CHAPTER III

REVIEW OF EARLIER STUDIES

Studies on taxation in general and tax burden in particular are numerous. Since the early part of 20th century, several governments, institutions and individuals examined this part of fiscal economics and enriched the existing level of literature. A cursory look at those earlier studies will help us in understanding the significance of the existing studies in the field of taxation. Studies on taxation can be reviewed under three heads namely, studies at international level, national level and at regional level.

George R. Zodrow\footnote{George R. Zodrow of Rice University (1994) analysed the incidence of taxes in United States. He analysed and measured about who ultimately bear the final burden of a tax. According to him ‘economic incidence’ is different from ‘statutory incidence’. He opined that once market adjusts, a tax may be partially or fully shifted from one set of economic agents to another. He concluded that business taxes are shifted forward as higher consumer prices or shifted backward as lower wages and prices.} of Rice University (1994) analysed the incidence of taxes in United States. He analysed and measured about who ultimately bear the final burden of a tax. According to him ‘economic incidence’ is different from ‘statutory incidence’. He opined that once market adjusts, a tax may be partially or fully shifted from one set of economic agents to another. He concluded that business taxes are shifted forward as higher consumer prices or shifted backward as lower wages and prices.

Mohamed Hussain and Najam us Saquib\footnote{Mohamed Hussain and Najam us Saquib (1989) analysed the “Tax incidence by income classes in Pakistan”. The study attempted to estimate the incidence of federal taxes, for the fiscal year 1978-79 on households belonging to different income brackets. All major direct and indirect taxes have been covered in the study. The tax system as a whole turned to be slightly progressive, and for rural households it is slightly regressive. Indirect taxes – a} (1989) analysed the “Tax incidence by income classes in Pakistan”. The study attempted to estimate the incidence of federal taxes, for the fiscal year 1978-79 on households belonging to different income brackets. All major direct and indirect taxes have been covered in the study. The tax system as a whole turned to be slightly progressive, and for rural households it is slightly regressive. Indirect taxes – a
major source of the federal government tax revenue are generally slightly regressive. Comprehensive household income and expenditure survey and input–output table for Pakistan were the main inputs for this study.

Wisconsin Department of Revenue, a Division of Research and Policy (2004) analysed the incidence of Wisconsian state taxes. The study examined the burden of each state and local taxes as well as the overall tax structure. It covered the burden of state and local taxes and their distribution across the Wisconsian households in 2001. Size distribution of households income, housing system, age and household structure were the factors considered for the estimation of burden of taxes.

Department of Revenue, Minnesota, analysed the Minnesota’s household and business tax incidence for the year 2009. Previous studies by the same department estimated how burden of state and local taxes were distributed across income groups from a historic perspective. It covered 99% of Minnesota taxes paid by individuals and business. It addresses an important question, who pays Minnesota’s taxes? It also estimated tax incidence across income groups for state and local taxes for 2011. By forecasting, the incidence in the future, it is possible for the policy makers to have a view of state and local tax system that reflects the changes in tax laws. 2011 projections also reflect the impact of the forecast for economic growth and expected changes in the distribution of income on the tax system. Major findings of the study were:
a) Of the total $22.1 billion taxes, 83.9% of burden ultimately falls on the Minnesota residents ($18.5 billion). The remaining $3.5 billion of the tax burden is exported to non-resident consumers or non-resident owners of capital.

b) In 2006, the state and local tax burden on Minnesota households were 11.2% of income which was 11.6% in 2004.

c) Share of business tax out of total tax revenue falls from 33.2% in 2004 to 32.5% in 2006.

d) The tax system as a whole is regressive.

Edward B. Sennoga\(^5\) of Makerere University, Kampala, Uganda and Sally Wallace, Andrew Young School of Policy Studies, Georgia State University (2007) analysed the incidence and economic impact of property taxes in developing and transitional countries. It found that, burden of property taxes imposed on capital and land is borne by the capitalists (owners of capital and land). Tax burden is progressive with middle income and wealthy consumers bearing a heavier burden compared to poor consumers. It also concluded that pattern of incidence unaffected by intranational and international mobility of capital.

Justin Marion and Erich Muchlegger\(^6\) (2008) undertook a study on “Tax evasion and commodity tax incidence: Theory and evidence from Diesel and fuel sales tax”. It was of the view that both state and federal diesel taxes are fully and immediately passed on to consumers. 50% of diesel tax is passed
on to consumers when United States refinery capacity utilization is above 95 per cent. Elasticity of residual supply of taxed diesel should be greater than the untaxed use of diesel. It also concluded that the tax passed through is greater in cold months in states that use diesel intensively for home heating.

