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THE INCIDENCE AND ECONOMIC EFFECTS OF INDIRECT TAXATION IN MALAWI

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BY

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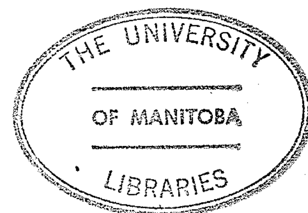

ABSTRACT

The study investigates the effects of indirect taxes on resource allocation and income distribution on the Malawi economy. In the process of doing so, it attempts to shed some light on foreign trade effects and changes in relative factor and consumer prices as well as problems of indirect taxation which might be peculiar to less developed countries.

The basic method for the analysis is the use of a general equilibrium model in an input-output framework with ten production sectors. From the input-output table, input-output coefficients, tax rates, factor supplies, production and demand functions, and export and import functions are derived. By substitution, these functions are reduced to a single labour market clearing equation containing one unknown -- the wage-rental ratio. The solution to this equation yields an equilibrium wage-rental ratio from which relative prices, outputs, factor employments, exports and imports can be computed.

In this study indirect taxes are separated into taxes on inputs (intermediate taxes) and taxes on final outputs (final demand taxes). To estimate the effects of indirect taxes on resource allocation the model is employed to generate the following solutions:

A. The initial equilibrium solution obtained with all indirect taxes included to provide a reference against which the effects of indirect taxes can be measured.

B. A solution obtained with all indirect taxes set equal to zero to measure the effects of the whole indirect tax structure;

C. A solution obtained with intermediate taxes set equal to zero to measure their effects;

D. A solution obtained with final demand taxes set equal to zero to measure their effects.

The solutions for relative prices of (A.) and (E.) are compared to measure the magnitude of price changes resulting from the indirect taxes. These are then used in conjunction with data on income and consumption patterns to measure the incidence of indirect taxes across income groups.

The results show that:

A. Intermediate taxes dominate final demand tax effects.

B. When all taxes are removed the wage-rental ratio rises.

C. Total output, factor employments and exports rise while prices and imports fall significantly in the manufacturing sectors when taxes are removed. The reverse is true for primary and service sectors.

D. When taxes are removed, final demand output decreases in primary and service sectors. This

effect is more pronounced with final demand taxes than with intermediate taxes.

E. The tax burden with respect to income is slightly progressive except for the high income classes. With respect to expenditure it is roughly proportional.

F. The tax burden is more progressive in the rural than in the urban areas.

G. The urban areas bear a heavier tax burden than the rural areas.

It can be concluded that Malawi indirect taxes have distorting effects on resource allocation. They shift productive resources away from the manufacturing to the primary and service sectors. Further, that indirect taxes in Malawi bear more heavily on labour income than capital income.

Finally, there is some evidence that the indirect tax structure has elements of progressivity but that these elements are not strong enough to redistribute income significantly.

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CHAPTER 1

INTRODUCTION

The tax structure of any economy has a direct relationship with the growth of the economy. For an economy to prosper the tax structure has to fulfil certain objectives or, what have been refered to as "canons" of taxation. These objectives have to be consistent with the social and economic goals of the society employing the taxes.

In deciding on the Malawi tax structure the government recognized:

> ... the importance, in the economic and social circumstances of Malawi, of indirect taxes as a means of ensuring efficient, low cost, tax administration; of ensuring that all sections of the community contributed to government revenue according to their means; ... by careful design, indirect taxes could be progressive in their incidence on individuals in different income brackets ... encourage initiative, enterprise, saving and investment, and ... it was essential to avoid forms and levels of taxation which would act as a disincentive in these respects ...[1]

Purpose and Scope of the Present Study

The objectives stated above are consistent with the familiar "canons" of taxation, namely, revenue, equity, optimum resource allocation and administrative efficiency. The

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[1]Malawi Government Treasury Document, 1970.

central concern of this study is to investigate the resource allocation and equity issues involved in Malawi's indirect tax structure, i.e., analyse the tax structure in terms of its effects on intersectoral factor movements and its incidence among income groups. However, issues pertaining to revenue and administrative efficiency will also be given some attention.

