MONOGRAPH 40/2018

GOODS AND SERVICES TAX: REVENUE IMPLICATIONS AND RNR FOR TAMIL NADU

D.K. Srivastava

K.R. Shanmugam

MADRAS SCHOOL OF ECONOMICS
Gandhi Mandapam Road
Chennai 600 025
India

April 2018

Goods and Services Tax: Revenue Implications and RNR for Tamil Nadu

D.K. Srivastava
K.R. Shanmugam

MADRAS SCHOOL OF ECONOMICS
Gandhi Mandapam Road
Chennai 600 025
India

April 2018

MONOGRAPH 40/2018

April 2018

Rs.200/-

MADRAS SCHOOL OF ECONOMICS
Gandhi Mandapam Road
Chennai 600 025
India

Phone: 2230 0304/ 2230 0307/2235 2157
Fax : 2235 4847 /2235 2155
Email : info@mse.ac.in
Website: www.mse.ac.in

Acknowledgement

We are thankful to Commercial Tax Department, Government of Tamil Nadu for entrusting this study to Madras School of Economics. We also thank Dr. C. Rangarajan, the Chairman, Madras School of Economics for allowing us to undertake this study.

We are grateful to Officials of Commercial Tax Department, particularly Mr. K. Rajaraman IAS, the Principal Secretary/Commissioner of Commercial Tax Department who initiate this study along with Mr. K. Shanmugam IAS, Finance Secretary, Government of Tamil Nadu. We have greatly benefitted from discussions with them in the different stages of this study.

We would like to express our special thanks to Mr. K. Gnanasekaran, Additional Commissioner (Taxation) for providing various inputs required for this study. We also thank officials of Commercial Tax Departments who were present at the time our (two) presentations on the draft versions of this study for providing useful comments and suggestions.

D.K. Srivastava
K R Shanmugam

Chapter 1

INTRODUCTION

Goods and Services Tax

Goods and Services Tax (GST) is a Value Added Tax (VAT) levied at all points on both goods and services in a comprehensive manner in the supply chain with credit allowed for any tax paid on inputs acquired for use in making the supply.[1] It is, in general, envisaged as a more efficient tax system with exemptions restricted to a minimum. Due to its capacity to raise revenues in the most transparent, and neutral manner, more than 160 nations have adopted the GST.[2] With the increase of international trade in services, the GST has become a preferred global standard. All OECD countries except US follow this standard.

GST Initiatives in India

The idea of moving towards the GST in India was first mooted in the Budget 2006-07. Initially, it was proposed to be introduced from April 1, 2010. Phasing out of CST (Central Sales Tax on interstate sale of goods) had begun from April 2007 with a reduction of CST rate from 4 per cent to 3 per cent. Empowered Committee (EC) of State Finance Ministers had constituted a Joint Working Group in May 2007. The EC finalized broad GST structure (Dual GST Levy, Separate Legislation and Administrations by Centre and States) in 2008 and the CST rate was further reduced to 2 per cent in June 2008. In 2009, the EC released its first discussion paper on GST while the 13th Finance Commission released its report including a chapter on GST containing the Commission's recommendations. The Standing Committee on Finance released its Report on GST Bill on August 2013 while the EC rejected the Centre's proposal to include Petroleum products under the GST net in November 2014.

With the passage of the Constitution (122nd Amendment) Bill 2014 by the Lok Sabha, the Government of India now hopes to introduce the GST from April 2016 in India.[3] In keeping with the federal structure of India, the proposed GST is to be levied concurrently by the Centre (CGST) and the States (SGST) keeping with the tax-base and other essential design features are common between CGST and SGST as also, across

[1] It is called as VAT because at every stage, the tax is being paid on the value addition.
[2] According to an OECD report (2014), 164 countries now levy a VAT.
[3] Rajya Sabha refers the Bill to a select committee.

SGSTs for the individual States. [4] All goods and services barring a few items like alcohol (for human consumption), tobacco and petroleum will be subject to GST with no distinction between goods and services. [5]

The GST shall subsume various indirect taxes being levied by the Union and the State Governments currently. That is, it will not be an additional tax. The CGST will include: Central Excise Duty (CENVAT), Additional Excise Duties, Service Tax, Additional Customs Duty (Countervailing duty or CVD), Special Additional Duty of Customs (SAD), and Central surcharges and Cesses (in so far as they relate to supply of goods and services), while the SGST will include: State VAT/Sales Tax, Entertainment Tax (other than the tax levied by the local bodies), Luxury Tax, Central Sales Tax (CST), Octroi and Entry Tax , Purchase Tax, Electricity Duty, Taxes on Lottery, Betting and Gambling, and State Surcharges and Cesses (in so far as they relate to supply of goods and services).

Both the CSGT and the SGST will be levied on the basis of the destination principle. Accordingly, exports will be zero rated while imports will attract the tax in same manner as domestic goods and services. Interstate supplies within India (and import) will attract an Integrated GST (IGST=aggregate of CGST and SGST of the destination State) by the Centre.[6] In addition, the Centre will levy an additional tax of up to 1 per cent in respect of only goods and the revenue from this tax will be assigned to the origin States for initial 2 years or such long period as recommended by the GST Council. [7]

As against the current CENVAT and State VAT regime, which allows (i) the CENVAT credit only for the Excise Duty paid on inputs (and not on the VAT paid on the input raw materials and this is known as tax on tax), (ii) the State VAT credit only for the input VAT and (iii) the credit of input excise/service tax for set-off against output liability

[4] India will adopt a dual GST, destination based, consumption type with credit invoice method like present VAT. All exempted goods under State VAT and CENVAT will be considered (there are 96 items of which 50 are of local importance under State VAT while there are 234 are exempted under CENVAT).

[5] For petroleum products, levy of GST is to be made effective at a future date. Further a common threshold (Rs. 25 lakh) for SGST and CGST (and for goods and services), except for northeastern States will be used. However, the threshold-exempted dealers will have an option to pay as per ITC credits. As a result, many dealers will go out of tax net. At the same time States need to deal with larger number of services providers.

[6] The revenue from this will be apportioned between the Union and States.

[7] Thus, in India the unified tax will take the form of a dual GST (i.e., it comprises of the CGST and the SGST, which will be legislated, levied and administered by the respective levels of Government).

of excise/service tax, the GST regime will allow the cross utilization of credit. [8] Thus, the GST will combat both the tax on tax and tax cascading problems.

Advantages of GST

The benefits expected from the proposed GST are: (i) wider tax base necessary for lowering the tax rates and eliminating classification disputes, (ii) elimination of multiplicity of taxes and their cascading effects on the cost of goods and services, (iii) rationalization of tax structure and simplification of compliance procedures, (iv) harmonization of Center and State administration which will reduce duplication and compliance costs, (v) uniform taxation laws across states and different sectors, (vi) reduction in prices (mainly due to full and seamless credit which will reduce the cost of production), [9] (vii) creation of a common Indian market which will add buoyancy to our economy, [10] (viii) making Indian products competitive in the international markets, among others.

Other impacts anticipated in the GST regime are:

(i) ***Redistribution of Tax across Goods/Services:*** Goods that are currently subject to both Centre and State taxes should experience a net reduction in tax burden by reducing cascading, with a positive impact on consumer demand;

(ii) ***Redesigning of Supply Chains:*** Currently the supply chains are invariably designed to minimize the burden of the CST with distribution centers located in States where customers are located. These are suboptimal from a strategic and economic perspective. [11] The GST will bring a fundamental redesign of supply chains;

(iii) ***Alter the Very Face of Fiscal Federalism:*** The GST will bring a fundamental shift in the allocation of tax powers between the Centre and the States. It repeals the powers to levy excise duties, service tax and sales and purchase taxes currently assigned to the Centre or States on mutually exclusive basis and replaces them by the concurrent powers to levy the Dual GST. Neither the Centre nor the States can exercise the new tax powers unilaterally but only through a collective body called the GST Council. Collective design of the tax will mean an

[8] Excise duty and service tax are levied by the Central Government, while the State VAT is levied by the State Government, which is one of the reasons why such a cross-utilization of credits is not allowed. But this does not constitute a valid reason that justifies the cascading effect of taxes.

[9] Since supply of both services and goods will be charged to GST, a supplier of services will be eligible to take credit of GST paid on goods and the reverse will apply to traders of goods as well.

[10] GST may yield a growth as the tax base will likely to increase for both Centre and States.

[11] Elimination of CST will provide an opportunity to optimize the supply chain, enabling companies to reevaluate existing procurement patterns and distribution and warehousing arrangements.

end to ad hoc and whimsical policymaking and non-transparent tax administration. Thus GST may usher in the new era of 'Cooperative Federalism";

(iv) ***Increase in Government Revenues:*** At the time of introduction of VAT, the government revenues actually went up instead of falling (this may be because of improved compliance). The same thing may also happen in the case of GST.[12]

Issues Related to the Proposed GST in India

The GST is expected to play a significant role in transforming the Indian economy. It is a game changing one with wider impact and ramifications on various stake holders including the Centre Government, the State Governments, manufacturers, services providers, traders etc. The model adopted by India is unique, without any precedence in the world. That is the reason why governments took so long to reach a consensus on this new Constitutional framework.

(i) ***Impact of GST on the States' Fiscal Autonomy:*** Currently, the State VAT/sales tax is the only major buoyant own revenue source for States. In the GST regime, the States can't exercise their tax powers (given by the Constitution) unilaterally on this important tax. That is, the proposed GST constraints the sovereignty of the State legislatures.

(ii) ***Destination-based Tax:*** The GST is a destination based and not the origin one. In this case, it should be clearly identifiable as to where the goods and services are going. Particularly in the case of services, it is not easy to identify where a service is provided.

(iii) ***Revenue Loss to States:*** As the GST is destination based, the sudden shift from the point of origin will adversely impact many States particularly producing (manufacturing) States like Tamil Nadu at least in the initial years. While the Centre has announced a full compensation for the revenue loss during the initial three years and extended for another two years, many States argue that as the loss may be on permanent basis, the compensation for initial years will not serve the purpose. They also feared over the Centre's attitude due to their previous experience when State VAT was introduced. While the Government of India agreed for a three year VAT compensation

[12] But many argue that as the government plans to introduce GST at a Revenue Neutral Rate (RNR), the revenues might not increase significantly in the short run.

package, later it was restricted to two years for States like Tamil Nadu. [13] The success of GST critically depends on the trust between the Centre and State governments.

(iv) ***Exclusion of Certain Taxes/Goods:*** States resistance to GST is reflected in their demand for exclusions/continuation of certain taxes and goods from the GST ambit to preserve the States' fiscal autonomy and revenues. The proposed GST excludes petroleum products, alcoholic products etc from the GST net, and does not distinguish between polluting and non-polluting goods and services.

The GST constitutional amendment bill provides for differentiated treatment of the three groups of goods that are considered demerit goods and/or goods with negative externalities. These are: (a) tobacco products, (b) alcoholic products for human consumption, and (c) polluting inputs and outputs. While there is a case to make a distinction between these goods and services from the more general group of goods and services, this differentiation could have been handled in a different, more consistent, and theoretically justifiable way as discussed later in Chapter 5. The basic objectives of GST are to simplify taxation, remove the cascading of taxes, bring in transparency, minimise current distortions that adversely impact production and consumption, and enhance investments and economic growth. All of these objectives get defeated due to the exclusion of some goods from the GST. The same argument is valid for real property (land, buildings and structures). [14] There is no clarity on whether real property will be subject to GST or not. [15] In the current VAT jurisdiction, no distinction is made between movable and immovable property, and tax applies to both. Exclusion of land from the tax base also gives rise to many complications. [16]

(v) ***Excessive Differentiation of Rates across Goods and Services:*** This will evidently add to the costs of administering and complying with the tax. However, it may be a very inefficient way of achieving policymakers' objectives. Setting lower rates on

[13] When the State VAT was implemented, Tamil Nadu incurred a huge loss of revenue of Rs. 4511 crore in 2007 and Rs. 4853 crore in 2008. In addition, it incurred a loss of Rs. 863 crore in 2007-08 and about Rs. 1700 crore in 2008-09 due to the reduction in CST rate. Thus, the cumulative loss of revenue on account of introduction of State VAT was the highest in Tamil Nadu.

[14] Exclusion of real estate from GST would lead to cascading as the builders and contractors will not be able to get input tax credit for goods, equipment, material and services that go into real estate construction.

[15] Tax could apply to the entire price of the agreement as per one interpretation or to the price of supplies under such agreements. Equally, the Constitutional provision could be interpreted, such that no part of the supplies would be taxable. Such an interpretation would create a huge gap or hole in the GST base.

[16] For instance, as per current system, works contract is divided in three parts: value of services, value of land and value of goods. The division is ad-hoc and arbitrary that makes complexities in applying the tax when contractors or sub contractors are involved in furnishing supplies. There is significant litigation on the definition of what constitutes a work contract. Whether an agreement for sale of an apartment prior to its construction constitutes a work contract is a disputed matter.

goods largely consumed by the poor is well-intentioned, but consequences are often not well understood. For while, the poor may spend larger proportions of their income on some items than the rich, the rich, being richer, may very well spend a large total amount on it and get the bulk of the benefit. [17] Similarly products like alcohol, petrol, etc are kept out of GST net with intention to levy higher rates perhaps because of the harm they cause to those who use them, or to others, or may be just because they are good revenue-raisers. These distinct considerations do not mean that these products should be subject only to special taxes outside the VAT/GST. Policy coherences require that they must be subject to special taxes and the VAT.

(vi) ***Treatment of Inter-State Trade:*** As the EU has learnt, zero-rating "exports" between countries, or states, that have no border controls between them makes the system vulnerable to fraud. This problem is inevitable in federations that wish to operate sub-national VATs. In India, the IGST is expected to solve this problem. But it has its own complexities and its outcome is uncertain.

(vii) ***High GST Rate:*** The Empowered Committee suggested about 12 per cent for basic necessities and 27 per cent for all other goods and services. [18] Such a high rate structure is unviable for the Indian economy and will lead to massive non-compliance. The high rate will be devastating for the services sector, which has been the engine of growth for the economy. Another issue relates to uniform tax rate is that if it is lower than the existing rate of a State, it will severely affect its collection. This issue may be resolved partly or fully as the central government will provide revenue compensation in the initial years.

(viii) ***Date of Implementing GST:*** All States need to implement the GST together with the same rate. Otherwise, it will be cumbersome for business to comply with provisions of laws of respective States.

(ix) ***Price Effect:*** An argument is that the replacement of existing tax (es) with a GST will always change the structure of relative prices in the economy, even if the revenue

[17] An OECD Study for Mexico showed that for each US $ 100 of revenue foregone, only about $ 4 goes to the poorest 10 per cent. Therefore the question is: if the government has US $ 100 to spend on helping poor, could it not find some other way to do it?

[18] Currently the VAT regulations and rates generally vary across states. There is a tendency that states tend to reduce rates to attract more investors. This generally leads to a loss of revenue to both the state and centre. GST will use uniform tax rate across states/sectors.

yield remains the same after the tax switch. [19] As prices indices like CPI or WPI use fixed weights to calculate the aggregate price effects, the direction in which the index change after the tax switch is a priori uncertain, depending as it must be on the pattern of the change in relative prices. In addition, that all traders will initially bear the tax and compliance cost but would like to recoup them in due course. Some traders take the advantages of the situation and charge prices somewhat higher than that warranted by GST.

However, the proponents of this tax argue that the overall tax burden will be rationalized and prices in general will fall. A similar argument was made when the State VAT was introduced. But the Controller and Audit General of India (2010) in its report "Implementation of Value Added Tax in India-Lessons for Transition to Goods and Services Tax" showed that manufacturers did not reduce MRP after introduction of VAT in a State although there was a substantial reduction of tax rate. It also stated that the dealers have undoubtedly enriched themselves at the cost of the common man. The same thing may happen again once the GST is implemented. Further many argues that if the GST uses a higher rate, prices will go up.

(x) ***Additional Tax on Inter-State Sales:*** This will apply every time goods move from one State to another, including inter branch transfers of the same dealer. Multiple applications of tax with no set-off against GST will cause its burden to cascade as goods mover through.

It seems that the GST is a long term strategy and will lead to higher output and employment opportunities and economic inclusion. However, initially, it is likely to be inflationary if a high GST rate or rate-structure is adopted.

Need for and Objectives of the Study

Tamil Nadu is a pioneering State in levying Sales Tax. Historically its tax compliance as well as Tax to GSDP has been one of the highest among the Indian States. Revenues from various taxes to be subsumed in GST contribute about 80 per cent of its own tax revenues. As it has been successfully implementing many innovative schemes for socio-economic development of the down-trodden, there has always been a great demand for revenue to match the ever increasing public expenditures of the State.

[19] Another argument put forward to support this view is that since taxes are distributed across the chain, the consumer prices are likely to rise to maintain the current tax revenue levels.

Since the proposed GST is destination based, a sudden shift from origin based to destination based will severely impact Tamil Nadu which is one of the fast developing industrial States in the country, exporting goods to other States and foreign countries. Since the tax was so far origin based, its fast growth of revenue was mainly proportionate to its industrial/economic development achieved by various effective measures taken over the years. This advantage may be lost under the proposed GST regime.

The State is and should be concerned about the impact of GST on fiscal autonomy. The Honorable Chief Minister of Tamil Nadu has on many occasions (e.g. NDC meeting, 14th FC meeting etc) highlighted this issue. Tamil Nadu also raised this issue in EC meetings.

Tamil Nadu also expects a very huge revenue loss on a permanent basis as it incurred when the State VAT was implemented. But the Centre plans to provide the compensation package only for initial years. In addition, the State's share in tax devolution has been continuously declining due to recommendations for various Finance Commissions including the Fourteenth Finance Commission.

Against this backdrop, the Commercial Tax Department of Government of Tamil Nadu has entrusted this study to Madras School of Economics with the following Terms and References:

(i) Revenue implication of GST and estimation of RNR for Tamil Nadu based on 2012-13 and 2013-14 data with methodology and detailed calculation. The RNR model shall be developed for two slabs of taxes as proposed under State GST and shall be capable of being revised and updated;
(ii) Impact of Input Tax Credit carried forward to other States due to inter State sales and likely impact on State GST collection;
(iii) Minimum threshold limit of turnover for regular and compounding scheme of tax payment under the GST;
(iv) Consequences of bringing Service Tax under the State GST;
(v) Impact of IT related Services on State's RNR;
(vi) Impact of GST on tax collections from the Automobile Sector in Tamil Nadu;
(vii) Likely impact of bringing Crude Petroleum products under the ambit of GST and impact of overall collection;

(viii) Likely impact of bringing Alcoholic Liquor for human consumption under the GST;
(ix) Impact of levy and collection of State GST on Sugar and Textiles on its revenue and RNR; and
(x) Possibilities for levy and collection of State GST on imported Goods and services by the State.

Database

This study utilizes the secondary data obtained from (a) Commercial Tax Department publications-Selected Indicators (2012-13 and 2-13-14) and Commercial Taxes Department At a Glance (2012-13 and 2013-14), (b) Electronic data base provide by the Commercial Tax Department on commodity wise rate, turnover, and tax collection etc for 2012-13 and 2013-14; (c) Budget Documents of Government of Tamil Nadu (various years); (d) National Sample Survey Estimates of Household Consumption Expenditure 2011-12 (68th round); (e) Input-output table of 2007-08, commodity by commodity matrix; (f) National Income Accounts 2010-11, 2011-12, 2012-13, and 2013-14; and (g) NSS 67th Round - Survey on Unincorporated Non-agricultural Enterprises (Excluding Construction) in India. Our analyses in this study are purely based on the availability of data. If any issue is not addressed, that is mainly due to data constraints.

Plan of the Report

The rest of this report proceeds as follows. Chapter 2 discusses the trend and growth of Own tax Revenues including the indirect tax revenues of Government of Tamil Nadu over the years while Chapter 3 provides a brief review of international spread of VAT/GST and its popularity. Chapter 4 presents the methodology of estimating the RNR for GST in Tamil Nadu and the estimation results while Chapter 5 provides the sectoral implications of GST. The final Chapter 6 provides a summary of findings and concluding remarks.

Chapter 2

TREND AND GROWTH OF INDIRECT TAX REVENUES OF GOVERNMENT OF TAMIL NADU

Introduction

This chapter briefly analyzes (i) the growth pattern of Tamil Nadu economy, (ii) the overall fiscal trends in Tamil Nadu, (iii) the composition of own revenues, (iv) the overall tax performance of Government of Tamil Nadu in terms of the annual growth and the buoyancy of various taxes including the indirect taxes over the years, and (v) some observations on the inflationary impact of State VAT in Tami Nadu.

Tamil Nadu Economy: Growth Performance

During 2005-06 to 2014-15, the average growth of Tamil Nadu economy at constant prices was 9.0 percent against the all India average growth of 7.83 percent.[20] While the Tamil Nadu economy grew at 10.3 percent up to 2011-12, the Indian economy grew at 8.47 percent. Like the Indian economy, the performance of Tamil Nadu economy over the past 3 years (3.4 percent in 2012-13, 7.3 percent in 2013-14 and 7.2 percent in 2014-15) has been disappointing (Chart 1). Both the Tamil Nadu economy and the Indian economy grew at an average rate of about 6 percent in the last three years. This downturn in the economic condition is a concern.

Comparing the GSDP growth of Tamil Nadu with GDP growth of country from Chart 1 over the years, we can observe that growth rate of Tamil Nadu has been more than the GDP growth in some years but the reverse is also true for some other years. Tamil Nadu's growth is highly volatile and more vulnerable to external shocks as compared to the all India growth due to increased globalization and structural changes in the economy.

[20]. For Tamil Nadu, the 2004-05 (base series) prices are used and for All India, the GDP (factor cost) in 2004-05 prices are used until 2011-12 and after that 2011-12 prices are used.

Chart 1: Growth Rate of Tamil Nadu GSDP and the Overall GDP Growth

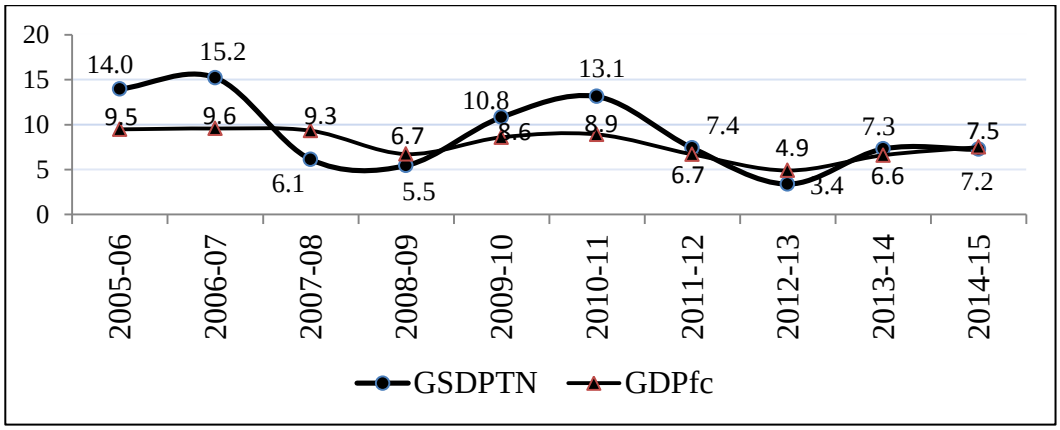
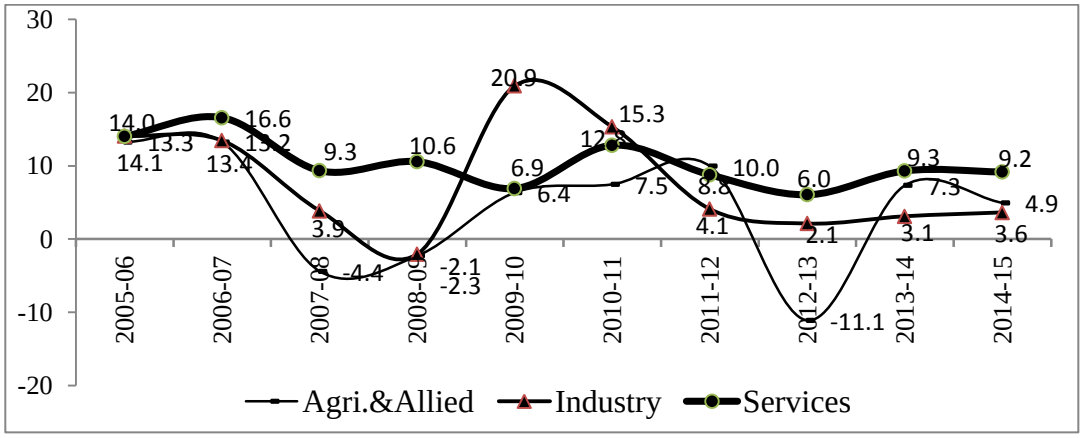


Chart 2 provides a profile of sectoral growth rates from 2004-05 to 2014-15. All figures relate to the GSDP at 2004-05 prices. During the last 10 years, the agriculture and allied sector in Tamil Nadu grew at an average rate of 4.47 percent while the industry grew at an average rate of 7.85 percent and services at 10.35 percent. However in the last 3 years (2012-13 to 2014-15), the agriculture and allied sector grew only at 0.4 percent, industry at 3 percent and services at 8.2 percent. Global slowdown in 2011-12 and worldwide recession after that year affected both industry and services sector in Tamil Nadu. Further, the agriculture growth is highly volatile and there is an element of cyclicality in the growth process of this sector. The industrial growth is also volatile while the services growth is less volatile.

