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CHAPTER 12

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## Agricultural Taxation in a Developing Economy

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THE literature on taxation of agriculture cannot be discussed as a separate branch of taxation in developing countries because of the predominance of the agricultural sector both in labor force and in national income. Whether one thinks of the problem in terms of transferring enough resources from agriculture to insure that agriculture pay its share in offsetting government expenditures, or whether one feels that agriculture ought to be squeezed more than industry, or whether one is concerned about appropriating a part of additional output from agriculture in the form of taxation, questions relating to taxation of agriculture are of great importance. While there are certainly cases in which agriculture, or at least a part of agriculture, has been taxed too heavily from both an economic and an equity viewpoint, much of the literature argues that agriculture is not being taxed heavily enough in most developing countries. In this survey, therefore, the primary emphasis is on taxation of the agricultural sector relative to the nonagricultural sectors.

The low-income countries differ from the high-income countries in tax revenue structure as in most other economic characteristics. Some salient facts of the tax structure in developed and underdeveloped countries are pointed out by Martin and Lewis (1956), Williamson (1961), S. R. Lewis (1963a), and Wai (1963), based primarily on United

\*In addition to suggestions from B. F. Johnston as editor and from W. A. Lewis and W. H. Nicholls as assigned critics, I have had the benefit of extensive comments and criticism from W. P. Falcon, H. G. Johnson, Sarfraz Qureshi, W. G. Rhoads, and G. C. Winston. This survey was drafted while I was at the Pakistan Institute of Development Economics, Karachi, and was put in final form with support from the Research Center in Economic Growth, Stanford University. The usual disclaimer applies to all the above. Finally, my intellectual debt to Emile Despres must be mentioned, even though it cannot be adequately expressed. He should not, of course, be held responsible for my own misuse of his many fruitful ideas.

\*In Agricultural Development and Economic Growth, Herman M. Southworth and Bruce F. Johnston, Eds. (Ithaca, N. Y.: Cornell University Press, 1967).

Nations' summary data for a large number of countries. The basic features of revenue structure are: (1) the share of tax revenue in national income increases from 10 or 15 percent or less to around 25 percent as per capita income rises from low levels to moderately high levels; (2) a much larger share of revenue comes from indirect taxes (75 to 90 percent) than from direct taxes (10 to 25 percent) in low-income countries, and direct taxes increase in importance as per capita income rises;<sup>1</sup> (3) among low-income countries, the share of foreign trade taxes varies with the importance of imports and exports relative to national income; but (4) taxes on foreign trade, both imports and exports, constitute a very heavy share (30 to 60 percent) of the tax revenue of low-income countries, and the share falls as per capita income rises. Developing countries generally tax those sectors easiest to tax, using the taxes most easy to administer.

Within the scope of tax analysis as defined by traditional public finance, the subject of agricultural taxation, much less of taxation in developing countries, would not appear. The idea of dividing an economy into sectors and discussing the taxes on those sectors separately is implicitly rejected by the bulk of the literature on taxation. Preference for neutrality and avoidance of excess burden has meant the avoidance of taxes that have strong substitution effects: taxes on specific persons, products, services, or sectors. General taxes are preferred, since there is less chance that they will interfere with market allocations.<sup>2</sup> The decision not to interfere with the market allocation of resources is based on the assumption that the results of market allocation are desirable, which is in turn based on assumptions about the sanctity of market-expressed demand and the technical efficiency achieved by a freely operating market. The prevailing attitude on neutrality, generality, and directness in taxation has been challenged in the developing countries, but largely on administrative grounds.

Central to the present discussion is the treatment of taxation, particularly of agriculture, by the principal contributors to the analysis of

<sup>1</sup>Historically, areas at the very lowest levels of monetization have depended largely on direct taxes such as simple poll taxes or land taxes. As modernization begins, the first sources of additional revenue are indirect taxes, giving low-income countries in the 1950's high shares of indirect taxes.

<sup>2</sup>There is an elaborate literature, summarized in Musgrave (1959, 147-54) and Walker (1955), showing that even general taxes have substitution effects and cannot be shown to be uncompromisingly better for economic welfare than specific taxes. The approach in practice has been to prefer generality.

economic development. Hence the major themes of the postwar literature on taxation in the developing countries are first discussed. Some characteristics of developing economies and the contributions of principal theories relevant to tax problems are outlined. Second, there is a brief discussion of the contribution of agriculture to the finance of other sectors and of investment within agriculture. The third section examines the major revenue-raising devices used in developing countries. In the fourth section a variety of the most important nontax instruments of government policy and their implications for the problem of taxation of agriculture are explored. Finally, some of the major areas of blindness are mentioned, and some profitable lines of further investigation are outlined.

Considerations of equitable income distribution are not treated as comprehensively as they must be in any discussion of particular measures in particular countries at particular times. The tax and fiscal system is thought of here both as a revenue-raising device and as a means of correcting certain distortions implicit in the dual economic structure and in the variety of tax policies already in use in the developing countries.

### *I. Recent Literature on Taxation and Development*

Most of the postwar literature on taxation in developing countries operates in an implicit or explicit framework of an economy relatively free from controls or other disequilibria, in which growth is determined primarily by the size of the saving ratio, in simple Harrod-Domar fashion. An additional note of realism has sometimes been added by separating out the agricultural sector for special treatment of some sort, since it presents certain administrative problems.

#### A. MAJOR VIEWS ON TAXATION IN DEVELOPING COUNTRIES

The two most frequently quoted articles on the subject of taxation in developing countries are by Goode (1952) and Heller (1954). Both take a position that direct and general taxes are to be preferred in developing countries as in industrial countries. Due to administrative limitations, lack of general literacy, presence of a large nonmonetized sector (mainly in agriculture), lack of traditions of accounting systems and systematic record-keeping, and a not-always-incorruptible administration, however, it is necessary to rely on taxes inferior by economic standards that are at

least possible to administer.<sup>3</sup> They also recognize that "direct and general" taxes may be in practice neither direct nor general and, therefore, may not have the advantages usually ascribed to them. The second part of the widely quoted United Nations document on the subject adds the warning that is common to the early literature: "The ultimate goal of good tax administration should, however, be to improve the income tax system to such an extent that an export duty [or other specific levy] is unnecessary" (UNTAA, 1954, 40).

The second major theme, beginning with Heller (1954), is that taxes should be thought of as additions to saving, and since raising the saving proportion in the developing countries is a goal of all economic writers and policy makers, the goal of tax policy should be to aid in raising the saving ratio. The most crude approach is simply raising public saving through taxation.

Kaldor, in a series of widely read papers (1955, 1956, and 1960), proposed a set of taxes, particularly direct taxes, that would fall on private consumption and encourage private saving. The limitations of such a system are discussed at some length by Goode (1960 and 1961) and Chelliah (1960). Chelliah proposed revisions designed to improve both the incentives and the administration of the package. Both Chelliah and Goode (1961) pay more attention to the possible role of indirect taxes on consumption goods. The basic idea in both direct-tax incentives to saving and indirect-tax disincentives to consumption is that the substitution effect of relatively higher costs of present consumption would result in lower present consumption and more saving for future consumption. The argument neglects the point made by Nurkse (1953) that if the same taxes on consumption are expected to prevail in the future, the only additional gain to be made by consuming in the future is the income from the investment of deferred taxes. Whether this will have any substantial effect is not at all clear. In addition, it is never clear *a priori* whether the income effect or the substitution effect of a change in

<sup>3</sup>The original authority on this point is Goode (1952), who is quoted favorably in Heller (1954), reprinted (in part) in Meier (1964) and in Bird and Oldman (1964), and widely read and referred to in the development literature. Heller's major contribution (1954) also appeared as part one of UNTAA (1954), was reprinted in Okun and Richardson (1960), Meier, and Bird and Oldman, and is also used widely in one form or another. Heller's article was the most authoritative statement of the role of fiscal policy and taxation in the context of the developing countries to appear in the early 1950's.

The literature reviewed in this section is principally theoretical, and neglects such government reports as that of India's Taxation Enquiry Commission.

relative prices is going to be more important.<sup>4</sup> A high tax on consumption could reduce saving if the income effect is sufficiently strong. Finally, the entire literature neglects the suggestion by Rolph (1954) that indirect taxes are not shifted forward and, therefore, would not even raise the prices of consumption goods.

The third major theme of the postwar literature on taxation in developing countries deals with agricultural taxation as a special problem. The principal literature is divisible into two parts. First, on a more orthodox plane, are the contributions of the International Program in Taxation at Harvard Law School. The Proceedings of the 1954 Conference on Agricultural Taxation and Economic Development (Wald and Froomkin, 1954) presents a wealth of information and ideas for further research. Wald (1959) summarizes and expands a bit on the basic themes of the conference, and is a more handy reference than the Proceedings. Levin (1960) discusses some of the more unorthodox of the postwar systems of agricultural taxation in developing countries and compares them with the historical pattern of export economies. On the whole, however, the literature is descriptive rather than analytical.

An important side issue that developed in relation to agricultural tax policy in the 1950's was that of stabilization policy, combined with policies of marketing boards for agricultural produce, discriminatory exchange rates, export taxes, and similar devices. The two basic references on this subject are (Symposium, 1958) and (Symposium II, 1959), which contain a large number of papers giving all shades of opinion on the desirability of such measures both as regulators of fluctuations and as taxing devices.

Throughout the development of other tax literature, land taxes have continued to be important focal points for discussion. They have been favored for reasons of equity and efficiency since Ricardo and Henry George. Two aspects of land taxation have been heavily emphasized. First, basing land taxes on potential rather than actual output would provide incentives for more productive use of land. Second, progression of rates by size of holdings would add an element of equity, and would be complementary to land reform efforts. Potential-value taxation attracted attention in Latin America, particularly, where a major cause of stagnant agricultural production was thought to be the inefficient use

<sup>4</sup>For a general discussion of this point see Musgrave, 1959, 136-59. Goole, 1961, has given the best survey of the consumption- or saving-oriented taxes.

of land by *latifundia*. A World Bank mission to Colombia (IBRD, 1954) proposed a graduated tax based on potential output, which has received considerable attention as a case study. Hirschman (1963) has given an interesting and useful history of the proposal and attempts at implementation. Goode (1952) and Wald (1959) have given similar proposals in general if brief treatment. Kaldor (1962b) and Little (1964) have given somewhat more elaborate treatment to suggested applications in Africa and India.

