CHAPTER I

THE PROBLEM OF INTER-SECTORAL RESOURCE TRANSFERS

1. Introduction

Structural transformation of economy is a widely recognized characteristic of modern economic growth in both developing as well as developed countries. This has involved a number of shifts in various structural inter-relationships reflecting changes in technological parameters, final demand use patterns, and saving-investment patterns. Inter-sectoral resource transfer is one important manifestation of this process of structural transformation. The literature on economic development which emphasises the dual character of development process has explicitly recognised the importance and necessity of these inter-sectoral resource shifts, largely on grounds of inter-sectoral productivity and technological differentials. The historical analyses of the process of modern economic growth provide evidence for an increasing share of non-agricultural sector in various dimensions of economic performance (Kuznets and others).¹ These evidences coupled

¹Kuznets (1955, 1957, 1958, 1959, 1961 to 1962, 1964, 1966, 1967) and, Hagen and Hawrylyshyn (1969) on the one hand, and Chenery, Elkington and Sim, Shishido and Watanabe (1962) Chenery and Taylor (1968) on the other hand succeeded in identifying a number of striking changes in structure that take place in the process of economic development. These changes have been identified from historical studies mainly with data from developing countries by Kuznets (1958, 1959, 1961b, 1962, 1966, 1967) Chenery, Shishido and Watanabe (1962) and for financial structure, Goldsmith (1955, 1969), from analysis of international cross-sections at one point in time, or from combination of cross-section and time series analysis.
with a general finding that resources flow to relatively more productive sectors, i.e., non-agricultural sectors have led to deliberate attempts by governments of developing countries to give greater emphasis on growth of non-agricultural (mainly industrial) sectors. As a result, inter-sectoral resource transfers have favoured non-agricultural sectors as a part of deliberate design of government economic policies. This has also resulted in organisational and institutional changes which facilitate this type of resource transfer.

In response to this thinking and associated policies and programmes, a number of studies have concentrated on analysing the implications of distortionary effects of the working of the strategy of economic development biased towards industry. As a result, a growing evidence has come to light which demonstrates the various ways through which the agricultural sector gets depleted of resources and non-agricultural sectors grow at the expense of agricultural sector. This, in fact, has given rise to lively debate on the nature, size, and effects of resource transfer from agricultural to other sectors of economy.

Here, at the outset, an attempt is made to provide a brief outline of different views existing on the problem and to survey the related literature.
Historical Background

For economies at the threshold of economic development, a number of hypotheses have come up to explain structural changes and the inter-sectoral relationships. Leibenstein (1957) advanced the "critical minimum effort thesis," which emphasized the relationship between population size and agricultural development. Rosenstein-Rodan's (1961) 'big-push' hypothesis focused on external economies. Nurkse (1953) emphasized balanced growth as a way of overcoming the supply and demand impediments to capital formation in less developed countries. Gerschenkron (1962) tied the tension between backwardness of pre-industrialization condition on the one hand and benefits expected from industrialization on the other to the response which overcomes the obstacles to development. The linking pattern of sectoral change to development strategies has been deliberately avoided by most contributors to the literature on structural changes.  

1Principal contributors to the literature on structural change were exceedingly cautious. Papandreou (1962) suggested that Greek planners should see to it that Greece follow the 'normal' pattern of sectoral change in terms of the elasticity of a sector's share with respect to income. Scitovsky (1959) has demonstrated that if economies of scale are present and important, unbalanced growth is likely to be more advantageous than balanced growth - even if all the other assumptions of balanced growth were realistic. Moreover, if the elasticities of substitution of consumers and producers are sufficiently high, a considerable degree of imbalance could be obtained even under assumptions not very dissimilar to those of balanced growth. Nurkse (1953), Prebisch (1959) envisaged that if foreign trade is not subject to penalties in the form of deteriorating terms of trade, imbalances in growth are not only possible but are also likely to be desirable from the point of view of comparative advantage.
A strand of thought on underdevelopment has argued that underdevelopment is a product of imperialism. It shows that the development of capitalism in the world capitalist system had occurred on the basis of the accumulation of surpluses taken from the under-developed peripheries of Asia, Africa and Latin America. The principal mechanism of this process of resource transfers is stated to be the system of unequal exchange of commodities in international trade where the exports of the under-developed countries are heavily under-priced in comparison to the actual value of labour. If an underdeveloped economy is viewed as a part of the integrated system of imperialism then the transfer of resources from agriculture may well be seen as a part of the mechanism of stagnation and under-development. Such a system of international drain of surplus generated in agriculture has helped in promoting development of imperial nations at the expense of these territories.*

