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Author(s): Robin Burgess and Nicholas Stern

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# Taxation and Development

By ROBIN BURGESS and NICHOLAS STERN

*STICERD, London School of Economics*

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## 1. Introduction

THIS PAPER CONCERNS the theory and practice of taxation in poor countries. We should ask at the outset whether the analyses of taxation for developed and less-developed countries are, or should be, essentially similar, or whether the objectives, responsibilities, and constraints are so sharply at variance that wholly different approaches are required. We shall argue that there are many problems and questions in common and that, broadly speaking, similar analytical methods can be used. At the same time there are some issues which arise in less-developed countries which are not faced in developed countries, and some problems which are much more acute. The analysis of taxation in less-developed countries may go badly wrong if it fails to take these into account.

The main purpose of taxation is to raise resources to finance government

expenditure.<sup>1</sup> We may see the problem of tax design as one of finding a way of raising these resources which is administratively and politically feasible and which promotes equity and efficiency as far as is possible. There must clearly be some trade-offs among revenue, administration, political acceptability, equity, and efficiency. The problem of tax reform is to find an improvement, with respect to these criteria, of an existing system. Equity and efficiency, in much of the formal, normative part of the analysis, will be considered in terms of the well-being of households. These criteria and concerns may be common to governments in both developed and developing countries.

While at a general level the objectives

<sup>1</sup> Other important objectives are redistribution and the control of externalities or other market imperfections; these are embodied in what follows. The main purpose of negative taxes (subsidies) is to redistribute or to encourage certain activities.

of taxation for developed and developing countries may be alike there may be important intermediate objectives or emphases which are different. Some commentators have argued, for example, that there should be a particular concern in developing countries with raising the rate of savings, with incentives for investment, or with self-sufficiency. We would suggest, however, that such intermediate objectives, if they are to be regarded as persuasive, should be derived from a broader concern with standards of living of individuals of current and future generations.

We must also ask whether the perceived responsibilities of government are, or should be, different for developing countries. More broadly, should there be a different role for the state in these countries? It may be argued that market failure is more prevalent in backward economies so that there is a greater justification for government intervention using, for example, corrective taxes and regulatory instruments. Widespread vulnerability to extreme deprivation may also point toward state intervention. In recent years, however, many have stressed the problems of government failure, associated with, for example, rent seeking, corruption, and inefficiency, which should be set beside those of market failure in assessing the desirability of government action. It may even be argued that government failure is so severe in developing countries that the level of government action should be (proportionally) lower than in developed countries. The judgment of the relative severity of the problems of market failure and government failure is not our main purpose here (see Stern 1989 and 1991a, for a discussion). We would argue, however, that the very low living standards of some groups, missing markets and the comparative advantage of government in some areas (e.g., infrastructure, social sectors) provide strong arguments as to

why the role of government should be more than minimal in developing countries (see Jean P. Drèze and Amartya K. Sen 1989; Burgess and Stern 1991; Stern 1991a; and Section 2.1 below). These focus attention on the need to raise sufficient revenue and in Section 2.2 we provide reasons as to why the bulk of revenue should be raised through taxation. Further, it will be a major theme of this paper that taxation and expenditure should be analyzed together. The problem of taxation should not be seen simply as the use of taxes to fund a fixed, exogenously given, expenditure.

Arguments concerning the overall level of government activity and the balance of its finance between taxation, borrowing, and money creation are provided in Section 2. In Section 3 we examine tax structures which are actually observed. These vary widely and we comment briefly on reasons for the variations. The basic principles of taxation for developing countries, derived from formal theorizing, are considered in Section 4. The formal theory abstracts from many difficult conceptual and practical problems, some of which are discussed in Section 5. From the perspective of taxation, these problems constitute the most important difference between developed and less-developed countries. Some experiences of tax reforms in less-developed countries are described in Section 6. In the final section (Section 7) we pull together the lessons from theory and from experience for the design of tax reform and provide guidelines for policy.

## 2. *Taxation, the Role of the State, and the Macroeconomy*

The first part of this section (Section 2.1) examines the arguments concerning the appropriate nature and scale of government involvement in the economy,

i.e., it considers the role of the state in economic activity. A view of the appropriate type and level of government activity influences one's judgment not only on the level of taxation but also its structure, as we shall see in Section 4. The problems and potential of taxation (discussed in Section 3 and Section 5) will, at the same time, influence judgments as to the appropriate scale and balance of expenditure.

Government activities are not, however, financed only by taxation. There are, as we describe in Section 3.2, many other sources of public or government revenue: public-sector profits, mineral royalties, net revenues of marketing boards, and so on. These sources of government income should, however, be appraised in much the same way as taxes (see Section 4) and, for the moment, we can include them under the heading of taxation. In addition to taxes, defined broadly, the government can meet its obligations by borrowing domestically or internationally, or by printing money. These other sources of finance have their own costs and disadvantages and in the second part of this section (Section 2.2) we consider the balance between taxation, borrowing, and money creation. Taking Section 2.1 and Section 2.2 together, this section assesses the role of taxation in the economy as a whole.

### 2.1 *The Role of the State and Government Expenditure*

Analyses of, and judgments on, the appropriate scale and balance of expenditure should begin with the reasons for government intervention. We may distinguish five groups of arguments. The force of these arguments, some but not all of which concern "market failure" in terms of departures from the standard conditions of welfare economics, can then be examined alongside an assess-

ment and analysis of the problems of government action, or potential "government failure."

(i) *Market failure*: including, notably, externalities, public goods, and missing markets, in addition to conditions leading to the violation of perfectly competitive behavior such as imperfect information, increasing returns, and entry barriers.

(ii) *Poverty and income distribution*: outcomes, whether efficient or otherwise, may be such as to leave some members in situations of extreme deprivation or result in a distribution regarded as unacceptable or unattractive.

(iii) *Rights to education, health, nutrition, and housing*: many would argue that "equality of opportunity" implies a state responsibility to provide literacy and to ensure basic nutrition, health care, and shelter, without which an individual's participation in the economy and society are severely limited.

(iv) *Paternalism*: the state may decide it has a superior view of individuals' own self interest than individuals have themselves and further that it should, in some cases, override individual preferences; relevant examples may include the requirement to attend school, limitations on the use of certain drugs, and compulsory pension schemes.

(v) *Future generations*: private individuals acting in their own self interest and that of their descendants may not make decisions which take the welfare or rights of future generations appropriately into account; relevant examples may include global warming, air and water pollution, conservation of rain forests, protection of species, and so on.

All of the above arguments provide cogent reasons for government action. They point fairly directly, through the examples given, to particular areas of government expenditure, notably infrastructure, social security, education,

health, pensions, and the environment, as well as to the government's role in keeping the economy competitive. Market failure arguments are especially persuasive concerning infrastructure (power, communications, and so on), where increasing returns, public goods, and externalities can all be of considerable importance. In addition, legal and regulatory structures that, for example, ensure that property rights are well defined and respected, contracts enforced, and illegal activity contained are essential for the competitive functioning of the economy. To these tasks one has to add basic administration, law and order, and defense. While this brief review of the arguments for state action has identified important (and costly) areas for state activity, it does not provide a convincing rationale for direct state involvement in the production of ordinary producer and consumer goods, at least from the perspectives included here (for elaboration, see Stern 1991a).

In Table 1 we present figures on the actual pattern of expenditures in industrial/developed and developing countries. Governments in developed countries (i) spend more as a percent of GDP (31.5 percent compared to 25.4 percent) and (ii) have expenditures that are more concentrated on social security (particularly) and health, whereas in developing countries these areas exhibit a smaller share with the bulk of expenditures going to economic services, general public services, and defense, though education also obtains a substantial share. In the light of the arguments for state action identified, attention should be paid to both the level and composition of expenditures.

The identification of important and costly areas for government action does not by itself justify extensive intervention. Even in a system where government tasks are efficiently discharged and

politics are honest and constructive, one has to take into account the cost of raising resources. But the problems are more fundamental than this. Governments may be corrupt, manipulative or manipulated, and inefficient. Indeed the self-interest of participants, inside and outside government, may make such outcomes likely. Many have argued, following the political economy approaches of those such as Hayek and Buchanan that the problems are so severe that the size of government should be kept as small as possible. Some moral philosophers such as Robert Nozick (1974) have come to similar conclusions on ethical grounds concerning the rights of individuals against the state. Over the 1970s and 1980s many writing on less-developed countries (see Anne O. Krueger 1990, for a recent expression) have emphasized the problems of rent-seeking and corruption during economic development. It is argued therefore that the extent of government action should be substantially limited, and the types of measures employed by the state be designed with the problems of manipulation and corruption in mind.

These arguments are of considerable importance but so also are the arguments for government intervention. In less-developed countries both the difficulties of and needs for state action would appear to be stronger than in their industrial counterparts. In the light of the scope and magnitude of problems facing the developing world, and given strong arguments for state intervention in certain areas, resort to "government failure" arguments to justify minimal state activity would, however, appear to represent an unreasonable and inadequate response. We would suggest that the government call on resources is likely to be major and therefore the magnitude of the task of taxation likely to be substantial.

TABLE 1  
CENTRAL GOVERNMENT EXPENDITURE BY TYPE  
(percent of total expenditure, 1986-87)

Region	General Public Services	Defense	Education	Health	Social Security	Transport & Communication	Other Economic Services	Other	Central Expend. (% GDP)	Central Revenue (% GDP)
Industrial	8.05	7.34	8.45	9.61	37.71	5.12	7.15	16.57	31.46	26.99
Developing	16.94	11.97	14.11	6.21	12.60	7.19	16.04	14.94	25.40	21.10
Africa	18.54	8.85	15.97	5.51	8.25	7.12	17.49	18.27	25.63	21.23
Asia	17.87	12.99	14.39	5.18	7.14	11.23	19.41	11.79	19.89	17.25
Europe	16.88	13.63	7.26	6.26	23.07	6.53	21.18	5.19	29.15	28.46
Middle East	13.29	26.69	12.54	4.85	13.22	3.71	11.06	14.64	33.12	25.82
Western Hem.	16.09	7.53	13.98	8.32	18.77	6.80	11.88	16.63	25.04	19.64

Source: IMF Government Finance Statistics Yearbook (1989).

Note: All regional averages are unweighted.

## 2.2 *Financing the Spending*

How is the expenditure to be financed? We have essentially four sources: government revenue, internal borrowing, external borrowing, and printing money. Our emphasis in this paper is on government revenue and we consider only briefly in the remainder of this section some effects of other sources relevant to an assessment of the appropriate balance. We shall argue that, in the long run, a healthy tax system must be at the heart of the public finances. The adjustment experiences of the less-developed countries over the last two decades has served to elevate fiscal issues to the head of the policy agenda. Fiscal correction is now seen as essential for long-term macroeconomic stability (see World Bank, 1991, for a discussion).<sup>2</sup>

There are very special models in which extra domestic borrowing has the same, or "equivalent" effect on the economy as extra taxation (see Robert J. Barro 1974, and B. Douglas Bernheim 1987 for a review). Strong conditions are required for "Ricardian equivalence" to hold, including:

- (i) perfect capital markets and rational expectations,
- (ii) private agents being able to borrow or lend on the same terms as the government,
- (iii) non-distortionary taxes.

While the conditions look implausible as a description of less-developed countries it is nevertheless an empirical matter as to whether the "equivalence" proposition holds good. Nadeem U. Haque and Peter Montiel (1987) attempt to test the proposition for sixteen developing

countries, comparing the effects of taxation and borrowing on aggregate demand. They conclude that full Ricardian equivalence can be rejected for 15 of the 16 countries. Problems of model specification, measurement of variables, and data quality in this area should warn us against the general applicability of results from empirical studies.<sup>3</sup> What remains clear and intuitive is that due to greater problems of distorted capital markets, repressed or underdeveloped financial systems, and the haphazard incidence of different taxes, conditions (i) to (iii) are likely to apply with less force in developing than in industrial countries. Given the weak empirical evidence for each of (i) to (iii), taken individually, we would, a priori, not expect Ricardian equivalence to apply in the majority of developing country settings. W. Max Corden (1987) also makes the interesting observation that extra borrowing (foreign or domestic) may lead to capital flight in the anticipation of future tax burdens. One could add that "no avoidance by emigration" should be included in the necessary conditions for "equivalence."

Given that debt is not neutral in the sense of equivalence, we may ask what constrains its use. Essentially there are two related problems, inflation and crowding out of private investment. Debt can be inflationary because a government will have an incentive to renege on part of the debt by a burst of unexpected inflation. Further if debt is used excessively, there will come a time when it will no longer be accepted and the government will have to resort to monetizing the debt. If sufficiently anticipated this can lead to inflation now (see Thomas J. Sargent and Neil Wallace 1981).<sup>4</sup>

<sup>2</sup> There has hardly been an adjustment program in recent years that has not seen the reform of the tax system and the containment of public expenditure as central objectives (World Bank 1991). Borrowing and money creation are no longer seen as sustainable or reliable sources of government finance.

<sup>3</sup> The evidence from developed countries where empirical research has been more intensive is inconclusive and difficult to interpret (see Bernheim 1987 for a discussion).

<sup>4</sup> On the relationship between debt and inflation in Latin America in the 1980s, see Jeffrey D. Sachs

Closely associated with these inflationary aspects of debt financing are the problems of crowding out. Given the non-neutrality of debt, the authorities' decision making directly affects the private allocation of resources. For example, substitution by the government of borrowing for current taxes on labor income may increase private consumption. In an economy with full utilization of resources this may lead to private investment being "crowded out," or may result in an increase in the deficit on the current account of the balance of payments (see Willem H. Buiter 1989).

The role of domestic debt finance will depend in part on the degree of monetization in the economy and the sophistication of the financial markets. The experience of low-income countries in South Asia has shown that relatively complex financial markets can develop within a short period. This can have an impact on the composition and level of savings. For example, in India between the early 1950s and the early 1970s the proportion of household savings going into financial assets rose from around 4 percent to over 50 percent (Government of India, Raj Committee 1982). Given that tax revenue involves collection costs and generates "consumer resistance," which may be substantial in developing countries, and that the purchase of government securities is more or less voluntary, governments may well be tempted to make more use of the latter if financial markets and institutions permit.

Governments may seek to use domestic borrowing when they face an unexpected shortfall in revenues, or to cover emergencies such as floods or defense requirements. Such borrowing can substitute for sharp and substantial increases

in taxation, which may be difficult or costly to implement (Richard Goode 1984, p. 197). As with other schemes, however, the surpluses in "randomly good" years may not be generated to finance the deficits in the "randomly bad." Simple rules of thumb in relation to domestic borrowing have occasionally been used to guide policy (see Goode 1984, pp. 197-98). From the perspective of standard economic analysis they generally have serious shortcomings, although they can have advantages in constraining governments from pursuing undesirable policies (also see Section 4.5 below). For example, one view is that it is appropriate to use borrowing to finance investment, but not consumption, outlays on the grounds that returns to finance the debt service and repayment will be generated. This rule fails to distinguish between the relative costs and benefits that accrue from financing "the project" from alternative sources. Borrowing will involve greater taxation, or reduced expenditure, in the future and the government will have to compare the costs of doing this with taxing now.

