social-security mesh compared with other measures, estimating the share of enterprises carrying their turnover, and examining the number of workers. All the measures based on GST participation yielded substantially higher estimates of formal employment (Ministry of Finance, 2018). In respect of this research, therefore, the best way to understand the link between the GST and financial inclusion and revenue mobilization is to regard formalization as the intermediary between the GST and compliance. The more businesses are registered, and the more transactions are documented, the more likely businesses are to be brought to the attention of the administration; the more that they are in contact with the administration, the more likely they are to be verified; the more verified they are, the more likely they will to be incentivized to comply (and vice versa); and this process is likely to broaden the tax base and facilitate revenue mobilization, although the effect is not necessary or linear, as small enterprises in particular face a number of costs and difficulties that can impede the process.

Conceptual Relationship Among the Five Variables: Taken together, the five concepts provide the analytical foundation of the present study and may be represented as an interconnected process in which GST provides the institutional and technological tax framework; GST registration, invoicing and input-tax-credit incentives encourage greater formalization and transaction visibility; formalization potentially broadens the effective tax base; a broader and more observable tax base facilitates taxpayer compliance and administrative enforcement; and improved compliance increases the capacity of the government to mobilize sustainable tax revenue, while administrative complexity, compliance costs, technological difficulties, tax evasion, fraudulent input-tax-credit claims and wider economic conditions may weaken these relationships; accordingly, the conceptual relationship underlying the study can be expressed as GST reform → digital and documentary integration → formalization → expansion of the effective tax base → improved tax compliance → stronger tax revenue mobilization, with the understanding that these links represent theoretically expected mechanisms to be critically assessed rather than outcomes that should be assumed merely because GST was introduced.

IX. REVIEW OF LITERATURE

The Indian GST literature interprets the reform as an effort to substitute a fragmented indirect-tax structure with an improved destination-based value-added tax, capable of enhancing economic integration, administrability and revenue productivity, although emphasizing that this kind of efficiency gain depends strongly on system design and implementation, Rao and Mukherjee (2019) show that GST helped broaden the common tax base for Centre and States and reinforced credit continuity, while Rao (2022) mentions that tax harmonization and limited inter-state distortions were significant achievements, but that the multiple rates, the exemptions, and the initially unstable technology platform limited the scope for simplification and compliance, and that revenue mobilization was difficult in the initial two years, with some evidence that the revenue buoyancy of the post-implementation period was weaker; Paliwal, Saxena and Pandey (2020) infer from a tax-buoyancy approach that tax revenue in GSP18 became insensitive to variations in GSP18 gross domestic product, indicating that the early year revenue performance was not in line with expectations of improved revenue productivity, while Mukherjee (2021) demonstrates that compensation needs have emerged as a key aspect of the tax-sharing dispute, especially in 2020-21 and 2021-22 when compensation-cess shortfalls entailed substantial borrowing supported by the Centre, and revealed the varying dependence of States on the GST compensation; studies on compliance emphasize the significance of registration, filing, input-tax-credit, invoice reporting and digitalized administration, Ghosh (2020) identifies that GST officially registered many previously unregistered businesses, that invoice matching and input-tax-credit provide incentives to promote self-enforcing compliance, and that frequent changes and procedural compliance impose compliance difficulties on micro- and small enterprises; Mohan and Ali (2018) observe that MSMEs faced adjustment and compliance challenges when GST was rolled out, implying that formal registration itself is not the determinant of compliance cost; thereafter, the digital architecture of compliance has been expanded by E-Way bills, E-Returns, E-Invoice reporting, based on the Department of Revenue (2022) that deploys business intelligence, risk-based registration, E- invoice reporting, data analytics to identify non-compliance and fake-invoice driven input-tax-credit fraud; the literature on the formalization of business (supplier) behavior interprets GST as creating incentives for suppliers to

