CHAPTER VI

INCIDENCE OF EXCISE DUTIES:
SOME APPROXIMATIONS
6.1 Resource mobilisation being the primary objective of taxation, the preceding two chapters exclusively meant for an evaluation of the growth, composition, elasticity and buoyancy of excise revenue. In this chapter, it is proposed to take up the second important tax objective which, in the Indian context, aims at more equitable distribution of income and wealth. When the tax structure is specially designed to achieve equity objective the distribution of the tax burden is presumably in accordance with the taxable capacity of the population.

For ascertaining the progressivity of the tax structure of indirect taxes in an empirical framework, it is necessary to estimate the quantum of tax burden contained in the consumption expenditure of different classes of the population. Such a study involves the quantitative estimation of the income and expenditure of the population, the nature and rates of commodity taxes levied and collected, the amount of tax ultimately shifted to the consumer, the per capita consumption of the taxed goods, the long run impact of tax incidence on the demand-supply elasticities etc.

6.1.2 The vast coverage and complexities of the tax structure make it difficult for an individual researcher to undertake a full-fledged investigation of excise duty incidence. An empirical approach requires precise formulation of income or expenditure groups and their consumption baskets. For each commodity, it is necessary to ascertain the applicable rate of duty, the
total duty element in the price such as taxes on inputs and intermediates, other commodity taxes paid etc. The consumption and behavioural patterns and practices of the population are to be ascertained with reference to social, ethnic, cultural and regional factors. On the basis of such information, sample surveys are to be designed for estimating the commodity-wise consumption expenditure of different income groups in the population. The survey may have to be repeated in different regions and at different intervals for minimising the influence of sectoral and temporal factors. Resource constraints in terms of money and time do not permit such a massive project.

6.1.3. In view of these limitations, the approach in this study is to review the incidence literature including the various estimates for Indian taxes and particularly for excise duties. The various constraints associated with such investigations in less developed economies are also discussed and certain suggestions have also been made regarding future research in this area. Finally, some approximations of the incidence of excise duties on mass consumption articles are also derived with a view to give certain broad indications of the progressivity of the incidence of excise duties as it developed over time.

6.2 Review of literature

Before entering the vast area of incidence literature for a review of the relevant studies, it is
is necessary to get familiar with the tax terminology used in such studies. Firstly, the very term 'incidence' requires definition and elaboration. In common parlance, the term incidence refers to the location of the direct money burden of a tax. But different terminologies are used in literature to indicate different types of incidence with reference to its movement from the initial tax payer to the ultimate consumer. The terms legal incidence, formal incidence and impact incidence refer to the statutory points of payment of the tax. Against this, the actual or effective incidence refers to the ultimate bearer of the money burden of the tax. In the case of indirect taxes, the points of formal incidence and effective incidence are normally different although for direct taxes they are assumed to be the same. Commodity taxes like excise duties are supposed to be shifted forward from the impact incidence or formal incidence point to the effective incidence stage where the ultimate consumer of the commodity bears the tax burden which has already been discharged for statutory purposes at the formal incidence stage. Other terms related to incidence are the 'expenditure incidence' and 'budget incidence'. While expenditure incidence refers to the ultimate beneficiary.


2\#. For a more elaborate treatment of effective incidence, see Ursula Hicks, *Public Finance*, New York, Pitman Publishing Corporation, 1947 p-158.

3\#. The various issues relating to terminology are also discussed by Ursula Hicks, in *Terminology of Tax Analysis, Economic Journal*, Vol.56, March 1946 pp 38-50.
of public expenditure, budget incidence implies the net outcome of the budget policies after adjusting the tax and expenditure incidence. Budget incidence also include the effect of other budgetary policies on the equilibrium position. If the lowest income groups have a positive net incidence than the higher income groups, the budget policies are considered to be equitable and the tax structure is a progressive one.

6.2.1 In addition to the various constructions based on the term 'incidence' discussed so far, there are two different types of incidence which denote different conceptual approaches to the study of incidence. In 'absolute incidence' the incidence is estimated with reference to the changes in income distribution by comparing to a no tax situation. In the case of the other term 'differential incidence', the comparison is made with reference to a situation obtained by the substitution of an equal yield tax or a neutral tax. The differential approach is considered to be advantageous as it excludes the effects of inflationary or deflationary side effects whereas absolute incidence is liable to the influence of several externalities. However, the distinction between the differential and absolute approaches does not seem to be of much consequence particularly when net fiscal incidence or budget incidence is estimated by summing up the tax incidence and expenditure incidence. As pointed out by Luc De Wulf there is no possibility of altering one situation by substituting another one claiming neutrality or equal effect and the entire exercise is conceptually irrelevant.

1/ Luc De Wulf "Fiscal Incidence Studies in Developing Countries, Survey and Critique", I.M.F. Staff Papers, Vol.22, 1975 p.96
Kaldor attempted inter-temporal studies to overcome the conceptual inaccuracies in the approach but his efforts did not meet with much success or acceptance.

6.2.2 After indicating the import of the common terms used in the incidence studies, it is necessary to review the major theoretical contributions and developments in this area of taxation. The very early suggestion of a general equilibrium theory of tax incidence was in the tableau of the physiocrats indicating that all taxes should be paid by agriculture as it was the only source of income. The contributions of labour and land were included later on and Ricardo's incidence theory which was based on the classical theory of factor shares considered that the tax incidence on wages, rents, profits etc. was determined by the principles that determined the particular factor share. According to this theory, a unit tax applied to a raw produce increased the cost of cultivation and consequently the price. The price increase would be equal to the tax as the demand was presumed to be inelastic. For the labourers the tax would be equivalent to a tax on wages and the tax rates required revision to subsistence levels. This was followed by a reduction in profits. This general equilibrium theory

4. Ibid p.157 & 182
of incidence had been replaced later by the wage theory based on the productivity of labour.

6.2.3 Wicksell's general equilibrium theory of incidence followed the model of a distribution theory and was an important development towards the formulation of marginal productivity theory of factor shares. But his studies on incidence still reflected the assumption of a fixed wage fund. A tax on production leads to unequal reductions in factor shares. Wicksell got this peculiar result on the assumption that the wage fund was constant. The assumption that the capitalists would reduce the wage fund by the rate of the tax was, however, not compatible with the wage fund theory. Although the basic equations and the treatment of the various taxes served as good illustrations of the wage fund theory, the incidence theory also suffered from the conceptual deficiencies of the basic theory.

