CHAPTER VI

GOVERNMENT'S BUDGETARY OPERATIONS AND RESOURCE TRANSFER TO AGRICULTURE

The foregoing chapters have dealt with the inter-sectoral resource transfers taking place through various direct and indirect mechanisms involving flow of goods, services and incomes between sectors. Government is an important institution in economy and it plays a leading role in transferring and allocating resources between sectors through its budgetary and non-budgetary operations. Through taxes and other methods of raising resources it withdraws resources from different sectors and through public expenditure programme it makes available resources to various sectors. The revenue raising and expenditure policies and programmes have implications for resource transfer between sectors. This chapter, therefore, attempts to estimate tax burdens in relation to taxable capacities for agriculture and non-agriculture sectors and similarly considers the benefits of public expenditure programmes to these sectors. The former would indicate the extent of

*Musgrave and Musgrave (1973 p. 357) observed, "while taxes impose a burden, this is only one side of the fiscal transaction to obtain the total picture, the expenditure side of the budget must be considered as well, since tax revenue is used to provide additional public services, resources are transferred from private to public use and the benefit from the public use must be balanced against the loss of reduced private uses... It will be necessary not only to determine the distribution of tax burden but also that of expenditure benefits and to net out the two." Similarly D.T. Lakdawala and K.V. Nambiar (1972 pp.31-32) state, "tax burden has its counterpart in expenditure benefit and for a proper judgement of the distribution effect of financial policies both must be considered together." As against the earlier view that comparison of tax burden between sectors is sufficient for the analysis, there is growing literature which emphasises consideration of expenditure benefits in such an analysis.
resources extracted by the government from the respective sector, while the latter would give an idea of transfer of resources by the government to that sector.

A theoretical case for increased taxation of agricultural sector in a developing economy is generally made on the ground that the most important limiting factor in the initial stages of development is the generation and mobilisation of agricultural surpluses and taxation is an important factor to transfer these surpluses for promoting economic development. But many practical questions need to be answered. Does the agricultural sector have the capacity to bear the additional taxation? What is the taxable capacity of the sector? Is it to be measured by its aggregate income or per capita income? How can the 'subsistence requirements' of the population of both the sectors be measured? Is the current tax burden on the agricultural sector inadequate? If the inadequacy is to be judged in terms of equity between sectors how can this be defined when the sectors have unequal economic and taxable capacities? Certain other questions will have to be answered empirically. Is a rupee of taxable capacity of a 'poor' agricultural sector equivalent to a rupee of taxable capacity of non-agricultural sector? Should not the pattern of government expenditures also be considered? Once the benefit of expenditure

are considered, some serious problems of measurement arise. How for current and capital expenditure of the Government between sectors to be allocated? How is the burden of capital receipts such as public debt and deficit financing to be evaluated? Should the short run or the long-run benefits of public expenditures be emphasised? Many of these questions cannot be answered precisely, though an attempt is made here to throw some light on these aspects.

The chapter is divided into three parts. The first part provides methodological details for estimating relative taxable capacities, tax burdens and expenditure benefits for agricultural and non-agricultural sectors of the State Economy. The second part gives the results of empirical analysis, while the third part summarises the main findings of the analysis.

6.1 Methodological Details of Estimation

Relative Taxable Capacity

It is generally accepted that the absolute taxable capacity can be measured by the surplus principle, i.e., the excess of income over the minimum subsistence needs of the population. (Kaldor, 1962) The relative taxable capacity is the ratio of difference between per capita income and the subsistence income of the agriculture sector to the difference between per capita income and the subsistence
income of the non-agricultural sector. So this is the ratio of taxable capacity of agriculture sector to the taxable capacity of non-agriculture sector.

\[
\frac{CA}{CN} = \frac{YA - SA}{YN - SN}
\]

where

- \(YA\) = per capita income of agricultural sector
- \(SA\) = subsistence income of agricultural sector
- \(YN\) = per capita income of non-agricultural sector
- \(SN\) = subsistence income of non-agricultural sector
- \(CA\) = taxable capacity of the agricultural sector
- \(CN\) = taxable capacity of non-agricultural sector

A major work on estimating relative taxable capacity in India is that of Ved. P. Gandhi (1966). Gandhi observed that Indian agriculture today has a 'slack' and that a part of its resources are not being properly utilised. Taxation could be an effective instrument for mobilizing this 'slack' and thereby creating conditions for increasing agricultural production. The subsistence requirements* are measured in terms of biological, economic, and even sociological needs of food, clothing, and shelter of an average person. For the community as a whole taxable capacity can be defined as

*This type of definition is given by Josiah Stamp (1922).
economic capacity minus the investment required to sustain the 'minimum' acceptable private consumption.*

Shetty (1970) in his study worked out the absolute and relative taxable capacity of the farm and non-farm sectors. He has defined the absolute taxable capacity as under.

\[ t = (\bar{y} - \bar{Cm}) - \bar{I} = (\bar{S} - \bar{I}) \]

where

\( t \) = taxable capacity
\( \bar{y} \) = income
\( \bar{Cm} \) = minimum consumption requirements
\( \bar{S} \) = potential surplus and
\( \bar{I} \) = allowance for minimum investment.

All these variables were in per capita terms. Shetty has also calculated the per capita relative taxable capacity of the two sectors as

\[ t = \frac{\bar{t}_b}{\bar{t}_a} \]

where \( \bar{t}_b \) and \( \bar{t}_a \) are per capita taxable capacities of the non-farm and farm sectors respectively.

The present study has relied upon the N.S.S. data on consumer expenditure and has defined the minimum consumption

*Simon Kuznets (1942) suggests this definition although in the end he points out that the limit to taxation and public expenditure should be determined by the extent to which the private sector of the economy failed to ensure the full utilization of resources.
requirements, using the poverty norms for Gujarat given by G.V.S.N. Murty and Niresh Shah (1983, p. 103). These norms have been adjusted for price changes. The per capita monthly real total expenditures of Group 1st (poorest 40% of the population in Rural and Urban) was taken as poverty norm for Gujarat because majority of population is below or on the level of minimum consumption requirements. We have tried to take 2nd group i.e. middle 40 percent of the population because they would be on the level of minimum consumption requirements. However, the potential surplus ratio turned out to be unrealistic and devoid of a meaningful result. Therefore the 2nd group of population was not included in subsistence sector. The estimates based on this procedure (referred as first approximation) are presented in Table 6.1

In calculating the second approximation an allowance for investment is made since the surplus of income over the minimum consumption is not a proper measure to define taxable capacity. Therefore, another measure is also calculated i.e. \( \bar{t} = (\bar{y} - \bar{Cm}) - \bar{I} \), in Table 6.2

Where I is per capita minimum investment for Gujarat. We have applied the equal percentage of net domestic saving\(^1\) to per capita income of agricultural and non-agricultural sectors as minimum investment allowance.

Relative Tax Burden

Having worked out the relative taxable capacities of

\^1\text{From T.K.Jayaraman, (1979) "Saving Behaviour in Gujarat", Margin, Vol. 12, No. 1, pp. 82-92.}
agricultural and non-agricultural sectors we propose to present the relative tax burdens. It is generally argued that since the agricultural sector is the largest segment of the economy it must bear a substantial part of the taxation. The important problem is to examine whether the agricultural sector is comparatively less taxed than the non-agricultural sectors or to see whether agricultural sector has the capacity to bear additional taxation. In the light of relative taxable capacity an attempt is made here to examine the inter-sectoral tax burden.

