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PUBLIC FINANCE IN UNDERDEVELOPED COUNTRIES:
A SURVEY OF SOME PROBLEMS

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Public Finance in Underdeveloped Countries:

A Survey of Some Problems

Two of the criteria which have been used in evaluating a country's fiscal performance are the ratio of government domestic revenues, R , to national income, Y , and the amount of government saving, i.e., government surplus on current account. Both measures can be interpreted as indicators of a country's willingness to pursue fiscal policies conducive to development. The fiscal burden criterion assumes that the government sector will use resources more effectively than the private sector because it undertakes "developmental" expenditures which the private sector would not find profitable. Further it assumes that a high burden indicates the actual availability of resources for developmental use as opposed to ordinary budget expenses. The savings criterion assumes that government saving increases the overall national saving rate, i.e., if there is any interaction between public and private saving, the increase in public saving more than offsets the decrease in private saving.

As we shall show in the second part of the paper by examining the performance of several countries, aggregate criteria are likely to be of little use, even as shorthand devices, as indices of the performance of the public sector. All such macroeconomic criteria must be expanded to include information on the composition of both revenue and expenditures, the distribution of revenues by level of government, methods of deficit financing, etc. In the first part of this paper we shall analyze the likely impact of a variety of taxes on the growth process, indicating how particular taxes are likely to affect the allocative efficiency of the economy, the equality of income distribution and the growth of the economy.

Ideally, it would be desirable to state our policy goals, specify the impact of each type of tax upon these objectives, and choose a mix of taxes which allows the achievement of these goals. Such a program cannot be carried out because of the lack of precise knowledge about the quantitative effects of many taxes; indeed in many situations it is difficult to ascertain even the qualitative impact of particular taxes, e.g., whether the corporation tax is shifted forward to the product users or backwards to factor suppliers. Thus, in analyzing each tax we shall concentrate on a small number of important issues for which theoretical deductions concerning their impact are likely to be unambiguous.

Personal Income Tax

The personal income tax currently provides only a minor source of revenue for most underdeveloped countries. However, it will have to be utilized increasingly if the government revenue share is to rise at the same time that distributional equity is maintained. Currently, there are several problems which require remedies if the tax is to provide a greater yield, among them excessive personal exemptions and low rates. Many countries provide personal exemptions which are five to ten times per capita income. A not atypical example is provided by Honduras where the basic personal exemption is 2,000 lempira (\$1,000), 800 lempira for a wife and 600 for each child. Thus, the basic nontaxable portion of income for a family of four is \$1,600, while the per capita income for a family of four is about \$800. Even these figures understate the relative importance of the exemptions--the median income for a family of four is certainly much less than \$800 since the income distribution is very uneven.¹

¹ It should be noted that converting lempira into dollars at the existing exchange rate probably understates the absolute income in terms of Honduran purchasing power.

Thus, the maximum income which is tax free is quite high, and a large potential source of tax revenue is foregone. This is not to imply that an income of say \$1,600 per year indicates an overly comfortable living standard, but it does seem that a family with more than twice the average income should pay at least some tax. It is difficult to see how one could justify exemptions of this magnitude as providing a "minimum" decent standard of living when perhaps 60 per cent of the population live at lower levels. This should also be considered when tax exemption levels are raised in inflationary economies to protect the "equity" of the tax structure.²

Besides granting high exemptions most countries impose very low rates, so that the average tax rate (tax/personal income) is very low. For example, in Columbia a hypothetical business executive earning about \$8,000 a year would pay a tax of 11 per cent, despite the fact that he is probably in the first decile of the income distribution.³ Similarly, in Honduras the tax rate on the first \$2,500 of taxable income is only 3 per cent so that a family of four with an income of \$4,500 would, given the above mentioned exemptions, pay a tax of only \$75 or a rate of 1.7 per cent.

Frequently, the factors cited as the main obstacles to effective income taxation are socio-economic, such as illiteracy and absence of high levels of integrity. As the above references to exemption and rate structures suggest, an income tax which effectively tapped the incomes of the relatively well-to-do would provide substantial revenues

² See Joint Tax Program, Fiscal Survey of Columbia, 1965, p. 65.

³ Joint Tax Program, op. cit., p. 63.

and also help to limit the extent of income inequality. Presumably people in this group are literate and few in number so that the alleged administrative problems would not, in fact, be overwhelming. Data on personal income distribution for some Latin American countries indicate that a small group in each country receives a substantial share of personal income (Table 1).

Although the type of inequality cited here probably does not exist in Africa or Asia, in these areas too, both the exemption and rate structure are much too generous frequently providing for exemptions of five times per capita income.⁴ Thus, reductions in exemptions, increases in tax rates and concentration of more administrative personnel upon a small proportion of the population could yield significant revenue gains and provide the basis for increased long-run elasticity of tax receipts.

Table 1
Share of Top Income Groups in Population
and in Personal Income

	<u>Percentage of</u> <u>Population</u>	<u>Percentage of</u> <u>Income</u>
Chile	5.0	25.4
	12.7	43.6
Ecuador	1.2	18.9
	5.0	25.2
Mexico	5.0	36.7
	25.0	67.0
Venezuela	5.0	30.5
	21.0	65.1

SOURCE: V. Tanzi, "Personal Income Taxation in Latin America: Obstacles and Possibilities." National Tax Journal, June, 1966.

⁴ See, for example, H. Hinrichs, Mobilizing Government Revenues for Development in Nigeria - mimeo.