6.2.4 Walras considered that the government could collect taxes from the landowners, workers and capitalists by cutting into the income they received from entrepreneurs before distribution of the earnings to the factors. The presumption was that the entrepreneurs compensated their payment by increasing their product price to the extent of the tax. Consequential reductions in rent, wages and interest followed indirectly. In the case of a tax on income from selected

1/ For a detailed account of this approach, see Wicksell's Value, Capital and Rent, originally published in 1893 trans. S.H. Frowrin, London George Allen & Unwin Ltd 1954.

capital goods, Walrus argued that the supply of capital to
taxed industry would reduce and consequently the price of
the products would increase and the consumers had to bear
some of the tax. But a portion of the tax would also be
borne by the capitalists. A portion of the capital would
flow to other sectors resulting in a decline in the general
prices and the consumers would recoup their tax burden to
certain extent from this spill over effect. However,
Walrus's treatment of the problem of incidence was not
based on any sound theory and it appeared to be superficial
as it could not explain tax incidence in a convincing manner.

6.2.5 Following the formulations of Ricardo, Wicksell and
Walrus, there had been several serious attempts to improve upon
the theory and methodology of tax incidence. The latest
approaches incorporate more precise formulation of the
issues involved and better methodology that can yield more
accurate results. Several restrictive assumptions and
conditions are also utilised in the analysis. The theory
that is frequently used for incidence estimates in recent
times is based on the marginal analysis with various
assumptions regarding the market conditions, long run and
static adjustments etc. The partial equilibrium model is
also increasingly utilised for analysing the tax effects.
Several old theories are also being re-examined and incidence
estimates are carried out under different market conditions.
The recent contributions in this area are by Kendrick (1942), Due (1957), Musgrave (1959), Harberger (1962) and Recktenwald (1971). The tax incidence studies are, however, mostly confined to the measurement of formal incidence. The noteworthy attempts to estimate the effective incidence are by Musgrave and Roskamp.

6.2.6. In order to estimate tax incidence, changes in the real income of a person or group of persons are required to be measured both on the source side as well as on the uses side. However, if macroeconomic incidence is to be measured, the changes in the personal, sectoral, regional and inter-temporal income distribution before and after taxation are to be estimated. The most useful instrument for measuring...

formal incidence is the Lorenz Curve which is based on the theory of income distribution and the concept of the coefficient of equality. The method of measurement using the Lorenz Curve can be illustrated as follows:

If horizontal axis from 0 to A shows cumulative percentage of income recipients in the economy or any relevant group and vertical axis is the cumulative percentage of the corresponding income, the Lorenz curve can be plotted as follows:

If ODB is the pre tax income distribution, OF percentage of persons receive ON percent and QE receive QM and so on. Post tax or budget income distribution is represented by OGB. The coefficient of equality in the pre-budget era is the ratio of ODB/OBA and post budget era is OGB/OBA. The ratio of the two coefficients or OGBA/ODBA gives the incidence of the resultant distributional change. If the ratio exceed one, the incidence is progressive and if it is one the incidence is considered to be

1/ See Musgrave op. cit. p 225
neutral or proportional and if less than one, it is considered to be regressive. It is also mentioned that the measure of progression depends not only on the rate structure but also on the level of yield, distribution of income and other adjustment processes. If the budgetary policies make changes only in certain segments, finer methods of measurement are required. However, the primary requirement for constructing the Lorenz curve is reliable data on income distribution which is not normally available in less developed countries.

6.3 Methodological Issues.

Several methodological issues are to be considered carefully before attempting estimation of tax incidence. The main issue is whether empirical or deductive approach will yield more accurate estimate of tax incidence. In the case of deductive method, the question is whether it should be at the micro level or at the macro level. The micro level studies of the household or firm may not give the changes in the distribution of income that take place at the total economy level. The time-dimension is equally important as attention can be focussed either on the long run adjustments in the economy to the changes in the tax structure or to certain specific short term changes. There are also issues relating to marginalism to be resolved in a satisfactory manner. Both general equilibrium as well as partial equilibrium methods are used in incidence analysis. The limitation of the par

17. See Rechtenwald op.cit. pp.40-42
equilibrium approach is that it can be used only with regard to a particular sector of the economy such as households, markets, firms etc. Partial equilibrium approach does not take into account the interaction of different sectors of the economy as its focus is only on the immediate processes and ignores the long run adjustments. On the other hand, general equilibrium approach looks at the inter-dependence of the entire economy and attends to the global adjustments to the changes in the tax structure. Although partial equilibrium method permits a detailed analysis of the adjustment process in a more accurate manner, it does not have much practical utility as it is limited to the immediate changes in a given area. However, the utility of any particular method generally depends upon the types of investigation. Partial equilibrium method can be successfully used for developing the theory of incidence, but the application of the theory involves general equilibrium approach.14

6.3.1 Although empirical approach can give indications of the effects of structure changes in practical tax situations, the results may not have applications useful for drawing general conclusions. Similarly, deductive approach may appear attractive for theoretical purposes, but it does not have many practical applications. A combination of these two methods can give more accurate results as the hypothesis derived through the deductive methods can be tested by empirical approach in practical situations.

6.3.2 The time-dimension also presents innumerable

14 See, Wecktenwald, op. cit. p.51
problems in the analysis of tax incidence. The major issue in this area is whether comparative statistical approach is more useful than a dynamic one. Normally, the assumption for the short term adjustments is that all other economic forces are not active once the tax is imposed. But this assumption is not acceptable from the practical point of view. The long run adjustments in the total economy and the interaction of the various economic forces are more important for a reliable estimation of the incidence.

6.3.3 Yet another important issue arises in regard to the question of marginalism. Normally, profit and utility maximisation are the prime considerations for adjustments to a change in the tax rate. However, other considerations also may play an important role in determining the type of adjustments in the economy. For example, profit maximisation may be replaced by considerations of long run stability and market share particularly in the case of developing economies. Similarly, marginal cost and/or marginal revenue considerations may not always be relevant in certain economies and markets. In such cases, deductive methodology may not be appropriate to understand the actual behaviour of the adjustment process.

6.3.4 The Problem of the shifting of tax burden theory. In the traditional ( ), it is generally assumed that the incidence of a consumption tax is shifted either fully or partially from the tax payer to the consumer. On the

17. See Recktenwald, op.cit p.55
basis of the partial equilibrium analysis of the tax effects on individual goods, it is also assumed that commodity taxes generally increase the marginal cost and cause a reduction in profits. Under conditions of perfect competition, it is assumed that there is a general tendency to reduce the production with a given demand and that such reduction will ultimately bring about an increase in the prices along with the new equilibrium. In view of the various theoretical possibilities and different types of practical situations, the vast literature on shifting indicates that the market form and behaviour and the types of the tax imposed will largely determine the directions and quantum of shifting. In the case of monopolistic and oligopolistic competitions, the tax may be shifted without eliminating the marginal enterprises, but under perfect competition, it is seen that the marginal enterprises are ultimately eliminated. It is also possible that the shifting is more uniform if the actual and expected profit of the taxpayer is equally affected. The literature on shifting also indicates that under conditions of monopolistic competition there is not much discrimination on the basis of efficiency since even the marginal firms also earn a profit. Under such conditions the tax affects in a uniform manner and the shifting is generally in the forward direction. It is also generally accepted that the quantum of the tax to be shifted mainly depends upon the closeness of the market price to the monopoly or competitive price. In cases where the oligopolists act in collusion with each other there is a possibility of the shifting of more than the tax amount levied on the commodity.
6.3.5 The recent literature on shifting conclude that the long run adjustment processes under conditions of perfect competition and pure monopoly shows that the previous incidence theories are mostly unacceptable due to severe limitations. It is found that eventually supply will adjust to the tax after the price rise. It is also argued that in the long run, the incidence of a consumption tax will be uniform in the case of oligopoly as well as monopoly. The final conclusion of all these studies is that a thorough knowledge of the practical market situation and the type of tax are absolutely necessary for any reliable estimation of the tax incidence and such results cannot be used for drawing generalizations.