Foreign borrowing differs from domestic in that it enables a country to command current goods and services in addition to those arising from domestic resources. Furthermore, the displacement of private investment may be less severe, although public foreign indebtedness may make finance more difficult for private borrowers. Over time debt servicing and repayment entail a reverse transfer of resources abroad. For foreign borrowing to be attractive the government should believe that the productivity of the loans along with the taxes generated will provide sufficient resources for the loan to be serviced and repaid in the future. Excessive optimism can lead to serious problems as we have seen with the debt crisis of the 1980s (Sachs 1989).

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(1989) and on the problems and circumstances associated with reneging on debt, see Jonathan Eaton, Mark Gersovitz, and Joseph Stiglitz (1986).



Governments have at times resorted to financing expenditure by printing money. In this way governments can claim real resources from the population. This claim is known as seignorage. A measure of seignorage can be taken as the product of the money growth rate ( $\sigma$ ) and money balances ( $M$ ). Thus we have, in real terms, the seignorage,  $R_s$ , given, where  $P$  is the price level, by

$$R_s = \sigma M/P. \quad (1)$$

Because demand for monetary assets tends to rise with economic growth the government can, to a limited extent, finance itself by expanding the monetary base without causing inflation. However, when the rate of new money creation exceeds the increase in the demand for money, inflation may result. Inflation then imposes a tax on the population by reducing the value of real money balances (see Martin J. Bailey 1956). The cost of this tax ( $R_i$ ) may be written as:

$$R_i = \pi M/P \quad (2)$$

where  $\pi$  is the rate of inflation. This is not a revenue directly received by the government in the particular period at issue but is a capital loss sustained by holders of money. The terms  $R_s$  and  $R_i$  are sometimes used interchangeably though the two quantities are identical only when  $\sigma = \pi$ , for example in steady states (see Olivier J. Blanchard and Stanley Fischer 1989, p. 188). Out of steady state there will be an intertemporal link between the resources captured by the government through seignorage and the capital losses suffered by the population.<sup>5</sup>

<sup>5</sup> To keep things simple we will be looking only at currency held by the public. However, it should be kept in mind that inflation will tend to erode the value of domestic government debt taken as a whole which includes currency, interest and noninterest bank deposits, and government securities (Gil Diaz 1987).

The evidence would suggest that the revenue potential of noninflationary money finance is limited. Seignorage typically accounts for only about 0.5 percent of GDP in stable, low inflation countries. Even moderate money financing of the order of 1–2 percent of GDP has been associated with inflation in excess of 50 percent in many developing countries in the 1980–85 period (World Bank 1988). High inflation rates can be associated with claims on resources that are significant. For example, in Bolivia and Argentina, seignorage accounted for 4.0 and 6.2 percent of GDP respectively in 1980–85 (World Bank 1988).<sup>6</sup>

High inflation, however, has many disruptive and distortionary effects on economic functioning (Fischer 1986; Sachs 1989; and Buitier 1989). In addition, due to collection lags and the structure of taxation, inflation will have a negative impact on real tax revenues in less-developed countries (see Section 5.4 and Vito Tanzi 1991a). Further, the inflation tax may hit the poor, particularly as they tend to hold a large proportion of their wealth as currency (see e.g., Francisco Gil Diaz 1987). Taken together these factors mitigate against consideration of seignorage or the inflation tax as attractive methods of public finance.

Two central messages have emerged from the experience of less-developed countries during the last two decades. First, there is no viable, long-term, and substantial alternative to taxation as a means of financing government expenditures. Second, successful adjustment and macroeconomic stability rely on profound and permanent fiscal corrections being made in the short and medium run (see Sweder van Wijnbergen 1989; Mario Blejer and Ke-young Chu 1989; Tanzi

<sup>6</sup> Note that total tax shares for these countries in 1987 accounted for 5.9 and 16.9 percent of GDP respectively (see Table 2).

1990; Ronald I. McKinnon 1991; World Bank 1991; Pedro Aspe Armella 1992). At the heart of these fiscal corrections are structural changes involving tax reform. Taxation is thus a central concern which cannot be relegated to the medium or long term.

### 3. Sources of Government Revenue

In all countries government revenue is raised from a number of sources and through a variety of mechanisms. In this section we provide a description of those sources, examine the mechanisms and attempt to explain their relative importance in different countries. The main source of government revenue is taxation, which contributes close to 80 percent of total government revenue for less-developed countries as a whole (IMF 1989). In Section 3.1 we describe the level and structure of taxation in developing countries, contrasting these with the situation in industrial countries, and in Section 3.2 provide a brief investigation of non-tax sources of revenue of which there is a rich variety in developing countries.

#### 3.1 *The Level and Structure of Taxation in Developing Countries*<sup>7</sup>

The overall proportion of taxation in GDP is higher in industrial than developing countries and there is a greater share of direct taxation in that total. Tax structure varies strongly between countries and across regions. For most countries taxation constitutes the main source of government revenue, but some developing countries obtain a substantial share of total revenue from sources other than

<sup>7</sup> This section builds on the work of Tanzi (1987) and on data prepared by Christine Wu of the Fiscal Affairs Department of the IMF. We are very grateful to them for their advice and assistance. Note that Table 2 follows the text as an appendix. The terms "industrial" and "developing" follow IMF classifications.

taxation and on average the share of non-tax revenue in total revenue is much larger than for industrial countries (see Section 3.2).

Much of the data on the existing tax systems of developing countries presented here come from IMF statistics (see IMF 1989).<sup>8</sup> Our eighty-two country sample includes most less-developed countries, all having per capita incomes less than \$6000. Given the difficulties of collecting comparable data, the size of the IMF sample is impressively large. Data on twenty-one industrial countries, all with per capita incomes greater than \$6000, are provided for comparison. In Table 2, (see appendix) we set out the basic data on total tax revenue, and tax revenue by type of tax, as a percentage of GDP for each of these countries. Table 3 summarizes this information by averaging over five income classes while Table 4 shows regional averages (as percentages of GDP). The percentage breakdown of total tax revenue on a regional basis is provided in Table 5.<sup>9</sup> The GNP per capita (1987 dollars) figures are calculated in the conventional manner without making adjustments for purchasing power parity (see, e.g., Robert Summers and Alan Heston 1988, and Stern 1989, on the effects of such an adjustment). Presentation of the data, essentially using a static, cross-sectional framework based on GNP or GDP per capita as a basis, is somewhat crude. The data and method, however, should be sufficient to give an impression of some of the broad regularities and differences.

<sup>8</sup> Though the data are the best available on a cross-country basis there are problems including: (i) unreliability of data due to factors such as poor and biased accounting, (ii) hidden variability and diversity across tax systems, (iii) underrepresentation or complete absence from the data of some taxes (e.g., local taxes).

<sup>9</sup> Breakdowns are presented as averages over the three years closest to 1987 for which data are available—some year-by-year fluctuations are smoothed in this way.

TABLE 3  
INCOME BREAKDOWN, TAX REVENUE BY TYPE  
(percent of GDP)

Income Range (GNP per Capita)	Average (GNP per Capita)	Income Taxes				Domestic Taxes				Foreign Taxes							
		Total Tax	Indi-vidual	Cor-porate	Other	Total	General Sales, Turnover, VAT	Excises	Other	Total	Import Duties	Export Duties	Other	Social Security	Wealth and Property		
\$ < 360	\$ 239	14.02	3.46	1.36 <sup>1</sup>	2.19 <sup>1</sup>	0.19 <sup>1</sup>	4.55	2.44	1.66	0.46	5.30	4.05	1.09	0.21	0.21	0.24	0.25
\$360-749	\$ 517	19.66	5.74	2.53 <sup>2</sup>	2.92 <sup>2</sup>	0.21 <sup>2</sup>	4.74	2.30	1.95	0.49	7.58	6.70	0.64	0.22	0.79	0.31	0.41
\$750-1619	\$ 1127	18.62	5.98	2.18 <sup>3</sup>	4.08 <sup>3</sup>	0.30 <sup>3</sup>	6.06	2.68	2.64	0.74	4.64	4.10	0.39	0.14	0.78	0.56	0.59
\$1620-6000	\$ 2996	19.79	6.81	2.14	3.80	0.84	5.41	2.40	1.99	1.02	3.12	2.51	0.36	0.24	3.34	0.65	0.75
All Developing	\$ 1241	18.05	5.51	2.08 <sup>4</sup>	3.29 <sup>4</sup>	0.40 <sup>4</sup>	5.21	2.46	2.07	0.68	5.13	4.32	0.62	0.20	1.30	0.45	0.45
\$ > 6000 (Industrial)	\$13477	31.21	10.96	8.45	2.37	0.14	9.43	5.58	3.02	0.83	0.72	0.70	0.00	0.01	8.90	1.11	0.10

Sources: IMF Government Finance Statistics Yearbook (1989) and Table 2.

Notes: For each country the breakdowns are unweighted averages over the three years closest to 1987 for which data were available. GNP per capita is for 1987, in 1987 dollars. Within the total of 82 developing countries there are 20 countries in each of the two lower brackets and 21 countries in each of the two upper income brackets. There are 21 industrial countries with incomes above \$6000.

<sup>1</sup> Excluding Maldives, Kenya, Pakistan, Myanmar.

<sup>2</sup> Excluding Western Samoa.

<sup>3</sup> Excluding Nicaragua, Peru, Jordan.

<sup>4</sup> Excluding Jordan, Peru, Nicaragua, Western Samoa, Maldives, Kenya, Pakistan, Myanmar.

TABLE 4  
REGIONAL BREAKDOWN, TAX REVENUE BY TYPE OF TAX  
(percent of GDP)

Region	Ave. GNP per Cap	Income Taxes					Domestic Taxes					Foreign Taxes					
		Total Tax	Total	Indi- vidual	Cor- porate	Other	Total	General Sales, Turnover, VAT	Excises	Other	Total	Import Duties	Export Duties	Other	Social Security	Wealth and Property	Other
<b>Industrial</b>	\$ 13477	31.21	10.96	8.45	2.37	0.14	9.43	5.58	3.02	0.83	0.72	0.70	0.00	0.01	8.90	1.11	0.10
<b>Developing</b>	\$ 1241	18.05	5.51	2.08 <sup>1</sup>	3.29 <sup>1</sup>	0.40 <sup>1</sup>	5.21	2.46	2.07	0.68	5.13	4.32	0.62	0.20	1.30	0.45	0.45
Africa	\$ 621	19.53	6.65	2.28 <sup>2</sup>	4.13 <sup>2</sup>	0.33 <sup>2</sup>	4.85	2.96	1.44	0.45	6.84	5.74	1.01	0.12	0.44	0.41	0.37
Asia	\$ 743	14.84	4.46	2.37 <sup>3</sup>	2.64 <sup>3</sup>	0.09 <sup>3</sup>	4.55	1.59	2.23	0.72	5.46	4.82	0.48	0.15	0.04	0.16	0.16
Europe	\$ 3361	21.88	5.80	3.44	1.53	0.83	6.86	3.43	2.48	0.96	2.80	2.80	0.00	0.00	5.09	0.61	1.08
Middle East	\$ 2339	14.73	4.83	0.47 <sup>4</sup>	4.44 <sup>4</sup>	0.45 <sup>4</sup>	2.30	0.04	1.58	0.67	4.16	4.11	0.04	0.01	1.21	0.71	1.52
Western Hem.	\$ 1581	18.16	4.84	1.63 <sup>5</sup>	2.71 <sup>5</sup>	0.64 <sup>5</sup>	6.47	2.75	2.81	0.90	3.46	2.50	0.49	0.46	2.37	0.58	0.65

Sources: IMF Government Finance Statistics Yearbook (1989) and Table 2.

Notes: For each country the breakdowns are unweighted averages over the three years closest to 1987 for which data were available. GNP per capita is for 1987, in 1987 dollars. Within the total of 82 developing countries there are 31 countries in Africa, 16 in Asia, 6 in Europe, 6 in the Middle East, and 23 in the Western Hemisphere region. The total number of industrial countries is 21.

<sup>1</sup> Excluding Jordan, Peru, Nicaragua, Western Samoa, Maldives, Kenya, Pakistan, Myanmar.

<sup>2</sup> Excluding Kenya.

<sup>3</sup> Excluding Western Samoa, Maldives, Pakistan, Myanmar.

<sup>4</sup> Excluding Jordan.

<sup>5</sup> Excluding Peru, Nicaragua.

TABLE 5  
REGIONAL BREAKDOWN, TAX REVENUE BY TYPE OF TAX  
(percent of total tax revenue)

Area	Ave. GNP per Capita	Income Taxes					Domestic Taxes					Foreign Taxes					
		Total	Indi- vidual	Cor- porate	Other	Total	General Sales, Turnover, VAT	Excises	Other	Total	Import Duties	Export Duties	Other	Social Security	Wealth and Property	Other	
																	35.75
<b>Industrial</b>	\$13477																
<b>Developing</b>	\$ 1241	28.94	10.57 <sup>1</sup>	17.81 <sup>1</sup>	1.50 <sup>1</sup>	30.37	13.83	12.59	3.89	29.37	24.28	4.12	1.02	6.18	2.59	2.89	
Africa	\$ 621	32.27	11.09 <sup>2</sup>	19.60 <sup>2</sup>	1.50 <sup>2</sup>	25.76	14.67	8.72	2.39	35.61	28.39	6.70	0.68	2.31	2.21	1.50	
Asia	\$ 743	27.36	14.59 <sup>3</sup>	16.66 <sup>3</sup>	0.67 <sup>3</sup>	34.82	13.41	16.22	5.13	34.95	30.91	3.11	0.85	0.23	1.31	1.29	
Europe	\$ 3361	25.23	15.46	6.94	2.83	34.49	21.34	9.08	4.11	16.70	16.70	0.00	0.00	17.95	2.32	4.17	
Middle East	\$ 2339	36.98	3.28 <sup>4</sup>	36.86 <sup>4</sup>	0.76 <sup>4</sup>	14.66	0.39	9.02	5.30	26.32	26.00	0.19	0.13	7.38	5.47	9.20	
Western Hem.	\$ 1581	24.18	7.76 <sup>5</sup>	13.76 <sup>5</sup>	3.56 <sup>5</sup>	36.54	13.82	17.93	4.70	21.31	15.84	3.59	1.87	11.96	3.39	3.99	

Sources: IMF Government Finance Statistics Yearbook (1989) and Table 2.

Notes: For each country the breakdowns are unweighted averages over the three years closest to 1987 for which data were available. GNP per capita is for 1987, in 1987 U.S. dollars. Within the total of 82 developing countries there are 31 in Africa, 16 in Asia, 6 in Europe, 6 in the Middle East, and 23 in the Western Hemisphere region. The total number of industrial countries is 21.

<sup>1</sup> Excluding Jordan, Peru, Nicaragua, Western Samoa, Maldives, Kenya, Pakistan, Myanmar.

<sup>2</sup> Excluding Kenya.

<sup>3</sup> Excluding Western Samoa, Maldives, Pakistan, Myanmar.

<sup>4</sup> Excluding Jordan.

<sup>5</sup> Excluding Peru, Nicaragua.

