

# **DISSERTATION REPORT**

## **TOPIC DESIGNED**

**“Impact of GST Implementation In Warehousing In India”**

## **“PROJECT REPORT”**



### **Submitted**

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## **TABLE OF CONTENTS**

Acknowledgment	3
Certificate from the guide	4
Executive summary	5
1. Chapter 1: Introduction	
1.1 Introduction to the topic	7
1.2 objectives	12
1.3 Scope of Study	12
2. Chapter 2: Review of Literature	
2.1 Literature Review	14
2.2 Interpretation of the Literature	15
2.3 Scope for Future Research	16
3. Chapter 3: Research Methodology	
3.1 Research Application and Design	20
3.2 Data Collection	20
4. Chapter 4 Results	
4.1 Findings	22
5. Chapter 5 Discussions and Recommendations	42
6. Chapter Conclusions and Lessons Learned	
6.1 Learning from the Project	44
6.2 Conclusion	44
7. References	47

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I thank my friends and colleagues who helped me, by way of their contribution of the information and support in compiling some portions of this project. Without their help, this project could not have materialized in this form.

**Place:** Dehradun

**RISHABH GYAL**

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## **Certificate from the Guide**

This is to certify that **SIDDHARTH RANJAN** has completed his project titled “**Impact of GST Implementation In Warehousing In India.**”. Under my guidance and supervision this project has not been done earlier in the university by any other student for a course of study. To the best of my knowledge, he has made an earnest and dedicated effort to accomplish this project.

I wish him all the best for future endeavors.

Date:

Mr. Aman Dua

Assistant Professor

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## **EXECUTIVE SUMMARY**

The current dual governance structure makes the Indian taxing system very complex. There are Central level taxes in the form of Central Sales Tax (CST), Customs duty, Service tax, and Excise duty, and then comes the State level taxes in the form of Value Added Tax (VAT), Stamp duty, Land revenue, luxury tax, State excise etc. This type of tax structure has forced the logistics companies to locate small warehouses in all the states where they do business.

The planning of locating small warehouses is more driven by logic of saving taxes than achieving efficiency. Due to the taxing systems and locating of small warehouses, most logistics companies have stayed away from modern warehousing techniques and use of modern technology. of the total warehousing space currently used in India, approximately 82 percent is not mechanized. Those which are mechanized or are semi-automated have just forklifts and hydraulic pallet trucks.

This clearly shows the need for an organized, large scale, good quality and automated warehousing infrastructure in the country. Good and Services Tax (GS) is a tax on goods and services, which is livable at each point of sale or provision of service, in which at the time of sale of goods or providing the services the seller or service provider can claim the input credit of tax which he has paid while purchasing the goods or procuring the service.

**CHAPTER 1**  
**INTRODUCTION**

## **INTRODUCTION**

The challenges in India's logistic sector are swiftly coming to a head. The primary pressure point is economy. The Indian economy has grown strongly since 2003—with an average annual growth rates above 8 percent.—It is projected to maintain this momentum till 2020. By 2025, India is projected to become the world's fifth-largest consumer market; and after 2035 forecasters expect it to be the world's third largest economy after US and China.

A swelling middle class already propels spending in India's urban areas, and tens of millions more people will move to the cities in the coming decades. But the strongest growth will come from the hinterlands—from a burgeoning marketplace of more than 720 million rural customers. Yet it is in the countryside where infrastructure is weakest, and where supply chains are most in need of transformation.

The country's rural economy was largely untouched by the global economic slowdown, blessed as it was by four years of continuous growth in agriculture that have sent rural incomes soaring. Rural demand for fast-moving consumer goods (FMCG), pharmaceuticals, automobiles, and consumer durables is soon likely to match that generated in urban areas. Both government and private industry are actively addressing the needs of the bulk of India's population who live outside of urban and suburban areas.

The private sector is investing heavily in product launches, research and development (R&D), and in capacity upgrades at manufacturing plants focused on the rural population. And the Mahatma Gandhi National Rural Employment Guarantee Act (NREGA) is playing a part. Signed into law in August 2005, the NREGA is a public-work job scheme designed to improve the purchasing power of rural communities; a third of the NREGA jobs are to go to women. The 2009-2010 union budget hiked the NREGA allocation to US\$8.03 billion—a big boost to the rural economy.



An upcoming move by the GoI will act as a powerful catalyst for change. The introduction of a national goods and services tax is expected to give business leaders the push they need to transform their physical, financial and information supply chains. It will compel them to look at their supply chains at a national level rather than regionally.

The GST will significantly improve logistics efficiency. It will speed the movement of goods across India with a single “consumption tax” structure that replaces the current multiple tax system, which includes central excise, state VAT and service tax – the sum of which can add as much as 30 percent to the manufactured cost. If manufacturers can align their supply chains with the new tax structure, they can expect to see real benefits from decreased costs at each point in supply chain—savings that will help them become more competitive. At the very least, alignment with the GST will give producers the opportunity to lower prices.

To reach India’s fast-growing markets flexibly and cost-effectively and to take full advantage of the upcoming changes in the tax structure, supply chains need to improve on three fronts: physical, financial, and in terms of the information flow that underpins all supply chain transactions.

With the rise in foreign trade, increase in FDI in manufacturing and Real Estate sectors and emergence of organized retail, India will witness high growth rates in its GDP. It would require sizable investments in Infrastructure and logistics so that the economic activities get accelerated and growth rates can be sustained. India spends about 13% of its GDP in logistics costs which is higher than world average of about 11%. Compared to the development of logistics and supply chain in the developed countries, India’s logistics and supply chain development has far more to achieve to reach the global standards.

Therefore, logistics as a sector is expected to grow at a very high rate in India. Growth drivers in the logistics sector are increased foreign trade, increased FDI in manufacturing and therefore the growth in GDP, increase in size of organized retail market, rise in 3PL (Third Party Logistics Providers) and increasing trend of outsourcing of logistics by corporates to 3PL. A major factor

that gives boost to the demand for logistics growth is change in sales taxes and introduction of VAT which paves way for efficient supply chain management and government investment in nationwide infrastructure development to facilitate increased logistics development. Key reasons cited by companies for outsourcing logistics are cost-reduction in logistics activity, focus on core competencies and therefore higher return on assets, increased customer services and efficient inventory management.

Warehousing is a part of logistics sector and provides an essential ancillary service to the foreign trade and manufacturing and retail sectors. So we expect warehousing also to grow at a very high rate over the next three to five years i.e. over the period ending 2012. In order to facilitate easier analysis and model building to predict demand for warehousing, we have classified warehouses based on their function and association and named them as follows:

1. **Exim Warehouses:** these warehouses are associated with foreign trade and are located near a sea port or air port and are a part of Container Freight Station (CFS) or an Inland Container Depot (ICD) or located near CFS and / or ICD.
2. **R&M Warehouses:** these warehouses are associated with inland supply chains for manufacturing and retail sectors and also provide critical storage space for efficient supply chain management.

We estimate the size of the warehouse development market to be in the range of \$ 4 – 6 billion using three models.

**1. Based on GDP estimates:** As per the report by Centre for Monitoring Indian Economy (CMIE), Indian GDP in 2006 was \$ 805 bn and logistics is estimated to be 13% of GDP. Warehousing is estimated to be 7% of logistics. Assuming that GDP grows @ 8% a year and the share of warehousing and logistics in the GDP remain the same, an additional investment of \$ 6 bn will be required in the warehousing sector over the period 2007-2014.

**2. Based on Industry estimates:** In order to validate our findings with industry expectations, we conducted series of interviews with key players in the warehousing and logistics space and tried

to understand their expectations about the logistics and warehousing growth rates. As per estimates provided by Gati Logistics, the market size for warehousing is expected to be about \$ 4 bn. This is arrived at by applying growth rate of 9% to GDP and logistics being estimated to be about 15% of GDP and warehousing about 5% of GDP. GDP in 2006 was \$ 805 bn and would become \$ 1.35 trillion by 2014. Assuming the share of logistics and warehousing in GDP remain as per industry estimates, the potential size of the market amount to about \$ 4 bn.

**3. Based on research reports:** In order to estimate the demand for warehousing space in terms of square feet of space, we studied various research reports and collated figures about existing infrastructure in warehousing. As of 2006, there was 45 mn sq ft of warehousing space existing in the market and was being utilized. This includes warehouses owned and managed by public and private players. The expected compounded annual growth rate in warehousing space was 40% due to increased outsourcing of logistics, introduction of VAT and the resulting efficiency in supply chain management.

Therefore, an additional 275 mn sq ft of warehousing space will be required to be added to the market over the period 2007-2014.

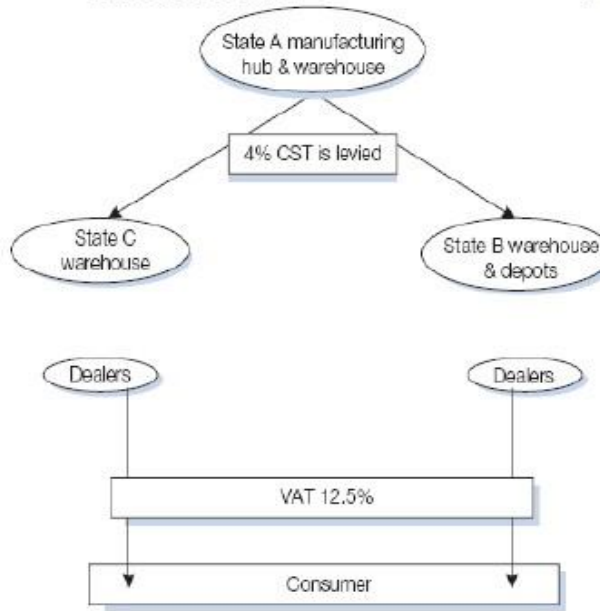
Based on above three models, we can safely say that the investment potential in warehousing is in the range of \$ 4 – 6 bn over next 5 years.