6.4 Formal Incidence Estimates.

There has been several empirical studies of formal incidence using various assumptions of shifting and market mechanism. The most important issue in these estimates has been the definition of the concept of income used for the estimates. In some studies, the income excluded the taxes. The question of using the aggregate income on the product side of national income or the total income on the income side depends on the purpose of the study and analytical framework adopted. The methodology also differs on the basis of the tax effects to be studied i.e. depending on whether it is the total budget effect or a given tax effect that is under investigation. The income is also allocated on the basis of individuals, households, or groups or sections. The tax data the time intervals and method of sampling also depends mainly on the purpose of the study and the assumptions used.
There is no hard and fast rule for designing the study. There is also no acceptable theoretical basis for allocation of the taxes to income groups. Adler\(^1\) (1947), Musgrave\(^2\) et al. Conrad\(^3\) (1950) and Bishop\(^4\) (1958) used consumption expenditure as the basis of incidence studies. Total consumption expenditure was used in the studies of Gillespie\(^5\) and National Tax Foundation\(^6\&7\) (1961). But there is very little uniformity in the approach or methodology employed in these attempts although the ultimate objective is more or less to provide an approximation of the distribution of tax burden over the different income groups.

In this context, it is necessary to briefly review the incidence estimates in some of the less developed economies. In Latin-American countries, several studies have been conducted mostly using the conventional theory and methodology. In the case of Argentina, a 1959 estimate indicates clear regressive trends as the lower income groups bear a tax burden compared to the upper income groups. The same results are also repeated in a 1965 study which shows that the tax structure during the reference period has remained regressive.

6.4.1 In the case of Brazil, two studies are carried out for 1961-62 and 1962-63 for rural/urban sectors. Rural incidence in both studies is much less compared to the urban incidence and the tax structure on the whole shows a fair degree of progression. However, the rural/urban differential in the case of Brazil is much more than that of other less developed economies which is perhaps indicative of wider disparities in income/expenditure levels between the two sectors. A study of the tax incidence in Jamaica for 1958 shows fairly good degree of progression. Similarly, in the case of Peru, two studies have been conducted for the years 1961 and 1969 and both of them show excellent progression for all income groups.

In Pakistan, a 1966-67 study using urban/rural break-up indicates a fair degree of progression in the tax incidence of the two sectors. In the case of rural sector, the tax incidence is much less compared to that of the urban sector.
6.4.2 In most of the above referred estimates, the basic assumption regarding the shifting of the tax burden is identical. All indirect taxes are generally assumed to be entirely shifted to the consumer and direct taxes are presumably borne by the taxpayer. In the case of Latin-American countries, inter-class equity is given more emphasis than the sectoral differences. In a study of the Malawian tax incidence, Minford (1970) investigated the tax effects on various economic variables, such as supply of labour, domestic production, balance of payment, etc. He used a general equilibrium model of the economy for examining the tax effects. As regards shifting of tax incidence, it was concluded that income tax levied on higher salary earners, corporate profit taxes and licence fees are completely shifted. He also indicated further effects of shifting, such as compensatory increases in certain salaries and changes in marketing of cash crops.

6.4.3 The main objective of these studies is the estimation of the progressivity of the tax structure which gives a measure of the vertical equity of the tax. Apart from a few isolated cases, the general trend is found to be progressive. This is perhaps contrary to the general assumption that in developing economies, the tax system is highly regressive as there is heavy reliance on indirect taxation.

6.4.4 As regards the income redistributional aspects of

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the tax structure, it is not possible to conclude from the various estimates that the tax structure in the less developed economies does considerably contribute towards redistribution of income. However, evidence is also not sufficient to indicate whether the redistributive potential of the tax system has any significant disincentive effect on economic growth or not. This issue requires a more in-depth examination with reference to various growth indicators and data relating to tax effects on various sectors of the society. Unlike vertical equity, the question of horizontal equity has not attracted adequate attention in tax incidence analysis. Horizontal equity requires equal payment of tax by units such as families having equal income. In the conventional incidence estimates, only average tax burden is estimated without considering this aspect.

6.4.5 Most of the Indian studies are mainly concerned with the estimation of horizontal equity by using sectoral dimensions such as rural/urban or agricultural/non-agricultural. The inference that is derived from these studies is that the rural/agricultural sector is comparatively undertaxed in relation to the urban/non-agricultural sector. In order to obtain more detailed information regarding horizontal equity, the Indian studies have also attempted estimation of the incidence on a per capita basis and in some other cases like the Ministry of Finance¹ study, estimation has also been made on the basis of income/expenditure classes in rural/urban or agricultural/non-agricultural sectors.

¹ For details see Government of India, Incidence of Indirect Taxation, New Delhi, Ministry of Finance, 1963-64
Shetty's estimate improved upon this methodology by deducting the notional subsistence income from each sector and thereby arrived at a taxable income. Taxable income of agricultural sector after adjusting subsistence income was found to be 4.4 times less than non-agricultural sector. Shetty's findings that the agricultural sector is relatively over-taxed during the years covered by the three Five Year Plans (1951 to 1966) are not in conformity with the conclusions of other researchers who hold the view that agricultural sector is undertaxed.

6.4.6 Under-taxation of agricultural sector is not only projected in the Indian studies but also finds mention in the study of Sahota and Aaron. The findings of these studies are that tax preferences have been shown to rural/agricultural sector. It is not possible to explain why such preferences exist when substantial resources can be mobilised from agricultural sector by taxing the inputs, products or income. The situation in India seems to be more complex and there is perhaps less political will to tax agricultural sector more heavily. Several reasons, such as low taxable capacity, difficulties in tax collection and operational problems of administering slab-rates for holdings of different sizes etc., can be the other constraints that keep rural/agricultural taxation at low key.

