1.1 Public Finance and Economic Growth

Public finance is quite a wide discipline in the theory of economics. It shapes the course of development. Public spending, taxes, user charges and borrowing also affect the behaviour of producers & consumers and influence the distribution of wealth & income in an economy. Poor conduct of fiscal policy has contributed to serious economic problems in part of developing world (World Development Report, 1988, 1). Tools of public finance are being used to achieve the goals of efficient allocation of resources and equity in the economy. It is being recognised increasingly that sustained economic growth is possible only within a sound macroeconomic framework and that in such a framework fiscal policy plays a key role (Stanley Fischer and William Easterly, 2005, 301). Thus, as per the theory of public finance, expansionary fiscal policy helps to achieve growth of the economy. Parallel to this, the economists have also examined how growth and development have determined the fiscal performance of an economy. The economic growth and development of an economy influence the government revenue and expenditure. Thus, the question which arises here, is that when any economy passes through the process of economic growth and development what are the responsible factors that lead to changes in the government expenditure and revenue in terms of magnitude and composition? Particularly when any economy
experiences increase in its per capita income, structural changes in the national income, increase in productivity of its factors of production, increase in physical and social infrastructure, improvement in the human development, do all these influence the revenue raising capacity of the economy?

Moreover, in the countries which are having federal structure, states governments are given the autonomy to take their fiscal decisions. In federal nation the state governments have the power to take their own fiscal decisions and hence their efforts are likely to determine their fiscal as well as economic performance. Now, when the state governments, like union governments are equally responsible for their economic and fiscal performance, the above discussed issue can be raised, whether the economic performances of the state governments influence their fiscal performance or not. At the federal level also one needs to examine the relationship between economic growth and revenue as to how does it affect and in what manner? There are several empirical studies in the western countries that have examined the relationship between per capita State Domestic Product and aggregate Own Tax Revenue of the states or countries. We intend to test the hypothesis whether this relationship does exist in the case of Indian economy or not.

1.2 Need for the Study

As far as Indian economy is concerned, it has a federal structure with a constitutional division of functions between the Union and states. It is characterised by constitutional demarcation of revenue and expenditure power among union government, state governments and local governments. As we know the Union government opted for the economic
reforms in terms of Liberalisation, Privatisation and Globalisation since 1991 and India experienced rapid economic growth and structural changes in the economy. India having a democratic federal structure, the state governments also followed broad framework of macro economic policies of the centre for their growth and development. However, states did not equally benefit from these policies. (Dholakia Ravindra, 2004) An analysis of the growth performance and sectoral changes in the State Domestic Product during the last two decades reveals that the development process has been uneven across all the states. While advanced industrial states have tended to leapfrog in the reform years, other states have lagged behind (Bhattacharya & Sakthivel, 2004). States like Maharashtra and Gujarat attained almost 7 to 8% economic growth rate while states like Bihar and Assam could not grow at this pace and were left behind in the process of economic growth. This led to an emergence of wide economic disparity among the Indian states. The interstate disparity in India is not only high but have also shown increasing trend. In 1980-81, the per capita GSDP of the richest state, Punjab (Rs. 2674) was about 2.9 times that of the poorest, Bihar (Rs 919). In 1998-99, this difference increased to 4.8 times with per capita GSDP of the two state at Rs. 23,254 and Rs. 4813 respectively (M G Rao, 2005,447). Thus, it is evident that Indian states have diverged income level and this divergence have increased over the years. At this point of time another question that emerges is whether this diversity in economic growth of states would have influenced the fiscal operations of the Indian states, particularly revenue receipts of the states. Which means as there is an economic disparity observed among Indian states, has it resulted into the disparities in revenue generation?