In addition to the loss in revenues caused by the above factors, another revenue problem is present in inflationary economies. In these countries, it is claimed that the income tax is an inefficient source of revenue, as inflation leads to a lower tax-income ratio. The argument is usually made that tax receipts are collected with a lag and that an increase in prices between the time when the liability occurs and the time when payment is made reduces the value of the tax payment. However, an economy experiencing a constant rate of inflation should not necessarily encounter this problem. If prices are increasing at a constant rate and in each period the ratio of liabilities to income is constant, then the rate of growth of tax receipts will be the same as the rate of growth of income, although the ratio of tax receipts to income will be lower than it would have been in the absence of inflation. That is, if the ratio of receipts to income would have been 0.20, then if prices are increasing at a rate of 25 percent per year, the ratio will be .16 - and will remain at .16. The big "if" here is the liabilities-income ratio: if evasion is increasing so that this ratio decreases, then clearly receipt-income ratio will fall. The point to be emphasized is that there is no mechanical reason why the receipts-income ratio must fall over time simply because of the price increases. Rather, it is necessary that the extent of evasion be increased, which of course, may occur as taxpayers discover new devices for hiding income. On the other hand, it is true that if the inflation is accelerating, even a constant liabilities to income ratio will lead to a decreasing tax income ratio over time. On the other hand, a slowing in inflation will raise this ratio.

The effect of inflation, namely, reducing the tax-income ratio below the level which would hold without inflation can be eliminated by pay-as-you-earn taxation or by tying tax liabilities to some price index. Recent experience in both Brazil and Chile indicates the latter is a feasible program, at least in Latin American where the ability level of tax administrators is relatively high.

The main allocation effects of a personal income tax are the possible discouragement of work effort and saving. Any income tax (not just a progressive one as is sometimes supposed) decreases the incentive to work as the income foregone by not working an hour is lower than it was prior to the tax. Against this, one must balance the inducement to work more hours as a result of the decrease in one's income level. For most of the LDC the importance of the substitution effect is certainly minimal as much of the tax is collected from workers who have little choice concerning their standard workweek, although they could exhibit higher degrees of absenteeism. However, given extensive unemployment and competition for jobs, it is unlikely that this last factor could be very significant. Even for the self-employed, there is no evidence of a decrease in average workweek following increases in the tax.

An income tax may reduce saving relative to an expenditure tax because the return from saving is taxed under an income but not under an expenditure tax. It is extremely difficult to counteract this effect, and attempts to do so may be unwarranted unless it can be established that **it is**, quantitatively significant.

Some attempts e.g., in Ceylon have been made to simulate the effect of an expenditure tax by granting tax rebates which are based on the value of a) one's deposits in a special account in the Central Bank, b) investment in government securities and c) purchase of life insurance

premiums in excess of a certain specified amount. However, such programs face enormous administrative difficulties as their effective enforcement requires personal asset statements at the beginning and end of each period as well as income statements. In the absence of these, a person could gain tax benefits for "saving" while in fact he is dissaving, e.g., if one had a sizable initial portfolio of unregistered assets, part of which is spent on current consumption and the rest of which is switched to forms which qualify for tax rebates.

Taxing interest income reduces the return after saving; however, there is no empirical evidence for any country which shows that the interest elasticity of personal saving is significantly different from zero. Even if the elasticity were positive (i.e., the reduced return leads to a decrease in personal saving), one could not be certain of its effects on the national saving rate as public saving out of the tax revenue might more than offset the decrease in private saving. In addition one would expect that many other factors will strongly influence private saving such as the expected rate of inflation and general confidence in the government. Indeed, these are likely to overwhelm the influence of the income tax on the rate of return. Further, most nongovernment saving occurs in the corporate sector and this is at most marginally influenced by the personal tax rate.⁶

The income tax should, of course, be the most useful tax for redressing some of the inequality which is likely to occur during the development process. A frequent objection to any income redistribution is that it may decrease the private saving ratio if the upper income groups have higher marginal propensities to save than the lower income

⁶ See Richard Goode, "Personal Income Tax in Latin America" in Fiscal Policy for Economic Growth in Latin America.

groups. As yet there is no statistical evidence to confirm that such differences in marginal (as opposed to average) propensities exist. Even if there are differences, it is important to ascertain whether the savings are used productively or go into relatively useless forms such as luxury apartment buildings. It can also be argued that if some part of the spending of all household units is attributable to emulation of the consumption patterns of higher income groups, and if this emulation leads to higher propensities to consume at all levels, then a progressive tax which decreased the consumption expenditures of the highest income groups would lead to a decrease in consumption at all income levels.⁷ In the absence of household consumption data, it is not possible to reach definite answers to these questions; all we can do is point out the uncertainty of the alleged inevitability of a decrease in either personal or national saving if a progressive income tax is introduced.

In the preceding we have been concerned with "vertical" equity, i.e., with the tax burden on groups which have unequal incomes. Many tax systems violate the principle of horizontal equity, i.e., individuals with the same incomes pay different taxes; the tax liabilities depending on the sources of income. Latin American countries, in particular, use schedular taxes, i.e., different tax rates on labor, property, interest income, etc. Moreover, each type of income usually has its own set of exemptions and deductions, a factor which may further decrease the equity of the tax. Although most countries have a "complementary" tax, i.e., a tax on all gross income regardless of its origin, it cannot redress the horizontal inequities caused by the schedular taxes. The small complementary rate makes it difficult to introduce significant progression into the system as people with high incomes may have these incomes originate in such a way that they pay relatively low rates on each type.

⁷ See Tanzi, V., and Ascheim, V., "Saving, Investment and Taxation in Underdeveloped Countries," *Kyklos*, 1965.

A unification of the tax system combined with reasonable exemptions and deductions is necessary in those countries having such tax systems.

Commodity Taxes

Commodity taxes may be placed on the sale of goods at the manufacturing, wholesale or retail level, usually, though not always, at a uniform rate. The tax may be a single stage one, taxing only retail sales, for example, or a multistage tax on value added or gross sales. In addition most countries have special excise taxes on goods with price inelastic demands, such as alcohol, tobacco and gasoline.