Chart 2: Sectoral Growth in Tamil Nadu



Tamil Nadu Government Finances: Key Fiscal Indicators

Tamil Nadu has managed its finances in a fiscally prudent manner. Like all State Governments in the country, Tamil Nadu had witnessed a serious deterioration in various indicators of fiscal balance towards the end of the 1990s and in the early years of the current century including large revenue and fiscal deficits relative to GSDP. But these imbalances were brought under prudent limits in the framework of Fiscal Responsibility and Budget Management Act (FRBMA), which was enacted in 2003, making Tamil Nadu one of the first States to enact such legislation even prior to the recommendation of the Twelfth Finance Commission. As a result, by 2005-06, the revenue account was brought into surplus (Table 1).

Budget expenditure (revenue plus capital expenditure) of Tamil Nadu as a ratio of its GSDP stood around 14.4-16.5 percent from 2004-05 to 2015-16BE (Table 2). Within this total, interestingly the ratio of capital expenditure went up. It relative to GSDP increased from 2.58 percent in 2004-05 to 3.27 percent in 2011-12. But it has come down to 2.5 percent level in 2015-16BE. The revenue expenditure relative to GSDP stood around 13-14 percent with minor variations in different years. The revenue receipts-GSDP ratio increased continuously from 12.99 percent in 2004-05 to 13.7 percent in 2008-09. But it suddenly declined to 11.64 percent in 2009-10, registering about 2 percentage points fall over 2008-09. This was mainly due to the fact that own revenues as percentage of GSDP declined by 1 percentage point as a result of introduction of State VAT and central transfers declined by 1 percent point due to the fall in central tax buoyancy and slow down of the economy. After that year, it had continuously increased and reached 13.6 percent level in 2014-15 RE.

As indicated earlier, the revenue account in Tamil Nadu showed surplus in 2005-06 and continued up to 2008-09. After that year, it showed deficit except in two years: 2011-12 and 2012-13, with the erosion of central tax buoyancy and economic downturn. However, in those years also, the revenue deficit was less than 1 percent of GSDP. The fiscal deficit (=net borrowing) relative to GSDP was kept below 3 percent since 2004-05. The outstanding liabilities (stock of public debt) relative to GSDP was 25.56 percent in 2004-05. After this year, this ratio started decreasing and reached 18 percent in 2013-14. Then it started increasing marginally and was slated to be 19.23 percent in 2015-16BE. This is still an acceptable level as the Twelfth Finance Commission had suggested an overall target of 28 percent for the states as whole. This is also well below the norms prescribed by the Thirteen/Fourteenth Finance Commission as well as the state's FRBM Act, 2003.

Table 1: Tamil Nadu State Finances: Selected Fiscal Aggregates

(Rs. Crore)

Fiscal Indicators	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15RE	2015-16BE
Own Tax Revenues	19357	23326	27771	29619	33684	36547	47782	59517	71254	73718	85773	96083
Own Non Tax Revenues	2208	2601	3423	3304	5712	5027	4651	5684	6554	9343	8868	9072
State's Own Revenue	21565	25927	31194	32923	39397	41574	52434	65201	77809	83061	94640	105155
Total Central Transfers	6886	8033	9720	14597	15646	14270	17754	20001	21019	24975	38548	37527
Share in Central Taxes	4236	5013	6394	8065	8511	8756	10914	12715	14520	15853	16824	21150
Grants	2650	3020	3326	6532	7135	5514	6840	7286	6499	9122	21724	16377
Total Revenue Receipts	28452	33960	40913	47520	55042	55844	70188	85202	98828	108036	133189	142681
Total Revenue Expenditure	29155	32009	38265	42975	53590	59375	72916	83838	97067	109825	136725	147297
Capital Expenditure *of which*	5650	5094	8207	9244	11934	10863	14688	21819	19337	19415	24147	27514
Capital Outlay	4564	4055	5952	7462	9104	8573	12436	16336	14568	17173	20341	24313
Loans and Advances (Gross)	1086	1040	2254	1782	2830	2291	2252	5483	4769	2242	3806	3201
Recoveries of Loans ,Advances	783	892	1602	1013	1934	2587	770	3181	1058	620	338	301
Revenue Deficit@	703	-1951	-2648	-4545	-1452	3531	2729	-1364	-1760	1788	3537	4616
Fiscal Deficit	5570	2251	3956	3686	8548	11807	16647	17274	16519	20584	27346	31829
Outstanding liabilities	55970	63850	68560	73890	86150	101710	114470	130630	147416	154051	181036	211483
GSDP at Current Prices#	219003	257833	310526	350819	401336	479733	584896	667202	744859	854238	976703	1099675

Note: * At the end of March; # 2004-05 base series. @ Minus sign means surplus.

Source (Basic Data): State Budget Documents of Tamil Nadu (Various Years); RE-Revised Estimates; BE-Budget Estimates. For GSDP, CSO website.

Table 2: Tamil Nadu State Finances: Selected Fiscal Aggregates (percent)

(Percent of GSDP 2004-05 base series)

Fiscal Indicators	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15RE	2015-16BE
Own Tax Revenues	8.84	9.05	8.94	8.44	8.39	7.62	8.17	8.92	9.57	8.63	8.78	8.74
Own Non Tax Revenues	1.01	1.01	1.10	0.94	1.42	1.05	0.80	0.85	0.88	1.09	0.91	0.82
State's Own Revenue	9.85	10.06	10.05	9.38	9.82	8.67	8.96	9.77	10.45	9.72	9.69	9.56
Total Central Transfers	3.14	3.12	3.13	4.16	3.90	2.97	3.04	3.00	2.82	2.92	3.95	3.41
Share in Central Taxes	1.93	1.94	2.06	2.30	2.12	1.83	1.87	1.91	1.95	1.86	1.72	1.92
Grants	1.21	1.17	1.07	1.86	1.78	1.15	1.17	1.09	0.87	1.07	2.22	1.49
Total Revenue Receipts	12.99	13.17	13.18	13.55	13.71	11.64	12.00	12.77	13.27	12.65	13.64	12.97
Total Revenue Expenditure	13.31	12.41	12.32	12.25	13.35	12.38	12.47	12.57	13.03	12.86	14.00	13.39
Capital Expenditure *of which*	2.58	1.98	2.64	2.63	2.97	2.26	2.51	3.27	2.60	2.27	2.47	2.50
Capital Outlay	2.08	1.57	1.92	2.13	2.27	1.79	2.13	2.45	1.96	2.01	2.08	2.21
Loans and Advances (Gross)	0.50	0.40	0.73	0.51	0.71	0.48	0.39	0.82	0.64	0.26	0.39	0.29
Recoveries of Loans ,Advances	0.36	0.35	0.52	0.29	0.48	0.54	0.13	0.48	0.14	0.07	0.03	0.03
Revenue Deficit@	0.32	-0.76	-0.85	-1.30	-0.36	0.74	0.47	-0.20	-0.24	0.21	0.36	0.42
Fiscal Deficit	2.54	0.87	1.27	1.05	2.13	2.46	2.85	2.59	2.22	2.41	2.80	2.89
Outstanding liabilities *	25.56	24.76	22.08	21.06	21.47	21.20	19.57	19.58	19.79	18.03	18.54	19.23
GSDP at Current Prices#	100	100	100	100	100	100	100	100	100	100	100	100

Source: Computed using Table 1. @, *, and # as stated in Table 1

Trends and Composition of Revenue Receipts

Own tax revenues constituted the largest single revenue source of Tamil Nadu. As per 2015-16 BE, own taxes constitute about 67 percent of total revenue receipts of the State. Own non-tax accounts for 6.36 percent of total revenues. While tax devolution (shared tax) contributes 14.82 percent, grants contribute 11.48 percent (Table 3). During 2001-03 to 2013-14, own revenue (own tax + own non-tax) accounts for 74-78 percent of total revenues of the State (except in three years: 2007-08, 2008-09 and 2014-15) while the fiscal transfers to Tamil Nadu which comes from Finance Commission tax devolution and grants, Plan grants, and grants under various centrally sponsored schemes, accounts for 21-30 percent.

Table 3: Composition of Revenue Receipts (percent)

Fiscal Indicators	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15RE	2015-16BE
Own Tax	68.03	68.69	67.88	62.33	61.20	65.44	68.08	69.85	72.10	68.23	64.40	67.34
Own Non Tax	7.76	7.66	8.37	6.95	10.38	9.00	6.63	6.67	6.63	8.65	6.66	6.36
Own Revenue	75.79	76.35	76.24	69.28	71.58	74.45	74.71	76.53	78.73	76.88	71.06	73.70
Central Transfers	24.20	23.65	23.76	30.72	28.43	25.55	25.29	23.47	21.27	23.12	28.94	26.30
Share in Central Taxes	14.89	14.76	15.63	16.97	15.46	15.68	15.55	14.92	14.69	14.67	12.63	14.82
Grants	9.31	8.89	8.13	13.75	12.96	9.87	9.75	8.55	6.58	8.44	16.31	11.48
Revenue Receipts	100	100	100	100	100	100	100	100	100	100	100	100

Source: Computed using Table 9.

It is noticed that the own non-tax revenue relative to GSDP is less than 1 percent (Table 2). Part of the reason for low collection of non-tax revenue is that the State is not well endowed with major minerals. Another reason is that some user charges (such as drinking water and transport charges) do not go directly to the State's treasury but are collected by the State owned enterprises. There is some potential for the State to increase the non-tax revenues. The possibilities of raising fees and service charges in line with inflation need to be examined.

Composition of Own Tax Revenues

As mentioned in the previous section, own tax revenue is the largest single revenue source of Tamil Nadu Government. During 2005-06 to 2015-16BE, the own tax revenues of Tamil Nadu (in nominal terms) grew at average rate of 15.94 percent, which was slightly higher than that of GSDP in the same period (15.84 percent). The own tax relative to GSDP declined from 8.8 percent in 2004-05 to 7.62 percent in 2009-10. After that year, it started again increasing and reached again 8.8 percent 2014-15 (Table 4).

Among the state taxes, sales tax (predominantly State VAT) is by far the most important own tax revenue source. The sales tax as percentage of GSDP was 6.03 percent in 2005-06 and declined to 4.72 percent in 2009-10 due to introduction of State VAT and global slowdown of the economy. Then it started increasing and currently it is estimated to be 6.3 percent of GSDP (as per 2014-15RE).

Next comes state excise. Its relative importance has increased steadily over the years. Its percentage share increased from 13.2 percent in 2004-05 to 18.5 percent in 2009-10. After that it started declining and reached about 7 percent level in 2014-15. This decrease in state excise is due to abolition of vend fees and additional vend fees for malt liquors and foreign liquors and sprits. The state excise relative to GSDP declined from 1.16 percent to 0.65 percent during 2004-05 to 2014-15 (Table 4). On the other hand, the share of stamps duty and registration increased from 8.2 percent to 11.4 percent. The stamp duty and registration as percentage of GSDP increased from 0.69 percent to 1.11 percent. The motor vehicle tax relative to GSDP also increased marginally from 0.49 percent to 0.55 percent.

Table 4: Composition of Tax Revenues

Taxes	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15RE	2015-16BE
As percent of Own Tax Revenue												
Sales Tax	67.14	66.68	63.83	61.30	61.38	62.01	59.88	60.97	61.81	72.62	71.78	71.68
State Excise	13.17	13.62	14.35	16.08	17.09	18.44	16.99	16.76	17.02	6.83	7.43	7.59
Stamps and Registration	8.29	8.94	10.79	12.85	11.26	10.02	9.73	11.06	10.73	11.19	10.88	10.81
Motor Vehicle tax	5.24	4.82	4.54	5.01	5.08	5.54	5.57	5.21	5.51	5.00	4.99	5.08
Goods andPass. Tax	3.95	4.22	4.48	3.71	2.91	2.99	3.40	3.57	3.16	2.50	2.89	2.86
Others	2.22	1.71	2.00	1.06	2.29	1.00	4.43	2.43	1.77	1.86	2.03	1.97
Own Tax Revenue	100	100	100	100	100	100	100	100	100	100	100	100
As percent of GSDP												
Sales Tax	5.93	6.03	5.71	5.18	5.15	4.72	4.89	5.44	5.91	6.27	6.30	6.26
State Excise	1.16	1.23	1.28	1.36	1.43	1.41	1.39	1.50	1.63	0.59	0.65	0.66
Stamps and Registration	0.73	0.81	0.97	1.08	0.95	0.76	0.80	0.99	1.03	0.97	0.96	0.94
Motor Vehicle tax	0.46	0.44	0.41	0.42	0.43	0.42	0.45	0.46	0.53	0.43	0.44	0.44
Goods andPass. Tax	0.35	0.38	0.40	0.31	0.24	0.23	0.28	0.32	0.30	0.22	0.25	0.25
Others	0.20	0.16	0.18	0.09	0.19	0.08	0.36	0.22	0.17	0.16	0.18	0.17
Own Tax Revenue	8.84	9.05	8.94	8.44	8.39	7.62	8.17	8.92	9.57	8.63	8.78	8.74

Source (Basic Data): State Budget Documents of Tamil Nadu (Various Years).

Tax Buoyancy

Table 5 shows the annual buoyancy and the annual growth rates of major taxes. During 2005-06 to 2015-16 (BE), the average own tax buoyancy was 1.1 with wider variations in

different years. It was 1.16 in 2005-06 and declined continuously to 0.44 in 2009-10. It again increased to 1.4 and 1.75 in 2010-11 and 2011-12 and again came down to 0.24 in 2013-14.

Table 5: Own Tax Revenues in Tamil Nadu: 2004-05 to 2013-14

Taxes	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15RE	2015-16BE
Annual Growth Rate (percent)											
Sales Tax	19.69	13.97	2.42	13.87	9.61	26.27	26.82	21.36	21.55	15.01	11.87
State Excise	24.62	25.49	19.51	20.81	17.12	20.40	22.91	21.56	-58.48	26.64	14.44
Stamps and Registration	29.95	43.77	26.93	-0.29	-3.47	26.99	41.50	16.18	7.92	13.07	11.31
Motor Vehicle tax	10.86	12.08	17.63	15.26	18.43	31.38	16.58	26.68	-6.23	16.18	14.09
GoodsandPass. Tax	28.94	26.25	-11.74	-10.82	11.56	48.89	30.60	6.04	-18.16	34.40	11.00
Others	-6.74	38.9	-43.7	146.70	-52.6	478.4	-31.6	-12.8	8.80	27.1	8.60
Own Tax Revenue	20.50	19.06	6.65	13.73	8.50	30.7	24.56	19.7	3.46	16.4	12.02
GSDP	17.73	20.44	12.98	14.40	19.53	21.92	14.07	11.64	14.68	14.34	12.59
Tax Buoyancy											
Sales Tax	1.11	0.68	0.19	0.96	0.49	1.20	1.91	1.84	1.47	1.05	0.94
State Excise	1.39	1.25	1.50	1.45	0.88	0.93	1.63	1.85	-3.98	1.86	1.15
Stamps and Registration	1.69	2.14	2.08	-0.02	-0.18	1.23	2.95	1.39	0.54	0.91	0.90
Motor Vehicle tax	0.61	0.59	1.36	1.06	0.94	1.43	1.18	2.29	-0.42	1.13	1.12
Goods and Pass. Tax	1.63	1.28	-0.91	-0.75	0.59	2.23	2.17	0.52	-1.24	2.40	0.87
Others	-0.38	1.91	-3.37	10.19	-2.69	21.82	-2.24	-1.10	0.60	1.89	0.68
Own Tax Revenue	1.16	0.93	0.51	0.95	0.44	1.40	1.75	1.69	0.24	1.14	0.95

Source (Basic Data): State Budget Documents of Tamil Nadu (Various Years); RE-Revised Estimates; BE-Budget Estimates.

It seems it is highly volatile and sensitive to economic growth which is sensitive to national and global economic growth. Further the introduction of State VAT also added the fuel. It is noticed that during 2005-06 to 2015-16, the stamps and registration revenue buoyancy (1.24) was the highest among other (individual taxes), followed by sales tax (1.08) and state excise (0.9). It is also noticed from Table 6 that (the average) own tax buoyancy, sale tax buoyancy and stamps and registration buoyancy were higher during 2011-12 to 2013-14.

During 2011-12 to 2013-14, the GSDP's (nominal) average growth was relatively low (13.5 percent) compared to its growth during 2005-06 to 2008-09. But the average growth of sales tax (State VAT) during 2011-12 to 2013-14 was relatively higher (23.2 per cent) while that of state excise was -4.67 (Table 6).

Table 6: Average Growth Rates of Tax Revenues and Tax Buoyancy in Tamil Nadu

Taxes	Average Annual Growth Rates (percent)				Tax Buoyancy			
	2005-06 to 2015-16	2005-06 to 2008-09	2009-10 to 2015-16	2011-12 to 2013-14	2005-06 to 2015-16	2005-06 to 2008-09	2009-10 to 2015-16	2011-12 to 2013-14
Sales Tax	16.59	12.49	18.93	23.24	1.08	0.74	1.27	1.74
State Excise	14.09	22.61	9.23	-4.67	0.90	1.40	0.62	-0.17
Stamps and Registration	19.44	25.09	16.22	21.87	1.24	1.47	1.11	1.63
Motor Vehicle tax	15.72	13.96	16.73	12.34	1.03	0.91	1.10	1.02
GoodsandPass. Tax	14.27	8.16	17.76	6.16	0.80	0.32	1.08	0.49
Others	51.01	33.80	60.84	-11.87	2.48	2.09	2.71	-0.92
Own Tax Revenue	15.94	14.98	16.48	15.91	1.01	0.89	1.09	1.23
GSDP	15.85	16.39	15.54	13.47	-	-	-	-

Source (Basic Data): State Budget Documents of Tamil Nadu (Various Years); RE-Revised Estimates; BE-Budget Estimates.

Table 7 provides summary information on the total revenue that is to be obtained in the case of Tamil Nadu by adding the different components that are to be merged under GST for three years: 2011-12 to 2013-14. State VAT revenue grew at an average rate of 12.3 percent while revenues from non VAT items (petroleum + alcohol) grew at 33.7 percent. CST grew at 5.3 percent while purchase tax under Section 12 and on sugarcane grew at 20.4 percent and 20.9 percent respectively.

Table 8 provides summary information on the total central government revenue that is to be obtained by adding the different components to be merged under GST for three years: 2011-12 to 2013-14. The central excise revenue grew at an average rate of 9.5 percent while the customs and services revenues grew at 14.3 percent and 26.4 percent respectively. The total revenues from all components to be merged with GST grew at 17.8 percent.

Table 7: Tamil Nadu: Revenue Details for Taxes to Merged/Not Merged in GST

(Rs. Crore)

Item	2011-12	2012-13	percent Change	2013-14	percent Change
1.VAT/Sales tax (exc. tax on petroleum products and Liquor)	18557	22752	22.6	23195	1.9
2.Entertainment tax	58	77	34.1	72	-6.7
3.CST (including ITC adjustment)	2833	2900	2.4	3136	8.1
4.Luxury tax	255	285	11.6	289	1.4
5.Taxes on lottery, betting and gambling	7	6	-18.3	5	-7.3
6.States cesses and surcharges in so far as they relate to supply of goods	0	0		0	
7.Entry tax not in lieu of Octroi	2122	2263	6.7	1871	-17.3
8.Purchase Tax under Section 12	154	173	12.4	222	28.4
9.Purchase tax on Sugarcane	91	160	75.9	118	-26.1
10.ITC Reversal (as per return)	876	1249	42.6	1753	40.3
Total (1 to 10)	24952	29864	19.7	30661	2.7
Taxes not to be merged in GST					
11.Sales tax on Petroleum Products	8323	9526	14.5	10903	14.5
12.Sales tax on liquor	7198	9425	30.9	16640	76.5
Total (11+12)	15521	18951.2	22.1	27543	45.3
Overall Total (1 to 12)	40473	48815.3	20.6	58204	19.2

Source: Department of Finance, Government of Tamil Nadu.

Table 8: Revenues of Central Taxes to be Merged in GST

(Rs. Crore)

Taxes	2011-12	2012-13	percent Change	2013-14	percent Change
1. Central Excise(NonPOL)*	**67972**	**88500**	30.2	**78557**	-11.2
2. Customs(a+b+c+d+e)*	**83302**	**104114**	25.0	**107825**	3.6
a.CVD(Non POL)	*56476*	*75273*	33.3	*77965*	3.6
b.SAD(Non POL	*21272*	*23963*	12.7	*24838*	3.7
c. Education Cess(Non -POL)	*4402*	*3578*	-18.7	*3660*	2.3
d. NCCD(Non -POL)	*401*	*372*	-7.2	*479*	28.8
e. Others (Non-POL) Cess/Surch.	*752*	*928*	23.4	*883*	-4.8
3. Service Tax*	**97509**	**132601**	36.0	**154778**	16.7
Total (1+2+3)	**248784**	**325215**	30.7	**341160**	4.9

Note: * Inclusive of NCCD, Education Cess and Other Cess and Surcharges.

Source: DODM (Customs and Central Excise), Receipt Budget Document (Service Tax).

Inflationary Impact of State VAT in Tamil Nadu

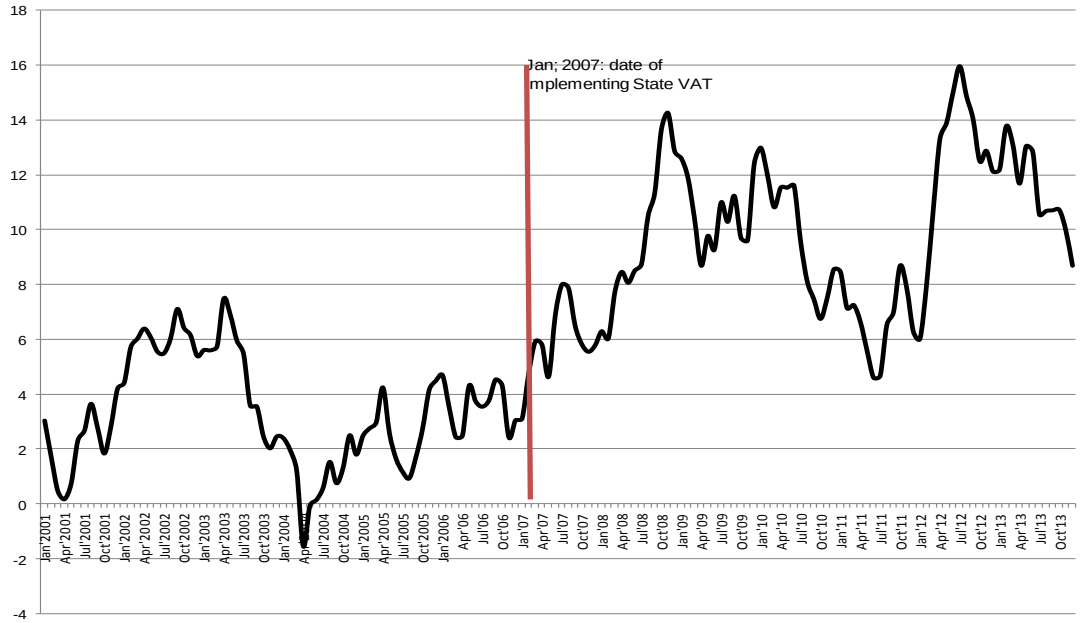
There is a conventional view on the price impact of VAT: VAT or any tax can never by itself lead to inflation and the change in inflation rate can only be produced by expansionary monetary policy. If it is a replacement tax and revenue neutral, it will not affect aggregate price level (because aggregate demand is unchanged). But Tait (1988) argues that VAT will have a much broader base than taxes that it replaces (i.e., many untaxed items will be taxed) and VAT will always change the structure of relative prices even if revenue yield remain the same after the tax switch.

As VAT is added to price of products, adopting it would lead to an initial jump in the aggregate price level because price indices such as CPI are computed on a tax inclusive basis. However, increase in price level would not necessarily lead to further inflation that is depending on monetary response by the central bank. International experiences also indicate inflationary impact of VAT, but little or no effect beyond initial price jump.

Tamil Nadu Government implemented State VAT from January 2007. Chart 3 plots the monthly CPI inflation (Industrial workers) for Tamil Nadu from January 2001 to December 2013. After January 2007, Tamil Nadu's inflation started moving up and reached 14 percent level in January 2009. This pattern clearly shows that inflation had an initial jump due to State VAT and persistent at least up to three years. However, the

price-impact of introduction of VAT in this period may only be a part of the overall inflationary experience since this was a period also of significant expansionary policies including expansion of money supply on account of macro-policy concerns as India participated in the global effort to overcome the global slowdown during 2007-08.

Chart 3: CPI-IW Inflation (January 2001-December 2013): Tamil Nadu



Concluding Remarks

Sales tax is by far the most important own tax revenue source in Tamil Nadu. It relative to GSDP is 6.3 percent in 2014-15RE. During 2011-12 to 2013-14, the revenue from State VAT grew at 12.3 percent while revenues from non VAT items at 33.7 percent. State excise registered a negative growth (-4.67 percent). Available evidence indicates that after introduction of State VAT in January 2007, CPI inflation in Tamil Nadu had an initial jump and persistent for about three years. Therefore one can expect another inflationary jump once GST is implemented.