The 1954 conference at Harvard pointed out that there existed virtually no detailed empirical studies on tax incidence in developing countries, even of a relatively simple sort (Wald and Froomkin, 1954, esp. 51-56). In the decade since the conference, little has been done to remedy this situation except for several studies on India. Fortunately, a major piece of work was recently completed (Gandhi, 1966) summarizing and improving on the estimates of tax incidence in India, and using an interesting empirical definition of taxable capacity to judge the relative incidence of taxation on various groups within the Indian economy. The lack of empirical studies, however, remains a major problem.

#### B. CHARACTERISTICS OF DEVELOPING COUNTRIES RELEVANT TO TAX PROBLEMS

The need to tax saving more lightly than consumption and take account of the administrative difficulties in raising taxes are not the only deviations from neutrality that are justified in developing countries. A number of the major themes of the literature on economic development that are relevant to discussions of tax policy must be mentioned briefly.

That countries change their economic structure during economic growth was noted early in the literature by Colin Clark (1939). However, it has more recently been suggested that changes in the economic structure, particularly between the agricultural and industrial sectors and within the foreign trade sector, are necessary conditions for further economic growth, and that if these changes do not take place, economic growth of the country as a whole will be retarded. The principal contributors have been W. A. Lewis (1954 and 1958), Kuznets (1959), Chenery (1960 and 1961), Johnston and Mellor (1961), Ranis and Fei (1961), Johnston (1962), Fei and Ranis (1964), and Johnston and Nielsen (1966).

The role of increased agricultural productivity and increased marketed surpluses of agricultural products, particularly food, in the structural

transformation of an economy has been emphasized consistently of late, but tax analysis still ignores the problem to a large extent. The importance of increased agricultural surpluses can be seen by focusing attention on the terms of trade between agriculture and industry. If the terms of trade move too severely against the industrial sector due to inadequate growth of marketed surpluses of agricultural products, industrial growth will be slowed down, while if the terms of trade of the agricultural sector deteriorate too badly, agricultural growth may be hampered. The issues are discussed fully by W. A. Lewis (1954 and 1958), Ranis and Fei (1961), Krueger (1962), and Nicholls (1963).

A significant literature has emerged suggesting that in developing countries the market-determined set of relative prices of factors of production and final goods are not optimal from the point of view of resource allocation. The literature on the dual economy has also explored some of the methods that can be used to correct these disequilibria, and these methods are directly relevant for discussion of tax policy. The principal references are W. A. Lewis (1954 and 1958), Eckaus (1955), Hagen (1958), Georgescu-Roegen (1960), Fishlow and David (1961), Bhagwati and Ramaswami (1963), and S. R. Lewis (1963c).

Another source of disequilibrium prices in developing countries is the presence of direct controls and licensing systems on imports, investment, prices, land utilization, and key inputs such as steel and cement. The basic reference on direct and indirect controls is W. A. Lewis (1948). Some of the effects and implications of direct controls for fiscal policy are discussed in Bhagwati (1962a), Haq (1963), S. R. Lewis (1964), Pal (1964), and Radhu (1965).

The question of supply elasticities in agriculture was a matter of pure speculation at the time of the Harvard Conference (Wald and Froomkin, 1954) and the two *Kyklos* symposia on primary products (Symposium, 1958, and Symposium II, 1959). Recently, important work has been done showing positive production response by farmers to changes in the relative prices among agricultural goods. The most relevant literature is R. Clark (1957), Falcon (1962 and 1964), Krishna (1963), Ghulam Mohammad (1963), and Hussain (1964).

The set of policies considered by other writers on taxation in developing countries is reexamined here in light of recent developments in theoretical and empirical research, and the detailed analysis of Sections III and IV draws heavily on the conclusions reached in the literature cited above.

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## II. Financing Growth in Agriculture and Other Sectors

Marginal allocations of investment resources between the agricultural and nonagricultural sectors and, within public sector expenditure, between provision of services to each of these major sectors, is a principal planning controversy in many countries. The agricultural sector plays two important roles in the development process. First, as agriculture is the largest sector of the economy, its production and income per head *must* rise in order for sustained economic development to occur. Second, growth of the agricultural sector is an instrumental goal, since it is generally necessary for agricultural production and productivity to rise in order for other sectors of the economy to expand.<sup>5</sup> The importance of agricultural growth for development of the rest of the economy is seen in Lewis' two-sector model (W. A. Lewis, 1954; 1955, Ch. V; and 1958), where food is necessary to keep the terms of trade from turning against the industrial (high-wage, high-profit) sector, a situation that would raise wages and reduce the share of profits in income, thus reducing capital formation and the rate of growth of output.<sup>6</sup>

Since agriculture is the predominant sector and since the nonagricultural sectors will grow relative to agriculture, there is at least an *a priori* case that investment resources for the nonagricultural sectors must come in the first instance from agriculture. In other words, the agricultural sector must make *some* net contribution to the rest of the economy (see Chapters 2 and 14). Precisely how much agriculture should contribute in this way can be settled only with reference to particular situations.

The agricultural sector can provide investment resources for the nonagricultural sectors by three methods: (1) private individuals in agriculture can invest in the nonagricultural sectors; (2) the government can tax the agricultural sector to provide infrastructure for the nonagricultural sectors; (3) the level of real income can be raised to provide more profits in the high-saving sector of the economy by terms of trade more favorable to industry. Government policy generally influences the level of nonagricultural investment through methods (2) and (3). There is also the important possibility of a mixture of these methods, mentioned by N. A.

<sup>5</sup> Agricultural development is necessary so that other sectors will be provided with the food, foreign exchange, labor, capital, and expanding market for their goods necessary for rapid growth. Rostow (1960), Kuznets (1959), and Nicholls (1960), among others, have talked of the need for agricultural development as preconditions to economic growth.

<sup>6</sup> The industrial sector could, of course, trade with the rest of the world to get its food and thus develop without agricultural improvements in the same country.

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Khan (1963), whereby the government turns the terms of trade against agriculture (which is administratively fairly easy to manage) and then taxes the higher (*ex post*) incomes in the nonagricultural sectors.

There is at least a body of theory and a model that identifies the sources of saving and investment in the nonagricultural sector. But as Mellor points out in Chapter 2, painfully little of a specific nature is known about the process of capital formation and the need for reproducible and working capital in agricultural development. Only cursory treatment is given to the problems of agricultural investment here and greater emphasis is given to the effects of tax policy on nonagricultural investment and growth, but such treatment does not mean that agricultural investment or agricultural growth is not important.

Dividing the capital needs of agriculture into fixed and working capital, and the fixed capital needs into social overhead and farm-level mechanization, it can be seen that the government's role is twofold. First, the government must generally provide such infrastructure as electric power and water for mechanization and irrigation, transport and communication to aid in marketing and distribution of nonfarm inputs and farm output, research on new and improved products, varieties, breeds, and techniques, and extension service and education in rural areas to advance the adoption of new and improved techniques of production (see Chapter 4). Second, in order to permit the adoption of new techniques of production the government must either leave enough resources in agriculture to facilitate the financing of new methods or provide sources of credit to farmers for short and intermediate terms. In Schultz's recent book (1964) he has emphasized that adopting improved methods involves expenditures not generally made in traditional agriculture. The actual needs and the problems of financing are still to be discovered in most cases, and investigation must be done on the basis of specific situations. The points relevant to the discussion of fiscal policy and agriculture are that (1) government expenditures must include a wide variety of basic services for agricultural development, and (2) government tax policy (and tax-related measures) can both starve agriculture of resources for its own internal development and construct price incentives under which investment in new agricultural practices is unprofitable. The latter could occur either because product prices were too low or too unfavorable to production for nonfarm use, or because the government prevented agricultural inputs or capital equipment from being produced or imported in reasonable quantities or at reasonable prices.

For development, defined as long-run rises in per capita income, to take place there must be sustained increase in total production and in productivity per head in agriculture. The important variable for the development of nonagricultural sectors, however, is not total agricultural production, but the marketed surplus of agricultural goods. If the marketed surplus of agricultural products can be increased without increases in agricultural production, then industrial growth at favorable terms of trade for the industrial sector can occur even though agricultural production is not keeping pace. Ohkawa (1961) and Krueger (1962), among others, have pointed out in formal models, and W. A. Lewis (1957 and 1958) in his basic model, the adverse effects of inadequate growth of food supplies on industrial growth. However, there has not been adequate recognition of the *short-run* role of marketed agricultural surpluses in overcoming the agricultural productivity bottleneck to non-agricultural growth.<sup>7</sup>

The best recent discussion of marketed surpluses is Nicholls (1963), though he does not give much attention to the historical experience of divergencies and parallels between production and marketed surplus. The experience of Japan and Russia was emphasized more than a decade ago by Johnston (1951). Japan experienced sustained and rapid increases in agricultural productivity in the early stages of her industrialization. Large proportions of those increases were appropriated in various fashions to finance industry at favorable terms of trade. In Russia, on the other hand, agricultural production and productivity failed to grow to meet the needs of its rapidly growing industrial sector at favorable terms of trade. The share of agricultural product retained in the agricultural sector fell, however, and the government appropriated the surplus of the agricultural sector and made it available to the expanding urban sector. It is quite clear that such a policy can be effective only for a limited period. Eventually agriculture must produce additional output from which to have a surplus. Perkins (1964) has pointed out the contrasts between the experience in Russia and China. The length of time that one has, of course, depends *inter alia* on the level of agricultural production and consumption per head and the composition of agricultural output. However, it is not strictly legitimate to base arguments for

<sup>7</sup> Mention should be made here of the important point raised by W. A. Lewis (1965) that in many countries industrial wage levels have risen very high relative to agricultural incomes, and that conscious efforts to transfer income to the high saving sector may result in large windfalls to those laborers who can find employment at high urban wage levels, rather than in greatly increased savings.

increased agricultural production on the necessity for providing food for nonagriculture and on the implicit assumption that increased marketings can come only from increased production per head. In the analysis of tax devices and their effects on allocation and on further growth of output, one must include the effects on *marketed surplus* as well as the possible effects on output and other variables.

The quantitative importance of taxes on marketable surplus, or the volume of real income that can be transferred from one sector to the other through movements in the intersectoral terms of trade, will vary from country to country. The principal determinants seem to be the degree of export (or cash crop) orientation of the economy, the share of the agricultural sector in total income and in total employment, the distribution of income in the agricultural sector, and the size of the nonmonetized sector within agriculture. In most cases, however, it would be possible to affect significantly the distribution of real income through movements in the terms of trade.<sup>8</sup>

Two points should be made before proceeding. First, in the analysis that follows, tax questions are asked *as if* agricultural production were relatively constant. Little attention is given to the question of how to appropriate a portion of increases in agricultural production, whether to finance larger expenditures to benefit agriculture, or for general revenue, or to benefit nonagricultural sectors. Second, the emphasis is only on sources of public revenue and on the side effects of tax and tax-related devices on the agricultural and nonagricultural sectors. (Several other chapters discuss specific problems of public expenditure policy for agricultural growth.)