The present structure of state taxes and laws (especially the incidence of Central Sales Tax forces corporates to have multiple warehouses in a state so as to show movement of goods and services within the company. This results in huge inefficiencies and benefits of scale of economies do not transfer to corporate bottom lines.

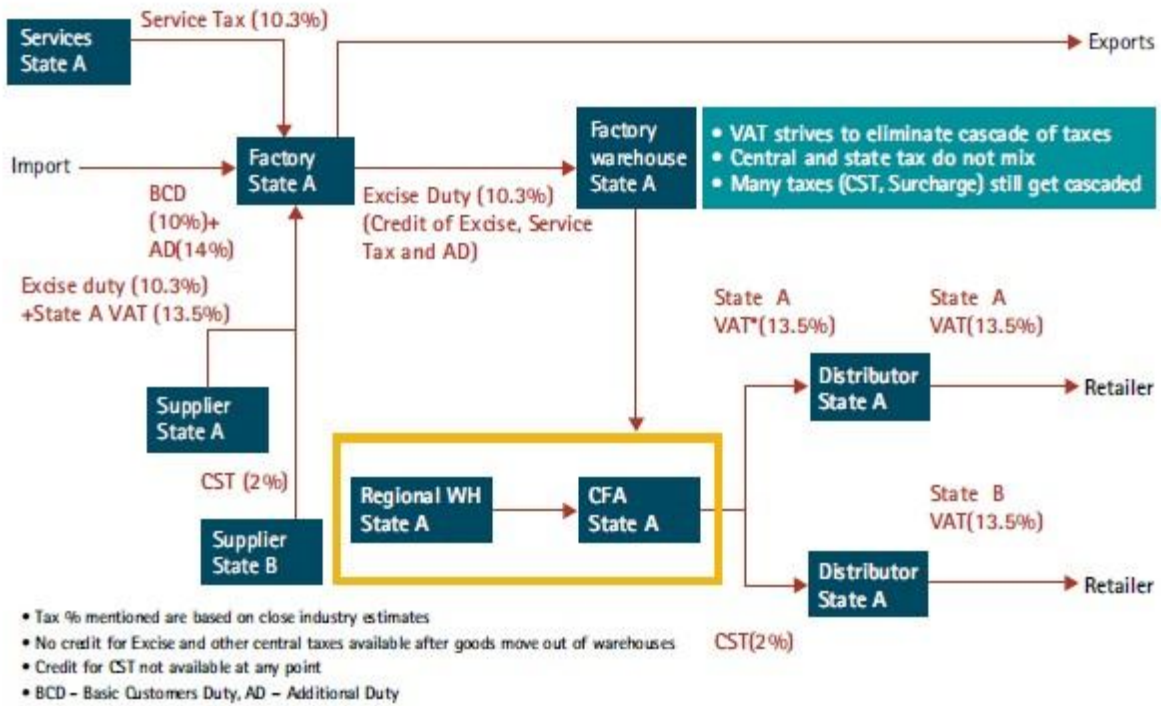
After VAT, there could be just one warehouse in a state serving a host of smaller, transit warehouses in over four-five other neighboring states, boosting the creation of hubs and spokes, the most efficient model of logistics. Post implementation of VAT and gradual phase out of the Central State Tax (CST), transportation of goods will be easy, which will boost cargo transportation. Also, since VAT is levied at every billing point, most of the manufacturing companies are likely to outsource the entire VAT procedure to 3PL service providers, thus giving a fillip to the domestic logistics industry.

**Current Scenario**

P.



**Present Tax structure**



## **RESEARCH OBJECTIVES**

The objectives of the study are as follows:

1. To understand the existing processes adopted by central government and state government for collecting various types of taxes from Warehouses.
2. To analyze how these taxes are responsible for loss of income and welfare of the Indian economy.
3. To provide a model for a common GST for warehouses all over country by finding the gaps that has been ignored by the various Indian government organizations.

## **SCOPE OF THE STUDY**

This dissertation would include various processes and practices used by central government and state government for collecting revenues by posing various taxes to the warehousing industries. The time duration for analysis of data would be from December 2013 to February 214. This work would be done for Warehousing sector in India but is study would also be useful for many other like Manufacturing sector.

**CHAPTER 2**  
**LITERATURE REVIEW**

## LITERATURE REVIEW

<b>AUTHOR</b>	<b>OBJECTIVE</b>	<b>CONCLUSION</b>
Maurice Laure, a French economist, in 1954	The tax was designed such that the burden is borne by the final consumer	Tax reform in many of the developing countries has focused on moving to VAT. Most of these countries have gained thus indicating that other countries would gain from its adoption.
Dr. Asim Dasgupta, Chairman, Empowered Committee of State Finance Ministers in 2005	The replacement of the state sales taxes by the Value Added Tax	It addressed the distortions and complexities associated with the levy of tax at the first point of sale under the erstwhile system and resulted in a major simplification of the rate structure and broadening of the tax base.
Dr. Amaresh Bagchi in 1994	Recommending a state VAT	The team felt that this was the only feasible option within the existing framework of the Constitution and would lay the foundation for an even more rational regime in the future.

Value added tax was first introduced by Maurice Laure, a French economist, in 1954. The tax was designed such that the burden is borne by the final consumer. Since VAT can be applied on goods as well as services it has also been termed as goods and services tax (GST). During the last four decades VAT has become an important instrument of indirect taxation with 130 countries having adopted this, resulting in one-fifth of the world's tax revenue. Tax reform in many of the developing countries has focused on moving to VAT. Most of these countries have gained thus indicating that other countries would gain from its adoption.

The replacement of the state sales taxes by the Value Added Tax in 2005 marked a significant step forward in the reform of domestic trade taxes in India. Implemented under the leadership of Dr. Asim Dasgupta, Chairman, Empowered Committee of State Finance Ministers, it addressed the distortions and complexities associated with the levy of tax at the first point of sale under the erstwhile system and resulted in a major simplification of the rate structure and broadening of the tax base.

The state VAT design is based largely on the blueprint recommended in a 1994 report of the National Institute of Public Finance and Policy, prepared by a team led by late Dr. Amaresh Bagchi (hereinafter, the "Bagchi Report"). In recommending a state VAT, the Bagchi Report clearly recognized that it would not be the perfect or first best solution to the problems of the domestic trade tax regime in a multi-government framework. However, the team felt that this was the only feasible option within the existing framework of the Constitution and would lay the foundation for an even more rational regime in the future.

Traditionally India's tax regime relied heavily on indirect taxes including customs and excise. Revenue from indirect taxes was the major source of tax revenue till tax reforms were undertaken during nineties. The major argument put forth for heavy reliance on indirect taxes was that the India's majority of population was poor and thus widening base of direct taxes had inherent limitations. Another argument for reliance on indirect taxes was that agricultural income was not subjected to central income tax and there were administrative difficulties involved in collecting taxes.

Warehousing is a part of the logistics sector and there is very limited information available on warehouse development related metrics in any published literature. We therefore, studied the logistics sector and extrapolated the data to predict demand for warehouse development. The size of market is in the range of \$ 4 – 6 billion in additional warehousing space of about 275 million square feet over 2007-2014. We estimate demand for warehousing space development based on GDP estimates, based on logistics industry reports.

The Joint Working Group of the Empowered Committee of the State Finance Ministers submitted its report on the proposed Goods and Services Tax (GST) to the Finance Minister in



November 2007. A dual GST, one for the Centre and other for the states, would be implemented by 1 April 2010. The new system would replace the state VAT and the CENVAT.

Implementation of a comprehensive GST across goods and services is expected, *ceteris paribus*, to provide gains to India's GDP somewhere within a range of 0.9 to 1.7 per cent. The corresponding change in absolute values of GDP over 2008-14 is expected to be between Rs. 42,789 crore and Rs. 83,899 crore, respectively.

The Government introduced the Long Term Fiscal Policy (LTFP) on 19 December 1985 for prudent fiscal management. LTFP was expected to provide a definite direction and coherence to annual budgets and to bring about a greater predictability and stability in the economic system. It would provide rule based fiscal and financial policies rather than discretionary approach. Further, it would also facilitate effective coordination of different dimensions of economic policies. Major reforms in excise and customs taxation were proposed under LTFP. These reforms were considered for progressively moving from discretionary, quantitative restrictions and physical controls to non-discretionary fiscal methods. The major reforms announced under Union excise taxation aimed at reducing the number of effective rates after harmonisation of the tariff classification with the custom nomenclature and implementing a modified system of value added taxation, i.e., MoDVAT. Excise duty is collected as CENVAT introduced in 2000 through re-naming of MoDVAT of 1986.