It should be emphasized that a retail sales tax is preferable to a wholesale or manufacturing tax because a given tax rate at the wholesale (or manufacturing) level may be reflected in different percentage price changes at the retail level, depending upon the markup practices of retailers (or wholesalers). Thus, the government may lose some control over relative price movements which it might well want to retain. It is frequently thought that a retail tax is impossible to administer because of the large number of small sellers. However, the recent introduction of a new retail tax in Honduras should receive attention from other countries.⁸

Under this plan all retailers who have more than a specified monthly sales level must register with the government. When purchasing goods from wholesalers or manufacturers the registered companies do not pay tax whereas smaller sellers without the registration certificate must pay the tax. In effect this system utilizes a retail tax for large retailers, (who are responsible for a majority of sales) and a wholesale

⁸ For a description see John Due, "The Sales Tax in Honduras" mimeo, prepared for the Internal Revenue Service, Foreign Tax Advisory Service.

and manufacturer's tax for the smaller ones, thus deriving at least some of the benefits of the retail tax.

In the following, we discuss the more important aspects of retail taxes, and, where relevant, indicate the qualifications necessary when either wholesale or manufacturing taxes are used.

The revenue which the sales tax yields depends upon both the rate of taxation and the base to which it is applied. The potential base for the retail sales tax is total consumption and the elasticity of the base is $\frac{\Delta C}{\Delta Y} \frac{Y}{C}$ where C is total consumption and Y total income. However, some goods such as food are usually exempt from taxes so that the actual tax base is less than the potential one. However, the elasticity of the actual base will be greater than that of the potential base as most of the goods with high income elasticities are subject to taxation.⁹ There is no necessary reason to impose uniform rates on all goods (Columbia, for example, has three different rates) unless it is believed that it would be administratively more difficult than a uniform tax. If multiple rates are used, the elasticity of the tax system can be made greater by placing high taxes on those goods with high income and low price elasticities.

The sales tax structure should be one of the ad valorem type (the tax being a fixed percentage of the selling price) rather than a specific fixed tax per unit as the former will tend to generate rising revenues during inflation as the tax base increases pari passu with prices. Payments by retailers should be done on a monthly basis where possible.

⁹ This may be true at very low levels of income as the income elasticity of the demand for food is probably as high as that for other goods.

The potential beneficial allocation effects of sales taxes in the LDC have not been utilized systematically. For example, reduced sales taxes could be used in a selective manner to encourage the sales of industries having high linkage effects.¹⁰ In labor surplus economics one could favor industries with high labor intensities and in economies with balance of payments difficulties, high sales taxes could be used to discourage the purchase of goods which have high import components. This tax is particularly useful for correcting the bias due to the tariff exemptions usually granted on intermediate imports, regardless of whether their ultimate use is to be consumption or investment. Such taxation should switch demand to consumption goods with lower import components, thus freeing foreign exchange for investment goods.

The use of sales taxes in this manner is likely to work in similar directions, e.g. changing consumption patterns to goods with low import components should increase employment as does the favoring of industries with high labor intensities, although it is not inconceivable that the goals may occasionally conflict. Administratively, it would indeed prove difficult to attempt to pursue all these goals simultaneously. Certainly, though, some movement in the direction of using these taxes as an allocative device should be begun, even if one goal at a time is followed. A tax system with say three different rates such as the Columbian one could serve as an initial step. Further, if these three rates were to replace the several hundred currently used in many countries, there would probably be a net decrease in the administrative burden as well as a decided gain in allocative efficiency.

¹⁰ Throughout this section on allocation effects we shall assume that sales taxes are fully shifted so that a decrease in the tax will be reflected in a decrease in prices.

So far we have been discussing retail taxes and it was assumed that the use of differential tax rates would be reflected in differential price movements which would move the economy towards some specified goals. If the tax is imposed on wholesalers or retailers, the attempt to discriminate among goods would depend on the pricing procedures of retailers if a wholesale tax is used, and of wholesalers and retailers if a manufacturer's tax is employed. Nevertheless, the direction of change is still likely to be the desired one.

A popular form of commodity taxation in many countries (e.g. Peru, Chile, Korea) is the turnover tax which is levied, at a fixed percentage, on all transactions in an economy. That this tax is likely to lead to significant distortions can be seen if we consider two industries, A and B, which produce (different) final goods. Both use their primary factors with identical efficiency and purchase their intermediate inputs from firms in which factor productivities are identical. The value added embodied in the final output of A and B is thus produced with the same efficiency and assuming the value added is the same for both industries, the price for both goods should be identical under competitive conditions. However, if a turnover tax is used and A is more vertically integrated than B, then the price of B will rise relative to that of A. Thus, one of the dangers of the turnover tax is randomness of price movements and the possibility that these will be contrary to development policy. Other difficulties include the strong inducement for vertical integration, and the administrative difficulty of exempting exports from the tax if such exemption is desired. While many of these flaws would be unimportant if low rates prevailed, in practice they may be considerable, e.g. Peru's rate is 4.5 percent.

The sales tax on nonluxury goods is likely to be regressive as the impact on purchasing power of low income groups will be greater than that on upper income groups since the latter spend a smaller proportion of their income on these goods. To partially redress this inequity high taxation of luxury goods is often advocated. However, the equity effects of luxury taxes are more complex than is usually realized. As Musgrave has emphasized, the distributional effect of a sales tax depends not only on changes in the relative price of products but also upon movements in factor earnings attributable to the tax. For example, if a tax is imposed on a luxury good which has a high input of low income workers, the net equity effects of the tax must take into account the lower rate of growth of their wages. The usual assumption that taxation of luxury goods results in increased equity hence assumes that the effects on the factor returns side are small. Before adopting increased luxury taxation the input structure of the good must thus be considered as well as possible employment alternatives for displaced workers.