### III. *Ordinary Taxes on Agriculture in Developing Countries*

The major revenue-producing taxes on agriculture in developing countries are land taxes, income and personal taxes, export and import

<sup>8</sup> This conclusion is in conflict with Mellor's in Chapter 2, in part because of his concern with secular trends in the terms of trade. Results of my own investigations in Pakistan and those cited below for Argentina indicate that it is possible to affect the distribution of income quite significantly by adjusting the terms of trade between sectors. On the basis of computing "implicit exchange rates" for different commodity groups, it appears that during 1954/55, when particularly tight quantitative controls on imports were imposed following a trade crisis, farmers in Pakistan received only about Rs. 3.25 per dollar's worth of agricultural products that they sold, but paid around Rs. 9.50 per dollar's worth of manufactured products that they bought. More recently, agriculture's terms of trade have improved considerably, although in the mid-sixties farmers received only about Rs. 5.00 for agricultural products worth one dollar, but paid over Rs. 8.00 for manufactured goods worth a dollar (Lewis, 1966).

duties, and sales and excise taxes. Characteristics of these taxes (1) in the traditional public finance view, (2) in terms of revenue, and (3) in the light of their side effects on the development process are discussed. Land-based taxes and income and personal taxes are kept separate from the taxes and tax-related policies affecting prices of commodities bought and sold by the agricultural sector; the latter can be thought of as taxes on marketed surpluses.

#### A. LAND AND LAND-BASED TAXES

Surveys of a wide variety of land-related taxes are made by Wald (1959) and in the Harvard conference proceedings (Wald and Froomkin, 1954). Land taxes yield relatively little revenue in most developing countries today (and proportionately less than they did two decades ago). They can be assessed in any number of ways on a variety of economic magnitudes relating to land. Wald classifies land taxes into those on area, on rental value, or on income, and "special purposes taxes."

When area is used, a separation between (a) uniform rate and (b) classified rate (or graded taxes) is meaningful. When rental value concept is the base, a distinction can be made between (a) annual value and (b) capital value. Finally, when an income concept is used at least four subdivisions are possible: (a) tithe, (b) gross yield or gross income, (c) net income, and (d) marketed produce (Wald, 1959, 10).

Generally, the meaning of "land taxes" is given to tax bases other than net income or marketed produce. Each of these land taxes could be further subdivided for analytical purposes in assessing their effects. The predominant land-tenure system, the degree of progressivity in the tax rates, the variability of the rate of tax by type of crop grown, whether or not taxes are assessed on idle lands, and whether taxes are payable in cash or in kind all exert considerable influence on the ultimate effects of each basic kind of tax. The analysis of the land tax in all its variations is too broad to be reviewed in detail. The principal characteristics discussed here are (1) nonshiftability, (2) strong income effects, (3) incentive effect of potential output as a base, and (4) effects of a progressive rate structure.

Taxes on the unimproved value of land in the agricultural (and urban) sector have been favorites since Ricardo, as it was thought that the tax would fall on the unearned income of the owner of the asset and could not be shifted to other persons, including even the tenants of a landlord.

Whether this part of the Ricardian model fits the type of feudal relations that exist between landlord and tenant in many of the developing countries is not clear, however, and this characteristic is not the strongest argument for land taxation.

From an economic point of view, the basic advantage of most land taxes in developing countries is that they strike the nonmonetized sectors or those consuming their own production, which is not true of taxes falling directly or indirectly on marketed produce. It is also the major administrative disadvantage of such taxes, since assessments would often have to be made without the guidance of market criteria for valuation of output or assets. It is sometimes argued, often while favorably citing the case of Japan, that the land tax *per se* has an output-increasing effect on the agricultural sector and that one principal advantage of such taxes is that they result in greater efforts to increase output. The argument assumes that the agricultural sector is not already maximizing its production with given resources, which would not be true unless the marginal product of labor (or some other factor of production directly complementary to labor) was zero. In the Japanese case, however, there was a sustained rise in agricultural productivity, which was no doubt because the heavy agricultural land tax was accompanied by the infusion of fertilizers, education, and other improved inputs at relatively low cost into the agricultural sector.

In addition to the effects a land tax would probably have on output of an individual farm operator, due to a predominance of the income effect increasing effort over the substitution effect which would tend to decrease it,<sup>9</sup> there are further output-increasing effects of land taxes in particular situations. Suppose tenure arrangements are such that large holdings of land are inefficiently utilized, while there is surplus labor on small holdings. A land tax based on or related to potential output would force owners of large holdings to use their land more productively (i.e. employ more complementary resources and increase output) in order to meet taxes. Such results are often thought likely to be quantitatively important in most Latin American countries. The recommendations of the World Bank mission to Colombia (IBRD, 1950) and Hirschman's discussion of the attempted implementation (Hirschman, 1963) deal with such a tax proposal.

If the land tax is progressive (the rate per acre increasing with the

<sup>9</sup>For an empirical study of these effects using international cross section data for the manufacturing sector, and for a good theoretical discussion, see Winston (1967 and 1966).

size of holdings and/or the value of land per acre) there may be pressure on large landowners to sell part of their land as well as improve the efficiency of its utilization. A progressive land tax could also be assessed on potential output. Proponents of a progressive tax on potential output of agricultural land, such as IBRD (1959), Kaldor (1962a), and Little (1964), argue that it would discourage absentee-landlordism and speculative holding of idle land and promote sale of such land to small-scale farmers who use the land intensively. An additional possible wrinkle in land taxation would be self-assessment of land value by the owner. Forestry would be enforced by requiring that the land be purchasable by government or private buyers at the assessed value. If landlords are few and powerful and holdings are large, however, opportunities for collusion are obvious.<sup>10</sup> Thus despite the results to be achieved in principle by a progressive tax on the self-assessed value of land, there are rather obvious administrative and political difficulties. It is unlikely that such land taxes could be used as a substitute for land tenure reform, which, as Raup has emphasized, is likely to be a precondition for successful land tax and other reforms.

A stronger effect of land taxes emerges when one looks at marketed surpluses. Most land taxes are assessed on a base related either to gross output or to potential output of some sort and have the strong income effect already noted. Whether or not output is particularly sensitive to increased effort, the strong income effect of the land tax in a subsistence or largely self-sufficient rural economy will in general increase the marketed surplus of agricultural products because of the increased cash needs of the farmers. An important effect of the land tax in the two-sector model is that it increases the supplies of agricultural products flowing to the urban area, and *ceteris paribus*, results in lower prices of food. In most cases the substitution of land tax for a tax of any other variety giving the same revenue yield will result in greater marketing of surpluses and better terms of trade for the nonagricultural sector, a result that, as pointed out above, would lead to larger saving and investment and allow a more rapid growth of the nonagricultural sector.<sup>11</sup> This latter aspect of land tax was probably a more important part of its salutary effects on Japanese development than its output-increasing effects.

<sup>10</sup> A self assessment scheme is being tried in Chile. The scheme and its drawbacks were brought to my attention by K. B. Griffin and T. Carroll.

<sup>11</sup> These propositions are demonstrated with greater rigor in S. R. Lewis (1963b). Again, the results depend on the values of income and price elasticities of demand as well as the fulfillment of the assumptions of the two-sector model.

Despite administrative difficulties, the important advantages of most land taxes suggest that developing countries would in most cases be well advised to include an introduction or extension of land taxation in the agricultural sector in their tax plans. No other major tax available<sup>12</sup> has comparable potential for forcing the agricultural sector toward the rest of the market economy, inducing increased supplies of agricultural products to the nonagricultural sectors, and, perhaps, increasing the efficiency of land utilization as well.

#### B. INCOME AND PERSONAL TAXES

Income and related direct taxes have been discussed, primarily with reference to nonagricultural incomes, by Kaldor (1955, 1956, and 1960), Chelliah (1960), Goode (1961), and Prest (1962). Personal taxes, which are common to most of the former British dependencies in Africa, seem to be more suited to most types of traditional agriculture; they are discussed by Hicks (1961) and Due (1963). Western-type income taxes (and such first cousins as expenditure taxes) are not at all suited to the agricultural sectors in most developing countries. The reasons are both administrative and conceptual, as pointed out by Goode (1952) and Prest (1962). Levels of literacy and record-keeping are generally lower in rural areas, and problems of evasion and lack of administrative personnel and procedure make it nearly impossible to apply any system directly transplanted from Washington or London. The problem of defining taxable income, difficult enough when all receipts are from marketed transactions, is even more intractable when income is largely or wholly in kind. It is probably not feasible in most places to rely on income taxes of the usual sort for any significant amount of revenue from agriculture unless agricultural incomes are heavily skewed in favor of large landowners.

Personal taxes, most publicized recently by Hicks (1961) and Due (1963), seem to be more attractive than income taxes. These taxes are also better suited to less well-settled areas than land taxes. In a frequently used form, they involve a family-by-family assessment of income and income-earning assets, made by local officials, to determine approximately a fair tax for each family. Such taxes will be most effective when tied to local expenditures where benefits are obvious to local taxpayers. Since personal taxes reach the nonmonetized sectors, they have salutary effects

<sup>12</sup> While poll or hut taxes have similar income effects, they are generally not important revenue raisers, and their importance is declining. See Abdel-Rahman (1965) for estimates of their importance in French-speaking Africa and Due (1963) for discussion of poll and hut taxes in former British Africa.

on marketings and are an inducement for persons in the nonmonetized sector to move toward the market economy. By keeping the assessment procedure simple it is possible to make the personal tax an improved substitute for the poll tax, as it can be related to crude measures of ability to pay, thus increasing its revenue potential. Introduction of a comprehensive system of personal taxes, though insufficient for high-income taxpayers, would lay the groundwork for the introduction of a more sophisticated tax system in the future.

Income and personal taxes can have incentive effects similar to those discussed for land taxes, though generally not as powerful, provided that all income from agricultural pursuits is included in the tax base. If income is limited primarily to income from monetary transactions, the tax would resemble more closely a tax on marketed surplus. An effective and comprehensive income tax on agriculture would be most similar to simple land taxes based on the value of crops produced. Progression could be introduced. Effects on output or on marketed surplus would be similar to those already discussed. The additional incentive effects of taxes on potential output could not be introduced, but income taxes would be more flexible in revenue yields than taxes on gross output or on land value.