3.1.1 *Level of Taxation.* Among the developing countries the lowest proportion of total tax revenue in GDP is found in Sierra Leone at 5.5 percent and the highest in Guyana at 40.5 percent (Table 2). The (unweighted) average ratio of total tax revenue to GDP, for the eighty-two developing countries, is 18.1 percent compared with the figure of 31.2 percent for industrial countries. The ratio is 14.0 percent for the twenty countries with per capita income less than \$360, however, and 19.8 percent for the 21 countries with per capita income of \$1620–\$6000. For the 41 countries in between, it is about 19 percent (Table 3). At the regional level, the Middle East and Asia exhibit low tax ratios of between 14 and 15 percent, the Western Hemisphere is slightly higher at about 18 percent and Africa the highest with almost 20 percent (Table 4). Among industrial countries 76 percent have tax ratios above 25 percent compared to 16 percent of developing countries, and not a single industrial country has a tax ratio below 15 percent of GDP (Table 2).

The patterns shown in Tables 2–4 suggest that though higher income exerts some influence on overall tax share, there are many other influences involved; historical, social, political, and economic factors all contribute to the explanation of differences in both the level *and* structure of taxation. Studies such as Richard A. Musgrave (1969), Raja J. Chelliah, Hassel J. Baas, and Margaret R. Kelly (1975), Alan A. Tait, Wilfrid L. M. Grätz, and Barry J. Eichengreen (1979), Guido Tabellini (1985), and Tanzi (1981, 1987 and 1991b), indicate that other factors, for example, the share of non-tax revenue, import and export ratios, literacy rates, urbanization, level of indebtedness, the share of agriculture, and the monetization and openness of the economy are all correlated with the total share of taxes in GDP.

The data may be described in terms of a regression of a tax ratio on log GNP per capita for the whole sample of 82 countries (Equation 3). The coefficients in parentheses are *t* values.<sup>10</sup> For 82 developing countries:

$$\begin{aligned} & \frac{\text{Total tax revenue}}{\text{GDP}} \\ &= 5.78 + 1.84 \log(\text{GNP per capita}). \\ & \quad (1.02) \quad (2.02) \end{aligned} \qquad \bar{R}^2 = 0.04 \quad (3)$$

The finding then is of a weak but significant (at the 5 percent level) relationship between tax share (T/GDP) and income for the whole sample of 82 developing countries (Equation 3). The very low  $\bar{R}^2$  indicates a wide scatter of points around the linear relationship between T/GDP and log GNP and any commentary should bear this firmly in mind. The positive coefficient in (3) indicates that an increase in GNP per capita is associated with an increase in the tax share. This finding is consistent with the idea that the ability to tax grows faster than income. And it is in accordance with Musgrave's (1959, 1969) idea that the "handles" to which the revenue system may be attached become more diverse with economic development resulting in a widening in the tax base (see also Harley H. Hinrichs 1966). Not only are new sources of revenue tapped but there may be extensions of the coverage of different types of tax. Ability to tax is closely associated with administrative capability and this is likely

<sup>10</sup> The point of the regression analysis here is simply to describe a mass of data and to discern broad patterns and regularities. Not too much importance should be attached to them as models of processes. Other regression forms are also in common usage. The coefficient on income in a time series log revenue-log income regression gives a measure of "tax buoyancy" which tells us whether a given tax revenue is growing faster than income. These estimates are, however, unsatisfactory in that they conflate policy and economic change.

to improve with economic development thus reducing the gap between the statutory tax system and the real or effective tax system (see Section 5). As tax bases broaden the temptation to impose high rates on constricted bases lessens and this may have a positive effect on enforcement and hence revenue (Malcolm Gillis 1989a).

If the sample is split into two (ranking by income per capita) around the median income per capita we find that the relationship is stronger for the poorer subset. In the richer developing countries there is often a substantial revenue contribution from such sources as state-owned enterprises and mineral resources which is not captured by tax statistics. For the richer subset of 41 countries, the relationship of the type embodied in Equation (3) is insignificant. In industrial countries we also find an insignificant relationship. There are fewer constraints on raising revenue in rich countries and the level of taxation is a reflection more of the orientation of government policy rather than the level of development.<sup>11</sup>

A central finding then is that per capita income is not particularly good at "explaining" the level of taxation. Tanzi (1991b), who has tracked a similar sample of 88 less-developed countries between 1978 and 1988, identified the share of imports in GDP and the share of foreign debt in GDP as having a substantial positive impact on tax levels, and the share of agriculture as having a negative impact. Together these three variables account for almost half of the variation in levels between countries. Per capita income had a smaller impact, which declined over the decade. There are several reasons for the importance of these factors. Imports constitute a significant tax base for various types of taxes (import

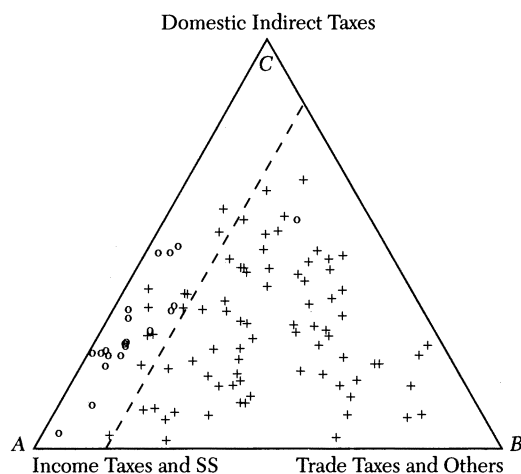
duties, sales taxes, and excises). The need to service rising foreign debt often generates tax increases.<sup>12</sup> A high share of agriculture in GDP proxies the difficulty of imposing taxation (see Section 4.3 and Section 5.3).

*3.1.2 Structure of Taxation in Developing Countries.* In this subsection we discuss the relative importance of various types of taxes in developing countries. The situation in industrial countries is presented as a comparison. Examining the top two rows of Tables 4 and 5 we see that there are marked differences between developing and industrial nations. Developing countries obtain the bulk of their revenue from (i) domestic taxes on goods and services (5 percent of GDP and 30 percent of tax revenue—partly from taxes on sales and partly from excises), (ii) foreign trade taxes (5 percent of GDP—mainly import duties) and (iii) income taxes (6 percent of GDP—mainly on corporations). In contrast, the three big sources of government revenue in industrial countries are (i) income taxes (11 percent of GDP and 36 percent of tax revenue—mainly on individuals), (ii) domestic taxes on goods and services (9 percent of GDP and 29 percent of tax revenue—mainly on sales) and (iii) social security contributions (9 percent of GDP).

The different makeup of taxes in developing and industrial economies may be illustrated using the triangle diagram of Figure 1. The points *A*, *B*, and *C* in the triangle represent 100 percent of tax revenue from income and social security taxes, 100 percent from trade and other taxes, and 100 percent from domestic indirect taxes, respectively. A point on the line *BC* corresponds to a zero level of income and social security taxes, and similarly the lines *AC* and *AB* represent the

<sup>11</sup> Compare, for example, tax levels in Canada and the USA to those in many of the European states (see Table 2).

<sup>12</sup> See Tanzi (1988, 1991a) on the effects of macroeconomic policies on the level of taxation in less-developed countries.



**Legend** +: Industrial Countries  
o: Developing Countries

Figure 1. Breakdown of Tax Revenue by Type: Industrial and Developing Countries

Sources: IMF Government Finance Statistics Yearbook (1989) and Table 3.

Note: We are grateful to Tony Atkinson and Stephen Howes for guidance and help with this diagram. SS= social security contributions.

other axes. It can be seen that the industrialized countries cluster close to the AC axis and towards the direct tax corner (A), whereas the developing countries are spread out with an average close to the center of gravity of the triangle (i.e., where one-third of revenue comes from each category).<sup>13</sup>

We examine more closely in the analysis below the relative importance of income taxes, domestic taxes, trade taxes, social security contributions, and wealth and property taxes (Tables 2 to 5).<sup>14</sup>

<sup>13</sup> Over 95 percent of industrial countries have less than a 15 percent share of trade taxes in their tax totals while more than 86 percent of developing countries have a share above 15 percent (see dotted line). While many developing countries have a sizable direct tax component this mainly consists of corporate income taxation, the individual income tax and social security contributions being relatively small.

<sup>14</sup> One might suggest from Tables 4 and 5 a rough progression (with income) from import duties (e.g., 28 percent of tax revenue for Africa), to domestic taxes on goods and services (e.g., 37 percent of tax

### Income taxes

Income taxes from all sources account for 5.5 percent of GDP and 28.9 percent of total tax revenue for the 82 country sample of developing countries. This may be compared to industrial countries where income taxes comprise 11.0 percent of GDP and 35.8 percent of tax revenue. Personal income taxes are roughly constant (and low) over all income ranges (except for the lowest, <\$360) while corporate income taxes exhibit a bell-shaped relationship with income. For rich countries (>\$6000) personal income taxes, to a substantial extent, replace taxes on corporations (Table 3 and see below).

*Individual income taxes* account for 2.1 (8.5) percent of GDP and 10.6 (27.7) percent of total tax revenue for the 82 developing (21 developed) countries examined. There is no significant relationship with GDP for developing countries.

The constraints on raising revenue through personal income taxation in developing countries are many and include problems of income measurement, administrative capability, low literacy, and poor accounting. An economic structure dominated by agriculture and small-scale (often unregistered) enterprises makes it difficult to trace, and hence tax, incomes (see Musgrave 1969; Goode 1984; Richard M. Bird and Oliver Oldman 1990). As a result, revenue from this source in developing countries tends to accrue largely from taxes on the wages of employees in public-sector enterprises and foreign corporations to whom tax laws can be more easily applied. Collection from such a narrow base, often at high rates, creates resistance which is apparent in the experience of a number of countries

revenue for the Western Hemisphere), to taxes on individual incomes and social security contributions (e.g., 56 percent of tax revenue for industrial countries). This is by no means a fixed progression; however, a broad pattern is discernible.



(see Gillis 1989a; Tanzi 1991a). In industrial countries, wage and salary employment is more widespread and the capability to tax those outside this net (e.g., the self-employed) greater, thus partly explaining the greater importance of individual income taxation in revenue.

*Corporate income taxes* are more important than taxes on the incomes of individuals in developing countries, accounting for about 3.3 percent of GDP and 17.8 percent of total tax revenue, while the reverse is true in developed countries.<sup>15</sup> Large corporations represent an attractive target for taxation. Their profits are often substantial and they are required to comply with statutory accounting requirements from which the majority of small farmers and traders are exempt. Taxation at source avoids some of the monitoring problems associated with personal income taxation and the difficulties in taxing a diffuse set of transactions. Corporations, however, constitute a narrow base and high marginal rates can act both as a disincentive to investment and as an incentive to adjust internal pricing and costing structures to minimize tax liabilities.

#### *Domestic taxes on goods and services*

Whereas corporate income taxation has limited scope and individual income taxes require sophisticated administration, domestic taxes on goods and services can be applied, or at least attempted, wherever markets or production exist. In the developing country sample as a whole, domestic taxes on goods and services average 5.2 percent of GDP and 30.4 percent of tax revenue.

<sup>15</sup> In four countries (Botswana, Congo, Gabon, Venezuela) the share of these taxes in GDP exceeds 10 percent and in thirteen it exceeds 5 percent. These are mainly countries that depend heavily on oil and other mineral exports and, on a regional basis, corporate income taxes are most important for the Middle East (see Table 5).

This share of tax revenue is almost identical to that in industrial countries (29.3 percent), though the share of GDP is lower. The revenue raised through domestic taxes on goods and services by developing countries may be seen as an impressive achievement and its share in total tax revenue has been on the rise (John F. Due 1988; Tanzi 1991b). The share of domestic indirect taxes in GDP shows no significant correlation with GNP per capita and these taxes are important for all regions (less so for the Middle East at 14.7 percent of tax revenue), comprising between 26 and 37 percent of total tax revenue (Table 5).

The allocation of revenue between domestic sales taxes and excises is roughly equal for developing countries while in industrial countries the contribution of sales taxes outweighs that of excises (see Tables 4 and 5). This partly reflects the administrative ease for developing countries of collecting revenue via excise systems. Excises are often based on quantities as opposed to values of goods and tend to be restricted to a limited subset of identifiable items (e.g., tobacco, alcohol, petroleum). We discuss sales taxes and excises in turn.<sup>16</sup>

*Sales taxes* average 2.5 percent of GDP and 13.8 percent of tax revenue in the developing country sample. Their importance thus slightly exceeds that of individual income taxes (2.1 percent of GDP and 10.6 percent of tax revenue). Sales taxes are not homogeneous. Aside from VAT, which began to be adopted in developing countries in the 1960s (e.g., by Brazil and Colombia), there are a number of other forms of sales tax. Though in some respects easier to administer than VAT, these other taxes are often cascading, in that tax is added to tax as a product moves from production to final

<sup>16</sup> See John Kay (1987) for a note on the distinctions between different types of indirect taxation.

sale. With cascading, tax liabilities cumulate through the system and the effect on final prices is very hard to determine. They provide artificial incentives for vertical integration and it is difficult to assess the tax content of exports or to decide the amount of tax to be imposed on imports<sup>17</sup> (see Ehtisham Ahmad and Stern 1991; Tait 1988). The coverage of domestic indirect taxation is generally weak. Tanzi (1987) estimates that at most 20 percent of the domestic value added is reached by domestic indirect taxation in most developing countries. There is a common tendency to concentrate on taxing the sales of imports which represent an easier target.

The introduction and successful operation of value-added tax (VAT) systems have been heralded as "the most significant event in the evolution of tax structure in the latter half of this century" (Sijbren Cnossen 1991, p. 72). Because a VAT is confined to the value added (value of sales minus purchases), tax neutrality is ensured in the sense that producers and users of a good in a production process face the same price for it. Thus some inefficiencies associated with most other indirect tax systems are avoided: the marginal rates of transformation between two goods (in competitive markets) will be the same wherever the pair of goods enter into a firm's activities. In practice the common price is usually achieved by giving registered firms credit for tax paid on purchases against taxes paid on sales. This has the added benefit of creating a good audit trail. Tax neutrality in international trade is also ensured by applying a zero rate to exports (and allowing reclaim of tax paid on inputs) and by taxing imports equally with domestic products, thus providing

no tax incentive to buy imported rather than domestically produced products and vice versa.

In most countries the VAT extends through the retail stage (Cnossen 1991). Nearly all categories of goods can be taxed using VAT, though basic foodstuffs and associated inputs are often exempt or taxed at a lower rate. "Luxuries" are often taxed at a higher rate. Services, and this is of considerable importance, can be taxed using the VAT, though this aspect may not have been given sufficient emphasis in developing countries (Cnossen 1991).

VAT systems have been introduced in over 30 developing countries and further introductions, especially in Asia, Africa, and Eastern Europe are planned. Its importance in Latin America has been increasing over time, and it now accounts for between 1 and 5 percent of GDP for Uruguay, Peru, Mexico, Guatemala, Colombia, and Argentina, and for about 9 percent of GDP in Chile. In nearly all developing countries where it has been introduced its contribution to tax revenue has been increasing (see Tait 1988). It is also notable that VAT has been increasing in importance in industrial countries despite the falling importance of domestic taxes on goods and services as a whole (again, see Tait 1988). Increasing recognition of its advantages in terms of revenue buoyancy, a broad base consisting of most goods and services, neutrality as concerns both domestic and international trade and difficulties of evasion would all seem to imply that the ascent of VAT will continue.