In theory tax burden has been defined and measured by economists such as R.A. Seligmen (1925), Edward L. Henry (1951), and A.R. Prest (1951) and is expressed as ratio of tax to economic capacity, where income is regarded as the best measure of economic capacity. The ratio of taxes to income, therefore, is taken to be a measure of tax burden. Gandhi (1966) mentioned in his study that in view of the difficulties met in measuring taxable capacity in empirical work, the definition of tax burden is made much simple. In fact, it is a definition of tax burden applicable only to certain units having more or less equal economic capacity. Otherwise, it represents nothing more than the "average rate of taxation."

There are other methodological limitations found in various studies on the distribution of inter-sectoral tax burden. In absence of reliable adequate data about size-
distribution of income, most of the studies are based on expenditure data. In allocating the sectoral burden of indirect taxes, the differences in the pattern of consumption or rural and urban households is not taken into account. In practice it is difficult to demarcate food habits of agricultural from non-agricultural segments of population. Another important methodological drawback of sectoral studies lies in drawing conclusions about inter-sectoral equity on the basis of comparison of tax burden on two sectors. Further, in the calculation of tax burden on the high income group households in the non-agricultural sector if instead of taking ratios of assessed tax to assessed income, the ratios are calculated as a percentage of the assessable income (income generated in this sector), the picture of burden distribution would change drastically Mahesh Bhatt (1976).

P.D. Ojha (1969) demonstrated that the tax ratios for non-agricultural and agricultural income are not comparable. If they are made roughly comparable and taxed on a comparable basis, the tax revenue from agriculture would be lower. This would suggest that in relation to 'taxable income', farm households are paying a higher proportion of their incomes than their counterparts in the non-farm sector.

Gandhi (1966) in his study, took into account the concealed taxes and subsidies received by agricultural sector while this is not done in the case of non-agricultural sector.
Only few studies have touched upon the inter-sectoral distribution of tax burden. The main reason for this is non-availability of data on the distribution of households' income by classes.* This lack of data made it difficult to present dependable quantitative estimates of distribution of direct and indirect taxes on two sectors. However due to the non-availability of these data, a simpler method for allocating burden of various direct and indirect taxes is used here. The other studies also have more or less applied this procedure.**

In estimating the burden of direct and indirect taxes on agricultural and non-agricultural sectors, we have allocated various revenue (tax) receipts from Gujarat State's own taxes on the basis of following considerations.

Direct Taxes***

1. **Land Revenue**: It has been assumed that the entire burden of land revenue rests upon the agricultural sector.


***Excludes some central taxes, like wealth tax, gift tax, expenditure tax, corporation tax.
2. **Stamp Duties and Registration Fees**: Revenue collections from these sources have been distributed in the proportion of 20:80 to the A-Sector and N. Sector since a high proportion of agricultural transactions are non-monetised.

3. **Income Tax**: Income tax collected in Gujarat from individuals, Hindu undivided families, registered and unregistered firms has been entirely allocated to the non-agricultural sector since no part of it is collected from the population of agricultural sector. Data on income tax collections have been obtained from various issues of *Socio-Economic Review*, Bureau of Economics and Statistics, Government of Gujarat.

4. **Companies Tax and Other Concern Assessible at Company Rate**: On the basis of his quantitative study of various profitability ratios, V.D. Lall comes to the conclusion that in India company taxes have been fully shifted to the consumers.

   Another study, using a multiple regression model following Krzyzaniak and Ozmucur (1968) concluded that company taxes are more or less shifted to consumers. Ved. P. Gandhi has the opposite view. However, we have distributed the proceeds from these taxes in the ratio of 2.3:1 i.e. on the basis of simply the population proportions in agriculture and non-agriculture sectors.

5. **Professional Tax and Other Taxes and Duties**: Professional tax has come in force in Gujarat since 1976. It is
considered as income tax on urban population. Therefore, entire burden is given to non-agricultural sector. Likewise other taxes and duties include receipt under education, examination fees, licence fees, luxury tax, price competition, taxes on advertisements, urban immovable property tax etc. These taxes are mostly borne by urban population. Therefore, the entire burden is given to non-agricultural sector, although the amount is meager.

Indirect Taxes

Here we allocated total revenue receipt for each of the taxes between agricultural and non-agricultural sectors and applied the Ratio of State Indirect taxes worked out by Ved. P. Gandhi (1966, p. 81) on the basis of algebra method as mentioned below.

For allocation of indirect taxes of the state Ved. P. Gandhi (1964, pp. 80 and 81) has applied the algebra method as

\[
\frac{TA}{TN} = \frac{tA}{tN} \cdot \frac{PA}{PN}
\]

where \(tA\) and \(tN\) are the rates of particular taxes per capita paid by residents of agricultural and non-agricultural (A and N) sectors respectively, and \(PA\) and \(PN\) are the populations of the two sectors. It is assumed that the ratio of state indirect taxes mobilised through A and N sectors is
same as that of rural and urban sectors. The tax rate per capita for rural and urban population in case of some indirect taxes are obtained from the Report of the Taxation Enquiry Commission, 1953-1954 (Vol. I).*

<table>
<thead>
<tr>
<th>Indirect Taxes</th>
<th>Rural Urban Ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Excises</td>
<td>2.1:1</td>
</tr>
<tr>
<td>2. Sales tax</td>
<td>3.0:4.5</td>
</tr>
<tr>
<td>3. Sales tax on motor spirits</td>
<td>2.3:6</td>
</tr>
<tr>
<td>4. Motor vehicle tax</td>
<td>2.3:4</td>
</tr>
<tr>
<td>5. Others (i.e., simply the population ratio)**</td>
<td>2.3:1</td>
</tr>
</tbody>
</table>

The indirect taxes levied by the Gujarat state are:
1. State excise duty
2. General sales tax
3. Sales tax on motor spirit
4. Interstate sales tax
5. Sales tax on motor vehicle
6. Taxes on goods and passengers
7. Electricity duty
8. Entertainment tax

*As given in Gandhi (1966), p. 81.

**According to 1981 census for Gujarat, rural urban population ratios are more or less same as that of all India ratios of 2.3:1 therefore, for apportioning direct and indirect tax burdens and expenditure benefits on agricultural and non-agricultural sectors we have applied the same population ratios for the respective sectors.
Relative Tax Burden

Finally we have apportioned the direct and indirect tax burdens on both the sectors and by dividing by respective agricultural and non-agricultural populations the per capita tax burden on each sector is obtained. The ratio of the per capita tax burden on agriculture and non-agriculture sector is given in formula as

\[
\frac{\text{Per capita tax burden on N Sector}}{\text{Per capita tax burden on A Sector}} = \frac{\bar{b}_b}{\bar{b}_a}
\]

Table 6.3 provides the details of the calculations.

Relative Public Expenditure Benefits

To examine the intersectoral flow of resources, previous analysis gave details of procedures used for allocating the incidence of taxes. The study of public expenditure is as relevant as that of public receipts i.e. taxes in the present study. For the purpose of incidence, public expenditure is customarily divided into two parts:

(i) **General benefit expenditure** which is incurred on providing social goods or those goods for which private allocation of resources is inefficient because of their joint consumption. Defence, justice, diplomacy and general administration are usually considered to belong to this category. Their incidence is usually worked out either on the basis of population or income or both for different sectors.
(ii) **Specific benefit expenditure** includes plan expenditure on agriculture and allied activities, industries and minerals, transports and communication, education, public health, medical services like other social and community services and economic services etc.*

The beneficiaries of these specific services rendered by public expenditures are theoretically identifiable, although adequate data are not available to allocate the incidence between two sectors. There is always a spillover of benefits from one sector to another and therefore, it will be difficult to draw exact demarcation line.