Chapter 3

INTERNATIONAL EXPERIENCE WITH VAT AND GST

VAT And GST

In modern economies, the most popular form of domestic indirect taxation is the value added tax (VAT) sometimes also referred to as the goods and services tax (GST). VAT has not only empirically been popular but also theoretically supported as a destination based, non-cascading tax system that promotes both production and consumption efficiency. In India's context, the experience of some of the federal countries such as Canada and Brazil, and economic community settings such as the European Union is particularly relevant. According to an OECD report[21] (2014), 164 countries now levy a VAT. As of January 2014, 46 countries in Africa, 1 in North America, 18 in Central America and the Caribbean, 12 in South America, 28 in Asia, 51 in Europe, and 8 in Oceania levy a VAT. In India also VAT exists but in segmented way as a combination of Cenvat, Statevat and Service tax.

In this review, we look at the international spread of VAT and the reasons why it has become so popular. We particularly look at on the working of VAT in Canada, Brazil, and the EU. We more broadly review the VAT rates across both federal and other countries.

International Spread of VAT

France is often recognized to be the pioneer of VAT. It developed VAT in several steps from 1948. The pace of adoption of VAT picked up over time and particularly accelerated in the nineties. In Europe and the Americas, nearly all countries in the region have adopted VAT. In the European Union, adoption of VAT is a requirement for the membership of the EU. All OECD countries other than the U.S. have now adopted a VAT. The US is the most notable exception where a retail sales tax (RST) is prevalent. A large number of developing countries and federal countries have also adopted VAT.

This popularity of VAT has been due to one or more of the following reasons. First, VAT is considered as an effective means of taxing consumption; second, in VAT revenues are more secure because these are collected at all stages of production and sale rather than only in the final stage as in the case of the retail sales tax; third, it is an

[21] Consumption Tax Trends, 2014, OECD.

effective means of avoiding cascading. The experience of the federal countries has also shown that it can be successfully adopted in federal countries. Other arguments are also made. For example, that VAT raises the tax-GDP ratio and that it increases production efficiency by inducing better resource allocation. These advantages depend largely on the tax rate adopted and the extent to which cascading is avoided leading to a positive impact on economic efficiency.

In a recent empirical study, Keen and Lockwood (2007) examine some of these questions. They take an unbalanced panel dataset consisting of 143 countries over 26 years (1975 – 2000). Recognizing that it is difficult to assess the efficiency gains from VAT directly, an indirect method is used. It is shown that, in principle, under weak conditions, the availability of a more efficient tax instrument would lead to an increase in the tax- GDP ratio by an optimizing (though not necessarily *benevolent*) government, all else equal. [22] It is argued that, if rolled out properly, VAT is a very efficient tax. The efficiency gains are identified as coming from replacing taxes like the turnover tax and sales tax (which can potentially induce production inefficiencies and tax evasion). Adoption of VAT has also come as part of trade reform packages. In the context of developing countries, it is viewed as a step towards tax administration reforms, better compliance and self – assessment.

However, if the VAT chain is broken, then could also be a potential source of inefficiencies, largely related to production. It is also vulnerable to missing trader frauds in collusive criminal actions. On the implementation front, if the refund mechanism is imperfect, then VAT could create counterproductive effects on exports and output in

[22] Keen and Lockwood (2007) consider a stylized economy with a single representative consumer whose preferences are described by $U(C, G)$ expressed in terms of private consumption C and public expenditure G. It is assumed that U is strictly increasing in C and G; quasi-concave and C is normal in demand. G is financed through taxation that yields R as tax revenue. As a result, the welfare of the consumer becomes $U(Y-R, R)$; Y is gross income, being a function $Y(R, V)$ where V represents the nature of tax instruments available. Pre-tax income Y decreases with R, showing the inefficiency loss due to taxation. Thus, $-Y_R > 0$ (the marginal deadweight loss due to taxation is positive). A tax innovation (the introduction of VAT, in this analysis) would improve efficiency of the tax system if it reduces the marginal deadweight loss due to taxation i.e. $Y_{RV} > 0$.

In a specific case of a benevolent state, the government will opt for that value of R that maximizes the consumer's welfare given as $U[Y(R, V) – R, R]$. From this, the modified Samuelson rule is obtained: the marginal willingness to pay for the public good is equal to unity plus the marginal deadweight loss due to taxation i.e. $(U_G / U_C) = 1 – Y_R > 1$. The tax-GDP ratio is $r = R / Y$. The impact of the VAT on revenue can be understood by following the standard tax effort equation: $r = \beta_0 + \beta_1 V + \beta_2 Y + \beta_3 VY$. By observing the coefficient of V, the money-machine argument can be tested. An important result is that the tax ratio r will be positively associated with the presence of VAT iff the adoption of the VAT reduces the marginal deadweight loss due to taxation. These broad concepts still hold even if the condition of a benevolent state is relaxed.

general. Welfare reductions are also highlighted in the VAT regime with respect to inducing larger scale informal production by increasing the VAT tax base.

The results of the analysis show that the decision to adopt the VAT is not confined to countries with a high level of income – over the years, the spread of the VAT has transcended the income level being a pre-condition. Demographic aspects also do not show a strong impact on the adoption of the VAT. However, trade openness and participation in an IMF program of development exert significant influence on the take-up of VAT. Higher trade openness is associated with a lower likelihood of the country adopting a VAT.

The IMF program participation effect shows that the IMF has played an important role in the spread of the VAT (raising the chance of adoption by 25 percent for a participant country). When a country has existing resources that are sufficient to raise revenue, it is less likely to opt for a VAT, hence the past tax-GDP ratio shows a negative effect on the probability of VAT take-up. The political economy effect of a federal structure of tax administration reducing the possibility of adopting the VAT is also seen. This is true of cases where substantial sales tax powers are vested with lower tiers of the state and VAT implementation would cause difficulties in the absence of border controls. Another important inference is that there is a strong regional effect in force when it comes to adopting the VAT, showing that the spread of the VAT has occurred in regional spurts.

Trade openness is shown to have a positive effect on the tax-GDP ratio. On the other hand, share of agriculture of agriculture has a negative effect because agriculture is hard to tax in general. The effect is more marked for a tax like VAT. At higher income levels, countries adjust to a new VAT regime easier and collect more tax revenue. Although more open economies were seen to be less likely to adopt VAT, once it is taken up (which would involve significant restructuring of tax administration), the revenue effect is positive due to the ease of collection from imports.

Revenue Productivity of VAT

Keen and Lockwood (2007) estimate that that the long run gain of adoption of VAT on the tax-GDP ratio is an increase of around 4.5 percent points. Martinez-Vazques and Bird (2010) in a later exercise estimate that the increase in the tax-GDP ratio for developing countries can be even higher when they adopt VAT.

International experience shows that not only VAT has been adopted by progressively larger number of countries, but it has proved to be highly revenue productive. In a recent review, Keen (2013) examines the extent and reasons for the growth of VAT revenue as percentage of GDP. Examining 150 countries where VATs were in place in each of the last twenty years (1993–2012) and grouping these within four income groups, Keen finds that in the high income group, there has been only a modest increase in the VAT revenue to GDP ratio from a little under 7 percent to a little over.

For the other groups the increase has been more tangible. The group of upper middle income countries are now raising about as much from the VAT as do high income countries. In low income countries VAT revenue has about doubled since the mid-1990s. While it remains the case that, broadly speaking, VAT revenue relative to GDP increases with the level of per capita income, the difference has become very much less. Part of the increase is due to increase in the standard rate, and part of the increase is due improved 'compliance efficiency'. Given a standard rate, in a country like India, dynamic gains in the VAT (GST) revenue to GDP ratio can be expected as compliance efficiency improves, which may be partly due to improved efficiency and partly due to expanded coverage of base. As reviewed in Bird and Gendron (2001), many federal countries have adopted VAT but they offer a variety of VAT models and arrangements (Table 9).

Table 9: VAT/Sales Taxes in Federal Countries

Ser No.	Country	Federal VAT	State Sales Taxes	Type of State Tax
1	Australia	Yes	No	All VAT revenue goes to States
2	Canada	Yes	Yes	Some have VAT; some have RST
3	Germany	Yes	No	States share in VAT revenue
4	Austria	Yes	No	States share in VAT revenue
5	Switzerland	Yes	No	None
6	Belgium	Yes	No	None
7	United States	No	Yes	Most have RSTs
8	Argentina	Yes	Yes	Gross tax receipts and states also get a share in federal VAT
9	Brazil	Yes (limited)	Yes	VAT (origin base)
10	India	No (limited to Cenvat)	Yes	State VAT; sales taxes for some goods; state receive a share in cenvat

Source: Bird and Gendron (2001).

Bird and Gendron (2001) discuss alternative forms in which VAT can be adopted in federal countries. Different examples indicate that the possibilities include the following:

(a) The two levels of governments could have completely independent VATs. This is so in Brazil except that its states do not have rate autonomy as the rate is set by central legislation:
(b) Each level of government could partake in a system of "dual" VATs, in which each level sets its rates independently but on similar bases and there is a high level of administrative cooperation (as in Canada).
(c) There could be a single "joint" VAT, which is essentially a central VAT with some of the revenue flowing to the states either in accordance with estimated consumption (as in Canada's HST) or with a distributive formula (as in Germany);
(d) There could be what has been called a "compensating VAT" or CVAT (McLure, 2000).

We particularly examine the VAT experience and practices in three federal or federal type arrangements, viz., Canada, Brazil, and the European Union.

VAT in Canada

In Canada, the Goods and Services Tax was introduced in January 1991, replacing the manufacturers' sales taxes. Canada is an interesting example of successful implementation of VAT in a federal country. There is a federal VAT, the Goods and Services Tax (GST), that is imposed throughout the country. In addition, provinces have options to levy a sales tax or VAT. There are variations as to who collects the tax. Four distinct combinations of dual taxes have emerged:

(a) Federal VAT and no sales tax
(b) Federal VAT plus Retail Sale Tax (RST)
(c) Federal VAT plus HST
(d) Federal VAT plus Provincial VAT (QST)

The VAT rates for different provinces in Canada are given in Table 10.

Table 10: VAT Rates in Canada

Alberta: 0 percent PST + 5 percent Federal GST = 5 percent
British Columbia: 7 percent PST + 5 percent Federal GST = 12 percent (since 1 April 2013)
Manitoba: 8 percent PST + 5 percent Federal GST = 13 percent
New Brunswick: 8 percent PST + 5 percent Federal GST = 13 percent HST
Newfoundland: 8 percent PST + 5 percent Federal GST = 13 percent HST
Northwest Territories: 5 percent GST
Nova Scotia: 10 percent PST + 5 percent Federal GST = 15 percent HST (since 1 July 2010)
Ontario: 8 percent PST + 5 percent Federal GST = 13 percent HST (since 1 July 2010)
Prince Edward Island: 9 percent PST + 5 percent Federal GST = 14 percent HST (since 1 April 2013)
Quebec: 9.975 percent PST + 5 percent Federal GST = 14.975 percent (since 1 Jan 2013)
Saskatchewan: 5 percent PST + 5 percent Federal GST = 10 percent
Yukon: 5 percent GST

Source: Vatlive.com

Provinces with HST are New Brunswick, Nova Scotia, and New Foundland. Prince Edward Island also adopted HST from 2013. Quebec has a provincial GST at 9.975 percent, which together with the federal GST at 5 percent makes the overall rate 14.975 percent. Quebec administers its provincial GST as well as the federal GST. Alberta does not have a provincial GST. Only the federal GST is levied at 5 percent. The rates of provincial GST in British Columbia are 7 percent, in Saskatchewan, 5 percent and Manitoba, 8 percent. In these cases it is not levied on top of the federal GST. The federal government collects its own GST as also the provincial GST in the case of British Columbia, Saskatchewan, Manitoba and PEI. In Ontario, the provincial government collects its RST while the federal government collects its GST.

There are certain items that are regarded as being zero rated under the value added taxation system in Canada. The items are basic groceries, outbound transportation, prescription drugs, medical devices and inward transportation. Export of certain goods and services are also regarded as being zero rated. Thus in Canada, provinces have considerable autonomy in determining the provincial rate of GST or sales tax and there is considerable heterogeneity in the way the provinces have determined their respective rates taking into account their respective economic conditions. Canadian

GST is generally accepted as working satisfactorily, indicating that in federal set up, a variety of combinations of federal and state taxes can be adopted while still producing a system of taxation that is able to broadly maintain the desirable features of VAT.

VAT in Brazil

Brazil was one of the first countries in the world to implement a Value Added Tax. Brazil is a Federal Republic, and each of the 26 states and the Federal District has its own legislation. This gives rise to 27 regulations on indirect state taxes, implying varying application, administration and compliance rules in each state.

Brazil adopted a new framework for taxation of consumption at the time of the fiscal reform of 1965. Services were taken out of the scope of VAT and a tax on services was established at the municipality level. At the state level a tax on goods was adopted, which has the characteristics of VAT. Since 1988, the telecommunication and transport services were included in VAT. In order to allow the Federal Union to benefit from the buoyancy of consumption taxation, a wholesale tax was levied on industrial products. This system replaced the old cascading tax. The first country to introduce a full- fledged VAT was not France (which had indeed pioneered this form of taxation but did not initially carry it through to the retail stage). It is therefore argued by some that the first country to adopt VAT was Brazil (Guérard 1973). But Brazil introduced VAT in two tiers, one for the federal government (the IPI) and one for each of the state governments (the ICMS). The federal IPI was essentially a selective tax applied at various rates to manufactured goods. In 2000, the legislated standard rate of IPI was (in tax- inclusive terms) 17 percent, or 20.48 percent in tax-exclusive terms. The ICMS, although it too excluded many services, had a broader base and applied through the retail stage, but still fell far short of anyone's idea of a "good" VAT – for example, credits were severely limited and there was much cascading.

In Brazil, the VAT rates are high and differentiated between goods and services. The service tax is at the local level except for telecommunications and transport. These developments have resulted in Brazil having a highly complex indirect tax since it has become a combination of various indirect tax regimes, including but not limited to:

ICMS (Imposto sobre a Circulação de Mercadorias e Prestação de Serviços de Transporte Interestadual e Intermunicipal e de Comunicação) [State Sales Tax];
IPI (Imposto sobre Produtos Industrializados) [Federal VAT Tax];

ISS (Imposto sobre Serviços), Municipal Services Tax [Municipal Tax (governed by a Federal Law)];
COFINS, Social Contribution for Social Security Financing, Federal Tax (*);
PIS, Employees' Profit Participation Program, Federal Tax (*);
(*) Under non cumulative regime.

Average State VAT rate in Brazil is 17 percent. In Sao Paulo the standard rate is 18 percent, while in Rio de Janeiro, the rate is 19 percent. The average federal VAT rate is 20 percent. Rates of inter-state supplies within Brazil are in the range of 7 percent to 25 percent. The 7 percent rate relates to basic food products etc. Certain products are exempt from VAT, e.g. books, newspapers, fruit and vegetables. Exports are exempt from VAT. VAT rates in Brazil are given in Table 11.

Table 11: VAT Rates in Brazil

17 percent to 19 percent. ICMS depending on state. Higher rate 25 percent
12 percent reduced ICMS rate on inter-state supplies
7 percent reduced ICMS rate on designated remote states transactions
0 percent ICMS rate on e-commerce
Federal IPI up to 300 percent
Local Municipal Service Tax ISS 2 percent to 5 percent
Federal Gross Revenue Tax PIS 1.65 percent to 7.6 percent

Source: Vatonline.com

For foreign companies making taxable supplies in Brazil, there may be a statutory obligation to register for indirect taxes. Once registered, non-resident traders must comply with local filing rules. Typical situations requiring a Brazilian indirect tax registration include:

a. Where goods are delivered within Brazil;
b. Where goods are imported into Brazil;
c. Export of goods from Brazil; and
d. Supply of services where the place of supply is Brazil.

There is no threshold for registration in Brazil. It is compulsory to register in Brazil if taxable supplies are made. Unlike Europe and many other parts of the world, it is not possible for foreign businesses to register for indirect taxes in Brazil as a non-resident. In Brazil it is necessary for non-resident traders to form a permanent establishment in order to register for indirect taxes. This can be in the form of either: a joint stock company; a limited liability company; or a branch. There are various

requirements and obligations to set up a permanent establishment in Brazil at the Federal, State and Municipal level, depending on the type of establishment.

The Brazilian experience with VAT also shows that in a federal country, the evolutionary aspect of indirect taxes and basic features of the federal system lead to a system of taxation of goods and services, which is not of the pure form of VAT. It has evolved to become a highly complex system. This complexity emanates from the desire to maintain revenue autonomy of different tiers of government.

VAT in the European Union

In the context of the European Union, a landmark study known as the Neumark Report (1962) had showed way back in the sixties that only the implementation of a value added tax would facilitate effective European integration and dismantling of tax borders. Hence, the EEC adopted the VAT in 1967 as a neutral consumption tax laying the foundation for a modern regime of taxation of consumption. The European Union Value Added tax encompasses member states in the EUVAT area. Joining in this is compulsory for the member states. The EUVAT taxes the consumption of goods and services in the EUVAT area. The key issues in implementing EUVAT relate to determining the place of supply and consumption thereby determining which member state will collect the VAT and which VAT rate will be charged.

a. Rate Structure: Each Member State's national VAT legislation needs to comply with the provisions of EUVAT law as set out in Directive 2006/112/EC. This Directive provides the basic framework for EUVAT, but allows Member States some degree of flexibility in the implementation of VAT legislation. For example, different rates of VAT are allowed in different EU member states. However Directive 2006/112 requires Member states to have a minimum standard rate of VAT of 15 percent and one or two reduced rates not below 5 percent. Some Member States have zero percent VAT rate on certain supplies. These Member States would have agreed to this as part of their EU Accession Treaty (for example, newspapers and certain magazines in Belgium). The current maximum rate in operation in the EU is 25 percent, though Member States are free to set higher rates.

VAT that is charged by a business and paid by its customers is known as "output VAT" (that is, VAT on its output supplies). VAT that is paid by a business to other businesses on the supplies that it receives is known as "input VAT" (that is, VAT on its input supplies). A business is generally able to recover input VAT to the extent that the input VAT is attributable to (that is, used to make) its taxable outputs. Input VAT is

recovered by setting it against the output VAT for which the business is required to account to the government, or, if there is an excess, by claiming a repayment from the government.

The VAT Directive (prior to 1 January 2007 referred to as the Sixth VAT Directive) requires certain goods and services to be exempt from VAT (for example, postal services, medical care, lending, insurance, betting), and certain other goods and services to be exempt from VAT but subject to the ability of an EU Member State to opt to charge VAT on those supplies (such as land and certain financial services). Input VAT that is attributable to exempt supplies is not recoverable although a business can increase its prices so that the customer effectively bears the cost of the 'sticking' VAT. A legal framework for the application of VAT rates has been developed. The basic rules are as follows:

- Supplies of goods and services subject to VAT are normally subject to a standard rate of 15 percent.
- Member States may apply one or two reduced rates of not less than 5 percent to goods and services enumerated in a restricted list.
- There are a number of derogations that were granted to member countries at the time of negotiations which lead to further variations.

Annex III to the VAT directive contains the list of goods and services eligible for exemption, which includes: the whole housing sector as well as some services related to places of worship, cultural heritage, and historical monuments; restaurants and catering services; locally supplied services including labour intensive services and locally supplied services like gardening, minor repair of movable tangible property, and personal care. Table 12 gives the rates structure for the EU countries.

The unweighted mean standard rate in EU countries is 22 and the first mean concessional rate is 10.5, that is about half of the standard rate.

b. Excise Taxes in the EU: VAT is supplemented by excise taxes. In the EU, all member countries levy excise duties (non-rebatable) on alcoholic beverages, manufactured tobacco products, and energy products including motor fuels like petrol and gasoline, and heating fuels, electricity, natural gas, coal, and coke. Full harmonization of excise duty rates was not considered necessary but a series of

minimum rates have been agreed upon. The minimum rates of excise duty (since these are often in specific terms) are increased in line with inflation.

Table 12: VAT Rates in EU Countries

Ser.No.	Country	Standard Rate	Reduced Rate 1	Reduced rate 2	Reduced Rate 3
1	Austria	20	10		
2	Belgium	21	12	6	
3	Bulgaria	20	9		
4	Croatia	25	13		
5	Cyprus	19	9	5	
6	Czech Republic	21	15	10	
7	Denmark	25			
8	Estonia	20	9		
9	Finland	24	14	10	
10	France	20	10	5.5	2.1
11	Germany	19	7		
12	Greece	23	13	6.5	
13	Hungary	27	18	5	
14	Ireland	23	13.5	4.8	0
15	Italy	22	10	4	
16	Latvia	21	12		
17	Lithuvania	21	9	5	
18	Malta	18	7	5	0
19	Netherlands	21	6		
20	Poland	23	8	5	
21	Portugal	23	13	6	
22	Romania	24	9	5	
23	Slovakia	20	10		
24	Spain	21	10	4	
25	Sweden	25	12	6	
26	UK	25	5	0	
	Mean	22.0	10.5	5.5	0.7

Source: Vatlive.com

The related EU legislation can be divided into three categories: (a) structure of tax to be applied to different groups of industries (definition of the product, excise tax rate, method of calculation), (b) minimum rates of duty, and (c) general provisions concerning production, storage, and movement of excise products between EU member

countries. The structure and rates of taxation on tobacco products are reviewed every four years.

Environmental taxes and their role have been extensively discussed in the EU since the nineties. In 1992, the Commission had proposed a new harmonized carbon and energy tax aimed at stabilizing CO2 emissions in the community in the medium term. However, an agreement could not be reached and in 1997 another proposal was developed based on the existing structure of excise duties on mineral oils. In 2003, the Community agreed to widen the coverage to all energy products including coal, natural gas, and electricity. This Directive, which entered into force on 1st January 2004 was designed to achieve the following objectives:

1. Reduce distortions of competition between Member States due to divergent rates of tax;
2. Reduce distortions of competition between mineral oils and other energy products;
3. Increase incentive to use energy more efficiently,
4. Allow Member States to offer companies concessional rates in return for specific undertakings to reduce emissions.

c. Administrative Cooperation in EU Countries: On October 7, 2007, EU adopted a new regulation for administrative cooperation between member countries for VAT. VAT frauds are extensive involving large losses for Member Countries. It distorts competition between honest traders and undermines confidence. The new legislation sets up a single legal framework regarding the rights and obligations of all interested parties and procedures are laid down for administrative cooperation. The basic features of these are summarized below:

- Form requirements for information requests and information are provided.
- Time limits for providing information are prescribed.
- Procedures and conditions for refusal to give information are also prescribed.
- Procedure and handling of information exchange with non-member countries are prescribed.

In regard to VAT investigations the following provisions are made.

- Requesting other member countries to conduct administrative enquiries.
- Presence of foreign officials during controls.

- Cross-border notification of decisions emanating from the tax authorities of another member state
- Procedure for organizing multilateral controls.

VAT Rates in Other Countries

The overall GST rates differ widely across countries. Table 13 gives the VAT/GST rates of a large selection of countries covering 114 countries. For the sake of comparison the EU countries are also covered here. The highest GST rates are now at 27 per cent. At the lower end, Switzerland, Japan, Thailand and Singapore have GST/VAT rates at 5 per cent or marginally above. In relation to the rates in vogue in many countries, except the Scandinavian countries where the tax is levied at the standard rate of 25 percent the un-weighted mean rate is about 16 percent, and for developing countries it ranges between 12 to 14 percent. At the lower end, the Singapore GST rate was 3 percent at inception, which has now been raised to 7 percent.

Many countries do impose excise duties in addition to VAT. Furthermore, there is now a move towards 'greening' the tax systems internationally by taxing at differentially higher rates the polluting inputs and outputs.

The review of VAT rates in federal countries and general international experience indicates that uniform rate structure across states is not a necessary condition for a successful implementation of GST particularly in federal or economic community contexts. In many countries and economic communities like the European Union minimum rates or a range within which the participating states can fix their rates has been agreed upon.