However, fillip to tax policy reforms came in with the introduction of economic reforms in 1990s. It was realised that a complex tax structure involving both the centre and the states taxing production and sales of commodities was not fostering efficiency in the economic activities. The presence of central sales tax acted as constraint to inter-state trade movement and contradicted the idea of India being a common market.

The Government of India constituted Tax Reforms Committee under the Chairmanship of Dr. Raja J. Chelliah in August 1991 so as to bring comprehensive reforms in the Indian tax system. The Committee suggested policy reform measures to restructure both direct and indirect tax systems. For indirect tax, the Committee recommended reduction in the general level of import tariffs comparable with similar developing countries, reduction in dispersion of tariff rates and abolition of end use exemptions. The excise duty was to be progressively converted from MoDVAT to VAT. Some specific recommendations of the Tax Reforms Committee included higher import tariffs on finished goods than basic raw materials and moderate rates for components and machinery. Central excise duties were to be restructured into three-rate MoDVAT regime at the manufacturing level at 10, 15 and 20 per cent and selective excise on nonessential commodities at 30, 40 and 50 per cent.

The 1990s tax reforms brought structural changes in the tax system. These reforms aimed at correcting imbalances in the sources of revenues through increasing the share of direct taxes. In

July 2002, Government of India constituted a Task Force under the Chairmanship of Dr. Vijay Kelkar to suggest measures for simplification and rationalisation of indirect taxes. The Task Force recommended various measures including trust based customs clearance, automation and modification of CENVAT rules to remove the distinction between capital goods and inputs. on central excise, all duties should be replaced by only one levy, the CENVAT. Scope of service tax should be expanded.

A system of VAT on services at the central government level was introduced in 2002. The states collect taxes through state sales tax VAT, introduced in 2005, levied on intrastate trade and the CST on interstate trade. The Government of India constituted a Task Force on implementation of Fiscal Responsibility and Budget Management Act, 2003 to chalk out a framework for fiscal policies to achieve FRBM targets. Task Force headed by Dr. Vijay L. Kelkar made a number of recommendations. Among others, it suggested an All India goods and services tax (GST) which would help achieve a common market and widen the tax base. It recommended that the multiplicity of tariffs should be reduced to three components viz., basic customs duty, additional duty and anti-dumping duties. All exemptions should be removed barring life saving drugs, security items, goods for relief and charitable purposes and international obligations.

McLure (2003) outlines characteristics of a well designed indirect tax regime in the context of Canada. While consumers should be taxed at single rate sales of inputs to business should not carry any tax liability. With regard to exports the tax should be levied under the destination principle, i.e. exports should be tax-free and imports should be taxed at the same rate as domestic products. McLure points out some adverse outcomes emanating from inefficient indirect taxation:

- Differential tax regime on taxation of consumers on goods and services has adverse implications for economic neutrality as well as equity. Consumers with relatively strong preference for taxed goods are at disadvantage vis-à-vis consumers with the same income level but preferring consumption of non-taxed / less taxed services. The equity aspect refers to the fact that the higher income household allocate relatively proportion of their incomes on purchase of services.
- Failure to provide full tax offsets to the business firms leads to distortions of choice of methods of production based on the types of differentially taxed inputs and also impacts household consumption patterns.
- Taxation of capital goods without apt offsets to business is perhaps the most serious consequence of inefficient taxation system. This discourages savings and investment and decelerates growth of productivity.
- Domestic producers face competitive disadvantage in the absence of destination based taxation principle both between India and rest-of-world as well as across states.
- Some states may have more complex tax regime as compared with some other states.

Lack of proper coordination between the central and the state-level tax administration creates complexities and cost inefficiency.

Imports which are currently implicitly subsidised (since much of these do not have to pay intermediate taxes but only taxes at the final sale to the consumer) would be taxed under the GST regime. While tariffs have protective effect, GST, through eliminating implicit subsidy on imports, creates a level playing field. Thus GST does not distort domestic production. Further, GST is superior to import tariffs since consumption provides a wider tax base than imports so that tax on consumption has a smaller deadweight loss per rupee of revenue collected (Bird and Gendron, 2007). Apart from improving export competitiveness, GST also creates level playing field between imports and domestic production since it does away with flawed structure of domestic indirect taxes.

Devarajan et al (1991) analyse the impact of introducing 10 per cent VAT in Thailand using a general equilibrium model to identify gainers and losers and the effect on output, prices and incomes. Though the paper provides an overall view of the changes in aggregate exports and imports it does not bring out sectoral changes therein. It does not provide reference to the type of the model used.

Wittwer and Kym (2002) use a computable general equilibrium model (CGE) to analyse the impact of the GST and wine tax reform on Australia's wine industry introduced in 2000. It is concluded that export-oriented premium segment would gain at the expense of non-premium segment of wine industry. The implicit message is that such gains would originate from increased prospects of exports of the premium wine segment.

Meagher and Parmenter (1993) analyse short-run implications of Australia's tax reforms of 1992 proposed as Fightback (Liberal and national Parties, 1992). Fightback was a radical economic reform package and incorporated move to 15 per cent GST. They use a general equilibrium model for their analysis. The conclusion states that: "The GST does not discriminate between imports and domestic commodities and affects exports only in a minor indirect way. Hence, its impact on cost-sensitive industries exposed to international competition is smaller than the impacts of other taxes. Hence the implications of the GST for output and employment are relatively small".

The evidence that the GST implementation by a country impedes international trade is based on two undesirable reasons: a) GSTs were generally imposed heavily on traded sectors; and b) governments often failed to provide adequate GST rebates for exports. However, there has not been much work on empirical relationship between VAT usage and export and import performance (Desai and Hines, 2002).

Lingamurthy et al. (1981) reported that regulated market provides storage facilities to the farmers who want to wait for a fair price. The Warangal Agricultural Market in Andhra Pradesh has 2100 metric tonnes storage accommodation which is sufficient to cater to the needs of the farmers of the market center. Moderate rates are charged for storage. But this storage accommodation is only a temporary one, ranging between 15 and 30 days.

Bhatnagar (1985) reported that as high as 87.49 per cent of total installed cold storage capacity in India is exclusively used for potato storage. The existing cold storage capacity has been created in the private sector which owns 85.85 per cent of the cold stores and 92.58 per cent of cold storage capacity. The public and cooperative sectors put together hold remaining 14.15 per cent of the total capacity and most of them were under utilizing their installed capacity. Author opined that diversified utilization of cold storage facilities are necessary for improving the viability of cold storage.

Rajendran (1987) opined that establishment of cold storages in general appeared to be economically unsustainable. It was observed from the study that 55 per cent of the project cost was involved in building materials and civil works. Machineries and power costs accounted for 22 and 36 per cent, respectively. He concluded that to make the project viable, reduction in installation cost and working cost were necessary.

Rao (1990) compared wholesale market price with cold storage economics in Bangalore district. Results of the study implied that storage beyond July might not be a workable proposition due to glut in the market. This type of situation adversely affect the economy of cold storage. He suggested that cold storage coupled with trading activity may be in a position to absorb losses and improve capacity utilization of the unit.

Alaouze et al. (1978) used dynamic programming to examine whether Australia should store wheat for subsequent sale at higher prices. The dynamic programming model was developed assuming that the demand for Australian wheat is perfectly elastic at the world price. The major conclusions of the study are : (a) Apart from interest rate, the most important factor affecting storage in any season was the price in the following season; (b) the holding of a speculative reserve to be sold in seasons of episodic price increased was generally unwarranted; (c) the optimal policies associated with simulations of the historical price series observed for the period 1953-54 to 1971-72 (when Australian wheat prices had a stable mean and a low variance) indicate that a storage policy based on storing wheat in seasons of below average prices would have been wrong more than half a time.

Recto (1980) undertook a study with the aim of improving the paddy/rice marketing system by determining optimal sizes and locations of warehouses and investigating ways by which the marketing costs of the product could be minimized. He examined the transport and storage systems in each of the 13 regions of Philippines during 1975-77. He found that warehousing facilities were inefficiently located, with shortages of storage facilities in some regions and

surpluses in others. There had been an improvement in the production of rice, but there was a corresponding improvement in marketing infrastructures and services. A large amount of the crop could be lost through inefficient handling and processing.

Reddy and Narasimhan (1980) found that locating of the colossal godowns of Central Warehousing Corporation adjacent to the market yard of the Hindupur regulated market was for the best advantage of growers and traders.

## **RESEARCH METHODOLOGY**

### **Type of research design**

Descriptive Research. Versatility and wide ranged approach to the preliminary investigation

### **objectives of study**

1. To understand the existing processes adopted by central government and state government for collecting various types of taxes from Warehouses.
2. To analyze how these taxes are responsible for loss of income and welfare of the Indian economy.
3. To provide a model for a common GST for warehouses all over country by finding the gaps that has been ignored by the various Indian government organizations.

### **Types of Data Sources**

The research is drawn on secondary data sources and case studies.

### **Tools of collecting Secondary Data**

Various statistical tools will also be used to analyze the secondary data.

- Web Search: - The information related to outside region (other part of India and Globe) will be studied from internet to other published papers.
- Research of journals, periodicals, technical materials, electronics/internet search, site visits etc.

### **Area of study**

Study is focused on the before and after effects of goods service tax in warehouses in India.

### **Limitations of study**

The major limitations of the study is that companies do not find it feasible to disclose their confidential information.