Analysis of the present study is restricted to the specific benefit expenditures as they are intended for specific group of beneficiaries. However, a rough idea about the inter-sectoral flow of capital resources can be formed if plan expenditure is examined after distributing on agricultural and non-agricultural sectors. To ascertain the benefits from public accruing expenditure to each sector is more difficult than the apportionment of the tax incidence. If one has to make such an attempt

*Data on plan outlays and expenditure on above mentioned segments from 1969-70 to 1977-78 are taken in this study from, "State Finances in India, Studies in State Finances," World Bank Staff Working Papers, No. 523, Vol. 21, Table 4, 1982, pp. 129 & 130. Data for the remaining previous years 1961-62 to 1968-69 were taken from Hand Book of Basic Statistics, Gujarat State, various isscs.*
one is likely to encounter a large number of methodological problems. Here too, the study has followed the methodologies applied in various empirical studies at regional level. Thus, the benefits from expenditure as estimated here in this study, as in other previous studies, are assumed to be indicated by financial amounts. It is assumed that real benefits are approximately proportional to financial flow of expenditure. The details for various sectors are as under:

Agriculture and Allied Activities

The developmental expenditure on agricultural and allied activities is meant basically to benefit agriculture and relates to agriculture, land reform, minor irrigation, soil and water conservation, animal husbandary, dairy development, fisheries, forest. It is, therefore, entirely allocated to agricultural sector.* There is a possibility of shifting some of the benefits to non-agricultural sector through lowering of prices of agricultural products consumed by non-agricultural sector. Since it would be impossible to exactly quantify the inter-sector/spillover, expenditure on agriculture and allied activities is fully allocated to agricultural sector.

Industry and Mineral

Expenditure on large and medium industries and mineral development is entirely allocated to non-agricultural sector. Here too an argument can be made that benefits of *See Ved. P. Gandhi (1966), E.T. Mathew, (1968) and Janak Raj Gupta (1983).
industrial development expenditure can percolate to agricultural sector also in the form of lowering the prices of inputs and other goods. However, we have ignored such effects due to difficulties of their quantification.

Cooperation

The expenditure on cooperation concerns mainly the agricultural sector. Cooperative finance is mainly aimed at benefiting agriculture sector and provides an important source for loans granted to farmers for purchase of land, tractors, tubewells, and for the improvements in land. Loans in this direction are also advanced by Land Mortgage Banks. Apart from the above co-operative finance, there are other cooperative institutions which also provide benefits. For Punjab, Janakraj Gupta (1983) allocated the benefits from this expenditure between agricultural and non-agricultural sectors in the ratio 90:10 because overwhelming proportion of benefits is routed through primary agricultural credit societies. Gujarat is agriculturally not as developed as Punjab. Therefore benefits have been assumed to be apportioned in the ratio of 80:20 between agricultural and non-agricultural sector in Gujarat.*

*Author during his M.Phil study on "Priority Sector Lending: A Case Study of Auto-Rickshaw Operators in Surat City" submitted to South Gujarat University, 1982 (unpublished) collected information on this aspect from various co-operative institutions which confirmed that agricultural sector was the main beneficiaries of co-operative loans and other advances in Gujarat.
Expenditure on Transport and Communication

Benefits from expenditure on transport accrue to consumers of transported goods. It is difficult to have an idea about the benefits which could be attributed to consumers of transported goods because it affects passengers as much as consumers of transported goods. Agricultural sector seems to have benefited more from state expenditure on transport than non-agricultural sector. Therefore population ration (2:3:1) is applied for distribution of benefits.

Expenditure on Education

It is widely recognised that people receiving education largely belong to urban areas. Higher education (university education and other special technical, scientific, art and cultural), sports and youth welfare programmes etc., are mostly available in urban areas. Some of the rural inhabitants of areas also receive education in the urban areas, although facilities for higher education exist largely in urban areas. Only primary education benefits agricultural sector. Taking these considerations 30:70 ratio is applied for distributing benefits between agricultural and non-agricultural sectors respectively.

Medical and Public Health

Expenditure on medical and public health services are located in the rural and urban areas but we do not have
institutionwise details of expenditure. We apportioned benefits on the basis of population ratio which was more or less equal to the ratio of sectoral income (2.3:1).

Other Types of Development Expenditure

It includes such items as labour and employment, social security and welfare, housing and urban development, general economic services, water and power development, and civil works. The break-up of expenditure under this budgetary head, reveals that while expenditure on 'housing and urban development' and 'labour and employment' benefits non-agricultural sector more than the agricultural sector, expenditure on "Water and Power Development" has the opposite nature. Social security and welfare, civil works and general economic services seem to affect agricultural and non-agricultural sectors in equal measure. In the absence of any dependable criteria we apportioned benefits, from these sources in the ratio of population of the two sectors which was more or less equal to the ratio of sectoral incomes.

Finally, the benefits on above mentioned line are apportioned between agricultural and non-agricultural sector, by dividing the same by respective sectors' population to quantify public expenditure benefits in per capita terms (e) as follows:

\[ e = \frac{eb}{ea} \]
where $eb$ is per capita expenditure benefits on non-agricultural sector and $ea$ is per capita expenditure benefits on agricultural sector. The estimates are given in Table 6.4.

**Empirical Results**

Before proceeding with presentation of one clarification needs to be made. Unlike the flows of consumer and producer goods the estimates of tax burdens, taxable capacities and expenditure benefits are at current prices. In absolute terms these figures would not give an idea of real resource transfers through Governments' budgetary operations. Therefore, the main emphasis on empirical analysis in present chapters is on relative ratios of respective aspects between the two sectors. It is expected that by taking inter-sectoral ratios the effect of price changes is removed to a considerable extent.

Following the procedures outlined in Section I, the results obtained from empirical estimation are presented in this section.

**Taxable Capacities**

Per capita taxable capacity based on the 1st approximation is shown in Table 6.1, col. 4 and column 8 for the two sectors. Per capita taxable capacity of agricultural sector increased from Rs. 77.07 in 1961-62 to Rs. 149.82 in 1977-78. In other words, taxable capacity of agricultural
sector doubled while in the non-agricultural sector it increased from Rs. 329 in 1961-62 to Rs. 1804.76 i.e. about six times more over seventeen years. Thus the growth in the taxable capacity of non-agricultural sector is more spectacular.

Looking to the per capita taxable capacity of agricultural sector for different time intervals it is found to have fluctuating trend while in the non-agricultural sector it has more or less increasing trend (table 6.1 col. 4 and 8).