*The Drain Theory of Dadabhai Naoroji emphasized by Dadabhai Naoroji and his colleagues (R.C. Dutt, C.N. Vakil, O.P. Mahajan, K.T. Shah, Kambatta, M.L. Dantwala) discussed these features of economies of underdeveloped countries. They argued that under the crown administration, India was mercilessly impoverished. Her world famous manufactures were ruined and wealth plundered. The argument examined further that net capital inflow on account of balance of payment in India was functionally related to unilateral transfer of resources from India and that the excess of exports over imports reappeared into India as capital and created a vicious circle. Dadabhai Naoroji anticipated Keynesian thought in the years to come. B.N. Ganguli in his book "Dadabhai Naoroji and the Drain Theory," cited the views of Prebisch Singer that worsening terms of trade would bring about exploitation of developing countries. Naoroji was talking of an impoverished country, and could not have been wrong. Gunnar Myrdar has also the same views in 'Asian Drama': an inquiry into the poverty of nations (1971).
In evaluating the role of international trade in the process of development two contrasting views of development are found. The first examines development within a neoclassical equilibrium system and the other view regards it as successive disequilibrium. The classical model originated with Adam Smith's 'Vent for Surplus' theory (1937) and culminated with Marshall's view of trade as the "engine of growth" (1920; 1952). The 'structuralist' approach to international trade on the other hand, emphasized distortions in the terms of trade and the asymmetry that existed in reaping the benefits of trade between the imperialistic nations and the periphery. P.A. Yotopoulos and J.B. Nugent (1976) came up with evidence to suggest that international trade may mitigate, delay or even cancel the structural changes that occur concomitantly with growth. The departures from balanced growth hinder development. This trade-induced distortion of the normal structural patterns may even have retarded economic growth to support the hypothesis that the terms of trade of the less developed countries have been deteriorating steadily.

**Soviet Illustration**

The post-war period has been characterised by the active pursuit of economic development by plunging into planning for economic development. In the choice of strategy for planned development resource transfers from
agricultural sector assumed a place of central importance in Soviet Russia. Evgenii-Preobrazhensky (1926) emphasised the need for mobilising surpluses from agricultural sector for economic development of the Soviet Union. Two aspects emerging from Preobrazhensky thesis would deserve emphasis:

(i) The strategy involved resource transfer between sectors. Such transfer involved a net flow of material resources and it could manifest itself in various financial forms corresponding to different policies, such as taxation, credit policy, terms of trade manipulation etc.

(ii) Another aspect of resource transfer which Preobrazhensky was concerned with, transfer of resources from the private economy to state sector economy where industry happened to be in the state sector, while agriculture was still a part of private sector economy.

These distinctions in the context of Soviet economy were essential since a strategy of industrialization became crucial for economic development (i.e. the consolidation and development of the socialist state sector at the expense of the private economy) where essentially a transfer of resources from the private economy to the public sector economy took place, indirectly, imply transfer of resources from agriculture to industrial sector.
The logic of extracting the agricultural surplus has been described as "double development squeeze" in detailed by Owen (1966). One is production squeeze and second is expenditure squeeze. The production squeeze has been developed as part of Marxist-Leninist approach. Output of agricultural sector can be extracted directly through compulsory deliveries at low prices to the non-agricultural sector. Alternatively, it can be extracted through a combination of high farm prices and high farm taxes. This approach was used in Japan during Meiji era (1881-1926). High farm prices stimulated the adoption of improved technology. Simultaneously, high farm taxes in the form of a land revenue, while transferring part of agricultural surplus also forced the farmers both to use their land intensively and to participate in manual work in the non-farm sector in order to pay these taxes (Okhawa and Rotovsky 1960). This approach indirectly finds place in Mill-Marshallian Model as exemplified from the experience of the United States. Within a market oriented and relatively perfectly competitive set up the family farming system, through an inter-sectoral profit transfer brought about by technological progress, delivers to the non-farm sector progressively increasing supplies of food at progressively lower prices. Farmers who do not adopt and exploit new methods or technologies will either have to go to the city to join the ranks of the urban unemployment or to
adopt non-commercial subsistence farming. This constitutes the second approach, i.e. expenditure squeeze, by Owen. Thus there are three aspects implied in double development squeeze on agriculture.

1. Squeeze through the direct outflow of capital, represented by the net balance of import and export of the agricultural sector.

2. Squeeze through the deterioration of domestic terms of trade or improvements in terms of trade coupled with large doses of agricultural taxation.

3. Squeeze through the transfer of human capital through migration to non-agricultural sector.

**Modern Economic Growth**

The interactions between agricultural and non-agricultural sectors change significantly overtime in the process of economic development. The changing role of agriculture in the development process have led to the formulation of dual economy models where input-output transactions take place between sectors. The investible agricultural surplus may be transferred and utilized in the development of non-agricultural sector through the outflow of capital, labour, agricultural taxation or the terms of trade, while the non-agricultural surplus may be in the form of the demand for intermediate inputs by agriculture such as fertilizers, insecticides and machinery.
Kuznets S. (1966) in his analysis of modern economic growth has drawn attention to the crucial problem of how to extract from the product of agriculture a surplus for the financing of capital formation necessary for industrial growth without at the same time lightening the growth of agriculture, under conditions where no easy substitute for the surplus is available in the country. Thus analysis of modern economic growth experience has reinforced the view that the agricultural sector should transfer surplus resources to the non-agricultural sector.