**CHAPTER 3**  
**FINDINGS OF THE PROJECT**



## **FINDINGS OF THE PROJECT**

The principal broad-based consumption taxes that the GST would replace are the CENVAT and the Service Tax levied by the Centre and the VAT levied by the states. All these are multi-stage value-added taxes. The structure of these taxes today is much better than the system that prevailed a few years ago, which was described in the Bagchi Report as “archaic, irrational, and complex – according to knowledgeable experts, the most complex in the world”. Over the past several years, significant progress has been made to improve their structure, broaden the base and rationalize the rates. Notable among the improvements made are:

- the replacement of the single-point state sales taxes by the VAT in all of the states and union territories,
- reduction in the Central Sales Tax rate to 2%, from 4%, as part of a complete phase out of the tax,
- the introduction of the Service Tax by the Centre, and a substantial expansion of its base over the years, and
- rationalization of the CENVAT rates by reducing their multiplicity and replacing many of the specific rates by ad valorem rates based on the maximum retail price (MRP) of the products.

### **Post GST – Need for Network Design**

The proposed implementation of GST will be one of the biggest tax reforms happening in India since independence. The current tax structure is very complex and differs from state to state. The evolution of GST can be seen as a gradual transformation of a disparate, complex and cascading tax structure into a largely unified value added system of taxation.

The current tax structure can be classified into three categories:

- Central indirect tax: Custom duty, Central excise duty, Central service tax etc
- State indirect tax: Value added tax (VAT), entry tax, luxury tax, entertainment tax etc
- Local tax: octroi and other entry tax

Highlights of the proposed GST tax structure are

- Dual GST for centre and states, Integrated GST (IGST) on interstate transactions
- Free credit flow-No cross credit for Central GST (CGST) & State GST (SGST)
- Refund of unutilized accumulated ITC (input tax credit)
- Between 12% to 20% in year 1, 12% to 18% in year 2, 16% in third year

The impact of current fiscal policies has been such that most companies had to give priority to tax benefits over operational efficiency. As an example, many companies have established warehouses in all states where they have a significant market size and transact on “stock transfer” as a way to nullify CST which is paid during interstate sales. Post GST the very existence of many of these facilities will come into question.

		Pre GST	Net Tax	Post GST	Net Tax
Vendor	Cost of manufacturing	100		100	
	Excise	10	10		
	VAT	13.8	13.8		
	GST			16	16
	Final Price	123.8		116	
	Total Tax Paid		23.8		16
Manufacturing Unit	Value addition (Mfg Unit)	50		50	
	BasicPrice	173.8		166	
	Excise				
	VAT				
	GST			26.6	10.6
	Total Tax Paid			176.6	26.6
Warehouse(Karnataka) to Tamilnadu WD	Value addition	50		50	
	BasicPrice	223.8		226.6	
	Excise	22.4	12.4		
	VAT	30.8	30.8		
	GST				
	CST	5.5	5.5		
Final Price	272.4		252.2		
Total Tax Paid		72.4		52.2	
Warehouse(Tamilnadu) to Tamilnadu WD	Value addition	50		50	
	BasicPrice	223.8		226.6	
	Excise	22.4	12.4		
	VAT	30.8	30.8		
	GST				
	CST				
Final Price	266.9		252.2		
Total Tax Paid		66.9		52.2	

Scenario 1

Scenario 3

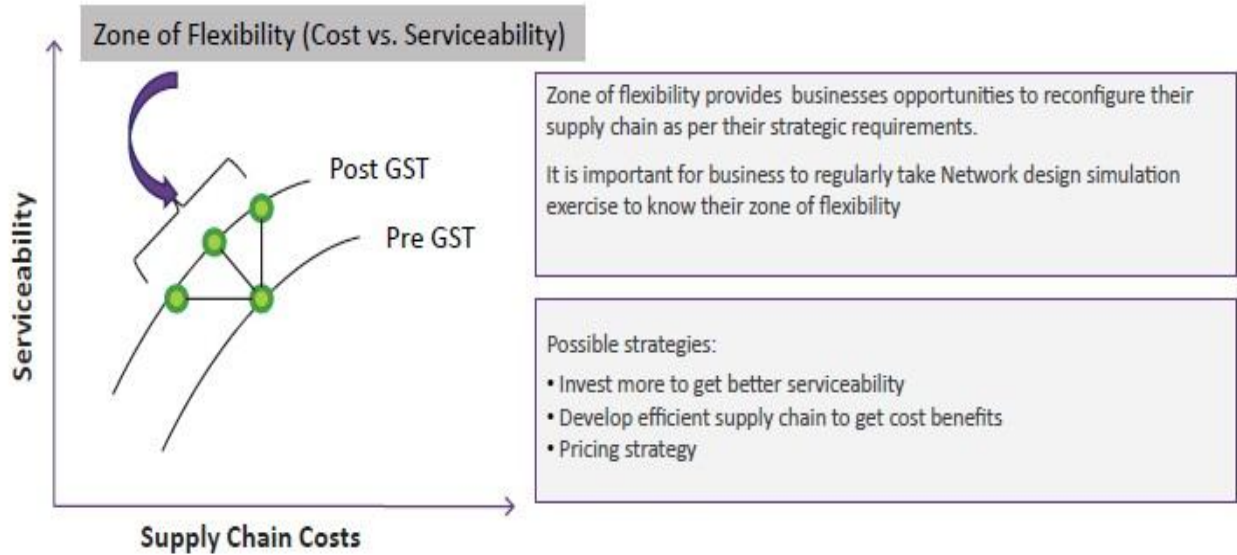
Scenario 2

Scenario 4

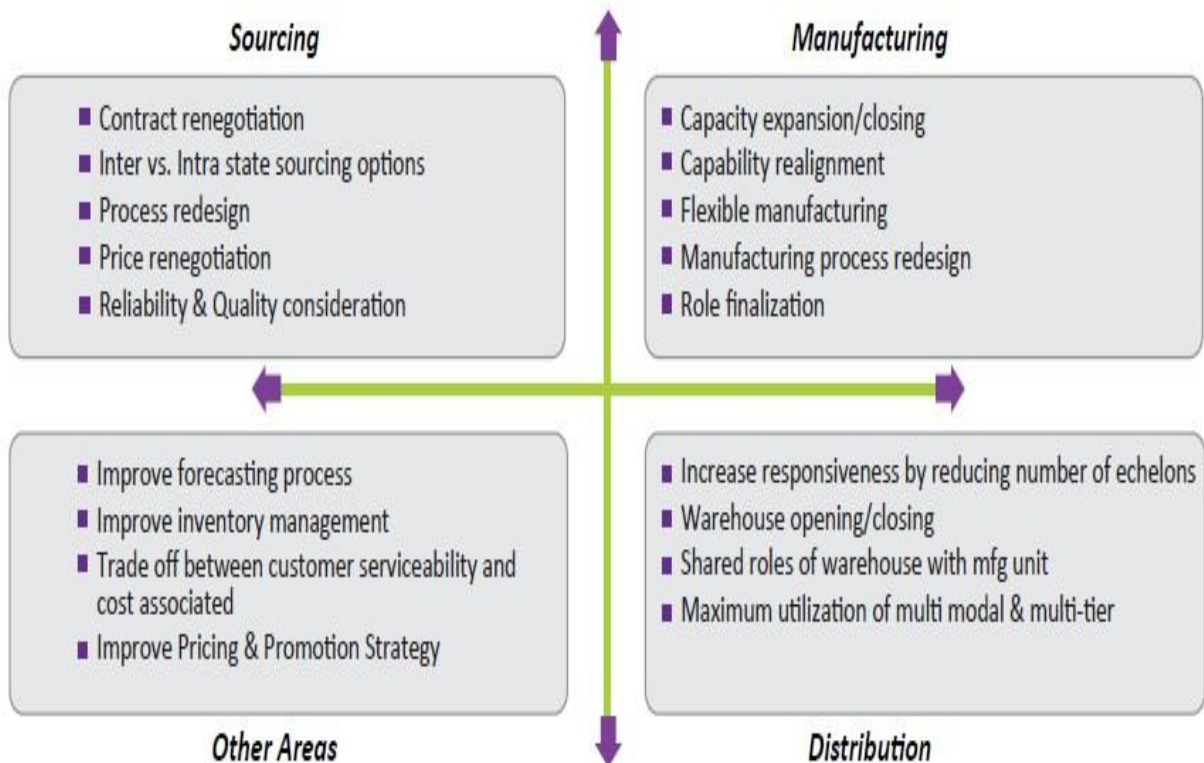
Positives	Negatives
Bigger consolidation of demand at warehouses	Route planning becomes a challenge as warehouses have to deal with dealers in a bigger geography
Reduced variation in demand at warehouses	Secondary freight cost will increase
Improved inventory management	Truck load utilization will reduce in secondary distribution

Improved demand planning	In lower lead times the service level will experience a little impact.
Reduced production complexity (less changeovers)	
Reduction in number of echelons in supply chain	
Increase in truck load utilization (especially in primary freighting)	
Reduced cost for improving service level	