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register and document transactions, because engaged (registered) buyers gain from legitimate input-tax-credit chains, but the same Ghosh (2020) recognizes that this kind of formalization creates costs for micro and small firms previously outside the tax net; Kumaraswamy (2020) concludes that GST-induced shifts can involve pressure on working capital, collections, payments, and liquidity in the MSME sector, compounding worries about the costs of professional (taxpayer) and technological (increased compliance process) and administrative (increased documentation) compliance; the COVID-19 pandemic and the accompanying lockdowns, and sudden contraction of production and consumption, caused a sharp drop in the taxable base, complicating assessment of GST outcomes, as Naik and Haldankar (2021) assess, and their impact on revenue and revenue sharing arrangements, so that it is not possible to attribute the observed effects to GST design. The studies which make up the GST Indian literature seem to be disconnected from one another, partitioned between taxes and public finance (revenue), fiscal federalism (revenue sharing, dispute resolution), compliance (behavior, formalization), MSME burdens, and digital technology-driven administration, so that, an integrated conceptual scheme links GST and tax administration to taxpayer compliance, and to expansion of the effective tax base and increased revenue, enabling a comprehensive interpretation of the first five years of GST.

X. CONCEPTUAL FRAMEWORK

Overall, the theoretical framework of this study incorporating Deterrence Theory of Tax Compliance, the Fiscal Exchange/Tax Morale view and digital-enabled tax administration helps explain how the GST architecture in India may shape taxpayer behaviour, formalization, compliance and thus revenue mobilization; firstly, the deterrence approach derived from Allingham and Sandmo's (1972) economic model of tax evasion perceives tax compliance as a cost-benefit analysis in which the expected costs of compliance are weighed against the benefits, including the probability of detection and the severity of sanctions for non-compliance, and this perspective can suggest that electronic filing of return, invoice record, audit trail, matching of transaction, e-way-bill, and digital input-tax-credit claims can enhance the perceived probability of detection by enabling tax authorities to compare the information submitted by participants along the supply chain and thus reinforce reinforced compliance, but alone this perspective is incomplete in its explanation of taxpayers' behaviour since they may conform even where the likelihood of audit is very limited, thus the perspective of Fiscal Exchange and Tax Morale can predict that taxpayers' willingness-to-comply is likely to be conditioned on the trust in public institutions, perceptions of fairness, legitimacy and procedural justice and administrative ease and willingness-to-contribute; even more so, according to the "slippery slope" framework, taxpayers' perceived power of tax authorities and tax authorities' perceived trustworthiness in them interactively determine the extent of compliance (Kirchler, Hoelzl & Wahl, 2008), which means that transparency and procedural justice, predictable rules, taxpayer responsiveness and reasonable compliance obligations might encourage voluntary compliance when the power of tax authorities is high but trustworthiness and perception of efficiency is low, meanwhile complex filing requirements, frequent procedure changes and high compliance cost might also undermine trustworthiness and motive resistance when the power of tax authorities is low but trustworthiness is high; by applying this framework to India, it implies that transparency and procedure integrity, predictability of regulation and fairness, accessibility, efficient service and reasonable obligation may promote voluntary compliance when the power of tax authorities is high, but complicated documentation requirement, frequent changes of regulation and high compliance cost could trigger taxpayers' motive resistance even when the power of tax authorities is high, thus overall the combined theoretical framework will enable the researcher to address the nature of revenue stronghold of India's GST between 2017 and 2022.