Corporate Taxation

Although corporate taxation currently plays a small role in total revenue collections of the LDC,¹¹ it will be necessary to obtain greater revenue from it as other sources, e.g. import duties, decline in relative importance. From the viewpoint of development the main features of interest are the incentive and "pioneer" industry laws.

Increasingly, corporate tax laws embody provisions to encourage investment, especially accelerated depreciation and investment allowances (writeoffs of more than the cost of investment). The logic of

¹¹ No exact data are available as almost all countries report corporate and personal income taxes jointly.

these allowances is to allow investors to recoup their capital outlays more quickly, thus reducing the risks which they face. Unfortunately these laws tend to encourage the use of more capital intensive modes of production than would other incentives, despite the extensive unemployment in many of these economies.

Thus several alternative incentive policies such as tax holidays or subsidies are preferable. Any of these could be used to guarantee a given rate of return on capital, which is presumably, the primary concern of the company. Before entering into a discussion of these provisions it should be emphasized that whatever method is adopted, it would be desirable if the advantages of the laws could be limited to truly marginal firms as the subsidies or tax holidays granted to infra-marginal firms represent an unnecessary loss of revenue. Because of shortages of administrative manpower many countries are forced to extend incentive provisions to existing profitable companies, which would undertake expansion in any case, or to new companies which will obviously be profitable. The training of personnel who can evaluate requests for favorable treatment will yield a large return.

Tax holidays, i.e. exemption from part or all of a corporation's tax liability have been utilized in many countries. There are two important dimensions to analyze, namely, the amount of investment which was induced by the holiday and the cost to the government in lost tax revenues caused by the granting of exemptions to companies which would have invested without the exemption. Evidence on the former is inherently difficult to obtain as it must rely on response to questionnaires, a notably unreliable procedure. Some evidence does exist on the Puerto Rican and Mexican experiences. Clearly the former is not a helpful case

to consider, given the close ties with the U.S. economy. Ross and Christensen in a survey in Mexico found that 24 of 25 firms granted a tax holiday would have begun business even without the exemptions. This, of course, cannot be taken as evidence of the lack of importance of the exemptions as they should only affect decisions of firms at the margin while the sample may have included only firms which were infra-marginal. Further, there are many other considerations which will enter the investment decision such as permissible levels of repatriation of earnings, government stability etc. Of even more interest is the fact that of 160 companies which did not receive exemption privileges in 1951-55, 150 nevertheless began production.¹² This suggests that in many of the richer LDC, profit prospects are promising enough to eliminate the need for exemption or other incentives.

Theoretically the revenue loss due to exemption is the reduction in tax revenues paid by firms who would have invested in the absence of the incentive. However, against this one would have to measure the taxes paid by the factors employed by the firms which are induced to invest because of the incentive (assuming these factors would not otherwise have been employed). Thus it is impossible to estimate the revenue loss due to exemption privileges unless we know the amount of investment induced by the exemption.

Although tax holidays are neutral in the sense that they do not distort factor choice, they may be of little value to firms which have low (perhaps negative) profit expectations during the first few years of operations. Because of this possibility it is important to provide for the full carry forward of losses i.e. the offsetting of all early losses against future profits.

¹²S.G. Ross and J.B. Christensen, Tax Incentives for Industry in Mexico, 1959.

Import Taxes

Tariff policies are discussed extensively in other summer research papers and we will therefore consider only a few points. Although import duties constitute an important source of current revenue (see Table 2) they are likely to prove inelastic for two reasons. First, most countries are planning substantial amounts of import substitution, especially at the final product level. Protective tariffs are imposed on those commodities which are to be produced domestically and are usually set at levels which will restrict imports and thus customs receipts. Second, many countries as part of their industrial incentive programs exclude from duties many imports of intermediate and capital goods. The LDC will therefore have to rely increasingly on domestic income and commodity taxes.

The practice of exempting all intermediate imports does not discriminate between those inputs ultimately embodied in consumption rather than investment goods, despite the desire of most countries to encourage investment. Ideally any preferential treatment should be achieved by taxation at the level of final transactions; but administratively it may well prove easier to do this at the import level given the likelihood that many consumption goods will continue to escape all sales taxes.

Export Taxes

The export tax may be thought of as an income tax on special forms of income, namely, those which would accrue completely to foreign factors engaged in domestic production and on domestic producers such as farmers who would otherwise escape taxation.

Table 2
Imports Duties as a Percentage of Total
Government Revenue in Selected Countries

Customs Duties as Percentage of
Total Revenue 1962-64

Latin America

Argentina	18.1
Brazil	5.1
Chile	14.2
Columbia	16.1
Costa Rica	44.4
Ecuador	32.1
Honduras	32.2
Mexico	17.5
Nicaragua	51.2

Asia

Burma	19.9
Phillipines	22.2
Taiwan	17.5
Thailand	45.0
India	14.5
Pakistan	23.5

Africa

Ethiopia	41.4
Ghana	37.1
Kenya	28.3
Tanganyika	34.0
Tunisia	23.6
Uganda	27.3

Sources: AID DATA Book

U.N. Statistical Yearbook, 1964

In the absence of an export tax almost the entire revenue accruing to foreign firms from the sale of a country's primary products might be remitted abroad as, for example, in the petroleum industry where domestic value added (primarily wages) is a low percentage of total income originating in the industry. Export taxes thus have the effect of increasing the share of gross national product out of a given gross domestic product.