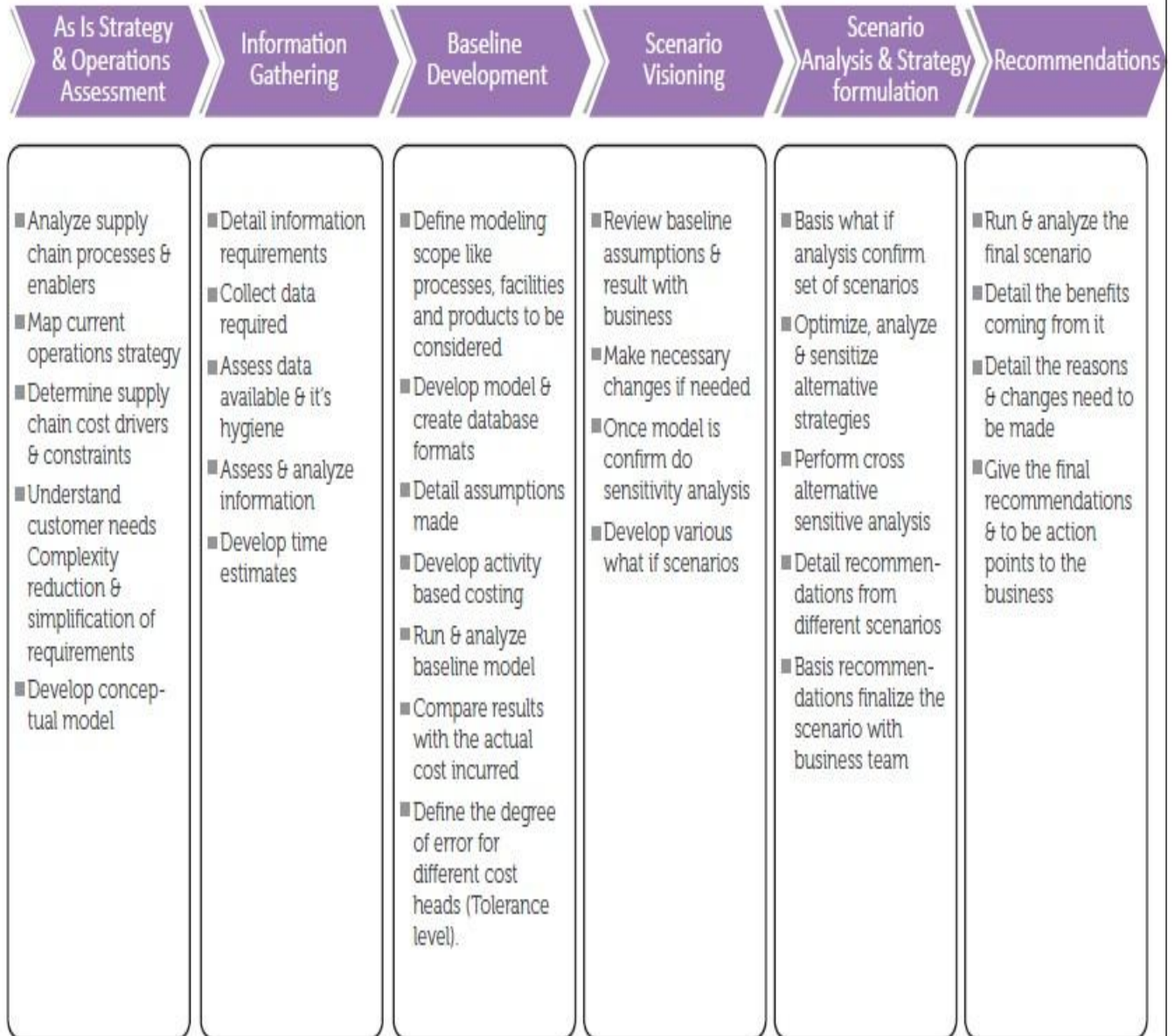
The figure below gives a comparison between supply chain cost and serviceability achieved. Zone of flexibility is a zone which provides businesses with a delta of supply chain cost to improve serviceability in post-GST scenario when compared with pre-GST scenario. Businesses get the flexibility to adopt the best possible strategies which align with their business objectives.



Post-GST companies will look forward to enjoy the benefits of economies of scale and align their objectives to take advantage of operational efficiency. The figure below gives the list of future action points in different areas.



Network design exercise provides platform to analyse all the things explained above. It is a powerful modelling approach to suggest timely changes in the network in a pre- and post-GST scenario. The feature for sensitivity analysis provides platform to analyse various “what if” scenarios. our approach for doing network design exercise is as follows:





The introduction of the GST in its current form is set to benefit cash flow. First, physical working capital costs are likely to decrease as GST would be paid at the time of sale or supply and not at the time of manufacture. Second: The GST is expected to do away with excise duty on manufacturing. And the new tax should open up broader availability of credit in inter-state transactions—a powerful lubricant for commerce.

The GST will make management of cash flow much more efficient since it will permit businesses to claim input credits from output GST obligations. Also, they can pay taxes with available central GST (CGST), state SGST (SGST), and interstate GST (IGST) credits to the state or the central government. Since GST payments affect cash flows, it becomes essential to decide whether to opt for cash-based accounting or accrual accounting. For instance, when considering the timing of the availability of input tax credits, cash basis refers to all payments actually made by the manufacturer during the period whereas accrual refers to all invoices issued to the business in that period. And when discussing the timing of the liability to pay GST, cash-based accounting applies to all payments actually received in the period while accrual relates to all invoices issued during the period.

The GST will affect the availability of working capital. In the case of stock transfers, working capital would reduce since GST is levied during stock transfer but credit is given only when stock is sold. The input tax credit (ITC) available can be utilized only the end of the supply chain, after the goods are sold, which is a function of the lead times of the company. Compared to the present scenario, the GST would delay the realization of cash, reducing working capital.

The new tax will also increase the need for working capital. It will be payable in lieu of service tax. Similarly, it comes on top of existing custom duties. Even though the credit for these taxes can be claimed downstream, more working capital will be needed if GST is higher than the existing tax rates. Any unutilized credit for the CGST (8 percent) and SGST will be refunded at the end of the fiscal year, meaning that cash in the form of utilized credit would be locked until the fiscal year closes. Furthermore, tax exemptions available presently will be converted into a cash refund scheme, raising working capital requirements.

These days, those who run world-class supply chains are attuned to the need to make their information supply chains as efficient and effective as possible. They use IT tools to “see” far up or down the supply chain to sense end customer demand or supply constraints and to help synchronize activities in order to reduce costs and quicken responses to fluctuations in demand.

India, however, does not have much of an information supply chain to speak of. Little is known about what data buyers and suppliers use, let alone what information they might share. Use of technology is quite limited, and the siloed nature of the logistics sector effectively blocks easy dissemination of vital information about shipment times, freight manifests, order accuracy, and much more. The paucity of information creates uncertainty, unnecessary paperwork and delays. The fragmented state of the sector creates another vicious cycle: It makes it much more difficult for technologies such as global positioning system (GPS) vehicle tracking and radio frequency identification (RFID) to catch on.

India's business leaders understand that they have to be able to capture and analyze information related to customer needs and use it to improve their products and services in order to remain competitive. So they are eager to assemble the collection of information and communication technologies necessary to collect information from discrete processes, transform this information from data into knowledge, and distribute this information efficiently and in a timely manner to the appropriate data consumers.

The GST will help to enrich the information supply chain. It will remove the need for CFA agents since businesses will no longer need to bother about taxation due to interstate transfers. This will help make information visible much further up and down the supply chain and make it easier to integrate processes for sharing data such as demand signals, inventory levels, alternate transportation routes, etc. – a definite plus in terms of demand planning and inventory rationalization. Also, with stocks aggregated at fewer warehouses, information management can improve, which in turn will improve planning and assortment availability. In effect, CFAs can now become bona fide third-party logistics providers. At the same time, customers' demands for more value added services will boost the adoption of technology solutions such as warehouse management systems and track-and-trace offerings.

This is not the place to get into the finer points of taxation. Suffice it to say that the GST will materialize in some form sooner rather than later even though it is still the subject of impassioned debate and debate at state and GoI levels—and even though the tax structure faces hurdles before, during and after implementation. Some of the issues still being hashed out include:

- Uniform legislation for collection of the tax at state and central levels, as well as binding agreement among the states to prevent unilateral amendments in their respective legislations. It will also be incumbent on the government to protect the interests of the states that have lower revenue potential.
- Octroi and state permits will still exist in the new regime, and thus may be an impediment following implementation of the GST.
- As yet, there is little discussion about training of field officers to ensure the smooth administration and implementation of the GST regime. Nor does there seem to be a robust technology-based credit infrastructure to support GST implementation.

The main point for business leaders is that the GST is on its way, and they should be ready to use it as a key rationale for transforming their supply chains. Here are several logistics initiatives that can be considered now:

- Design a multi-tiered distribution network to reduce the impact of unreliable transportation. Manufacturers will probably need to adopt multi-echelon networks that cover local, regional and central points. Since the GST can enable a reduction in the number of warehouses, companies can consider efficient hub-and-spoke distribution models. One of India's leading communications industry players is currently experimenting with this mode.