Focusing on the fiscal performance of Indian states there is observed variations in the fiscal performance along with the economic performance.
The Finance Commissions’ endeavours mainly focus on the scheme of transfers that could serve the objectives both of equity and efficiency. These transfers, in the form of tax devolution and grants, are meant to correct both the vertical and horizontal imbalances. Nevertheless as interstate difference in the ability to raise revenue increased over the years, and as federal transfer did not entirely offset the fiscal disability of the poor state, the coefficient of variation in per capita expenditure also increased over the time (M.G.Rao, 2005). Moreover, various studies have shown that there has been a severe deterioration in fiscal health at the State level. Both revenue and fiscal deficits have increased sharply, in particular after the economic reforms. Thus, after the efforts of consecutive twelve Finance Commissions to achieve fiscal equality among the states, disparity has rather increased over the years both in terms of economic and fiscal achievements. Pertaining to these circumstances of Indian federalism when fiscal operations have failed to bring equality among the states’ fiscal performance, two issues have emerged. One, examining the finance commission approach which might have failed to achieve its objective. However, that is not the subject matter of this research. Two, does the fiscal performance respond significantly towards the overall economic performance of the state? Does growth and development determine the revenue and expenditure performance of the states? Does the growth and development of the state economy in turn determine the magnitude and composition of revenue receipts?

To answer all these above raised questions in this study is practically not possible. Hence, the area of study will be restricted to examine the relationship between the growth and development and revenue receipts of Indian states. The study tries to discuss whether the tax and non-Tax
Revenue of the state governments respond to the growth and development. If so, how will it react towards the growth and development?

1.3 Objectives

1. To develop an econometric model of determinants of revenue receipts of Indian states.
2. To examine the trend in Tax Revenue and non Tax Revenue of Indian states.
3. To examine the structure of Tax Revenue and non Tax Revenue of Indian states.

1.4 Review of Literature

Extensive work has been done in the discipline of public finance in India and abroad. However, the issue of centre-state financial relations attracted more attention of the researchers in India. It is only during the last decade that, studies related to the state finances have got some importance. These include various studies related to assessing trend of the state fiscal performance and its projections, fiscal imbalances among states, evaluation of fiscal reforms implemented by states, policy recommendations to a particular state for its improvement in fiscal health, discussions related to methodology and approaches of various finance commissions for examining the fiscal performance or tax efforts of states, and vertical & horizontal devolution of Tax Revenue. Implementation of VAT - problems and prospects is the prime area of work in the state finances during current period.
A detailed analysis of revenue performance of Indian states, doing an inter-temporal and inter-state comparison, have got relatively less weightage among the broad framework of state finances studies in India. Although scholarly efforts have been put in the field of states’ revenue, they concentrated mainly on discussing the methodology adopted by various Finance Commissions to measure tax efforts and policy recommendations given by them for improving revenue mobilisation capacity of the states. Researchers those who have tried to examine the revenue performance of Indian states, have either done a case study of a particular state, or have analysed the performance of all states’ revenue together or have made comparison of the tax efforts of major states for a particular year.

Thus, various studies conducted on the Indian states finances can be classified in the following category:

- Fiscal study of individual state.
- State govt. finances – macro study.
- Determinants of states’ revenue

It would be beyond the reach to review all the research findings of Indian studies on state finances and hence as per the issue raised by this research, we focus on the research work that have covered the issues of states revenue.

1.4.1 Fiscal study of individual states

Various studies have been carried out which focus on fiscal performance of the individual state. National Institute of Public Finance and Policy undertook series of fiscal studies of the states – State Fiscal Studies – in
consultation with the respective state authorities and on a local consultancy assignment from the World Bank. These studies have covered the states like Assam (Srivastava D.K., Chattopadhyay Saumen & Rangamannar T.S., 1999), Haryana (Sen Tapan & Rao Kavita, 2000), Rajasthan (Sen Tapan & Bhattacharyya P.N., 2000), Kerala (Srivastava D.K., Chattopadhyay Saumen & Jena P R, 1999), Tamil Nadu (Sarma JVM, Naresh G & Bofcra O P, 1999), Punjab (Rajaraman Indira, Mukhopadhyay Hiranya & Nath H.K. Amar, 1999) and Maharashtra ((Sen Tapan, Rao Kavita & Amarnath H.K.). These works focus on the issues of size, growth and composition of state’s expenditure and revenue (tax and non-tax), debt management, financial position of infrastructural sectors like power, irrigation etc., financing pattern under social sectors, performance of the public sector undertakings, designing fiscal reforms measure and policy recommendations. Theses studies have put an effort to examine the financial performance of the states in relation to their economic and social performance but do not specifically deal with the issue of examining the relationship between growth & development and revenue.