The institution used to tax domestic producers is usually a marketing board. Although presumably they exist to insulate peasant producers from fluctuations in world demand and supply, their main impact appears to be collection of a tax, as evidenced by the large and continuing profits which they have. For example, between 1947 and 1962 the Nigerian Marketing Board accumulated a surplus of £46.6 million.

What are the effects of these taxes? The incidence of the tax in industries in which there are international cartels (e.g. oil) may well be on foreign users of the products. However, for products for which either substitutes are available or cartels are absent, much of the tax may initially be borne by the foreign firms. These companies could then attempt to pass the tax back to the domestic labor force by reducing wages. To prevent this some countries e.g. Ceylon and Chile have simultaneously introduced minimum wage legislation,¹³ in effect, legislating the "incidence" onto the profit share.

Whether the decrease in profit rates has any adverse effect on the domestic economy depends on the reaction of investment to the lower rate of return. If the companies affected have similar facilities in other countries where the after tax rate of return is greater, invest-

¹³ See Jonathan V. Levin, The Export Economies, p. 271.

ment may fall. However, in many industries such as oil and copper very similar tax arrangements are offered by all the producing countries so that one may safely expect no change in investment practices. Where the resources used are not country specific there is the possibility that investment will indeed be reduced although it is difficult to cite any examples of this actually happening.

Another possible allocation effect may be noted. If the export tax is based on units of output rather than on profits it may discourage utilization of lower grades of ore even though these resources may provide a more efficient source of foreign exchange earnings than alternative activities available to the economy. This apparently occurred, for example, in Bolivia during the early 1950's.¹⁴ Taxation based on profit rather than quantum of output will preclude this result.

Some governments, e.g. Nigeria seem to have been too concerned with revenue to be derived from the marketing board and overlooked the possibility that paying higher prices to peasant farmers might reduce the flow of workers to urban areas. Whether increased crop prices would have such an impact depends inter alia on the price elasticity of supply and the labor intensity of various crops. If the movement of labor to the cities is reduced it will decrease the costs which the government incurs in maintaining the urban unemployed and this saving will partially offset the reduced revenue from the marketing board. The main benefit, however, would be a reduction in the political volatility of the urban unemployed.

¹⁴ R. Goode, "Reconstruction of Foreign Tax Systems reprinted in Bird and Oldman, Readings on Taxation in Developing Countries.

Land Taxation

Taxation of agricultural and urban land constitutes an important potential source of revenue as well as an instrument to achieve other objectives such as increased farm output and decreased speculation in land. In countries in which more than half the total value added originates in agriculture the failure to adequately tax this sector necessarily results in severely diminished government revenues. The subsistence part of this sector is not reached by either sales or income taxes (except where export taxes exist). Small farmers who produce some cash crops and purchase either inputs or consumer goods from the industrial sector may pay some sales tax, but it is likely to be insignificant. Large landowners presumably pay tax on the income derived from their land but usually evasion is considerable and even if it isn't, tax rates are quite low. These considerations suggest the use of land taxes if sufficient revenues is to be derived from the agricultural sector.

Adequate taxation of agricultural land has several requisites. First, it is necessary to carry out a cadastral survey which will show the relevant features of the area (such as soil quality, exposure to sunlight etc.) and to accurately record ownership. This is an enormously time consuming project, but it is an important first step, as in many areas the ownership of land is in fact unknown. When the survey is completed it is necessary to decide on the proper base e.g. land area, annual rental value, potential income etc.¹⁵

¹⁵ For a thorough discussion see H.P. Wald, Taxation of Agricultural Land in Underdeveloped Economies, Chapters 1 and 8.

Whichever base is adopted, it will be quite difficult to revise it given the scarcity of appraisers; thus the base will not be responsive to changes in prices and output.¹⁶ Tax receipts will thus prove to be inelastic with respect to income unless the tax rates applied to the base can be continually raised, again a difficult measure to implement. The revenue from a land tax as a percentage of GNP is therefore likely to decline from its initial height, and cannot be relied upon to contribute significantly to development financing over time. This inelasticity, as we shall see, also has important implications for the allocation effect of land taxes.

Conceptually, land taxes could be used to induce an increase in agricultural production or at least in the marketed portion of current output. For example, a tax on potential output (i.e. on imputed potential income) or on the size of the holding, should lead to greater production as the tax reduces disposable income if supply remains constant, but any income derived from additional output is not subject to tax and accrues completely to the owner. Thus, the fact that the tax is fixed in amount and does not depend on current actual output acts as an incentive for increased production. While such a result may be expected where large landowners do not utilize all their land, or cultivate it inefficiently, it seems unlikely that much of an increase in production could be obtained where the majority of holdings are small peasant ones, as on these production may be assumed to be taking place

¹⁶ Some schemes to automatically adjust the base have been suggested e.g. use of price and production indices but these would be difficult to construct theoretically and practically are certainly beyond the competence of existing administrators. If the tax were placed directly on output, these problems would not arise, but this would in effect constitute an income, not a land, tax.

at levels close to the maximum which the existing technology permits.¹⁷ However, marketed output may well increase if the farmers are currently not earning the cash needed to pay the tax.

The importance of the lack of elasticity in the tax structure may now be seen. The tax incentive to increased output depends on the tax reducing the level of income which landholders enjoy and on their desire to (minimally) reach the initial income level. Once the tax has been imposed there is no incentive to further increase output unless the tax liability is raised further. Thus the benefit in terms of output is of a once-and-for-all variety, or at least constant until the base or rates are again increased. Admittedly the one time benefit may be substantial and induce organizational changes within agriculture which may make the initial movements self sustaining. Nevertheless, it must be remembered that land taxes are not a magic source of either continually increasing revenue or output unless fairly frequent revisions of the tax structure are implemented.