Antone Bozio of the Institute of Fiscal studies, United Kingdom, analysed the tax incidence. According to him taxes were not paid by companies, it is being paid by the workers through lower wages. Companies hand over the money (statutory incidence) but the worker is made worse-off (economic incidence). The study opined that it is the most inelastic side of the market that pays the tax most. It was the view that payroll taxes paid by the employees. Increase of payroll tax led to the reduction in real wages and not reduction in profits.

Richard W. Tresch (2008) while evaluating public sector economics was the opinion that impact of a tax refers to who pays taxes to the government? And incidence refers to who bears the burden of taxes? The two differs, because government tax market transactions and market reacts to taxation. It is the market distributes the tax between producers and consumers. Consumers bear the burden because they pay higher prices and buy less and lose some of their consumer’s surplus. Producers bear burden because they receive lower price and sell less and lose some of the producer’s surplus.
Don Fullerton (2002), Department of Economics, Tufts University analysed the tax incidence. The very purpose of the study was to identify how the tax burden is allocated among consumers, through higher prices, and lower wages. According to the study, in a partial equilibrium analysis, burden of a tax depends on elasticity of supply relative to elasticity of demand.

The first systematic study on taxation in India was done way back in 1939 when, the National Planning Committee appointed a sub-committee on public finance whose terms of reference included the determination of weight of taxation on occupational groups. Taxation Enquiry Commission study (1953-54) was based on the consumer expenditure data collected by the National Sample Survey (NSS) in the 4th Round (April-Sep., 1952). These data were assumed to hold good for the year 1953-54 for which Taxation Enquiry Commission worked out the incidence of indirect taxes. The burden of indirect taxes was worked out in terms of percentages of expenditure among different monthly expenditure classes of rural and urban areas. In the absence of data on income distribution, the expenditure was assumed to be equal to income and this presumption constituted a serious limitation of the study. Main findings of the Taxation Enquiry Commission study were:

a) 3.6 per cent of consumer expenditure was paid as indirect taxes by all households in the country.

b) Urban households paid twice the proportion of consumer expenditure as indirect taxes than by rural households.
c) Among different expenditure groups in rural and urban households, the money burden of indirect taxes was mildly progressive.

The incidence of central and state indirect taxes in India was examined twice by the Union Ministry of Finance. The first study was carried out for the year 1958-59 and the second study for the period 1963-64. Ministry of Finance Study (1958-59) was based on the NSS data on consumer expenditure collected in the 13th round (Sep. 1957 to May 1958). This study provided a comparative analysis of the distribution of money burden of all indirect taxes among rural and urban households in different expenditure groups in 1953-54 and 1958-59. The comparison brought out the changes in the distribution of tax burden inflicted by increase in indirect taxation during the period between the mid-points of the first and the second five year plans. Main findings of the study are:

i) In 1953-54, indirect taxes accounted for 3.6 per cent of consumer expenditure of all households. This had shown an increase to 5.7 per cent in 1958-59. This expansion is mainly due to central excises and sales taxes.

ii) Similar pattern is true for both rural and urban households. The proportion of consumer expenditure paid as indirect taxes by rural households increased from 2.9 per cent in 1953-54 to 4.4 per cent in 1958-59 and that by urban households from 5.9 per cent to 9.3 per cent during the same period.
iii) In 1953-54, urban households shouldered the burden two times higher than the rural households while by 1958-59, the proportion paid by urban households became 2.1 times higher than that was paid by rural households. This implies a higher relative burden on urban households.

iv) The distribution of money burden of indirect taxes among different expenditure groups was progressive both in 1953-54 and 1958-59.

v) The distribution of money burden of indirect taxes among different expenditure groups was more progressive at the all India level and also for rural and urban households.

Another study was done by the Ministry of Finance concerning the incidence of indirect taxes for the year 1963-64. According to this study the proportion of indirect taxes in the total consumer expenditure increased from 3.6 per cent in 1953-54 to 5.7 per cent in 1958-59 and to 10.1 per cent in 1963-64. In the case of urban households, the tax element as percentage of per capita consumer expenditure increased from 5.9 per cent in 1953-54 to 9.3 per cent in 1958-59 and to 16.6 per cent in 1963-64. In the case of rural households the corresponding increase was from 2.9 per cent in 1953-54 to 4.4 per cent in 1958-59 and to 8.0 per cent in 1963-64. Thus, as in the case of Taxation Enquiry Commission (1953-54) and Ministry of Finance Studies (1958-59), the tax incidence on the urban households in 1963-64 was a little more than two times of the incidence on rural households. Finally, the incidence of indirect taxation continued to be progressive in 1963-64, both in the case of urban and rural
households as per the proportion paid as indirect taxes by the households in different expenditure groups.