- Develop inventory strategies that call for staging of inventory in the multi-echelon network. This would entail investments to create additional capacity flow, such as staging floor space. It is expected that this investment would offset currently high transportation costs.
- Partner with a fast-growing 3PL provider with demonstrated supply chain planning skills and expertise in areas such as operation of warehousing and distribution centers, after-market distribution, fleet management, and logistics network modeling. Major international players in the electronics, communication and cosmetics industries are already partnering with leading 3PLs in India to be ready for the challenges ahead. Major Indian companies in the power and resources industries are partnering with 4th party logistics providers thus leveraging the competencies of both 3PL providers as well as leading consulting and technology firms.
- Build core logistics teams “on the ground”— in the markets being served. The teams would be responsible for: scoping out and building relationships with service providers in the region; determining criteria for selecting supply chain partners; being familiar with inter-state regulations to remove procedural snafus; and managing local operations.
- Take advantage of growth in the telecom sector and invest in technology that enables better tracking and reporting capabilities. Most Indian companies have already started using techniques such as palletization and are now turning to technology tools such as warehouse management systems software. The next wave of technology use is expected to involve RFID for pallet tracking and returnables and GPS for tracking of vehicles, especially in the food and fast-moving consumer goods (FMCG) sectors.
- Increase asset utilization by building shared infrastructure in warehousing, distribution and transportation space. This investment would cut costs in the short term but it could also be a source of extra revenue in the long term when proper supply chain maturity is established. 3PLs are expected to be prominent players in the effort to better use assets. Some FMCG companies are already moving in that direction with their 3PL partners.
- Make use of cross-docking techniques. With the inception of GST, companies need far less documentation for the inter-state movement of their goods, making cross-docking an attractive way to further reduce costs. Leading global players in the electronics and communications industries have been doing this for many years outside India. Now they are keen to implement the same techniques in their Indian distribution networks.

When the GST finally takes effect, its initial impact will be to hike supply chain costs. Companies will have to maintain parallel networks and invest in new facilities; truck owners will almost certainly purchase larger capacity vehicles, and more of them. on top of that, the government’s tax infrastructure may not be ready to pass on the GST credits.

Nevertheless, the GST affords an unprecedented opportunity to improve supply chain efficiency all across India. It will help improve operating performance in small- and mid-sized businesses as well as large national and international enterprises. And it will help many of India’s foremost corporations close the gap with their global competitors in crucial functions that, until now, they have had relatively little power to improve.

Now is the time for India’s business leaders to act on the opportunity. Their customers will be expecting it. And their shareholders have a right to demand it.

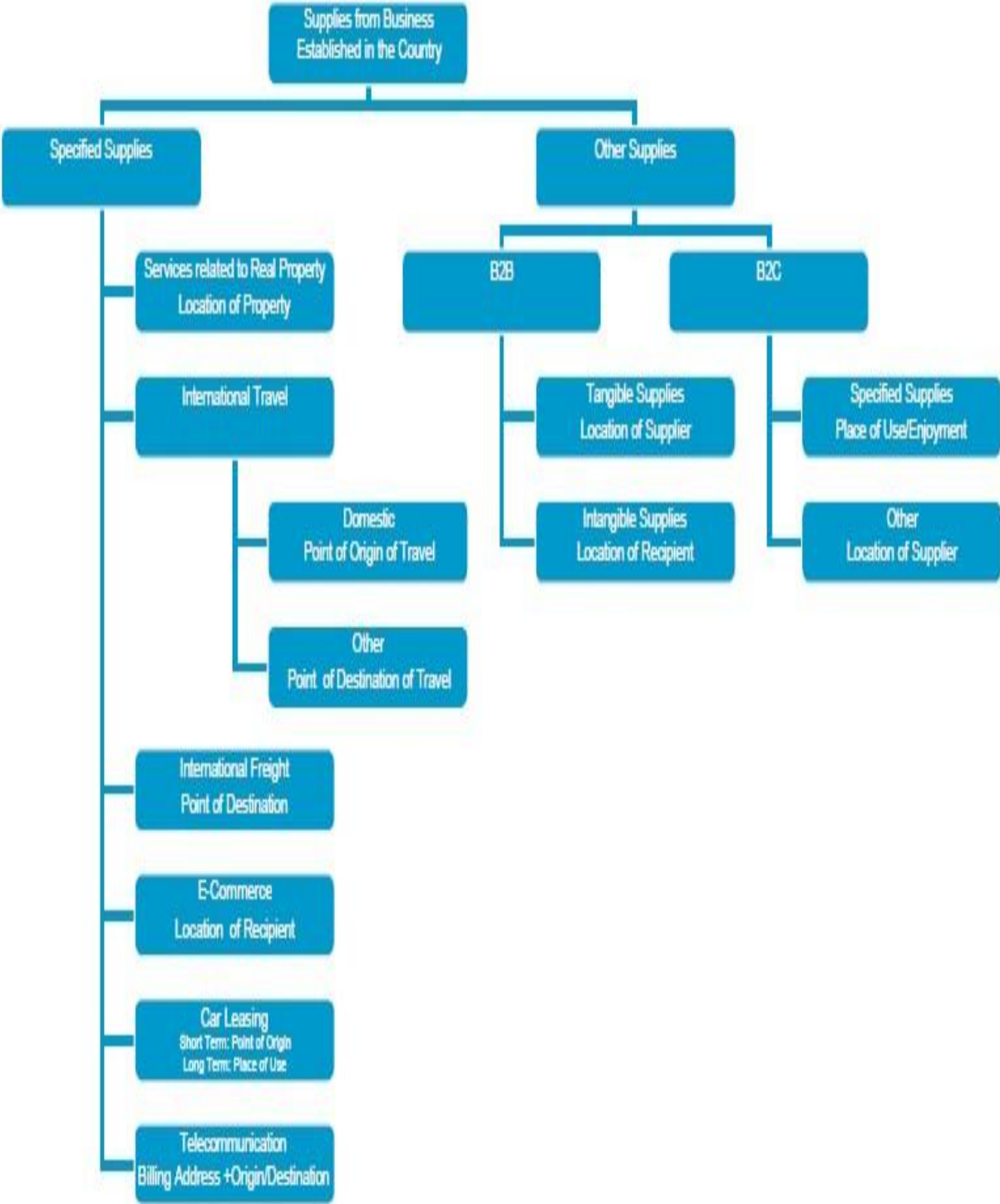


## Tax Rates

In discussions on the GST design for India, it has been suggested that the tax would need to be levied at a combined Centre-State tax rate of 20 percent, of which 12% would go to the Centre and 8% to the states (vide, for example, the Kelkar Task Force Report). While they fall below the present combined Centre and State statutory rate of 26.5% (Cenvat of 14%, and VAT of 12.5%), GST at these rates would encounter significant consumer resistance, especially at the retail level, and would give rise to pressures for exemptions and/or lower rates for items of daily consumption. With the notable exception of Scandinavian countries, where the tax is levied at the standard rate of 25%, few countries have been successful in levying and sustaining a VAT/GST at such high rates.

Table 1 provides a comparison of the tax base and rates in selected international jurisdictions with 'modern' VAT/GST. It provides data on C efficiency, which is a widely-used measure of the comprehensiveness of the tax base. It is calculated as the ratio of the share of GST revenues in consumption to the standard rate. Any deviation from a 100 percent C-efficiency indicates deviation from a single tax rate on all consumption. Zero-rating of some consumption items would lead to a C-efficiency of less than 100 percent while inclusion of investment or a break in the GST chain could lead to a C-efficiency higher than 100 percent. While a C-efficiency of 100 does not imply a perfect VAT, it can serve as a useful indicator of the productivity of GST revenue per percentage point of GST rate. The last column in the table shows revenue productivity of GST in these countries, measured as GST revenues per point of the standard rate divided by the GDP (i.e., (Aggregate Revenues/Standard Rate)/GDP).

Place of Taxation (of supplies other than goods)



## Factors AFFECTING Location of Warehouse

### **Exim Warehouses:**

- Proximity to sea-ports
- Part of logistics parks built around/near ports
- Nodal point of sea ports, rail and road
- Proximity to ICDs

### **R&M warehouses**

- Proximity to manufacturing hubs / SEZs, markets
- Connectivity with rail and road
- Centrally located to serve as distribution hub
- Tax laws and other government regulations
- Trade-offs between cost of land and transportation costs