Further, comparing taxable capacity of the two sectors, it is found that increase in taxable capacity of agricultural sector is smaller (i.e. between Rs. 73.07 to Rs. 357.83) than the increase in per capita income of non-agricultural sector (i.e. between Rs. 329 to Rs. 1804.76). Further, table 6.1 (columns 55 and 9) gives the percentage ratios of per capita taxable capacity to per capita income in the two sectors. It can also be seen that the percentage ratio for agricultural sector has experienced fluctuating trend. In the 1st decade from 1961-62 to 1969-70 it has fluctuating around an increasing trend i.e. from 29.24 to 67.57, while in the subsequent period from 1970-71 to 1977-78 has witnessed fast decreasing trend i.e. from 47.24 percent to 19.27 percent. In the non-agricultural sector in the first period it has fast increasing trend
(i.e. from 52.44 percent to 79.78 percent) and in the second period it has gradually increasing trend i.e. from 58.98 percent to 69.78 percent. Thus with increasing per capita income of agricultural sector, taxable capability has increasing trend in the first decade while in the second period in agricultural sectors' taxable capacity gone down with increasing per capita income. On the other hand taxable capacity has increased with increasing income of non-agricultural sector. It has speedy increasing trend in the 1st decade i.e. from 52.44 percent to 79.77 percent and in the second period i.e. from 58.98 percent to 69.78 percent. Thus in both the segments of time taxable capacity increased with increasing per capita income of the non-agricultural sector.

Considering that excess of income over the minimum consumption is not a proper method to define taxable capacity, an allowance for the minimum investment requirements is given to both the sectors. Adding these investment requirements to the minimum consumption needs of agricultural and non-agricultural sector we derived taxable capacity based on second approximation in table 6.2.

As shown in column 6 of table 6.2 per capita taxable capacity of agricultural sector increased from Rs. 36.51 in 1961-62 and decreased to Rs. 13.80 in the year 1977-78. While per capita taxable capacity of non-agricultural sector (table 6.2 col. 12) increased from Rs. 233.46 in 1961-62 to Rs. 1260.41 in 1977-78. Thus, agricultural sector has
negative taxable capacity while non-agricultural sector has positive taxable capacity.

Looking to the ratio of taxable capacity per capita income of agricultural and non-agricultural sectors (table 6.2 col. 6 and col. 2 and col. 12 and 8 respectively), it is found that the proportion of taxable capacity in agricultural sector is smaller (between Rs. 60.78 to Rs. 242.63) than the proportion of taxable capacity in non-agricultural sector (between Rs. 207.65 to Rs. 1260.41). However, the fluctuations of taxable capacity in agricultural sector are relatively uneven than in non-agricultural sector. Thus, the growth in taxable capacity of non-agricultural sector is more spectacular even after giving minimum investment allowance to both the sectors.

Further looking to the per capita taxable capacity as percentage ratios of per capita income in both the sectors (table 6.2 col. 7 and 13 respectively) the ratio in agricultural sector has positive trend in early period and negative trend subsequently while in non-agricultural sector it has positive trend in both the segments of time. Thus, the earlier conclusions based on first approximation estimates are still true.

In regard to movements through time in two sectors' taxable capacities (table 6.2 col. 6 and 12) the experience is different in two sectors. Given the minimum investment
allowance the fluctuations are observed in both the sectors. However, since 1971-72 to 1977-78 taxable capacity of agricultural sector decreased unevenly i.e. from Rs. 159.30 to 13.80 while taxable capacity of non-agricultural sector increased faster i.e. from Rs. 453.79 to 1260.41 in the same period.

Considering the relative taxable capacity of two sectors in per capita terms (ratio of per capita taxable capacity of agriculture sector to per capita taxable capacity of non-agriculture sector table 6.5 columns 2 and 3) it is found that the capacity of non-agricultural sector stood at about thrice the capacity in the agricultural sector (except for some unusual results arising out of short-run factors leading to fluctuations in incomes). The results of estimates of taxable capacity, therefore, point to the fact that both the sectors have taxable capacity and non-agricultural sector has about three times per capita taxable capacity than agricultural sector.

Ratio of per capita taxable capacity in non-agricultural to that in agricultural sector, however, does not show significant trend. This is clear from the following estimates of fitting linear, semi-log and quadratic trend curves for this ratio.

\[ y = 5.981 - 0.636t \quad (R^2 = 0.03) \]
\[ \log y = 0.874 + 0.076t \quad (R^2 = 0.21) \]
\[ y = 9.835 - 1.853t + 0.068t^2 \quad (R^2 = 0.39) \]
Where \( y \) is per capita taxable-capacity ratio and \( t \) is time. The quadratic curve gives better estimates as indicated by improved value of \( R^2 \). Although linear trend seems to indicate a negative tendency in movement of this ratio, the strength of this negative trend is very weak. This seems to be the outcome of noticeable fluctuations in taxable capacity estimates of agricultural sector. The semi-log and quadratic relationships are able to capture the fluctuation to some extent. After an initial decline, there is noticeable rise in the ratio. This is corroborated by positive sign of quadratic term's coefficient along with negative sign of linear term. The overall trend is, thus, positive, also confirmed by positive sign of semi-log relationship (see Chart 6.1 for a visual idea of nature of movement in this ratio).

Taxable capacity alone does not reveal much unless it is related with tax burdens borne by the two sectors.

**Tax Burden**

The estimates of aggregate and per capita direct and indirect tax burden on agricultural and non-agricultural sector are presented in table 6.3*. A rising trend in aggregate and per capita tax burden in both sectors is observed, although rise is faster and steady in non-agricultural sector.

*The detail of direct and indirect tax burden by individual categories and their sectoral apportionment is given in Appendix 6.1.*
To judge the nature of trend in each sector aggregate tax burden linear, semilog and quadratic trend were estimated. The results are as under:

**Agricultural sector**

\[
y = -6.835 + 7.576t \quad (R^2 = .88)
\]

\[
\log y = 2.762 + .128t \quad (R^2 = .99)
\]

\[
y = 27.427 - 3.244t + .601t^2 \quad (R^2 = .98)
\]

**Non-agricultural sector**

\[
y = -26.735 + 15.197t \quad (R^2 = .88)
\]

\[
\log y = 3.084 + .150t \quad (R^2 = .99)
\]

\[
y = 41.581 - 6.376t + 1.199t^2 \quad (R^2 = .98)
\]

The above estimates indicate that the tax burden in both agricultural and non-agricultural sector has a steadily rising tendency as shown by positive co-efficient of time in semi-log relationship which has highest $R^2$ value. The quadratic curve having nearly same explanatory power also has a positive quadratic term, which confirms the positive trend, especially in latter period.

The comparison of direct tax burden of agricultural sector with non-agricultural sector in absolute rupee term reveals that non-agricultural sector is bearing more tax burden than agricultural sector, and the tax burden on agricultural sector has fluctuating trend while non-agricultural sector has steady trend. Similarly the comparison of indirect tax burden among the two sectors (col. 6 to col. 9) shows that non-agricultural sector is bearing more tax burden than its counterpart in absolute rupee terms.
The aggregate direct and indirect tax burden on agricultural sector has increased from Rs. 19.07 to Rs. 153.26 while that of non-agricultural sector has increased from Rs. 27.48 to Rs. 300.90. It can be seen that in agricultural sector tax burden has increased 8.3 times while in non-agricultural sector it has increased about 11 times more during the seventeen years of study.

The comparison of tax burden by sectors amply demonstrates that the tax burden is directly influenced by sector's performance. It may increase or decrease according to income changes or expenditure changes in the respective sectors. If tax burden of two sectors is compared with their corresponding per capita income (table 6.1 col, 2 and 6), then it is observed that the per capita income increased about three times in agricultural sector while tax burden in the sector increased 5.1 times. On the other hand, the per capita income of non-agricultural sector has increased about 4 times while tax burden increased 7.4 times (table 6.3 col. 12 and 13). If income increases faster the tax burden also increases faster, therefore, tax burden on non-agricultural sector increases faster than the tax burden of agricultural sector because increasing trend in income is faster in non-agricultural sector than agricultural sector.