Many case studies of tax incidence in less developed countries have recently appeared. Charles McLure, for example, has studied the incidence of the Colombian tax structure[2] and incidence and income distribution in Panama.[3] Other examples include Rao's work on the Indian corporate income tax incidence,[4] Krzyzaniak and Ozmucur's work on income distribution and tax incidence in Turkey,[5] and Richard

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[2]Charles E. McLure Jr., "The Incidence of Taxation in Colombia" in Fiscal Reform for Colombia: Final Report and Staff Papers of the Colombian Commission on Tax Reform ed. by Malcom Gillis, Harvard University, 1971, pp. 239-66. Also Program of Development Studies, Paper No. 14 (Rice University, 1971).

[3]Charles E. McLure Jr., "The Distribution of Income and Tax Incidence in Panama 1969," Public Finance Quarterly, Vol. II, No. 2, 1974.

[4]Vganapathi Rao and K.S. Hanumanta Rao, "Incidence of the Corporate Income Tax in the Short-Run: The Case of Indian Corporations," Public Finance, Vol. XXVI (1971), pp. 586-606.

[5]Marian Krzyzaniak and Suleyman Ozmucur, "The Distribution of Income and the Short-Run Burden of Taxes in Turkey, 1968," Finanzarchiv, Vol. 32 (1973), pp. 69-97.

Webb's on tax policy and incidence in Peru.[6]

Other case studies which have focused on indirect taxes and their effects include Levin's work on the Colombian sales tax,[7] Gillis' work on the Chilean sales tax,[8] and Baer's work on the retail sales tax of Costa Rica and Honduras.[9]

So far little work has been done along these lines in Africa, although there has been some effort to adapt tax theory to the African setting. Examples of this can be found in Due,[10] Orewa,[11] and Due and Robson.[12]

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[6]Richard C. Webb, "Tax Policy and the Incidence of Taxation in Peru," Wilson School of Public and International Affairs, Discussion Paper No. 27 (Princeton University, 1972).

[7]Jonathan Levin, "The Effects of Economic Development on the Base of a Sales Tax: A Case Study of Colombia," IMF Staff Papers, Vol. XV (1968), pp. 30-101.

[8]Stephen Malcom Gillis, "Sales Taxation in a Developing Economy: The Chilean Case" (unpublished doctoral dissertation, University of Illinois, 1968).

[9]Donald E. Baer, "The Retail Sales Tax in a Developing Country: Costa Rica and Honduras," National Tax Journal, Vol. XXIV, No. 4 (Dec., 1971).

[10]John F. Due, Taxation and Economic Development in Tropical Africa, MIT Press, Cambridge, 1963.

[11]Oka G. Orewa, Taxation in Western Nigeria, Oxford University Press, 1962.

[12]John F. Due and Peter Robson, "Tax Harmonization in the East African Common Market," in Fiscal Harmonization in Common Markets, Vol. II: Practice, ed. Carl S. Shoup, Colombia University Press, New York, 1967, pp. 553-605.

Malawi, in particular has received little attention from economists. It is even more significant that problems of public finance have received even less attention. Only one serious study, by A.P.L. Minford, exists.[13] However, its emphasis was aggregative and its scope was too wide to provide a penetrating analysis. Given this situation, a more detailed study of the effects of taxes in Malawi seems extremely desirable.

Unlike Minford's work and some of the other studies mentioned above, this study considers sales and excise taxes as well as customs duties, but excludes all direct taxes, licences and fees. It is hoped that the study will not only help to fill a void in the literature on Malawi, but also provide yet another method of analysing tax incidence and production effects of taxes through its use of a general equilibrium model.

Direct tax considerations are neglected in the study for two major reasons. First, since Malawi, like many other less developed countries, relies relatively more on indirect than direct taxes, 59 percent of all revenue coming from indirect taxes in 1972, it is appropriate to begin a study of its tax

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[12] Also in Taxation for African Economic Development, ed. Milton Taylor, Africana Publishing Corporation, New York, 1969, pp. 491-514.

[13] A.P.L. Minford, "A Model of Tax Incidence for Malawi," African Public Sector Economics, Centre of African Studies, University of Edinburgh, 1971.

structure with indirect taxes.[14] Secondly, with over 90 percent of the population in rural areas where direct taxes barely touch them, the impact of direct taxes takes a back seat when compared with indirect taxes, which do reach the rural population.[15]

Expenditure incidence is also left out of the study. There are similarities in methodology in the analysis of incidence on both sides of the budget. However, it can be argued that expenditure incidence is sufficiently independent of tax incidence to warrant a separate study.