## **Role of Government Regulations**

### **Incentives to S E Z Enterprises : incentive to set up warehouses within SEZs**

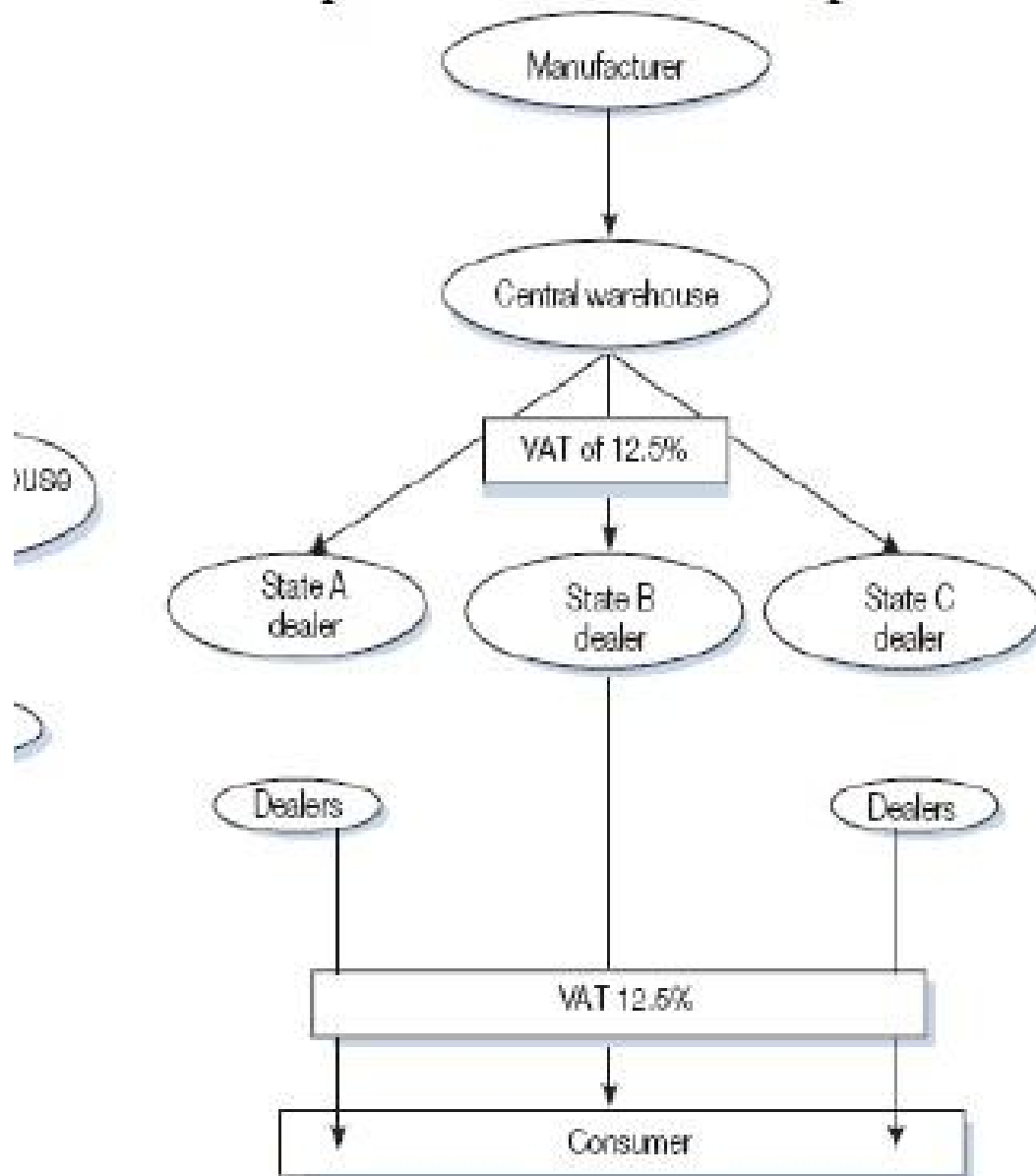
- o Zero Custom Duty
- o Zero Excise Duty
- o Exemption from Central Sales Tax
- o Exemption from Service Tax
- o Exemption from Income Tax
- o 100% for the first 5 years
- o 50% for the next 5 years
- o Re-investment allowance to the extent of profits ploughed back
- o 100% Foreign Direct Investment in manufacturing permitted
- o offshore Banking Units permitted
- o State Govt. Exemptions – Sales Tax, Stamp Duty & other local levies

### **Introduction of VAT**

Warehousing is the new focus area for logistics companies moving up the value chain from plain vanilla trucking or freight forwarding. With the supply chain approach gaining more acceptance in India Inc., the warehousing space is fast becoming part of a premium value package. Customers are demanding services that include freight and warehousing from the same vendor with a view to streamline processes and cut costs. Consequently, several players have started ramping up their space and service offerings around metros and larger cities across India.

The present structure of state taxes and laws (especially the incidence of Central Sales Tax forces corporates to have multiple warehouses in a state so as to show movement of goods and services within the company. This results in huge inefficiencies and benefits of scale of economies do not transfer to corporate bottom lines.

## Post VAT Implementation – Hub & Spoke Model



After VAT, there could be just one warehouse in a state serving a host of smaller, transit warehouses in over four-five other neighbouring states, boosting the creation of hubs and spokes, the most efficient model of logistics. Post implementation of VAT and gradual phase out of the Central State Tax (CST), transportation of goods will be easy, which will boost cargo transportation. Also, since VAT is levied at every billing point, most of the manufacturing companies are likely to outsource the entire VAT procedure to 3PL service providers, thus giving a fillip to the domestic logistics industry.

## **LOCATION RELATED CHALLENGES FOR WAREHOUSE**

### **Availability of contiguous land parcel of optimal size:**

Lot of the key players are yet to take off because even if they have the necessary finances to invest and there is enough demand for services of a warehouse, they still are not able to buy that kind of land parcel of optimal size on which they can build warehouses.

Land ownership is either too fragmented and/or the land is available at a very high rate which makes the economics of warehouse development and operations non-profitable. So the ideal route for SUN-Apollo would be to look for owners of land banks in the suggested locations and then jointly plan investment in warehouses.

### **Rail-road connectivity and other infrastructure development**

Demand for warehousing is maximum where a node is formed due to intersection of railways, roads and sea-ports and at the node of rail-road-airport. Infrastructure required to facilitate quick, easy and economic transportation of goods is yet to be developed in India. Government investment in infrastructure including that in railways, roadways, ports and airport development has been announced so as to facilitate growth of GDP overall. However, as things stand today, challenge is connectivity of locations with rail and road.

Air cargo movement in India is very limited. Therefore, warehouse development around node of airport and rail-road connectivity is not a viable option. Warehouses can be developed where a node is formed by intersection of seaport, rail and roadways. However, limited rail-road development is a challenge.

## **SUGGESTED LOCATIONS**

Dedicated Freight Corridor (11500 km long) is being set up by Railways to connect the four metros by way of dedicated railway line for cargo movement. There will be 7 feeder routes along the Western Corridor and 17 along the Eastern Corridor. Western Freight Corridor (1469 km) will connect Dadri (Delhi) to JNPT through Vadodara, Palampur, Rewadi, Jaipur, and Ahmedabad. Eastern Freight Corridor (1232 km) will go through Ludhiana, Delhi, and Kolkata.

Logistics parks will be set up at interval of 400 km along the freight corridor. Around 40 projects are in pipeline costing Rs.100 billion by private players to set up container terminals on BoT basis. Container terminals will be around major ports: Mumbai, Nhavasheva, Kandla, Ennore, Chennai, Tuticorin.

# Suggested Locations - EXIM Warehouses



## SUGGESTED LoCATIoNS: R&M WAREHoUSES



**CHAPTER 4**  
**BENEFITS AND APPLICATION**



## **BENEFITS AND APPLICATIONS**

Warehouses are an important part of any supply chain and logistics industry. The Indian warehousing sector is progressively getting redefined from the traditional concept of “Godowns” to modern day set-ups with automation. The demand for warehousing space is expected to grow from ~391 mn sq. ft. in 2010 to ~476 mn sq. ft. in 2015, at a CAGR of 6.8 percent. of the total warehousing space, most of the space is not mechanized, the need for logistics industry to re visit there warehousing approach is pressing.

With the introduction of GST the key advantage for logistics companies will be merging of small warehouses to one productive warehouse. Large Productive warehouses will be able to attain benefit through technological sophistication by using state-of-the-art planning and warehouse management systems which are not feasible and used in smaller and scattered warehouses. Large productive warehouses will be able to attain and master massive multidimensionality on the demand and supply side of the warehousing sector, recognizing the need for better services and mass customization, logistic companies look towards modern techniques and data management systems to attain more efficiency and smarter fulfilment. The functioning of large and productive warehouses will be optimized by investing in technologies that will enable visibility, visualization and virtualization. Use of advanced technology, warehouse management systems, material handling equipments, automated pallet racking, forklift trucks; efficient storage systems etc. will determine the modernisation and functioning level of a warehouse in the near future. Modernization of large and key warehouses is highly recommended on the account of:

- a) Large sizes with high throughputs and more complex operations.
- b) Increasing level of services required by organised retail.
- c) Increasing scarcity of skilled labour and real estate requiring mechanised warehouses.

The current dual governance structure makes the Indian taxing system very complex. There are Central level taxes in the form of Central Sales Tax (CST), Customs duty, Service tax, and Excise duty, and then comes the State level taxes in the form of Value Added Tax (VAT), Stamp duty, Land revenue, luxury tax, State excise etc. This type of tax structure has forced the logistics companies to locate small warehouses in all the states where they do business. The planning of locating small warehouses is more driven by logic of saving taxes than achieving efficiency. Due to the taxing systems and locating of small warehouses, most logistics companies have stayed away from modern warehousing techniques and use of modern technology. of the total warehousing space currently used in India, approximately 82 percent is not mechanized. Those which are mechanized or are semi automated have just forklifts and hydraulic pallet trucks. This clearly shows the need for an organized, large scale, good quality and automated warehousing infrastructure in the country.