Growth studies have pointed out to unmistakable pattern of structural change (Colin Clark 1940, Kuznets 1958, 1959). This relates to changes in the sectoral composition of employment and output. In the process of development, there occurs a dramatic decline in the share of primary sector and dramatic increase in the share of secondary (industrial) and tertiary (services) sector. Most of these changes occur relatively early in the growth process and have particular relevance to less developed countries. Implicit in these shifts of sectoral shares are resource transfers from agricultural sector to non-agricultural sectors in the form of human migration, food products, and investible capital. The dual economy models have explicitly incorporated these interrelated transfers of various human and material resources in their explanations of growth process.
2. **Dual Economic Models**

The market structures in less developed countries suffer from a great degree of imperfection. Product market is yet characterised by a barter system in many rural areas of Asia, Africa and Latin America. The labour market also suffers from problem of disguised unemployment. Thus whole economy cannot be regarded as uniformly homogenous analytically. It could be divided into two main sectors: one is organised industrial sector and second is a backward sector comprises the unorganised agricultural sector. In such a dual economy system, the ultimate question for the country's future development is how the modern capitalist sector is to expand at the expense of the agricultural sector. This requires an analysis of interrelations between the two sectors. R. Nurkse (1953), and W.A. Lewis (1954-58) explicitly provided for a shift of labourers and marketable surpluses from agricultural to non-agricultural sector. Nurkse emphasised the existence surplus labour as a source of potential capital formation in underdeveloped countries. The Lewis model uses this idea through the classical assumption of unlimited supply of labour available at subsistence wage. Secondly it follows the neo-classical model where profits and wages are determined by the relative marginal productivities of capital and labour in the modern sector. In the Lewis model, practically all the savings are made by capitalist
form his profit. Lewis argues that profits or surplus generated in the industrial sector are usually invested by capitalists.

A study by A.M. Khusro (1962) attempts to show on the basis of empirical analysis of Indian economy that implications of growth model of Lewis/Nurkse are not inevitable for underdeveloped economies. The non-agricultural sector itself has so much unemployed labour force that there may be no absorption of surplus labor from agriculture in the non-agricultural sector. Khusro thus shows that the Lewis-Nurkse model overstated the capacity of the modern sector to absorb surplus labor from the subsistence sector.

Ranis-Fei (1964) extended the Lewis model on the transfer of real resources from agriculture to industry. In contrast to the Lewis Model, Ranis and Fei argue that a balanced growth of both the industrial and the agricultural sectors is necessary to avoid stagnation of the rate of economic growth. Hence at the policy level it follows that the growth of agriculture and industry should be balanced since the growth of agriculture is as important as the growth of industry. In the context of Ranis-Fei model the financial transfer of savings from agriculture happens to be equivalent with the net transfer of real resources in the intersectoral balance of trade.
In this context it is important to examine the work of Ishikawa (1967) which completely reverses the Ranis-Fei thesis that the transfer of resources from agriculture to industry constitutes a necessary condition of economic development in the early stages of development. Basing himself on the evidence from Japan, Taiwan, China and India,* Ishikawa (1967) argued that under the typical initial conditions obtaining in contemporary Asia, economic development requires a net flow of resources from industry to agriculture. He has attempted to make such generalisations in the Asian context. He argued even more explicitly that at least in the case of Asian developing countries, significant resource flows into agriculture are likely to be necessary to finance capital intensive investments needed to introduce technical change in agriculture and hence increase agricultural productivity and output.

The supply of output with respect to price is upward sloping; the differential between agricultural and industrial wage rates will draw workers off the farms. The evidence from the various countries suggests that a

*The study of S. Sanguanruang, 'Net resource flow between agriculture and non-agriculture in Thailand in 1953 and 1963' (Ph.D. Dissertation, Indiana University, 1971) examines that since recent empirical studies elsewhere in Asia do not support the commonly held assumption that agricultural sector provides net resources to the non-agricultural sector.
massive exodus of rural population into urban areas has been occurring at least since 1920.* This direction of migration is consistent with neo-classical model of migration as investment in human capital. Here discussions of dualistic models** it is important to look into the analysis of rural urban labour distribution in the less developed countries. Todaro (1969), and Harris and Todaro (1970) provide an interesting analysis of migration and unemployment. In 1964, in an effort to reduce urban unemployment particularly in Nairobi and its outskirts, Kenyan government had entered into a pact with capitalists and trade unions. However the consequence turned out to be quite contrary to what was expected. Here neo-classical model is inoperative while Todaro's model came (1969), increasing unemployment through migration.