Further, if we compare changes in per capita tax burden of two sectors with similar changes in per capita
through time it is seen that per capita income of non-agricultural sector is 2.38 times higher than that of agricultural sector in 1961-62 while the burden in non-agricultural sector is 2.61 times higher than agricultural sector. In 1977-78 the per capita income of non-agricultural sector becomes 3.32 times higher than that of agricultural sector while tax burden on non-agricultural sector is 3.73 times higher than that in agricultural sector.

The trend in relative disparity measured by relative per capita tax burden ratio \( \frac{\bar{b}_n}{\bar{b}_a} \) is estimated by using linear, semi-log and quadratic trend curves. The estimates are obtained as under:

\[
\begin{align*}
y &= 2.385 + 0.84 t \quad (R^2 = .69) \\
\log y &= 0.877 + 0.028 t \quad (R^2 = .64) \\
Y &= 2.183 + 0.148t - 0.004t^2 \quad (R^2 = .71)
\end{align*}
\]

These estimates confirm a positive trend in tax burden ratio which means that per capita tax burden on agricultural sector has grown faster than corresponding per capita tax burden on non-agricultural sector. It may be seen that linear trend estimates are as good as quadratic estimates.

Further, the inter-sectoral ratios of relative tax burdens (in table 6.5 col. 2) are compared with relative
inter-sectoral taxable capacity ratios (table 6.5 col. 3). An idea of this comparison can also be had from chart 6.1. The relative per capita taxable capacity ratio on the basis of 1st approximation (i.e. $\bar{t} = \bar{y} \cdot \bar{C}_m$) was 4.3 in 1981-82 while relative burden ratio stood 2.61. This implies that non-agricultural sector possessed a taxable capacity which was about 4.3 times that of the agricultural sector, while it actually bore only 2.6 times tax burden compared to agricultural sector. During the years 1966-67 to 1971-72 of agricultural sector the capacity ratio declined from 3.37 to 2.44 while the burden ratio increased between 2.88 to 3.45. Thus, the hypothesis of under taxation of the agricultural sector in Gujarat was found to be holding valid in conformity with Shetty's conclusion in case of Indian experience. In the beginning period (i.e. from 1961-62 to 1965-66) non-agricultural sector was found under taxed and farm sector over taxed. Even after 72-73 relative taxable capacity ratios were found greater than relative tax burden ratio (barring the year 1975-76). Thus, relative capacity ratio being greater than relative burden ratio ($\bar{t} > \bar{b}$) is a situation in which non-agricultural sector is undertaxed and agricultural sector is over taxed. The relative capacity ratio is 12.05 in the year 1977-78 while the relative burden ratio stood at 3.73. This implies that while non-agricultural sector possessed taxable capacity of about 12 times than that of the agricultural sector, tax burden
borne by it was only 3.7 times the tax burden borne by agricultural sector. The generalisation of under taxation of agricultural sector this does not seem to get support from the empirical evidence relating to Gujarat, considering the relative tax burden and taxable capacity ratio. Thus, conclusion may be drawn that there is a wide scope for mobilisation of additional resources from non-agricultural sector for financing economic development than depending on enhancement of tax burden on agricultural sector. This conclusion would be justified on grounds of inter-sectoral equity.

**Expenditure Benefit**

The important items of expenditure, the benefits from which have been analysed here relate to development expenditure on revenue account. The break-up of developmental expenditure on all heads by sectors is given in Table 6.4, col. 1 to 6.* It can be seen that per capita benefits accruing from developmental expenditure have been found increasing in both sectors and were greater in non-agricultural sector (barring the years 1962-63, 1964-65, 1967-68, 1968-69, and 1975-76), than in agricultural sector. This is confirmed from ratio of benefits in two sectors from development expenditures.

---

*The detail of expenditure by individual categories and their sectoral apportionment is given in Appendix 6.2.
It may be seen from the ratio of per capita expenditure benefits in two sectors that though non-agricultural sector has enjoyed greater per capita benefits than its agricultural counterpart, the disparity is not so high as in evidence in case of per capita tax burden ratio (Table 6.5 cols. 3 to 5).

These inferences are confirmed by results of trend curves estimated for this purpose and the results yielded are as under:

**Agricultural sector (aggregate benefit)**

\[ y = -12.365 + 9.366t \quad (R^2 = .83) \]
\[ \log y = 2.877 + 0.131t \quad (R^2 = .96) \]
\[ y = 38.069 - 6.561t + 0.884t^2 (R^2 = .97) \]

**Agricultural Sector (per capita benefit)**

\[ y = 1.585 + 4.197t \quad (R^2 = .83) \]
\[ \log y = 2.595 + 0.104t \quad (R^2 = .95) \]
\[ y = 23.304 - 2.661t + 0.389t^2 (R^2 = .96) \]

**Non-agricultural sector (aggregate benefit)**

\[ y = -7.882 + 5.328t \quad (R^2 = .85) \]
\[ \log y = 2.218 + 0.137t \quad (R^2 = .97) \]
\[ y = 19.029 - 3.170t + 0.472t^2 (R^2 = .98) \]

**Non-agricultural sector (per capita benefit)**

\[ y = -0.483 + 4.614t \quad (R^2 = .87) \]
\[ \log y = 2.532 + 0.113t \quad (R^2 = .94) \]
\[ y = 21.154 - 2.219t + 0.379t^2 (R^2 = .98) \]
Ratio of per capita expenditure benefit in non-agricultural to that of agricultural sector

\[ y = 0.926 + 0.010t \quad (R^2 = .16) \]

\[ \log y = -0.086 + 0.013t \quad (R^2 = .16) \]

\[ y = 0.902 + 0.017t - 0.0004t^2 \quad (R^2 = .17) \]

The above estimates of linear, semi log of agricultural and non-agricultural sector in aggregate and per capita benefit term have rising tendency as shown by positive co-efficient of time and high \( R^2 \) values. The quadratic curve having nearly same explanatory power possess a positive quadratic term which confirms the positive trend, especially in latter period.

The trend in relative disparity between per capita benefit from expenditure in non-agriculture and agriculture sectors as measured by relative per capita expenditure benefit ratio \( \bar{e} = \frac{eb}{eb^a} \), though positive, is not noteworthy as it is not having satisfactory explanatory power (as seen from low \( R^2 \) values). This confirms that disparity in benefits from expenditure in per capita terms in two sectors has not increased significantly.

**Inter-Sectoral Comparisons of Tax Burden, Taxable Capacities and Expenditure Benefits**

Earlier, sectoral tax burden ratios have been compared with corresponding taxable capacity ratios and it has been found that non-agricultural sector has larger and increasing taxable capacity than the agricultural sector, while
relative tax burden borne by it has not grown correspondingly. This disparity can be seen in another way also, i.e., by comparing among sector the tax burden in relation with taxable capacity.

Taking ratio of per capita tax burden on agricultural sector with corresponding taxable capacity, it is observed that it has increased from 0.18 to 0.48 during seventeen years of study (Table 6.6 col. 2) while similar ratio for non-agricultural sector has been low and has slowly increased from 0.11 to 0.15 during the same period (table 6.6 col. 3). This confirms that in relation to taxable capacity, tax burden has grown faster in agricultural sector and non-agricultural sector has not yet been explored for resource mobilisation purposes.