2. Ibid, pp 216-46
Incidence Studies in India.

6.5 In the context of the conceptual and methodological issues and the incidence studies in other less developed economies discussed in the foregoing paragraphs, it is relevant to review the major tax incidence studies in India. The earliest study of the distribution of tax burden in India has been carried out by the Indian Taxation Enquiry Committee, (1924-25). The Committee was required to examine the manner in which the tax burden was distributed between different classes of the population and also to suggest methods for easing the burden where it was excessive and of increasing it where it was too light. On a prima-facie examination, the Committee concluded that it would not be possible to study the distribution of tax burden in the absence of any dependable data on the average income and the average of the tax burden that fell upon the population. The Committee did not use any particular methodology but relied upon the general knowledge of the comparable incomes and standards of living of different classes of the population. The Committee drew conclusions on the desirability or otherwise of a particular tax from the point of view of their probable incidence on particular classes of the population. The population was broadly classified into different groups which presumably represented the complex class structure of the society. The lower strata comprised of two categories viz., urban labourers and landless agricultural labourers, both including artisans. Agriculturists were categorised

into (i) the small holder, whether ryot or tenant, (ii) peasant-proprietor with substantial holding and (iii) large land holders, generally in the Zamindari areas. In the case of traders, the following categories were made: (i) Petty trader in the village or in the town; (ii) the large trader subject to the income tax; and (iii) the big merchant class. For professional classes, two divisions were made viz.,

(i) the clerical class including the subordinates ranks of government servants and lower ranks of professional men who are not subjected to income tax, and (ii) the upper professional class. According to the Committee, the principal taxes that affected labourers in urban areas were (i) duty on salt, (ii) excise duty on cotton goods, and kerosene oil, (iii) customs duty on coarser variety of cotton goods, kerosene, matches and sugar (iv) customs duty on productive goods such as machinery, raw materials etc. (v) excise duty on intoxicants except liquor, and (vi) municipal taxes. The Committee concluded that the burden of the above mentioned taxes with reference to the price-index on the whole increased on the poorest class. It was stated that the taxes which pressed most heavily on the poorest class were excise duty on intoxicants and municipal taxes on consumption like octroi. The Committee recommended substitution of octroi and terminal taxes by graduated direct taxes levied according to taxable capacity. It was also suggested that salt duty should not be increased except when there is grave financial emergency. As regards small land holders, the Committee pointed out that it was difficult to estimate the tax burden and that their difficulties were mainly due to problems other than the tax
incidence. In the case of peasant-proprietors and large land holders, reimposition of income tax was recommended on agricultural income or alternatively introduction of some tax in the form of a general probate or succession duty. It was indicated that the village trader should be effectively brought within the scope of taxation by expanding the existing taxes on property and profession and also by improving the efficiency of administration. In the case of lower professional classes, it was suggested that no tax-relief could be given and that some help should be provided through a reduction in prices or through an increase in salaries. Professional classes of the higher grade were compared with the upper classes of merchants and business firms for the purpose of increasing the tax burden.

The suggestions that emerged from the cursory examination of the distribution of tax burden on the basis of common sense did not, however, have any theoretical significance or practical utility other than that it was the first attempt to understand the incidence of taxation in India. But the complexities of the social structure and the difficulties in ascertaining the tax component in the consumption expenditure were acknowledged in this pioneer study and these observations still hold good for incidence estimates in India.

6.5.1 Taxation Enquiry Commission (1953-54):

The first comprehensive and systematic study of the incidence of various taxes on different classes of population was undertaken by the Taxation Enquiry Commission (TEC 1/).

1/ See the Report of the Taxation Enquiry Commission, (1953-54) op.cit. PP 45-84
Recognising the enormity of the task, the Commission at the very outset examined the various methodological constraints and conceptual issues involved in the incidence analysis. The study was naturally confined to estimation of the formal incidence of the prevailing taxes. The classification was based on the income criterion as well as an urban-rural dimension. The simplifying assumption was that two important determinants of the consumption pattern of the population in India were (i) income and (ii) residence.

The Commission identified that variations in the tax incidence were mainly due to the differences in income and expenditure and also because of the differences in tax-rates in different sectors. For the Central taxes having uniform rates, the variations were mainly attributed to the income and consumption pattern. The Commission stated that a study of the total tax incidence would be meaningful only if all the factors contributing to variations in tax incidence are identified and analysed separately and together. In respect of indirect taxes, the main problem was to establish a relation between the consumption of taxable commodities and the family budgets of different income groups. For this purpose, it was pointed out that only specially designed family budget enquiries would give a satisfactory solution.

The Commission used the data compiled by the fourth round of the NSS covering over 12,000 households both in the urban and rural sectors for the period 1950 to 1952. As the NSS data was not originally meant for incidence estimates it was retabulated for obtaining the consumption pattern by
expenditure groups in rural and urban sectors. A major problem that arose in the re-tabulation was that the number of households having expenditure above Rs.300 per month were very few. The data could not also be used for inter-state comparison of tax incidence.

The household expenditure groups selected for the study were in the following income brackets:

1) From Rs.1 to Rs.50/- per month.
2) From Rs.51 to Rs.100/-
3) From Rs.101 to Rs.150/-
4) From Rs.151 to Rs.300/-
5) Above Rs.300/-

For the urban sector, the data was compiled on an all India basis for cities having different population levels. It was acknowledged that the assumption that the expenditure was approximately equal to income would not hold good in respect of higher expenditure groups i.e. above Rs.300 per month as the expenditure would most likely be less than the income and that the tax incidence would be overstated if it was estimated on the basis of expenditure alone.

The analysis indicated a consistent pattern of increasing household size with rising expenditure level of the household. For each expenditure level the household size was also found to be smaller in the urban sector compared to the rural sector. The inference was, therefore, unavoidable that as one moved up the expenditure level the number of earners, particularly dependent earners also increased. Since incidence per household in
different expenditure groups was not comparable if
the number of family members in each household was not
taken into account, the basis of analysis was the per
capita income data relating to different household
expenditure groups.

No major shift in income was noticed except some
inter-sectoral shift in the rural sector. The burden of
income tax was practically confined to the urban sector
and the incidence of sales tax, excise duty and customs duty
was less on rural sector than on the urban sector. It was
found that since the pre-war period, the total tax burden
increased in the urban sector as compared to the rural
sector and that there had been some redistribution of
income both within the rural as well as urban sectors.
The average incidence of central excise duties, was found
to be slightly higher in the urban sector and incidence
in relation to cash expenditure of successive
expenditure groups revealed a small degree of progression
both in rural as well as urban sectors. However, certain
degree of regression was also noticed in some ranged. When
total expenditure was considered, urban incidence was
appreciably higher than rural.

The Committee concluded that the estimates could
only be taken as some general indications and it would
not by itself determine the magnitude of the general or
average burden of the tax system. Although much reliance could not be placed on the study for the various methodological and conceptual deficiencies, it was a laudable attempt as the first empirical attempt to estimate the tax burden of a population that vary widely in respect of income, expenditure and many other factors.