The redistributive scope of indirect taxes is limited and extensive rate differentiation can be problematic administratively. However a system with some modest progressivity can be designed as follows: an exemption in the VAT for basic foods plus a higher rate of VAT, or excises, on some "luxury" items (Ahmad

<sup>17</sup> For example, in Korea, recognition of these problems led the government to replace eight indirect taxes with a VAT system and a "special consumption tax," i.e., an excise system (see Tait 1988).

and Stern 1991; Tait 1988; and Section 4 below).<sup>18</sup>

*Excises* are almost as important as sales taxes in developing countries, contributing 2.1 percent of GDP and 12.6 percent of tax revenue. Their share in tax revenue is thus larger than in industrial countries, as is their contribution within domestic indirect taxes as a whole. Though excises are important in all developing regions they are of special significance in the Western Hemisphere and Asia where they account for 17.9 and 16.2 percent of tax revenue respectively (Table 5). In developing countries, the rise in the importance of excises is associated with a decline in customs revenue as domestic production of excisable goods grows (1988). Administrative simplicity and revenue buoyancy form a major part of the attraction of excises in developing countries (see Cnossen 1977).

Excise goods typically exhibit large sales volume, few producers, relatively inelastic demand, and easy observability (Cnossen 1991). Three products—alcohol, tobacco, and petroleum—account for most excise revenue though motor vehicles, consumer durables, coffee, tea, cocoa, soft drinks, sugar, and confectionary are also often targets for excise taxation. The fact that there are few producers (e.g., on account of license control) implies that close physical monitoring can be exercised over these goods. Thus excises may be effectively levied on the basis of quantities (e.g., packets of tobacco, litres of alcohol) either leaving the factory or at the import stage. This simplifies measurement and collection, allows extensive coverage (aside from illicit production and smuggling) and limits (although does not eliminate) evasion through channels such as fraudulent in-

<sup>18</sup> The strength of the argument for differentiation of indirect taxes is weakened if income support and social systems are in place (see Section 4).

voices, understated business turnover or spurious claims for exemption which are common for other forms of indirect taxation. In addition, externalities may provide additional reasons for singling out certain goods.<sup>19</sup>

In general, excises should be restricted to a small set of goods with the bulk of goods being taxed under a coherent and unified system of indirect taxation (e.g., VAT), otherwise the system is likely to become unwieldy. In India, for example, the central excise system resembles a form of general production taxation with highly differentiated rates. Rationalization, through the imposition of a VAT system to cover most goods, would seem to be desirable (Ahmad and Stern 1987 and Cnossen 1991).

#### *Foreign trade taxes*

Foreign trade taxes account for 5.1 percent of GDP and for 29.4 percent of total tax revenue in developing countries. They are thus similar in importance to income taxes (5.5 percent and 28.9 percent) and domestic taxes on goods and services (5.2 percent and 30.4 percent). In industrial countries their role is very limited, accounting for only 0.7 percent of GDP and 2.8 percent of total tax revenue. As we shall see in Section 4 the main justification for using trade taxes is administrative feasibility. They are generally unattractive on efficiency grounds.

As a percentage of GDP, trade taxes in developing countries are highest for countries with incomes between \$360 and \$750 and lowest for countries with incomes between \$1620 and \$6000 (Table 3). Africa has the highest share of trade

<sup>19</sup> In the case of alcohol and tobacco, one might want to protect the user (and society) from the negative effects of smoking and drinking. Taxes on motor fuels may be seen as charges for externalities such as pollution, congestion and road maintenance costs (David M. G. Newbery et al. 1988).

taxes in GDP (6.8 percent) and five countries (Zaire, Lesotho, Mauritius, Swaziland, The Gambia) exhibit shares above 10 percent compared to only four countries in all other regions (Belize, Maldives, Solomon Islands, Western Samoa)—see Table 2. Trade taxes are also important for Asia (5.5 percent of GDP) and the Middle East (4.2 percent) but less so in the Western Hemisphere (3.5 percent) or developing Europe (2.8 percent—see Table 4). Given this pattern it is not surprising that we observe (for the developing countries' sample) a negative correlation between the proportion of total trade taxes in GDP and log GNP per capita ( $-0.22$ , significant at the 5 percent level). This may be attributed partly to the fact that in very poor countries with less developed markets and limited administrative capability (e.g., sub-Saharan Africa), trade taxes represent a convenient handle for the raising of revenue. The relative decline in the importance of foreign trade taxes and the increase in importance of domestic indirect taxes with economic development is a well-established finding (see Hinrichs 1966; Musgrave 1969; Norman Gemmell 1990; David Greenaway 1984, 1985; Due 1988; Theo Hitiris 1990; and Tanzi 1991b).

Countries that make heavy use of *import duties* have poorly developed systems of domestic taxation of goods and services, while those countries which have developed extensive systems of domestic taxation make little use of import duties (see Table 6). It is notable that this variation occurs within a *total* share of indirect taxes which is roughly similar for both sets of countries. Those which use import duties heavily are predominantly small and poor open economies with less developed domestic markets. The domestic-tax users, on the other hand, tend to be larger, richer countries with diversified economies.

The relationship seems to be of suffi-

cient interest to warrant a more detailed investigation. To do this we regress share of import duties in GDP (ID/GDP) against per capita income ( $Y$ ), the share of imports in GDP (IM/GDP), and the share of domestic taxes on goods and services in GDP (DOM/GDP).<sup>20</sup> Numbers in parentheses represent  $t$  values. For the 82 developing countries in our sample we have:

$$\begin{aligned} \text{ID/GDP} = & 2.28 - 0.0007 Y \\ & (3.64) \quad (3.24) \\ + & 0.145 (\text{IM/GDP}) - 0.311 \text{DOM/GDP}. \\ & (12.22) \quad (4.27) \\ & \bar{R}^2 = 0.68 \quad (4) \end{aligned}$$

The level of import duties in GDP would appear to be (i) positively related to the degree of openness of the economy, (ii) negatively related to per capita income and (iii) negatively related to a country's raising of revenue from domestic taxes on goods and services.

*Export duties* are a much less important form of taxation than import duties, contributing only 0.6 percent of GDP for developing countries and 4.1 percent of total tax revenue (Table 5). They are most important for countries with GNP per capita less than \$360 (1.1 percent of GDP) and least important in countries with incomes between \$1620 and \$6000 (0.4 percent—see Table 3). A negative correlation coefficient between their share in GDP and log GNP per capita of 0.29 (significant at the 1 percent level) indicates that their importance falls with rising income. When we list the top eight users of export duties,<sup>21</sup> we see that they are predominantly poor exporters of pri-

<sup>20</sup> See Tanzi (1987) for similar calculations. The right hand variables cannot be thought of as exogenous since imports will be a function of import duties, and domestic taxes will be chosen at the same time as import duties, rather than determining them. The regression should be interpreted only in a descriptive way.

<sup>21</sup> Uganda, Zaire, Zambia, Ghana, Solomon Islands, El Salvador, Mauritius, Cote d'Ivoire.

TABLE 6  
INDIRECT TAXES  
(percent of GDP)

Country	GNP per Capita (1987 dollars)	Import Duties	Domestic Taxes on Goods and Services	Total Indirect Taxes	Imports
Lesotho	\$ 372	27.99	5.73	33.77	136.2
Swaziland	\$ 701	16.87	2.16	19.07	96.1
Western Samoa	\$ 560	13.83	4.10	19.06	na
The Gambia	\$ 190	11.40	1.25	13.56	51.7
Solomon Islands	\$ 421	10.25	0.55	13.75	79.5
Belize	\$1324	9.79	2.58	13.23	68.4
Maldives	\$ 344	9.52	3.87	14.36	68.3
Mauritius	\$1500	9.03	4.12	15.55	59.8
<b>Average</b>	<b>\$ 682</b>	<b>13.59</b>	<b>3.05</b>	<b>17.79</b>	<b>80.0</b>
Nicaragua	\$ 828	2.21	18.05	21.62	24.0
Djibouti	\$1008	1.62	15.39	17.04	56.0
Jamaica	\$ 942	1.37	14.71	16.08	53.7
Guyana	\$ 390	1.74	13.96	18.58	65.8
Greece	\$4015	0.34	12.73	13.07	30.9
Portugal	\$2874	0.81	11.81	12.62	38.7
Chile	\$1358	2.62	11.81	14.63	26.1
Mexico	\$1771	0.76	9.85	10.65	12.0
<b>Average</b>	<b>\$1648</b>	<b>1.43</b>	<b>13.54</b>	<b>15.54</b>	<b>38.4</b>

Sources: Same as Table 2; except imports, which are from the IMF International Finance Statistics (Dec. 1986, Dec. 1989, Apr. 1990, Aug. 1990).

Notes: Averages are unweighted. Total indirect taxes are the sum of total foreign trade taxes and total domestic taxes on goods and services. The countries in the first block are the eight developing countries with the highest share of import duties in GDP and those in the second block represent the highest eight users of domestic taxes on goods and services as a percentage of GDP.

many agricultural commodities mainly in Africa. As will be discussed in Section 4.3 this may be connected to the difficulties of taxing agricultural production and incomes at source, although some countries raise considerable revenue via monopsonistic marketing boards (see Section 3.2 below). The convenience of export taxes must, however, be balanced against their deleterious effect on the competitiveness of goods in world markets (see Christopher Bliss 1987).

#### *Social security contributions*

The importance of social security contributions in developing countries is

small, accounting for 1.3 percent of GDP and 6.2 percent of tax revenue. This is in sharp contrast to industrial countries where they constitute one of the major sources of government revenue, contributing 8.9 percent of GDP and 28.4 percent of tax revenue. While this may partly reflect a low priority being attached to social security in developing countries one must recognize that there are considerable difficulties connected with operating formal social security systems in developing countries. The problems of extracting social security contributions are similar to those for individual income taxation (see Burgess and Stern

1991). For this reason, coverage is often restricted to employees in the formal sector leaving out most of those in the informal sector and in rural areas, while in industrial countries coverage is often close to universal (see Ahmad et al. 1991; and Anthony B. Atkinson 1989 for a discussion). Given that the base of social security taxes in developing countries is largely wages, and that the share of wages in national income rises with per capita income, it is not surprising to find a strong positive correlation between the share of these taxes in GDP and log GNP per capita (0.48—significant at the 1 percent level).

### *Wealth and property taxes*

Taken together, these taxes constitute the least important form of taxation in developing countries, contributing a mere 0.5 percent of GDP and 2.6 percent of total tax revenue. Their importance in industrial countries is also negligible. As wealth and ownership of property is commonly concentrated in the hands of a small section of the population this result is striking, especially as these taxes have exhibited considerable importance in the past (Hinrichs 1966, and Haskell P. Wald 1959). The poor performance of these taxes may be traced to two factors (i) difficulties of observation, measurement and administration, (ii) political and social resistance.

Wealth is inherently difficult to observe and measure. It may be concealed, exported (e.g., capital flight) or shifted into assets which are exempt from taxation. Due to lack of other criteria, presumptive criteria often have to be used to estimate wealth (see Tanzi and Milko Casanegra de Jantscher 1989). Poor administration and stiff and effective resistance on the part of the potential taxpayers have meant that attempts to introduce taxes such as the net-wealth tax have often been costly fail-

ures (Tanzi and Casanegra de Jantscher 1989).

Land and buildings are immovable, visible assets usually with legal titles of ownership. Land, being easily observable, in inelastic supply (at least “unimproved” land) and with an unequal distribution, would seem to be a natural base for taxation from the perspectives of administration, efficiency, and equity (see e.g., Ahmad and Stern 1991; and Nicholas Kaldor 1964). While historically there are times and places where the land tax has been important, the recent record has been poor (see Jonathan Skinner 1991, and Section 4.3 below).

### *3.2 Non-Tax Revenue*

In most countries the bulk of government revenue is raised through taxation. Governments do, however, obtain substantial revenue from a number of other sources. On the whole this non-tax revenue is more important for developing than opposed to industrial countries, comprising about 21 percent compared to 10 percent of total revenue (IMF 1989).

Regional variation in the importance of non-tax revenue is marked. Non-tax revenue is by far the highest in the Middle East where it accounts for over half (53.3 percent) of total revenue due largely to the importance of direct revenue from oil. Shares in total revenue are also high for developing Europe (22.4 percent) and Asia (21.8 percent) which is partially explained by state involvement in industry. Shares for Africa (15.8 percent) and the Western Hemisphere (15.4 percent) are somewhat lower although a number of countries in these regions do exhibit high dependence on non-tax sources.<sup>22</sup>

<sup>22</sup> The IMF statistics (IMF 1989) show eight countries where revenue from non-tax sources exceeds that from taxation. These for the main part are oil exporters—United Arab Emirates (100 percent of to-

A notable feature of many non-tax interventions is that revenue can accrue directly to the government. In some cases, people may not be fully aware that they are being taxed, thereby easing collection. On the other hand, non-tax sources of revenue can exhibit a substantial degree of variability. In countries where there is a strong dependence on revenue from mineral and agricultural bases, fluctuations in world prices lead to large swings in government revenue and these "shocks" have many adverse effects (see Newbery and Joseph E. Stiglitz 1981).

Sources and mechanisms for raising non-tax revenue are diverse. Our intent here is not to attempt comprehensive coverage but rather to present and comment briefly on a few prevalent non-tax mechanisms of revenue generation.<sup>23</sup> In (i) we discuss revenue from state-owned industry. Revenue from mineral monopolies, of particular importance, is examined in (ii) and in (iii) we look at agricultural marketing boards.<sup>24</sup> Though diverse, these different sources of non-tax revenue all involve government command over resources. In the case, for example, of a nationalized industry, government revenue is extracted through pricing as opposed to taxation. Similarly, agricultural marketing boards may raise

revenue by consistently setting farm-gate prices below world prices. While there is a distinction between prices and taxes it should be noted that the principles of taxation (see Section 4) also apply to public-sector pricing (see e.g., Atkinson and Stiglitz 1980, and Newbery and Stern 1987).

(i) *Nationalized Industries.*<sup>25</sup> Developing countries devote a much higher proportion of expenditure to the supply of "economic services" than industrial countries. This often reflects a view of the role of the state as the driving force behind growth and development through ownership and control of natural resources, public utilities, transport and communications, construction and manufacturing, heavy industry, and so on. Revenue from public-sector enterprises constitutes the main component of non-tax revenue and is important in some countries (as are losses of public-sector enterprises). In cases where a surplus is generated, this form of implicit taxation may carry benefits in terms of low costs of administration and difficulties of evasion (see (ii) and (iii) for examples).<sup>26</sup>

The failure of public-sector enterprises to generate investable surpluses in a wide variety of settings has focused recent discussion on their efficiency relative to their private counterparts and of the gains from privatization (Paul Cook and

tal revenue), Kuwait (97.6 percent), Oman (76.2 percent), Bahrain (71.2 percent), Nigeria (62.9 percent). A few others have heavy concentrations of revenue from state-owned industry (Romania—71.2 percent; Brazil—53.5 percent) and the final one, Singapore (50.6 percent) is a city state. None of the industrial countries exhibits high shares of non-tax revenue, the highest share is recorded by Norway (17.6 percent).

<sup>23</sup> Also it should be realized that the purpose and effect of non-tax interventions are often not primarily to raise revenue for the state.

<sup>24</sup> Revenue from these sources often does not make its way into the government accounts and as a result their importance may be underestimated. Ideally the discussion and statistical analysis in Section 3.1 should have focused on total revenue (tax and non-tax—see Tabellini 1985).