Excess burden is another topic excluded from this analysis. The analysis of excess burden is defined as a measure of the difference between total loss in welfare resulting from the imposition of a tax and the loss that would result if another type of tax, yielding the same revenue but causing no distortions in economic decisions, were imposed. A model developed in Chapter 2 computes what is termed "the true quantity index," which is meant to provide a crude proxy for welfare loss due to tax. As will become clear below, this measure assumes the absence of all other distortions in the economy. The admission of any other distortions may either augment or reduce the size of the loss.

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[14] Cf. Due, Taxation and Economic Development, pp. 25-30.

[15] See Ragnar Nurkse: Problems of Capital Accumulation in Underdeveloped Countries, Oxford University Press, New York, 1953, p. 43.

Indirect taxes, like any other tax except the lump sum tax, impose excess burdens on individuals. Selective indirect taxes force the consumer to reorder his preferences by changing the marginal rates of substitution between one product and another. Through the changes in preference ordering a loss in total welfare results in the absence of other distortions.

The effects of indirect taxes on macroeconomic stability are also omitted in this discussion. Indirect taxes by themselves lessen persistent inflationary pressure by restricting consumption through price increases. However, how effective selective taxes will be in this regard depends on the elasticity of demand for the commodities taxed as well as the elasticity of indirect tax revenue with respect to GDP. If the indirect taxes are highly elastic with respect to GDP, revenues will rise more rapidly than income during times of boom and thus dampen inflationary pressure and work in reverse during slack periods. To what extent the Malawi tax structure performs this function was not examined in this study, although it would provide an interesting avenue for further research.

Another significant exclusion from the study is the subsistence sector. This is partly due to lack of data and partly for convenience. Indirect taxes chiefly affect monetary transactions and only indirectly affect subsistence production and consumption. The imposition of indirect taxes on monetary transactions may discourage subsistence

producers from participating in the monetary economy. This might have a negative effect on the growth of domestic product by affecting the adoption of modern methods of production by subsistence farmers.[16] It might also discourage their entry into the wage labour market. But as the model used in this study assumes that total labour supply is fixed, the exclusion of subsistence labour will therefore have no effect on the results of the model. To the extent that subsistence production constitutes income for the rural population, however, its exclusion will result in over-estimating the tax burden as a percentage of its total income. However, given the fact that our main interest is the effects of indirect taxes on monetary transactions, it was felt that the subsistence sector should not be dealt with here.

The subsistence sector is not identifiable as a group of individuals engaged in production for own consumption or non-monetary transactions only. The majority of the rural population participate in both monetary and non-monetary activities. Rural non-monetary activities define the subsistence sector. In 1972, the year we are concerned with in this study, the subsistence sector contributed 34 percent to GDP, of which 88 percent was from agriculture while the rest was derived from small manufacturing (handicrafts),

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[16] It is assumed here that a purely subsistence farmer is less likely to accept modern farming methods than a commercial one. However, once he enters the monetary sector he tends to be more readily attracted to them.

construction, transport and other services.[17] All activities that are not classified as non-monetary are regarded as being in the monetary sector. In 1964, the year the country obtained independence, the monetary sector contributed 53 percent to GNP and by 1972 its contribution had risen to 66 percent with an average annual growth rate of 13.4 as compared to 6.9 percent for the non-monetary sector.[18] For this and other reasons mentioned above, the monetary sector is worth a study on its own.

Description of the Malawi Economy

Since Malawi has received little attention in the literature, a brief description of the economy may provide an appropriate foundation for the analysis which follows.

Malawi is a small land-locked nation in south eastern Africa. The 1966 census estimated the population at 4.04 million and growing at approximately 3 percent per annum. This rate of growth puts the population in 1972 at about 4.82 million.

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[17] Figures derived from Reserve Bank of Malawi, Financial and Economic Review, Vol. VI, No. 2, 1974, p. 116.

[18] The year 1972 was selected for this study partly because it was the most recent year for which data were available in an adaptable form, but also partly because by that year the present indirect tax structure had had a three year trial period, giving the economy a reasonable amount of time to readjust to the new situation.