Apart from the research undertaken at NIPFP, there are few individual studies that focus on either the over all fiscal performance of an individual state or a particular aspect of state’s fiscal operations. The studies related to the fiscal balance assumed greater importance in the perspective of fiscal crisis faced by Indian states. The study pertaining to fiscal imbalance in Gujarat reveals that the problem of deficit on revenue account of the Government of Gujarat started only after the year 1984-85 which can partly be attributed to the so called ‘progressive’ formula for horizontal resource distribution adopted by the Planning Commission and successive Finance Commissions (Dholakia Archana, 2000). In case of the Andhra Pradesh the basic fiscal imbalance arises from the fact that most government
expenditures have been oriented towards consumption rather than capital formation. This coupled with the low productivity of government investment has shrunked the base for raising revenue. Thus while government expenditure was rising commensurate increase in the revenue was missing. (Sarma J.V.M. & Sreedevi N.)

Looking at the performance of Non-Tax Revenue, for Gujarat, contrary to the spirit of economic reforms, the state is more active in areas from which it should withdraw as shown by high economic subsidies and it is less active in areas where intervention is called for as shown by low social sector subsidies. Gujarat needs to raise its non-Tax Revenue to ease its fiscal crisis (Dholakia Archana, 2000). Growth and buoyancy of NTR shows deceleration between the pre-reform and reform periods. The factors responsible behind this are: less than 15 per cent contribution of revenue generated out of all publicly provided economic and social services (exclusive of income from non-ferrous minerals), low and obsolete user charges, poor recovery of prices, widening gap between effective price to public and actual price fixed by the government. A study of non-Tax Revenue in Rajasthan has also examined trends in non-Tax Revenue and had identified the factors responsible for their slow growth and the major sources of non-Tax Revenue have been evaluated. Based on the recommendations of this study, state government brought about measures of objectivity and rationality in the user rate structure. An important cause of the poor growth of non-Tax Revenue in Rajasthan seems to be the fact that most of the government services are provided free of charge or remain undercharge (Sarma J V M, Pradhan G & Bohra O P, 1993). An evaluation of tax performance of the West Bengal during the period of 1960-61 to 1991-92 by Dr. Biswadeb Chettejee has studied nine taxes levied by the state government. He explored two major reasons for the poor tax
performance and increased deficit, they are: growing imbalance in the centre-state financial relations and unsatisfactory/low tax efforts due to structural and administrative deficiency.

The state governments realised the severity of fiscal crisis and started adopting fiscal reforms. During the period of 1997-98 to 2000-01, almost all the states implemented fiscal reforms in areas of revenue mobilisation, expenditure management, public enterprises and power sector. Few studies in the recent years have evaluated the steps undertaken by the governments during these fiscal reforms. In case of Haryana, the government took corrective measures during 1998-99 and the fiscal situation was brought under control (Bishnoi N.K., 2004). The study covers the impact of tax reforms, changes in user charges, restructuring public sector and power sector reforms on the tax and non-Tax Revenue. It reviews the initiatives of the state government as a part of reform process and suggests that the future strategies of fiscal policy must address the issues of improving growth of the economy, increase the productivity of agriculture, diversification of agriculture and absorption of workforce in secondary and tertiary sector. Andhra Pradesh was among the states which initiated the fiscal reforms (during 1995-96) while other states were still sceptical about it (Rao Sudarsana, 2005). The paper has studied in detail the reform measures and its impact on the fiscal performance of the state. A decade of political strife in the eighties which was followed by populist economic policies in the nineties led to a massive fiscal deterioration in Punjab, hampering its overall growth process. The state initiated fiscal reform in 1999 and more recent effort towards fiscal consolidation in 2003. The assessment of the entire fiscal reform effort of the state reveals that the Punjab government lacks the grit and determination to implement certain hard decisions for fiscal restructuring. The government is very much
caught up in the web of populist policies and succumbs readily to political pressure against certain unpopular decisions for attaining fiscal stability. The success of the fiscal reform programme depends only on the administrative competence and political will of the government towards achieving long-term fiscal consolidation and restoration of fiscal balances in the state. (Sawhney Upinder, 2005)

1.4.2 Finances of state governments – macro study

There are many studies aiming to examine the overall fiscal performance of the states in Indian federal structure. This macro economic approach of studying the state finances focuses on the comparative analysis of fiscal performance of state governments. The states are grouped in the category based on their Gross Domestic Product or fiscal discipline.