In the discussion of dual economy models it is clearly seen that basic concept of development implied in these models is that agriculture is only seen as the ultimate form of development facilitator, making available the necessary quantities of labour, capital and other resources for financing investment, for industrial development.

*A number of dual economy models build on the initial disequilibrium between agriculture and non-agriculture and describe how equilibrium is being restored, primarily through labour transfer.

The rationale of dual economy models largely lies in the empirical observations of marked differences obtained in two sectors of the economy. The models have no comprehensive framework to study the totality of resource transfers from agricultural to non-agricultural sectors. Recent contributions on intersectoral resource transfer have, however, yielded two comprehensive views on the resource transfers from agriculture to other sectors. These two views are held respectively by two sets of scholars, represented largely by J.W. Mellor on the one hand and M. Lipton on the other hand.

3. Debate on Resource Transfers Problem

In the shadow of historical background, there are two prominent opposing viewpoints in the recent literature on resource transfer problem. One is led by J.W. Mellor and his associates and the other is strongly highlighted by Michael Lipton.

Mellor (1967 and 1971) argues that, in the long run, "the process of economic transformation will proceed more rapidly if a net transfer of income and savings can be made from the agricultural sector to the other sectors of the economy." He concedes that "although a relative decline of agriculture and the growth of the non-agricultural sector is inevitable in development, it does not follow that maximising the short-run outflow of capital from
agriculture will maximise economic development. Development of agriculture can materially contribute to overall economic development and it requires a major inflow of certain forms of capital." In fact it has been argued that in certain context, resource transfers from agriculture may be injurious even to non-agricultural growth. However, at the relevant stages of development, agriculture will possess the capacity to loan or surrender resources. The possibility that the transfer of resources from agriculture may indeed, ruin agricultural growth has been sometimes suggested.*

Overall economic growth demands a transformation of a country's economic structure, involving relative decline of agricultural sector and a net flow of capital and other resources from agriculture to the industrial sector of the economy. Agriculture's contribution to the requirements for development capital is especially significant in the earlier stages of the growth process. It will not be so crucial in countries which have the possibility of securing a sizable fraction of their capital requirements by export of mineral products or in the form of foreign loans or grants. Mellor's outlook for economic development is balanced. He asserts that "deep progress

Balanced growth is needed in the sense of simultaneous efforts to promote agricultural and industrial development. He accepts several limitations on the capacity an underdeveloped country to do everything at once. "It is precisely this consideration which underscores the importance of developing agriculture in such a way as to both minimise its demand upon resources most needed for industrial development and maximise its net contribution to the capital requirement for general economic growth."²


(i) magnitude of resource flows between agriculture and non-agriculture under various conditions of economic growth.

¹See Y.A. Sayigh (1959).

(ii) changing role of economic and institutional devices in transferring resources among sectors

(iii) the relationship between such resource transfers and technological change in agricultural sector.  

In the case of India, Mellor finds that all the three mechanisms - government accounts, price-relationships and private account have transferred resources to the agricultural sector. This situation differs from that in Taiwan, Great Britain, the Soviet Union and perhaps in most successive cases of development. A wide range of devices may be used to facilitate such resource transfers, including increasing agricultural taxes, lowering the relative agricultural prices and direct investment outside agriculture by wealthy agriculturalists.

It is difficult to achieve continuous net resource transfers from a technologically stagnant agriculture if those resources are invested productively in the non-agricultural sector. Growth of non-agricultural sector increases demand for food. As a result Mellor argues further that resources will be transferred back to the agricultural sector. There is a scope for transferring resources from non-agricultural sector to agricultural sector. Thus Mellor, in certain cases, give balanced outlook for economic development.