6.5.2 Government of India, (Ministry of Finance) Studies

Adopting the methodology used by the Taxation Enquiry Commission, the Government of India, (Ministry of Finance) attempted two successive estimates of tax incidence for the period 1958-59 and 1963-64. The NSS data of the 13th and 18th rounds were suitably modified for estimating tax incidence. The estimates obtained by the Taxation Enquiry Commission and by the Government of India are given chronologically in Table 6.1 for a comparative study of the increase in tax burden over time.


2. See the Report of Taxation Enquiry Commission (1953-54). pp 48-84
## Table 6.1

Comparative study of the incidence estimates

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<th>Under Rs.50/PM</th>
<th>Rs.50 - Rs.100/PM</th>
<th>Rs.100 - Rs.150/PM</th>
<th>Rs.150 - Rs.300/PM</th>
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<td>2.7</td>
<td>3.1</td>
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<td>2.4</td>
<td>2.6</td>
<td>2.8</td>
<td>4.1</td>
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<td>5.9</td>
<td>3.6</td>
<td>4.5</td>
<td>5.1</td>
<td>5.1</td>
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<td><strong>Min.of Finance (Govt. of India) 1958-59</strong></td>
<td>5.7</td>
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<td>4.3</td>
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<td><strong>1963-64</strong></td>
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<td>Urban</td>
<td>16.6</td>
<td>11.1</td>
<td>11.6</td>
<td>12.6</td>
<td>14.0</td>
<td>24.6</td>
</tr>
</tbody>
</table>

Certain interesting patterns emerge from the inter-temporal analysis of the incidence estimates. It is evident that from 1952-53 to 1963-64 through 1958-59, tax incidence has progressively increased which indicates the intensity of the tax efforts during the Five Year Plans. It is also seen that tax incidence is higher in urban areas compared to rural areas and that there is fairly high degree of progression in the incidence of different expenditure groups. It is seen that more realistic results can be obtained if the household groups were chosen on better
defined expenditure ranges. Another important observation is that the urban/rural distinction has yielded consistent estimates of incidence indicating that the income and expenditure patterns in these two sectors are distinctly different. A household sample survey conducted by NCAER for the reference year 1975-76 shows that 63.3% of the rural households are in the monthly income/expenditure level of up to Rs. 300/- and that in the case of urban sector, only 31% of the households are in the same income bracket. It is, therefore, evident that the estimates obtained from the three studies clubbed together a large percentage of the household income group in the upper/middle class level whose tax incidence would be of more relevant in deciding the progressive nature of the tax policies.

6.5.3 Other studies:

Another more or less identical sectoral dimension was introduced by Gandhi1 (1972) and Mathew2 (1968) who attempted estimates of the new fiscal incidence of agricultural sector. Some more studies were done in this line (Raj3 (1959) Gulati4 (1960)) by modifying the incidence estimates of earlier studies having urban/rural distinction. However, most researchers are of the view that urban/rural distinction

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is broadly identical to agricultural/non-agricultural dimension particularly in the case of the Indian economy. Notable estimates of the tax incidence of rural/urban income groups were made by others but the assumptions regarding the rate of growth, constant income distribution etc. used in the study are questionable.

6.5.6 National Council of Applied Economic Research used a different approach to estimate tax incidence for the States of Gujarat, Mysore and Jammu and Kashmir. A sample survey was specifically designed for estimating the tax incidence on different expenditure groups, and more detailed and reliable data was collected for direct as well as indirect taxes. Household expenditure groups had been chosen more carefully encompassing all statistically significant expenditure ranges. In the case of Gujarat, the incidence was found to be progressive in the higher expenditure groups mainly due to central excise and state sales tax. Some of the individual taxes on commodities were, however, found regressive. The estimates for the State of Mysore indicated mild regression in respect of lowest income groups but for the higher income groups, it showed some degree of progression. The progression was deceptive as it had been over the income tax exemption limit and hence would be entirely due to direct taxes. The overall regressive nature of the tax structure was attributed to the absence of income taxes in the rural sector.

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The recent study of tax incidence was by the National Institute of Public Finance & Policy conducted for the Indirect Taxation Enquiry Committee. The data used was taken from the NSS (28th round) and the assumptions and the methodology were also identical to that of the TEC and the Ministry of Finance studies. The results were also identical not only in regard to the progressive nature of the tax but also on the rural/urban variations. Major methodological difference in this study was the exclusion of governments' consumption which was estimated to be about 5% of the total indirect taxes in 1973-74. The study covered all State, Central and local taxes on goods and services. An important conclusion of the study was that the Central indirect taxes, particularly excise duties were more progressive than the State taxes. This study also attempted to work out the tax incidence on commodity groups on the basis of separate categorisation for consumption goods, intermediates including inputs and capital goods. The share of consumption goods out of the total incidence of 10.54% was estimated to be 5.34% and that of intermediates 4.53%. A comparative study attempted by Indirect Taxation Enquiry Committee also showed that there were only marginal differences between the 1963-64 study of the Ministry of Finance and the 1973-74 study of the Committee. This conclusion again support the view that given a common set of assumptions, methodology and data, tax incidence studies for different period will give consistent patterns of estimates. The degree of progression

shown in this survey is, however, more than that found in earlier studies. This variation is partly attributable to the changes in the pattern of taxation and also to a certain extent to the marginal methodological differences.

6.5.6 The overall findings of the major tax incidence studies in India is tabulated in Appendix A-ll. This table covers a nineteen year period and presents variations in incidence estimates on the basis of two identical dimensions i.e. urban/rural or non-agricultural/agricultural. Except NCAER consumer sample survey, all other studies used NSS data for estimating the consumer expenditure of different income/expenditure groups. The purpose of this comparative study is to understand the inter-temporal movement of the incidence and also to show how the estimates for the same period varies inspite of the use of almost identical data. This will show that the estimates only suggest certain possible trends of the tax burden which varies if different assumptions and approaches are used. The general pattern of the estimates indicate that the incidence of rural/agricultural sector is always less than urban/non-agricultural sector. The only study which gives a somewhat different picture is the estimate for the State of Rajasthan by Angrish. The lower tax incidence for the rural/agricultural sector as compared to urban/non-agricultural sector is presumably due to the absence of any substantial tax on agricultural products and the lower consumption expenditure of agricultural/rural sector. As regards urban/non-agricultural sectors, the higher income/expenditure in this sector is

reflected in the higher tax incidence. Moreover, several taxable consumer products are also mainly manufactured and consumed in the urban areas.

When the results are examined on a temporal dimension, it is clear that the tax incidence increases for all sectors during the reference period, i.e. 1950-51 to 1973-74. The progression in tax incidence in the temporal dimension is indicative of the large scale tax efforts during this period.