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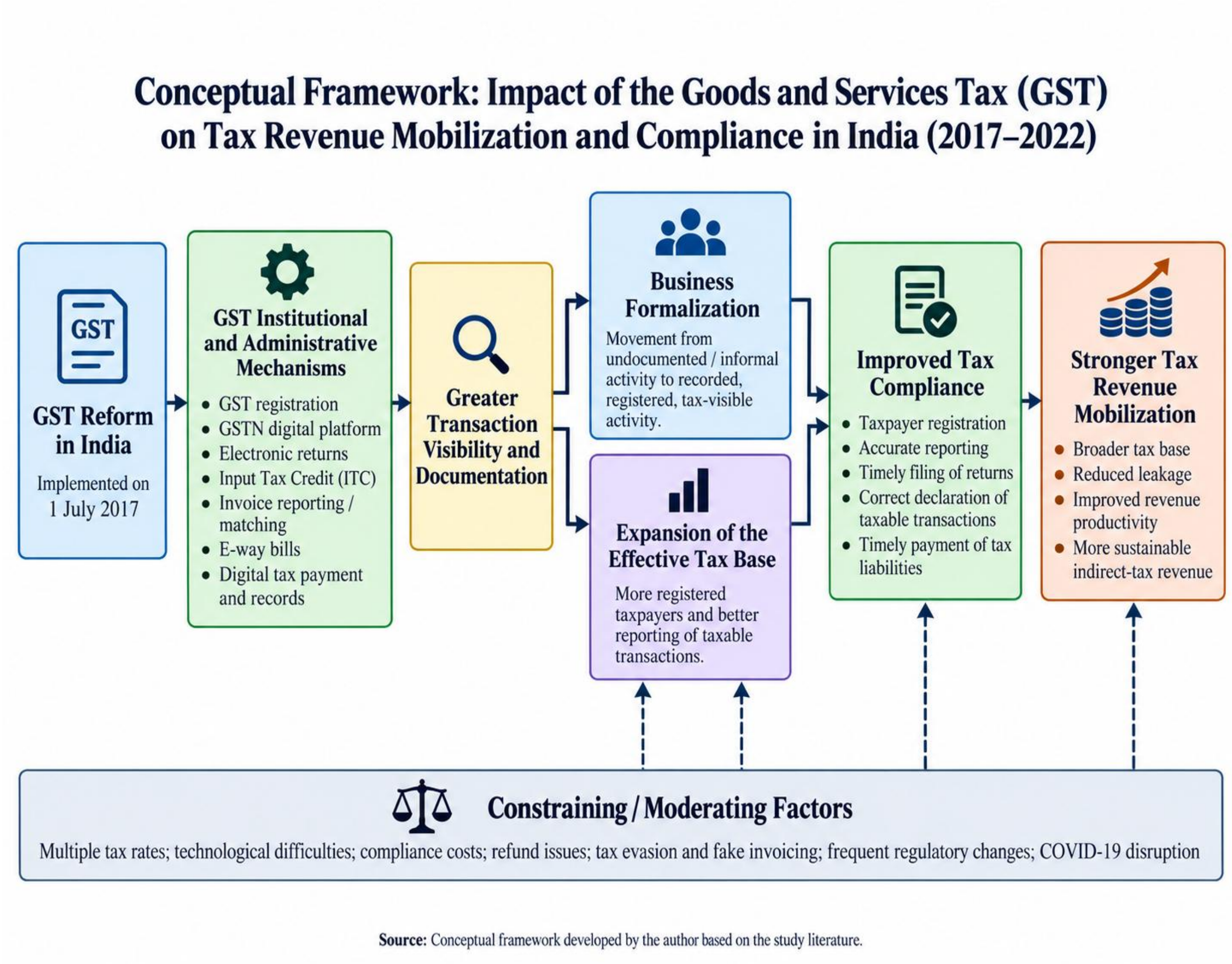

Above diagram showing Conceptual Framework developed by author based on extant review of literature

XI. RESEARCH METHODOLOGY

This study has a conceptual, descriptive research design limited by its reliance on secondary materials, to analyse the relations between GST reform, mobilization of revenue and taxpayer compliance in India from 1 July 2017 to 31 July 2022: the time period was purposefully set to 'end' at the end of July 2022 so that the study describes institutional reforms, policy evidence and academic knowledge, rather than employing primary survey or experimental research to generate new data; documents and secondary literature, appropriate given the aims of this research to interpret policy changes, institutions and linkages between associated ideas, as document analysis allows systematic research of official records as qualitative data (Bowen 2009), and literature review as synthesis method enables synergizing fragmented study findings into a coherent body of knowledge (Snyder 2019); information is derived from official Indian sources: Ministry of Finance, Central Board of Indirect Taxes and Customs, GST Council, Goods and Services Tax Network, Reserve Bank of India, Economic Survey of India, Comptroller and Auditor General of India, Indian Parliament reports, and selected peer-reviewed publications and institutional working papers on Indian taxation; where relevant, research materials also include the reports of the OECD, International Monetary Fund and World Bank on global tax administration; that were selected for review based on their relevance to GST revenue performance, taxpayer compliance, administration, document availability and the effective five-year time frame for analysis; the research uses thematic analysis, a flexible qualitative tool to identify, compare, compare and synthesize evidence around central themes connecting GST reform, revenue mobilization, tax base broadening, formalization and administration, and tax compliance, without imagining that these themes will necessarily predict effects, but rather help explain the relationships between them (Braun & Clarke 2006, 2012; Jabareen 2009); accordingly, it does not test statistically whether GST causes any increase in revenue, but critically considers available evidence to generate a theoretically informed interpretation of the first five years of GST in India.