<sup>25</sup> In discussing revenues from state enterprises one should distinguish between net and gross figures. Public enterprises often receive investment funds from the center. The size of revenues channelled back to the center will then be overstated if expressed in gross terms. In the case of a planned economy, the government and enterprises have, in essence, a unified budget.

<sup>26</sup> In a decentralized economy the government may not, however, find it easy to induce enterprises to transfer funds to the exchequer and there are a host of accounting and other procedures which hinder this. For a full discussion of the substantial economic, financial, and social costs of administering implicit taxes (and subsidies) through state-owned enterprises, see Cook and Kirkpatrick (1988) and Gillis (1989b).

Colin Kirkpatrick 1988; Robert Millward et al. 1983; IMF 1986; World Bank 1988; John A. Vickers and George Yarrow 1988; Dieter Bös 1991). From the public finance perspective, a number of points emerge. First, changing ownership per se may achieve little savings in resources in the absence of effective competition. Second, revenue from privatization sales cannot constitute a sustainable dependable source and even in the short term its revenue potential is not large. Third, from the perspective of the public finances the critical question is whether a greater quantum of discounted revenues can be obtained from a privatized industry via the receipts of privatization and taxation than from state-owned enterprises via pricing and profits.

(ii) *Revenue from Mineral Sources.* The mineral sector with its high visibility and large rents is often seen as a convenient revenue handle. Governments employ a variety of means to extract mineral rents which include royalties, property/wealth (or related) taxes, corporate income taxes, and direct monopoly control. All these mechanisms may be effective in raising significant revenue. The method or combination of methods employed is determined by factors such as the stage of development of the domestic mineral industry, administrative concerns, judgments concerning the relative efficiency of public versus private mineral companies, and considerations of national security and bargaining power (see Ross Garnaut and Anthony Clunies Ross 1983).

As concerns oil, we see that as the domestic industry develops there tends to be a shift from output and profit sharing, enforced through taxation, to government direct monopoly control. Venezuela, for example pioneered the 50–50 profit split in 1948. From 1969 to 1978, the government appropriated 85 percent of profits as corporation income tax, and

in 1978 total nationalization of the industry was implemented (see Edwin Lieuwen 1985). Alternatively there may be a mixture of instruments. In Indonesia, where operations are jointly managed and financed by private companies (mostly foreign) and the state company Pertamina, there is a requirement that 85 percent of the output be handed over to Pertamina. When taken together with other mineral taxes, Garnaut and Clunies Ross (1983) find that this arrangement is equivalent to an 89 percent corporation tax. From a revenue perspective one cannot assume the superiority of one form of rent extraction over another. Both theory and empirical evidence suggest that the effect on revenue of a move to monopoly control may be insignificant if profit or corporate income taxes are already extracting the entire rent element in profits.<sup>27</sup>

(iii) *Agricultural Marketing Boards.* In many developing countries, agriculture is the largest sector. As we saw in Section 3.1 (see also Section 4.3), taxation of agriculture is problematic. In some countries, there has been an attempt to raise revenue through the establishment of agricultural marketing boards.<sup>28</sup> The government acts as a monopolistic buyer and where farm-gate prices are set systematically below world or consumer prices, with the margin designed to exceed transport, storage, and distribution costs, government revenue is generated. This system resembles a trade tax. It is

<sup>27</sup> Lieuwen (1985), finds that the effects of the oil industry nationalization in Venezuela in 1976 on the profit split between government and companies was insignificant. In Kuwait the revenue boost which followed legislation passed in 1973 to allow the national oil company KNOG to purchase 40 percent of equity in private companies is attributed more to the oil boom of 1974 than to any other factor, and there was in fact a drop in revenue following total nationalization in 1975 (Garnaut and Clunies Ross 1983).

<sup>28</sup> Other objectives include the stabilization of prices or incomes and support of particular types of production (see John C. Abbott 1987).



often presented as a device for maintaining price stability to farmers. Volatility will, however, be translated into government revenue. In most cases only a few goods are taxed in this way. The disincentive aspects of imposing lower prices can lead to lowered domestic production of these goods and illegal informal marketing and smuggling.

The extent to which revenue is raised varies. Abbott (1987) reviews a number of modern examples and finds only a few cases where significant revenue was raised. Peter T. Bauer (1954), in his now classic study of West African trade, argued that the agricultural marketing boards set up in this region in 1947 for such commodities as cocoa, palm oil, groundnuts, and cotton, regularly maintained prices paid to producers at between 32 percent and 58 percent of commercial values, and thus raised substantial revenue. Angus Deaton and Dwayne Benjamin (1988) found that the Cote d'Ivoire Coffee and Cocoa Marketing Boards, responsible for all purchasing and distributing of the country's two most important crops, had in some years generated as much as 40 percent of government revenue. Real price series for the period 1963–1987 for both crops exhibit a flat administered price trend consistently below a highly variable world price (the mean ratio of the two prices being 47 percent for cocoa and 37 percent for coffee). The search for revenues can, however, be carried too far and the role of the Cocoa Marketing Board in the demise of the cocoa sector in Ghana is well documented (see Gillis 1989b, Michael Roemer 1984).

#### 4. *Theory and Principles*

There are a number of features of developing countries which are not present in the standard tax models and which are critical to tax analysis. These include the

limited availability of tax tools and their restricted coverage, lack of resources and poor administration, different institutional and sectoral structures, and a variety of types of market functioning. This makes, in many ways, the analysis of the impact of taxation in developing countries more challenging and more interesting. In this section we try to summarize and assess what theory has to say about tax policy in developing countries.

While this section is not very technical, it is based largely on formal models and results in the relevant existing literature on the economic theory of taxation. Formal models must necessarily be simple and omit a great deal if they are to be tractable. In the economic theory of taxation this has generally meant that many of the problems of administration and political pressures have been left out of formal policy models. Those involved in tax analysis, whether theoretical or empirical, do not, however, regard these issues as unimportant. For instance, they are often taken into account by concentrating the analysis on those tax tools which are seen as implementable in a given context. The problem is that it is difficult to get very far in the analysis of policy models that try to incorporate administrative and political problems explicitly. Our approach in this paper, in the way of theoretical insights, is to distil theoretical insights arising from models and then set them beside a less formal analysis, provided in Section 5, of the problems of administration, political pressures, and the like. Any final judgment about the workings of taxation, and on policy, would then come from taking the more formal and less formal approaches together. In our view that is the way tax analysis is likely to proceed for some time, and wisely so given what theory is likely to be able to manage.

The positive theory of taxation forms the subject matter of Section 4.1. In Sec-

tion 4.2 we present the relevant insights from theories of normative taxation in terms of basic principles which can guide the design of tax structures. By far the largest sector in most developing countries is agriculture. This creates special problems for taxation and the structure and tax treatment of this sector can exert particular influence on the economy and the effectiveness of other taxes. Agricultural taxation is the subject matter of Section 4.3. We comment briefly in Section 4.4 on some aspects of the political economy of taxation. By this we mean how one takes into account the ways in which agents in the economy may try to influence tax policy to suit their own interests. Much of the analysis of taxation is based on static models, and we discuss in Section 4.5 some of the problems involved in extending the analysis to dynamic contexts.

#### 4.1 *The Positive Theory of Taxation*

Analysis of taxation for developing countries diverges from that for developed countries in several important respects, in particular concerning the tools and bases which may be used and the structure of the models analyzed. In this section of the paper we will illustrate the differences which arise from these two perspectives. At the same time, however, we shall want to emphasize that many of the principles, methods, and elements of models will be common to the analysis of taxation for both developed and developing countries. Therefore many lessons learned in one sphere will be relevant to the other.

Subjects which are prominent in the positive analysis of taxation for developed countries include the effects of taxes on labor supply, on risk taking, and on saving, and the incidence of taxes on the corporate sector (see, for example, Atkinson and Stiglitz 1980; and Kay and Mervyn A. King 1986). While these issues

are important for developing countries, they have not been centerpieces for research, partly because the kind of databases used in their empirical analysis are rarely available for developing countries. Rather, for developing countries, there has been greater emphasis among theorists on the effects of various indirect taxes and government pricing decisions in models which incorporate particular features of relevance for developing countries, with a focus on restricted tools, special economic structures, or particular problems in markets, such as that for labor (Newbery and Stern 1987). The difference in emphasis accords with the different balance in the sources of revenue (see Section 3) with, typically, in developing countries around two-thirds of tax revenue coming from indirect taxes, and in developed countries two-thirds from direct taxes (including social security contributions) for which questions of labor supply, risk, and savings have been more important in the literature (Atkinson and Stiglitz 1980).

A number of authors have contributed lists of special features of developing countries of particular relevance for tax analysis (see, for example, Newbery 1987a, p. 167; Raaj K. Sah and Stiglitz 1987, pp. 428–29; Anwar Shah and John Whalley 1991, Table 11.4). These include: (i) the importance of the primary sector; (ii) dualism—economic and social organization in traditional activities may be different from that in modern capitalist enterprises; (iii) segmentation in the labor market; (iv) the fragmentation of capital markets; (v) large numbers of people living in very poor conditions plus small sections of the population who are extremely rich; (vi) many small-scale enterprises; (vii) poor education levels; (viii) the prevalence of trade distortions, particularly quotas; (ix) a major role for planning, including extensive use of permits, licenses, and rations; (x) a large public

sector; (xi) extensive foreign ownership; (xii) weak administrative capabilities; (xiii) pervasive corruption; and (xiv) substantial evasion. Limited information plays an important role in a number of the special features just described. Extensive use of physical controls in trade and in planning, together with a small industrial base, may be associated with oligopolies, rents, and rent-seeking. We do not have the space to follow through the theoretical implications of the kinds of difficulties implied by the features described, however, in addition to the references cited, see Newbery and Stern (1987), Javad Khalizadeh-Shirazi and Shah (1991) and Ahmad and Stern (1991).

An important goal of tax analysis is to characterize who gains and who loses from tax reform or tax changes, and by how much. It has been common in the literature to phrase this type of concern in terms of questions such as Who bears the tax burden? and What is the incidence of a particular tax? (For an excellent discussion see Atkinson 1990.) There are two problems with the expressions of the question in terms of "burden" and "incidence." The first is that the implied contrast is apparently between the state of affairs with the tax and that with zero taxation, which is generally not a sensible or feasible option. Replacement of zero taxation as the standard of comparison by some kind of proportional tax structure can often be rather artificial because the system that is supposed to yield this proportionality is often difficult to specify in a plausible manner. Second, there is a temptation to think that the "incidence" can be analyzed by looking at one tax at a time and the particular assumptions surrounding that tax. Such an approach can be misleading because predictions of the effects on the economy of a tax change should take into account the whole structure of the model, including behavior of agents, structure of markets, and the in-

fluence of other taxes in the system. While incidence is a word that can sometimes have useful intuitive appeal, it is hazardous in formal analysis, and that is why we would recommend presenting the problem in terms of the analysis of gainers and losers from reform.

A useful table is provided by Shah and Whalley (1991), the entries of which show the implications of different modeling assumptions for the effects of different taxes. For example, an increase in a tariff on a good with a binding import quota, but competitive world supply conditions, would be expected to reduce the rents from the quota, but would not affect (at least in the first round) the domestic price of the good. This is in contrast with the case without a quota where an import tariff would simply push up the price of the good subject to tariff. To take a second example, if a company is foreign-owned and taxes incurred in the developing country are creditable for tax purposes by the foreign company in its country of origin, then an increase in corporation tax may have no effect on prices in the developing country or on net of tax profits for the firm worldwide, but might simply imply a reduction of tax revenue for the finance ministry in the origin country.<sup>29</sup> Third, in models (such as that of John R. Harris and Michael P. Todaro 1970) where labor markets do not clear and there is movement from a rural to an urban sector with urban search unemployment, then taxes that affect the level of income in either sector will have an influence on the level of equilibrium unemployment. Further examples of the influence of developing country characteristics on tax analysis are provided in the section on agriculture (Section 4.3).

<sup>29</sup> Under these conditions the provision of tax concessions to the foreign company entail an unnecessary loss of revenue (see World Bank 1991).

There have been, broadly speaking, three approaches to questions of deriving the impact of tax changes for developing countries in general equilibrium models. Some theoretical analyses (see, for example, Sah and Stiglitz 1987; Christopher Heady and Pradeep Mitra 1987; Avinash K. Dixit and Stern 1974) have used simple theoretical general equilibrium models with two or three sectors and a transparent analytical structure. One can try to bring out the effects of tax changes in terms, for example, of the contributions of different elements in an appropriate equation or formula. Second, there have been attempts to calibrate this kind of model using explicit functional forms (see, for example, Avishay Braverman, Jeffrey Hammer, and Choong Y. Ahn 1987, or Newbery 1987b). Third, we have computable general equilibrium (CGE) models.

There is now a substantial selection of examples of CGE models. It is unnecessary to review these in detail because there are excellent surveys (see, for example, John B. Shoven 1983; Shoven and Whalley 1984; and Sherman Robinson 1989). For applications see, for example, Kemal Dervis, Jaime de Melo, and Sherman Robinson (1982), or for a country case-study (Mexico) see Timothy J. Kehoe and Jaime Serra-Puche (1983). Typically, production functions exhibit a constant elasticity of substitution (CES), factor markets are perfect, and preferences are of a fairly standard type (often also CES). The free parameters in the model are chosen to be compatible with the national accounts structure for a particular base-year. Policy variables are then changed and the new equilibrium is computed. Household utilities can be compared before and after the tax change to come to a judgment as to whether the change is beneficial. More recently there has been a focus on introducing price rigidities and non-market clearing (see, for

example, Shah and Whalley 1991, for a recent survey, and Kehoe and Serra-Puche 1983, for an early example).

We shall confine ourselves here to some brief comments concerning the use of CGE models in policy discussion. First, they require a very large number of parameters, many or most of which are essentially imposed exogenously. Second, the scope for sensitivity analysis is rather narrow. Thus one can vary an elasticity of substitution fairly easily but it would generally require substantial work to change in any serious way the institutional structure of a market or sector. Third, and related to the first two points, it is not easy to make an intuitive assessment of the role of crucial assumptions in determining the answers. Fourth, the detail they provide on the consumption side is generally rather less than would be required in coming to a judgment about the identification of different types of gainers and losers—typically there may be 20 or so household groups compared with a household survey of five or ten thousand household groups (see, for example, Atkinson and Holly Sutherland 1988). On the more positive side the models are explicit and they do allow some flexibility. And the models allow, in many contexts, estimation of changes in factor prices, an essentially general equilibrium phenomenon.

#### 4.2 *Normative Tax Theory*

Normative tax theory uses a combination of positive theory on the effects of tax changes, together with ethical criteria for the evaluation of these effects, to appraise changes in the tax system. Most normative arguments involve a balancing of the economic criteria of efficiency, equity, and revenue. The explicitly economic analysis would itself have to be balanced against administrative, political, constitutional, or any other relevant constraints or objectives (see Sec-

tion 5). In this section our main focus is on the economic criteria.