1Uma J. Lele (1971) has discussed this argument in detail, with a brief review of experience in Japan, England, and France, while T.H. Lee (1971) has discussed in detail with a brief view of experience in Taiwan and India.
A contrasting argument is given by Michael Lipton (1968, 1973, 1977, 1978, 1979, 1980, 1981) that resources are transferred to the non-agricultural sector than in the agricultural sector presumably on the assumption that the rate of return to investment is higher in the non-agricultural sector. It is shown that factors in support of population, skill, private saving in excess of private investment, forced saving (via manipulation of the intersectoral terms of trade) - have, however, moved out of agriculture. Contrary to recent work, the evidence also suggests that the tax burden on Indian agricultural households has exceeded both its receipts from public exchequer (even including aid) and the burden on non-agricultural households. Moreover high productive resources are transferred out of agriculture successfully. Income distribution gradually moves against agriculture. Better off towns attract more resources, become more articulate and better off attract more resources. Institutional lending for rural development is a political conspiracy to deny the poor or small farmers any opportunity to become productive. The existing power structure in poor countries is such that institutional credit, which is always subsidized, flows to the rich who use it to exploit the poor even further. Small proportion of resources has been going to rural areas and that a small part of that amount is going to the poor farmers.
Further M. Lipton (1978) examines the reasons why India's agricultural share of population and labour force has for long remained constant? The average productivity of labour is much lower in agriculture than industry; of capital, much higher and in this case a priori implication is that general labour should leave agriculture for industry, while capital should be transferred from industry to agriculture. It is widely believed that such transfers have not taken place in India. There has been an unbalanced surplus transfer progressively increasing inequality between village and town. The Government of India has succeeded in transferring agricultural families' saving and skills for investment into non-agricultural fixed and human capital respectively and also in manipulating relative tax rates and prices to the advantage of the non-agricultural sector but there has been no similar success in transferring unskilled workers and their families. Therefore the village has retained a decreasing share of capital and skill resources needed to generate growth. The transference of agricultural capital surpluses in excess of investment in agriculture to non-agricultural uses has damaged the rate of growth of Indian total output. Thus the structuring of farm output to cater for urban needs has militated against the efficient use of rural inputs.
Rural sector gets too small a share of educational resources. Since the share of rural children receiving any given level of education is so low compared to the share of urban children, the rural sector gets too small a share of educated resources. The faster growth of urban income-per head, in part a result of government policy, attracts into cities that large majority of highly intelligent men who provide scarce services in income-elastic demand. As a result they are further improving the cities' income levels relative to the villages and hence recruiting even more potential engineers, doctors and accountants from the villages. This is surely the biggest transfer of resources from agriculture to non-agricultural activities. Thus, according to Lipton, a paradox lies at the heart of agriculture from where resources are shifted to non-agricultural sector.

4. Inter-Sectoral Resource Transfers in Indian Context - A Survey

The direction and magnitude of resource flows between agriculture and non-agriculture is an important determinant of the pattern of development. This is borne by a number of studies on various facets of inter-sectoral linkages and resource transfers through such mechanisms as terms of trade and inter-sectoral tax burden and flow of funds and real resources. The comprehensive work by Michael Lipton, elucidated earlier in this chapter has
largely Indian experience in the background. However, it is only recently that the problem has received serious and comprehensive treatment from Indian scholars. Two studies by Sudipto Mundle and Ashok Mody respectively have dealt with the problem of resource transfers from two separate angles.

Sudipto Mundle (1975, 1977a, 1977b) measures inter-sectoral resource flows during post-independence India (i.e. in the 1950s and the 1960s). The thesis is that the drain of resources from agriculture hampers capitalist development in agriculture and reduces the differentiation of peasantry, limiting thereby the growth of the market for industrial goods in the agricultural sector. In assessing the net flow of consumer goods between the sectors in relative terms, the ratio of net consumer goods inflow (to agriculture) to total consumption expenditure in the economy remained fairly stable up to the middle sixties and then declined during the latter half of the second decade.* In spite of differences in methodology, the results confirm the contention of some earlier studies** that the share of

*Earlier studies in which the Bagchi-Raj hypothesis of a restricted home market for industry has been emphasised are by Ashok Mitra (1967), Pranav Bardhan (1971), Thamrajakshi (1971), Ranjit Sau (1974).

**Apart from shedding light on the issue of inter-sectoral flows Ranjit Sau (1974) shows that the market for industrial consumption goods in India is in a sense, shrinking: the percentage of per capita consumer expenditure spent on industrial goods in declining over the years 1952-53 to 1964-65, rather sharply in rural India and mildly in urban India.
non-agricultural goods in total consumption expenditure has declined.

Much of the Mundles' work deals with the estimation of different components of inter-sectoral trade. His analysis of resource flow pattern is mainly explained in terms of inter-sectoral rates of growth, input-output coefficients between the two sectors and the inter-sectoral terms of trade. Regarding the producer goods, the movement of the input-output coefficients also tended to reduce the resource outflow from agriculture. While the shift of terms of trade as well as the relative rates of growth in favour of agriculture tended to reduce the resource outflow from agriculture. Thus combined effect of all the three determinants was a declining resource outflow from agriculture in the 1960s.