In summary, direct taxes on agriculture are probably best met from levies related to land that are relatively simple to assess. As long as the average rates are not extremely high, complete accuracy in relating the rate on a piece of land to the production from that land should not be necessary. By taxing land whether used or not, the annual collection from each individual would be administratively much simpler than where the tax payable is related to the crop grown or its yield in each particular season. In cases of extreme flood, drought, or blight, rates could be reduced on the entire affected area. Changes in the rates could be made according to a moving average of harvest prices in the area. It would be much simpler to build refinements such as progression into such a system than to introduce a system like the income or expenditure tax of Western type into rural areas.

#### C. EXPORT TAXES

Taxes on exports in developing countries are often more overtly agricultural taxes than most other indirect taxes. They are sometimes regarded as a substitute for income taxes in the administratively difficult agricultural sector despite the fact that they fall on marketed surpluses only.

They have been most frequently discussed in the context of stabilization schemes designed to isolate the domestic economy from external fluctuations. The discussion of export duties has been tied to the discussion of multiple exchange rates and of export monopolies or marketing boards, and to the related discussions of buffer stock and buffer fund policies. Most major issues are discussed in the two *Kyklos* symposia (Symposium, 1958, Symposium II, 1959). The major arguments of the proponents of export taxation are that it can (1) absorb windfall gains that accrue to the exporters during periods of rising prices, dampening fluctuations and reducing the primary and secondary effects of increased export earnings on the economy, (2) be administered with ease, (3) be made flexible by providing sliding-scale rates to vary with international prices, (4) generate revenue from a low-saving sector that can be transferred by government expenditure to the high-saving sector and be used to diversify the economy and avoid future fluctuations, and (5) for a country in a monopoly position, serve to restrict supply and increase short-run exchange earnings.<sup>13</sup> The opponents of such policies, led by Bauer and his associates (Bauer, 1954; Bauer and Paish, 1952; Bauer and Yamey, 1957) argue that these devices are not likely to be satisfactory because: (1) they are likely to move domestic prices well out of line with world prices, thus reducing the country's real income by preventing it from producing at its greatest comparative advantage; (2) they discriminate against one sector of the economy, and, therefore, should be opposed on equity grounds; (3) they discriminate against crops produced for and sold in foreign markets and in favor of those sold domestically; (4) they may reduce private saving more than they increase public saving (and public investment is not as desirable as private investment anyway); and (5) even if exchange earnings are increased in the short run, new entrants on the supply side and the accelerated development of substitutes will reduce exchange earnings in the long run.

Export duties are one means of influencing the terms of trade between agriculture and domestic industry. They do this directly by reducing the domestic prices of export products and indirectly because export duties are a protective device. Holding foreign assistance constant, the only way to pay for more imports is to increase exports. If export duties have restrictive effects on export production and foreign exchange earnings (as will be the case for small producers), the quantity of imports

<sup>13</sup> These arguments can be found in a variety of the papers in the symposia. See also Wald and Froomkin, 1954; Levin, 1960; and Prest, 1962 for summary discussions.

available is reduced, thus raising the scarcity value of imports in the country and creating a more profitable situation for import-competing industries. Where export commodities can also serve as raw materials for a domestic manufacturing industry, such as cotton textiles or vegetable oil products, an export duty that reduces the domestic price below what it would be in the absence of the tax provides a subsidy to domestic manufacturers. In the intermediate or long run, such a policy can provide higher export earnings, since the products can be exported at a later stage of fabrication and, therefore, earn more foreign exchange per unit of raw material consumed.<sup>14</sup> Such a policy seems to have been an important factor in the development of the cotton and jute textile industries on the Indo-Pakistan subcontinent.

Related to export taxation is the extent of overvaluation of the domestic currency at official exchange rates. As with most taxes, disincentive effects that are mild at low rates of taxation can become severe at high rates. If exports are valued at only one-half or one-third their "shadow" or scarcity value at official exchange rates, the addition of an export tax is more serious than if the exchange rate were closer to an "equilibrium" rate. Extreme disequilibrium has not been uncommon in Latin America and other developing countries in the postwar period. Another point relates to the monopoly position of major producing countries. In the postwar period, a number of primary-producing countries that had, or thought they had, monopoly positions in their major export commodities pursued restrictive price and production policies to improve their gains from trade, as the German Government did during the 1930's. As a result of export taxes and related supply-limiting and price-increasing devices, a number of countries that emerged from World War II with strong positions in international markets have seen their market position dwindle. Examples of such a process are Uganda (cotton) and Pakistan (jute). Thus, though some use of export taxes and related devices seems to be warranted both on economic and on administrative grounds, one could argue that the limits of taxation without severe adverse effects on the entire economy have been reached in this sector more often than with other kinds of taxes in recent years.

<sup>14</sup>An important problem not discussed here but raised in Johnson (1964a and 1965) is that the tariff structure of high-income countries may discourage processing in developing countries through low tariffs on unprocessed and high tariffs on processed raw materials imports.

D. IMPORT TAXES

The role of import taxes in the revenue structure of a country and in the taxation of its agricultural sector cannot be discussed separately from (1) the official value of the currency relative to its equilibrium value, (2) the system of quantitative import restrictions used to ration imports (a prevalent practice in many countries), (3) the policy of industrial development and import substitution being followed by the government, and (4) the real cost structure of the country and its relation to money costs as reflected in market prices for factors of production and for final products. The effect of import taxes in taxing agriculture depends also upon the composition of exports and other marketed agricultural production. The first two considerations, though of utmost importance to policy in specific cases, are discussed later; we turn first to the role of these taxes apart from the structural rigidities with which one must deal in practice.<sup>15</sup>

It is, in general, not possible to separate the revenue function of import duties from their protective function. In most discussions of tariffs, particularly those centering around GATT and negotiations among industrialized countries, it is the protective function, not the revenue function, that receives most attention and comment. But in the developing countries, taxes on imports have an important place in the revenue structure, largely for historical and administrative reasons.

The usual attitude has been to try to eliminate the revenue importance of import taxes at an early date and to rely more on direct taxes. If, however, one accepts the basic assumptions underlying the widely used model of the dual economy, the international terms of trade between agriculture and industry facing a small country generally are too favorable to agriculture, given the real cost structure of the developing country. Protection is justified for the manufacturing sector not only on infant industry grounds but also on the grounds that the money cost of factors of production to the industrial sector is overstated relative to the real social opportunity cost of the factors to the country as a whole.

Manufacturers should therefore be protected to raise their domestic prices relative to agricultural goods above the international price relationship. This argument was given prominence by Manoilescu (1932) in the

<sup>15</sup> For an excellent general discussion of tariff theory in the context of development see Johnson, 1964b.

1930's, was revived in the formal language of economic theory by Haberler (1950), and is debated and elaborated further by Hagen (1958), Bhagwati (1962b), Bhagwati and Ramaswami (1963) and S. R. Lewis (1963c). However, the formal discussion assumes that the alternatives are free trade and autarky, and the possibility of protective but revenue-raising tariffs is not considered.<sup>16</sup> Actually, import taxes as sources of revenue compare favorably to direct taxes on economic grounds. Import taxes, in turning the terms of trade domestically against agriculture, tax agriculture both directly and indirectly. By providing domestic manufacturing with more favorable terms of trade, import duties raise the share of profits in income, thus raising the saving rate and the rate of growth of nonagricultural output (under assumptions of the two-sector growth model).

These results can be achieved by imposing general import duties. Import duties are also important in influencing the direction of investment activity, particularly when used in combination with excise taxes or sales taxes on domestic output. The extent to which these more specific uses of import duties would serve to tax agriculture would presumably depend on the extent to which the items taxed were consumed by the agricultural sector. However, the importance of import taxes as general instruments of agricultural tax policy lies partly in their power to influence the terms of trade of the agricultural sector as a whole, particularly where exports are largely agricultural and imports are largely manufactured goods, and partly in their ability to absorb purchasing power from the nonagricultural sector if the latter benefits from the nontax policies discussed below.

If the agricultural sector depends on imported current inputs or on imports of certain commodities for its capital formation and if import restrictions or import duties limit the import of such commodities, there will be more severe repercussions on agricultural production and growth. In the simple model of the formal dual economy literature, there is no explicit recognition of this problem, even though in practice it can be important. Some of the stagnation of agricultural growth in Argentina after World War II, for example, has been attributed to the complete starvation of capital formation in that sector by import controls. The more modernized the agricultural sector becomes, the more it can be

<sup>16</sup> Tariffs and autarky are a second-best solution. Optimum solutions to resource allocation are achievable only through subsidies and taxes in the factor markets, where the underlying distortions exist, as brought out by Fishler and David (1961) and Bhagwati and Ramaswami (1963). Revenue tariffs as second-best solutions are also discussed in Meade, 1955.

harmful by policies that restrict availability of current inputs or capital goods.

#### E. SALES AND EXCISE TAXES<sup>17</sup>

Taxes on domestic production of manufactures fall less overtly on agriculture than do other measures discussed here, but are considered briefly because they are an integral part of the package of fiscal and administrative measures used to transfer income from the agricultural sector to the government and nonagricultural sectors.

Import duties (and the related measures discussed below) are often used to protect domestic manufacturing. When such is the case, import prices plus duties, or the scarcity value of imports, will set an upper limit for prices of domestic products. Increased indirect taxes on domestic production may then decrease prices received by producers rather than increase prices paid by consumers. (When imports are restricted by licensing, the problem becomes somewhat more complicated; this is treated in greater detail below.)

The general point is, however, that indirect taxes on domestic production may be paid by the nonagricultural sectors out of income transferred from agriculture by other tax and nontax policies.

Indirect taxes on domestic manufacturing have other purposes in development policy. Taxes exempting exports can be used to promote exports of goods that would be competitive in international markets but for which protected domestic markets are more profitable.<sup>18</sup> Likewise, taxes on domestic output can be used to discourage consumption of particular goods (whether of domestic or imported origin), or to promote or discourage domestic production of particular goods. The use of taxes to discourage consumption of particular goods or to discourage establishment of particular consumption goods industries is discussed by Nurkse (1953), Chelliah (1960), Goode (1961) and Power (1963), and a somewhat more precise empirical meaning to consumption restrictions is developed by A. R. Khan (1963). Finally, since a growing share of domestic utilization of manufactured goods is met from domestic production during economic development (Chenery, 1960), there will gen-

<sup>17</sup> There may be differences between sales and excise taxes on administrative grounds, including the stage of production at which they are imposed. Such problems are discussed in Prest (1962), and other problems of administration are covered in Goode (1952 and 1961). The two types of taxes are similar enough to be treated together here.