Indirect Taxation Enquiry Committee undertook a comprehensive study of incidence of indirect taxes for the year 1973-74. This study was based on NSS data of consumer expenditure in its 28th round (Oct. 1973 to June 1974). Main findings of this study are:

1. All indirect taxes amounted to 11.2 per cent of national income. Of this 1.65 percentage points had fallen on the government sector and on the investors and the rest had been shifted to the private consumers.

2. The burden on rural households amounted to 8.0 per cent of their consumption expenditure and on the urban households it was 18.0 per cent.

3. The distribution of tax burden in terms of percentage of total expenditure at the all India level was 2.96 per cent for households with per capita monthly expenditure not exceeding Rs. 15 and 21.96 per cent for the group with the per capita expenditure of Rs. 100 and above. Thus, the poorest section of the society was found to be paying 3 per cent of its expenditure as taxes to the government.

4. Per capita indirect tax payment per annum for urban and rural households was Rs. 174.50 and Rs. 57.30 respectively in 1973-74. This ratio was 3:1.
5. In this study, goods subject to taxes were classified into three groups, i.e., consumption goods, intermediate goods and capital goods. Out of the total incidence of 10.54 per cent of consumption expenditure, the share of consumption goods was 5.34 percentage points, amounting to half of the total incidence, intermediate goods accounted for 4.53 percentage point and the remaining 0.63 percentage point was on capital goods.

Another study on the incidence of indirect taxes sponsored by the Ministry of Finance was undertaken by Pawan K. Agarwal, National Institute of Public Finance and Policy. This study estimated the incidence of major indirect taxes viz. Customs duties and excise duties levied by the central government and sales taxes levied by the state governments. Major findings of the study pertaining to the year 1989-90 are:

i) Tax incidence was high on necessities.

ii) Sales tax constituted the highest part of input taxation or major part of revenue from input taxation came from sales tax.

iii) Tax incidence on consumers in rural areas was lower than that in urban areas.

iv) Progressivity of taxes in rural areas was higher than that in urban areas.

v) Tax incidence on food items was lower than that on non-food items.

This study used the consumer expenditure data of the NSS in its 44th round of survey (July 1988 – June, 1989). The distribution of tax burden with reference to consumer expenditure was found to be progressive in both
rural and urban areas, but tax progressivity was higher in rural areas vis-à-vis urban areas. By relating tax burden to monthly per capita expenditure, the study repeated the mistake committed by the Indirect Taxation Enquiry Committee. Hence, its conclusions not free from limitations.

Ved P. Gandhi worked out the relative taxable capacity and the relative tax burden on the agricultural and non-agricultural sectors for the years from 1950-51 to 1961-62.\textsuperscript{15} This study assumed that, the 30\textsuperscript{th} percentile of the population in agricultural and non-agricultural sector having only subsistence or below subsistence income (i.e.), no taxable capacity. For the calculation of relative tax burden this study assumed that direct taxes are not shiftable and indirect taxes are shiftable. As far as relative taxable capacity is concerned, this study concluded that there is a clear indication of inter-sectoral inequity in favour of the agricultural sector. But the exact extent of inequity was not revealed by the study. This study examined the incidence of public expenditure on the agricultural and non-agricultural sectors also. It concluded that the benefits received by the agricultural sector were higher than the taxes paid by this sector.

Lydall and Ahmed conducted a study during the year 1965-66.\textsuperscript{16} This study calculated the incidence of almost all the direct and indirect taxes according to income groups in rural and urban sectors for the first time in India. Estimates for the year 1965-66 were made by taking 1955-56 as base and assuming the variables involved and income distribution constant. This study
had not considered the inter-industry use of various commodities on which taxes have been imposed. Moreover, the assumption that the rates of direct and indirect taxes would not change over a decade is not realistic. Therefore, this work was insufficient to arrive at any realistic estimate of the tax burden for 1965-66.

Another study by Harold Groves and Madhavan\textsuperscript{17} attempted to measure the fiscal burden. Both direct and indirect taxes and government expenditure were covered to arrive at the net contribution of the agricultural sector. However, one peculiarity made the estimates of this study less dependable. The methodology employed in the study outlined that principles used to apportion the receipts and expenditures between the sectors vary from one item to the other depending upon the expenditure pattern of the people, nature of tax, nature of expenditure etc.

Economic Times Research Bureau studied tax incidence in India covering all central and state taxes.\textsuperscript{18} It examined the inequity in tax incidence both at the inter-sector and inter-class levels in India. It was observed that, the incidence of income tax, corporation tax, expenditure tax, estate duty, wealth tax, gift tax, profession tax, urban immovable property tax, entertainment tax and electricity duty fell entirely on the non-agricultural sector, only land revenue in its entirety was borne by the agricultural sector. The bureau opined that the agricultural sector was substantially under taxed. Within the agricultural sector, household with cultivated land of 10 acres and above paid
only Rs. 14 crores towards agricultural income tax, while their counterparts in the non-agricultural sector (with annual income of Rs. 3500 and above) paid direct taxes to the tune of Rs. 917 crores in 1969-70.