Reserve Bank of India Bulletin annually publishes the highlights of finances of the state governments. These articles mainly present an overview of the development of the budgetary position of states for a particular financial year, discuss the development in the state government’s finances as per the revised estimates, provide detailed analysis of the budgetary operations of states covering states’ own revenues, transfer of resources from Centre to States, the pattern of expenditure, development and non-development expenditure and annual plan outlays of the states. These publications provide the extensive statistical data related to the state finances.

Some extensive research works have been carried out in the State finances during the last few years. Fiscal strain in the state government finances is a major area of concern in the Indian studies. Various economists have
analysed the trend of state finances, discussed the problems and prospects and suggested the fiscal reforms. Failure to curtail wasteful expenditure and reluctance to raise additional resources on the part of the states are the two common problems afflicting most of the state finances (Kurian N J, 1999). The article discusses issue of economic and fiscal disparity across states looking at the differences in fiscal performance in the perspective of other economic differences. He looks at the revenue raising capacity of the states with respect to the variations in their Net State Domestic Product & population. It observes that states like Gujarat and Karnataka collect more Tax Revenue than the larger states like Bihar and Madhya Pradesh. States with lesser population collect more Tax Revenue than the largely populated states. It implies that the level of prosperity — measured in terms of per capita state domestic income may have major influence on level of Tax Revenue. Thus in an implicit way the author realises an association between the growth and the revenue performance. However, the discussion is restricted to classifying the states in terms of their NSDP performance and then looking at their per capita Tax Revenue performance. Apart from this the main focus is on financing pattern of state plans, states’ revenue mobilisation and expenditure pattern and problems of government finances of special category states. Kurian’s observations regarding revenue mobilisation are based on cross sectional data across non-special category state for just one year, i.e. 1996-97. It fails to give a meaningful insight into the individual states’ finances over time (Chakraburty Pinaki, 1999). The article by Pinaki Chakraburty examines what happens to the revenue mobilisation effort of individual states over a period of 1991-92 to 1996-97. According to this study the own revenue-NSDP ratio, of all high-income category states declined by 1.6 percentage point. The low income category of states, which are ‘backward and fiscally weaker’, fared well in terms of their own revenue mobilisation compared to middle and high-
income category of states. However looking at the value of the ratio, throughout the time period it remained high for the high income states, around three times higher than that of low income states.

All the above studies conclude one thing in common that the growth of the states’ revenue has declined particularly after 1985 – 86. Prof. Rao in his study; ‘State Finances in India – Issues and Challenges’ (2002) mentions reasons for slow growth of Tax Revenue. They are; reduction in cases of tax on land and agriculture, stamp registration, state excises and sales tax. Sales Tax Revenue is one third of Tax Revenue and it reduces by 1.7 %. Reduction in growth rate of sales Tax Revenue is due to inability to extend the base to services sector, the base of state taxes is rendered narrow because of large-scale exemptions, evasion and avoidance of taxes. Reasons for reduction in non-Tax Revenue are inability to recover returns on large investment - 85 % of investment is in state electricity board, the financial drain (due to SEBs) and subsidies to SEBs varies among states and losses of state road transport and poor cost recovery from public services.

Fiscal Reform in India – Progress and Prospects a report by World Bank (2004) provide with a macro study of states fiscal crisis during 90s. It is a detailed analysis of fiscal crisis and its impact on the economic growth of Indian states. It also provides an evaluation of expenditure & revenue structure of states, reforms measures adopted at the aggregated level to improve the fiscal performance of states. While focusing on the revenue of Indian states the report reveals that the state government, in holding Tax Revenue constant as a percentage of GSDP is creditable as compared to the Tax Revenue as a percentage of GDP of central government. However, the report analyses either the total states revenue over a period of time or
revenue performance of individual states at a given year. This gives the partial view if one wants to look at the overall trend of the finances of the individual states.