XII. GST AND REVENUE MOBILIZATION IN INDIA

GST remained a revenue mobilization tool in India, post-July 2017, as its registration-return-invoice based architecture was aimed at widening the tax-base, increasing transaction transparency and strengthening indirect-tax collection; as per GSTN records, about 1.30 crore active taxpayers existed by August 2021, including more than 80 lakh taxpayers post- 1 July 2017, implying that quite a few businesses had entered a common reporting framework, though registration alone is hardly indicative of sustained compliance and revenue (Goods and Services Tax Network [GSTN], 2021); revenue collections recovered after the pandemic hit, with June 2022 collections at 1,44,616 crore (CGST 25,306 crore; SGST 32,406 crore; IGST 75,887 crore; cesses 11,018 crore), although the Government attributed the improved receipts to the economic recovery and anti-evasion efforts rather than to GST architecture per se (Ministry of Finance, 2022a); tax-base expansion was materially supported by the credit chain created through input-tax-credit (ITC), since buyers wanted valid invoices and sellers wanted to report transactions, thus strengthening documentation and tax-base visibility, but this chain also generated pressure for fake ITC, with the enforcement directorate recording about 8,000 cases of fake ITC aggregation exceeding 35,000 crore in 2020-21 (Ministry of Finance, 2021); GST also integrated interstate trade through the IGST mechanism, whereby taxes on inter-State supplies were raised centrally and then devolved to destination States, simultaneously ensuring credit- continuity and creating a settlement process, as seen in June 2022 when, of the total 1,69,448 crore collected on interstate supply, 29,588 crore was paid to CGST and 24,235 crore to SGST, with a further 27,000 crore ad hoc settlement (Ministry of Finance, 2022a); however, fiscal effects for the Centre and the States remained large, with States surrendering several independent indirect-taxing devices in exchange for a harmonized structure, protected through a compensation mechanism that guaranteed compensation at a 14 percent annual growth path over FY2015-16 revenue for five years, while the pandemic-created slowdown in GST and compensation cess collections prompted the Centre to disburse back-to-back loans of 1.10 lakh crore and 1.59 lakh crore in 2020-21 and 2021-22, respectively, implying that the GST's revenue-mobilization contribution during July 2017-June 2022 should be estimated based on widening the tax base, collection, compliance quality, fraud prevention, interstate settlement and Centre-State fiscal adjustment, not gross collection (Ministry of Finance, 2022b).