In the earlier period the terms of trade remained more or less stable. Non-agricultural output was increasing much faster than agricultural output and the coefficient of agricultural inputs to non-agricultural output was rising while that of non-agricultural inputs to agricultural output was stable. After the mid-sixties the growth rate of non-agriculture came down sharply such that the relative rates of growth shifted in favour of agriculture. The terms of trade also started shifting in favour of agriculture. All the determinants were now moving against an increased resource outflow from agriculture. Thus the quantum of outflow started declining in India.
Another study on this problem is by Ashok Mody (1977 and 1980, 1981, 1983, 1985). He has made some independent estimate on resource flows between agriculture and non-agriculture in India based on a methodology different from Sudipto Mundle. In the analysis of the resource flows in a disaggregated form, to discuss various components that have actually taken place in India in the 1950s and the 1960s, he has estimated financial flows i.e. receipts, tax payments, government expenditures and changes in the financial assets and liabilities of the agricultural sector. The conclusions are that financial flows into agriculture by way of government expenditure were necessary to create capital-intensive development in agriculture* and these, in turn, have led to a savings potential in the agricultural sector which is yet to be tapped. Whether this tapping is done through increased taxation, reduction of credit or turning the terms of trade against agriculture is not answered by the author.

*Looking to the classical theory, Marx (1867, 1885, 1894) has clearly indicated that it is the demand for investment goods and not consumer goods that gives the principal basis for expansion of the home market, such that the development can occur inspite of a stagnation or slowly increasing level of demand for consumer goods. In the Keynesian theory of income determination a similar argument was formulated by introducing government intervention in the economy.
The movement of terms of trade is an important mechanism to cause intersectoral transfers. Sudipto Mundle has devoted his attention to this aspect also in his study. The longest time-series on the terms of trade between agriculture and non-agriculture, however, has been constructed by Thamarajakshi (1977) in India. During the period of first three five-year plans, prices received by agriculture rose at a faster annual rate than those paid by agriculture and yet the improvement in favour of agriculture in the net barter terms of trade was marginal. There was no trend in the movement of the terms of trade between the early 1950s and the mid 60s. However, there was a small movement in favour of agriculture over the period as a whole.* The net barter terms of trade index prior to the mid sixties, in a narrow range around 100. Hence resource flows on account of terms of trade changes were not uniform in any one direction.** Although it does not by itself contradict

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*Ashok Mitra's view is not on resource transfer but towards Marxian tradition of class struggle. He points out the importance of class divisions in Indian peasantry which have reached urban society. This favourable terms of trade are benefiting in this framework. The rich peasantry which has flow trade and socio-economic link with industrial capitalist class, since poor peasantry (small and marginal farmers and landless labourers) does not largely enter in sale of agricultural product in market.

**T.W. Schultz (1964) and Edward Mason (1966) have argued that Indian public policy has significantly influenced the relative level of agricultural prices in a direction which has discouraged agricultural development. On the other side Keith Griffin 1974 and most notably M.L. Dantwala (1976) have questioned the fact of policy having such an influence and the existence of a secular turn in the domestic terms of trade against agricultural sector.
The more subtle argument that there has been a net transfer of resources out of agriculture into the non-agricultural sector.*

The debate on intersectoral terms of trade has late shifted to the concrete question of whether unfavourable terms of trade have contributed to the depressed growth of the Indian agricultural sector.** A.S. Kahlon and D.S. Tyagi (1980, 1983) have presented a detail of more elaborate methodology for deriving the terms of trade and its conclusion is that, contrary to the widely held view, terms of trade, in fact, have moved against agriculture in the recent years. It is therefore important that the movement of terms of trade is kept under control in the interest of rapid development of agriculture.

The tax system is one of the instruments which may help the structural transformation through the resource transfers. The pioneer work in India on relative tax burden between the sectors is done by Ved. P. Gandhi (1966). In this study he presents several methods of correction, first by deducting a 'subsistence' allowance in each sector.

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**T.N. Srinivasan (1985) has supported the same argument in his recent work.
second by adjusting 'taxable capacity' by parameters reflecting the distribution or income and wealth, third by using wealth per capita as another weight and finally by introducing progression. Thus he improved the estimates of the tax incidence by using empirical definition of taxable capacity to judge relative incidence of taxation on two sectors. Gandhi assumed the 30th percentile of the population in the two sectors as having no taxable capacity and having only subsistence or below subsistence income. For calculating the relative tax burden he employed the usual assumption that whereas direct taxes are shifted, indirect ones are not. However, some of the indirect taxes like import duties were assumed in part to be unshifted, and therefore borne by the importer-trader. He concluded that Indian agriculture possesses the capacity to pay additional taxes. His conclusion is strengthened by showing that additional taxation would help to promote the better utilisation of resources so as to increase agricultural productivity in India. On comparing his estimates of relative taxable capacity and relative tax payments in agricultural and non-agricultural sectors, he concluded that there is a clear indication of inter-sectoral inequality in favour of the agricultural sector. The exact extent of inequity is difficult to state. He also examined the incidence of public expenditure on the agricultural and non-agricultural sectors through he considered expenditure on revenue account only and concluded that the benefits
received by the agricultural sector were higher than the
taxes paid by agricultural sector. Gandhi (1970) made
another attempt to measure the tax burden on Indian agri-
culture. He observed that sectoral tax burden defined as
the ratio of taxes per capita to income per capita of
the sector has various short-comings. He found that the
agricultural sector is undertaxed.