On the lines of Tax Research Unit studies, Chelliah and Lal made an analysis for the year 1973-74\(^1\) covering all central and state taxes. While calculating the tax incidence, an allowance for the first time was made that the taxes falling on the goods purchased by the government administrative departments should not be included in the allocational exercise as the tax collected is tax to the government only. Due to the non-availability of disaggregated input-output table, this study adopted a more simple minded case by case allocation of taxes on inputs and machinery on the basis of their pattern of consumption of final goods. Taxes on inputs are taken to be passed on to consumers without any time lag. But taxes on machinery items were taken to be passed on through higher depreciation charges over a period of time. The average life of plant and machinery was taken to be 10 years and accordingly only 10 per cent of the taxes collected on machinery items in 1973-74 was assumed to be passed on to the consumers during that year.

Ahmed and Stern made a comprehensive study of effective taxes and tax reform in India. They also attempted to measure the incidence of indirect taxation for the year 1979-80.\(^2\) They constructed a consumer expenditure matrix for 1979-80 on the basis of consumer expenditure matrix available for the year 1973-74 (NSS 28\(^{th}\) round). They constructed the
consumer expenditure matrix for 1979-80, assuming a constant distribution of expenditure between groups over a few years when mean income have not changed drastically. Since, they generated the consumer expenditure matrix in terms of total consumer expenditure; the allocation of indirect tax revenue over expenditure classes was done on the basis of total per capita expenditure only. Incidence pattern was found to be less progressive in this study.

Divakara Rao\textsuperscript{21} (1984) attempted to measure the incidence of direct and indirect taxes with respect to household’s income for the years 1964-65, 1968-69 and 1975-76. He estimated the size distribution of income by integrating the NSS consumer expenditure data with the income tax data. The NSS data were first used to construct Lorenz-curves and then with the help of assumption of Paretoan distribution of income tax data and National Council of Applied Economic Research saving – income ratios, the fractile-wise consumer expenditure for the household income brackets in rural and urban areas were generated. Important conclusions of the study are: a) direct taxes are more progressive than indirect taxes, b) urban households bear higher tax burden, c) the increase in tax burden is more for lower and middle income classes than for upper income classes and d) there has been very little effect of taxation on the size distribution of income.

A study by the Government of India based on consumer expenditure data provided by the 18\textsuperscript{th} Round (1963-64) of NSS, worked out new estimates of tax content of the expenditure of both rural and urban
This study employed the usual assumption of full shiftability of indirect taxes. The study adopted consumption rather than income as the basis for calculation of tax incidence. The adoption of consumption tends to overstate the progression or understate regression of the tax system since the consumer expenditure as a proportion of income tends to fall as one move up the income scale. This study revealed that the money burden of indirect taxation was more on the urban than on the rural sector. Progression was also more for the former than for the latter. This applied not only to all the households taken together but also to households at different expenditure levels.

To measure the tax burden on Indian agriculture, yet another study was made by Ved P. Gandhi. He was of the opinion that the sectoral tax burden defined as the ratio of taxes per capita to income per capita of the sector is not free from shortcomings. Assuming proportionality, if income alone is an indicator of taxable capacity, aspects such as wealth per capita, wealth inequality and income inequality were not given due weightage. Despite these shortcomings, the study observed that the agricultural sector is under taxed. This study also took cognizance of open and concealed taxes and open and concealed subsidies.

S.L. Shetty worked out the relative taxable capacity and relative tax burden of the farm sector and non-farm sector in India for the first three five year plans and three annual plans. He opined that the relative tax burden
between the two sectors had no significance without reference to their relative taxable capacity. He first calculated the absolute taxable capacity of the two sectors and then arrived at their relative taxable capacity. For calculating the tax burden on the farm and non-farm sectors, he used the term incidence in the sense in which it was used by Dalton: i.e. the total direct money burden is equal to the yield of tax to the public treasury. He calculated the relative tax burden for the urban and rural sectors, both on per capita and aggregate accounts. For calculating the aggregate figures, he assumed that the proportion of population between two sectors was just equal to that of the distribution of workers between the two sectors. He also calculated the elasticity coefficients of tax burden to sectoral income, using the semi log function of the type \( Y = AX^b \). On the basis of his findings, he observed that the hypothesis that the farm sector is under taxed did not hold good except for the period of Annual Plans (1966-69).