Table 13 :VAT, GST and Sales Tax Rates in Selected Countries: 2015

No.	Jurisdiction	Standard Rate *	Other Rates **
1	Albania	0.20	0
2	Argentina	0.21	10.5 percent, 0 percent
3	Armenia	0.20	0
4	Aruba	0.02	NA
5	Australia	0.10	0
6	Austria	0.20	12 percent, 10 percent
7	Azerbaijan	0.18	0
8	Bahamas	0.08	0
9	Barbados	0.18	7.5 percent, 0 percent
10	Belarus	0.20	10 percent, 0 percent

No.	Jurisdiction	Standard Rate *	Other Rates **
11	Belgium	0.21	12 percent, 6 percent, 0 percent
12	Bolivia	Nominal: 13 percent Effective: 14.94 percent	0
13	Bonaire, Sint, Eustatius and Saba	Goods: 8 percent Services: 6 percent	30 percent, 25 percent, 22 percent, 18 percent, 10 percent, 7 percent, 5 percent, 0 percent
14	Botswana	0.12	0
15	Brazil	IPI: 0 percent–365 percent ICMS: 0 percent–35 percent ISS: 0 percent–5 percent PIS-PASEP: 0.65 percent, 1.65 percent COFINS: 3 percent, 7.65 percent	NA
16	Bulgaria	0.20	9 percent, 0 percent
17	Canada	GST: 5 percent HST: 9.975 percent–15 percent	0
18	Chile	0.19	15 percent–50 percent
19	China	0.17	13 percent, 11 percent, 6 percent, 3 percent
20	Colombia	0.16	5 percent, 0 percent
21	Costa Rica	0.13	10 percent, 5 percent, 0 percent
22	Croatia	0.25	13 percent, 5 percent
23	Curacao	0.06	9 percent, 7 percent
24	Cyprus	0.19	9 percent, 5 percent, 0 percent
25	Czech Republic	0.21	15 percent, 10 percent, 0 percent
26	Denmark	0.25	0
27	Dominican Republic	0.18	13 percent, 0 percent
28	Ecuador	0.12	0
29	Egypt	0.10	1.2 percent–45 percent
30	El Salvador	0.13	0
31	Estonia	0.20	9 percent, 0 percent
32	European Union	NA	NA
33	Finland	0.24	14 percent, 10 percent, 0 percent

No.	Jurisdiction	Standard Rate *	Other Rates **
34	France	0.20	10 percent, 5.5 percent, 2.1 percent
35	Georgia	0.18	0.0054
36	Germany	0.19	0.07
37	Ghana	0.15	17.5 percent, 0 percent
38	Greece	0.23	13 percent, 6.5 percent
39	Guatemala	0.12	0
40	Honduras	0.15	0.18
41	Hungary	0.27	18 percent, 5 percent
42	Iceland	0.24	11 percent, 0 percent
43	India	12.5 percent–15 percent	20 percent, 5 percent-5.5 percent, 1 percent, 0 percent
44	Indonesia	0.10	0
45	Ireland	0.23	13.5 percent, 9 percent
46	Isle of Man	0.20	5 percent, 0 percent
47	Israel	0.18	0
48	Italy	0.22	10 percent, 4 percent
49	Japan	0.08	NA
50	Jersey	0.05	0
51	Jordan	0.16	4 percent, 0 percent
52	Kazakhstan	0.12	0
53	Kenya	0.16	0
54	Korea	0.10	0
55	Kosovo	0.16	NA
56	Latvia	0.21	12 percent, 0 percent
57	Lebanon	0.10	0
58	Lithuania	0.21	9 percent, 5 percent, 0 percent
59	Luxembourg	0.17	14 percent, 8 percent, 3 percent
60	Macedonia	0.18	5 percent, 0 percent
61	Madagascar	0.20	0
62	Malaysia	0.06	0
63	Malta	0.18	7 percent, 5 percent
64	Mauritius	0.15	0
65	Mexico	0.16	0
66	Moldova	0.20	8 percent, 0 percent
67	Mongolia	0.10	0

No.	Jurisdiction	Standard Rate *	Other Rates **
68	Morocco	0.20	14 percent, 10 percent, 7 percent
69	Myanmar	Goods: 5 percent Services: 5 percent–100 percent	NA
70	Namibia	0.15	0
71	Netherlands	0.21	6 percent, 0 percent
72	New Zealand	0.15	0
73	Nicaragua	0.15	0
74	Nigeria	0.05	0
75	Norway	0.25	15 percent, 8 percent, 0 percent
76	Pakistan	Goods: 17 percent Services: 16 percent	27 percent, 19.5 percent, 18.5 percent, 10 percent, 8 percent, 5 percent, 4 percent, 2 percent, 1 percent, 0 percent
77	Panama	0.07	15 percent, 10 percent
78	Papua New Guinea	0.10	0
79	Paraguay	0.10	0.05
80	Peru	0.18	0
81	Philippines	0.12	0
82	Poland	0.23	8 percent, 5 percent, 0 percent
83	Portugal	0.23	13 percent, 6 percent
84	Puerto Rico	0.07	0
85	Romania	0.24	9 percent, 5 percent
86	Russian Federation	0.18	10 percent, 0 percent
87	Rwanda	0.18	0
88	Saint Lucia	0.15	9.5 percent, 0 percent
89	Serbia	0.20	10 percent, 0 percent
90	Seychelles	0.15	0
91	Singapore	0.07	0
92	Sint Maarten	0.05	NA
93	Slovak Republic	0.20	10 percent, 0 percent
94	Slovenia	0.22	9.5 percent, 0 percent
95	South Africa	0.14	0
96	Spain	0.21	10 percent, 4 percent
97	Suriname	Goods: 10 percent Services: 8 percent	25 percent, 0 percent

No.	Jurisdiction	Standard Rate *	Other Rates **
98	Sweden	0.25	12 percent, 6 percent
99	Switzerland	0.08	3.5 percent, 2.8 percent, 0 percent
100	Taiwan	VAT: 5 percent GBRT: 0.1 percent–25 percent	NA
101	Tanzania	0.18	10 percent, 0 percent
102	Thailand	0.07	0
103	Trinidad and Tobago	0.15	0
104	Tunisia	0.18	12 percent, 6 percent
105	Turkey	0.18	8 percent, 1 percent
106	Uganda	0.18	0
107	Ukraine	0.20	7 percent, 0 percent
108	United Kingdom	0.20	5 percent, 0 percent
109	United States	0 percent–7 percent	NA
110	Uruguay	0.22	10 percent, 0 percent
111	Venezuela	0.12	8 percent–16.5 percent
112	Vietnam	0.10	5 percent, 0 percent
113	Zambia	0.16	0
114	Zimbabwe	0.15	0

Source: EY Compilation; * Rate shown is most common standard rate; there may be regional variations.
Note: ** There may be special rates for small businesses and special schemes.

The nature of inter-dependence of the economy is such that even if there is legislative separation, economic separation of tax bases is not possible. Tax bases are concurrent. An increase in the tax rate by one tier will affect the tax base of the other tier. A consultative or advisory body for coordination is therefore necessary. While the tax may be given different names, the tax base may be fully or partially common between the centre and the states. For example, even under the present arrangements, the value added in the production of goods is a common tax base for the centre and the states. In such cases, the decision about changing tax rates would have a direct effect on the base of the other tier of government. Therefore while retaining legislative powers, the states in India will have to take into account the fact that in an economic sense the tax bases are interdependent. Neither the centre can over-exploit the common tax base without affecting the tax base of the states nor can the states do so without affecting the tax base of the centre. Therefore an institutional arrangement like a Goods and Services Tax Council where key decisions can be taken with mutual consultations is necessary. However, this body should not overtake the power of state legislatures.

Key Lessons from Evolution of Modern VAT Systems

A simple, transparent, low rate, comprehensive base, destination-based, export-zero-rated VAT system is now considered the best form of VAT. Features of VAT where elements of origin-based still partly continues without reason, tax rates are high and multiple rates are involved, tax base is narrow with too many exemptions make a country's VAT system fall below the most desirable.

Although VAT has been adopted in many countries including the European, some of the early pioneers remain far way from a 'modern' or evolved form of VAT. In the Preface to 'Three VAT Studies (2010)[23]' Cnossen observes about the EU VAT: "Having been harmonized in 1977, long before the internet and the onset of globalization, the common VAT appears an anachronistic tax compared with modern VATs in New Zealand, Canada, Australia, South Africa, and Singapore. The exemptions and differentiated rates that are prevalent throughout the EU violate the logic and functionality of the VAT. More importantly, they are highly distortionary and greatly complicate the administration and compliance with the tax." Cnossen derives the following main lessons in designing VAT concerning exemptions, zero-rating and threshold limit.

(i) Exemptions: On exemptions, he favours limiting exemptions only on grounds of administrative cost benefit considerations since exemptions violate the logic and functionality of the VAT by distorting input choices and harming exports. He suggests that exemptions should be confined to elementary education and the sale of used residential housing and most health, government, cultural, and financial services should be brought into the VAT base.

(ii) Single rate: VAT should be levied at a single rate.

(iii) Zero-rating: zero-rating should not be imposed on so-called basic necessities, such as groceries as a zero rate on food is not a well targeted instrument to alleviate the VAT burden on the poor. In fact, the benefit of a zero rate accrues mainly to middle- and higher income consumers who buy more expensive varieties of food, eat out more often, and throw food away more easily. Accordingly, the zero rate should be confined to exports.

[23] Cnossen, Sibren (2010), Three VAT Studies, CPB Netherlands Bureau for Economic Policy Analysis, The Hague, Netherlands

(iv) High Threshold: A high threshold should be provided for so that small businesses and farmers do not have to register and pay VAT, saving on administration and compliance costs. Small entities would still pay VAT on inputs purchased from taxable businesses. But optional registration should be provided for small businesses, so that they can pass the tax on inputs on to their customers, if desired.

These are particularly relevant for latecomers like India who are trying to bring in a GST but all present designs appear to be characterized by many undesirable features. Federal countries show a variety of variants in adopting VAT in their countries. These variations show recognition of the empirical realities of the countries and the nature of federal-provincial relations. In most federal structures, only floor rates appear to have been agreed to and states/member countries of an economic community have been given the flexibility to vary the rates within reason there often are more than one rate categories. International experience also indicates that it takes time for a comprehensive goods and services tax regime to evolve and adequate and administrative coordination arrangements need to be put in place for its successful working.

Chapter 4

METHODOLOGY AND ESTIMATES OF REVENUE NEUTRAL RATES FOR GST

Revenue Neutral Rates

The estimation of revenue neutral requires the application of the GST rate (or rates) on an estimated GST tax base in order to raise the same revenue as are presently raised by the taxes that are to be subsumed in the tax base. This needs two inputs: (a) revenues raised under the present taxes that are to be subsumed in GST and (2) estimation of the tax base under GST. Given the data constraints in the context of India, particularly since tax base estimates have to take into account central taxes, state taxes, and tax on inter-state sales, two possible methodologies appear feasible. These may be referred to as (a) the revenue method and (b) the consumption expenditure method.

Revenue Method and its Shortcomings

In the revenue method, the GST tax base is calculated using the revenue data with respect to the present taxes that are to be subsumed in GST and the tax rates that were applied to raise this revenue. In this method, the relationship between tax base (B), tax rate (r), and tax revenue (R) is given by:

$$R = r.B$$

This is used to derive the tax base, given tax revenue and tax rate. Thus,

$$B = R/r$$

This method can be extended to multiple rates and corresponding tax bases.

There are several difficulties with the revenue method for deriving the tax base in the context of the planned transition to GST from the current combination of Cenvat, Service tax and Statevat in India, particularly at the state level.

1. First, in the present VAT system, a good part of revenues come from blocked input taxes. Any input tax collected by a state on an intermediate good where the final good is sent to another state on stock transfers constitutes part of the present revenue. In the revenue method, this will also be a converted into a corresponding base. But this base will not be there in GST because input taxes will not be blocked. The tax will be on the final good and collected in the consuming state. Similarly, on some items, particularly raw materials and intermediate goods used as inputs, where

these items are sent to another state and CST is leviable, states presently limit input tax credit often up to 2 percent, i.e. up to the CST rate. But the tax base corresponding to the blocked input tax will not be available to the state under GST.

2. Statevat/sales tax on goods that are inputs to services presently generate revenues and there would be a corresponding tax base estimated under the revenue method. But this base will not be available under GST.
3. Similarly, under GST, cascading between central excise and state sales taxes may produce revenues under the present system. Under the revenue method, some tax base will be estimated on this account. But a tax base corresponding to this revenue will not be available under GST.
4. The revenue approach provides no handle to assess the state level tax base on services since the service tax is administered by the central government. Estimating the tax base at the all India level and then distributing it according to the share of services in the all India service output can be highly distortionary as there is no one-to-one correspondence between consumption and production of services.

The revenue side approach therefore can lead to considerable distortion in the inter-state distribution of the tax base as we move from the present system to a largely destination based tax system. In particular, in the case of industrial states where considerable output is of intermediate goods that serve as inputs, there is likely to be an underestimation of the revenue neutral rate. Therefore an alternative approach needs to be adopted even if there are data constraints.

It is not as if input-tax blockage will not occur in the present design of GST. This will arise primarily because some taxes on goods and services would still be outside the scope of GST in the present design. Three important groups of goods of this nature are major petroleum products (petroleum crude; high speed diesel; motor spirit (commonly known as petrol), natural gas, and aviation turbine fuel), alcohol for human consumption, and electricity. Excise/sales taxes levied on these goods would be outside GST but would cascade into GST. Further since real estate would also be outside GST, taxes paid on cement and other construction materials would also suffer blockage of ITC. Similarly, since the farmers would not be registered with the GST authorities, GST paid on agricultural inputs and machinery, tools and implements would also be blocked. The estimated tax base for GST would therefore have to account for these tax bases that are not goods of final consumption but serve as intermediates. Apart from these, purchases by unorganized sector from the organized sector would also suffer blockage of ITC.

A Note on NIPFP's Methodology:

It uses the reverse (revenue) method to calculate tax base of goods, i.e., broadly dividing revenue by tax rate. As there are 3 rates (1 percent, lower rate and standard rate), it assumes that 1 percent rate applies to 2 percent of tax base, lower rate to 56.15 percent and standard rate to rest. [24]

The service tax base is computed as: All India service tax base is derived using PROWESS (CMIE) data base. Then, the data on value added of Services for each state (i.e. GSDP services at factor cost) as given by CSO is used to calculate each state's GSDP services to services sector GSDP of all states. Then, all India service tax base and these ratios are used to calculate tax base of services sector for each state.

After that the following corrections are made:

a. PROWESS covers only companies submitted returns and not cover services provided by entities not registered in stock exchanges, and services consumed by the households. Therefore adjustment is made to revise sale of services of each sector based on tax collected from each category of services.
b. Further corrections are made for currently exempted services like railway passenger fares, freights, air fares etc.
c. Two kinds of adjustment: deduction for taxable inputs used for services provision, and deduction for services when used as inputs into taxable activities. For this, Input-Output Table for 2006-07 was used for deriving service specific input-output ratio.
d. Partial correction for informal sector: from literature, 10 percent of GDP services are from other unorganized sector. This correction gives additional tax base.
e. Additional base accrue due to real estate sector, computer services not covered and incomplete credit for financial services.
f. Sugar and Textiles are taxed by Centre under AED. Under GST, the state will levy this. Net addition output of these are derived from I-O Table and added.

After these corrections, adding the service tax base with base of goods gives the total base of GST. In deriving RNR, the same weights (2 percent, 56.15 percent and 41.85 percent are applied to divide the service tax of a state into three categories.

Many have questioned the following: (i) How are services also going to be taxed at three rates that are used for goods?; (ii) Estimating the base at All India level and then

[24] However, many argues that as the list of goods under exemption, 1 percent, lower rate and standard rate vary across states and share of consumption expenditure for them are vary, using the same weights for every state in deriving tax base is not correct.

distributing it to states using shares of services in all India services output is distortionary as there is no one-to-one correspondence between consumption and production of services?; (iii) Why 2006-07 input output matrix is applied when 2007-08 matrix is available?; (iv) Why commodity by industry matrix is applied when commodity by commodity matrix should have been applied?; (v) Invalidity of 2011-12 as a reference year because now the service tax is being levied under a 'negative list' concept; and (vi) ignoring the impact of increasing the threshold from Rs. 10 lakh to Rs. 25 lakh?

Table 14 shows the estimated RNR by the NIPFP study for Tamil Nadu, Centre and other selective Stated in 2011-12. As Tamil Nadu's RNR is lower than average, the question is: whether Tamil Nadu is a net gainer? Since Tamil Nadu is a producing State? Is it possible? Further, if the standard rate becomes so high for services, increasing from 12.36 percent to close to 27 percent, centre and states taken together, would the tax base not erode?

Table 14: NIPFP' Study Estimates of RNR for Selective States (2011-12)

States	With Entry Tax		Without Entry Tax	
	CST @ 4 percent	CST @ 2 percent	CST @ 4 percent	CST @ 2 percent
Tamil Nadu	13.01	10.95	12.81	10.62
All States	14.77	12.23	14.76	12.12
Karnataka	18.98	14.9	18.98	14.9
Centre	12.77	12.77	12.77	12.77

Consumption Expenditure Based Approach

The levy of GST aims to capture consumption expenditure as the tax base. GST tax base would consist of the following components.

1. Private final consumption expenditure on goods and services of non-exempt sectors purchased from the organized sector;
2. Government final consumption expenditure on goods and services of non-exempt sectors purchased from the organized sector;
3. Investment expenditure on non-labor inputs to housing and machinery and equipment purchased from the organized sector;
4. Intermediate demand (blocked input tax) with respect to exempt sector purchases or sectors outside GST from the organized sector
5. Intermediate demand (blocked input tax) with respect to unorganized sector purchases from the organized sector

Here, reference to the organized sector is meant to reflect dealers who will be registered dealers under GST. Unorganized sector would reflect dealers who would not be registered under GST and taxes paid by them on purchase of inputs from registered dealers would therefore be blocked. For estimating the GST base, two major informational inputs that have been used in the application of the consumption expenditure based approach are (a) National Sample Survey Estimates of Household Consumption Expenditure 2011-12 (68th round), which is available state-wise and (b) Input-output Table of 2007-08, commodity by commodity matrix. The first gives estimates of private final consumption expenditure and the second facilitates estimation of intermediate demand.

(i) NSSO 2011-12 Consumer Expenditure Thick Round Survey

The 68th round survey of the NSSO carried out during July 2011-June 2012 was the ninth survey in a series of quinquennial surveys that the NSSO started conducting in 1972. These surveys extensively cover households across all rural and urban regions of India to provide estimates of: (i) Household consumer expenditure and (ii) Employment and unemployment.

The survey provides estimates of household monthly per capita consumer expenditure (MPCE) and the distribution of households and persons over the MPCE range separately for the rural and urban sectors of the country for States and Union Territories, and for different socio-economic groups. It also provides a break-up of average rural and urban MPCE over 30 groups of food and non-food items.

The survey involves collection of information on household expenditure on food, energy (fuel, light and household appliances), clothing, bedding and footwear, education and medicines, durable goods and other items from almost 60,000 households in rural areas and 42,000 households in urban areas across India. The information in the 2011-12 survey was collected in two schedules on the basis of two types of reference periods as given in Table 15.

The two types of schedules had the same item break-up but differed in reference periods used for collection of consumption data. In Schedule Type 1, for certain categories of relatively infrequently purchased items including clothing and consumer durables, information was collected on consumption during the last 30 days and the last 365 days. For other categories, including all food and fuel and consumer services, a 30-days reference period was used. Schedule Type 2 used 'last 365 days' (only) for the

infrequently purchased categories, 'last 7 days' for some categories of food items, as well as pan, tobacco and intoxicants, and 'last 30 days' for other food items, fuel, and the rest.

Table 15: NSS 2011-12 Survey: Schedule Types and Corresponding Reference Periods

Category	Item Groups	Reference Period	
		Schedule Type 1	Schedule Type 2
I	Clothing, bedding, footwear, education, medical (institutional), durable goods	'Last 30 days' and 'Last 365 days'	Last 365 days
II	Edible oil; egg, fish and meat; vegetables, fruits, spices, beverages and processed foods; pan, tobacco and intoxicants	Last 30 days	Last 7 days
III	All other food, fuel and light, miscellaneous goods and services including non-institutional medical; rents and taxes	Last 30 days	Last 30 days
	No. of sample households	Rural: 59,695 Urban: 41,967	Rural: 59,683 Urban: 41,968

Source: MOSPI.

From each sample household where Schedule Type 1 was canvassed, two measures of MPCE emerged. This was because for each such household, there were two sets of data for Category I items – "last 30 days" data and "last 365 days" data – unlike items of Categories II and III, for which only "last 30 days" was available. Thus there were two ways of measuring household MPCE: one using "last 30 days" for all items, and the other using "last 365 days" data for Category I items and "last 30 days" for the rest. The first measure of MPCE is called $MPCE_{URP}$ (Uniform Reference Period MPCE) and the second, $MPCE_{MRP}$ (Mixed Reference Period MPCE). From data on $MPCE_{URP}$ and $MPCE_{MRP}$ (collected from households where Schedule Type 1 was canvassed), two alternative estimates of the distribution of MPCE and average MPCE could be built up.

From each sample household where Schedule Type 2 was canvassed, a single measure of MPCE emerged, as for each item of consumption, data for only one reference period had been collected. The reference period system used for Schedule Type 2 was only a slight modification of the Mixed Reference Period (differing only in the reference

period used for Category II items), this measure of MPCE was called the $MPCE_{MMRP}$ (Modified Mixed Reference Period MPCE).

For the purpose of estimation of private final consumption expenditure statewide, the MMRP measure was used since the MMRP method uses the reference periods that were recommended after suitable experimentation by the Expert Group on Non-Sampling Errors. This method gives the highest estimate of consumption expenditure among the three methods. However, the sum of consumption expenditures for all states and UTs still falls short of the private final expenditure prepared by the CSO for the national accounts. Further adjustment is required as discussed below.

(ii) Estimation of Consumption Expenditure for a State

Estimates of private final consumption expenditure for a major state like Tamil Nadu can be derived by using the thick samples of National Sample Survey Thick Round of 2011-12. These estimates are available in per capita terms separately for rural and urban population. There are 14 categories of food items and 16 categories of non-food items in the NSS data. Multiplying the per capita expenditures for each category by respective rural and urban populations, an estimate of total private final consumption expenditure can be derived for any given state. This is done for 2011-12.[25]

It is well known that the sum of private final consumption expenditures derived by using the NSS estimates for all states falls well short of the national income account estimate of private final consumption expenditure. We have therefore used the shares based on the NSS data are applied these to the commodity wise aggregate of private final consumption expenditure data from the NAS to derive estimates of consumption expenditure that would be consistent with the National Income Accounts. [26]

Estimates of private final consumption expenditure from the National Income Accounts are available for 38 categories of goods and services at the all-India level for the years 2010-11, 2011-12, 2012-13, and 2013-14. See Appendix 1 for the list of 38 categories of goods and services. The figures for commodity-wise, state-wise, and year-

[25] The question here is whether the ratios derived from NSSO for 2011-12 will change every year? and can we workout annual change using previous year survey? The answer is: Although we use the change in expenditure ratios when interpolation is used and the interval is for five years, in the present context the interval is only for two years and forecasts rather than interpolation is involved. In any case, the shares change very slowly.

[26] It is noticed that the consumption expenditure data aggregated for households from NSS data is only 43 percent of Private Final Consumption expenditure data from NAS for 2011-12.

wise ratios can be applied to the NAS private final consumption (PFCE) categories to derive any state's commodity-wise expenditure at current prices for each respective year. This was done for Tamil Nadu.

Next a correspondence is established with the 2007-08 commodity by commodity input-output transactions matrix. This provides a 130 x 130 sector disaggregation. These sectors are re-aggregated into 40 sectors consisting of 32 sectors for which corresponding final demands (final consumption expenditures) are available and eight sectors for which only intermediate demand (or inter-industry use) is available. The final consumption expenditure data of 38 categories are remapped onto the 32 final demand categories consistent with the input-output table classification. See Appendix 2 for the list of these 38 categories. It may be noted that all services used by households are covered and there are no noticeable exclusions.

(iii) Coverage of Services

On the estimation of the service tax base, presently items that are not on the centre's negative list may be taxed under GST also. Whether some of the services will be taxed at the lower rate and others at the standard rate are issues to be decided by the GST Council. While the service tax base will become an additional tax base for the levy of GST for the state governments, it should be remembered that goods that are used in the production of services today bear statevat, which is presently not rebated when the concerned services are consumed within the state or outside. It remains a blocked input tax. Under GST, state will have to rebate this. Thus, services used as inputs in the production of goods will not provide any additional tax base for the state government. At the same time goods used in the production of services that may presently be taxed under VAT remaining a blocked input tax will go out of the tax base under GST. We need to calculate services used as inputs in the production of goods and goods needed in the production of services. Table 16 gives a list of services covered under the consumption expenditure survey being used for this study.

Table 16: Services Covered Under Consumption Expenditure Survey

House rent, garage rent (actual)	Photography
Hotel lodging charges	Doctor's/surgeon's fee
Residential land rent	Hospital and nursing home charges
Other consumer rent	Other medical expenses
House rent, garage rent (imputed- urban only)	Air fare
Water charges	Railway fare
Cinema, theatre	Bus/tram fare
Mela, fair, picnic	Taxi, auto-rickshaw fare
Club fees	Steamer, boat fare
VCD/ DVD hire (incl. instrument)	Rickshaw (hand drawn and cycle) fare
Cable TV	Horse cart fare
Other entertainment	Porter charges
Domestic servant/cook	School bus, van, etc.
Attendant	Other conveyance expenses
Sweeper	Telephone charges: landline
Barber, beautician, etc.	Telephone charges: mobile
Washerman, laundry, ironing	Postage and telegram
Tailor	Internet expenses
Grinding charges	Library charges
Miscellaneous expenses	Tuition and other fees (school, college, etc.)
Priest	Other educational expenses (incl. fees for enrollment in web-based training)
Pet animals (incl. birds, fish)	Legal expenses
Other consumer services excluding conveyance	Repair charges for non-durables

Source: NSS, 2011-12, MOSPI.

The detailed 40 categories wise final private consumption expenditure details for Tamil Nadu for three years are shown in Appendix 3.

Adjusting for Central and State Taxes Embedded in Final Consumption Expenditure Estimates

The estimates of private final consumption expenditure include indirect taxes that are to be merged in GST. These taxes should be taken out from the estimated tax base of GST since they will be eliminated and should not form of the tax base on which the GST rate

is to be applied. Both central and state taxes proposed to be merged into GST should be taken out. Thus, the first step, in reconstructing the tax base for GST is to deduct from the estimates of private final consumption expenditure taxes that are to be merged in GST. In particular, Cenvat and service tax as well as Statevat already embedded in the private final consumption expenditure estimates should be first taken out to provide the proper tax base for GST. At the same time, taxes that are not to be merged in GST at the time of transition such as taxes on petroleum products and alcoholic products meant for human consumption and electricity duty should not be taken out as they will continue to cascade.

The tax base for GST under the consumption expenditure method supplemented by other relevant information therefore consists of the following components:

B1: Private final consumption expenditure in the state after taking out cenvat, service tax, statevat/sales tax representing purchases from the organized sector.