S.L. Shefty (1970 and 1971) has analysed the re-
lative tax burden and taxable capacity on the farm and
non-farm sectors in India during the first eighteen years
of planning. The inter-class tax burden in the two sectors
is also analysed and the potential tax which the farm
sector would have to pay if the incidence of tax was on
the same levels as for the non-farm sector is estimated.
The study does not support the view that the farm sector
is undertaxed since it is held that, inequity, the tax
burden should not be considered relative to income, but
to taxable capacity. For this he calculated the absolute
taxable capacity of the two sectors first and then arrived
at the taxable capacity. He assumed that the estimates of
incidence of per capita indirect taxes for rural and urban
sectors as given by Taxation Enquiry Committee and the
Ministry of Finance for 1953-54, 1958-59 and 1963-64 hold
true, inter-alia, for the farm and non-farm sectors. Then he analyzed the relative tax burden for both the sectors per capita and aggregate account. He also calculated the elasticity coefficients of tax burden to sectoral income. He observed on the basis of his findings that except for the period of three annual plans (1966-67 to 1968-69) the hypothesis that the farm sector is undertaxed is not true. But considering the difference in the taxable capacity of the two sectors, the tax burden of the farm sector was not inadequate but equitably distributed during 1950-51 to 1965-66.

Michael Lipton (1978) has examined the common view that Indian agricultural sector is undertaxed. He finds its logic faulty from various viewpoints. First, even if it is accepted that agriculture is undertaxed relative to its taxable capacity but the undertaxation is substantially less than other sectors of Indian economy. Secondly undertaxation may mean that agriculture is paying less in contribution to government than it is receiving in benefits from government. This is demonstrably false even before taking account the private non-agricultural sectors.

1 Angrish, A.C. (1970) also mixed up the classification of farm and non-farm sectors and rural and urban sectors in estimating the inter-sectoral incidence of both direct and indirect taxes in Rajasthan. Angrish further allocated total revenue figures for each of the taxes between two sectors in the ratios derived on the basis of the ratio of per capita tax (given by TEC) and population ratio in the Rajasthan State.
hidden benefits from the under-pricing of public sector services like power and transport. Agriculture is overtaxed relative to non-agriculture in the sense that farm families pay more in tax than they get in public benefits. Thirdly the alleged 'undertaxation' of agriculture is based on a comparison of the sectors' ability to pay with that of other sectors. This allegation is also shown to be demonstrably false. The over taxation may be seen as a measure of the resource transfer from agricultural to non-agricultural sector through public taxation activities; the tax burden on agriculture being excess of what it would have borne if the total burden is distributed according to ability to pay.

With these notions of 'undertaxation' M. Lipton in J.F.J. Toye (1978) tried to estimate tax burden on two sectors - by using NCAER data. He calculated the 'taxable capacity' of rural and urban persons in which income less subsistence plus some allowance for wealth is given. For proper calculation of taxable capacity he allowed for income distribution within each sector. Finally he compared the proper share with the actual share of each sector year by year, or alternatively the paid per head and equity adjusted weighted average taxable capacity. If taxes were equitably split between the sectors in any particular year, the ratio for the two sectors would be the same in that year. Finally he suggested that tax burden on Indian agricultural households
has exceeded both its receipts from the public exchequer (even including aid) and the burden on non-agricultural households corresponding to an equitable distribution of tax effort between the two sectors.

Indian studies highlight the various viewpoints on resource transfers in terms of real and financial flows and through market mechanism and state intervention. The empirical analysis of resource transfers has provided evidence on the influence of technological and institutional factors in explaining resource flows between agriculture and other sectors.*

5. Framework of the Present Study

The role of transfer of resources in economic development is largely dependent on the technological and institutional advancement in the economy, especially in agriculture. Therefore their importance is specific to individual economy. Even within the country a development experience is not uniform for all regions. The study of inter-sectoral resource transfer therefore needs to be conducted in a specific regional context. The present study therefore is directed to analysing the quantum of various types of resource transfers and changes there in

*For a recent exhaustive discussion on this problem with comparative framework in relation to Japan's growth experience see Mody, Mundle and Raj (1985).
in the regional context of Gujarat economy which came into existence politically as a separate entity on 1st May 1960 and which occupies through time a high rank in the profile of country's industrial development. Although several studies on inter-regional comparative analysis have been undertaken earlier and a few studies on economic development of individual states have recently come to light, no study attempts to deal with the question of transfer of resources from agricultural to other sectors at state level. The present study analyses the net resource transfers from agricultural sector through the mechanisms of domestic terms of trade, intersectoral tax burden and comparative incidence of tax burden and benefits in agricultural sector and flows of consumer and producer goods. The analysis of resource transfer is undertaken in the context of structural changes at the regional level.