K.S.R.N. Sarma and M.J.K. Thavaraj\textsuperscript{25} were critical on the various studies on tax incidence in India and highlighted the conceptual and empirical shortcomings therein. In most of the studies, it is assumed that the expenditure pattern as given by the NSS conforms the income distribution pattern. But, not only income, the expenditure of the households is also influenced by its size. They further stressed that, the commodity taxation which has been worked out by the Ministry of Finance and others through NSS data, makes no provision for direct taxes and therefore, what has
emerged is only a partial view of tax incidence in India. They also pointed out that due to voluminous expansion of inter-state trade; there is the likelihood of inter-state transfer of tax burden. Regarding the net burden studies, their major objection is that all types of expenditures have not been taken into consideration. Most of the studies on net tax burden in India considered only the expenditures of the revenue side of the budget policy.

The direct tax burden on agricultural and non-agricultural sectors in India was analysed by A.C. Angrish (1970), and upheld that the farm sector was under taxed. The distribution of benefits of public expenditure on the agricultural sector also have been calculated in this study and justified the enhancement of land revenue on the basis of the benefits the agricultural sector had drawn from the state exchequer. The taxable capacity of the agricultural sector has also been worked out in this study, by laying down the subsistence norm of income with reference to the subsistence size of holding. This study primarily relied on the data available in the RBI Bulletins and the Reports on Currency and Finance.

K.N. Reddy made an attempt to estimate (1972) the inter-sectoral fiscal burden by incorporating the burden borne and the benefits received. This study covered both the central and state taxes along with the taxes collected by the local bodies. This study discussed in detail the concealed taxes, that is the additional costs which the agricultural sector has to bear for education and health services, as well as concealed subsidies, that is the lower
irrigation and electricity rates, cheap finance, etc. received by the agricultural sector. According to K.N. Reddy, there is no inequity in tax burden between the agricultural and non-agricultural sectors and between the lower income class in the agricultural sector and the lower income class in the non-agricultural sector while there is inequity between the upper income class in the agricultural sector and the upper income class in the non-agricultural sector.

D.T. Lakdawala and K.V. Nambiar\textsuperscript{28} (1972) studied the incidence of commodity taxation in India. This study reveals that the overall incidence of commodity taxation in India in respect of different expenditure groups had been progressive. This study emphasized that while assessing the distribution of burden, benefits accrued through expenditure must be taken into consideration, for policy prescriptions.

A committee\textsuperscript{29} was set up to review the taxation of agricultural wealth and income by Ministry of Finance. This committee suggested the imposition of Agricultural Holding Tax (AHT) and the integration of agricultural and non-agricultural income to determine the tax rate for non-agricultural income. The committee observed that the system of indirect taxation may lead to progression, but it is a poor means for resource mobilization, since there is a possibility of shifting it. Therefore, for equitable distribution of the burden it is essential to use direct taxes to the extent possible for resource mobilization.
Government of India through the Ministry of Finance made again an attempt to examine the incidence of taxation in India in 1973-74. For the calculation of tax burden, this study has used the data of NSS consumer expenditure survey, 1973-74. For sales tax and union excise duties, the data on their item-wise collections were used to allocate incidence. Similarly, the burden of electricity duty was allocated on the basis of its purpose-wise collection.

Studies on taxation in general and on incidence in particular at national level are significant in formulation of fiscal policies. Studies on tax rate, tax handles, coverage, tax compliance, administrative efficiency and tax efforts made by government at regional level are totally different and are important. It is of great value to investigate the distribution of tax burden at state levels as taxes have impacts on the standard of living of the people.

National Council of Applied Economic Research conducted different surveys for the three states namely Gujarat, Mysore and Jammu and Kashmir. These studies were intended to measure the distribution of burden of taxes. All important central and state, direct and indirect taxes were covered in these studies. These studies did not cover the fiscal incidence. To estimate the incidence of taxes, these studies opt for the usage of the concept-full family budget survey. The study found the incidence of individual taxes on commodities and services such as union excise and sales tax to be regressive throughout the income ranges. The incidence of taxes on
commodities and services was also studied with reference to expenditure. It was found that the overall burden of these taxes did not vary significantly at lower expenditure ranges although it became significantly progressive for the higher expenditure groups mainly due to the central excise duty and state sales tax.

The National Council of Applied Economic Research study of tax incidence for the state of Mysore related to the year 1968-69, examined the tax burden in relation to household income and analysed the pattern of its distribution among different income groups both in the urban and in the rural sectors of that state. For estimating the incidence of income tax, the tax revenue realised in the state from income during the year 1968-69 was allocated to the different income classes in the proportion of their tax liability calculated on the basis of the survey data. For indirect taxes, incidence was calculated separately for taxes on final consumer goods and producer goods.

State governments such as Orissa, Uttar Pradesh, Kerala and Gujrat independently constituted Taxation Enquiry Committees to study their existing tax structure and to suggest measures for additional resource mobilization.