Optimal tax theory combines economic criteria into a single objective and finds the best tax system subject to the various constraints. The objective is usually expressed using a social welfare function, which itself depends on the utility or real income of households. If one household gains and no others lose then the social-welfare function shows an improvement. It therefore embodies efficiency in its basic sense. Moreover, the social welfare function incorporates, in a way which is central to the whole analysis, a trade-off between efficiency and equity. To be explicit the function usually takes the form  $W(u^1, u^2, \dots, u^h, \dots, u^H)$  where  $u^h$  is the utility of household  $h$ . A transfer of income  $\Delta y$  from household 1 to 2 (if there are no further effects) would therefore<sup>30</sup> change welfare by  $(\beta^2 - \beta^1)\Delta y$  where  $\beta^h$  is the social marginal utility of income of household  $h$ . It is often helpful to think of distributive value judgments in terms of specification of the  $\beta$ s (see Stern 1987, or Ahmad and Stern 1984, 1991). The theory is not, of course, about how to impose the  $\beta$ s but shows how to work out policies for an arbitrary set of  $\beta$ s or social welfare function. It provides, therefore, the basic grammar of normative tax analysis.

Given that one is optimizing over a range of possible tax measures, the tax tools themselves and the model of the economy will usually have to be kept fairly simple to keep the analysis tractable. The best-developed optimal tax models are those of optimal commodity taxation, where there is a simple linear tax rate for each commodity, and of optimal income taxation where, usually, there is a single source of income, but where the tax rate on that income may

be nonlinear (see Newbery and Stern 1987, for example, for an introduction). Of particular interest are models where optimal commodity taxation and optimal income taxation have been combined.

We shall not go into the detailed analysis of optimal tax models. We shall, however, present and discuss briefly the basic principles for tax design and tax analysis which emerge from these models and which have importance for the analysis of taxation in developing countries. They are all based on specific results and theories in the literature (see Ahmad and Stern 1989, 1991, and Newbery and Stern 1987, for references).

(i) Where possible, lump-sum taxes and transfers, or close approximations, should be used to raise revenue and transfer resources. Examples are land taxes (although disincentives to the improvement of land must be considered) and transfers, or subsidized rations, linked to the demographic structure of households (although incentives concerning family size and saving would have to be considered). It is not easy to find other examples where lump-sum taxation can be appropriately linked to relevant criteria (particularly wealth or poverty) without the tax or transfer ceasing to be lump sum. Head or poll taxes are further examples but are unattractive on distributional grounds.

(ii) It can be very misleading to look at one set of tax tools in isolation from what is happening elsewhere in the tax system. For example, we should not allocate redistribution to the income tax and revenue raising to indirect taxes. Both taxes affect distribution, affect resource allocation, and raise revenue. Further, the presence and role of the one set of taxes strongly influences the appraisal of the other (see, for example, principle (vi) below).

(iii) The focus of indirect taxation should be final consumption. This means

<sup>30</sup> Where we also assume that there are no external effects.

that intermediate goods should not be taxed unless there are special distributional reasons or there is difficulty in taxing final goods. This applies also to tariffs, which should be rebated on intermediate goods and linked to other taxes on final goods. They should be used for protection only when the case for supporting a particular domestic industry (and penalizing its users) is strong and where other means of stimulating the industry are less satisfactory. Tariffs are generally superior to quotas in providing protection. However, because they act like a production subsidy financed by a consumer tax on the same good, there is no presumption that they are the best fiscal means of aiding an industry through a learning period. It must be recognized that the elimination of tariffs is a long-term goal which, for revenue reasons, could not be achieved in the short or medium term in countries with very few tax handles. But it should be pursued in the sense that tariffs should be reduced as and when the revenue from final goods taxation can be built up (e.g., through VAT systems). Again, in the short term, it is generally preferable to replace quotas by tariffs so that the rent from the quota flows directly to the government rather than to those agents who allocate or receive the quota.

(iv) Public-sector prices should be set according to the same principles as indirect taxes: price equal to marginal social cost for intermediate goods (except for the cases noted in (iii) above) and marginal social cost *plus* an element for taxation for final goods.

(v) The appropriate microeconomic criterion for the expansion of industries is profitability at shadow prices (see below) of the incremental output. Other indicators (such as effective protection rates or domestic resource costs) are reliable only where policies arising from them coincide with those associated with the use

of shadow prices. Similarly a reform rule based on the other indicators, such as adjusting tariffs to move towards uniform protection, is incorrect.

(vi) The cost of a policy measure, such as an expanded education or pension scheme, should be seen in terms of shadow tax revenue rather than market tax revenue. Shadow revenue is that associated with shadow taxes defined as the difference between market prices and shadow prices (Drèze and Stern 1987 and 1990). For example, if producer prices are equal to shadow prices then shadow producer taxes are zero, shadow consumer taxes are equal to actual commodity taxes and shadow tax revenue and market tax revenue coincide.

(vii) Indirect taxes should be guided by a trade-off between efficiency and equity, and, in the absence of well-functioning schemes for income redistribution, there is no theoretical presumption in favor of uniformity of indirect taxation. Specifically one can show (see Deaton and Stern 1986) that proportional commodity taxes are optimal if Engel curves are linear and differences across households in their demographic structure shift the position but not the slope of their Engel curves, and if there is a universal and optimal set of demogrants (i.e., transfers linked to household structure). If any of these assumptions fail, then generally indirect taxes should depart from uniformity to take account of whether goods are relatively more important in the consumption of the worse off (mitigating in favor of lower taxes on those goods).

(viii) There are important examples of externalities as a basis for taxation. These include road usage, energy consumption, tobacco, and alcohol. As with other taxes in analyses where "first-best" assumptions do not apply, income distribution and revenue effects elsewhere (and not simply marginal externality costs) should

enter into the judgment of the appropriate tax.

(ix) Theoretical arguments for a corporate income tax as such are weak. This tax should be seen as a means for taxing personal incomes and an analysis of it should be closely linked to the personal income tax.

These results are based on basic propositions in the theoretical literature. Almost all of them also have some simple intuitive appeal. It is nevertheless the case that they run counter to many policies currently implemented and to "common sense" arguments that one often hears advanced. We often hear uniformity of proportional indirect taxes advocated as a requirement for efficiency—see principles (ii) and (vii). That argument is inadequate because there are generally many sets of taxes which are efficient subject to revenue and other relevant constraints (e.g., the absence of lump-sum taxes). If we add equity as a criterion in addition to efficiency, we find that uniform taxes become unattractive unless the income redistribution system through taxation and transfers is very powerful. The less effective the transfer and tax system, the weaker the argument for uniformity of commodity taxes becomes.

We shall not provide further detailed discussions of the derivation or application of the basic principles beyond noting briefly some of the analytical discussion around principles (v) and (vi). These are a little different from some of the other principles in two ways: they introduce an important analytical concept, that of social opportunity cost, or shadow price; and they concern reform rather than optimality. The distinction here is that the optimality analysis involves a search for the best, whereas the analysis of reform is simply concerned with finding improvements from some given starting point. Analytically it is clear that the two

approaches are closely related since, by definition, the optimum is a state of affairs from which no beneficial reform is possible. One can show (see Drèze and Stern 1987 and 1990) that an improvement in a government instrument (be it a ration, tax, subsidy, or a quota) may be characterized by first looking at the direct welfare effect on households of the change and then subtracting the cost at shadow prices of the induced changes in net demands. For example, if we are considering an increase in an old-age pension then we can compute the net social benefit as the social value of the income going to the pensioners less the cost at shadow prices of the increases in pensioners' demands. If that calculation yields a positive number, then an increase in the old-age pension is a social improvement. The optimality rule for the old-age pension is that this calculation should yield zero (i.e., there should be no further room for improvements in social welfare). Analytically this approach is identical to that involving shadow tax revenue embodied in principle (vi).

One concept we have not used in formulating our set of principles of guidelines is that of the "shadow price" of public funds.<sup>31</sup> In our judgment it has limited usefulness. Crudely speaking, the concept is intended to encapsulate the extra dead-weight losses associated with raising extra revenue—it is argued that the losses would imply that the cost of a dollar of public revenue is in excess of a dollar. There are a number of difficulties. First, the shadow price or Lagrange multiplier on the government revenue constraint will depend on how the problem is formalized, rather than on the basic economic structure of the model (see Drèze and Stern 1987). For example, in

<sup>31</sup> For a recent and useful discussion which provides a number of references, see Charles L. Ballard and Don Fullerton (forthcoming).

many general equilibrium models the government revenue constraint will not appear at all (it will follow from Walras' Law). Second, even in models where the shadow price can be appropriately defined as the Lagrange multiplier on this constraint, its level and moreover its relationship to private marginal utilities of income will depend on the choice of numeraire (see Atkinson and Stern 1974) so that whether the value is above or below unity requires careful interpretation. Third, if taxes are not optimally set, "marginal dead-weight losses" appropriately defined, can be negative. For example, a small increase in an indirect tax might generate substantial revenue if it led to substitution in demand towards heavily taxed goods. The loss in welfare required to generate a unit of revenue may therefore be small, indeed it can be smaller than that associated with raising extra revenue through an increase in lump-sum taxation. Fourth, the (high) shadow price of public funds is often used as an argument for high social discount rates. This argument requires careful definition of social discount rates, of the structures of projects being analyzed and of the movement over time in the shadow price of public funds (see Drèze and Stern 1987). Such care is rarely exercised. For some examples of the many costs of funds see Ahmad and Stern (1991).

### 4.3 *The Taxation of Agriculture*

There are many reasons why the taxation of agriculture deserves special study in developing countries and cannot be treated as just another example of a production activity in the standard competitive model. First, it is of central importance in both employment and output, the contributions often being in the region of one-half to three-fourths and one-fourth to one-half respectively. Sec-

ond, there are strong limitations on the tax tools available to the government to tax agriculture. In particular it is often impossible to tax transactions between producers and consumers, the difficulty arising both when the "transaction" is within the household and when sales are between households or in informal markets. Third, the rural labor market, which is dominated by agriculture, interacts directly and indirectly with labor markets throughout the economy. Fourth, the government is often the main or only supplier of vital inputs such as water, fertilizer, and electricity so that its pricing policy must be integrated into the taxation of production. Fifth, food—its availability, distribution, and price—is of such importance to welfare that all governments need to take some responsibility for its price, quality, and security. These characteristics make agriculture an arena where the application of normative tax theory of the kind described in Section 4.2 is both important and requiring of careful attention to the special features described. With agriculture playing such an important role in output and labor markets, it is clear that one has to take a general equilibrium view and, therefore, there will be many influences on the incidence of taxes. We would emphasize four of these: the difficulty of taxing food transactions within the country (so that subsidies to consumers act like taxes on farmers and vice versa); the elasticities of supplies and demands for agricultural products; effects operating through the labor market (for example, changes in rural incomes may influence urban wages), and the nonuniform distribution of farmers' access to technology (so that taxing or subsidising certain inputs may have strong distributional effects).

An obvious and important example of a possible method of agricultural taxation is the land tax. The distribution of land in developing countries is often very un-



equal and it can be argued that land is in inelastic supply. Land is visible, immovable, and serves as a good indicator of wealth. Effective land taxation requires careful land records. This does not in principle raise difficulties which are excessive when compared to measuring the base for other taxes—landowners have a strong incentive to establish legal titles to their lands. From the viewpoint of equity, and efficiency and administration, land would seem the natural base for agricultural taxation and has been seen as such by economists from David Ricardo to Henry George.

There is a problem with land quality. One would want to measure this by looking at potential income. A number of countries (for the example of Pakistan, see Ahmad and Stern 1991) do have records which are linked to quality. This raises, however, the further question of whether improved land is in inelastic supply and the answer would often be negative. To this extent the attraction of the efficiency argument for taxing land is diminished. Another disadvantage of the land tax is that it involves no co-insurance between government and farmer, as compared with, say, an output tax (see Karla Hoff 1991).

These drawbacks are small relative to the overall attractiveness of land taxes. The small contribution of land taxes to overall tax revenue (see Section 3.1) and its relative decline over time are thus mainly explained by fierce and effective resistance to this form of taxation (see Skinner 1991, and Section 5.3).

It is interesting to ask how far taxes on inputs and outputs can substitute for a land tax. Clearly if the prices of all outputs and inputs are reduced in the same proportion then this is equivalent to a proportional tax on land. This would involve an output tax and an input subsidy. Such a combination is clearly impossible, however, because labor could not be sub-

sidized in this way. An attempt at such a system would therefore distort incentives towards purchased inputs. The example does show, however, that one must examine carefully the effects of combinations of taxes.

Other possibilities for taxing agriculture include an agricultural income tax and export duties. The first of these raises severe administrative difficulties in measuring income. The second has been quite popular (for example, for cocoa in Ghana and cotton in Pakistan) but can create considerable distortions given that elasticities of supply of particular crops may be quite high (see Newbery 1987a and 1987b). Note that if supply is inelastic, an export tax is like a land tax. If the exportable is produced by richer farmers, this need not have an adverse distributional impact.

The different possible methods we have indicated suggest that a careful study of the potential of the reform of various combinations of the taxation of outputs, the pricing for publicly supplied inputs, and the subsidization and taxation of purchased inputs may well suggest possibilities for substantial improvements for revenue, efficiency, and distribution. It is an area where it can be very misleading to look at one agricultural tax in isolation and for which a general equilibrium framework will be important (see, e.g., Braverman, Hammer, and Ahn 1987; and Newbery 1987b).

#### 4.4 *Political Economy*

Recently there has been particular attention in the study of public policy in developing countries to “rent-seeking.” Government policy, such as tariffs or quotas on particular goods, raises the incomes of certain individuals or groups. Those individuals or groups seek the rents which might be conferred by such policies by spending resources on trying

to get them implemented (see also Section 5.3). Those who decide or administer the policies can thereby gain substantially and favor systems which allow themselves to benefit from the exercise of their discretion. In this kind of theory, policy has an endogenous element in that it is determined in part by agents acting in their own self-interest.

"Rent-seeking" theories provide one example of a type of approach often called "political economy." Further, important and interesting examples concern voting models where public choices are determined by votes of individuals, models of bureaucracy where those who administer the organs of state exert strong influence on outcomes, and models where interest groups compete against others for group gains and for control. A leading figure in this literature has been James M. Buchanan and many of these positive theories are grouped under the heading "public choice" (see e.g., Buchanan and Robert D. Tollison 1972; Agnar Sandmo 1990; and Buchanan 1991). In these models bargains are struck and transfers may be made. An optimistic view of such a process would see it as leading to Pareto improvements (Wicksell writing in 1896 provides an early discussion).<sup>32</sup> More pessimistic pictures would be of special interest groups gaining power or a leviathan bureaucracy dominating. It must be recognized, however, that a systematic analysis of policies in terms of their consequences is necessary for this approach also. For a recent discussion of some of the issues and of relations with normative theories see Atkinson (1987).

Some analysts have embodied the considerations just raised into guidance for the construction of tax systems. For example Buchanan (1966) stressed the im-

portance for democratic decision making of clarity in tax-prices (defined as the extra tax due from individuals or groups arising from an extra unit of public spending). He therefore argues the virtues of well-defined and understandable rules governing the allocation of costs and benefits of public transactions.<sup>33</sup> A related line of argument emphasizes the importance of constitutions both in protecting some groups from others (e.g., a minority from the majority), but also in the restriction of "Leviathan's fiscal appetites" (Geoffrey Brennan and Buchanan 1980 and 1985). Constitutional limitations on revenue, bases, rates and types of tax might then be seen as controlling the size of government and the direction of its tentacles. In addition the theory offers insights into why certain taxes encounter resistance while others do not (see Section 5.3) and thus can help explain observed tax structures.