B2: Government final consumption expenditure in the state (both of the centre and the state): after taking out cenvat, statevat, and sales tax. It may be assumed that most purchases by the government sector for final consumption of goods and services (non-salary part) are from the organized sector. [27]

B3: Investment expenditure as it relates to housing will constitute part of the tax base to the extent it represents purchases of materials (non-labour part) and machinery and equipment from the organized sector[28]

B4: Exempt sector purchases of inputs (goods and services) from organized sector where input tax will not be rebated. [29]

B5: Unorganized sector purchases of inputs from organized sector where input tax will not be rebated. [30]

Purchases from sectors that produce only intermediate outputs such as minerals would not be part of the tax base of GST since any GST paid for intermediate purchases

[27] For government expenditure, we use data on final expenditure on administrative departments for central government, state governments, local bodies, and autonomous institutions (para statals) from the national income accounts. The share of individual states is based on each states share in all-state revenue expenditures. Government final consumption expenditure arises in several categories. Some of the important items are as follows: transport equipment, communications, equipment and machinery, education, services including recreation and cultural services, etc.

[28] Investment expenditure is limited to machinery and equipment and construction.

[29] All categories of goods and services where they may be a share of exempt purchases. Only public administration is taken as fully exempt.

[30] All categories of goods and services have a share of purchases made by the unorganized sector. These shares differ from category to category. The key steps of the methodology of estimating the share of the unorganized sector has been explained in the text below. Only public administration is taken as fully organized.

should get refunded at later stages. This can form part of the tax base only to the extent that any input tax paid may get blocked as at present. However, under GST most of these input taxes will have to be rebated. Continued ITC blockage will be largely for intermediate inputs in construction since real estate will not be covered under GST.

In the case of the three main present taxes that are to be merged in GST, viz., Cenvat, service tax, and State VAT, cross ITC is available between Cenvat and service tax. Thus, Cenvat paid on inputs can be claimed by as credit in Cenvat paid on output. State VAT on inputs cannot be claimed as ITC if there is no output tax. Exports are zero rated in cenvat as well as State VAT. The methodology of taking these taxes out of the estimated GST base is described below.

To ascertain the excise duty rates, each individual product/category was mapped onto relevant HSN code/s. The respective tariff was ascertained after taking into account various cesses, exemptions and additional duties. All the relevant cesses were included.

Similar to the determination of excise duty rates, the service tax rates were ascertained by first mapping the various input services onto the respective chapter headings of the Service Tax Act under which they would fall. The final rates were calculated after taking into account the effect of various abatements. The tax rates for state VAT are similarly compiled. Using these tax rates, different parts of the GST base are estimated as described below.

Inputs purchased can be divided into four parts:

(a) Purchases by organized sector from organized sector
(b) Purchases by organized sector from unorganized sector
(c) Purchases by unorganized sector from organized sector
(d) Purchases by unorganized sector from unorganized sector

Calculation of the Share of Organised Sector

The estimation of the gross value added (GVA) of the organized sector was done using data from three sources:

- 2007-08 Commodity x Commodity Input-output matrix
- Statement 76.1 of National Account Statistics
- NSS 67th Round - Survey on Unincorporated Non-agricultural Enterprises (Excluding Construction) in India

Statement 76.1 gives the NAS estimates of the gross value added of 17 sectors (including sub-sector) of economic activities, separately for the organized and the unorganized part each. The organized sector consists of companies that are registered under the Companies Act. Estimation of GVA of all the sectors in the I-O matrix in 2011-12 was done separately for the organized and unorganized part. The share of organized sector was calculated as a proportion of the sum of the two parts.

The share of the organized sector in each of the I-O matrix categories was estimated by first mapping the categories of the I-O matrix onto the 17 categories of NAS. The relative share of GVA of each I-O matrix category within its respectively mapped NAS category was calculated. These shares were multiplied by the gross value added (GVA) by the organized sector as given by NAS to get the organized sector value added.

In a similar manner, the same ratios of GVA were used to calculate the share of unorganized sectors for all the I-O matrix categories. For the manufacturing sector, however, data from the 67th Round Survey by National Sample Survey Organization (NSSO) was used to calculate the shares of the unorganized sectors. Data on the gross value added per enterprise and the number of enterprises was obtained for the unorganized parts of 25 manufacturing sectors. These 25 sectors were further aggregated into 22 sectors which could be mapped to the manufacturing sectors in the I-O Matrix. The relative shares of these were multiplied with the Gross Value Added of unorganized manufacturing obtained from NAS 2011-12. Thus the GVA (according to NAS) of the unorganized manufacturing was estimated for each of these 22 sectors. Next, the manufacturing categories in I-O Matrix were mapped to these 22 manufacturing sectors. Subsequently, the shares of GVA by organized manufacturing for I-O 68 categories were also collapsed into the 22 aggregated categories. The total GVA was calculated by adding the organized and unorganized sector GVA for each of these sectors. The share of organized sector GVA was estimated as a share of total GVA 2011-12 for these sectors and consequently mapped onto the manufacturing categories in the I-O Matrix.

Estimation of Consumption Expenditure

Estimates of private final consumption expenditure are prepared by jointly using the National income accounts and the NSS 68th round, as discussed earlier. We have 14 categories of food items and 18 categories of non-food items in the NSS data. Estimates of private final consumption expenditure from the National Income Accounts are available

for 38 categories of goods and services at the all-India level. A correspondence is the established with the commodity by commodity input-output matrix which has been re-aggregated into 40 sectors from the original 130 sectors. These sectors consist of 32 sectors for which corresponding final demands (final consumption expenditures) are available and eight sectors for which only intermediate demand (or inter-industry use) is available. The final consumption expenditure data of 38 categories are remapped onto the 32 final demand categories consistent with the input-output table classification.

Using the commodity by commodity transaction matrix, the input-coefficients table is derived (say, A). This is used to derive intermediate demand (inter-industry use) with respect to a given final demand vector (say F) using the well-known identities for input-output analysis. Using the 32 final demand (consumption expenditure) categories, estimates for the 8 intermediate demand categories can be derived wherever these are needed to take account of blocked input taxes.

Thus, gross output (X), which is annX1 vector of gross output, is written as follows:

$$A*X+F=X$$

Where A is the nXn input-coefficients matrix. The first term of the left hand side is the intermediate demand and the second term, final demand. The identity says that gross output is the sum of intermediate demand (inter-industry use of any good or service) and its final demand. Using the above identity,

We write

$$(I-A)^{-1}*F=X$$

This indicates that given the final demand vector and the input-coefficients matrix, the intermediate demand (X-F) can be derived.

The final demand consists of private final consumption expenditure, government final consumption expenditure and household fixed capital formation in construction and machinery and equipment. The estimates for consumption expenditure contain both central and state taxes. From these, the State VAT/sales tax element needs to be taken out to get an estimate of the tax base on which the existing or other tax rates (for simulation purposes) can be applied to estimate the state level tax revenue. Since we are using 40 sector classifications of goods and services, tax revenue can be derived for

these 40 categories. Indicating the tax base for any category net of State VAT/sales tax as Z, we can write the actual final consumption expenditure as the sum of Z and the tax revenue.

Thus,

$$C=Z+Z*(1-E)*(1-U)*R$$

Here, E is the share of the exempt part of any commodity group and U is the share of the unorganized sector purchases for that group, and R is the effective tax rate. From this, we derive

$$Z=C/[1-(1-E)*(1-U)*R]$$

This provides the relevant tax base for non-exempt organized sector final consumption/investment expenditure on the concerned good.

Reconstruction of Tax Base under GST

The following parameters and variables are used.

P=Private final consumption expenditure

G=Government final consumption expenditure

H1=Household sector expenditure for fixed capital formation on construction

H2=Household sector expenditure for fixed capital formation on machinery and equipment

I=Inter-industry usage of output of a sector

U=Share of unorganized sector

R=Effective tax rate (combination of cenvat/service tax rate and State VAT tax rate with a multiplicative term to take account of existing cascading of Cenvat/service tax on statevat)

E=Share of exempt sector

The reconstructed tax-base consists of the following components:

- Private final consumption expenditure consisting of purchases made from non-exempt organized sector net of sales tax/State VAT

  $$B1=[(1-U)*(1-E)*P]/[1+R*(1-U)*(1-E)]$$

  This indicates the consumption expenditure base for non-exempt sectors, after taking out taxes paid on account of purchase from the organized sector.
- Private final consumption expenditure by government sector reflecting purchases made from the organized sector after sales tax/State VAT is taken out.

B2=G/(1+R*(1-E))

- Investment expenditure on fixed capital formation by organized sector. This has mainly two elements
  - Construction and
  - Machineryand equipment

  In both cases, purchases from organized sector alone are counted

  B3=H1/(1+(1+R*(1-U1) *(1-E))+H2/(1+R*(1-U2) *(1-E))
- Inter-industry purchases by the exempt sectors sourced from the organized sector

  B4=E*P*I
- Inter-industry purchases by non-exempt unorganized sector sourced from the organized sector

  B5=U*(1-E)*P*I*(1-U)

After estimating the taxable base under GST, GST rate(s) have to be applied to obtain an estimate of potential revenue under GST.

Estimation of Revenue Neutral Rates

The overall base is to be divided into different parts: share of the tax base that will be exempt, share of tax base that will be subject to the lower rate, and share of the tax-base base that will be subject to the standard rate. These critical decisions will eventually be taken by the GST Council and the State government. For the time being, the aggregate tax base has been divided using the same ratios as in the NIPFP estimates, i.e. 2 percent for the application of the special rate of 1 percent; 56.15 percent for the application of the lower rate of 6 percent, and the balance for the application of the standard rate, which provide the 'revenue neutral rate' (RNR). RNR has been worked out for different combinations of CST rate (2 percent and 4 percent) and inclusion/non-inclusion of entry tax. [31]

It is useful to remember the definitions of RNR in multi-rate GST context which are given below:

(i) **RNR for a state with respect to SGST may be defined as follows:** In a multiple rate GST, given the special and lower rates at commonly agreed levels (1 percent and 6 percent for the states in the present calculations) that are to be applied to pre-agreed goods and services, RNR is the standard rate that, when applied to all the

[31] It is noticed that for a low rate of 5 percent (instead of 6 percent), the RNR will go up and for a low rate of 7 percent , it will come down

remaining goods and services, will provide the same amount of revenues as raised by the states taxes that are to be subsumed in GST for a given year.

(ii) **RNR for India covering CGST, SGST, and IGST may be defined as follows:** In a multiple rate GST, given the special and lower rates at agreed levels respectively for the centre and each of the states that are to be applied to pre-agreed goods and services, RNR is the standard rate consisting of a CGST and a SGST component with IGST rate being equal to the sum of CGST and SGST, that when applied to all the remaining goods and services by the centre and the states, will provide the same amount of revenues as raised by the central and states taxes that are to be subsumed in GST for a given year.

It is also noticed that goods like alcohol, petroleum are factored out in the beginning. They are not part of bases and RNR calculations. Table 17 summarizes information on the total revenue that is to be obtained from the GST base by applying the GST rate structure in the case of Tamil Nadu by adding the different components that are to be merged under GST.

Table 17: Tamil Nadu: Revenue Details for Taxes to Merged/Not Merged in GST

Item	2011-12	2012-13	2013-14	Growth 2012-13 over 2011-12	Growth 2013-14 over 2012-13
Taxes to be merged in GST					
VAT/Sales tax (exc tax on petroleum products and Liquor)	18556.84	22751.6	23195.1	22.6	1.9
Entertainment tax	57.63	77.3	72.1	34.0	-6.6
CST (including ITC adjustment)	2833.1	2900.3	3136.4	2.4	8.1
Luxury tax	255.21	284.7	288.7	11.6	1.4
Taxes on lottery, betting and gambling	6.73	5.5	5.1	-18.7	-6.2
States cesses and surcharges in so far as they relate to supply of goods	0	0.0	0.0		
Entry tax not in lieu of Octroi	2122.25	2263.4	1870.9	6.7	-17.3
Purchase Tax under Section 12	153.54	172.6	221.7	12.4	28.5
Purchase tax on Sugarcane	90.69	159.5	117.9	75.9	-26.1
ITC Reversal (as per return)	876.06	1249.2	1752.9	42.6	40.3
Taxes not to be merged in GST					
Sales tax on Petroleum Products	8323.08	9525.8	10902.9	14.5	14.5
Sales tax on liquor	7198.24	9425.4	16640.1	30.9	76.5
Revenue to be Neutralized					
With 2 percent CST and Entry Tax	**24952.05**	**29864.0**	**30660.9**	19.7	2.7
With 4 percent CST and Entry Tax	27785.15	32764.3	33797.3	17.9	3.2
With 2 percent CST without Entry Tax	22829.8	27600.5	28790.0	20.9	4.3
With 4 percent CST without Entry Tax	25662.9	30500.9	31926.4	18.9	4.7

Source: Department of Finance, Government of Tamil Nadu

Table 18 gives the estimated revenue neutral rates with alternative assumptions about CST and entry tax. The RNR with 2 percent CST and entry tax included for revenue neutralization gives an estimate which varies across years between around 15 percent and 18 percent. These rates are considerably higher than the rates for Tamil Nadu given in NIPFP's study. is Table 18 also provides the estimated tax bases which are to be taxed at 1 percent, 6 percent and standard rate (RNR) for three years. More elaborated 40 categories of goods and services wise bases for SGST in Tamil Nadu are given in Appendix 4.

Table 18: Estimated Revenue Neutral Rates

(Percent)

RNR	2011-12	2012-13	2013-14
With 2 percent CST and Entry Tax	15.9(10.95)	17.9	14.8
With 4 percent CST and Entry Tax	18.7 (13.01)	20.4	17.2
With 2 percent CST without Entry Tax	13.8 (10.62)	15.9	13.4
With 4 percent CST without Entry Tax	16.6 (12.81)	18.5	15.8
Tax Bases (Rs. Crore)			
Taxed at 1 percent	4793	5489	6390
Taxed at 6 percent	134562	154104	179395
Taxed at Standard Rate (RNR)*	100293	114857	133708
Total Tax base	239648	274450	319493

Source: Estimates; figures in parentheses are RNR estimates given in NIPFP study.

While these are estimates, some of the key limitations may be noted.

1. Many critical decisions regarding coverage of goods and services and their division between low, standard, and special rates will decided later by the GST Council.
2. These estimates are based on estimated parameters, ratios and consumption expenditures and other critical parts of the likely GST base. As these assumptions change, the estimates of the RNR would also vary.
3. These estimates do not cover the impact of the proposed 1 percent tax on inter-state supplies that is likely to cover both stock transfers and inter-state sales in the constitution amendment bill presently under the consideration of Parliament. This provision is for a period of 2 years unless explicitly extended by the GST Council.
4. There are noticeable changes in the RNR across the three years. The highest RNR is noted for 2012-13. As compared to 2011-12, this shows an increase of 2.2 percent points. We note in Table 16 that VAT revenue excluding petroleum

products and alcohol increased over this period by more than 30 percent. This could have been largely due to increase in the VAT rates. Collection of arrears may also have played a role. In 2013-14, the increase in VAT revenue excluding petroleum products and alcohol over 2012-13, fell to only 1.9 percent resulting in a fall in the RNR since this would be much lower than the increase in the estimated base.

5. One may use average figures for three years and compute average RNR for three years. But the Central representatives may not accept the average RNR and basically they use a bench mark year for interstate comparisons. However, we have given some alternative results (single RNR) based on simulations and some alternative assumptions (three years average etc.) in Appendix 5.
6. Our methodology excludes the final consumption of goods which are not subsumed in GST in determining tax base, but cascading is allowed.

Appendix 1: List of Goods and Services in National Income Accounts (Private Final Consumption Expenditure Data used for Mapping into Aggregated Input-Output Categories)

List of 38 Goods and Services			
1	CEREALS and BREAD	20	LIQUIFIED PETROLEUM GAS
2	PULSES	21	KEROSENE OIL
3	SUGAR and GUR	22	OTHER FUEL
4	OILS and OILSEEDS	23	FURNITURE, FURNISHING and REPAIR
5	FRUITS and VEGETABLES	24	REFRIGERATOR, COOKING, WASHING APPLIANCES, ETC.
6	POTATO and OTHER TUBERS	25	GLASSWARE, TABLEWARE and UTENSILS
7	MILK and MILK PRODUCTS	26	OTHER GOODS
8	MEAT, EGG and FISH	27	SERVICES
9	COFFEE, TEA and COCOA	28	MEDICAL CARE and HEALTH SERVICES
10	SPICES	29	PERSONAL TRANSPORT EQUIPMENT
11	OTHER FOOD	30	OPERATION OF PERSONAL TRANSPORT EQUIPMENT
12	BEVERAGES	31	PURCHASE OF TRANSPORT SERVICES
13	PAN and OTHER INTOXICANTS	32	COMMUNICATION
14	TOBACCO and ITS PRODUCTS	33	EQUIPMENT, PAPER and STATIONERY
15	HOTELS and RESTAURANTS	34	RECREATION and CULTURAL SERVICES
16	CLOTHING	35	EDUCATION
17	FOOTWEAR	36	PERSONAL CARE and EFFECTS
18	GROSS RENT and WATER CHARGES	37	PERSONAL GOODS NEC
19	ELECTRICITY	38	OTHER MISCELLANEOUS SERVICES

Source: From PFCE Statement, NAS, CSO.

Appendix 2: List of 40 Categories of Goods and Services including Goods and Services with only Intermediate Use

Ser. No	Goods and Services (Final and Intermediate Demand)	Ser. No	Goods and Services with only Intermediate Demand
1	Cereals and Bread	1	Natural Gas and Crude Petroleum
2	Pulses	2	Mineral Ores
3	Sugar and Gur	3	Organic and Inorganic Chemicals, Fertilizer and Pesticides, Synthetic Fibers, Resin, Other Chemicals
4	Oil and Oilseeds	4	Structural Clay Products, Cement, Construction
5	Fruits and Vegetables and Other Tubers	5	Ferrous and Non-Ferrous Products, Ferro Alloys, Hand Tools, Hardware
6	Milk and Milk Products	6	Agricultural, Industrial Machinery and Misc, Manufacturing, Water, Rail And Air Transport Equipment
7	Meat, Egg and Fish	7	Trade, Storage and Warehousing
8	Coffee, Tea and Cocoa	8	Public Administration
9	Spices, Pan and Other Intoxicants		
10	Other Food		
11	Beverages		
12	Tobacco and Its Products		
13	Hotels and Restaurants		
14	Clothing		
15	Footwear		
16	Gross Rent and Water Charges		
17	Electricity		
18	LPG, Kerosene, and Operation Of Personal Transport Equipment		
19	Other Fuel		
20	Furniture, Furnishing and Repair		
21	Refrigerator, Cooking, Washing Appliances, Etc.		
22	Glassware, Tableware and Utensils		
23	Other Goods		

Ser. No	Goods and Services (Final and Intermediate Demand)	Ser. No	Goods and Services with only Intermediate Demand
24	Serv. Inc. Rec. and Cult. Ser. and Pers. Eff.		
25	Medical Care and Health Services		
26	Personal Transport Equipment		
27	Purchase of Transport Services		
28	Communication		
29	Equipment, Paper and Stationery		
30	Education		
31	Personal Goods Nec		
32	Other Miscellaneous Services		

Source: From Input-Output Table Categories, CSO, MOSPI.

Appendix 3: Estimated Pvt. Final Consumption Expenditure (PFCE) in Tamil Nadu

SN	Head	Estimated PFCE (Rs. Crore)		
		2011-12	2012-13	2013-14
1	Cereals and Bread	19692	20107	21618
2	Pulses	3078	4001	4623
3	Sugar and Gur	2300	2517	2883
4	Oil and Oilseeds	2981	3622	4101
5	Fruits and Vegetables and Other Tubers	28070	31577	36126
6	Milk and Milk Products	17668	19930	23267
7	Meat, Egg and Fish	15278	18103	21148
8	Coffee, Tea and Cocoa	889	1203	1357
9	Spices, Pan and Other Intoxicants	4843	4725	5095
10	Other Food	2667	2973	3511
11	Beverages	9311	10342	11919
12	Tobacco and Its Products	6046	6855	7933
13	Hotels and Restaurants	9450	10250	11838
14	Clothing	19089	21030	24509
15	Footwear	2799	3148	3508
16	Gross Rent and Water Charges	66065	74629	86190
17	Electricity	2134	2597	2963
18	LPG, Kerosene, and Oper. Of Personal Transport Equipment	29855	35110	40511
19	Other Fuel	6061	7080	8256
20	Furniture, Furnishing and Repair	1497	1622	1836
21	Refrigerator, Cooking, Washing Appliances, Etc.	3751	3850	4386
22	Glassware, Tableware and Utensils	2745	2962	3410
23	Other Goods	2498	2847	3300
24	Serv. Inc. Rec. and Cult. Ser. and Pers. Eff.	10991	12345	14499
25	Medical Care and Health Services	12599	14035	15496
26	Personal Transport Equipment	6863	6957	8214
27	Purchase of Transport Services	38810	45524	52289
28	Communication	4926	5784	6325
29	Equipment, Paper and Stationery	6125	6357	7197
30	Education	5683	6276	6956
31	Personal Goods Nec	13888	17386	21260

SN	Head	Estimated PFCE (Rs. Crore)		
		2011-12	2012-13	2013-14
32	Other Miscellaneous Services	40649	49183	61942
33	Natural Gas and Crude Petroleum	0	0	0
34	Mineral Ores	0	0	0
35	Organic and Inorg. Chemicals, Fert. and Pesticides, Synth. Fibers, Resin, Other Chemicals	0	0	0
36	Structural Clay Products, Cement, Construction	0	0	0
37	Ferrous and Non-Ferrous Products, Ferro Alloys, Hand Tools, Hardware	0	0	0
38	Agr., Ind. Machinery and Misc, Manufacturing, Water, Rail And Air Transport Equipment	0	0	0
39	Trade, Storage and Warehousing	0	0	0
40	Public Administration	0	0	0
	Total	399301	454928	528468

Source: Estimated.

Appendix 4: Estimated Tax base for SGST in Tamil Nadu

(Purchases from Organ.Sector inc. investment exp. and government purchases and blocked input taxes)

Ser. No.	Head	Estimated Tax Base (Rs. Crore)		
		2011-12	2012-13	2013-14
1	Cereals and Bread	13871	14162	15229
2	Pulses	2347	3020	3481
3	Sugar and Gur	1708	1858	2123
4	Oil and Oilseeds	2195	2648	2994
5	Fruits and Vegetables and Other Tubers	21240	23886	27322
6	Milk and Milk Products	13408	15118	17641
7	Meat, Egg and Fish	12191	14430	16853
8	Coffee, Tea and Cocoa	675	899	1011
9	Spices, Pan and Other Intoxicants	4023	4003	4335
10	Other Food	700	780	919
11	Beverages	11	12	14
12	Tobacco and Its Products	128	144	167
13	Hotels and Restaurants	1389	1501	1733
14	Clothing	3310	3644	4247
15	Footwear	547	612	683

Ser. No.	Head	Estimated Tax Base (Rs. Crore)		
		2011-12	2012-13	2013-14
16	Gross Rent and Water Charges	25271	28552	32976
17	Electricity	7720	8920	10335
18	LPG, Kerosene, and Oper. Of Personal Transport Equipment	8	9	11
19	Other Fuel	5804	6768	7882
20	Furniture, Furnishing and Repair	106	116	131
21	Refrigerator, Cooking, Washing Appliances, Etc.	310	322	366
22	Glassware, Tableware and Utensils	507	547	630
23	Other Goods	637	725	840
24	Serv. Inc. Rec. and Cult. Ser. and Pers. Eff.	10129	11412	13368
25	Medical Care and Health Services	4146	4623	5106
26	Personal Transport Equipment	381	386	455
27	Purchase of Transport Services	41211	47971	55241
28	Communication	5013	5893	6466
29	Equipment, Paper and Stationery	5564	5953	6727
30	Education	7607	8598	9665
31	Personal Goods Nec	1656	2067	2528
32	Other Miscellaneous Services	37361	45197	56869
33	Natural Gas and Crude Petroleum	447	513	587
34	Mineral Ores	54	56	60
35	Organic and Inorg. Chemicals, Fert. and Pesticides, Synth. Fibers, Resin, Other Chemicals	360	400	455
36	Structural Clay Products, Cement, Construction	5433	6200	7164
37	Ferrous and Non-Ferrous Products, Ferro Alloys, Hand Tools, Hardware	1001	1134	1312
38	Agr., Ind. Machinery and Misc, Manufacturing, Water, Rail And Air Transport Equipment	1107	1281	1471
39	Trade, Storage and Warehousing	75	89	100
40	Public Administration	0	0	0
	Total	239648	274450	319493

Source: Estimated.

Appendix 5: Some Alternate Results Based on Simulations and Alternative Assumptions

A. RNR with a Single Rate

In Chapter 4, the RNR estimates are based on a multiple rate structure of GST. Instead, if only a single rate structure (SGST) rate is used, the RNR is expected to come down is indicated in Appendix Table 5A.

Appendix Table 5A: Single RNR

(Percent)

RNR	2011-12	2012-13	2013-14
With 2 percent CST and Entry Tax	10.0	10.9	9.6
With 4 percent CST and Entry Tax	11.2	11.9	10.6
With 2 percent CST without Entry Tax	9.2	10.1	9.0
With 4 percent CST without Entry Tax	10.3	11.1	10.0

Source: Estimates

B. Average RNR over the period 2011-12 to 2012-13

RNR is sensitive to the prevailing economic conditions and tax buoyancy in different years. That is why these change significantly from year to year. It is sometimes useful to consider the RNR as an average over a given period to average out year-wise difference. Appendix Table 5B gives the average RNR for the three year-period 2011-12 to 2013-14. This is obtained by summing up the estimated tax bases for the three years and the revenues that are to be neutralized. This gives a weighted average. The emerging average RNR should be interpreted as centered in the middle year, namely, 2012-13 given in Appendix Table 5B. However, this set of RNRs not much different from the arithmetic average of the yearly rates.