There are some studies in the state finances that specifically focus on the revenue performance of the states and their comparative analysis. They emphasise on the comparative study of tax ratio (tax/GSDP) across the states. The study conducted by K.N. Reddy arrives at the three different types of tax ratios like state’s own Tax Revenue as per cent of state’s income (T/Y), state’s own tax and non-Tax Revenue as per cent of state’s income (R/Y) and state’s own tax and non-Tax Revenue as per cent of state’s income net of direct taxes paid to the Centre (R/Yn). Apart from simply attaining the issue of measuring the tax effort and tax ratio, the author has tried to find the factors that strongly influence the tax ratio and examine the effect of six various factors that exert strong influence over the tax ratio. They are Per capita income, share of non-agricultural sector in SDP, percentage of people above the subsistence level, percentage of urban population to total population, per capita level of services and degree of literacy (K.N. Reddy, 1975). Another study on measuring the tax efforts of the Indian states provide the alternative measure of states’ tax effort by criticising the comprehensive study done by Chelliah-Sinha (D.N. Dwiveći, 1985). The study indicates that different methodologies adopted to measure the tax efforts of states can substantially alter the ranking of states in their tax performance. The method adopted is known as ‘taxable capacity ratio’, the method widely used by IMF studies. Taxable capacity ratio compares the actual Tax-GDP ratio with estimated taxable capacity ratio. TCR is taken as a function of per capita state income and urbanisation. Ideally, relative tax efforts can be compared if one can arrive at a normative standard rate. The fairly good measure of relative tax effort may be derived.
by comparing the actual T/Y ratio with an average response to such tax handles (Oamman M A, 1987). He attempts to measure the relative tax effort of 16 major Indian states on the basis of their performance during 1970 – 1982 with the equation where state taxes-income ratio for all states is a function of income from agriculture, income from manufacturing sector and income from hotels, trade and commerce. The study also compares the elasticity and buoyancy of individual states as a measure of tax efforts.

There are two sets of problems with this simple measure of taxable capacity. One, GSDP is the imperfect proxy for tax base especially when tax structure consists of a combination of number of different taxes falling on distinct tax base. Two; the implicit assumption of linear and proportional relationship between the broad tax base and Tax Revenue is not necessary. (Sen Tapan, 1997). Sen studied the separate cross-section regression for each of the taxed or more accurately, group of taxes for the sample of 15 states for the average of 3 years. Thus, it is the computation of tax efforts of each state for group of taxes. For this purpose, regression approach is adopted. Agriculture Tax Revenue is taken as a function of GSDP from primary sector; sales Tax Revenue is taken as a function of per capita SDP, share of agriculture in SDP, urbanisation and no. of schedule bank branches in the states. Thus, the tax effort of each state is computed on disaggregated bases.

All the above studies aim at providing better measure of tax efforts. However, they suffer from one or the other limitations. They fail to take into account the trend behaviour of states’ revenue. To evaluate how fare the state is performing in generating revenue it is important to see the performance over a period of time. Cross section study or measuring the
tax ratio by taking average of some years will not help to investigate whether the state has improved upon the tax efforts or not. It provides only a relative position as compared to other states that vary widely in terms of socio-economic situations. However, some of the studies like, Oamman and K.N.Reddy have tried to take either the average of tax efforts over the years or have compared the tax efforts at the beginning of the time period with the end years. This method somewhat captures the performance of states over a time but the outcome will be influenced by the value of tax efforts at the beginning and end year.

Study done by Raja Chellia and R.Kavita Rao (2003) traces the trend in the Tax Revenue at the centre and state level and based on that background formulate the recommendations on tax policy to increase Tax Revenue along with the growth of the economy. In their analysis, they focus on the Tax Revenue behaviour during the period of 1980-81 to 1999-2000. While examining the trends, they have made an attempt to identify the causes that have led to the fall in the tax ratio in some cases and a rise in the others. Nevertheless, the paper does not deal with the revenue performance of an individual state and rather study the different Tax Revenue trends of all the states together.