Good and Services Tax (GS) is a tax on goods and services, which is liveable at each point of sale or provision of service, in which at the time of sale of goods or providing the services the seller or service provider can claim the input credit of tax which he has paid while purchasing the goods or procuring the service. In the Budget speech of 2007-08, the implementation of GST from April 1, 2010 was announced. But due to delay the second deadline for GST of April 2012 was given. Now, it is expected that the GST regime will come into effect by 1 April 2014. GST

is supposed to be the biggest tax reform undertaken by the Indian Government since independence. It is aimed at creating a single and unified market that will benefit both companies and customers. Implementation of GST will be the transformation of a disturbed and complex taxing structure into a largely unified value added system of taxation. It is expected to replace most of the current applicable indirect taxes incurred by the companies at central and state level. The current rate of indirect taxes amounts to approximately 20 percent, whereas the highest rate of taxation under the first year of GST rollout will be around 15 percent and will eventually come down to 12 percent in the second year.

**Table (1) Taxes Included under GST**

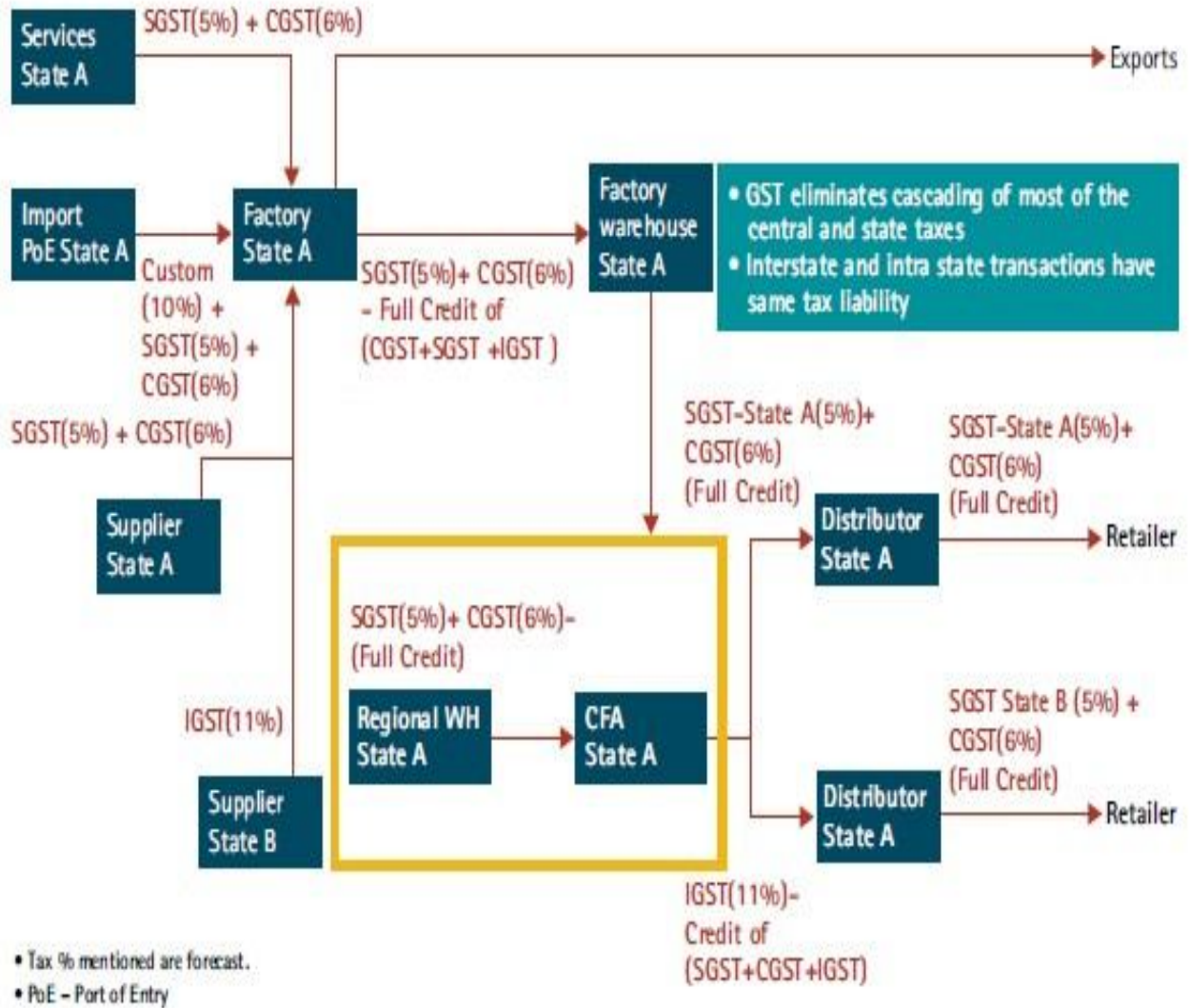
<b>Central Taxes</b>	<b>State Taxes</b>
Central Excise Duty	VAT/Sales Tax
Service Tax	Entry Tax

<b>Additional Customs Duty</b>	<b>State Excise</b>
Surcharges and cesses	Other taxes and duties (Luxury tax, Stamp duty, Land revenue etc.)

GST rollout will offer great opportunities for logistic companies to revisit their supply chain and warehousing strategy. Organizations will be able to explore various new modern warehouse set-ups to increase their efficiency. The share of modern warehousing in India is anticipated to grow from 15 percent (62 million sq. ft.) in 2010 to 30 percent (178 million sq. ft.) by 2015. New and enlarged warehouses will have to be designed or redesigned and with the increasing demand for products and warehousing services, the demand for planning and product management at new constructed and redesigned warehouses will have to be re-evaluated. The increasing demand for modern assets, rising share of organized retail and over production and consumption growth are influencing the logistics industry to set-up large warehouses with more efficient system. Firms will have to look for new optimization techniques with respect to the growing warehousing sector. Small warehouses will have to be replaced with large facilities or warehouses equipped with modern systems to attain modernised warehouse functioning. To maintain the current lead time, firms will have to redesign the warehousing system by factoring in the best warehouse practice to get the most from there warehouse or distribution centre. A new and interactive approach towards the set-up of the warehouse system will have to be kept in mind. From the traditional set-up of warehouses with limited machinery, the set-up has to be changed into a more

modern outlook to meet the global market and demands. The new optimization techniques which can be used to optimize the work flow and management of the system will vary from storage systems to packaging systems, warehouse trucks to forklift trucks, loading/unloading bays to pallet racking systems and from supply chain management to warehouse management system.

### GST Structure



**CHAPTER 5**  
**RECOMMENDATIONS AND SUGGESTIONS**

## RECOMMENDATIONS AND SUGGESTIONS

GST introduction will be one of the strong compelling factors for companies to revisit their supply chain network. The envisaged changes would be large-scale and bring into question the roles of many existing facilities (sourcing/manufacturing/distribution). The optimum network post-GST may result in realignment/closing/opening of facilities. Such transitions are seen to have long lead times, three months to three-four years, depending on the type of industry and type of transition. Companies must revisit their network considering next two to five year horizon so as to be proactive enough to respond to big ticket changes like GST.

Network design exercise provides platform to analyse all the things explained above. It is a powerful modelling approach to suggest timely changes in the network in a pre- and post-GST scenario. The feature for sensitivity analysis provides platform to analyse various “what if” scenarios. our approach for doing network design exercise is as follows:



	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 6	PHASE 7
Activity	Understand- ing strategic Objectives	Data collection & aggregation	Baseline Modelling (Pre GST scenario)	Include forecasted values	Impose GST	Optimize network	Post optimization analysis
Outcome	Existing network analysis, forecast for next 5 years	SKU wise costs involved. Customer, product & geographical clustering	Variable based model for cost estimation & validation	Logistics cost of existing network without taxes	Logistics cost of existing network with GST	Zone of flexibility & analysis of alternatives within it	Selection of best possible network

**CHAPTER 6**  
**CONCLUSION**

## **CONCLUSION**

Tax policies play an important role on the economy through their impact on both efficiency and equity. A good tax system should keep in view issues of income distribution and, at the same time, also endeavour to generate tax revenues to support government expenditure on public services and infrastructure development. Cascading tax revenues have differential impacts on firms in the economy with relatively high burden on those not getting full offsets. This argument can be extended to international competitiveness of the adversely affected sectors of production in the economy. Such domestic and international factors lead to inefficient allocation of productive resources in the economy. This results in loss of income and welfare of the affected economy.

Government regulations are favourable for development of bonded warehouses in CFS and near the ports as there are no excise, customs or sales taxes payable for goods stored in bonded warehouses and moving from one bonded location to another in a sealed condition. SEZ rules provide for certain minimum and maximum area requirements for processing zones and warehousing zones in SEZs.

Sales Taxes payable on inter-state sale of goods currently make it convenient for companies to have state level small warehouses where goods are transported as branch transfers to avoid taxes. This makes supply chain to function below optimal efficiency. With the applicability of Value Added Tax (VAT) to all the states from 2009 onwards, the concept of state level small warehouses will vanish. There will be emergence of 'hub and spoke' model of supply chain management as is prevalent in many of the developed economies so that the costs can be lowered by efficient supply chain management.

In order to estimate the demand for warehousing space in terms of square feet of space, we studied various research reports and collated figures about existing infrastructure in warehousing. As of 2006, there was 45 mn sq ft of warehousing space existing in the market and was being utilized. This includes warehouses owned and managed by public and private players. The expected compounded annual growth rate in warehousing space was 40% due to increased outsourcing of logistics, introduction of VAT and the resulting efficiency in supply chain management. Therefore, an additional 275 mn sq ft of warehousing space will be required to be added to the market over the period 2007-2014.

**CHAPTER 7**  
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