If tax burdens of the two sectors are compared with corresponding expenditure benefits (table 6.3 col. 12 and 13) and table 6.4 col. 3 and 5) it is revealed that per capita expenditure on agricultural sector is fluctuating more intensely than tax burden on agricultural sector. While per capita expenditure on non-agricultural sector is lower than the per capita tax burden on non-agricultural sector in absolute rupee terms, the ratios of the two in two sectors (table 6.6 col. 4 and 5) reveal that expenditure benefits to agriculture in relation to tax burden borne by it is larger than that in non-agricultural sector, although in both sectors tax burden per unit of expenditure
benefit has declined, the relative disparity continues to be maintained (see chart 6.1). Thus when tax burdens are compared with expenditure benefits, the non-agricultural sector emerges as located in a disadvantageous situation. This implies that planning process has led to programmes for agricultural and rural development, although at the same time tax burden of agricultural sector has also increased faster than that of non-agricultural sector. A question here naturally arises about the net effect of budgetary operations. Since benefits accruing from expenditure programmes are not all direct and our measure of tax burden is also not inclusive all effects, it would be hazardous to make a determine a precise quantification of total effect of taxes and expenditure allocations.

It can be stated undoubtedly that agriculture has benefitted to a somewhat larger extent from expenditure programmes, although it is also bearing considerably larger and increasing tax burdens than non-agricultural sector.

6.3 Conclusion

This chapter has attempted to estimate the taxable capacities, tax burdens and expenditure benefits of agricultural and non-agricultural sectors with a view to get an idea about the extent of flow of resources between Government and the sectors. The analysis has been largely conducted in terms of movements in ratios to reduce the affect of price-changes and thus to obtain an idea of transfers in real terms.
Chart 6.1

Per Capita Relative Ratio of Taxable Capacity (t) Tax Burden (b) & Expenditure Benefit (e)
The analysis has shown that in all respects viz., taxable capacity, tax burdens and expenditure benefits, the non-agricultural sector is ahead of agricultural sector. However, in relative terms the relative advantage of non-agricultural sector in taxable capacity is not appropriated as indicated by lower tax burden ratios. The ratio of tax burden to taxable capacity compared over two sectors confirms this inference. This ratio was initially smaller in non-agricultural sector than the agricultural sector. Further, it has sharply moved up in agricultural sector and has increased only slightly in non-agricultural sector. This rules out the generally held contention that agriculture is undertaxed. In fact the empirical analysis reveals a much larger scope to tax non-agricultural sector to attain intersectoral equity in tax burden. In terms of the flow of resources the present evidence is in favour of larger outflow of resources in relation to taxable capacity to government sector from agriculture than from non-agricultural sector.

The flow of resources from the Government sector to agricultural and non-agricultural sectors in terms of expenditure incurred by former indicate larger benefits to non-agricultural sector, although relative advantage of non-agricultural sector in this respect is smaller than its relative disadvantage in the form of higher tax burden ratio. This seems to suggest that in per capita
terms agricultural sector has benefitted to a larger extent than the non-agricultural sector when benefits are compared in relation to sacrifices in terms of tax burdens. The emphasis of planned development programme in the country has been in favour of initiating programmes for agricultural and rural development. However, this inference of larger benefit in relative term to agricultural sector must be viewed with caution since just as agriculture is bearing greater tax burden in relation to taxable capacity the expenditure benefits are to be considered in relation to the resource transfers required to meet the minimum goals of reducing rural poverty and unemployment and promoting agricultural development. Thus looking to the resource requirement to attain the goals of planning, expenditure benefits to agricultural sector appear to be meager.
Table 6.1

Growth of Taxable Capacity (First Approximation)

<table>
<thead>
<tr>
<th>Year</th>
<th>Per capita income of agri. population in Rs.</th>
<th>Per capita consumption surplus in Rs.</th>
<th>Per capita income of non-agri. population in Rs.</th>
<th>Per capita consumption surplus in Rs.</th>
<th>Per capita taxable capacity of non-agricultural sector</th>
<th>Per capita taxable capacity of agricultural sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961-62</td>
<td>263.55</td>
<td>186.48</td>
<td>77.07</td>
<td>29.24</td>
<td>627.32</td>
<td>298.32</td>
</tr>
<tr>
<td>1962-63</td>
<td>248.49</td>
<td>169.80</td>
<td>78.69</td>
<td>31.66</td>
<td>635.53</td>
<td>300.84</td>
</tr>
<tr>
<td>1963-64</td>
<td>261.23</td>
<td>188.16</td>
<td>73.07</td>
<td>27.97</td>
<td>679.77</td>
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<td>203.33</td>
<td>59.29</td>
<td>755.07</td>
<td>217.32</td>
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<tr>
<td>1965-66</td>
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<td>189.69</td>
<td>63.59</td>
<td>822.80</td>
<td>162.36</td>
</tr>
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<td>1966-67</td>
<td>377.03</td>
<td>103.92</td>
<td>273.11</td>
<td>72.43</td>
<td>889.21</td>
<td>192.12</td>
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<td>1967-68</td>
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<td>138.00</td>
<td>322.13</td>
<td>69.98</td>
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<td>781.44</td>
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</table>

Notes:
1) In this and subsequent tables for deriving per capita estimates the population of agriculture and non-agriculture sector is used methodology for demarcating population of rural and urban areas in these two sectors is given in Chapter III. The figures so derived are given in table 3.3.

2) A and a used for agricultural sector, B and b used for non-agricultural sector here and in subsequent tables and appendix of tax analysis.

3) Per capita taxable capacity of non-agricultural sector
   ---------------------
   Per capita taxable capacity of agricultural sector

(Tabulated in approximate)
### Table 6.2

Growth of Taxable Capacity (2nd Approximation)

<table>
<thead>
<tr>
<th>Year</th>
<th>$\bar{y}$</th>
<th>$\bar{Cm} + \bar{I}$</th>
<th>$\bar{Cm} + \bar{I}$</th>
<th>$\bar{y} - \bar{Cm} + \bar{I}$</th>
<th>Col.6 as % of Col.2</th>
<th>$\bar{y}$</th>
<th>$\bar{Cm}$</th>
<th>$\bar{I}$</th>
<th>$\bar{Cm} + \bar{I}$</th>
<th>$\bar{y} - \bar{Cm} + \bar{I}$</th>
<th>Col.12 as % of Col.8</th>
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<td>233.46</td>
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<td>169.80</td>
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<td>127.04</td>
<td>427.88</td>
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<td>(43.85)</td>
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<td>116.66</td>
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<td>544.35</td>
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<td>1260.41</td>
</tr>
</tbody>
</table>

\[ \bar{y} = \bar{Cm} + \bar{I} \]

where \( \bar{y} \) = per capita income

\( \bar{Cm} \) = minimum per capita consumption requirements

\( \bar{I} \) = allowance for minimum investment (per capita)