Incidence of Union Excise Duties.

6.6. The studies surveyed so far dealt with tax incidence in general and did not focus on any particular tax. Since this project is concerned with excise duties, it will be necessary to have a close look at the estimates of excise duty incidence.

The estimates which are more or less comparable are given in Appendix A-12. The estimates which cover a period of two decades, indicate that the rural incidence is definitely less than the urban incidence in all cases. However, the estimates apparently do not reflect the tremendous growth of excise tax revenues during the reference period. In the case of NIPFP estimates, it is stated that the marginal differences between the Ministry of Finance estimate for 1963-64 and NIPFP estimates for 1973-74 is due to the exclusion of Government consumption in the latter case. However, the exclusion of 15% of indirect tax revenues from allocable pool is not likely to give a result which is only just marginally different from the estimates obtained in 1963-64. The estimates obviously failed in capturing the actual tax incidence in consumption expenditure attributable to input taxation.

\[\text{NIPFP}\]

1\[\text{NIPFP}\] See The Report of the Indirect Taxation Enquiry Committee op.cit. pp 83-121
6.6.1 TSC's estimate of incidence of excise duties indicates that in the rural sector, excise duties as percentage of cash expenditure show very little progression. The same is the case with urban sector and the somewhat higher burden on the upper expenditure groups shown in the estimates is attributable to the differential rates of duty on items like cloths and cigarettes. The urban/rural disparity is also very marginal. If the total expenditure instead of cash expenditure is taken into consideration, a little more progression is indicated. It is stated that the taxes on tobacco and cloth constitute the two major commodity taxes and wherever consumption is indicated in the expenditure groups for these items, the tax incidence is highly enhanced. In the MIPUP estimate, it is stated that the excise duties which contribute more than 50% of the total tax revenue of the Central Government, is the most important single tax showing the maximum progressivity. It has also been brought out that 72% of the incidence on the lower classes of the population is on account of the central excise duties. In the NCAER study of the incidence for the State of Mysore, the excise duty incidence indicates a fair amount of progressivity in the urban sector. However, in the rural sector, the progressivity is not much pronounced.

6.6.2 In all the above mentioned studies, it is stated that the duties on essential consumer articles like cloth, kerosene, tobacco and tobacco products are mainly responsible for the regressive nature of excise duties. It is interesting to note that a commodity-wise break-up of the burden of excise duties as percentage of consumer expenditure
indicates that the incidence on intermediate goods, account for a large share in the total incidence whereas unlike the popular notion consumption goods account for only one third of the total burden. This pattern repeats itself in the case of urban incidence also. Inter-temporal comparison of the estimates show that since 1953, there has been more progressive trend in the incidence of excise duties. It is therefore, reasonable to assume that with the expansion of tax base and rate revisions, the incidence has perhaps shifted towards the higher income/expenditure groups.

6.7. Possibilities for future research.

From the survey of tax incidence studies, it is evident that the estimates do not reflect the actual incidence and that at best they can only give some rough approximations of the trend and the directions of the tax burden. It has also been illustrated in several studies that by changing the basic assumptions, methodology and source of data, the estimates vary so widely that they cannot be relied upon for formulating fiscal policies. Keeping in view these constraints the scope for further research in this area is examined in the succeeding paragraphs with reference to the incidence estimates in developing economies.

6.7.1 Several tax incidence studies are undertaken in the developed countries with a view to reorient existing tax policies towards more equitable income distribution and minimisation of sectoral disparities. However, such estimates are usually discredited as unreliable and they are not made use of in formulating fiscal policies. The theoretical
and methodological deficiencies discussed earlier might have been responsible for the restricted practical applicability of the findings. In the developing countries where income disparities are sharper, tax policies are generally not considered as effective instruments for income redistribution. In countries like India, where the share of the total tax revenue in the national income is only about 18%, it is felt that the impact of tax policies having income redistribution potential will not be of much use as a large percentage of the population having income at subsistence level will not be affected by any marginal changes in tax structure or purchasing power. This may not be so in the case of countries having higher tax revenue such as U.K. (29.2% of N.I.), Sweden (30% of N.I.) and Belgium (31.9% of N.I.).

6.7.2 In this context, it can be seen that wherever inter-sectoral and intra-sectoral income disparities are pronounced, more fundamental and radical reforms are required for effective redistribution of income and wealth. In the existing situation in India, basic changes through land reforms and wage and price policies are probably more efficient and effective instruments in bringing about a desirable income distribution. It is also generally agreed that excessive tax burden on higher income groups act not only as a disincentive to investment, production and work, but it can also generate tax evasion which gives rise to untaxable parallel economies. Such parallel economies can push up the cost of the factors of production creating inflationary situations which are independent of the fiscal
Another constraint in using tax policies for redistributive purposes is the composition of tax revenue of the Governments in less developed economies. Commodity taxes which are extensively imposed particularly in the developmental phase of the economy, fall heavily on the consumer items used by the common man as demand for these goods is inelastic compared to that for luxury and semi-luxury items consumed by the higher income groups. If commodity taxation is restricted to articles of luxury consumption, sufficient resources can not be generated for developmental purposes. When the tax system heavily relies upon common man's consumer items for large scale revenue mobilisation, it is too much to expect from the same system to obtain effective income distributional impact.

The recent trend in the study of tax/expenditure incidence is towards more disaggregated estimates rather than the total budget incidence. The incidence of a particular tax or expenditure measure presumably provides a better idea of its progressivity per se rather than the tax/expenditure system taken as a whole. Conceptual and methodological problems are also much less in disaggregated studies as the pattern of shifting and demand/supply elasticities in various sectors could be more closely examined for each individual case. The HIPFP study (1973-74) of tax incidence by commodity types is a significant attempt in this

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1\textsuperscript{1}\textsuperscript{1} See, Report of Indirect Taxation Enquiry Committee \textit{op.cit.} pp 97-104
direction. The commodities in the NIPFP studies are classified into consumption goods, intermediate goods and capital goods. The percentage of consumption expenditure in each sector according to the expenditure group is quantified, although the share of intermediate goods and capital goods appears to have been over-estimated. The most important point emerging from the study is the predominance of the intermediate goods in the incidence of excise duties which is uniformly observed in the case of all expenditure groups. It also indicates large scale input and intermediate level taxation and comparatively low tax rates on finished consumer articles. This feature is perhaps due to the peculiarities of the tax situation prevailing in India.

6.7.5 Considering the conceptual and methodological issues and various other constraints, there is a school of opinion that analytical and empirical approach may not after all be useful or worth the efforts and expenditure involved in deriving the estimates. It is also stated that defective analytical conclusions that quantify the tax incidence or expenditure incidence can mislead the public as well as the policy makers who may not probably be fully aware of the theoretical and methodological differences that render the results unreliable. In such cases, income distribution effect of tax/expenditure policies get over-rated and the policy makers may not consider it necessary to make any serious efforts for achieving desirable income distribution through some other more radical means.