XIII. GST AND TAX COMPLIANCE

Electronic registers, return submissions, invoice-based input tax credits, data-matching and information-collection applications, accompanied by enforcement actions, could be described as formal digital registration, electronic filing, invoice-based input tax-credit discipline, digital transaction-monitoring and enforcement tools in use, to encourage taxpayers to reveal taxable transactions and pay what is due on time and correctly; for registration compliance, GST network coverage expanded the number of firms in a common digital-reporting framework, with GST Council reporting in 2022 that over 1.32 crore registered firms under GST generated electronic data, though registration compliance was only the early phase because registered taxpayers will need to follow filing, reporting and payment rules (GST Council, 2022); on return-filing compliance, digital information reporting formed the basis for the additional data received by tax officials with mandatory electronic provision of outward supplies, tax liabilities, input tax credit claims and payments by registered entities, while annual returns help to draw together the data reported in periodic filings, though there are filing deadlines and late-fee requirements to contend with in the GSTs digital management (GST Council, 2022); in terms of input tax credit, automatic enforcement may be hoped for, as a buyer looking to claim the credit will attempt to get a valid tax invoice and an optimal supply partner will strive to report the relevant invoice correctly, like-minded incentives creating crossbuyer-supplier communication links that are at the core of risk-avoidance, and the intention for automatic matching was to use this data crossovers to identify anomalies and deter ghost inputs (Government of India, 2017); e-way bills, a new digital trace for travelling goods worth over Rs 50,000, found the way to 6.41 crore generated bills in a monthly period in October 2020, and this signal system was able to serve a significant role (Ministry of Electronics and Information Technology, 2020); an e-invoice requirement implemented from October 2020 also added to the availability of transaction-related data, with 39.81 crore e-invoices generated by 88,471 suppliers in the first half-year after its introduction, and further facilitating automatic transmission of records and invoice recognition (Ministry of Electronics and Information Technology, 2021); still, in spite of digital systems, unscrupulous taxpayers continued to operate, with investigations proving the existence of illegal businesses and invoices to claim or pass ITC, including a Mumbai fraud case in July 2022 with claims worth more than Rs 100 crore, pointing to the fact that technology has had the ability to improve visibility and detectability, but this relies on risk-evaluation, verifications, audit and infiltration activities; so GST revenue collection between 2017 and July 2022 represented not just a mere result of mandatory digital reporting, but rather a combination of digital record enabled facilitation, transaction-chain self-interest and enforcement (Ministry of Finance, 2022).

XIV. MAJOR CHALLENGES DURING 2017–2022

While simplification, integration and better compliance objectives appeared to portend salutary effects from GST, the 2017-2022 period brought to fore myriad structural and administrative hiccups that tempered reform benefits – beginning with multiple-rate design, including principal rates of 5, 12, 18 and 28 percent and categories of exemption and special rates, which added to administration complexity, eroded revenue neutrality and engendered classification conflicts and inverted-duties, resulting in Fifteenth Finance Commission's recommendation to consolidate rate structure (Fifteenth Finance Commission, 2021); classification itself grew complex, wherein the GST treatment of goods, services, composite and mixed supplies varied greatly depending upon minute legal category descriptions, resulting in heightened rate uncertainty and differential treatment of similar inputs (Jain, 2021); repeated extension, deferment and cancellation of return-related deadlines and procedures pointed to transitional operational quagmire, with GST Council easily discounting annual returns or substantially changing filings based on taxpayer inconvenience (GST Council, 2020); these procedural bottlenecks proved challenging for MSMEs, as research based on a poll of 728 Haryana-based SMEs pointed to large perceived GST complexity entailing record-keeping, return submission, mismatched invoices, technological woes and invoice recon, excessive reliance on consultants, lower compliance due to complexity, delays in refunds and invoice-matching, imposts of high analysis costs and the added burden of external tax experts, along with weak self-enforcement infrastructure owing to technology glitches and refund delays and the looming threat of fraud, while 15th Finance Commission elucidated collection fluctuations, refund postponements and hefty fraud issues (Fifteenth Finance Commission, 2021; Nandal et al., 2021; PRS Legislative Research, 2021). Meanwhile, Center-States financial discontinuities persisted, since numerous States-Counties relied on GST compensation to hit assured revenue hikes due to COVID-19 induced slack in economy, collections and compensation-cess reveno (PRS Legislative Research, 2021); in this way, the 2017-2022 experiment illustrates the imperative to strike a delicate balance between aggressive technocratic enforcement and anti-fraud tactics while ensuring the stability of fiscal rules, technology, legislations, and the triviality of the process to maintain easily manageable regulatory burdens so that enforcement does not paradoxically serve as a bottleneck to compulsory compliance.