Appendix Table 5B: Average RNR Over the period: 2011-12 to 2013-14

(Percent)

RNR	Weighted average	Arithmetic average
With 2 percent CST and Entry Tax	16.2	16.2
With 4 percent CST and Entry Tax	18.7	18.8
With 2 percent CST without Entry Tax	14.4	14.4
With 4 percent CST without Entry Tax	16.9	17.0

Source: Estimated.

Chapter 5

GST IMPLICATIONS: KEY ISSUES AND SECTORAL ASPECTS

Sectoral Implications of GST

In this Chapter, we examine selected sectoral aspects and other important issues in the context of implementation of GST in Tamil Nadu with reference to the GST design consistent with the GST amendment bill (122ndconstitution amendment bill) presently being considered by parliament. We also examine the implications of altering certain features of the present bill like inclusion of alcohol for human consumption in GST. Some of sectors that are discussed in this context are: textiles, sugar, alcohol for human consumption, and petroleum products, automobiles and IT related services. Some of critical issues that are dealt with relate to implementation of state GST on imports and carry-forward of ITC to other states.

The entire GST design implicit in the constitution 122nd amendment bill (referred to as CAB 122, hereafter) needs to be examined with reference to three basic objectives of this tax reform. These are: production efficiency, consumption efficiency, and trade efficiency as described below.

GST in a Federal Country: Key Objectives and Pre-requisites

Designing and implementing a GST in a federal country must serve at least four objectives as discussed below.

a. Production Efficiency: Aspects of GST that are consistent with production efficiency relate to ensuring that no inputs or capital goods bear any tax so that all input allocation and technology decisions by the producers of goods and services can be taken without the consideration of any indirect tax load that they carry in their prices. This can be ensured in an indirect tax system only when the inputs and capital goods are provided input tax credit (ITC) throughout the value added chain so that production and technology decisions are taken on their genuine economic costs (opportunity costs). If this can be ensured throughout India, then location and allocation decisions by the producers can optimally take advantage of different resource endowments of different states.

b. Consumption Efficiency: Consumption efficiency can be ensured in the GST design by ensuring that (a) the destination principle is followed so that the tax is

levied and collected in the consuming (b) the inverse elasticity rule is followed in determining tax rates, (c) negative externalities of pollution are neutralized, and (d) demerit goods that are hazardous to individual's health are taxed at rates that are high enough to discourage consumption.

c. Trade Efficiency: This has two aspects relating to international and domestic trade. The feature of GST that ensures international trade efficiency is zero-rating of exports, which allows global production efficiency so that countries can specialize according to their relative comparative cost advantage. The same principle is applied to the domestic economy by ensuring that when goods and services are exported to other states, they bear no tax of the origin state. This feature therefore complements the objective of production efficiency. But trade efficiency extends beyond manufacturing or production to cover value-added stages in trading particularly, covering transportation, warehousing, marketing and retailing. This is the reason why the GST design should ensure a seamless all-India market so that fiscal barriers do not become a consideration in the decisions affecting transport, storage etc. Trade efficiency ensures efficient markets allowing prices to converge across the common market. Any price differences across states and regions would then be due only to transport, storage, and retailing costs and not due to any tax load.

d. Federation-Preservation: Promoting market-efficiency to which these three objectives are not enough. The basic feature of the Indian federation must also be preserved and promoted while designing the GST. In the context of taxation, this basic feature is separation of taxation powers so that revenue autonomy to all the tiers of government can be ensured. Revenue autonomy is not just preservation of revenues but the freedom to fix tax rates and define tax bases within the constitutionally permitted tax bases. This freedom should be available to all the tiers of government who have expenditure responsibilities. It can be seen that several features of the CAB 122, violate all of these efficiency requirements. There are other infirmities also.

Observations on Constitution (122nd) Amendment Bill

a. Definitional Issues: There are several features of the Constitution Amendment Bill (CAB) that imply shortcomings in the implicit design of GST and fall short of the objectives of GST in ensuring production, consumption, and trade efficiency. In addition, there are other definitional issues also.

1. Definition of Goods

a. Goods are defined in the constitution under article 366 of the constitution as follows:
b. "goods" includes all materials, commodities, and articles.

2. Definition of Services
Services are defined in CAB 122 under clause 14(26A) as
"Services" means anything other than goods.

This way of defining goods and service to each other's mutual exclusion is quite unsatisfactory since the need for a GST arose because often it is not possible to distinguish between goods and services. More pertinently, if land, real estate, and property are not materials, commodities and articles, can they then be included as if they were services? The term 'anything' can lead to quite a number of unanticipated disputes. Taken together, the goods and services tax is then a tax on 'anything'.

3. Definition of Goods and Services Tax

Under clause 14 of CAB 122, the goods and services tax is defined as:
"goods and services tax" means any tax on supply of goods, or services or both except taxes on the supply of the alcoholic liquor for human consumption;

The term 'any tax' tax means that any existing tax if it involves supply of goods and services would be redefined as goods and services tax. There may also be new taxes on ' the supply of anything'. All sales involve supplies. But all supplies do not imply sales. So sales taxes would be redefined as GST. But central excise is levied on manufacturing. Manufacturing by itself is not a supply. The term 'supply' has however not been defined under article 366 of the constitution as it stands and even after amendments to article 366 proposed in CAB 122.

b.Input Tax Credit: Not Integral to CAB 122: The term 'input tax' or 'input tax credit' is not integral to CAB 122 as these are not used anywhere in the amendment bill. The way the goods and service tax has been defined in the proposed constitutional amendment therefore need not be a value added tax. It will be entirely dependent on the jurisdictions that implement fully or partially the principle of 'input tax credit'. The centre and states would be free to levy the tax on supplies or turnovers, or limit the input tax credit up to defined limits, or keep certain goods and services out of process of ITC. The input tax credit mechanism will have to be ensured through the central GST Acts and Rules and through the

model acts and rules prepared by the GST council. In implementing the State VAT, different states have followed different practices of limiting the ITC in different ways. There is nothing in CAB 122 to ensure ITC. A proper valued added tax on the other hand should ensure full ITC.

a. **Dynamics of Voting in GST Council:** The dynamics of voting in the GST council is quite unpredictable. But two features are notable.

CAB 122 under the proposed amendment to article 366 clarifies that the Union Territories with legislature will be treated as States in GST matters. With 2 members of the centre, 29 states and two Union Territories with legislature, there will be 33 members. Two central members will have a weight of 33.33 percent. The 33 state members will have a weight of 2/3rd, so each member's vote will individually be equal to 0.666.

Decisions in the GST Council will be taken on the basis of a 3/4rth majority. So, the centre government with a 1/3rd weight can always veto any proposal. To carry through any proposal, minimum needed would be centre plus 20 state votes. To defeat any proposal, centre by itself would be enough. Any group of states of a size of 12 votes would also be able to defeat any proposal. Thus the eleven special category states together with the UTs would also effectively have a veto power. The dynamics will become extremely complex when centre abstains and states get divided between two groups such as 'net losers' and 'net gainers' and the voting takes up a subject like compensation.

Turnover Tax on Inter-state Supplies

Under clause 18, the CAB 122 provides as follows:

18. (*1*) An additional tax on supply of goods, not exceeding one per cent. in the course of inter-State trade or commerce shall, notwithstanding anything contained in clause (1) of article 269A, be levied and collected by the Government of India for a period of two years or such other period as the Goods and Services Tax Council may recommend, and such tax shall be assigned to the States in the manner provided in clause (2).

(*2*) The net proceeds of additional tax on supply of goods in any financial year, except the proceeds attributable to the Union territories, shall not form part of the Consolidated Fund of India and be deemed to have been assigned to the States from where the supply originates.

(*3*) The Government of India may, where it considers necessary in the public interest, exempt such goods from the levy of tax under clause (1).

(*4*) Parliament may, by law, formulate the principles for determining the place of origin from where supply of goods take place in the course of inter-State trade or commerce.

Although a temporary provision for a period of two year, it may generate such attractive revenues for the states that they may eventually persuade themselves to continue it indefinitely. This tax violates all the efficiency pre-requisites that justify GST and would therefore nullify the very *raison d'être* of GST. Already Gujarat has voiced its concern that the two year period is not enough.

Some of the specific difficulties with this provision are discussed below.

First, the term supply can be interpreted to cover consignment transfers that are not sales but supplies. This wide interpretation will make the 1 percent tax much larger in volume than the 2 percent CST, since stock transfers are much larger in volume than the inter-state sales. This would give rise to significant valuation issues.

Secondly, the magnitude of cascading linked to this turnover tax would become far more than at present since no ITC will be given against this tax.

Third, it would lead to production inefficiency because people will be forced to work on minimizing multiple movements of goods in and out of state, which may otherwise be required depending on the nature of production process since each time a supply is made, a taxable event would have happened.

Fourth, the service industries will also be adversely affected. A good example is IT services where provision of services requires use of goods in the form of equipment and parts, which if procured from another state, even if located across the border, would attract this 1 percent tax adding to the cost of the service.

In fact, procuring goods from a neighboring country may turn out to be more competitive since that would not be subjected to this additional tax compared to procuring these from a neighboring state.

Thus, this 1 percent tax would be a major violation of the production efficiency and trade efficiency pre-requisites on the basis of which GST as a tax reform would be

justified. On the other hand, the purpose for which it has been proposed would also not be satisfied since it is a temporary measure whereas compensation is a more permanent issue.

Compensation Issues

In fact, the centre may be trying to get away with minimum compensation since the compensation claims would be very small in the first two years because of the 1 percent tax. After that it would be reducing the amount of compensation. On the period of compensation, the Fourteenth Finance Commission has recommended as follows: '…**the revenue compensation, in our view, should be for five years. It is suggested that 100 per cent compensation be paid to the States in the first, second and third years, 75 per cent compensation in the fourth year and 50 per cent compensation in the fifth and final year.'** For the first two years the amount of compensation will be limited because of the 1 percent tax. Compensation will be maximum in the third year and after that it will taper off.

There are four core issues in regard to GST linked compensation. First, the overall amount involved; second, the methodology of determination of the amounts for individual states; third, the mechanism of transfers; and fourth, for how long should this process should be continued.

The overall amount has to be determined with reference to the GST rate, consisting of the sum of the SGST and CGST rates, and its relationship with the revenue neutral rate (RNR). This is so because the central government does not have any other buoyant sources of revenue, which can be spared for compensation to the states. This means that the amount of compensation required should be included in estimating the overall RNR for the Centre. This has three infirmities. First, it raises the overall GST rate, and second it gives a permanent gain to the centre since the compensation mechanism is proposed to be for only five years while the extra rate in Centre's GST would result in additional revenues for the centre indefinitely.

Third, a compensation mechanism that works through the centre is an inefficient mechanism. This can be explained as below. The RNR is bound to be different for the centre, the states considered together, and individual states. The centre would be a net gainer if the CGST rate is higher than the centre's RNR. If the SGST rate is fixed such that it gives the same revenue as is presently being raised under the state taxes to be subsumed in it, it will be equal to the RNR for all states considered together. Assuming

that the SGST rate is fixed to be equal to all-state RNR, states can then be divided into two parts: net gainers and net losers. Since compensation cannot come from the net gainers to the net losers, it will have come from the centre. The gains to the net gainers will be permanent. After the compensation period is over, the centre would also become a net gainer. On the other hand, the net losers will be compensated for temporary period and after that their losses would become permanent. Meanwhile the GST rate would have become higher because gainer states cannot transfer to loser states, making thinking about compensation in this manner quite inefficient.

The 1 percent tax on turnover can potentially allow the centre to get away without paying any compensation. It is quite possible that for most states if this 1 percent tax generates revenue which is larger than the present 2 percent CST since the volume of consignment transfers is much larger than the inter-states sales. By extending this turnover tax to a third year, and some states may even ask for an indefinite extension, centre may get away with hardly paying any compensation. Another uncertainty will be caused by the application of band rates. Band rates may differ from state to state also across goods and across services, making estimation of revenue loss that is fair across states extremely difficult. The possibility of some of the band rates being justifiably made not subject to ITC will also add uncertainty in the estimation of compensation amounts.

Under all circumstances the amount of compensation will depend on an estimate of loss. Since the old system will not be there actual loss will need to be estimated. All estimates can be subject to disputes. Past trends and patterns do not help since tax revenues depend on current prices and growth. The mechanism of dispute resolution is not clear and centre may raise objections to any set of estimates and the process of resolving the dispute may be a long drawn and costly process.

The provision of compensation has also a moral hazard in the sense that collection of tax revenues depend not only on objective factors like tax rates, exemption, prices, and real economic activity but also on the tax effort undertaken by the authorities administering the tax. Tax levels and compliance efforts are very different across states.

A better method of making up for the anticipated revenue loss would be to retain revenue autonomy for the states allowing them to levy supplementary sales tax on demerit, polluting, and luxury items so as to make up for their anticipated loss. This supplementary sales tax need not be rebated. It is consistent with consumption efficiency

since negative externalities of pollution are being internalized. It is consistent with production efficiency since ITC is being given to the extent of input tax, which is equal to the GST rate. It is only in the polluting inputs, that the rate would contain a non-rebatable part but that would be justified since the burden will be passed on the final consumer who must pay under the 'polluter pays principle' since it is the consumer of the polluting good or the good that uses polluting inputs.

The higher rate on demerit goods would be justified since consumption of these goods need to be discouraged and in general their demand elasticities would low. A higher tax rate would be justified on account of the inverse elasticity rule ensuring consumption efficiency. The revenue compensation would also be permanent. Furthermore, for the reason of compensation, the overall GST rate would not need to be hiked, making this mechanism efficient, providing a long term solution while retaining the revenue autonomy of the states.

Change in Structure of ITC Blockage

With several exclusions like petroleum products, tobacco, alcoholic liquor, and electricity, the resultant GST may not be much of an improvement over the current position of ITC. Two cases can be distinguished. In the first case, we can consider the situations where the ITC blockage presently exists but would be eliminated under GST. These would be situations where the states would lose revenue. In the second case, we can consider situations where ITC blockage will continue. In Table 19, we consider the change in structure of ITC blockage in the present system and under GST with the implicit design in CAB 122.

In Table 20, we consider cases where ITC will continue to be blocked under GST as at present. There are a large number of situations where cascading will continue under GST and therefore much of the anticipated efficiency benefits from GST will not come through.

Consequences of Bringing Service Tax under SGST

The estimated service tax base consists of the following components:

(i) Private final consumption expenditure on services of non-exempt sectors purchased from the organized sector representing registered dealers;

Table 19: Cases where Present ITC Blockage will be discontinued

Tax	Current mix of central excise, sales and service taxes and cesses and surcharges	Under GST
Service tax on services used in production of goods	No ITC of service tax in sales tax/VAT	Service tax replaced by GST, ITC given
Sales tax on goods used in the production of services	No ITC of sales tax in service tax	Sales tax replaced by GST, ITC given
Central excise on petroleum products	No ITC of central excise in central excise and sales tax	Central excise tax replaced by GST, ITC given
Sales tax paid on goods used in the production of services	No ITC of sales tax/State VAT in service tax	Sales tax replaced by GST, ITC given
Central excise on goods used in the production of buildings/other constructions	No ITC of central excise in central excise and sales tax	Sales tax replaced by GST, No ITC given
Sales tax on goods used in the production of buildings/other constructions	No ITC of sales tax in central excise and sales tax	Sales tax replaced by GST, No ITC given
Service tax on services used in the production of buildings/other constructions	No ITC of service tax in central excise, service tax, and sales tax	Service tax replaced by GST, No ITC given
Cesses and surcharges	No ITC in central excise, service tax, and sales tax	Cesses and surcharges merged in GST; ITC given in GST when goods and services used as inputs
Central sales tax	No ITC in central excise, service tax, and sales tax	CST abolished, equivalent amount absorbed in GST; No GST when goods and services cross state borders

Source: Compiled by Research Team

Table 20: Cases where Present ITC Blockage will continue under GST

Tax	Current mix of central excise, sales and service taxes and cesses and surcharges	Under GST
Sales tax on petroleum products	No ITC of sales tax in central excise and sales tax	No ITC
Sales tax on alcoholic liquor for human consumption (sales tax)	No ITC of sales tax in sales tax or central excise	No ITC
Central excise/service tax on goods and services used as inputs to petroleum products	No ITC of central excise/service tax in Central excise/service tax and sales tax	No ITC
Sales tax on goods and services used as inputs to petroleum products	No ITC of sales tax in central excise, service tax, and sales tax	No ITC
Central excise/service tax on goods and services used as input in alcoholic liquor for human consumption	No ITC of central excise/service tax in Central excise/service tax and sales tax	No ITC
Sales tax on goods and services used as input in alcoholic liquor for human consumption	No ITC of central excise; No ITC of sales tax	No ITC
Central excise/service tax on goods and services used as inputs in production and sale of electricity	No ITC of central excise/service tax in electricity duty	Central excise /service tax replaced by GST, No ITC in electricity duty
Sales tax on goods and services used as input in production and sale of electricity	No ITC of sales tax in electricity duty	Sales tax replaced by GST, No ITC in electricity duty
Electricity duty	No ITC of electricity duty in central excise, service tax and sales tax	No ITC of electricity duty in GST
Central excise paid by below threshold dealers on their purchases from registered dealers	No ITC of central excise	Central excise replaced by GST, No ITC of GST,
Sales tax paid by below threshold dealers on their purchases from registered dealers	No ITC of sales tax	Sales tax replaced by GST, No ITC of GST, IT blockage will go up if threshold limit is lifted up

Central excise paid by dealers availing compounding schemes	No ITC of central excise	Central excise replaced by GST, No ITC of GST
Sales tax paid by dealers availing compounding schemes	No ITC of sales tax	Sales tax replaced by GST, No ITC of GST, ITC blockage will increase depending on number of dealers availing of the scheme.
Central excise paid by dealers of items exempt from central excise on their purchases of taxed items from registered dealers	No ITC of central excise	Central excise replaced by GST, No ITC of GST
Sales tax paid by dealers of items exempt from sales tax on their purchases of taxed items from registered dealers	No ITC of sales tax	Sales tax replaced by GST, No ITC of GST

Source: Compiled by Research Team

(ii) Government final consumption expenditure on services, representing purchases of the state government and central government purchases within the state with respect to non-exempt sectors purchased from the organized sector;

(iii) Intermediate demand (blocked input tax) with respect to taxable inputs purchased from the organized sector for producing exempt services; and

(iv) Intermediate demand (blocked input tax) with respect to taxable inputs purchased from the organized sector for producing services provided by the unorganized sector.

The overall base is to be divided into different parts: share of base that will be exempt, share of tax base that will be subject to the lower rate, share of base that will be subject to the standard rate. Information on determining these shares is needed from the state government for the estimation of the revenue neutral rate.

The anticipated gains from the sharing of the service tax base to the states would be considerably overstated if the revenues from the ITC blockage of services used as inputs into goods and goods used as into services are not taken into account since under GST these ITC blockages will be eliminated. Most services are provided as B-to-B transactions and would not provide any net tax revenues. One clue to this effect can be obtained by examining the impact on the Union excise duties after the provision to give ITC on service tax on inputs used in producing goods. After this provision, the buoyancy and growth rate of the Union excise duties went down and although the service tax gave

higher buoyancy, much of it was neutralized by the lower buoyancy of the Union excise duties.

If we estimate the existing tax base on the basis of the revenue approach the estimated VAT tax base for Tamil Nadu for 2013-14 is close to Rs.245230 crore. Bringing in services is estimated to add about 30 percent to this base (Rs. 742360 crore). This is net of ITC adjustments discussed earlier. Significant portions of services like health and education are likely to be exempt. The revenue impact can only be estimated by delineating the rate and exemption structure regarding services.

Possibility of levying Import SGST by State Governments

In terms of possibility of levying and administering SGST on imports by the state governments, it seems that this may not be permitted. In the 122nd constitution amendment bill, article 246 clause (2) provides that

(2) Parliament has exclusive power to make laws with respect to goods and services tax where the supply of goods, or of services, or both takes place in the course of inter-State trade or commerce.

Further, under clause 9, it is provided under article 269 that

"269A. (1) Goods and services tax on supplies in the course of inter-State trade or commerce shall be levied and collected by the Government of India and such tax shall be apportioned between the Union and the States in the manner as may be provided by Parliament by law on the recommendations of the Goods and Services Tax Council.

Explanation.—For the purposes of this clause, supply of goods, or of services, or both in the course of import into the territory of India shall be deemed to be supply of goods, or of services, or both in the course of inter-State trade or commerce.

Thus, imports will be treated like supplies in the course of inter-state trade and commerce on which IGST is to be levied and administered. As such the import GST would be an IGST to be levied and administered by the central government. The revenue of the SGST component of the import IGST will accrue to the state government under the destination principle on the basis of place of supply rules. The place of supply rule and the distribution mechanism will both be determined by the central government. It is further provided under clause 9 of the proposed constitutional amendment:

(2) Parliament may, by law, formulate the principles for determining the place of supply, and when a supply of goods, or of services, or both takes place in the course of inter-State trade or commerce.".

Threshold Limits and Compounding Provisions

The present threshold limit for registration with VAT authorities in the States varies in general from Rs. 5 to Rs.10 lakh. In the case of central excise the threshold level for manufacturing units is Rs.1.5 crore. For service tax, the threshold level is Rs.10 lakh. In the GST discussions there are proposals to increase the threshold limit for the states to Rs. 25 lakh and reduce for the Union excise duty from the existing level to Rs. 25 lakh. It is difficult to exactly quantify the revenue impact of these changes primarily because of the inclusion of service providers in the registration process of the state governments.

There would also be several registrants who would be supplying both goods and services. In general it can be said that states may be net losers on this account because some of the existing registrants with a turnover between Rs.10-25 lakh would be deregistered. But the margin of revenue loss may be small (see Chart 1 for Tamil Nadu). There would also be an incentive to fragment units to remain just below Rs. 25 lakh. On the other hand, the central government may gain because they will have a larger base of dealers in their network. Dealers who are below the threshold limit will not be able to claim ITC on taxes paid on their inputs.

Compounding can be revenue neutral since the compounding rate can be calibrated to generate the same amount of revenue as expected from the dealers who are being offered the compounding scheme. Table 21 proposed threshold and compounding limits suggested by various bodies that have deliberated on the matter. It is also possible that dealers below the threshold can be given the option to voluntarily register with to claiming ITC.

Table 21: Threshold Limits

Empowered Committee	Task Force (13th FC)	13th Finance Commission	CAB 122
SGST: Gross annual turnover of Rs.10 lakh both for goods and services for all the States and Union Territories CGST: Separate thresholds for goods and services Goods: Rs.1.5 crore and the Services: Rs. 10 lakh.	Threshold: Annual aggregate turnover (excluding both CGST and SGST) not to exceed Rs.10 lakh. Those below the threshold limit may register voluntarily Threshold exemption limit should be uniform for both CGST and SGST and across States. Small dealers with annual aggregate turnover of goods and services between Rs.10 lakh to Rs.40 lakh may opt for a compounded levy of one percent.	A threshold of Rs. 10 lakh and a composition limit of Rs. 40 lakh Sales of goods of local importance will fall within these threshold limits, thus keeping them out of the ambit of GST.	GST Council to decide.

Source: Compiled by Research Team

In Chart 4, the share in revenue of dealers according to turnover limits is depicted for Tamil Nadu. The share in revenue in the range of Rs.10 to Rs.25 lakh is close to 4 percent with respect to data for 2013-14. This revenue will be lost but only the blocked ITC would provide revenue for this group under GST.

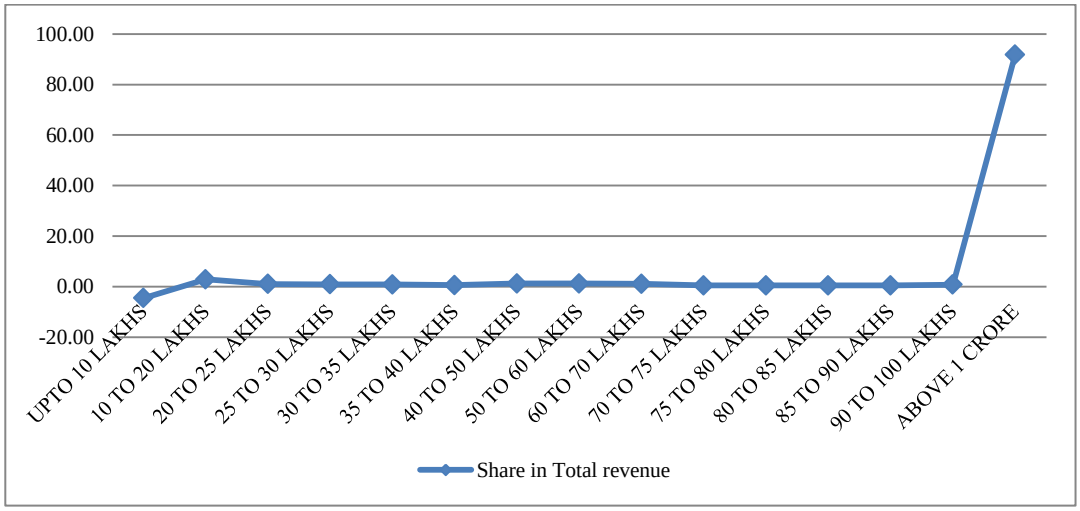


Chart 4: Share in Revenue according to Turnover

For the case of compounding, the revenue share in the range of Rs.25-Rs.50 lakh turnover is 3.65 percent. A compounding rate can be calibrated so that if these dealers opt out, an equivalent amount can be raised. This rate would be with respect to present output tax minus anticipated blocked ITC.