All sensible tax models, however, whether or not policy is determined within the system, share the requirement that the effects of policy have to be calculated explicitly. This is the first, and often most difficult, part of any analysis of policy in terms of its consequences. Thus, for example, the normative approach to a change in income tax should calculate who gains and who loses in a similar manner to a model where changes take place according to whether particular interest groups would benefit. For further discussion of "rent-seeking" and "neoclassical political economy" see Krueger (1974), Buchanan, Tollison, and Gordon Tullock (1980), David Colander (1984), T. N. Srinivasan (1985), Jagdish Bhagwati (1987), Bös (1989), and William Ascher (1989).

<sup>32</sup> This article may be found reprinted in translation in Musgrave and Alan T. Peacock (1958).

<sup>33</sup> The importance of both transparency and of reaching a consensus between the various players (i.e., government, workers, private sector institutions) has been stressed in the recent tax reform literature (see Section 6).

#### 4.5 Dynamics

The models and approaches discussed in the preceding subsections have been largely static. Many of the problems of developing countries involve growth and change. It is natural to ask, therefore, whether the theories of growth and of taxation can be combined to provide useful insights into the role of policy in growth (for a discussion see Newbery and Stern 1987 and Stern 1992). Only a little progress has been made in this direction. This has been clearly not because the writers on one topic have been ignorant of the other as the number (and the distinction) of authors who have contributed to both is striking (including Wicksell, Ramsey, Hotelling, and Samuelson). Rather the reasons include the following: we know much less about the dynamic behavior of individuals; there are important problems which arise for dynamic models; and dynamic optimizing models are less tractable than static ones.

The static theory of optimal taxation allows a dynamic interpretation if we view goods produced or consumed at different times as different goods. From this perspective there are four groups of results of particular relevance. First, we have results on the circumstances under which indirect taxation is optimally uniform. These focus on cross-elasticities with leisure and on whether a well-functioning direct tax system is in place. Uniformity, if translated into a dynamic context, is a characteristic of expenditure taxation in the sense that consumption in different periods is made subject to the same rates of tax. Given the strength of the assumptions and the weakness of direct tax systems in developing countries, this kind of result can furnish little support for expenditure taxation. Second, we have the intertemporal analogues of the efficiency theorems which

suggest that inter-firm dynamic transactions should not be taxed and indirect taxes should be between producers and final consumers. Where the household and firm overlap, a situation more common for developing than developed countries, this suggests lower taxation on household savings than might otherwise be the case.

Third, we have taxation or subsidization for externalities, for example through learning from others, or to correct for distortions introduced elsewhere in the tax system. Fourth, the government may wish to take greater responsibility for future generations than current generations are prepared to take. Indeed, the government may wish to take greater responsibility for individuals' own future than they are prepared to take themselves—a version of the merit-good argument (Musgrave 1959). These last two sets of results may be of relevance for developing countries and point away from the taxation of saving and investment.

To the problems of applying and extending static models to a dynamic framework must be added those issues which are intrinsically new when we pass to the dynamic from the static. These include: incorrect expectations; the development of knowledge; revision of policy and credibility; the influence of future generations; pensions and intergenerational transfers; whether the tax base should be consumption, income, or wealth;<sup>34</sup> and the process of adjustment. Each of these could be of great significance for tax policy. Together they imply that while the simple intuition developed in static theory has some usefulness it may have only a limited role to play in the understanding of dynamic tax policy.

<sup>34</sup> In a one-period model there is no distinction between consumption, income, and wealth.

Growth theory has provided us with valuable tutoring on the logic of the determinants of growth—a simple but crucial example being the Harrod-Domar growth rate  $s/v$  for capital stock (where  $s$  is the savings rate and  $v$  the capital-output ratio) and  $s/v$  for output, where  $v$  is the incremental capital-output ratio), and equal to  $s/v$  if  $v$  is constant. Growth theory has pointed also, however, to what we are bad at explaining, particularly technical progress. There have been some efforts in recent years to improve our understanding here—many of these have been grouped under the heading “endogenous growth theories.” In these models technological advance comes from the creation of ideas, either indirectly through the act of capital investment or directly through investment in research and development. The publicness of ideas, however, creates problems for the efficient functioning of markets. If the externalities from investment do influence the long-run growth rate then the importance of institutions, and of government activities and tax-subsidy policies, which encourage them could, in principle, be substantial.

A number of the models have an externality from capital investment operating through learning which increases labor productivity (e.g., Kenneth Arrow 1962; Paul M. Romer 1986 and 1989). A particular form of the production function and externality which has been popular has the effect of making output proportional to capital so that the *long-run* rate of growth becomes  $s/v$ . Hence any policy that increases  $s$  or reduces  $v$  increases the long-run rate of growth (see, e.g., Robert G. King and Sergio Rebelo 1990). For further discussion of this “new” growth literature, see Robert J. Barro and Xavier Sala-i-Martin (1990) and Stern (1991b).

The uneasy state of theory leaves us in a difficult position as regards dynamic

tax policies. The rate of growth is rightly at the center of the stage in development economics, and in most theories from Roy F. Harrod (1939) to W. Arthur Lewis (1954), to more modern growth theories (Romer 1986; Robert E. Lucas, Jr. 1988; and Maurice F. Scott 1989, for example), investment is seen as a crucial engine of growth. It might seem therefore that tax policy should be oriented towards the encouragement of investment and savings. However, the justification of special incentives in a market economy requires arguments to tell us why market incentives to invest are inadequate. On the savings side we remain unsure not only about the interest elasticity of savings, and how it varies within the population, but also about the appropriate models within which the elasticity should be estimated. We do not know, then, whether tax policy is very important in its effects on savings rates. We would be sceptical, for example, whether it has a lot to do with the rise in the savings rate in India in the decades following independence or in the fall in the rate in economies in sub-Saharan Africa (for further discussion see, e.g., Stern 1989 and 1991b).

### 5. *Constraints and Pressures*

We saw in Section 3 that the differences in levels and patterns of taxation across countries reflect a diversity of economic structures and administrative capabilities as well as widely varying political, cultural, and institutional histories and environments. The generation of revenue via taxation in developing countries faces a number of constraints and pressures. These need to be brought into sharper focus and considered alongside the principles of taxation derived from theory (Section 4) in order to understand the design of tax reform (Section 6). Problems of administration, implementation, and political feasibility represent the

greatest challenge and in Sections 5.1–5.3 we dissect the different constituent elements. At the most basic level, information, resources, and managerial ability tend to be inadequate and, in Section 5.1, under administration, we discuss attempts to increase the efficiency with which taxes are assessed, processed, and collected. Administrative difficulties are also related to the propensity and ability to evade which is discussed in Section 5.2. Tax analysis must also take into account political responses and feasibility, the subject of Section 5.3. These impinge strongly on administration and are closely related to evasion. In Section 5.4 we examine the difficulties that inflation imposes on taxation and finally, in Section 5.5, we discuss the international constraints on the design of taxation and the role of harmonization.

### 5.1 *Administrative Constraints*

Much of the practical work on tax reform over the last three decades or so has concentrated on finding taxes and procedures that can be implemented with the administrative capabilities found in developing countries (see Bird and Oldman 1964, 1990; Gillis 1989a; Michael J. Boskin and Charles E. McClure, Jr. 1990; Khalizadeh-Shirazi and Shah 1991; World Bank 1991; and Section 6 below). More effective enforcement of taxes has been another central theme of tax reform. While the focus on administrative effectiveness and simplification is to be welcomed, indeed is indispensable, one should not lose sight of the objectives of economic efficiency, equity, and macroeconomic stability, which are central concerns of tax and public finance theory (see Section 4 and Newbery and Stern 1987). Administrative and other problems should not be set headlong against theory. The task of the tax analyst is to combine them constructively.

The process of taxation may be divided into four distinct phases: design and enactment of the tax codes; information collection and identification of taxpayers; the assessment of liabilities, tax litigation, and enforcement; and tax collection. Weaknesses in the tax administration can exist at each of these stages and this is the subject of Section 5.1. Evasion and noncompliance compounds these difficulties and these factors are discussed in Section 5.2.

Administrative constraints may be eased via changes to tax laws and the overall tax structure. As argued in Section 3.1 different taxes make very different demands on administrative capacity. The use of physical barriers for taxation (for example, excises and customs), concentration on sectors with greater revenue potential (for example, the modern corporate sector), the withholding of taxes (for example, PAYE), the use of presumptive taxation for many areas of difficult verification, the restriction of sales taxes to easily taxable goods and sensible exemption limits to exclude very small firms, traders, and individuals on low incomes can all lessen administrative demands. Self-assessment of income or VAT can help to shift the burden of appraisal from the public authorities to the private sector where it may be dealt with more efficiently. Self-assessment also reduces scope for collusion between authorities and taxpayers. The removal of exemptions, loopholes, and concessions can simplify administration and reduce evasion. These are often central elements in tax reform (Section 6). Taking a systematic view of the tax system, rationalization, simplification, and the removal of anomalies should have the effect of reducing the administrative costs of identification, assessment, auditing, and enforcement. The administrative simplicity of “tax handles” however, while influencing tax policy, should not be allowed to

dictate it. Concentration on just a few handles can lead to a highly distortional structure.

There are a number of shortcomings common to most tax agencies in developing countries, albeit in varying degrees, which affect abilities both to use information to assess taxes, and to collect the assessed taxes. These include insufficient staff with the appropriate skills, lack of sufficient and up-to-date equipment and facilities, and complex legal structures which are often ill-defined, or in a state of flux. The enforcement of penalties for evasion is generally poor (World Bank 1991; Richard K. Gordon 1990). The shortage and inadequacy of staff and equipment, and the inadequate legal structure may be compounded by the absence of incentives to collect taxation. Wages of public-sector employees typically do not depend on performance, jobs are secure and there is little supervision (Newbery 1987a). Legal complications can be extreme: it is often difficult in developing countries to find a document or documents setting out what the rules and rates for a particular tax really are (see, for example, Ahmad and Stern 1991). Overly complex tax codes make it difficult to assess and collect taxes. This vagueness and complexity often generates great scope for evasion.<sup>35</sup>

Administration may be improved by direct reform of the tax administration. Records are often poor or inconsistent and under the control of different tax authorities. The introduction of a system of numbers that uniquely identifies each individual taxpayer and the creation of a master tax file for use by the tax authorities can greatly aid both identification and enforcement (see World Bank 1991). Cross-checking across authorities can

<sup>35</sup> Clarity regarding both liabilities and penalties for evasion is often a central objective of tax reform (see Section 6).

provide valuable weapons for improving administration. Computerization can help update and improve records and facilitate cross-checking between, for example, direct and indirect tax authorities (see François Corformat 1990).

Factors such as improving the gathering of information, raising the pay of tax collectors, linking pay and indeed employment to performance, and improving the training of these officials can lead to significant improvements in terms of both efficiency and revenue collected (Nicholas Kaldor 1956; Shankar N. Acharya 1985; Goode 1984, 1990; and Bird 1989).

Improvements in identification and assessment need to be coupled to penalties for evasion which are both clearly signaled and enforced.<sup>36</sup> Amnesties have been tried occasionally in an attempt to encourage revelation. To be effective, penalization for not declaring hidden income must represent a likely event. Regular and widespread auditing of accounts can help in this respect.

The "administrative constraint" should not be seen as an unchanging reality for developing countries. Significant improvement may be achieved even in the short term (see Section 6). Strengthening tax administration is critical to the successful implementation of tax reform (see World Bank 1991). Investing to improve one's tax agencies is an infrastructural project which may show considerable returns, both economic and otherwise.

<sup>36</sup> Auditing, prosecution, and enforcement in Mexico, for example, have been used to increase the number of taxpayers from 1.7 million to 2.8 million between 1988 and 1991. An amnesty was provided whereby taxpayers who declared themselves were liable only for the past year's taxes, while tax evaders would be fully liable. Fiscal enforcement was made credible by the widespread auditing of both firms and individuals, and by the prosecution of evaders. Between 1989 and 1991 there were more than 200 recorded offences for fiscal evasion while between 1929 and 1988 there were only two (see Aspe Armella 1992).

### 5.2 Evasion<sup>37</sup>

Tax evasion in developing countries is rife. We discuss in turn cultural factors, the evasion of direct and indirect taxes, corruption, and rent-seeking. The effect of evasion activities can be to drive a wedge between the statutory and effective tax systems to the point that the revenue that is legally due bears little relation to that collected.

Information on incomes, production, transactions, property records, and inheritances is notoriously difficult to obtain in developing countries. As Alex Radian (1980) argues, information problems do not originate solely from the deficiency of collecting agencies but also from the fabric of economic, social, and cultural relations which exist in a given country. There may be no conventions of issuing receipts, recording transactions, reporting the existence of enterprises to the government, complying with accounting and bookkeeping standards, defining farm boundaries, and so on. Taxation is a strange, unwelcome, and sometimes incomprehensible concept to many people in developing countries. Differences in the tradition of compliance probably explain as much of the worldwide pattern of taxation as do under-resourced or poorly organized tax administrations. The success or failure of systems of taxation such as VAT depend on the level of voluntary compliance as well as on enforcement. Very few like paying taxes but the hostility to taxation and the propensity to evade depend on cultures as well as economic incentives.<sup>38</sup>

<sup>37</sup> This section draws on James J. Thomas (1992). We are grateful to him for his advice and making a draft available to us. For an excellent theoretical treatment of tax evasion see Frank A. Cowell (1990).

<sup>38</sup> For example, one hears it argued that the superiority of Chile over Argentina with respect to tax collection comes in part from the Germanic tradition in the former and the Italian in the latter. Such argu-

Problems of information and measurement imply that individual income taxation is particularly vulnerable to noncompliance (see Gordon 1990). For some, evasion may be relatively passive in that there is little attempt by the government to impose the tax. This is especially the case for the self-employed (e.g., farmers, informal sector workers, or professionals), as the gathering of information on the incomes of such individuals is difficult and costly.<sup>39</sup> For similar reasons many small enterprises remain invisible to the tax authorities.<sup>40</sup> While under- or nonreporting of income may be easier in the self-employed and small-business sectors than elsewhere, it is by no means restricted to them. Large enterprises also often underreport taxable income. Taken as a whole, the effects of evasion are impressive. Acharya (1985) estimated that, for India, of the total income assessable for tax, the actual percentage declared was 53.3 percent in 1975–76 and 41.9 percent in 1980–81. Frederico J. Herschel (1978) reports that, for Argentina in 1959, only 21.5 percent of total taxable income was reported for tax purposes.

Tax evasion is not limited to income taxes. Sales taxes and excises are evaded in many ways. A popular method is underinvoicing. The problem seems to be particularly severe in the service sector, where clients are often presented with an option: a higher fee if tax is to be declared, a lower one if the transaction is to go unreported. Elsewhere greater

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ments give the impression of immutability in tax habits, however, and rest uncomfortably with the rapid progress Argentina has made in tax collection over the last few years.

<sup>39</sup> As a result, many individuals who are in principle liable may not become registered as taxpayers.