XV. DISCUSSION

Another way to put this is that the contribution of GST to revenue raising between 2017-22 is better seen as not a direct effect of increased GST revenue collections, but an effect of a nexus of determinants, in which tax design, tax administration, taxpayers and macroeconomic shocks affect the ultimate yield to government (Afzal et al, 2017); in principle, GST digitalisation can promote revenue raising by

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changing the link from transactions to digital information, via registration, returns, invoices, input-tax-credit documentation and movement information, allowing increased transaction transparency and enabling taxpayers to cross-check each other's declarations, as well as relying on third-party information and invoice chains to create self-enforcement effects (Pomeranz, 2015); for India in particular, the sequence runs as: digitalisation increased visibility of transactions increased reporting increased income tax base increase revenue raising, especially where input-tax-credit incentivizes buy-sell documentation, although Khoja (2020) stresses that GST effectiveness should be considered in terms of its impact on cascading, transaction costs, evasion and complexity, rather than on absolute collection levels; simultaneously, increased digitalisation does not necessarily translate into proportionately increased compliance, because more complex procedures, multiple reporting requirements and constrained collection capability can raise compliance costs, especially for small and informal firms, with Roy (2021) suggesting that digitized taxation can lead to asymmetric or premature formalization when firms have very different capacity for regulation, and where complex rules can undermine voluntary compliance or lead to non-compliance even as their monitoring capacity is expanded; evasion with false reporting, fake invoices or wrongful input-tax-credit deduction can also break the gainfully apparent link between documentation and collection, and observations on tax collection must be compared with what is happening in the broader economy, because the expansion or contraction of the tax base, as indicated by GST collections, is partly a function of the overall economic upswing or downswing, as witnessed during the COVID-period when the Reserve Bank of India identified deep demand and production shocks and a subsequent rise in economic activity (Reserve Bank of India, 2021); all of which suggests that the role of GST may be conditional on the presence of electronically verifiable documentation, reasonable compliance requirements, a capacity for implementation, formalizing incentives, and a buoyant macroeconomy, whereas undue complexity dampens compliance and evasion (either through documentation fraud or extralegal concealment) interrupts the trajectory from collection through documentation, and the macroeconomy swings, which affect the size of the monetized base, are not merely factored into collection numbers.

XVI. POLICY IMPLICATIONS

The 2017-July 2022 experience with India's Goods and Services Tax suggests that as its role in compliance and revenue mobilization is enhanced, there is a need for a policy combination of administrative ease, ease of use of digital technology, ease of use by taxpayers and effective enforcement to achieve this, (i) GST rules and the rate structure should be made simpler and more uniform over time, especially where inverted duty structures, differences of classification and return complications are sources of uncertainty, an issue identified in the 47th GST Council (2022) meeting's packages on rate rationalization, return related amendments and refunds; (ii) GST norms should be more stable and predictable as frequent legal and procedural changes impose high costs of information and adjustment on GST taxpayers and administrators, (iii) continued strengthening of GSTN's capacity, system stability, automated return filings and interoperable digital data flows should reduce filing burden and improve the quality of transactional data, (iv) compliance conditions should be proportionate for MSMEs, to avoid formalization imposing prohibitive costs on new entrants, (v) taxpayer education, user-friendly guidance, and timely assistance should complement enforcement as better understanding of registration, return, invoice, and input-tax-credit rules can promote compliance, (vi) the use of GST return, invoice and third-party information to identify suspicious transactions through analytical techniques should be reinforced, (vii) anti-evasion measures should specifically address fake invoices and input-tax-credit fraud issues, which prompted the linking of input-tax-credit accessibility more closely to supplier information and GSTR-2B by the GST Council, (viii) Centre-State administrator coordination and information sharing need to be improved as GST is jointly run within the Indian federal system, (ix) complaints handling and refunds should be made more timely and transparent through effort already invested through the GST Grievance Redressal Committees at the State and zonal levels, which has dealt with taxpayer issues (GST Council, 2021b), and finally, (x) policy design should afford enforcement sufficient

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weight, while keeping compliance-easing measures, good quality digital technology, smooth refunds, stable policies, and taxpayer assistance high enough priority to provide incentives for a broader base of taxpayers and higher revenues.