\( \bar{y} - \bar{Cm} + \bar{I} \) = per capita potential surplus of agricultural sector
<table>
<thead>
<tr>
<th>Year</th>
<th>Direct Tax Burden Aggregate</th>
<th>Per Capita</th>
<th>Indirect Tax Burden Aggregate</th>
<th>Per Capita</th>
<th>Direct and Indirect Tax Burden Aggregate</th>
<th>Per Capita</th>
</tr>
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<td>A N</td>
<td>A N</td>
<td>A N</td>
<td>A N</td>
<td>A N</td>
</tr>
</tbody>
</table>
| 1961-62| 12.97 15.57                 | 8.07 20.76 | 8.10 11.91                    | 5.96 15.98 | 19.07 27.48                              | 14.03 36.64| 2.61  
| 1963-64| 12.74 16.04                 | 8.43 22.84 | 11.20 16.49                    | 7.76 20.76 | 23.34 34.64                              | 16.21 43.60| 2.69  
| 1964-65| 12.84 15.81                 | 8.47 19.52 | 15.20 21.05                    | 10.27 25.99| 27.74 36.85                              | 18.74 45.81| 2.93  
| 1965-66| 11.72 18.26                 | 7.71 22.26 | 16.48 23.05                    | 10.84 28.11| 28.20 41.31                              | 13.55 50.37| 2.72  
| 1966-67| 11.87 25.32                 | 7.60 30.86 | 20.48 29.44                    | 13.12 35.05| 32.35 55.36                              | 20.72 65.91| 3.18  
| 1967-68| 13.01 24.41                 | 8.63 28.39 | 23.41 33.29                    | 14.63 38.70| 37.22 57.69                              | 23.26 67.08| 2.88  
| 1968-69| 13.11 34.96                 | 7.99 39.73 | 26.70 38.78                    | 16.28 44.07| 39.31 73.74                              | 24.27 83.80| 3.45  
| 1969-70| 13.79 38.06                 | 8.16 41.80 | 31.57 46.07                    | 13.68 50.63| 45.36 94.11                              | 26.84 92.43| 3.44  
| 1970-71| 21.00 52.93                 | 12.07 56.91| 37.22 53.67                    | 21.42 57.71| 58.27 106.60                             | 33.49 114.62| 3.42  
| 1971-72| 22.09 68.35                 | 16.25 71.96| 42.54 62.04                    | 23.77 65.31| 71.63 130.39                             | 40.02 137.26| 3.43  
| 1972-73| 16.47 52.32                 | 8.79 53.39 | 50.99 70.93                    | 27.17 72.38| 67.16 125.25                             | 36.50 125.77| 3.46  
| 1973-74| 22.51 59.15                 | 11.91 59.15| 55.47 77.65                    | 20.35 77.65| 77.98 136.30                             | 41.26 136.30| 3.32  
| 1974-75| 24.97 58.56                 | 12.80 57.61| 73.43 109.52                   | 37.66 127.37| 99.40 169.08                             | 50.46 164.78| 3.27  
| 1975-76| 20.43 86.30                 | 10.22 82.67| 83.59 126.44                   | 41.85 120.42| 104.12 213.24                            | 52.07 203.09| 3.90  
| 1976-77| 28.75 87.68                 | 13.86 87.68| 107.06 161.13                  | 51.97 149.19| 135.81 248.81                            | 65.93 230.37| 3.49  
| 1977-78| 36.64 126.20                | 17.36 113.69| 116.62 174.70                 | 55.27 157.39| 153.26 300.90                            | 72.83 271.08| 3.73  

**Note:**

- **b** = Per Capita direct and indirect tax burden on Non-agricultural sector
- Per Capita direct and indirect tax burden on Agricultural sector
Table 6.4
Estimates of Relative Expenditure Benefits on Agricultural and Non-agricultural Sectors

<table>
<thead>
<tr>
<th>Year</th>
<th>Expenditure benefit to A. sector</th>
<th>$\bar{ea}$</th>
<th>Expenditure benefit to N sector</th>
<th>$\bar{eb}$</th>
<th>$\bar{e} = \frac{\bar{eb}}{\bar{ea}}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961-62</td>
<td>24.00</td>
<td>17.65</td>
<td>13.41</td>
<td>17.88</td>
<td>1.01</td>
</tr>
<tr>
<td>1962-63</td>
<td>27.66</td>
<td>19.76</td>
<td>11.43</td>
<td>14.84</td>
<td>0.75</td>
</tr>
<tr>
<td>1963-64</td>
<td>29.21</td>
<td>20.28</td>
<td>18.07</td>
<td>22.87</td>
<td>1.13</td>
</tr>
<tr>
<td>1964-65</td>
<td>27.69</td>
<td>19.77</td>
<td>14.78</td>
<td>18.25</td>
<td>0.98</td>
</tr>
<tr>
<td>1965-66</td>
<td>30.45</td>
<td>20.03</td>
<td>16.60</td>
<td>20.24</td>
<td>1.01</td>
</tr>
<tr>
<td>1966-67</td>
<td>36.87</td>
<td>23.63</td>
<td>18.56</td>
<td>22.10</td>
<td>0.94</td>
</tr>
<tr>
<td>1967-68</td>
<td>42.66</td>
<td>26.66</td>
<td>21.79</td>
<td>25.34</td>
<td>0.95</td>
</tr>
<tr>
<td>1968-69</td>
<td>46.18</td>
<td>28.16</td>
<td>25.43</td>
<td>28.90</td>
<td>1.03</td>
</tr>
<tr>
<td>1969-70</td>
<td>51.89</td>
<td>30.70</td>
<td>28.91</td>
<td>31.77</td>
<td>1.03</td>
</tr>
<tr>
<td>1970-71</td>
<td>57.96</td>
<td>33.31</td>
<td>32.39</td>
<td>34.83</td>
<td>1.05</td>
</tr>
<tr>
<td>1971-72</td>
<td>62.42</td>
<td>34.87</td>
<td>38.13</td>
<td>40.14</td>
<td>1.15</td>
</tr>
<tr>
<td>1972-73</td>
<td>85.03</td>
<td>46.21</td>
<td>53.00</td>
<td>54.08</td>
<td>1.17</td>
</tr>
<tr>
<td>1973-74</td>
<td>79.40</td>
<td>42.01</td>
<td>48.48</td>
<td>48.48</td>
<td>1.15</td>
</tr>
<tr>
<td>1974-75</td>
<td>123.40</td>
<td>63.28</td>
<td>65.04</td>
<td>63.76</td>
<td>1.01</td>
</tr>
<tr>
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<td>79.48</td>
<td>77.46</td>
<td>73.77</td>
<td>0.93</td>
</tr>
<tr>
<td>1976-77</td>
<td>161.50</td>
<td>78.40</td>
<td>98.74</td>
<td>91.42</td>
<td>1.17</td>
</tr>
<tr>
<td>1977-78</td>
<td>181.46</td>
<td>86.00</td>
<td>98.78</td>
<td>88.99</td>
<td>1.03</td>
</tr>
</tbody>
</table>

Note: 1) $\bar{ea}$ = Per capita expenditure benefit in agril. sector
       2) $\bar{eb}$ = Per capital expenditure benefit in non-agriculture sector
       3) $\bar{e} = \frac{\bar{ea}}{\bar{eb}}$ shown above (1 and 2)
Table 6.5
relative Per Capita Tax Burden in Terms of Two Ratios in Gujarat and Relative Taxable
Capacity and Expenditure Benefit Ratios