During the economic development, government has a pressure for raising resources to meet development finance and hence tax structure undergoes a change. This change in revenue depends on the built-in-flexibility of the tax structure. These characteristics vary from state to state. All these aspects can be analysed intensively if each state is taken separately for a study (Purohit M.C., 1976). The paper attempts at presenting state-wise analysis of growth and composition of Tax Revenue in India during the period of 1957-58 to 1970-71. While analysing the variations in the trend
of Tax Revenue of each state, the emphasis is laid on a comparative role of different taxes in various states. To calculate the growth rate over a period of time a trend rate is calculated by fitting the regression line of $Y_t = a b^t$; where $b = (1 + r)$ and $Y_t$ is the value of growth character (Tax Revenue). However, the paper neglects the role of the non-Tax Revenue and has not incorporated the analysis of the non-Tax Revenue in the study. The study concludes that taxes on agricultural land and income as well on property have been dwindling. Taxes on commodities and services, on the other hand, have been contributing a larger part of states’ own Tax Revenue. The role of these taxes in the states’ tax structure is becoming increasingly important. This is the effect of the policy of least resistance of the state governments contrary to the idea of framing a progressive tax structure.

1.4.3 Determinants of Tax Revenue.

Indian scholars while studying the state revenue performance have remained centred around the tax effort of the state governments. Very few studies have addressed the issue of what determines the Tax Revenue, how does it change with the changes in economic structure, sectoral performance, urbanisation, monetisation, etc. Moreover, these studies have neglected the non-Tax Revenue also and have attempted to identify the determinants of only individual taxes or their aggregate.

Jose Sebastian’s study (1993) proposes the consumption expenditure as a better proxy for the sales tax base rather than the State Domestic Product. He argues that SDP may not adequately capture the inter-state differences in sales-tax potential arising from the variables like, income distribution, marginal propensity to consume, urbanisation and monetisation. Apart
from this, SDP is measured on income origin principle. It does not capture the increase in tax potential due to remittances made by people, working in other state and countries to the home state. However, there is a problem with the data used as substantial portion of the consumption expenditure in any states falls out side the purview of households and is not covered in the NSS. Part of the burden of the sales tax levied by a state is borne by the consumers of other states and so tax base is not confined to the states' borders only. Moreover, consumption expenditure of higher income group is not adequately covered by NSS (Sreedevi, 1991).

Shibalal (1995) has developed a model that incorporates both per capita sales Tax Revenue and ratio of sales tax to State Domestic Product separately as dependent variables. He has concluded that per capita state domestic product is a prominent determinant of sales Tax Revenue. However, state income is a proxy to the tax base and is purely exogenous from the point of view of Tax Revenue. This leaves with the alternative to identify endogenous variable that could be used as suitable policy instrument to affect tax yield. The study finds tax rate as the suitable alternative to state income that affects sales Tax Revenue collection as and when desired by policy makers. To handle the multiple tax rates Shibalal has constructed two indices of sales tax rates with the weight of production base and consumption base. The study has developed two different models for two dependent variables, per capita sales Tax Revenue and sales tax ratio and the independent variables are per capita state domestic product, share of non-agriculture sector in SDP and rate of sales tax. Nevertheless, due to the problem of multicollinearity between the tax rate and SDP, both independent variables are used in separate equations. Though the researcher realises that the changes in Tax Revenue over time seem to be influenced by a wide range of factors, such as environmental, technical,
economic, political and administrative, the relative impact of these factors is likely to vary spatially as well as inter-temporally. He therefore focuses only on the parameters namely, base and the rate of the tax.

While the findings of studies discussed above focus on the determinants of only sales Tax Revenue, M G Rao has tried to study the determinants of states’ aggregate Tax Revenue; considering both economic and political factors. The author argues that changes in Tax Revenue depend on factors affecting the taxable capacity and tax efforts of the states and has segregated the impact of the various capacity and effort factors. The study examines the effect of various economic factors on individual Tax Revenue as well as aggregate Tax Revenue of states over time. The effects of political factors such as the ideological leanings of the parties in power and the political stability, on the states’ fiscal outcomes have been observed in this study. It is the time series study of four states separately. The determinants of per capita state Tax Revenue that he has selected are; percentage of income from the primary sector, per capita income at constant prices and working class consumer price indices in the state capital. These three are the capacity factors. For the tax effort factors he has chosen, percentage of previous year’s budgetary deficit/surplus to states’ expenditure in previous years, changes of party in power and the developmental plans. Dummy variables are introduced to represent the developmental plans and political parties in power. The study concludes that the increase in the Tax Revenues of the states seems to have been caused mostly by increasing prices rather than expansion of real per capita income or percentage of primary sector income. The logic behind this can be explained by the disaggregated analysis of the major taxes. The political factors do not seem to be significant determinant of Tax Revenue. However, the study faced the problem of multicollinearity. While the
percentage of primary sector income is highly correlated with the per capita income in Orissa and West Bengal, the price index is highly correlated with both the per capita income and percentage of primary sector income in all the state except Kerala. Hence, the individual independent variables do not seem to pick up their true impact on dependent variable. (Shibalal, 1995, 119). The study covers only four states, having not so varied economic structure. The findings may not be applied to other states that are more industrial in nature. While studying the determinants of individual Tax Revenue the study has assumed independence of different taxes, which is unrealistic.