These observations are subject to changes that may be brought about after service providers and provides of both goods and services are required to register with the state authority.

Input Tax Credits for Inter State Supplies under GST

In the case of inter-state supplies under GST, these supplies will be subjected to IGST, which will be administered by the central government. For goods and services under GST, as these leave the boundaries of a state, SGST should be zero-rated. The IGST on final sales levied in the destination state will consist of CGST that will go to the centre and SGST that will go the consuming state. Any SGST that has been collected by the origin state will have to be refunded to the IGST authority who will refund it to the dealers in the destination state who would have paid the ITC to the dealers in the origin state from whom they made the purchases.

In the case of Tamil Nadu, ITC adjustment will have happened both ways. For consumption within Tamil Nadu, where its dealers may have purchased goods and

services from other states, IGST will give ITC refunds after collecting it from the state governments of these other states who would have collected it in the first place. At the same time, Tamil Nadu government will have to give ITC refunds for exports to other states of goods and services in respect of which it might have collected SGST on inputs. Both these payments and credits would be done as book entries and the net payment due to any state will be transferred to the concerned state by the IGST authority.

Being a net exporting state, Tamil Nadu will have more payments to make that credits to receive and there would be net loss on this account, which will be equal to :

SGST rate*[Value of exports to other states from Tamil Nadu]- SGST rate*[Value of imports from other states into Tamil Nadu]

Tamil Nadu being an industrial state will be importing relatively more inputs to production that may be either exempt of bearing the lower SGST rate, while it will be exporting mostly finished goods bearing the standard SGST rate except when these goods are goods of mass consumption such as food items and textiles.

Bringing Alcoholic Liquor for Human Consumption under GST

In CAB 122, alcoholic products for human consumption has been kept out of the ambit of GST by the definition of goods and services tax itself by virtue of clause 12 A of the Bill, which reads as follows:

'(12A) "goods and services tax" means any tax on supply of goods, or services or both except taxes on the supply of the alcoholic liquor for human consumption;'

Keeping alcoholic products out of GST has implications for production efficiency, relative ambit of taxation of the central and state governments, and it may have revenue implications under certain conditions.

Production efficiency is affected because GST on inputs that go to make alcoholic products would suffer blockage of ITC. Some of the goods and services important in this respect are molasses, sugar, bottles made of glass or plastic, chemicals, paper, machinery and equipment, and some of the services that may be inputs are printing, transportation, etc.

The relative ambits of centre and state governments will be affected in the sense that at present alcoholic products for human consumption are under the exclusive ambit of the state governments both for the levy of excise duty and sales tax but under GST while excise duty on these would be under the exclusive ambit of the state governments, sales tax would be replaced by GST which will be under the concurrent jurisdiction of the central and state governments. It may be noted that molasses which is an important ingredient for the production of alcoholic products is subject to central excise even today and will be part of GST. If the CGST is zero-rated, centre's sharing of the tax base provided by alcoholic products can be avoided but the issue arises as how ITC against CGST paid on inputs to alcoholic products would be given by the central government. One option is to allow centre a low special rate of CGST for this purpose calculated on the basis of inputs to alcoholic products other than molasses for this purpose. Such a rate can be very small such as 3 to 4 percent, which can be considered as a special rate. This can be specified in the constitutional amendment as ceiling rate for the CGST on alcoholic liquor for human consumption thereby ensuring that the centre cannot use this power for revenue gains.

There would be revenue implications if alcoholic products are subjected to the standard GST rate since at present in almost all states, the VAT/sales tax rates are significantly higher, this being a demerit good. The only way to include alcoholic liquor for human consumption is to allow the states to levy a sales tax over and above the SGST standard rate which is non-rebatable. The SGST part would be adequate to take care of the ITC on inputs after which a balance will be left. The supplementary non-rebatable tax can then be calibrated to cover the total revenue presently being earned by any state government so that there would be no revenue gain or loss to any state on this account. The supplementary levy is justified on economic grounds because alcoholic products are demerit goods and have negative externalities and are hazardous to health.

This way three objectives can be satisfied jointly: production efficiency since ITC for both CGST and SGST sides will be complete for the whole chain; consumption efficiency since negative externalities are neutralized through the non-rebatable levy; and revenue autonomy for the states since the instrument of the non-rebatable levy will be entirely in their hands.

In such a mechanism, states will have full and exclusive control on the production and distribution of alcoholic liquor. This will be consistent with production efficiency of the sector without affecting the ambit of states in controlling the sector. It

would not result in net revenue gains to the centre but it will ensure revenue autonomy for the states as well as revenue neutrality. They will still have exclusive powers to levy excise duty on alcoholic products.

Keeping alcoholic products for human consumption out of the ambit of GST means continuation of cascading through the CGST side for the CGST on molasses and other inputs. Cascading continues from the SGST side also for SGST on molasses and other inputs. In both cases, machinery and equipment will suffer blockage of ITC.

Bringing Petroleum Products under GST

Five specific petroleum products have been kept out of the ambit of both CGST and SGST through a device different from the one used for alcoholic products for human consumption. These products have been listed in two lists pertaining to central and state governments under schedule 7 of the constitution.

With respect to the central government, the 122nd amendment bill proposes under clause 17 of the bill:

In the Seventh Schedule to the Constitution,—

(*a)* in List I — Union List,—

(i) for entry 84, the following entry shall be substituted, namely:—

"84. Duties of excise on the following goods manufactured or produced in India, namely:—

(a) petroleum crude;

(b) high speed diesel;

(c) motor spirit (commonly known as petrol);

(d) natural gas;

(e) aviation turbine fuel; and

(f) tobacco and tobacco products.";

(ii) entries 92 and 92C shall be omitted;

A comparable list is included for the state governments. In their case, the relevant para is as follows:

(b) in List II — State List,—

(i) entry 52 shall be omitted;

(ii) for entry 54, the following entry shall be substituted, namely:—

"54. Taxes on the sale of petroleum crude, high speed diesel, motor spirit (commonly known as petrol), natural gas, aviation turbine fuel and alcoholic liquor

for human consumption, but not including sale in the course of inter-State trade or commerce or sale in the course of international trade or commerce of such goods.";

Thus, five petroleum products, namely crude petroleum, petrol, natural gas, and aviation turbine fuel are items where for the central government can levy and excise duty and state governments can levy a sales tax. In addition, a CGST and SGST can be levied constitutionally provided the GST council includes these goods in the list of goods on which GST is to be levied. In other words, both CGST and central excise duty and SGST and sales tax on these five petroleum products can be levied constitutionally.

Within the bill it is provided that The Goods and Services Tax Council shall recommend the date on which the goods and services tax be levied on petroleum crude, high speed diesel, motor spirit (commonly known as petrol), natural gas and aviation turbine fuel.

In the Statement of Objectives and Reasons attached the amendment bill under clause 2, that it is clarified that GST Council can notify a date when these petroleum products can be subjected to GST. The relevant entry is as follows:

> " In case of petroleum and petroleum products, it has been provided that these goods shall not be subject to the levy of Goods and Services Tax till a date notified on the recommendation of the Goods and Services Tax Council."

Production of petroleum products from crude oil is highly capital intensive activity. Transport and inter-state movement of petroleum goods is also highly capital inputs. Petroleum exploration is also highly capital intensive. The machinery and equipment used for these purposes and inputs used in the petroleum production process are costly. Costs involved in this sector increases significantly if equipment, machinery and inputs used in this sector carry any tax load. Petroleum itself is an input into many sectors. Cascading of tax in this sector is costly and inefficient. Inclusion of the five listed petroleum products along with others is therefore consistent production and trade efficiency objectives.

It may be noted that all petroleum products other than these five like lubricants etc will be subjected to GST. Under CAB 122, the petroleum products will be subjected to a mixed tax regime where some petroleum products will be under GST and some not for

an undefined time. All inputs in the value added chain other than these five will be subject to ITC blockage and cascading, implying production inefficiency.

But production and use of petroleum products leads to pollution. Thus, for ensuring consumption efficiency, we need a supplementary non-rebatable tax. This can also generate adequate revenue for the central and state governments through central excise and sales as already provided in the CAB 122. For the petroleum products, GST can co-exist with central excise and sales tax. The latter should be non-rebatable.

In terms of revenue implications, even when these are brought under GST, the central excise and sales tax rates over and above the GST can and should be calibrated to make the transition revenue neutral. If the existing central excise and sales tax rate were to apply over and above the CGST and SGST rates, there will be significant increase in prices.

ITC will however not be available for the central and sales tax parts for these five products whether these are used for production or consumption purposes. ITC for GST on inputs for the production of these products will however be available when these are subjected to GST. Thus, bringing these into GST satisfies production efficiency since for their own production GST is not blocked, consumption efficiency since being polluting goods negative externalities are neutralized by the non-rebatable central excise and sales tax, and revenue-neutrality, since the sales tax and excise duties can be calibrated to keep these revenue neutral. Given their revenue importance, these provide an important dimension to states' revenue autonomy. This arrangement can simultaneously satisfy production, consumption, trade, and revenue autonomy requirements of a designing a proper GST for India's federal context.

GST and Electricity Duty

States are empowered to levy electricity duty under a distinct constitutional power assigned to them in Schedule 7 of the constitution under entry 53 of the State List, which specifies levy of 'taxes on the consumption or sale of electricity'.

Electricity is key input in all production activities of goods as well as services as well in trade and transport. It is also directly used for final consumption. Its tax treatment is of crucial importance to production efficiency. The production of electricity itself is highly capital-intensive. Thus ITC for capital goods would augment investment in this sector. It is used by both the organized and the unorganized sectors.

The matter as to whether electricity is a good or service has been clarified by courts. Similarly, the special nature of inter-state sales of electricity through transmission lines has also been considered at length by the courts.

Accordingly, electricity is to be treated as a good and states have currently exclusive power to tax electricity. It is settled with the pronouncement of the Supreme Court in Commissioner of Sales Tax, Madhya Pradesh, Indore Vs. Madhya Pradesh Electricity Board, Jabalpur- 1969 (2) SCR 939 that electricity is goods. The definition of goods as given in Article 366 (12) of the Constitution was considered by this Court and it was held that the definition in terms is very wide according to which "goods" means all kinds of moveable property.

The term "moveable property" when considered with reference to "goods" as defined for the purpose of sales-tax cannot be taken in a narrow sense and merely because electrical energy is not tangible or cannot be moved or touched like, for instance, a piece of wood or a book it cannot cease to be moveable property when it has all the attributes of such property. It is capable of abstraction, consumption and use which if done dishonestly is punishable under Section 39 of the Indian Electricity Act, 1910. If there can be sale and purchase of electrical energy like any other moveable object, the Supreme Court held that there was no difficulty in holding that electric energy was intended to be covered by the definition of "goods".

Hence it falls under both Entry 53 and Entry 54 of the Indian constitution. Entry 53 gives power to the state to tax the sale and consumption of electricity while Entry 54 gives power to the state government to levy a tax on the sale of goods. However Entry 54 is further subject to the provisions of Clause 92A according to which the centre has the exclusive right to levy "taxes on the sale or purchase of goods other than newspapers, where such sale or purchase takes place in the course of inter-state trade or commerce." Hence any sale of electricity outside the state is subject to the central legislation which at present would be the Central Sale Tax Act, 1972.

Another significant characteristic of electric energy is that its generation or production coincides almost instantaneously with its consumption. Courts have held that these properties of electricity as goods are of immense relevance as this implies that Entry 53 should therefore be read as 'taxes on the consumption or sale for consumption of electricity'. Courts have also held that the interstate movement of electricity is pursuant to contracts of sale even if the supply happens within a state as soon as

electricity is transmitted. Such sales can be held only as inter-state sales. Thus a state can tax only electricity that is consumed or distributed for consumption within the state and a consumer should be defined as such by the relevant electricity duty act. Otherwise the definition of a 'consumer' would be rendered ultra virus of Articles 286 and 269 of the Constitution read with Section 3 of the Central Sales Tax Act, 1956.

These aspects of electricity imply that the levy of GST supplemented by an electricity duty in the originating states would be ideal and consistent with production, consumption, trade and revenue autonomy objectives. Interstate movement of electricity would require levy of IGST. A special rate of CGST would be called for to just neutralize the ITC for CGST levied on capital goods and other inputs that are required to produce electricity. Otherwise, GST taxation should ensure that the tax revenue accrues to the state where final consumption takes place.

The CAB 122 does not mention electricity duty explicitly. Within the broad definition of GST being leviable on 'anything' a GST on electricity can be levied even if the electricity duty can continue to levied over and above GST under entry 53 of the of the State List under the seventh schedule to the constitution. In CAB 122, provision has been made to delete entries 52 and 55, and entries 54 and 62 have been modified but entry 53 relating to electricity duty has been left untouched. At the same time, if states want a specific exclusion of electricity from the purview of GST, such an explicit exclusion will have to be provided within the CAB.

Production of clean energy is highly capital-intensive. Ensuring that capital goods and inputs that are used in the production of clean energy do not bear any load of CGST and SGST. This can only be done by bringing electricity under GST. Transmission and distribution of electricity are also highly capital intensive and the same argument applies. From the viewpoint of production efficiency its inclusion in GST is desirable. But production of electricity is also a polluting activity. From the viewpoint of consumption efficiency, its non-rebatable taxation is desirable. Both objectives can be met by subjecting it to GST and continue the levy of electricity duty, which can remain under the exclusive jurisdiction of the states.

Textiles

The textile industry has considerable significance for the Tamil Nadu economy both because of the contribution that makes to Tamil Nadu's GDP and the employment it

offers. Taxation of the textile sector will be significantly recast with the implementation of the Goods and Services tax (GST).

The textile industry consists of a large number of small enterprises and a small number of large enterprises where the organized and unorganized sectors integrally coexist. The share of the decentralized sector has been increasing in recent years as compared to the mill sector. The textile industry is characterized by large inter-state movements both in respect of inputs and finished products. It also draws inputs from many other sectors consisting of both goods and services including dyes and chemicals, petroleum products and transport services.

The production cycle of the textile industry starts from raw materials such as cotton, jute, wool, silk, and in the case of synthetic textiles from specific petroleum products. Natural fibres like cotton, jute, wool, silk are spun into yarn while man-made staple fibres and filament are processed from petroleum products. While man-made staple fibres are spun into yarn, man-made filaments forming a continuous thread are directly used as yarn. These yarns are then either woven or knitted into fabric which is finally converted into apparel and home textile products. Technical textile products can be manufactured from fiber, yarn or fabric stage.

Yarn can either be spun yarn or filament yarn. Yarn produced from staple fibre is called spun yarn while filament yarn is in the form of a continuous thread. Major filament yarns produced in India are: viscose, polyester, nylon and polypropylene. Viscose is used to make viscose filament or rayon, which is commonly used in dresses, linings, shirts, shorts, coats, jackets, and other outer wear. It is also used in industrial yarns, upholstery and carpets. Polyester is one of the most important filament yarns produced in India comprising 94 percent of the total filament yarn production in terms of quantity during the six year period 2007-13. It is used in making apparel and home furnishings besides other industrial uses. Polypropylene is a major polymer used in nonwovens. Most of it is used for diapers or sanitary products where it is treated to absorb water. Nylon is widely used in the manufacture of carpets apart from being used as industrial yarn in manufacturing of tyre cord.

Some of the main features of the textile industry in the context of present taxation are summarized below:

a. **Break in Input Tax Credit Chain:** The textiles industry comprises of both regular and composition taxpayers, with a large proportion of the industry being in the composition segment. Numerous transactions in the textiles industry flow from the unorganized to the organized sector and vice versa. In instances where regular taxpayers purchase goods from composition taxpayers, they are ineligible for any input tax credit, thereby breaking the credit chain. Any input taxes paid on previous transactions in the supply chain is included in the cost of the product, seriously affecting the competitiveness of textile exports by merchant exporters.

b. **Small Business Threshold and Compliance Cost:** Composition taxpayers are reluctant to join the regular CENVAT credit chain, since it increases their compliance cost, given that they have to engage professionals for meeting their tax obligations. After the tax rental agreement under the Additional Excise Duty was discontinued, attempts to levy CENVATon all powerloom units without a threshold limit resulted in a strike by powerloom units, which eventually led the Central government to offer an optional excise duty payment route. In this context, under the GST, the threshold level for small businesses is critical.

c. **Differential Treatment of Job Work under CENVAT and State VAT:** Currently indirect tax treatment of units performing job work is different between CENVAT and State VAT. For the purpose of CENVAT, job work units are treated like any other manufacturing unit with job workers paying CENVAT on processed fabrics and getting a credit of excise duty paid on their inputs i.e. grey fabrics. Unlike the CENVAT procedure, the State VAT treats job workers under the Works Contract category, where job workers pay tax on the total value of goods used in processing the fabric like dyes etc. including gross profit. This leads to a difference in tax base with the CENVAT tax base being more than the State VAT tax base. Under a uniform GST, with a common return for CGST and SGST, this differential treatment will be removed, since the tax base will be uniform based on value addition at each stage of the supply chain.

Effective Tax Rate on Textiles

At present the textile sector, particularly outputs of the textiles sector, except for that relating to man-made fibres, are taxed very lightly. The overall incidence of tax depends largely on blocked input taxes. The entry tax and central sales tax may also apply to both textile inputs and outputs.

A recent study has estimated the effective tax rates on textiles. This study has divided the textile industry into nine segments for the estimation of effective tax rates under the current regime of indirect taxes in India. It takes into account the effect of both blocked input taxes and output taxes. The RNR calculations are done with reference to 2011-12 data.

At the level of states, for taxation of textile products, three taxes are important in the present context: State VAT, central sales tax and entry tax.

Except for a few items, state governments have not been able to levy State VAT on textile products after the tax rental arrangement under additional excise duty (AED) in lieu of sales tax for textiles, tobacco, and sugar came to an end and the state governments were given the power to levy a sales tax/State VAT on the textile items also. Andhra Pradesh attempted this but had to withdraw it following considerable opposition from the textile producers and dealers. Most state governments feel that while it is difficult for them to levy the State VAT on textile items individually, they can all go for it at the same time based on a joint decision or under the guidance of the Empowered Committee of State Finance Ministers. In other words, there is potential revenue available to the State governments over and above what they are presently raising from the textile sector.

It is useful to review the process of withdrawal of the arrangement of additional excise duty on textiles in lieu of sales tax as it gives an idea of the revenue that should have been raised by the state governments through sales tax/VAT once the AED was withdrawn (summarized in Appendix 5).

Table 22: Effective (Revenue Neutral Rates) for Textile Sectors based on Ministry of Textiles Study, (2014)

Sector	RNR (percent)
Khadi, cotton textiles(handlooms)	4.0
Cotton textiles	7.1
Woollen textiles	9.3
Silk textiles	9.6
Art silk, synthetic fibre textiles	10.2
Jute, hemp, mesta textiles	9.0
Carpet weaving	5.6
Readymade garments	10.5
Miscellaneous textile products	12.0
All Segments	**9.3**

Source: Ministry of Textiles Study, GOI, 2014

These rates pertain to both central and states taxes presently leviable on textiles inputs and outputs and include the effects of service tax (on inputs), central sales tax and entry tax on inputs and outputs. Since the states are taxing textiles either as exempt or for certain segments at low rates, the final effects of bringing textile into GST will depend on at what rate the different textiles segments will be taxed under GST.

Even if the textile segments are taxed at the lowest rate under GST, say 12 percent, this would imply and increase in textile prices since this would be nearly 3 percent points higher than present RNR. Given the low demand elasticity of textile products, this would mean higher prices but also higher revenues for the state government.

Industry will clamour for an exemption status for textiles but this will neutralize most of the benefits of avoidance of cascading under GST.

One positive outcome of GST would be genuine zero-rating of exports provided it is not exempted. At present although there is zero-rating of exports of textiles, for blocked ITC rebates are being given through a variety of duty drawback schemes. Most of the duty drawback schemes have come to be questioned under the WTO regime. It would be best to place all textile products under the low GST rate and eliminate all taxation of inputs.

GST and Sugar Industry

Sugar and sugarcane are notified as essential commodities under the Essential Commodities Act, 1955. India is the largest consumer of sugar and the second largest producer of sugar in the world; but lack of predictability in sugar production and trade policy. Sugar industry suffers from controls across the entire value-chain of sugar production and sale.

Sugar industry in India is known for its production and price cycle. One-half of this cycle is characterized by low production and high sugar prices. This part of the cycle lasts on average for 3-4 years. The other part of cycle is characterized by high production and low sugar prices. This part of the cycle runs on average for 2 to 3 years.

Sugar industry has a number of by-products. Important among these are molasses and alcohol, electricity, and press-mud. Alcohol produced from molasses is

primarily used for (a) producing potable liquor for human consumption, (b) industrial use for production of various chemicals and (c) for blending with motor spirit (petrol).

The main regulations that presently apply to sugar industry may be summarized as below.

(i) *Cane Reservation Area and Bonding*: Every designated mill is obligated to purchase from cane farmers within the cane reservation area, and farmers are bound to sell to the mill.

(ii) *Minimum Distance Criterion*: The Central Government, under the Sugarcane Control Order, has prescribed a minimum distance of 15 km between any two sugar mills. Enhancement of this distance has also been allowed on the request of some state governments.

(iii) *Price of Sugarcane*: The Centre Government fixes FRP as the minimum price, which is also used for arriving at the price of levy sugar. Many States have intervened in sugarcane pricing with State Advised Price (SAP) to strengthen the farmer interests.

(iv) *Levy Sugar Obligation:* Every sugar mill used to mandatorily surrenders 10 percent of its production to the Central Government at a pre-determined price, which is, at present, Rs. 1,904.82 per quintal. This has now been discontinued.

(iv)By-products: Molasses, these are at the state level, in terms of state government decisions relating to fixation of quotas for different end uses of molasses, restrictions on movement (particularly across state boundaries), etc.

Cogeneration from bagasse: Regulatory and implementation issues relating to freedom to sell power to consumers other than the local power utility, and resort by state governments or their electricity boards to restriction on such open access sale by frequent or routine invocation of statutory provisions meant to deal with emergencies.

(v) Packaging (Compulsory Use in Packing Commodities) Act, 1987 mandates that sugar be packed only in jute bags. This has also been discontinued/progressively reduced.

Alcohol produced from molasses is primarily used for the following purposes:

(i) Use as potable liquor by diluting and blending;

(ii) Industrial use for production of various chemicals like acetic acid, acetic anhydride, ethyl acetate, acetone, mono-ethylene glycol (MEG) etc. These chemicals provide feedstock for a variety of industries such as synthetic fibres, pesticides, pharmaceuticals, paints, adhesives etc.

(iii) Blending with motor spirit (petrol) and use as a fuel as part of the Ethanol Blending Programme (EBP).

As far as inputs are concerned the main taxes are (a) purchase tax on sugarcane, (b) central excise duty on inputs e.g. chemicals, plant and machinery, (c) entry tax on sugarcane if leviable, (d) State VAT/ sales tax on sugarcane, and (e) service tax on inputs, e.g. transport services. The main output taxes are (a) central excise duty, (b) state VAT, (c) entry tax, and (d) sugar cess.

Table 23: Input Structure of Sugar and Sugarcane

2013-14 (Input prices exclude indirect taxes and subsidies)			
	Sugar and Gur		Sugarcane
Sugarcane	**55.2**	**Sugarcane**	**26.8**
Fruits and vegetables including potato and tubers	0.2	Animal services(agricultural)	7.6
Electricity	2.0	Other liv.st. produ.	4.5
LPG, Kerosene, Operation of personal transport equipment	1.8	Petroleum products	2.4
Other fuel	0.8	**Fertilizers**	**26.0**
Purchase of transport services	**3.1**	Tractors and agri. implements	0.1
Organic and inorganic chemicals, Fertilizers and Pesticides, synthetic fibers, resin, other chemicals	**4.8**	Construction	2.0
Structural clay products, Cement, Construction	0.8	Electricity	6.5
Agricultural, industrial machinery and misc, manufacturing, Water, rail and air transport equipment	0.4	Water supply	0.1
Trade, Storage and warehousing	**24.8**	Railway transport services	0.5
(Total of listed inputs)	93.9	Land transport including via pipeline	3.6
Other inputs	6.1	Water transport	0.1
Total Input costs	100.0	Supporting and aux. transport activities	0.4
		Trade	**13.2**
		Banking	5.9
		(Total of listed inputs)	**99**
		Other inputs	0.5
		Total Input Costs	100.0

Note: Sugarcane is 74 percent of total inputs excluding trade, storage and warehousing.

Based on Input-Output Table, 2007-08, MOSPI

The central government levies a central excise on sugar [3.42 percent] and sugar cess (24/Q). Most states have given sugar an exempt status in VAT. Some states levy a sugarcane purchase tax including Tamil Nadu where the rate is ad valorem at (2.72 percent). Very few states levy a VAT (e.g.1 percent in Chattisgarh and Kerala, 5 percent in AP). Some states levy an entry tax in the range of 1 to 2 percent. Thus, sugar as output mostly being exempt, it is only blocked ITC that constitutes the present tax burden. For a sugar producer in Tamil Nadu, therefore the effective rate would come central tax and central cess and Tamil Nadu's purchase tax on sugarcane.