It should be noted that a tax on potential output which maximized incentive is unlikely to narrow the income distribution unless potential output or landholdings are taxed at progressive rates. Indeed the tax may increase income inequality if large landowners are able to increase output more than smaller ones, as may well be the case if they have considerable unused land of high productive potential.

¹⁷ Of course, taxation could make producers receptive to new techniques, but in the short run little increase in output could be expected.

Taxation of Urban Real Estate

Taxation of urban real estate is also a potentially large generator of revenue. A successful tax program, especially on capital gains, would also have the effect of decreasing the attractiveness of investment in urban buildings and land relative to manufacturing. In this connection, a distinction between annual taxes on real estate and the capital gains arising from its sales is quite important. An annual tax on real estate, based, say, on the capital value will only affect the owner of the property when the tax is passed (or increased). There is a decrease in the capitalized value of the property. However, anyone purchasing the property will pay the new capitalized value and still receive the same rate of return. Thus the attractiveness of the yield remains the same.

However, a tax on capital gains is much more likely to reduce speculative investment in real estate, as usually such investment is made in the expectation that if inflation occurs (or continues) the property can be sold at a substantial profit. If the profit were subject to a high tax the attractiveness of such investment would decline. A capital gains tax should be implementable if all sales of property are registered. The tax would be levied on the difference between purchase and sales price and would tend to be self enforcing as buyers would not be willing to understate the purchase price nor would sellers be willing to overstate it.

Recommendations

Given the above outline of major tax problems in the LDC, what policies should be pursued?

Several changes in the income tax structure are necessary, although the priority varies from country to country. One of the first moves in

all countries should be the reduction of the level of personal exemptions to more reasonable levels. This step would both widen the existing tax base, leading to a large initial increase in revenue, and increase the elasticity of the revenue structure over time.

An increase in the coverage of withholding taxes should decrease evasion and, in inflationary economies, increase the ratio of revenue to national income.

For those taxpayers not covered by withholding tax, liabilities should be fully tied to a price index so that delay of tax payment is not profitable. The formula for determining the revised tax liability should not be a simple adjustment of last year's liability by the change in some price index. This would still make it profitable to delay payment, if the money could be invested at an interest rate exceeding the rate of price increase. Thus, delayed tax payments should be adjusted by the nominal rate of interest, i.e., interest plus the rate of price increase. Which interest rate to choose is obviously a difficult problem, but some start must be made.

Finally, countries using schedular taxes should be encouraged to switch to a unified system, i.e., one in which all income, regardless of source, is lumped together for tax assessment. If this is not done, at least the existing global tax should be raised so that some significant degree of progression can be introduced. In the same vein, further effort should be made to tax high incomes in countries where there is a considerable concentration of income. For a fixed level of administrative cost this is likely to be more productive of revenue than any other reform.

A major change in commodity taxation which should be encouraged is a shift from turnover to single stage taxes. To encourage such a switch, part of each year's aid could be tied to the yield of the tax by matching revenue collections on say a 1:5 basis. Such a device would provide strong incentive to carry through the reforms efficiently and would also cover any temporary reduction in yields which may occur during the first year of the tax.

In those countries in which the bulk of the sales tax is specific in form, a change to an advalorem system would make the revenues inflation proof.

The major alteration necessary in corporation tax policies is the removal of accelerated depreciation provisions and investment allowances. Unlike these, tax holidays and the right to fully cancel current losses against future profits will not result in any bias in factor choice.

Taxation of capital gains from the sale of buildings or land should be extended (or initiated) if speculation in real estate and its deleterious effects on resource allocation are to be overcome. Cadastral surveys of nonurban land must be carried out before any significant land taxation can take place. Once such a survey exists, land taxes should be placed in a lump sum manner (e.g., on imputed income or land size) to maximize incentive effects.

Evaluation of Existing Self-Help Criteria

In the introduction we referred to overall self-help criteria which are utilized in evaluating a country's development performance. Among the main criteria currently used are the ratio of government domestic revenues to national product (R/Y) and the ratio of domestic revenues to total government expenditures (R/E). Of course, such ratios are at best convenient shorthand devices which should be used in conjunction

with other disaggregated information. It seems to us that these ratios are relatively useless unless supplemented by so much subsidiary information that the original measures lose all meaning.

The R/Y measure is designed to indicate, at least roughly, the intensity of a nation's fiscal effort and the total resources which the government controls: the larger the command over resources, the more can be (at least potentially) devoted to development purposes. As we shall show below, various institutional arrangements may so limit the value of this measure, that the more direct procedure of examining the expenditure side of the budget becomes necessary to ascertain the actual developmental impact of the budget.

The ratio of revenue to expenditures supposedly provide information on the extent of inflationary pressure generated by the public sector. This measure is at best a poor gauge as a deficit may be financed in a noninflationary manner. Rather than examine the size of the deficit, one should ascertain the total amount of inflationary financing. Nevertheless, it is true that it may in fact be important to consider current revenues, as a government which has relied primarily on borrowing may not have the ability to quickly change to a tax basis for financing. Thus a balanced approach requires that both the financing of the current deficit as well as the ability of the government to mobilize increasing tax revenue, should the need arise, must be considered jointly.

Several other serious difficulties in gauging fiscal effort also arise when either of the above criteria are used. For example, a country in which R/Y has increased during some period of time is usually considered to have shown an increasingly effective fiscal policy. It may be, however, that the tax base was rising more rapidly than national

product, and despite the observed increase in R/Y, the efficiency of tax administration was declining, or new laws were legislated which actually reduced the level of the existing rate structure. In other words, had administrative effectiveness and the rate structure remained constant, R/Y would have been higher than observed. On the other hand, R/Y or R/E may be declining and this fall may serve several goals, such as trade liberalization, offset of a decline in export earnings or a change in the composition of taxes from a seriously distorting to more neutral set. These considerations undoubtedly enter the AID fiscal evaluation process. However, they still seem to be subordinated to the more convenient aggregate ratios. That it is necessary to take account of them explicitly will be shown in an analysis of three countries: Ceylon, Ecuador, and Honduras. These countries were chosen for their illustrative value and because of the availability of fairly reliable data. Nevertheless, the problems encountered in analyzing the public sector appear characteristic of those of many of the countries receiving aid.