Kerala Taxation Enquiry Committee estimated tax incidence on the agricultural and non-agricultural sectors covering only state direct and indirect taxes. Uttar Pradesh Taxation Enquiry Committee entirely depended for the allocation of indirect taxes levied by the state on the methodology
adopted by Taxation Enquiry Commissions. However, direct taxes were allocated only to rural and urban sectors. Gujarat Taxation Enquiry Committee estimated incidence for the year 1977-78 on the households belonging to different groups both in rural and urban and agricultural and non-agricultural sectors. This study also calculated incidence with respect to income and distributed the burden on intermediate goods and capital goods without using input-output tables. The committee also recommended for the abolition of Octroi and proposed the levy of Entry Tax to cover the commodities including ‘declared goods’. Orissa Taxation Enquiry Committee launched a Consumer Budget Enquiry to arrive at figures of tax incidence directly on the basis of tax payments revealed by the survey. The distinction of this study lies in the fact that after relating the tax (important central and state, direct and indirect taxes) to the expenditure of the household groups, an attempt was also made to convert the expenditure groups into corresponding income groups on the basis of assumed average propensity to save for each expenditure groups and then relate the tax liability to the ascertained average income in each group.

The Taxation of Agricultural land in Andhra Pradesh by C.H. Hanumantha Rao\textsuperscript{38} and Agricultural Taxation in Gujarath by Mahesh T. Pathak and Arun S. Patel\textsuperscript{39} are also notable studies regarding tax bruden.

Banamali Dey\textsuperscript{40} attempted to estimate the incidence of indirect taxes on the basis of NSS data and benefits of government expenditure on
social services for fractile groups in rural and urban sectors of West Bengal for the year 1964-65. The significance of this study is that it separately treated the incidence of tax on raw materials and the producer goods proper using 144 sector input-output table constructed by Saluja for the year 1964-65.

Jain attempted to study the incidence on agricultural and non-agricultural sectors for the period 1951-1971. While distributing the burden of taxation on agricultural and non-agricultural sectors, he took into consideration the proportion of tax collections to national income of the two sectors separately and came to the conclusion that the agricultural sector was under taxed. He observed that the urban tax incidence was almost three times higher than the rural incidence.

D.N. Dwivedi measured the incidence of land tax in Uttar Pradesh for calculating the incidence of land revenue. Only the taxed area and the tax paying cultivators were taken into consideration. The study concluded that the incidence of land revenue in Uttar Pradesh has considerably declined over the period 1955-56 to 1965-66.

Hemlata Rao examined the tax incidence with respect to agricultural and non-agricultural sectors in Uttar Pradesh for the period from 1960-61 to 1965-66. This study covered all the direct and indirect taxes of central and state governments. Data on rural and urban sectors were substituted for agricultural and non-agricultural sectors, wherever, the data for agricultural and non-agricultural sectors were not available. The study
made the conclusion that the incidence of total tax on the non-agricultural sector was more than on the agricultural sector.

The tax structure of different states in India was reviewed by P.K. Bhargava. He objected to the separation of agricultural and non-agricultural income for tax purposes as it led to inter-sector inequity in tax incidence. According to this study, the significance of sales tax is growing in the finances of state governments while the significance of land revenue is waning.

Shyam Nath worked out the incidence of important taxes in Rajasthan. The main objective of this study was to develop an appropriate methodology to measure incidence of both central and state taxes falling on the inhabitants of the state. This study also attempted to measure and analyse the tax incidence on the rural and urban sectors and different expenditure groups in the two sectors in Rajasthan. This study revealed that tax incidence on the rural sector consistently stands lower than on the urban sector. This disparity is more marked in direct tax incidence. At all levels of expenditure, urban households have borne higher tax incidence than rural households. Moreover, incidence of central indirect taxes is consistently higher than those of state taxes.

A study on commodity taxes in India with special reference to Uttar Pradesh was done by A.K. Agarwal. An effort had been made in this study to find out the role the taxes have played in the economic development of the
state since 1951. The study was of the opinion that the then existing tax mobilization measures were inadequate to mob up the required revenue to the exchequer. Hence, it suggested innumerable measures such as revamping of the tax rates and re-defining the ‘tax handles’ to mobilize the revenue to the government of Uttar Pradesh.

Janak Raj Gupta\textsuperscript{47} made an attempt to study the burden of taxation in Punjab. His study is an inter-sectoral and inter-class analysis. This study examined the inter-sector tax and expenditure incidence in Punjab for the period from 1967-68 to 1976-77. To study the inter-class distribution of tax burden and expenditure benefits, the data pertaining to the NSS consumer expenditure survey 28\textsuperscript{th} Round (1973-74) was used. The study opined that the absolute incidence of all indirect taxes taken together is slightly more progressive in the agricultural sector than in the non-agricultural sector. The per capita benefits from all types of developmental expenditures taken together are found to be more for the agricultural sector than for the non-agricultural sector. According to this study, the taxable capacity of the agricultural sector is larger than that of non-agricultural sector. This study also opined that the agricultural sector has received more benefits from public expenditure and it has always borne less tax burden than the non-agricultural sector.