6.7.6 Of late, descriptive studies are also preferred
for estimating tax/expenditure incidence so that the effect of the particular tax policies can be discussed without quantifying the actual impact on the population. For example, it may not be necessary to conduct any formal study to ascertain who bears the burden of excise duties on articles like kerosene, low-priced cotton fabrics, cheaper varieties of soap, cigarettes etc. Similarly, it can be reasonably assumed that the incidence of excise and sales tax on airconditioners and refrigerators meant for domestic use may not adversely affect the purchasing power of the lowest expenditure groups. The detailed descriptive analysis of the various policies incorporated in the annual budgets give as much correct and reliable information on tax incidence as any quantitative studies.

The pragmatic approach for further research in this area will be a combination of quantitative and qualitative study with disaggregation of various tax/expenditure items for detailed examination. Such disaggregated studies can use alternative assumptions of tax shifting, different income/expenditure concepts and other variants. In the case of the indirect taxes, particularly in countries like India, sectoral variations in tax rates and expenditure pattern are of vital importance and comprehensive sectorwise analysis is essential for reliable conclusions. Rates of sales taxes and local taxes on different commodities and services differ so widely from place to place that the incidence estimates have to be made with reference to all such factors before aggregating the tentative findings. For each commodity, the demand-supply elasticities and the relevant market can be explored for assuming individual shifting patterns for analytical purposes. Commodity-wise revenue and
tax rates after adjusting exemptions and concessional duty can be apportioned to consumers in relevant sectors using disaggregated tax revenue data. Through specially designed consumer surveys information regarding the expenditure patterns and the variations observed in various regions or sectors can be collected. In the case of less-monetised sectors like rural areas, information regarding cash expenditure and total expenditure can be ascertained for detailed examination of the tax element in the consumption expenditure. Further, from the tax allocations given in the budget, governmental consumption can also be excluded for arriving at the actual consumption of the population. Descriptive studies can be used for examining various aspects of the tax impact and aggregation of all such findings can be utilised for formulating the fiscal policies. Although it is not possible to undertake such highly disaggregated analysis of the incidence of excise duties in this study, another approach is used in the succeeding part to indicate the trend and direction of the tax burden of excise duties. This attempt is only to obtain certain approximations of the trend and progressivity of the tax structure particularly since independence. It will also show that disaggregated approach can be employed for ascertaining the trend of the even incidence of excise duties at a macro/level/without designing sample surveys for estimating the distribution of tax burden.
Some rough approximations of the incidence of excise duty on mass consumption articles.

6.8.1 In the preceding part, the conventional approach to incidence analysis has been discussed at length. In brief, the methodology consists of comparing the tax burden on different expenditure groups which presumably reveals the "progressivity" or "regressivity" of the tax structure. The main criticism against the application of this methodology to excise duties is that it does not take into account the cumulative effect of the taxes on inputs and intermediates and that it only reckons with the tax rates which are statutorily applicable on the finished product. Moreover, the tax rates are always taken into account without considering the fact whether the full rate is applicable or not. It is also pointed out that provisions for including negative taxes like subsidies are not generally made in these studies. Government consumption as also consumption by domestic producers of their own produce are also not given due weightage. It is also clear that apart from estimating tax burden with reference to a non-tax situation, the incidence studies do not indicate any optimal tax burden that would be comparable to the existing pattern of the distribution. In reality, most of the developing countries are bound to maintain a heavy burden of indirect taxes as other means for raising resources are inadequate and administratively impractical.

6.8.1 An alternative method attempted in this study is to indicate the direction of the tax burden instead of
quantifying the actual tax burden in the consumption expenditure. The direction of the tax burden is ascertained with reference to the comparative revenue yield of a selected set of consumer articles in the total excise revenue over a period of time. For this purpose, the consumer articles are selected on the criterion of its revenue significance as well as essentiality to the lower income groups of the population. It is also assumed that for higher expenditure groups more expensive substitutes are probably available. Following articles are chosen on the basis of this criterion:

1. Kerosene
2. Sugar
3. Matches
4. Veg. Products
5. Coffee
6. Tea
7. Footwear
8. Soap
9. Cotton Fabrics

These articles constitute a fairly representative sample of the entire tax structure as they include goods having specific rates and ad valorem rates. They are also excisable from the very early days of the levy which makes it possible to have time series data of the revenue yield. The duty incidence on these articles and the year of inception in the excise tariff are already indicated in Appendices A² & A⁻¹.

6.8.2 Comparative study of the revenue yield of selected consumer articles vis-a-vis revenue from other articles is made for a period of 44 years i.e. from 1938-39 to 1982-83. The details of the revenue from these articles
as also the total revenue in percentage terms as well as in actual terms are provided in Appendix A. The revenue yield is comparable from the year 1953-54 as the tax base of these articles was also fully established by that time.

6.8.3 As the objective of this study is to ascertain the direction of the shift, if any, in the tax burden, certain simplifying assumptions are made for analytical convenience. The argument that the change in the relative revenue yield is subject to the rate and base variation is accepted but it may be pointed out that the study is only intended to ascertain the direction of the tax burden and not the actual quantum of tax in the consumption expenditure. If it can be established that the revenue yield from the essential consumer articles disproportionately increased or decreased over time, it may be due to the rate revision or base expansion of other articles, it is possible to conclude that the tax system as a whole has become more progressive or regressive as compared to the earlier position. It is also noteworthy that by 1953-54, 50% of the high revenue yielding articles were already taxable and that it may not be correct to say that there has been substantial increase of high revenue yielding articles in recent times. Moreover, by the year 1975, the tax base expansion has been completed and the trend in the tax burden on essential consumer articles since 1975 will, therefore, be acceptable as indicative of the shift in tax revenues. It is also seen that the growth of revenue from mass consumption articles has more or less been consistent with that of other dutiable articles in the excise tariff. Table which
gives the compounded growth rate of the articles and their buoyancy and elasticity in comparison to that of the total tax revenue confirms this point. In fact, there are not many other essential mass consumption articles in the excise tariff that has got any significant revenue yield. The fall in revenue from these articles cannot be attributed to the shift in customer preference for the substitutable articles as they also have a high burden of excise duties. If the shift in tax emphasis in terms of revenue from selected articles has considerably changed over a period of time in any direction, it will indicate that the tax incidence has moved to other articles.