One of the concepts used in the following analysis will be the estimate of the potential tax base. The potential base is the amount which is subject to tax under existing legislation. In general it will not correspond to the amount upon which tax is actually paid due to evasion and to legal exemptions and deductions. The effective tax rate may be defined as the ratio of collections of any particular tax to the potential base of the tax. A change in effective rates may be due to any combination of changes in the extent of evasion, in tax rates, and in the exemption and deduction structure. The potential growth in tax revenue depends upon the growth in the potential base and on changes in the effective rate. If the effective rate for each type of tax, ($t_i = T_i/Y_i$)

remained constant, than the change in tax collections in response to a change in income would be

$$\Delta T = t_1 \Delta B_1 + \dots + t_n \Delta B_n.$$

Should the overall effective rate (the weighted average of the t_1 's) decrease, the potential growth in taxes would not be realized. Thus, an increase in R/Y may mask a weak fiscal performance as the pattern of increase in the various bases might have been expected to generate a much larger rise in R/Y.¹⁸ This method also allows one to evaluate claims that a decline in R/Y is due to, say, import liberalization, while in fact it may be due to decreased effective rates on other bases as well as on imports.

Clearly a major difficulty lies in the measurement of the potential base. In order to obtain consistent definitions of this magnitude we have made use of national income accounts and foreign trade data. The bases of four major taxes are estimated (import, export, income and commodity) and then the effective rate for each type of tax is calculated for some initial period and for 1964. The results are incorporated in the analysis of each country. The method of estimating the potential base is discussed in Appendix A.

The tax collections on the above bases account for a major part of total domestic revenue of the government. However, all the countries have other tax items such as urban property taxes and nontax revenues, for example, those from the sale of public enterprise services. In calculating the effectiveness of the government fiscal effort these items are treated as exogenous. Of course, changes in R/Y or R/E may, in fact,

¹⁸ We use R/Y rather than T/Y as domestic receipts include nontax receipts such as profits from government enterprise. In our analysis we shall isolate the effects of the nontax component upon the R/Y ratio.

be attributable to movements in these exogenous receipts and when these are relevant to the analysis it will be noted.

The actual calculations performed are the following. For some initial period the effective rate for each type of tax is calculated. The rate is then applied to each potential base in the final period. The potential collections are then added to the exogenous items to arrive at the revenues which would have been received had the initial effective rates been maintained. This potential revenue level is then compared with national product to arrive at the potential R/Y ratio which we will denote as $(R/Y)_p$ and which may be compared to the actual ratio observed to hold, namely, $(R/Y)_a$.

We now proceed to an analysis of the three countries.

Honduras

Honduras provides a good example of a country whose fiscal performance on the basis of the aggregate criteria appears deficient, but when evaluated within the context of the potential taxation argument, appears much better. Its actual R/Y ratio, $(R/Y)_a$, increased from 9.1 to 10.1 between 1961 and 1964.

During the period there was a decline in the rate of import taxation as a result of the decrease in dutiable imports caused by increasing tariff remissions granted under industrial incentive laws and by the exemption of goods imported from countries in the Central American free trade area. To compensate for the decrease in revenue a new sales tax law was passed. Had this law not been enacted the final $(R/Y)_a$ ratio would have been 9.2 instead of 10.1.

The strength of the Honduran performance comes through most strongly if we examine the potential tax structure. In the 1961-1964 period every

tax base increased substantially more rapidly than did GNP. At the same time the effective rate on all of the potential bases except for imports remained about constant or increased.¹⁹ If the same import taxation rate had held in 1964 as in 1961 the overall R/Y ratio would have increased to 10.7.

Table 3

Honduran Tax Performance 1961-1964

	Income Tax	Excise & Sales Tax	Import Tax	Export Tax				
Percentage Increase in Potential Tax Base	39.3	22.0	41.4	32.6				
Percentage Increase in Tax Receipts	27.3	61.9	3.8	43.3				
Tax Receipts/Potential Base, 1961-1964	3.3	3.0	9.3	12.4	22.4	16.5	1.9	2.1
Percentage Increase in GNP (Current Prices)	18.5							

The Honduran income tax reform of 1963 increased the minimum personal exemption and at the same time considerably increased the progressivity of the rate structure. At first the growth of income tax receipts was slowed but by 1965 they had begun to increase quite rapidly. The initial negative influence of the reform tended to slow the increase in (R/Y), although the long term effect was clearly to increase the elasticity of the income tax structure. This is likely to be the pattern in any country whenever a reform is introduced as the administrators gain increasing proficiency as they learn by doing.

Thus the R/Y criterion is of little value as an index of self-help in a country undergoing a rapid change in tax structure, as movements in individual tax components stemming from reforms may cause year to year

¹⁹ The slight decline in the effective income tax rate is primarily attributable to the reform of 1963 which generated greatly increased revenues in 1965.

variations in R/Y which are difficult to evaluate. An analysis of the performance in terms of the potential base proves especially valuable in such situations as it enables the analyst to ascertain whether observed movements in R/Y stem from tax reforms or whether they are primarily attributable to changes in the effectiveness of enforcement of existing tax laws.