The present study relates to the period 1961-62 to 1977-78. It is largely based on the secondary data collected from various government and non-government agencies such as Bureau of Economics and Statistics, National Sample Survey, Central Statistical Organisation and Agricultural Ministry in India etc. As mentioned earlier the following important types of resource flows have been analysed:
a) flows of consumer goods, intermediate goods and capital goods,
b) sectoral income transfers through shifts in terms of trade between sectors,
c) sectoral flow through tax mechanism and plan expenditure.

The basic hypotheses of this study are as under:

1. the growth process in a developing economy is characterised by rising interdependence between agricultural and non-agricultural sector reflected in rising inter-sectoral transfers of resources.

2. the increasing importance of non-agricultural sector in growth process leads to deterioration of agricultural sector's gains in resource transfers mechanism,

3. the changes in inter-sectoral transfers of resources are explained by technological considerations and partly by improvements in relative terms of trade,

4. net transfer of resources to agricultural sector is positively influenced by prosperity of non-agricultural sector and negatively influenced by prosperity of agricultural sector.

5. compared to non-agricultural sector, agriculture is over taxed and budgetary operations of government have been relatively beneficial to non-agricultural sector.
The methodology followed for estimating various types of resource transfers is briefly discussed here.

a) **Net Flow of Consumer and Producer Goods**

The flow of commodities between agricultural and non-agricultural sectors involves the building up of the flows of consumer goods, intermediate goods and capital goods. Mundel has described this as the balance of trade approach. In the inter-sectoral flow of consumer goods of Gujarat we have attempted to rectify the deficiencies of methodology of Mundel's study approach and worked out the net resource flow.

For the inter-sectoral flow of producer goods we prepared the time series of input-output coefficients and converted using the official estimate of SDP for corresponding sector to give us the further time series of inter-sectoral flow of intermediate goods. By adding the flow of investment goods from non-agriculture to agriculture for which independent estimates are available, finally got the total intersectoral flow of producer goods.

b) **Terms of Trade Changes**

In the sectoral terms of trade analysis an attempt is made to see how the sectoral distribution of income between the two sector stands in Gujarat caused by changes in gross terms of trade. To know the distinctive features

* The detailed methodology for estimating particular types of resource transfer is given in respective chapters.
of Gujarat a comparison with all India experience is also made using data on NNP from CSO for period 1960-61 to 1979-80.

In estimating net sectoral terms of trade Kahlon and Tyagi have developed an elaborate and refined methodology. To make comparative study the present study has followed more or less same methodology. The estimated indices of prices received and paid by agricultural sector and of the net barter terms of trade, based on Lespeyrs' approach. With weights derived from NSS data on consumption expenditure for combined indices of different groups are worked out.

c) **Tax Incidence and Expenditure Benefits**

Incidence of taxes and benefits from public expenditure are important mechanisms of resource transfer. First, per capita taxable capacity in both the sectors is worked out, then to see which sector has the capacity to bear additional taxation we examined relative per capita tax burden ratios. The study of per capita public expenditure benefits to both the sectors is also included. If one has to make such an attempt a large number of methodological problems arise. However, in the present study for Gujarat methodologies of various recognised studies were taken into consideration to work out the burden-benefit distribution between agricultural and non-agricultural sectors.
Finally, the study is organised as per following chapter schemes:

I  The Problem of Intersectoral Resource Transfers
This chapter introduces the problem of resource flows and provides a literature survey and plan of study.

II  Structural Changes in Gujarat Economy
This chapter provides a background of study area. The emphasis is on providing basic idea on structural changes in terms of sectoral patterns of income, employment and investment. In this background an attempt is also made to see sources of growth of agricultural sector to understand linkage of this sector with other sectors.

III  Inter-Sectoral Flow of Consumer Goods
This chapter estimates and analyses time series of net flows of consumer goods from agricultural to non-agricultural sectors.

IV  Inter-Sectoral Flow of Producer Goods
This chapter estimates and analyses time series of net flows of producer goods from agricultural and non-agricultural sectors.
V Inter-Sectoral Terms of Trade

This chapter estimates inter-sectoral terms of trade (both net and gross) and analyses changes in them with a view to understand their implications for inter-sectoral income transfers.

VI Government's Budgetary Operations and Resource Transfer to Agriculture

This chapter estimates and analyses tax capacities and tax burdens of agricultural and non-agricultural sectors and the benefits to agricultural sector from Government's expenditure programmes. This chapter attempts to see the government's budgetary operations as facilitating device for effecting resource transfers from agricultural to non-agricultural sectors.

VII Conclusions and Policy Implications

This chapter integrates the results obtained from earlier chapters and explains resulting policy implications and further scope of study.