<sup>18</sup> See Power (1963), Bruton and Bose (1963), S. R. Lewis (1964 and 1965) for discussions of this point and its application to Pakistan.

erally have to be fairly heavy reliance on sales and excise taxes. In fact, such taxes seem to be one of the most promising sources of income-elastic tax revenue for developing countries.

#### IV. *Nontax Policies Affecting Agricultural Incomes*

A wide variety of government financial policies affect real incomes in the agricultural sector and the intersectoral terms of trade. It is in practice impossible to ignore these policies and their effects when assessing the relative desirability of ordinary tax devices. One of the major shortcomings of the literature on taxation in the developing countries is the failure to come to grips with these policies and to see their implications for tax policy. To a certain extent the neglect is due to the economist's natural bias of assuming that other policies are more or less optimal, or *should* be more or less optimal, and then examining proper tax policy in that situation. However, many policies that it would be rational (in the economic sense) to change are not changeable. For example, the suggestion that a country revalue its currency to bring the official rate more in line with real market conditions is likely to be met with the attitude that the suggester has no regard for the country's international prestige. Exchange rates, however absurd, may in fact be untouchable.

In this section, some of the principal nontax government policies are examined both for their direct effects on agricultural incomes and their implications for government tax policy in general. The policies considered are: (1) marketing boards and export monopolies for agricultural crops, (2) procurement policies and price controls for major agricultural commodities, (3) inflationary financing of government expenditures, (4) exchange rate policy, (5) licensing systems for imports, investment, and principal inputs, and (6) imports of agricultural surplus commodities as a form of aid to finance government development expenditures.

##### A. MARKETING BOARDS AND EXPORT MONOPOLIES

The principal economic aspects of marketing boards and of state export monopolies have already been discussed in the section on export taxes. In postwar years these bodies have operated as taxing agents for many commodities in many countries. Their operations are discussed by Bauer and Paish (1952), Walker (1962), and Levin (1960) for specific countries in Africa and Asia.

When boards consistently buy at a price under the world-market price and build up reserves (whether or not these are transferred as govern-

ment revenue) they act as a taxing body and reduce the real income of the agricultural exporter below what it would have been in their absence. However, since many of the boards operate at a surplus in some years and at a deficit in others, the effects of their actions cannot simply be identified directly with export taxes. In addition, as Prest points out (1962), there will be important real economic differences when the export monopoly or marketing board has its own marketing system in the inland agricultural areas than when it simply acts as the official exporter, buying from the private trade at the point of export. In the latter case the board's operation would be very similar to the export tax, but in the former it would influence prices to original producers not only through its wedge between buying and selling prices but also in the margins it accepts as opposed to those practiced by the private trade.

#### B. PROCUREMENT POLICIES AND PRICE CONTROLS

Government policies to procure agricultural products at fixed prices are similar in operation to export monopolies, but are broader in scope. The basic purpose is to assure deliveries of agricultural goods at less than their opportunity cost to the economy. (Government policies to *support* agricultural prices are discussed in Chapter 13.) The government may or may not take a profit (that is maintain a margin between buying and selling prices). Depending on the design of the procurement policy, the price responsiveness of the producers, the degree of coercion in making production decisions, and similar factors, there can be a variety of results from such a policy.

In the Soviet Union there were not only fixed prices but enforced deliveries (Johnston, 1951), resulting in food supplies adequate for the needs of the urban areas and increases in marketed surpluses that were larger than increases in production. While no revenue was received, the terms of trade were turned against the agricultural sector in the most direct sense: it was forced to supply specified quantities of food. (The collectivization of agriculture under central control was, of course, very important in enforcing deliveries.)

Where coercion is not used, the results will be less spectacular, but they can still yield substantial deliveries at lower prices than would otherwise prevail. There are, or can be, dangerous elements in the procedure if proper limits are not observed, since agricultural development could be stifled by adverse incentives and inadequate resources for increasing its output over the long run.

General price controls and procurement policies go together in a package in many countries, with the aim of assuring food deliveries to the urban areas at relative prices favorable to the industrial sector. However, when such measures are attempted without either any increase of production or any attempt (such as forced deliveries) to raise the share of production being marketed, official prices may be kept low in cities but supplies may fall, resulting in not-very-suppressed inflation, since the scarcity value of food would rise in the cities. One may get the adverse effects of low agricultural prices on the agricultural sector without any of the beneficial effects of more wage goods in the industrial sector. The case of India in 1964 comes readily to mind as an example of such results. Another alternative is found in postwar Argentina, where prices were kept low in both rural and urban areas and the quantities of food necessary to maintain low prices came from reduced exports.

In any of the above cases, however, the net result is equivalent to taxing the agricultural sector. The beneficiary of directly increased real income to match the directly decreased real income in agriculture may be the public sector, in the form of a spread between buying and selling prices, or the nonagricultural sector, in the form of lower prices and larger supplies of food than it otherwise would have received.

#### C. INFLATION AND DYNAMIC PROBLEMS

The pros and cons of inflationary finance have been discussed at length since the postwar resurgence of interest in economic development. Few areas of economic policy are as clouded by dispute as the question of the "correct" amount of inflation or the inevitability of inflation during economic growth. For the present discussion the important characteristics of inflation are its income redistribution effects and its impact on relative prices and on other fiscal and control policies, but even these cannot be surveyed adequately here.

Inflation not only will result in some direct transfers of resources from those whose money incomes cannot keep pace with the rise of prices, but also will lead to the imposition or implementation of other policies discussed in detail in other parts of this survey. Price controls and rigid exchange rates with import controls are the most important concomitants<sup>10</sup> of inflation and produce some of the worst side effects. They also have combined with sustained inflation to produce dynamic patterns in

<sup>10</sup>I call such controls concomitants since they are used extensively by governments attempting to avoid the overt effects of inflation by preventing certain prices from rising.

some Latin American countries that almost amount to cyclical behavior. Periodic devaluations are combined with relatively rigid controls on *some* prices between devaluations, resulting in sharp changes in relative prices (and in the distribution of income) at the time of devaluation.<sup>20</sup> The dynamic problems, also, cannot be treated adequately here. The rest of the discussion is limited to some of the allocation and income redistribution aspects of principal policy measures.

#### D. EXCHANGE RATE POLICY

The policy followed by a government regarding the price it maintains for foreign exchange and the vigor with which it attempts to maintain it can have a very significant impact on the allocation of resources, the pattern of relative prices, and the distribution of income in the country. The use of single or multiple exchange rates as taxing and subsidizing devices has been reviewed and summarized admirably by Bernstein (1950), Schlesinger (1952), and Gradin (1958). The maintenance of exchange rates for exports that overvalue domestic currencies is in effect a tax on exports, since the exporter receives less local currency than the scarcity value of his foreign exchange to the economy.

In the case of a single exchange rate for all transactions, the tax implicitly paid by the exporter is received as a subsidy by the user of foreign exchange, who is able to purchase it at a price in local currency lower than its scarcity value. Since exports are generally agricultural in developing countries and imports are often made by the commercial/industrial sector, the policy transfers real income from agriculture to the nonagricultural sectors by fixing disequilibrium buying and selling rates.

There will, of course, be problems of rationing the amount of foreign exchange available at a price at which demand exceeds supply.<sup>21</sup> Even though the *foreign exchange* may be bought at a low price, the prices of the imported *goods* are likely to reflect the scarcity of the amount of foreign exchange available. The burden of a tax on exports (in the form of an overvalued currency) resulting in decreased foreign exchange earnings, will most likely fall on the final consumer of imported goods (not

<sup>20</sup> Ferrer (1964) has estimated for Argentina that the change in relative prices brought on by devaluation in 1959 transferred about 500 million dollars per year from the non-agricultural to the agricultural sector. Working backwards, before devaluation the agricultural sector must have been "losing" 500 million dollars per year due to exchange rate distortions brought on by, or aggravated by, inflation.

<sup>21</sup> Few developing countries now are able to supplement their exchange earnings with enough foreign capital (long- or short-term) to allow all imports that are desired at the prevailing exchange rate.

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the individual who is able to obtain valuable foreign exchange at low prices) as well as on the agriculturalist who must surrender foreign exchange at less than its scarcity value.<sup>22</sup>

A single disequilibrium exchange rate can transfer resources between sectors but will not be directly revenue raising. Multiple exchange rates for different types of transactions can be a revenue-raising device and can act as an intersectoral resource transfer device as well. The agricultural sector can be given more unfavorable exchange rates for its exports than the industrial sector, and foreign exchange users can be discriminated against as well.<sup>23</sup> In addition, a spread between the buying and selling rates for foreign exchange can be credited as government revenue, in lieu of actual export or import taxes.

Currency overvaluation and multiple exchange rate systems create a disequilibrium in which there is a fertile field for discretionary use of tariff policy both to absorb resources from the private sector and to promote or penalize certain types of resource use. The role of the import rationing system in determining proper tax policy is a subject that complicates the above discussion, however, and it must be treated explicitly.

#### E. LICENSING AT FIXED PRICES

The most frequently licensed sector in the developing countries is the import sector, though licensing is often used in such items as steel, cement, and petroleum products, and also in major raw materials. Since most governments and government servants are unimpressed by arguments that controls through the price system are likely to be more efficient than direct allocation,<sup>24</sup> direct controls and licensing are likely to remain and should be taken account of in tax policy.

Scarcities in particular sectors are often related to licensing. If supplies are limited by import licenses and demand considerably exceeds supplies at duty-paid prices, actual prices will reflect the scarcity value, not simply the duty-paid value. Increases in duties on imports then result in reduced real income to the import licensees, not higher prices to the final users. Such a situation exists for many commodities and in many countries.

<sup>22</sup> Note that when exchange rates are fixed, the symmetry between export and import taxes that was first brought out by Lerner (1936) no longer exists. Restrictions on exports and export earnings limit imports, but reductions of imports do not necessarily reduce exports or export earnings.

<sup>23</sup> A good discussion of this practice in Brazil is given in (Gradin, 1958). A variant on multiple exchange rates used in Pakistan is analyzed in (Bruton and Bose, 1963).

<sup>24</sup> See, *inter alia*, W. A. Lewis (1948) for a discussion of the basic logic.

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The consumers, in agriculture or in urban areas, are already being taxed by licensing. The reduction of real incomes in the agricultural sector reappears as increased incomes in the nonagricultural sector rather than as government revenue. Where imports are tightly restricted by licensing, increased duties on them will not affect their final prices and can therefore be increased substantially, even on mass-consumption items, without raising the cost of living. This is an important point, but its application will vary with the circumstances of particular countries regarding currency overvaluation and the extent and types of licensing.