6.8.4 In addition to the analysis of the revenue yield of selected commodities and their compounded growth rate, certain other indicators are also used in this study to assess the direction of the duty burden. A regression analysis of the buoyancy of the revenue from 6 of the 9 articles which are significant in terms of the total yield has also been made. The regression coefficients indicate the relative change in the revenue from individual articles in terms of 1% change in the total excise revenue. If the buoyancy of the selected articles is considerably less than that of the aggregate, it can be interpreted that the tax efforts in respect of the selected articles were less than that of other articles. If the emphasis has shifted from mass consumption articles, it can be considered that the tax system as
a whole has become progressive in course of time. Other two indicators used for supporting the general pattern emerging from the study of the revenue is the per capita burden of the tax from the selected consumer articles. The share of the tax burden from these articles with reference to net domestic product has also been examined with a view to ascertain significant variations which can support the findings obtained from the revenue analysis.

**Findings.**

Appendix A gives the revenue from the selected articles as percentage of the total excise revenue which was 81.32% in 1938-39. There were only 6 articles in the excise tariff at that time out of which 3 were mass consumption articles such as kerosene, sugar and matches. Other taxable commodities were motor spirit, steel ingots and mechanical lighters. The excise revenue was obtained mainly from mass consumption articles and hence the tax structure was definitely regressive. The revenue yield from selected groups of articles declined to 40% of the total excise revenue in 1948-49. By this time, the number of items in the excise tariff has also increased to 14. Out of 14 taxable articles, 7 belonged to the group of mass consumption articles. One of the reason for the sharp fall in the revenue from these articles was the inclusion of tobacco in excise tariff in 1942-43 which accounted for 50% of the total excise revenue in 1948-49. Although a part of the tobacco, as it was taxable then, was used by the common man
in the form of chewing tobacco and biris, it is not included in the list of consumer articles as the major portion of the revenue from tobacco comes from consumers of cigarettes.

6.9.1 All the 9 selected consumer articles became dutiable by 1958-54 and the excise tariff at that time contained a total number of 18 items. The revenue from these articles increased to 51% by 1954-55 and this position continued unchanged up to 1958-59. In 1960-61, the share of revenue from consumer articles declined to 38.7%. From 1960 to 1963, 26 new commodities were added to the excise tariff which explains the decline in revenue from the selected group of articles. However, the articles that became taxable during this period were mainly raw materials and intermediates and few consumer items were in the nature of luxury consumption articles such as air-conditioners, refrigerators and cosmetics used by the well-to-do sections of the society. Between 1960-61 to 1969-70, 41 more items were made dutiable bringing total number of taxable products to 80. The share of the revenue from the selected group of articles declined from 38.7% in 1960-61 to 23.2% in 1969-70. Petroleum products were the important items introduced during this period and other new articles were again inputs and intermediates. There were a few luxury consumption articles like the preserved food, domestic electric appliance etc. which were brought under excise levy during this period.

6.9.2 From 1969-70 to 1982-83, 61 more commodities were
brought under excise net bringing the total number of excisable commodities to 141. The new additions were as usual, inputs and luxury consumer articles and there was no mass consumption articles included in the excise tariff since 1953-54. During this last phase, the share of revenue from selected group of articles declined from 22.2% to 10.41% indicating a sizeable decrease from the initial position of 81% in 1938-39.

6.9.3 In the early stages of development of excise system in India, the sole objective of taxation was collection of revenue. This objective could be achieved only by imposing taxes on mass consumption articles like sugar, matches and kerosene as the tax base of domestically manufactured goods has not sufficiently grown to yield any significant revenue. As the tax system developed over time, the emphasis shifted to other goods which were consumed by the upper strata of the society. Large scale industrialisation during the post-independence period also brought in heavy dose of taxation on inputs and intermediates. These taxes were in many cases unavoidable as certain end products could not be subjected to taxation either due to administrative difficulties or some other socio-economic consideration.

6.9.4 The pattern of development of excise duties clearly indicates that from the position of extreme regressivity it has reached a fairly progressive stature with only 10% of total excise revenue now being contributed by common mans' consumer articles as against 81% in 1938-39.
This finding is further supported by the growth of per capita incidence of excise duty from selected articles which was Rs.1.38 in 1953-54 and reached the level of only Rs.10.78 in 1980-81. As against this, the growth of per capita incidence of total excise duty has been from Rs.2.53 to Rs.95.87 during the same period. Another indicator of the growth of excise revenue from selected articles is its share in NDP at factor cost. The excise revenue from selected articles as percentage of NDP in 1953-54 was 0.537 and in 1980-81 it reached only 0.701. The growth rate of revenue from consumer articles being so nominal compared to that of total excise revenue, it can be accepted that the tax system became more progressive in the later stages.

6.9.5 Yet another variable examined in this connection is the excise revenue from selected articles as percentage of private financial consumption expenditure at current prices and also at 1970-71 prices. In terms of private financial consumption expenditure at current prices, excise revenue from selected articles was 1.345% in 1960-61. In 1980-81 it was only 0.831%. This shows a steady decline of revenue from these articles in the private final consumption expenditure. At 1970-71 prices the revenue from selected articles in private final consumption expenditure increased from 0.302% to 1.870%. This variation is perhaps due to the higher rate of inflation during the reference period and low elasticity of excise revenue from mass consumption articles. However, the fact that the share of revenue from mass consumption articles remained almost static
shows that the tax system as a whole became more progressive
in terms of consumption expenditure and also in comparison
to its initial regressivity.

6.9.6 In Table 6.2 certain characteristics of the revenue
from mass consumption articles has been analysed. The
compounded growth rate of 5 out of 9 articles indicates
that only in the case of kerosene the growth rate is more than
that of the total excise revenue. In the case of matches
and cotton fabrics the rate is much lower. Elasticity
and buoyancy estimates of revenue from the selected articles
to national income also indicates that the coefficients
are far below unity. These indicators clearly reveal the
fact that there is very little responsiveness in the tax
revenue from the selected articles to changes in income
and price. It is, therefore, possible to conclude that the
tax efforts in respect of these articles has been minimal
which confirms the trend towards more progressivity.
Table - 6.2

Elasticity buoyancy and compounded growth rate of essential consumer articles.

<table>
<thead>
<tr>
<th>Name of the article</th>
<th>Elasticity to NNP at current prices</th>
<th>Buoyancy to NNP at current prices</th>
<th>Compounded growth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kerosene</td>
<td>0.041</td>
<td>0.497</td>
<td>20.29</td>
</tr>
<tr>
<td>Sugar</td>
<td>0.333</td>
<td>0.676</td>
<td>10.48</td>
</tr>
<tr>
<td>Matches</td>
<td>0.420</td>
<td>0.514</td>
<td>5.66</td>
</tr>
<tr>
<td>Veg. products</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Coffee</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tea</td>
<td>0.333</td>
<td>0.676</td>
<td>13.17</td>
</tr>
<tr>
<td>Footwear</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Soap</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cotton fabrics</td>
<td>0.107</td>
<td>0.518</td>
<td>4.44</td>
</tr>
</tbody>
</table>

Source: From Chapter IV & V which gives commodity-wise estimates.