Ecuador

Ecuador's performance might appear at first to be a clear case of fiscal success as it has a high and rising R/Y, the ratio rising from 21.5 to 23.9. Similarly $(R/Y)_p$ was also rising. However, this good overall performance masks a fiscal system which appears to be incapable of making a significant contribution to development due to the decentralization of the budgetary process. The central government received less than one half of total public sector revenues through 1963, and, of this share, part was transferred to the provinces and municipalities as well as to the autonomous agencies. Thus the central government had control only over one third of public sector revenues and ran continuous deficits while the other levels of government were running surpluses which were primarily accumulated as deposits in the banking system. Part of the surpluses were lent to the central government but it could not, according to the existing law, use them for current operations. Indeed, the treasury was forced to borrow while the autonomous agencies had surpluses.

It is thus necessary to supplement the aggregate data with information on the budget performance at different levels as well as the laws governing the relations of these bodies. This is particularly important in Latin America where the autonomous agencies obtain a large part of

total public sector revenues in the form of fees and earmarked revenues from the central government. Indeed, some of the agencies even have autonomous borrowing power which may make the control of the money supply more difficult for the central government.

Ecuador also provides a good example of the difficulty in using R/E as an indication of self-help. Table 4 presents the R/E ratio for Ecuador for 1960-1964, the absolute size of the deficit and the breakdown of the financing into foreign and domestic financing. In 1961 R/E was 90.6, however, 75 per cent of the deficit was covered by foreign borrowing, which is likely to be noninflationary. Of the remaining 25 per cent, part was financed by noninflationary domestic borrowing. Thus, the total inflationary impact of the deficit is not accurately indicated by the current deficit; rather a breakdown of the methods of financing is necessary. Indeed, it would be best to look directly at changes in the money supply for some indication of the inflationary activities of the government, although it may prove quite difficult to decide the precise increase in money which is inflationary.

Table 4

	<u>R/E</u>	<u>Deficit in Millions of Escudos</u>	<u>Percentage of Deficit Covered by Foreign Borrowing</u>
1960	96.2	-117	100.0
1961	90.6	-325	75.4
1962	93.1	-244	44.9
1963	101.1	43	--
1964	101.2	56	--

Ceylon

Ceylon is an example of a country whose overall fiscal appearance may be sound but in which the underlying structure is quite defective. The receipts to product ratio has increased from 1960 to 1964, and indeed $(R/Y)_a$ in 1964 is greater than $(R/Y)_p$. Further, the absolute level of R/Y is quite high, being 24.8 in 1964. However, there are two major difficulties with concentrating on these high figures. First, 20 per cent of domestic receipts are returned to the private sector as subsidies, primarily for the purchase of food. Second, the expenditure pattern is very unlikely to promote development as much of it goes for social services and administrative expenditures rather than developmental activities. Again, any use of the overall R/Y ratio is rendered useless, this time because of the expenditure pattern.

A further important point may also be gleaned from the Ceylonese experience which is of general validity in export economies. During the early 60's Ceylon's exports decreased in value terms both because of adverse movements in the terms of trade and as a result of decreased output due to bad weather. This would naturally lead to a decrease in $(R/Y)_a$ as export tax receipts were falling and this might be taken as an adverse indication of the fiscal effort. However, in general it is desirable for government revenues to fall during a period of declining export earnings to offset the domestic multiplier effects.

Conclusion

The above brief analysis of three different fiscal situations should be sufficient to show the futility of utilizing aggregate criteria such as R/Y for self-help purposes. Presumably, some less aggregate concepts must already enter the evaluation program. Specifically,

revenues and expenditures should be analyzed by level of government; where this is impossible, because of deficient accounting practices, encouragement to move in this direction should be given. If one is worried about the inflationary impact of the public sector, attention should be paid to the method of deficit financing as well as to the size of deficits. Finally, some attempt should be made, probably by the internal revenue advisory service, to estimate the potential tax base, for in the absence of such estimates, accurate evaluation of the effectiveness of a country's tax program are impossible.

APPENDIX A

As a first approximation the potential base for import taxes is taken to be all commodity imports. The potential tax base for export taxes is the value of the main commodity exports upon which a tax is levied. In cases where no information is available concerning commodity distribution (or tax structure) total commodity exports are used.

Commodity and income tax bases are more difficult to define. The income tax base which we will employ is $W + P - D - A$ where W is compensation of employees, P is property income, D is income originating in ownership of dwellings and A is income originating in agriculture. This definition lumps together both personal and corporate tax bases, and is the only feasible method as all three of the countries in our group do not divide the property income account in a manner which would make it possible to separate corporate from other forms of property income. Even if this were possible, all of the countries report personal and corporate income taxes jointly. Does this combined base represent a useful concept? It seems to us that it is helpful if the corporate income tax is viewed as a convenient method of collecting taxes which would have to be paid by individuals if the taxes collected at the corporate level were distributed as dividends. Since we are trying to measure the intensity of fiscal effort it should not matter at which level a tax is collected, but rather the ratio of the tax receipts to the entire base.

Value added in agriculture is subtracted as traditionally it has been difficult to assess and collect income taxes from this sector (although land taxes have occasionally been used with some success), and there is little indication that income tax receipts from this sector are important in any of the countries considered.

The national income imputation for ownership of dwellings is subtracted as it does not correspond to any flow of money income, although in some countries an (unsuccessful) attempt has been made to include some imputed income in the tax base.

Finally, one might object that that above base should not be used in computing the effective rate of taxation as we do not know the income distribution in each country and in the absence of such knowledge calculations of the effective rate are meaningless. However, unless there is growing equality of income the average tax rate should increase and at a minimum, the average effective rate should remain constant.

The base for the commodity tax in all three countries was derived from the consumption section of the national accounts. The tax laws specify that certain categories of consumption, mainly food and services shall go untaxed. The base was therefore calculated as the sum of expenditures on beverages, tobacco, clothing, furniture and household equipment and fuel and light.