In contrast to the Rao study, in Gujarat the Tax Revenue responded greatly to the change in income. (Sarma, Rao and Radhakrishnan, 1973). The study has come up with analysing growth, responsiveness, determinants and projections of Tax Revenue of Gujarat state. It emphasises on evaluation of the state taxes in terms of adequacy criterion where adequacy criterion refers to the built-in-ability of tax structure to respond in great yields to rise in income. The determinants of individual taxes are examined. Where land revenue depends upon agricultural income, sales tax revenue depends upon income from manufacturing and non-agricultural income. The number of vehicles on road explained the variations in revenue from motor vehicle tax better than income or any of its components. Non-agricultural income and number of cinema halls are equally good at explaining variations in entertainment tax revenue. None of the dummy variables, representing legislative changes, in the analysis is significant. However the study had to content with only eleven observations and so all the legislative changes could not be considered by them. Another problem is that the study is based on the unrealistic assumption that the revenue from one tax is independent of those from all
other taxes. Similar study has been conducted by M. C. Purohit but was extended for sixteen states. (Purohit M C, 1981). The study aims at presenting an empirical analysis of buoyancy and income-elasticity of states’ taxes and examines the determinants of Tax Revenue explaining the variations in tax yield. The results have been presented for each tax at individual states as well as all-states’ for the period of 1960-61 to 1970-71. However, the study fails to analyse the disparities among the states that is reflected in the revenue generation and its determinants.

From above it can be inferred that there are very few studies, which examine the relationship between the economic growth/development and revenue performance. However none of them have incorporated Non-Tax Revenue and were restricted to only Tax Revenue. Another issue emerges that theses studies are either cross sectional that fail to capture the trend and provide only relative performance of the states, or the studies are restricted to only one state and provide time series analysis. Few studies like M G Rao and M C Purohit provide time series of individual states providing an analysis of relative performance of states while examining the determinants of states’ Tax Revenue. Thus, since the regressions were run individually, this method fails to capture the variation that exists among the states in terms of economic and social structure. Almost all the studies tried to incorporate tax rate as one of the determinants. Study by Shibalal tried constructing tax rate indices to deal with multiple tax rates. While another studies adopted the dummy variable approach to capture the effect of legislative changes in tax structure. In none of the studies dummy variables coefficient have been significant. Except the studies such as Rao’s all researchers have studied the determinants of individual Tax Revenue and assumed lack of interdependence. For among the various taxes which the economy is interested in raising the aggregate revenue, the theoretical
approach cannot be successfully adopted. The determinants of revenue need to be studied at the aggregate level, rather than individual tax level as the bases of all taxes compete with each other.

At the international level there are few noteworthy studies which have shown that government revenue as a percentage of national income increases with economic development. Williamson (1961) relates the differences in revenue shares in Gross Domestic Product between the countries to their level of development as represented by their per capita income (Shibalal, 1995, 118). In contrast the study of sixty counties, (both developed and underdeveloped) by Hinrich (1965) offers ‘openness’ – import as a percentage of GNP – as a superior indicator of revenue shares for less developed countries. He concluded that there is a highly significant correlation between government revenue share and per capita income for all sixty countries. Nevertheless, none existed among only less developed or developed country separately.