R.K. Bansal and J.R. Gupta\textsuperscript{48} studied the aspects of sales tax in Punjab. This study traced the origin and growth of sales tax in Punjab and also
analysed the burden of it. The study has relied mainly on the data contained in the state budgets, the Reserve Bank of India Bulletins and the NSS consumer expenditure survey 28th Round (1973-74). This study observed that the proportion of per capita sales tax to per capita income has been lower for the agricultural sector than for the non-agricultural sector. It also revealed that in spite of ever-increasing population, per capita tax burden in Punjab has been consistently growing over the period. Similarly, the rate of increase in per capita burden of sales tax has also been higher for the non-agricultural sector.

System of sales taxation in Andhra Pradesh and its various aspects were analysed by A. Venkatarayudu. This study reveals that the incidence of sales tax in the rural and urban sectors taken together appears to be closer to that in the rural sector, as the rural sector accounts for a major share in the total consumption expenditure. This is found to be true when total expenditure is considered for assessing the tax incidence. This study computed the buoyancy and elasticity of state’s sales tax taking the state’s non-agricultural income and the state income from secondary sector as bases.

Regarding the determinants of per capita sales tax revenue, per capita income and proportion of urban population to total population together explain a greater proportion of variation than the combination of per capita value added by manufacture and proportion of urban population to total population. It thus appears that, the degree of urbanization (as indicated by
the proportion of urban population to total population) is a major determinant of sales tax revenue either in the aggregate or per capita.

Girish K. Srivastava\textsuperscript{50} has traced the incidence of commercial taxes in Rajasthan. This study estimated the elasticity and rate of growth of commercial taxes in Rajasthan. While analyzing the economic aspects of sales tax, this study identified the following factors influencing the revenue of sales tax. They are; character of sales tax, incidence of sales tax, nature of goods sold, incidence of imports and exports, protection policy of the government and kinds of dealers. According to this study, the per capita incidence of sales tax has increased more than six times within a period of 13 years from 1961-62 to 1973-74. The reasons for a rapid increase in tax incidence during these years were partly due to mid-year taxation measures and measures taken for early recovery of tax arrears, strict control against tax evasion etc. in 1963-64 and increase in the rate of taxes during 1965-66 due to Indo-Pak war. In 1967-68 the rates were again revised to increase the revenue to meet out the mounting expenses of the government. Similarly, the incidence of passengers and goods tax also varies with the nature of route as the tax is higher on pucca roads than that on kutcha roads. As far as electricity duty is concerned, the quantum of incidence of electricity duty depends upon the income of individual persons, whereas a person’s tax burden varies directly with changes in expenditures on entertainment and the tax payer can alter his tax burden by varying these
expenditures. i.e. A person’s tax burden does not change with a change in his money income but it rather alters on the basis of his rate of spending.

An attempt was made to present a state-wise analysis of growth and composition of tax revenue in India by Mahesh C. Purohit. This study presented the trend of revenue from a tax with respect to all states. Thereafter, variations in the trend of revenue from the tax for each state have been analysed. While analyzing changes in composition of tax revenue, growth rate of each tax has been presented. It has been calculated by the relationship \( Y_t = ab^t \). The reference period of the study is 1957-58 to 1970-71. The first year of the study coincides with re-organization of states. This is necessitated because; no comparison of the position of individual states with reference to the year preceding 1957-58 is possible. The study opined 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. This is the effect of the policy of least resistance of the state governments contrary to the idea of framing a progressive tax structure.

The methodological issues involved in the measurement of sales tax potential and efforts of states were analysed by Jose Sebastian. Existing sales tax efforts, the State Domestic Product and its various components were used to assess the potential base of taxes. In a federation like India, where the tax efforts of units is accepted as one of the criteria for the devolution of grants-in-aid, any inappropriate measurement of tax efforts of units can result
in perverse transfer of resources. To avoid this, this study tried to present an alternative approach which serves as a potential base of sales tax. This study observed that as State Domestic Product is estimated on the basis of income origin principle and it may not adequately capture the increase in tax potential arising from remittances. Therefore, among two states with equal State Domestic Product the state with higher income accruing will have higher level of consumption and to that extent, its sales tax potential will be higher.\textsuperscript{53} Hence, it is clear that State Domestic Product cannot truly represent the sales tax potential of the states. It may overestimate the potential in the case of some states while, it may under estimate the potential in the case of yet other states.

But, the state-wise consumer expenditure data provided by the National Sample Survey Organisation (NSSO) appears to be far superior to State Domestic Product (SDP) as the proxy base of sales tax. The major advantage of this data is that, it is collected throughout India by a single agency using the same methodology.