Where there are licensing systems in many major sectors of the economy, absence of indirect taxes will not necessarily imply prices to consumers that are near costs of production or import. More directly relevant to agricultural taxation, overvalued currencies with restrictions on the imports of manufactured products will result in substantial resource transfers out of agriculture to industry. These can be then "collected" by taxing the nonagricultural sector, which is administratively much easier to tax.

Two empirical studies in Pakistan provide considerable support for the point of view expressed here. Pal (1964) found that internal prices of imported goods reflected license-created scarcities and that domestic price differentials were only slightly related to tariff differentials. The result of Radhu's study dealing with domestic output taxes was consistent with the view that in the tightly licensed Pakistan economy following the end of the Korean War boom increases in indirect taxes were absorbed by the producing sectors and did not result in price increases (Radhu, 1965). "Taxes" on agriculture through adverse terms of trade were "collected" from the nonagricultural sector by indirect tax increases without further affecting prices.

#### F. IMPORTS OF SURPLUS AGRICULTURAL COMMODITIES

Discussions of the usefulness and the possible side effects of surplus agricultural commodities, particularly PL 480 food grains, in the programs of developing countries are found in increasing abundance, and the issues are becoming more clearly stated. The use of PL 480 imports to offset development expenditure is likely to cause a fall in the relative prices of commodities imported and of competing locally produced goods. There is, in effect, a tax on those commodities, in that the prices received in the rural sector will quite likely be lower than they otherwise would

be.<sup>25</sup> If farmers are completely unresponsive to price changes in their production and marketing decisions, their incomes would be reduced and no further complications would arise. If, however, there is a response of production or marketing, the policy may have the secondary repercussions of shifts out of food grains into cash crops, withdrawal from the market economy, and/or reduced farm saving and investment that prevents agricultural development (Schultz, 1960; Beringer, 1963; Falcon, 1963; and Fisher, 1963). Thus if supplies of marketed surplus or of production are responsive to price, the "tax" on agriculture has important side effects that may harm general economic progress in the long run.

Recent empirical studies, mostly on the Indo-Pakistan subcontinent, have shown that farmers are remarkably responsive in the short run to changes in the prices of particular crops relative to competitive crops (Clark, 1957; Falcon, 1962; Krishna, 1963; Ghulam Mohammad, 1963; and Hussain, 1964; these are reviewed in Chapter 13). In general, major food grains of a region appear to be less responsive than cash crops, but the elasticity is significant, and positive. These results are extremely important in evaluating the relative desirability of methods of raising revenue as well as in examining the nontax income-transferring devices, and much more concrete evidence of this sort is needed in other countries.

If farmers are not price responsive, prices of the agricultural items imported are reduced, giving the nonagricultural sector more favorable terms of trade. The agricultural sector suffers some reduction in real income because of lower prices. If farmers are responsive to price, however, the output or marketing of the goods in question will fall and, presumably, the output of some other good will rise. In such a case the reduction in the income of the agricultural sector will, *ceteris paribus*, be less than if farmers took no alternative course of action. Foreign surplus food grains could be used to encourage production of other products for either domestic or foreign consumption, which would be consistent with the comparative advantage of the country, including in this the opportunity of importing food grains at no (or very small) outlay of domestic resources.

<sup>25</sup> A difficult but interesting question, only alluded to in most of the literature, is the alternative with which one should compare the increase of PL 480 imports to offset some expenditure. Does one assume that the expenditure is not undertaken and imports are not made? Or, does one assume that the expenditure is undertaken but financed in some other way? If the expenditure undertaken was of a labor-intensive public works variety, and if the income elasticity of demand for food is sufficiently high, the effect on the relative price of food might be very small.

Certain policies used separately, such as export taxes, currency overvaluation for exports of agricultural commodities, marketing monopolies for exports, imports of certain PL 480 commodities, procurement policies for food grains, and the like, will affect prices among agricultural commodities. They will have important allocation effects within the agricultural sector. When such policies are used together, or when import licensing, import taxes, sales and excise taxes, or other measures are used to raise the aggregate price level of nonagricultural commodities, agriculture's terms of trade may deteriorate, but with little or no reallocation of resources *among* agricultural commodities. Finally, when relative prices among nonagricultural commodities are changed so that capital goods or current inputs for agriculture are taxed or subsidized, important reallocations within agriculture are likely to occur having implications for the level and rate of growth of agricultural production.

### V. *Summary and Review of Research Priorities*

The first three sections below discuss some central problems of further research relating to taxation of the agricultural sector, and the fourth gives a short summary view of taxation of agriculture. With the exception of land-based taxes, virtually all methods of taxing the agricultural sector result in reduced prices of some or all commodities sold, or increased prices of some or all commodities purchased by that sector. The impact of tax and nontax policies on the price structure and the response of agriculture and other sectors to such changed prices, therefore, appear to be the central empirical questions.

#### A. EMPIRICAL STUDIES OF TAXATION

The Harvard Conference pointed out in particular that tax incidence studies even of a simple sort were not available in the developing countries. They recommended that one priority of research was to prepare such studies to indicate, under simple assumptions, the relative taxes falling on various groups within the economy. Such studies have not come forth. Due (1963) has presented computations for some of the African countries, but only India has had comprehensive treatment.

A recent study by Gandhi (1966) is an integration of and improvement on all the previous Indian incidence studies. The principal conclusions of Gandhi's "first approximation" to relative tax burdens of agriculture and

nonagriculture is the ratio of "assigned" tax burden of ordinary direct and indirect taxes to income originating in each sector. Such a criterion is not a fair measure, he says, since per capita incomes in agriculture are substantially below those in the nonagricultural sectors. Gandhi presents several methods of correction, first by deducting a "subsistence" allowance in each sector, second by adjusting "taxable capacity" by parameters reflecting the distribution of income and wealth, third by using wealth per capita as another weight, and finally by introducing progression. Under all reasonable assumptions for the differential weights, he suggests that the agricultural sector in India has been undertaxed relative to the nonagricultural sector.<sup>26</sup> One of the important points that emerges as one reads Gandhi's work, however, is the large number of supporting documents and studies needed to do a detailed study of tax incidence. This more than any other factor probably explains the dearth of empirical studies on taxation by sector within other countries.

A major criticism of Gandhi's conclusions can be made on the basis of the analysis of this survey. He does not take into account any of the nontax policies affecting real income in agriculture, which in India are of major quantitative importance. One should try to take account of the nontax policies and estimate their quantitative effects. Such a course of action would mean a detailed investigation of the relative prices of goods within the country compared with the relative prices existing in international markets (taken as a standard of correct relative prices, since they represent the free-trade alternative). The allocation of indirect taxes between sectors would change quite significantly. If the limiting factor on supplies of imported goods is licenses, not costs, the agricultural sector is already being taxed by the licensing and exchange rate system. Import taxes would fall on the licensees in the nonagricultural sector. Many domestic industries whose product prices are determined largely by the scarcity value of imported inputs or the protection afforded the industry by tariffs and import licensing would absorb indirect taxes on domestic output. Thus, the assessment of tax burden on agriculture cannot be accomplished without taking into account the effects of nontax policies on agricultural incomes. In many countries, incidence studies that did not take these policies into account would give a very distorted picture of relative tax burdens on agriculture.

<sup>26</sup> The entire exercise presumes, of course, that progressivity is a correct standard for judging a tax system.

## B. PRICE RESPONSIVENESS OF FARMERS

The literature on farmer response to price that has emerged in recent years is a major breakthrough in empirical knowledge relevant to tax policy. Available studies, however, cover only a relatively small geographic area and, moreover, deal only with one part of the price responsiveness problem: the responsiveness of *output* to the relative prices among agricultural goods. Even here one should be cautious of overgeneralizing from the observed results in a few crops for a few countries. In a recent study of long-term trends in agricultural output and exports Beckford (1962) suggested that in an area in which a crop is newly introduced, a disequilibrium situation is created between desired and actual output mix. For a considerable time thereafter, short-run changes in relative prices of the new crop and its substitutes may not affect the allocation of agricultural resources much, if at all. The efforts of the system to work off the disequilibrium will overwhelm the short-run changes of the minority already in equilibrium.

There is no empirical evidence on the responsiveness of production to changes in the terms of trade between agriculture and industry. The possible sources of response are (1) preferences for agricultural versus industrial goods on the part of the agricultural sector, (2) increased employment of abundant factors of production (unused land and underemployed labor) as output prices become relatively more attractive, and (3) effects of changed prices of agricultural inputs purchased from the nonagricultural sector on the use of purchased inputs and, therefore, on the output of the agricultural sector.

Finally, the question of the response of marketed surplus to changes in both relative agricultural prices and the terms of trade of the agricultural sector is very much in doubt. The response of marketings must parallel the response of production for nonedible cash crops. But the response of food crops, particularly major food grains, may not be the same for both marketed surplus and production. Food crops have alternative uses after harvest: they may be used as further inputs (e.g. livestock feed), be held as stocks, be consumed, or be traded for nonagricultural products. Marketing, therefore, may be more responsive or less responsive to prices than is production.<sup>27</sup> On the question of response of

<sup>27</sup> Falcon (1963, 326) found farmers in the Punjab reported selling less food grains and feeding food grains to animals if food grain prices are low, and selling larger quantities of

total marketings to the terms of trade between agriculture and industry, however, there is no empirical evidence.

#### C. RELATIVE PRICE STRUCTURE AND ECONOMIC GROWTH

A basic problem continues to reappear in various forms: what relation has the relative price structure to economic development? How much tampering will the price structure bear without destroying incentives? How can it be changed to improve incentives? These questions are important both within the agricultural and nonagricultural sectors and between major sectors of the economy. Determination of comparative advantage in international trade and its changes through time are related to questions of the price structure. The literature on the subject is growing,<sup>28</sup> but it will require not only theoretical but also detailed empirical work on price structure in a wider variety of countries before any clear guidelines can be laid down. It has been argued here that certain conscious interference with the market-determined set of prices is indeed justified. Almost every government policy does in fact influence relative prices, and it is imperative that some information be made available on the sorts of changes or corrections that are more desirable and those that are less desirable. It is this basic issue that lies behind discussions about allocation of investment by central planning authorities.

#### D. SUMMARY

The basic line of argument of this paper can be summarized as follows.

1. In order for sustained economic growth to occur, the agricultural sector must grow, *first*, to provide rising incomes in the largest sector of the economy, and *second*, to facilitate growth of the nonagricultural sector. One corollary of this proposition is that there must be adequate public and private capital formation in agriculture.