We have estimated the effective rate for sugar, taking into account other major inputs also as indicated below. These estimates are with reference to major sugar producing but are applicable to Tamil Nadu. The first column giving RNRs takes into account the purchase tax on sugarcane as it prevailed in 2013-14. In that year, the weighted average of purchase tax on sugarcane was 2.8 percent, which is very close to the Tamil Nadu sugarcane purchase tax rate. Since then most states have withdrawn the purchase tax on sugarcane. In transiting to GST, Tamil Nadu will have to eliminate the purchase tax on sugarcane.

Table 24: Estimated Effective Rate (RNR) for Sugar: 2013-14

Components	RNR with purchase tax on sugarcane	RNR without purchase tax on sugarcane
Central excise collection (output tax)	2.27	2.3
VAT (Output tax)+Entry Tax/CST	0.62	0.6
Blocked Input Taxes**	2.42	0.5
Total	5.32	3.4

*Excludes electricity and petrol/diesel. Covers only state level taxes as central taxes are creditable; #Excludes sales to bulk/industrial consumers. Notes: The share of central excise that should be neutralized is that which is sold for consumption (households and small businesses). In the case of sugar sold to large businesses, cenvat revenue should be neutralized against the outputs of these industries used for consumption (beverages, medicines, etc).
Source: Estimates by Research Team

Clearly the effective tax burden for sugar is quite low at 5.3 percent with purchase tax on sugarcane as it prevailed in 2013-14 and at 3.4 percent without the purchase tax. If the GST on sugar is levied at 12 percent in the lower rate category, the sugar price would increase. This would not be an excessive burden to consumers in one-half of the sugar

cycle when the prices are low. The sugar industry will lobby for an exemption status although this will imply ITC on GST paid on inputs and therefore it will be inconsistent with production efficiency. To the extent sugar is exported to other states, in a proper GST no tax revenue would accrue through central sales tax but if the turnover tax is levied any loss on this account may be more than neutralized.

GST and the Automobile Sector

Tamil Nadu has a very developed automobile sector both with respect to automobiles and its components. Being a hub of automobile industry and its ancillaries, GST can provide significant production efficiency benefits to the automobile industry in Tamil Nadu. GST obviates the need for vertical integration. Therefore, there can be a seamless movement of automobile parts being developed into separate specialized units or industries and brought together for assembly without any blockage of ITC.

In the development of the automobile industry in India, two features are critical. First, that it develops in a hub, where a centralized unit may be surrounded by a number of satellite units specializing in producing parts. There are considerable movements between the centralized units and units producing the parts. With invoice based claims of ITC, there would be no need for physical control and the movement would become seamless.

The second feature is that the industry develops along industrial corridors which may often cross state boundaries. The major automotive clusters in India are Delhi–Gurgaon–Faridabad in the North, Chennai–Bangalore–Hosur in the South and Mumbai–Pune–Nasik–Aurangabad in the West, apart from the Jamshedpur region. With GST, the abolition of CST and entry tax will also make inter-border movement of inputs and outputs of the automotive industry seamless.

The net impact on the automobile industry will depend on the GST rate that applies to final outputs of the sector in the form of finished automobiles of different kind and the GST rate on the components industry. It is likely that the finished outputs will be subjected to the standard rate and the components can be put at the lower rate or at the standard rate. If certain finished products like tractors are put at the lower rate, there may be possibilities of duty inversion if the any of the components are taxed at a higher rate. The industry will also benefit from the harmonization of rates across states and across products.

As far as states are concerned, net exporting states such as Tamil Nadu would lose the CST. But this is a general problem and will need to be addressed through the compensation mechanism.

The other disadvantage of GST will be that a producing state will suffer from localized pollution linked to the auto-industry. They may also have invested large amounts in developing infrastructure including roads and other facilities to facilitate the growth of the industry. A provision of non-rebatable sales tax on identified polluting inputs and outputs, would enable the producing states to cope with these production linked externalities when the GST is introduced.

Appendix 5: Additional Excise Duties on Textiles in lieu of Sales Tax

The Additional Duties of Excise (Goods of Special Importance) Act, 1957 was enacted by Parliament in December 1957. The objective of the legislation was to impose an additional duty of excise on certain goods of special importance in lieu of sales tax levied by the states on those goods. These goods were textiles, sugar, and tobacco. The scheme of levy of AED in lieu of sales tax on sugar, tobacco and textiles came into force after a decision was taken by the National Development Council (NDC) in December 1956. Because of the difficulties experienced in inter-state sales on a large scale of these articles, the Central Government with the concurrence of the State Governments had imposed an enhanced Central excise duty on the sale of those articles which was to be equivalent to and substitute for the sales tax levied upon them. The sum so collected by the imposition of the enhanced Central excise duty was to be distributed by the Central Government to the State Governments who agreed to exempt those articles from sales tax. The distribution of the revenues raised under the additional excise duty has been done under the recommendations of the Finance Commission.

The net proceeds of AED were distributed among States in accordance with the principles laid down by successive Finance Commissions. The AED Act does not debar state governments from levying sales tax on these three items. However, if any state were to levy a tax on the sale or purchase of these commodities, it would not be entitled to a share of the proceeds of AED, unless the Union Government directs otherwise.

The Tenth Finance Commission had proposed an alternative scheme of devolution suggesting that the additional excise duties in lieu of sales tax be merged in the basic excise duty and the tax rental arrangement should be terminated (Para 13.14, Chapter 13, Report of the Tenth Finance Commission). The revenue on account of the AED was assessed to be 3 percent of the central tax revenues excluding surcharges. In the Tenth FC scheme, State governments were not supposed to levy a sales tax on these commodities.

In December 1996, the Government of India had brought out a Discussion Paper on the Alternative Scheme of Devolution spelling out the pros and cons of the scheme proposed by the Tenth FC. Eventually, this led to an amendment of the Constitution

which fundamentally changed the arrangement of sharing of central taxes between the centre and states.[32]

In this context, the Eleventh FC observed that 'On the basis of our analysis and assessment of the Centre's and States' budgetary requirements we are of the view that the share of the States be fixed at 28 percent of the net proceeds of all taxes and duties referred to in the Union List, except the taxes and duties referred to in articles 268 and 269, and the surcharges and cesses'....The Commission noted that the Constitution (Eightieth) Amendment had come into force. The Commission recommended that 1.5 percent of all shareable Union taxes and duties be allocated to the States separately with reference to the sharing of revenues of additional excise duties in lieu of sales tax. They further recommended that if any State levies and collects sales tax on sugar, textile and tobacco, it will not be entitled to any share from this 1.5 percent.

Subsequently, the Twelfth FC recommended that the share of the states in the net proceeds of shareable central taxes be raised from 29.5 percent to 30.5 percent. For this purpose, additional excise duties in lieu of sales tax on textiles, tobacco and sugar were treated as part of the general pool of central taxes. If, however, the tax rental arrangement is terminated and if states are allowed to levy sales tax (or VAT) on these commodities without any prescribed limit, the share of the states in the net proceeds of shareable central taxes will be 29.5 percent.

This indicates that over time, the revenues raised under the additional excise duty in lieu of sales tax was coming down as percentage of the sharable pool of central taxes: 3 percent at the time of Tenth FC, 1.5 percent at the time of Eleventh FC, and 1 percent at the time of Twelfth FC. The last year in which revenue under the additional excise duty was shown separately in the Union Budget was in 2006-07[33].

[32]On the basis of a consensus reached in the Third Meeting of the Inter-State Council held on 17th July, 1997, the Government of India accepted the scheme with some modifications. A Constitution (Eighty-Fifth Amendment) Bill, 1998 was introduced in the 12th Lok Sabha. The Bill was referred to the Standing Committee of Parliament on Finance. The Standing Committee gave its report to the Parliament in the last week of February 1999. However, the Bill lapsed with the dissolution of the Lok Sabha. A modified version of the Bill was introduced in the Lok Sabha as 'The Constitution (Eighty-Ninth Amendment) Bill, 2000' on March 9, 2000. The Bill was passed by Parliament and received the assent of the President of India on June 9, 2000, as 'Constitution (Eightieth Amendment) Act, 2000.'

[33]It provided estimates of revenue under additional excise duty in lieu of sales tax for RE2005-06 at Rs. 2574 crore and BE2006-07 at 2742 Rs. crore. In the 2006-07 Budget, the excise duty structure was rationalized by merging the special excise duty (SED) and the additional excise duty (AED) with the Cenvat rate of 16 percent. Under the AED, the rate on textiles had been brought to nil two years back. In 2006-07, the AED rates on sugar and tobacco were also brought down to nil or in technical terms, zero-rated. Zero-rating of AED was considered a rationalization measure, though the Centre had not yet given states the power to levy value added tax (VAT) on these three items. Technically, AED had to be

On the recommendation of the Twelfth FC, the Centre had stopped levying AED on these three items from 2006-07. After that, states started imposing VAT on tobacco, but sugar and textiles were not taxed. The reason was the Centre still used to give one percent devolution to states till 2010-11. This devolution was stopped from this year. Also, sugar and textiles were taken out of schedule of AED only from this fiscal. States continued to get 1 percent of the sharable pool of central taxes as additional devolution on account of AED in lieu of sales tax on textiles and sugar until the recommendations of the Thirteenth FC.

The Thirteenth FC observed: "All the goods under the Additional Duties of Excise (Goods of Special Importance) Act, 1957 have been exempted from the payment of duty under the Act from 1 March 2006. Following this exemption, the Centre had made suitable adjustments in the basic excise duty rates on cigarettes, beedis and sugar. We are not earmarking any portion of the recommended 32 percent states' share in shareable net central tax revenue as attributable to additional duties of excise in lieu of sales tax and are not recommending any reduction in the share of the states in the event of levy of VAT on textiles, tobacco and sugar by them."

Since the centre has already adjusted the basic excise duty rates to take account of the additional excise duty component for tobacco products and sugar, only textiles are left and the 1 percent of sharable pool of central taxes may be considered as pertaining to textiles.

After the recommendation of the Thirteenth FC, States had the option of levying VAT on textiles without fear of losing their share of 1 percent of the sharable pool of central taxes amounting to Rs. 6,200 crores in 2011-12. States have kept most textile items under the exempt category. Some of the States like Andhra Pradesh who tried to at least put a 4/5 percent VAT on textiles products had to withdraw.

withdrawn if states were to levy VAT and this required an amendment in the Additional Excise Duty (Goods of Special Importance) Act, 1957.

Chapter 6

SUMMARY AND CONCLUSION

This chapter provides a summary of findings and concluding remarks of the study.

Summary of Major Findings

- As Goods and Services Tax (GST) is an efficient tax system with exemptions restricted to a minimum, and capacity to raise revenues in the most transparent and neutral manner, it is a preferred global standard and more than 160 nations have adopted it.

- While the GST initiation in India started in 2006-07 and Empowered Committee (EC) finalized its structure (a dual levy-concurrently by the Centre (CGST) and the State Governments (SGST), destination based, and Integrated GST-IGST on interstate supplies, and 1 percent additional levy by the Centre in respect of goods only for initial years), its passage in Raj Sabha is still pending.

- All goods and services barring a few items like alcohol for human consumption, specified petroleum products, and tobacco products, have been brought under GST with similar treatment for goods and services, and with cross utilization of credits.

- Expected benefits of GST are: creating a common market across the nation, widening tax bases, lowering tax rates, eliminating multiple taxes and their cascading, reducing prices, and enhancing investments and economic growth.

- All of the perceived (theoretical) benefits will get defeated due to the proposed structure of GST. (i) Adoption of high rate structure (about 27 percent for most of goods and services) will be unviable for the Indian economy, and will lead to massive non-compliance and higher prices; (ii) Exclusion of some goods from the GST and differential treatment of certain goods will lead to cascading; (iii) it affects the sovereignty of the State legislatures; (iv) sudden shift to destination based tax will adversely impact many producing (manufacturing) States like Tamil Nadu; (v) revenue loss in many producing states may be on permanent basis and initial compensation may not serve the purpose; (vi) zero-rating "exports" between states makes the system vulnerable to fraud (the IGST may solve the problem partially); and the proposed GST does not distinguish between polluting and non-polluting goods and services.

- As the model adopted by India is unique and without any precedence in the world, its consequences are difficult to predict or guess.

- Tamil Nadu's concerns are: (i) GST's impact on fiscal autonomy of the state; (ii) As it is a pioneering one in levying Sales Tax (which currently accounts for about 72 percent of its own tax revenues), a sudden shift from origin based to destination based levy will lead to heavy revenue loss; (iii) Being a producing state, the loss may be permanent; (iii) When the state had incurred a heavy loss at the time of implementing State VAT, its experience was highly unsatisfactory in receiving compensation from the Centre which later restricted the VAT compensation only for two years (instead of 3 years promised earlier) for Tamil Nadu; (iv) Given that the estimation of RNR for Tamil Nadu by the Empowered Committee (using the NIPFP study) was lower than average, how is it possible to get such a low rate for Tamil Nadu which is a producing state?; (v) Being one of the fastest industrial growing states with dominance of IT, textiles, sugar etc, what are the implication of GST on these major sectors?.

- As the NIPFP study uses the revenue reversal method to calculate the tax base for goods and CMIE PROWESS data for calculating services bases to State after adjustments, it has many limitations. Therefore this study uses a new methodology, i.e., the consumption expenditure based approach.

- Tax base for GST in the new methodology consists of: (i) Private final consumption expenditure in the state after taking out cenvat, service tax, statevat/sales tax representing purchases from the organized sector; (ii) Government final consumption expenditure in the state after taking out cenvat, statevat, and sales tax; (iii) Investment expenditure as it relates to housing will constitute part of the tax base to the extent it represents purchases of materials (non-labour part) and machinery and equipment from the organized sector; (iv) Exempt sector purchases of inputs (goods and services) from organized sector where input tax will not be rebated; and (v) Unorganized sector purchases of inputs from organized sector where input tax will not be rebated.

- This study uses data from (i) Commercial Tax Department publications-Selected Indicators and Commercial Taxes Department At a Glance, (ii) Electronic data base provide by the Commercial Tax Department on commodity wise rate, turnover, and tax collection etc for 2011-12, 2012-13 and 2013-14; (iii) Budget Documents of Government of Tamil Nadu (various years); (iv)National Sample Survey Estimates of

Household Consumption Expenditure 2011-12 (68th round); (v) Input-output table of 2007-08, commodity by commodity matrix; (vi) National Income Accounts 2010-11, 2011-12, 2012-13, and 2013-14; and (vii) NSS 67th Round - Survey on Unincorporated Non-agricultural Enterprises (Excluding Construction) in India.

- The estimated revenues to be neutralized in Tamil Nadu for the years 2011-12, 2012-13 and 2013-14 in scenario 1 with 2 percent CST (and Entry Tax) are: Rs. 24952 crore, Rs. 29864 crore and Rs. 30661 crore and in scenario 2 with 4 percent CST (and Entry tax) are: Rs. 27785, Rs. 32764 crore and Rs. 33797 crore.

- Total tax bases that are to be taxed are estimated at Rs. 239648 crore, Rs. 274450 crore and Rs. 319497 crore for the years 2011-12, 2012-13 and 2013-14 resp. Of this, the base to be taxed at RNR is estimated at Rs. 100293 crore, Rs. 114857 crore and Rs. 133708 crore in the respective years.

- The RNR for Tamil Nadu State in scenario 1 (with 2 percent CST and entry tax) for 2011-12 is estimated at 15.9 percent and in scenario 2 (with 4 percent CST and entry tax) is estimated 18.7 percent (as against the NIPFP estimates of 10.95 percent and 13 percent resp.).

- There is about 4 percentage point difference between the average RNR estimate (of 12.2 percent in scenario 1 and 14.7 percent in scenario 2) given by the Empowered Committee and Tamil Nadu RNR in both scenarios (for the year 2011-12). In this case, the expected revenue loss to Tamil Nadu Government is estimated at Rs 4011.72 crore (for 2011-12). Assuming 18 percent nominal growth (see Table 6 and Table 17), it would be around Rs. 9177.84 crore for the year 2016-17. This would be the approximate (expected) compensation to Tamil Nadu for the first year of implementation in 2016.

- The RNR in scenario 1 in 2012-13 and 2013-14 are estimated at 17.9 percent and 14.8 percent and in scenario 2 at 20.4 percent and 17.2 percent. 3-year Average RNR over 2011-12 to 2013-14 is 16.2 percent in scenario 1 and 18.7 percent in scenario 2.

- For a lower rate of 5 percent (instead of 6 percent), the RNR (in scenario 1) will go up from 16 percent in 2011-12 to 18.12 percent, 17.9 percent in 2012-13 to 19.24 percent and 14.8 percent in 2013-14 to 16.17 percent. For a lower rate 7 percent, it will down to 15.55 percent, 16.56 percent and 13.49 percent in respective years.

- There could be many sectoral implications. The major ones are as follows:

(i) The term 'input tax credit' is not integral to Constitutional Amendment (CAB) Bill 122 and so there is nothing in CAB 122 to ensure ITC. A proper value added tax on the other hand should ensure full ITC;
(ii) The Centre may get away with giving minimum compensation as the compensation claims would be very small in the first two years because of the 1 percent tax. After that, the compensation will be at maximum because of removal of 1 percent tax. But compensation percentage will decline. Producing States like Tamil Nadu will need 100 percent compensation for not only remaining three years but also for many more years;
(iii) With several exclusions like petroleum products, tobacco, alcoholic liquor, and electricity, the resultant GST may not be much of an improvement over the current position of ITC.
(iv) The anticipated gains from the sharing of the service tax base to the states would be considerably overstated if the revenues from the ITC blockage of services used as inputs into goods and goods used as into services are not taken into account since under GST these ITC blockages will be eliminated.
(v) The present threshold limit for registration with VAT authorities in the States varies in general from Rs. 5 to Rs.10 lakh. In the case of central excise the threshold level for manufacturing units is Rs.1.5 crore. For service tax, the threshold level is Rs.10 lakh. In the GST regime, the threshold limit will be likely to be Rs. 25 lakh. It is difficult to exactly quantify the revenue impact of these changes primarily because of the inclusion of service providers in the registration process of the state governments.
(vi) Keeping alcoholic products out of GST has implications for production efficiency (because GST on inputs that go to make alcoholic products would suffer blockage of ITS), relative ambit of taxation of the central and state governments, and it may have revenue implications under certain conditions;
(vii) Electricity is to be treated as a good and states have currently exclusive power to tax electricity. These aspects of electricity imply that the levy of GST supplemented by an electricity duty in the originating states would be ideal and consistent with production, consumption, trade and revenue autonomy objectives. Interstate movement of electricity would require levy of IGST.
(viii) The textile industry has considerable significance for the Tamil Nadu economy both because of the contribution that makes to Tamil Nadu's GDP and the employment it offers. Taxation of the textile sector will be significantly recast with the implementation of the Goods and Services tax (GST);
(ix) Sugar and sugarcane are notified as essential commodities under the Essential Commodities Act, 1955. Since then most states have withdrawn the purchase tax on sugarcane. In transiting to GST, Tamil Nadu will have to eliminate the purchase tax on sugarcane;
(x) As Tamil Nadu has a very developed automobile sector, the GST can provide significant production efficiency benefits to the automobile industry in Tamil Nadu.

CONCLUDING REMARKS

It seems that the GST is a long term strategy and will lead to higher output and employment opportunities and economic inclusion. However, initially, it is likely to have significant revenue as well as other sectoral implications listed above. For producing states like Tamil Nadu, these implications are critical. Revenue loss will not only be significantly high but also permanent. Already Tamil Nadu faced a bad experience with Centre in receiving compensation when state VAT was implemented and it also experienced that state VAT was inflationary. It could also expect a similar (and another) inflationary effect of GST. It is also not clear whether the State will go for complete prohibition of alcoholic products. If so, this will affect severely its government finances. In addition, there will be consequences due to the forthcoming recommendations of seventh pay commission.

Therefore, the better strategy for the state is to buy time for implementing GST through its voice in the GST council along with other states opposing or asking postponement of GST implementation. In the mean time, it needs to ensure that all issues raised above are addressed adequately by the GST council so that a flawless GST which will be acceptable to all stakeholders will be implemented.

As suggested by Rangarajan and Govinda Rao (2015), the Union Government, by itself, initially needs to transform its domestic indirect taxes into GST at the manufacturing stage (without having to amend the Constitution). Then the States may be encouraged to transform their respective domestic indirect taxes into GST at consumption level. Finally a full-fledged and flawless GST can be implemented. Thus, it is better to approach the reform as a process and not an event.

REFERENCES

Bird, Richard M. and Pierre-Pascal Gendron (2001), "VATs in Federal States: Experiences and Emerging Possibilities," *International Studies Program Working Paper Series*, at AYSPS, GSU paper 0104, International Studies Program, Andrew Young School of Policy Studies, Georgia State University.

Cnossen, Sibren (2010), Three VAT Studies, *CPB Netherlands Bureau for Economic Policy Analysis*, The Hague, Netherlands.

Guérard, M. (1973) "The Brazilian State Value-Added Tax", *International Monetary Fund Staff Papers*, (20), 118-69.

Keen, Michel (2013), "The Anatomy of the VAT," *IMF Working Paper*, Fiscal Affair Department. https://www.imf.org/external/pubs/ft/wp/2013/wp13111.pdf

Keen, Michel and **Ben** Lockwood (2007), "The Value-Added Tax: Its Causes and Consequences" *IMF,* Fiscal Affairs Department. https://www.imf.org/external/pubs/ft/wp/2007/wp07183.pdf

Martinez-Vazques, Jorge and Richard M. Bird (2010), "Value Added Tax: Onward and Upward?," *International Studies Program Working Paper Series*, at AYSPS, GSU paper 1026, International Studies Program, Andrew Young School of Policy Studies, Georgia State University.

McLure (2000), "Implementing Subnational Value Added Taxes on Internal Trade: The VAT (CVAT)", *International Tax and Public Finance*, (6), 723-740.

Neumark Report (1962), Report to the Commission of the Fiscal and Financial Committee.

OECD (2014), "Consumption Tax Trends 2014 - VAT/GST and Excise Rates, *Trends and Policy Issues*", OECD Publishing. http://dx.doi.org/10.1787/ctt-2014-en.

Rangarajan, C. and M. Govinda Rao (2015), GST, by Other Means, *The Indian Express*, 28th August 2015.

Tail, Alan A. (1988), "Value Added Tax: International Practice and Problems", *IMF*.

MSE Working Papers
Recent Issues

* Working Paper 160/2017
  An Alternative Argument of Green Solow Model in Developing Economy Context
  Santosh K. Sahu and Arjun Shatrunjay

* Working Paper 161/2017
  Technical Efficiency of Agricultural Production in India: Evidence from REDS Survey
  Santosh K. Sahu and Arjun Shatrunjay

* Working Paper 162/2017
  Does Weather Sensitivity of Rice Yield Vary Across Regions? Evidence from Eastern and Southern India
  Anubhab Pattanayak and K. S. Kavi Kumar

* Working Paper 163/2017
  Cost of Land Degradation in India
  P. Dayakar

* Working Paper 164/2017
  Microfinance and Women Empowerment- Empirical Evidence from the Indian States
  Saravanan and Devi Prasad DASH

* Working Paper 165/2017
  Financial Inclusion, Information and Communication Technology Diffusion and Economic Growth: A Panel Data Analysis
  Amrita Chatterjee and Nitigya Anand

* Working Paper 166/2017
  Task Force on Improving Employment Data - A Critique
  T.N. Srinivasan

* Working Paper 167/2017
  Predictors of Age-Specific Childhood Mortality in India
  G. Naline, Brinda Viswanathan

---

* Working papers are downloadable from MSE website http://www.mse.ac.in
$ Restricted circulation

MSE Monographs

* Monograph 28/2014
  Fiscal Instruments for Climate Friendly Industrial Development in Tamil Nadu
  D.K. Srivastava, K.R. Shanmugam, K.S. Kavi Kumar and Madhuri Saripalle

* Monograph 29/2014
  Prevalence of Undernutrition and Evidence on Interventions: Challenges for India
  Brinda Viswanathan

* Monograph 30/2014
  Counting The Poor: Measurement And Other Issues
  C. Rangarajan and S. Mahendra Dev

* Monograph 31/2015
  Technology and Economy for National Development: Technology Leads to Nonlinear Growth
  Dr. A. P. J. Abdul Kalam, Former President of India

* Monograph 32/2015
  India and the International Financial System
  Raghuram Rajan

* Monograph 33/2015
  Fourteenth Finance Commission: Continuity, Change and Way Forward
  Y.V. Reddy

* Monograph 34/2015
  Farm Production Diversity, Household Dietary Diversity and Women's BMI: A Study of Rural Indian Farm Households
  Brinda Viswanathan

* Monograph 35/2016
  Valuation of Coastal and Marine Ecosystem Services in India: Macro Assessment
  K. S. Kavi Kumar, Lavanya Ravikanth Anneboina, Ramachandra Bhatta, P. Naren, Megha Nath, Abhijit Sharan, Pranab Mukhopadhyay, Santadas Ghosh, Vanessa da Costa, Sulochana Pednekar

* Monograph 36/2017
  Underlying Drivers of India's Potential Growth
  C.Rangarajan and D.K. Srivastava

* Monograph 37/2018
  India: The Need for Good Macro Policies
  Ashok K. Lahiri

* Monograph 38/2018
  Finances of Tamil Nadu Government
  K R Shanmugam

* Monograph 39/2018
  Growth Dynamics of Tamil Nadu Economy
  K R Shanmugam