Srinivasa Mathur and Tapas Kumar Sen\textsuperscript{54} made a study on the “Income Responsiveness of State Taxes in Maharashtra”. They opined that the composition of state tax revenue and the growth of individual tax revenue relative to that of State Domestic Product seem to suggest that the overall income responsiveness of the tax revenue in terms of buoyancy and perhaps in terms of elasticity as well would be expected to be fairly high in Maharashtra.
Jose Sebastian through a study “Indicators of Sales Tax Administrative Efficiency: A Comparative Study of Southern States” proved that sales tax administration in Andhra Pradesh, Karanataka and Tamil Nadu is more efficient than in Kerala. This study is in support of an earlier work on Kerala which concluded that the relative sales tax effort of Kerala has deteriorated despite tremendous increase in potential.

Mahesh C. Purohit analysed the structure and incidence of sales taxation in India. The study probed the rationalization of sales tax structure and harmonization of inter-state tax. Lot of innovative reforms such as proper and timely assessment of sales tax, cost of collection, trends in appeals, collection of arrears, processing of returns, determination of exemption limit, advisory committees, developing information system, re-organising enforcement wing, abolition of check-posts, and training and recruitment of personnel have been suggested to increase sales tax revenue. He opined that, the political commitments, the economic as well as administrative rationality also calls for the above reforms, and the reforms suggested above would go a long way in this direction.

S. Gurumurthi has discussed the sales tax system in Tamil Nadu. This study in its first part presents the origin of sales tax in India. The historical perspective and the various changes that took place in the structure of sales taxation in Tamil Nadu including the tax base, rate and exemptions granted are also analysed in this work. The second part of his work is
devoted mostly to the administrative reforms, especially for the introduction of Value Added Tax (VAT) in the place of sales taxation to ensure harmony in rates among states.

Pawan K. Agarwal (1991) analysed the responsiveness of personal income tax. It found that inequity in the distribution of income is the reason behind the responsiveness. He developed a methodology for estimating the elasticity of taxation due to changes in personal income. It concluded that increase in the tax inequity in the distribution of income yielded more revenue. Tax elasticity varies with rise and fall in inequity.

Govinda Rao (2000) analysed the tax reforms in India. While doing so, he evaluated the major changes in the tax system. He assessed and compared the direct and indirect taxes also. Main focus of tax reform should address the reduction of inequities that exists in the system. He was of the opinion that tax reform is major challenge as it interacts with various agents of the economy.

Kelkar Task Force (2002) analysed the reforms that Indian tax system needed. He proposed an agenda of reform for direct and indirect taxes. It was of the opinion that following reforms must be addressed without any time lag.

a) Elimination of exemption and replacement of allowances.

b) Indirect tax system needs overhauling.

c) Direct tax rates must be moderate.
Gillen et al., (2002) analysed the taxation of Air Transportation in India. According to him, service tax on domestic and international passengers and cargo will hit hard the air service users in general. Moreover, he was of the view that, taxing air transport is a violation of Chicago convention. According to World Travel and Tourism Council, 32.39.4 billion Indian rupees worth of economic transactions were carried out in 2009 in India by air transportation. (6% of GDP). A service tax of 10.3% will ultimately fall on 3.1 million Air passenger.

Ashokankur Dutta (2006) analysed the incidence of fuel taxation in India. To assess the incidence of fuel taxes, the study undertook a representative household survey and used input-output table. According to this study fuel tax is regressive. A tax on kerosene is an only tax regressive in all situations. Policy makers deem fuel tax an abatement tax because of climate change as India being the fifth largest emitter of CO₂. It concluded that, subsidies outweigh taxes for cooking and light fuels and for transport fuels taxes outweigh subsidies.

Helene Poirson (2006) studied the tax system in India as “Could reform spur growth?”. She analysed the effects of tax system on growth through private investment. According to this study, Indian tax system is characterized by (a) High dependence on indirect taxes, (b) Low average effective rates and (c) Large tax induced distortions.
M.Q. Dalvi and M.M. Ansari (1985) analysed the fiscal performance of central and state taxes in India. They estimated the elasticity and buoyancy of state and central taxes by using regression method. They concluded that the buoyancy for central and state taxes were exceeding one. At disaggregate levels buoyancy of central taxes were 1.25, state taxes 1.24 and for both central and states 1.24. It was of the opinion that trends in personal income taxation from 1980-81 to 2007-08 suggest tax rates were exorbitantly high.

Ankita Gupta (2009) analysed the trends and responsiveness of personal income tax in India. It estimated the trends in the taxation of personal income during 1980 and 2008. Tax collections were to the tune of Rs. 24.56 billion in 1990 increased to 103.76 billion in 2000. It was of the view that personal income tax revenue growth is very high during the study period.
REFERENCES