<table>
<thead>
<tr>
<th>Year</th>
<th>t</th>
<th>( \frac{t}{t_a} )</th>
<th>b</th>
<th>( \frac{b}{b_a} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961-62</td>
<td>4.27</td>
<td>6.39</td>
<td>2.61</td>
<td>1.01</td>
</tr>
<tr>
<td>1962-63</td>
<td>4.25</td>
<td>7.16</td>
<td>2.48</td>
<td>0.75</td>
</tr>
<tr>
<td>1963-64</td>
<td>6.16</td>
<td>9.39</td>
<td>2.69</td>
<td>1.13</td>
</tr>
<tr>
<td>1964-65</td>
<td>2.64</td>
<td>2.80</td>
<td>1.93</td>
<td>0.98</td>
</tr>
<tr>
<td>1965-66</td>
<td>3.32</td>
<td>3.55</td>
<td>2.72</td>
<td>1.01</td>
</tr>
<tr>
<td>1966-67</td>
<td>2.55</td>
<td>2.61</td>
<td>3.18</td>
<td>0.94</td>
</tr>
<tr>
<td>1967-68</td>
<td>2.45</td>
<td>2.56</td>
<td>2.88</td>
<td>0.95</td>
</tr>
<tr>
<td>1968-69</td>
<td>3.37</td>
<td>3.61</td>
<td>3.45</td>
<td>1.03</td>
</tr>
<tr>
<td>1969-70</td>
<td>2.89</td>
<td>3.04</td>
<td>3.44</td>
<td>1.03</td>
</tr>
<tr>
<td>1970-71</td>
<td>2.44</td>
<td>2.85</td>
<td>3.42</td>
<td>1.05</td>
</tr>
<tr>
<td>1971-72</td>
<td>2.76</td>
<td>3.29</td>
<td>3.43</td>
<td>1.15</td>
</tr>
<tr>
<td>1972-73</td>
<td>7.56</td>
<td>21.19</td>
<td>3.45</td>
<td>1.17</td>
</tr>
<tr>
<td>1973-74</td>
<td>3.06</td>
<td>3.75</td>
<td>3.32</td>
<td>1.15</td>
</tr>
<tr>
<td>1974-75</td>
<td>-68.94</td>
<td>-16.00</td>
<td>3.27</td>
<td>1.01</td>
</tr>
<tr>
<td>1975-76</td>
<td>5.30</td>
<td>9.44</td>
<td>3.90</td>
<td>0.93</td>
</tr>
<tr>
<td>1976-77</td>
<td>8.11</td>
<td>53.20</td>
<td>3.49</td>
<td>1.17</td>
</tr>
<tr>
<td>1977-78</td>
<td>-12.05</td>
<td>-91.33</td>
<td>3.73</td>
<td>1.03</td>
</tr>
</tbody>
</table>

Note:
- \( t = \frac{tb}{ta} \) = Per capita taxable capacity of non-agricultural sector
- \( \frac{t}{t_a} \) = Per capita taxable capacity of agricultural sector
- \( 1 - t = \frac{\frac{tb}{ta}}{1} \) = Per capita taxable capacity of non-agricultural sector after giving investment 
  allowance
- \( \frac{b}{b_a} \) = Per capita taxable capacity of agricultural sector after giving investment allowance
- \( \bar{b} = \frac{\bar{b}_b}{\bar{b}_a} \) = Per capita tax burden on non-agricultural sector
- \( \frac{\bar{b}}{\bar{b}_a} \) = Per capita tax burden on agricultural sector
- \( \bar{e} = \frac{\bar{e}_b}{\bar{e}_a} \) = Per capita expenditure benefit of non-agricultural sector
- \( \frac{\bar{e}}{\bar{e}_a} \) = Per capita expenditure benefit of agricultural sector
Table 6.6
Ratio of Tax Burdens, Taxable Capacities and Expenditure Benefits

<table>
<thead>
<tr>
<th>Year</th>
<th>$\frac{Ba}{ta}$</th>
<th>$\frac{Eb}{tb}$</th>
<th>$\frac{Ba}{ea}$</th>
<th>$\frac{Eb}{eb}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961-62</td>
<td>0.18</td>
<td>0.11</td>
<td>0.79</td>
<td>2.05</td>
</tr>
<tr>
<td>1962-63</td>
<td>0.21</td>
<td>0.12</td>
<td>0.84</td>
<td>2.77</td>
</tr>
<tr>
<td>1963-64</td>
<td>0.22</td>
<td>0.10</td>
<td>0.80</td>
<td>1.91</td>
</tr>
<tr>
<td>1964-65</td>
<td>0.09</td>
<td>0.08</td>
<td>0.95</td>
<td>2.49</td>
</tr>
<tr>
<td>1965-66</td>
<td>0.10</td>
<td>0.08</td>
<td>0.93</td>
<td>2.51</td>
</tr>
<tr>
<td>1966-67</td>
<td>0.08</td>
<td>0.08</td>
<td>0.88</td>
<td>2.98</td>
</tr>
<tr>
<td>1967-68</td>
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<td>0.08</td>
<td>0.87</td>
<td>2.65</td>
</tr>
<tr>
<td>1968-69</td>
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<td>0.10</td>
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<td>2.90</td>
</tr>
<tr>
<td>1969-70</td>
<td>0.09</td>
<td>0.10</td>
<td>0.87</td>
<td>2.91</td>
</tr>
<tr>
<td>1970-71</td>
<td>0.12</td>
<td>0.16</td>
<td>1.01</td>
<td>3.29</td>
</tr>
<tr>
<td>1971-72</td>
<td>0.16</td>
<td>0.19</td>
<td>1.15</td>
<td>3.42</td>
</tr>
<tr>
<td>1972-73</td>
<td>0.33</td>
<td>0.15</td>
<td>0.79</td>
<td>2.33</td>
</tr>
<tr>
<td>1973-74</td>
<td>0.12</td>
<td>0.12</td>
<td>0.98</td>
<td>2.82</td>
</tr>
<tr>
<td>1974-75</td>
<td>2.24</td>
<td>0.13</td>
<td>0.80</td>
<td>2.58</td>
</tr>
<tr>
<td>1975-76</td>
<td>0.20</td>
<td>0.14</td>
<td>0.66</td>
<td>2.75</td>
</tr>
<tr>
<td>1976-77</td>
<td>0.35</td>
<td>0.15</td>
<td>0.84</td>
<td>2.52</td>
</tr>
<tr>
<td>1977-78</td>
<td>0.48</td>
<td>0.15</td>
<td>0.84</td>
<td>3.05</td>
</tr>
</tbody>
</table>

Broad Periods

<table>
<thead>
<tr>
<th>Period</th>
<th>$\frac{Ba}{ta}$</th>
<th>$\frac{Eb}{tb}$</th>
<th>$\frac{Ba}{ea}$</th>
<th>$\frac{Eb}{eb}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961-62</td>
<td>0.15</td>
<td>0.10</td>
<td>0.87</td>
<td>2.45</td>
</tr>
<tr>
<td>to 1966-67</td>
<td>0.11</td>
<td>0.13</td>
<td>0.95</td>
<td>3.03</td>
</tr>
<tr>
<td>1967-68</td>
<td>0.12</td>
<td>0.12</td>
<td>0.98</td>
<td>2.82</td>
</tr>
<tr>
<td>to 1971-72</td>
<td>0.30*</td>
<td>0.17*</td>
<td>0.82*</td>
<td>2.69*</td>
</tr>
<tr>
<td>1972-73</td>
<td>0.62</td>
<td>0.14</td>
<td>0.82</td>
<td>2.68</td>
</tr>
<tr>
<td>to 1977-78</td>
<td>0.35</td>
<td>0.15</td>
<td>0.84</td>
<td>3.05</td>
</tr>
</tbody>
</table>

Note: *Barring the year 1974-75, which was abnormal year.