2. The literature on growth and structure of the low income countries, especially the literature on the dual economy, suggests that terms of trade relatively favorable to industry would aid substantially in the growth of the nonagricultural sector. In addition, if the latter sector's terms of trade deteriorate, its growth will be stifled.

3. One principal means of changing the terms of trade is to restrict

quality food grains (wheat) when their price was high and buying cheap food grains for home consumption. Marketing would in this case be more price responsive than production and with a different lag. See also discussion in Chapter 13.

<sup>28</sup> One excellent survey is given by Chenery (1961). Many relevant issues are also discussed in Meier (1963).

international trade (on the import or on the export side). This is being done consciously or unconsciously by many countries. It is also a method that economic theory suggests *may* improve the efficiency with which resources are used in a country.

4. Combined with the restrictions of exports by currency overvaluation and other export-taxing devices are licensing systems for imports. Licenses are usually given to the nonagricultural sector, and the agricultural sector as consumer of imports and import-competing goods is forced to pay higher prices.

5. A supplementary measure in use in many countries is the import of food grains (particularly PL 480 surplus food grains) to maintain low food prices. If cash crop prices are depressed through the overvaluation of domestic currency or similar schemes and the food grains prices are depressed by the import of food grains, *most* agricultural prices are reduced relative to the prices of industrial products.

6. In this situation, the principal beneficiary of increased real income (corresponding to the decreased real income in agriculture) is the urban-industrial sector. If food prices are kept low, the principal beneficiaries can be further isolated to (1) importers and (2) manufacturers of import-competing industrial goods.

7. *Thus*, if indirect taxes are increased, they are not likely to result in decreased real income in the agricultural sector, since that sector is already being taxed through the terms of trade by the other policies of the government, which are very important quantitatively in many countries.

8. The increase in indirect taxes on imports when licensing systems for imports are prevalent is likely not only to raise revenue, but also to improve the allocation of imports among users (where licensees are also users of imported raw materials and capital goods). Casual empirical observation suggests that this is an extremely fertile field for increased revenue in a number of countries.

9. Assuming policies that turn the terms of trade against agriculture, increases in indirect taxes on manufactured goods are in part simply the collection of taxes already paid by the agricultural sector to the nonagricultural sector.

The conclusion reached over a decade ago by the Harvard Conference remains true today: the major lack is in empirical studies of the impact of taxes and nontax devices in the developing countries. The areas of ignorance that are most important for assessing the relative merits of alternative schemes are, broadly, (1) the incidence of current tax and

nontax measures in the country of concern, (2) the price responsiveness of production and marketings in the agricultural sector and its subsectors, with reference both to relative prices among agricultural goods and to the terms of trade between agriculture and industry, and (3) the relationships between relative price structure and economic growth in each sector of the economy.

## REFERENCES

- Abdel-Rahman, 1965. A. Abdel-Rahman, "The Revenue Structure of the CFA Countries," *Staff Papers*, 73-118 (March 1965).
- Bauer, 1954. P. T. Bauer, *West African Trade* (Cambridge: Cambridge Univ. Press, 1954).
- Bauer and Paish, 1952. P. T. Bauer and F. W. Paish, "The Reduction of Fluctuations in the Incomes of Primary Producers," *Economic Journal*, 62:750-80 (Dec. 1952).
- Bauer and Yamey, 1957. P. T. Bauer and B. S. Yamey, *The Economics of Underdeveloped Countries* (Chicago: Univ. of Chicago Press, 1957).
- Beckford, 1962. G. L. F. Beckford, "Secular Trends in the Growth of Major Tropical Export-Crop Industries," Ph.D. diss., Stanford University (1962).
- Beringer, 1963. C. Beringer, "Real Effects of Foreign Surplus Disposal in Underdeveloped Economies: Comment," *Quarterly Journal of Economics*, 77:317-23 (May 1963).
- Bernstein, 1950. E. M. Bernstein, "Some Economic Aspects of Multiple Exchange Rates," *Staff Papers*, 1:224-37 (Sept. 1950).
- Bhagwati, 1962a. J. Bhagwati, "Indian Balance of Payments Policies and Exchange Auctions," *Oxford Economic Papers*, 14:51-68 (Feb. 1962).
- Bhagwati, 1962b. J. Bhagwati, "The Theory of Comparative Advantage in the Context of Underdevelopment and Growth," *Pakistan Development Review*, 2:339-53 (Autumn 1962).
- Bhagwati and Ramaswami, 1963. J. Bhagwati and V. K. Ramaswami, "Domestic Distortions, Tariffs, and the Theory of Optimum Subsidy," *Journal of Political Economy*, 71:44-50 (Feb. 1963).
- Bird and Oldman, 1964. R. Bird and O. Oldman, eds., *Readings on Taxation in Developing Countries* (Baltimore: Johns Hopkins, 1964).
- Bruton and Bose, 1963. H. J. Bruton and S. R. Bose, *The Pakistan Export Bonus Scheme* (Karachi: Institute of Development Economics, 1963).
- Chelliah, 1960. R. J. Chelliah, *Fiscal Policy in Underdeveloped Countries* (London: George Allen & Unwin, 1960).
- Chenery, 1960. H. B. Chenery, "Patterns of Industrial Growth," *American Economic Review*, 50:624-54 (Sept. 1960).

- Chenery, 1961. H. B. Chenery, "Comparative Advantage and Development Policy," *American Economic Review*, 51:18-51 (March 1961).
- Clark, 1951. C. Clark, *The Conditions of Economic Progress* (London: Macmillan, 1939).
- Clark, 1957. R. Clark, "The Economic Determinants of Jute Production," *Monthly Bulletin of Agricultural Economics and Statistics* (FAO), 6(9): 1-10 (Sept. 1957).
- Due, 1963. John F. Due, *Taxation and Economic Development in Tropical Africa* (Cambridge: M.I.T. Press, 1963).
- Eckaus, 1955. R. S. Eckaus, "The Factor Proportions Problem in Underdeveloped Areas," *American Economic Review*, 45:539-65 (Sept. 1955).
- Falcon, 1962. W. P. Falcon, "Farmer Response to Price in an Underdeveloped Area: A Case Study of West Pakistan," Ph.D. diss., Harvard University (1962).
- Falcon, 1963. W. P. Falcon, "Real Effects of Foreign Surplus Disposal in Underdeveloped Economies: Further Comment," *Quarterly Journal of Economics*, 77:323-26 (May 1963).
- Falcon, 1964. W. P. Falcon, "Farmer Response to Price in a Subsistence Economy: The Case of West Pakistan," *American Economic Review*, 54 (Proceedings):580-91 (May 1964).
- Fei and Ranis, 1964. J. C. H. Fei and G. Ranis, *Development of the Labor-Surplus Economy* (Homewood, Ill.: Richard D. Irwin, 1964).
- Ferrer, 1964. A. Ferrer, "Income Distribution," in W. Baer and I. Kerstenetzky, eds., *Inflation and Growth in Latin America* (Homewood, Ill.: Richard D. Irwin, 1964).
- Fisher, 1963. F. M. Fisher, "A Theoretical Analysis of the Impact of Food Surplus Disposal on Agricultural Production in Recipient Countries," *Journal of Farm Economics*, 45:863-75 (Nov. 1963).
- Fishlow and David, 1961. A. Fishlow and P. A. David, "Optimal Resource Allocation in an Imperfect Market Setting," *Journal of Political Economy*, 69:529-46 (Dec. 1961).
- Gandhi, 1966. V. P. Gandhi, *Tax Burden on Indian Agriculture* (Cambridge: Harvard Law School International Tax Program, 1966).
- Georgescu-Roegen, 1960. N. Georgescu-Roegen, "Economic Theory and Agrarian Economics," *Oxford Economic Papers*, 12:1-40 (Feb. 1960).
- Ghulam Mohammad, 1963. Ghulam Mohammad, "Some Physical and Economic Determinants of Cotton Production in West Pakistan," *Pakistan Development Review*, 3:491-527 (Winter 1963).
- Goode, 1952. R. Goode, "Reconstruction of Foreign Tax Systems," *Proceedings of the 44th Annual Conference on Taxation* (Sacramento: National Tax Association, 1952).

- Goode, 1960. R. Goode, "New System of Direct Taxation in Ceylon," *National Tax Journal*, 13:329-430 (Dec. 1960).
- Goode, 1961. R. Goode, "Taxation of Savings and Consumption in Underdeveloped Countries," *National Tax Journal*, 14:305-22 (Dec. 1961).
- Gradin, 1958. V. Gradin, "Effects of Multiple Exchange Rates," *Weltwirtschaftliches Archiv*, 81:176-219 (Heft 2, 1958).
- Haberler, 1950. G. Haberler, "Some Problems in the Pure Theory of International Trade," *Economic Journal*, 60:223-40 (June 1950).
- Hagen, 1958. E. E. Hagen, "An Economic Justification of Protectionism," *Quarterly Journal of Economics*, 72:496-514 (Nov. 1958).
- Haq, 1963. M. Haq, *The Strategy of Economic Planning* (Karachi: Oxford Univ. Press, 1963).
- Heller, 1954. W. W. Heller, "Fiscal Policies for Underdeveloped Economies," in Wald and Froomkin, 1954.
- Hicks, 1961. Ursula K. Hicks, *Development from Below* (London: Oxford Univ. Press, 1961).
- Hirschman, 1963. A. O. Hirschman, *Journeys Toward Progress* (New York: Twentieth Century Fund, 1963).
- Hussain, 1964. S. M. Hussain, "A Note on Farmer Response to Price in East Pakistan," *Pakistan Development Review*, 4:93-106 (Spring 1964).
- IBRD, 1950. International Bank for Reconstruction and Development, *The Basis of a Development Program for Colombia* (Baltimore: Johns Hopkins, 1950). Parts reprinted in (Bird and Oldman, 1964, 413-5).
- Johnson, 1964a. H. G. Johnson, "Fiscal Policy and the Balance of Payments in a Growing Economy," *Malayan Economic Review*, 9:1-13 (April 1964).
- Johnson, 1964b. H. G. Johnson, "Tariffs and Economic Development: Some Theoretical Issues," *Journal of Developmental Studies*, 1:1-30 (Oct. 1964).
- Johnson, 1965. H. G. Johnson, "The Theory of Tariff Structure with Special Reference to World Trade and Development," *Études et Travaux de l'Institut Universitaire de Hautes Études Internationales de Genève*, 4:9-29 (1965).
- Johnston, 1951. B. F. Johnston, "Agricultural Productivity and Economic Development in Japan," *Journal of Political Economy*, 59:498-513 (Dec. 1951).
- Johnston, 1962. B. F. Johnston, "Agricultural Development and Economic Transformation: A Comparative Study of the Japanese Experience," *Food Research Institute Studies*, 3:223-76 (Nov. 1962).
- Johnston and Mellor, 1961. B. F. Johnston and J. W. Mellor, "The Role of Agriculture in Economic Development," *American Economic Review*, 51:566-93 (Sept. 1961).