XVII. LIMITATIONS OF THE STUDY

The present conceptual analysis has some limitations to be acknowledged when interpreting its (3) evaluation of GST (Goods and Services Tax) – revenue mobilization and tax compliance (July 2017 to July 2022): firstly, the secondary evidence upon which much of the analysis depends on – government policy papers, official reports and published research – means the research depends on the conceptualisation, scope, definitional choices, measurement approach and reporting conventions of the original data producers and cannot verify all underlying observations, despite being a legitimate research framework (Heaton, 2008; Johnston, 2014); secondly, the inability to access direct firm-level primary data means researchers cannot observe directly how registration decisions, filing behaviour, invoicing, input-credit claimed or notions of compliance costs may have changed among businesses post-GST, so any conclusions on taxpayer behaviour are necessarily conceptual rather than micro-econometrically substantiated; thirdly, given India's wide-ranging economic characteristics, different parts of the economy react differently to an introduction of a broad-based GST, making disentanglement of the effects of GST from macroeconomic factors complicated – output, consumption and inflation come from the sectoral composition of the economy and public policies, compounded by the inflation experience, and in 2020-21 real GDP in India contracted by 6.6%, and then recovered unevenly in 2021-22 due to the COVID-19 pandemic (RBI [Reserve Bank of India], 2022); fourthly, the relatively short five-year period after GST implementation may not be sufficient to assess its long-term stability and revenue effects, given the ongoing institutional reforms; fifthly, the legal and compliance environment changed over the period of analysis through amendments, relaxations, extensions and the inclusion of COVID-19 pandemic circumstances, rendering that relatively short period less consistent; sixthly, data on aggregate output and consumption; and state-specific data may hide important heterogeneity by sector, firm size and location, so observed trends cannot necessarily be projected to all taxpayers; finally, based solely on conceptual synthesis, the analysis does not apply a quasi-experimental, experimental or econometric identification strategy, so it is not possible to derive causal relationships between GST and revenue or compliance; for this reason, the results can be interpreted only as theoretically driven associations and institutional insights, which suggests future research on firms, regions and time series.

XVIII. CONCLUSION

The conceptual evidence available through 5 July 2022 suggests that the GST reform did not simply alter the rate structure or integrate or replace previous indirect taxes, but that it also shaped an integrated institutional, administrative and informational architecture through which enhanced tax-base integration, digital registration, electronic filing, invoice-based reporting, input-tax-credit linkages, and interstate tax coordination can collectively facilitate compliance and improve revenue-raising capacity; the destination-based and dual nature of the reform architecture also helped to integrate the Central and State tax systems, since Pandey (2020) concluded that the post-GST system had integrated rather than replaced the previous broken-up Central and State indirect taxes; Sury (2021), meanwhile, has characterized GST as helping to strengthen tax institutions, foster cooperative federal arrangements and raise tax-base buoyancy; however, the achievement of each of these goals will depend crucially upon the capacity of taxpayers themselves to use technology effectively, with Badola and Mukherjee (2021) establishing that computer and internet use is positively associated with tax registration among unincorporated enterprises; and also depending on taxpayers' familiarity and experience of procedure and administration, with Mour and Paul (2021) highlighting that improvements to procedural and structural simplicity and administrative clarity are associated with better compliance; thus, the link shown here might be viewed as the 'GST institutional architecture' – the reform's design, enabled through greater use of technology – leading to better compliance by taxpayers, producing more revenue, and strengthening India's capacity to fund its public sector; however, each of these links is conditional upon administrative efficiency, procedural simplicity, and useability of technology, in addition to taxpayer understanding, administrative efficiency, credible enforcement and wider economic conditions; therefore, while increases in GST receipts in the context of the reform's implementation may be indicative of success, they should not be viewed as the sole indicator, since these outcomes may also reflect (among other factors) shifts in output, inflation, sales, consumption, policy and economic shocks; in summary, GST might be viewed as an ongoing process of building an integrated architecture of indirect tax administration and information reporting through which the long-term reform goal of sustainable revenue collection can ultimately be achieved.

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