Openness cannot be considered as a determinant while talking about the state Tax Revenue. However, the logical relationship between the growth and revenue may certainly remain the same both at centre and at state level. Several other international studies Groves and Kahn (1952), Wilford (1965) and Legler and Shapiro (1968) try to discuss the determinants of state revenue. Studies by Groves and Kahn and Wilford have serious limitations of empirically dealing with tax rate as a determining factor of state Tax Revenue, holding the assumption of independence of taxes. Legler and Shapiro have developed the general theory of state Tax Revenue, which has dropped the assumption of independence of state taxes, and considers states’ entire tax system rather than each tax individually. They have tried to build up a behavioral relationship between:
the Tax Revenue and income & consumption. To deal with the multiple tax rates they have introduced vectors for each tax where each element of the vector represents the respective tax rates. They further introduced variables such as population, income distribution between luxurious and non-luxurious goods, price of the taxed goods and non-tax goods as determining factors of consumption and hence derived the revenue function as \( R = f(y,N,p,r_1,r_2) \) (where, \( y = \) per capita income, \( N = \) population, \( p = \) price of taxed goods, \( r_1 = \) income tax rate & \( r_2 = \) sales tax rate) and also obtained the elasticity of Tax Revenue with each of the above variables. However they have assumed that state income and growth are independent of the tax yield. They developed the general model of determinants of states’ Tax Revenue, where state Tax Revenue was determined by per capita income, population, direct tax rates; which include income tax rate, corporate tax rate, and indirect tax rates, such as sales tax rate, motor vehicle fuel tax rate, alcoholic beverage tax rate and tobacco tax rate. This model in fact suffers from the problem of multicollinearity as the per capita income is correlated with direct tax rates. In case of the multiple tax rates structure the same identity would hold. Under the system of multiple tax rates the variable indicates the vector with as many elements as there are tax brackets. The regression equation estimated the relevant elasticity by taking the logarithm of each variable. The study in fact emphasises the relationship between the Tax Revenue and tax rates and through this discusses the impact of growth of the states on their revenue performance. Though all the tax rate coefficients are not found to be significant, the statistical results are satisfactory in terms of goodness-of-fit. (Shibalal, 1995, 118). They recommend that tax problems can not be solved by piecemeal adjustments of individual tax rates but a complete revision in their tax structure is required.
The study conducted by Legler and Shapiro has proved to be superior in examining the determinants of states’ Tax Revenue. It tries to establish the behavioural relationship between the Tax Revenue and various economic parameters such as population, consumption, price and multiple tax rates too.

However this study also has a limitation that it provides time series analysis of states’ Tax Revenue of United States only individually. Moreover it is restricted to only Tax Revenue and does not include non-Tax Revenue. No significant work has been observed in the area of finding the determining factors of non-Tax Revenue or examining the relationship between the economic performance and non-Tax Revenue. One of the reasons might be low percentage share of non-Tax Revenue in the total basket of states’ revenue. Apart from this, Tax Revenue has more political implications than that of non-Tax Revenue.

Two important conclusions which may be derived from the above are: 1. a study of non-Tax Revenue needs to be done in the present scenario. States need to generate additional financial resources to meet the growing expenditure. This can be done by raising the non-Tax Revenue which so far has not been tapped fully. We need to study whether the structural changes in the states economies influence the non-Tax Revenue or not. Study of this relationship is so far being neglected both in India and other countries. 2. Another issue is that the study combining both time series and cross sectional data is required, to examine the revenue performance of the states over a period of time. States experience the economic growth and development, the structural composition of the states income also changes with the time hence the impact of all these on the revenue can be captured only with the time series analysis. Moreover, Indian states differ greatly
from each other in their economic and social structure. There are a few states that are growing rapidly in terms of manufacturing sector while some of them are still agriculture predominant. The states like Gujarat, Maharashtra enjoy higher level of urbanization while others lag behind. There is a wide disparity in terms of natural endowment, population and so on. In such a situation, it is necessary to capture the varied socio-economic conditions while discussing the relationship between the growth of the state economy and its revenue generation. The relative performance needs to be studied. To fulfill this objective, use of panel data analysis becomes inevitable. The present study thus tries to overcome the limitations of some of above studies and use the technique of panel data analysis while examining the impact of economic growth on the states’ tax and non-Tax Revenue.