- Johnston and Nielsen, 1966. B. F. Johnston and S. T. Nielsen, "Agricultural and Structural Transformation in a Developing Economy," *Economic Development and Cultural Change*, 14:279-301 (April 1966).
- Kaldor, 1955. N. Kaldor, *An Expenditure Tax* (London: George Allen & Unwin, 1955).
- Kaldor, 1956. N. Kaldor, *Indian Tax Reform: Report of a Survey* (New Delhi: Ministry of Finance, Govt. of India, 1956).
- Kaldor, 1960. N. Kaldor, *Suggestions for a Comprehensive Reform of Direct Taxation*, Sesssional Paper IV, 1960 (Colombo, Ceylon: Government Publications Bureau, 1960).
- Kaldor, 1962a. N. Kaldor, "The Role of Taxation in Economic Development," paper presented at the International Congress on Economic Development, Vienna (1962).
- Kaldor, 1962b. N. Kaldor, "In the Context of an Underdeveloped Country, What are the Most Appropriate Taxes that can be Relied upon for Maximum Revenue?" Nyasaland Economic Symposium (1962).
- Khan, A. R. 1963. A. R. Khan, "Import Substitution, Export Expansion and Consumption Liberalization," *Pakistan Development Review*, 3:208-31 (Summer 1963).
- Khan, N. A., 1963. N. A. Khan, "Resource Mobilization from Agriculture and Economic Development in India," *Economic Development and Cultural Change*, 12:42-54 (Oct. 1963).
- Krishna, 1963. R. Krishna, "Farm Supply Response in India-Pakistan: A Case Study of the Punjab Region," *Economic Journal*, 73:477-87 (Sept. 1963).
- Krueger, 1962. A. O. Krueger, "Interrelationships Between Industry and Agriculture in a Dual Economy," *Indian Economic Journal*, 10:1-13 (July 1962).
- Kuznets, 1959. S. Kuznets, *Six Lectures on Economic Growth* (Glencoe, Ill.: Free Press of Glencoe, 1959).
- Lerner, 1936. A. P. Lerner, "The Symmetry Between Import and Export Taxes," *Economica*, 3:306-13 (Aug. 1936).
- Levin, 1960. J. V. Levin, *The Export Economies* (Cambridge: Harvard Univ. Press, 1960).
- Lewis, 1963a. S. R. Lewis, Jr., "Government Revenue from Foreign Trade: An International Comparison," *The Manchester School*, 31:39-46 (Jan. 1963).
- Lewis, 1963b. S. R. Lewis, Jr., "Taxation and Growth in the Dual Economy: An Evaluation of Tax Devices in Underdeveloped Countries," Ph.D. diss., Stanford University (1963).
- Lewis, 1963c. S. R. Lewis, Jr., "Some Problems in the Analysis of the Dual Economy," *Pakistan Development Review*, 3:527-46 (Winter 1963).

- Lewis, 1964. S. R. Lewis, Jr., "Aspects of Fiscal Policy and Resource Mobilization in Pakistan," *Pakistan Development Review*, 4:261-82 (Summer 1964).
- Lewis, 1965. S. R. Lewis, Jr., "Domestic Resources and Fiscal Policy in Pakistan's Second and Third Plans," *Pakistan Development Review*, 5:461-95 (Autumn 1965).
- Lewis, 1966. S. R. Lewis, Jr., Ch. 6 of *Economic Policy and Industrial Growth in Pakistan* (Williamstown, Mass.: Center for Development Economics, Williams College, 1966).
- Lewis, 1948. W. A. Lewis, *The Principles of Economic Planning* (London: George Allen & Unwin, 1948).
- Lewis, 1954. W. A. Lewis, "Economic Development with Unlimited Supplies of Labour," *The Manchester School*, 22:139-91 (May 1954).
- Lewis, 1955. W. A. Lewis, *The Theory of Economic Growth* (Homewood, Ill.: Richard D. Irwin, 1955).
- Lewis, 1958. W. A. Lewis, "Unlimited Labour: Further Notes," *The Manchester School*, 26:1-32 (Jan. 1958).
- Lewis, 1965. W. A. Lewis, "A Review of Economic Development," *American Economic Review*, 55 (Proceedings):1-16 (May 1965).
- Little, 1964. I. M. D. Little, "Tax Policy and the Third Plan," in Rosenstein-Rodan, 1964, 30-76.
- Manoilescu, 1932. M. Manoilescu, *The Theory of Protection and International Trade* (London: P. S. King and Staples, 1932).
- Martin and Lewis, 1956. A. Martin and W. A. Lewis, "Patterns of Public Revenue and Expenditure," *The Manchester School*, 24:203-44 (Sept. 1956).
- Meade, 1955. J. E. Meade, *The Theory of International Economic Policy, Volume II: Trade and Welfare* (London: Oxford Univ. Press, 1955).
- Meier, 1963. G. M. Meier, *International Trade and Development* (New York: Harper and Row, 1963).
- Meier, 1964. G. M. Meier, *Leading Issues in Development Economics* (New York: Oxford Univ. Press, 1964).
- Musgrave, 1959. R. A. Musgrave, *The Theory of Public Finance* (New York: McGraw-Hill, 1959).
- Nicholls, 1960. William H. Nicholls, "The Place of Agriculture in Economic Development," in K. Berrill, ed., *Economic Development with Special Reference to East Asia*, Proceedings of a Round Table sponsored by the International Economic Association, Gamagori, Japan, April 1960 (International Economic Association, 1963). Reprinted in C. K. Eicher and L. W. Witt, eds., *Agriculture in Economic Development*, 11-44 (New York: McGraw-Hill, 1964).

- Nicholls, 1963. W. H. Nicholls, "An 'Agricultural Surplus' as a Factor in Economic Development," *Journal of Political Economy*, 71:1-29 (Feb. 1963).
- Nurkse, 1953. R. Nurkse, *Problems of Capital Formation in Underdeveloped Countries* (New York: Oxford Univ. Press, 1953).
- Ohkawa, 1961. K. Ohkawa, "Balanced Growth and the Problem of Agriculture," *Hitotsubashi Journal of Economics*, 2:13-25 (Sept. 1961).
- Okun and Richardson, 1961. B. Okun and R. W. Richardson, *Studies in Economic Development* (New York: Holt, Rinehart, and Winston, 1961).
- Pal, 1964. M. L. Pal, "Determinants of the Domestic Prices of Imports," *Pakistan Development Review*, 4:597-622 (Winter 1964).
- Perkins, 1964. D. Perkins, "Centralization and Decentralization in Mainland China's Agriculture (1949-1962)," *Quarterly Journal of Economics*, 78:208-37 (May 1964).
- Power, 1963. J. H. Power, "Industrialization in Pakistan: A Case of Frustrated Take-Off?" *Pakistan Development Review*, 4:191-207 (Summer 1963).
- Prest, 1962. A. R. Prest, *Public Finance in Underdeveloped Countries* (London: Weidenfeld & Nicolson, 1962).
- Radhu, 1965. G. Radhu, "The Relation of Indirect Tax Changes to Price Changes in Pakistan," *Pakistan Development Review*, 5:54-63 (Spring 1965).
- Ranis and Fei, 1961. G. Ranis and J. C. H. Fei, "A Theory of Economic Development," *American Economic Review*, 51:533-65 (Sept. 1961).
- Rolph, 1954. E. R. Rolph, *The Theory of Fiscal Economics* (Berkeley: Univ. of California Press, 1954).
- Rosenstein-Rodan, 1964. P. N. Rosenstein-Rodan, ed., *Pricing and Fiscal Policies: A Study in Method* (London: George Allen & Unwin, 1964).
- Rostow, 1960. W. W. Rostow, *The Stages of Economic Growth* (Cambridge: Cambridge Univ. Press, 1960).
- Sahota, 1961. G. S. Sahota, *Indian Tax Structure and Economic Development* (Bombay: Asia Publishing House, 1961).
- Schlesinger, 1952. E. R. Schlesinger, *Multiple Exchange Rates and Economic Development*, Princeton Studies in International Finance (Princeton: Princeton Univ. Press, 1952).
- Schultz, 1960. T. W. Schultz, "Value of U.S. Farm Surpluses to Underdeveloped Countries," *Journal of Farm Economics*, 42:1019-30 (Dec. 1960).
- Schultz, 1964. T. W. Schultz, *Transforming Traditional Agriculture* (New Haven: Yale Univ. Press, 1964).
- Symposium, 1958. A Symposium, "The Quest for a Stabilization Policy in Primary Producing Countries," *Kyklos*, 11:139-265 (Fasc. 2, 1958).

- Symposium II, 1959. Symposium II, "Stabilization and Development of Primary Producing Countries," *Kyklos*, 12:269-401 (Fasc. 3, 1959).
- UNTAA, 1954. United Nations, Technical Assistance Administration, *Taxes and Fiscal Policy in Underdeveloped Countries* (New York: United Nations, 1954).
- Wai, 1963. U Tun Wai, "Taxation Problems and Policies of Underdeveloped Countries," *Staff Papers*, 9:428-48 (Nov. 1962).
- Wald, 1959. H. P. Wald, *Taxation of Agricultural Land in Underdeveloped Countries* (Cambridge: Harvard Univ. Press, 1959).
- Wald and Froomkin, 1954. H. P. Wald and J. N. Froomkin, eds., *Papers and Proceedings of the Conference on Agricultural Taxation and Economic Development* (Cambridge: Harvard Law School International Program in Taxation, 1954).
- Walker, 1955. D. Walker, "The Direct-Indirect Tax Problem: Fifteen Years of Controversy," *Public Finance*, 10:153-77 (Nov. 1955).
- Walker, 1962. D. Walker, "Marketing Boards," paper presented at the International Congress on Economic Development, Vienna (1962).
- Williamson, 1961. J. G. Williamson, "Public Expenditure and Revenue: An International Comparison," *The Manchester School*, 29:43-56 (Jan. 1961).
- Winston, 1965. G. C. Winston, "Income and the Aggregate Allocation of Effort," *American Economic Review*, 55 (Proceedings):375-85 (May 1965).
- Winston, 1966. G. C. Winston, "An International Comparison of Income and Hours of Work," *Review of Economics and Statistics*, 48:28-39 (Feb. 1966).