<sup>40</sup> Rather than depend on declaration of income by small taxpayers and businesses, Musgrave (1990) and others suggest that presumptive-income and estimated-income approaches, where incomes and returns on capital are calculated independently, might be used instead.

checks are in principle available, for example, through the verification of stock purchases, but nevertheless evasion is extensive. The introduction of VAT systems, with their built-in incentives to seek correct invoicing of one's purchases (which are another person's sales), seems to contribute to a reduction of noncompliance in domestic indirect taxation (see Tait 1988 and Goode 1990). The revenue security advantages of VAT over simple sales and business taxes are twofold: (i) only buyers at the final stage have an incentive to undervalue purchases; (ii) nonpayment of tax at one stage can be reversed by payment at a later stage. It should be remembered, however, that in developing countries many or most domestic goods and services do not come under any type of taxation (Tanzi 1987). Evasion is thus unnecessary for the majority of transactions.

The evasion of taxes gives rise to the phenomenon of transactions in black money. For example, the purchase of a house in India is usually partly in "white" and partly in "black." The white part of the transaction is recorded and the black is not. This not only keeps down taxes on property and transactions but also conceals from the authorities the possession of large sums gained through untaxed activities the origins of which would otherwise have to be explained. Occasionally attempts are made to allow official laundering of black into white money, for example, through the issuance of government "bearer bonds" which can be bought "no questions asked" with black money. In this way governments can extend their borrowing capabilities. Further, tax revenue may increase subsequently as this part of wealth can be spent more openly outside the black economy.

Evasion of import or export duties—we shall use the term "smuggling"—remains a serious problem in many devel-

oping countries. The procedures used vary, and do not always require avoidance of customs officials. B. P. Alano, Jr. (1984) reports various ways, for the Philippines, whereby duties are evaded even though goods are physically brought through customs: goods can be misdeclared; goods that are correctly described may have their values understated; fake delivery papers may be used to remove the goods from the customs area before duties are paid, and so on.<sup>41</sup> The importance of these activities can be gauged by the estimate that the value of smuggled goods into the country could have been some 29 percent of the total value of imports into the Philippines between 1965 and 1978 (Alano 1984).<sup>42</sup> Taxation is thus constrained in the sense that if customs duties or excises are raised smuggling may increase. The response may be sufficient to result in a net decrease in government revenue from this source.<sup>43</sup>

Finally, we mention briefly some aspects of corruption in public life and rent-seeking via the currying of favor with officials. Corruption, bribes, kickbacks, and leakages from public expenditure in general are included here (see Thomas 1992). Reduction in rent-seeking may be achieved by reducing discretionary controls available to officials. One can, for example, keep down the number of licences and permissions needed to do

<sup>41</sup> Underinvoicing of imports can be used to evade high import duties. For Tanzania, T. L. Maliyamkono and M. S. D. Bagachwa (1990), by comparing Tanzania and U.K. records, found that in 1985 imports from Britain were underinvoiced by 18.7 percent.

<sup>42</sup> This is not an isolated example. Mark M. Pitt (1981) estimates that between 25 percent and 30 percent of all rubber exported from Indonesia in the period from 1959 to 1965 was smuggled.

<sup>43</sup> Gil Díaz (1987) notes that in Mexico in the early 1970s a 30 percent excise tax on mink coats caused tax collections to fall to one-third of former levels when the tax had been 10 percent, as many rich Mexicans now purchased the coats in U.S. border towns.



business. Similarly import quotas are to be eschewed on these grounds (in addition to their inferiority, from the perspective of revenue, to tariffs). Rent-seeking involves real losses of resources in the efforts spent to secure favors and is not just a transfer payment to corrupt officials.

Once corruption gets into tax authorities it is not easily eliminated. Those who are supposed to root it out can themselves be corrupted or threatened. In principle, raising penalties on officials and increasing the probability of detection can improve performance but that is easier said than done. Raising wages and salaries in the tax authorities at the same time as increasing the likelihood of dismissal can lead to improvement, as the experience of Ghana in the 1980s appears to have shown. Alternatively, one can accept that corruption is ingrained in the public sector and resort to private sector firms to collect taxes on a payment by results basis. Indonesia, for example, in 1985 turned customs assessments over to a foreign firm; in Mexico commercial banks play a central role in the collection of domestic taxes and the customs warehouses are now operated by private custom agents (see Gillis 1989c; World Bank 1991; Aspe Armella 1992). The introduction of new management and organizational structures are often central aspects of tax reform (see Section 6).

### 5.3 Political Pressures

Problems in introducing and maintaining effective systems of taxation relate not only to administration and evasion, but also to political pressures. Taxation involves an attempt by the state to exercise control over the resources which would otherwise be controlled by private agents. Political coalitions, or representatives thereof, will attempt to avoid such claims on resources by influencing both the development and functioning of tax

systems (for models of this type see Section 4.4). Individuals who have spent considerable resources devising means of evading the outgoing set of taxes are unlikely to welcome new measures designed to overcome the porousness of the existing system. Those who may benefit from tax reform may be less aware of the significance of proposals, and less able to organize and ensure implementation of new tax measures. The net result is that, at the public level, tax reforms tend to be greeted with antagonism and considerable resources may be spent lobbying against tax measures (Gillis 1989a). This in turn restricts the feasible set of tax instruments and influences the observed structure of taxation.

Political power is often closely allied to groups which have large asset or wealth holdings. These groups are in many cases attentive in blocking the introduction of unfavorable measures, for example, progressive income taxes, wealth and property taxes, and land taxes (Robert H. Bates 1989; and Ascher 1989). It is likely that the relatively small contribution of personal income taxes, land, property, and wealth taxes in developing countries (see Section 3.1) reflects in part the use of political power to suppress such measures or to evade them when implemented.<sup>44</sup> Michael H. Best (1976) studied the incidence of taxation in several Central American republics in the 1960s and early 1970s, and suggests that the observed tax structure closely resembled the preferences of the most powerful group, and that this mapping became closer over time.

<sup>44</sup> The dramatic drop in the importance of land revenue, for example, in India from 50 percent of total revenue in the mid-19th century to a mere 0.9 percent of total tax revenue in 1984-85, and the concomitant rise in the importance of indirect taxes may partly reflect the successful efforts of landowners in shifting the burden of taxation to the general population by political and other means (see Dharma Kumar 1982; and Ahmad and Stern 1991).

Political blocking power is illustrated in the failure of a number of attempted reforms. In Colombia, landowners, acting through the Ministry of Agriculture, managed to suspend a tax law creating a presumptive income tax on agricultural land in Colombia in 1973, despite the will of Congress to the contrary (Ascher 1989). In 1986, in Argentina, as part of a sectoral adjustment loan, the World Bank proposed that agricultural export taxes be replaced by a less distortionary land tax. A tax bill to this effect did not become law because of opposition both from the farm lobby and from government members who argued that the tax was administratively infeasible.

Despite its theoretical attractiveness (Section 4.3) and the importance of agriculture, resistance to land taxation is fierce and effective. It is interesting to speculate why this is so. First, given that land ownership is related to wealth, the effectiveness reflects the success of the resistance of the rich and powerful to measures which harm their interests. Second, land taxation is very visible. Third, it is not easy to organize a deduction at source in a way which is possible for other direct taxes. It seems that parting with money is more painful than not receiving it. Fourth, for distribution and administrative reasons some land taxes have had an exemption limit (see, e.g., Ahmad and Stern 1991, on Pakistan). This allows landowners to divide up land between relatives for tax purposes (or to create fictitious holders) to reduce liability.

Potential resistance to taxation can be countered by reducing the incentives for opposition. From this perspective high rates targeted on a narrow base are likely to prove unproductive. Widening the coverage, broadening the tax base, and lowering tax rates may improve political acceptability and reduce conflict between different political interest groups

(Bird 1989; Gordon 1990; Bös 1989; and Goode 1990). As more individuals (for example, not just public-sector employees) or goods (for example, not just luxury items) are taxed, the perceived “discriminatory” nature of some forms of taxation may be removed or lessened. Indirect taxes, being less visible, tend to encounter less resistance than direct taxes.

A central message here is that reforms facing strong and active opposition cannot be imposed upon countries. For government commitment to tax reform to be credible, the likely behavior of potential gainers and losers needs to be taken into account and a broad consensus arrived at. Gil Díaz (1987), for example, attributes much of the success of Mexican tax reform (see Section 6) to the ability of the Secretary of the Treasury to align different interest groups and views obtaining approval of the groups as “the most difficult part of the reform” (p. 355).

#### 5.4 *The Effects of Inflation*

The balance among taxation, borrowing, and money creation was discussed in Section 2.2. In this section we focus on some of the effects of inflation on the functioning of tax systems.<sup>45</sup> In less-developed countries, these effects are, on the whole, disruptive and negative. The distortionary effect on the tax base, especially as regards changes in the value of assets, can be important and lags in collection can greatly reduce the real value of tax revenue to the government.

Tanzi (1977, 1978, 1980) has argued that the effects of inflation on the tax system depend on two factors: the so-called “price elasticity of tax revenue”; and the length of the collection lag, described as the time elapsed between the moment when the amounts of tax due are deter-

<sup>45</sup> For a more complete treatment of the effect of macroeconomic policies and inflation on tax issues, see Tanzi (1988, 1991a).

mined and the moment when they are actually transferred to the government. If the price elasticity is equal to one and the lag is negligible, real tax revenue collected is not affected by inflation. If, however, the collection lag is not negligible or the price elasticity is less than one, inflation will tend to lead to reductions in the real value of tax revenue collected.

The "price elasticity of tax revenue" measures the response of total tax revenue to a general rise in prices and incomes and depends on the composition of revenue. Inflation can increase the yield from a system of progressive taxation when tax brackets are not indexed. Brackets may be adjusted for inflation but this is usually done with a lag.<sup>46</sup> Another route by which inflation may, in principle, raise tax revenue from individuals is through taxes on capital gains if these are inadequately indexed. Inflation will, however, decrease the yield of indirect or direct taxes which are set at specific rates and which do not adjust quickly enough to match value erosion by inflation.

In industrial countries, with low to moderate inflation, where a large part of revenue comes from income taxes collected with progressive rates and withheld at source (i.e., negligible lag), inflation can increase tax revenue.<sup>47</sup> In less-developed countries where the share of these taxes is small, where taxes with specific rates (e.g., import duties, excises) have a significant role, where collection lags are long and where inflation is often high, the reduction in the real value of tax revenue collected can be substantial (see Tanzi, 1977, 1978, 1980,

1991a). Specific (as opposed to ad valorem) taxes may be adjusted only with a lag so that real tax revenue falls.<sup>48</sup> Similar effects arise with import duties (even if they are ad valorem) if inflation leads to periods of exchange rate overvaluation (see Jesús Seade 1990). Where interest payments are deductible, inflation may also reduce corporate income tax revenue and create incentives against equity finance.<sup>49</sup>

### 5.5 International Constraints

We have so far in this section focused on domestic pressures and constraints associated with the raising of tax revenue in developing countries. But, albeit to varying degrees, virtually all of these countries are open economies. The international interaction of tax systems places further restrictions on the raising of tax revenue (see Mark Gersovitz 1987; Bird and Oldman 1990; Tanzi 1990; Boskin and McLure 1990; and Khalizadeh-Shirazi and Shah 1991). Many of the factors subject to taxation are moveable and may be relocated internationally in search of more favorable tax treatment. International mobility of factors may thus constrain the effectiveness of domestic tax systems and limit the scope for reform. Because capital is the most internationally mobile of factors, capital income taxation (be it on interest, corporate income, or assets) is perhaps the most subject of all forms of taxation to international constraints.

Regulatory controls on capital outflows cannot be fully effective. Attempts to tax capital income heavily can result in capital flight (see Donald R. Lessard and John

<sup>46</sup> Bracket creep can undermine the progressivity of individual income taxation. Inflation adjustment to prevent this involves linking the nominal base to some indicator of inflation such as the consumer price index.

<sup>47</sup> This indeed was the experience of many industrial countries during the 1970s (see Tanzi 1980).

<sup>48</sup> The buoyancy of VAT systems under inflation is thus an important consideration.

<sup>49</sup> In Mexico the combination of inflation, long collection lags, and the deductibility of nominal interest payments led to a fall in corporate income tax revenue from 2.6 percent of GDP in 1982 to an average of 1.6 percent during 1983–87 (World Bank 1991).

Williamson 1987). Gil Díaz (1987), for example, emphasizes the constraints on interest income taxation which arise because so many Mexicans have tax-free bank accounts in the USA—the net return in Mexico cannot, therefore, fall significantly below interest rates in the USA.

Manual Pastor (1990) lists interest rate differentials, expected devaluations, availability of liquid capital and accelerating inflation as the main causes of capital flight from Latin American countries. Stocks of foreign assets held by nationals of this region are very large. Argentine and Mexican assets abroad, for example, represent over 70 percent of each country's respective debt burden. Large holdings of foreign assets represent severe erosion of the wealth and earnings tax base. Pastor (1990) estimates that if all interest earnings on the capital stocks held abroad by Latin Americans could be taxed the taxable income base would increase by around 5 percent in both Argentina and Mexico. This would entail an improvement in the budget deficit in these countries of the order of one percent of GDP. Aside from the effects on investment and growth, tax base erosion through capital flight is particularly serious at a time when foreign borrowing, an important means of financing budgets in the 1970s, is increasingly unavailable (see Sachs 1989). The greater use of broad-based taxes (e.g., VAT) whose burden is spread more evenly over the population, and a lowering and harmonization of tax rates can both help reduce capital flight.

Corporate income taxation is also subject to international constraints (see, e.g., Shah and Joel Slemrod 1991). A firm planning to build a plant in the industrial belt along the Mexico-USA border will naturally consider tax conditions in both countries along with other site factors. Mexico's leeway in setting its own corpo-

rate tax policy is thus effectively constrained. Transnational corporations that supply a large industrial market face a wide choice of locations and the more similar the other factors (e.g., cost of labor) the more attention will be paid to corporate tax structure. Many developing countries are highly dependent on foreign direct investment and the desires for revenue and for investment must be balanced. Tax free zones and tax holidays are often designed to attract foreign investment. Revenue losses may, however, be unnecessary if the decision to invest does not hinge on tax costs or the capital exporter can credit foreign income taxes made on overseas investment. Competition over tax incentives may be avoided by harmonization of tax policies across countries through multilateral agreements. By ensuring that similar rates apply across different countries and that there is some degree of constancy and credibility in tax policy, harmonization can provide a more stable environment for investment and business.

#### 6. *Tax Reform in Practice*

The 1980s saw many examples of major tax reforms in developing countries. For a review of the literature see Newbery and Stern (1987), World Bank (1988, 1991), Gillis (1989a), Bird and Oldman (1964, 1990), Tanzi (1990 and 1991a), Boskin and McLure (1990), Ahmad and Stern (1991), and Khalizadeh-Shirazi and Shah (1991), and the references cited in Table 7. A number of related pressures came together which led to several governments grasping the nettle. First, a series of ad hoc tax measures in response to increasing expenditure and changing economic structure had accumulated, over a number of decades, into systems which were cumbersome, riddled with complications and anomalies, and subject to widespread evasion. Second, views on

trade and industrial policy were changing with an increasing emphasis on reducing trade barriers and protection. A tax system heavily focused on trade taxation, a common position as we saw in Section 3, is inconsistent with these trade-oriented policies. Third, the difficulties of the international recession of the early 1980s, following the increase in oil prices of the late 1970s, led to severe macroeconomic problems in many countries. The resulting short-term revenue difficulties accentuated those of the long term which had already been mounting. Finally, these pressures together generated the perceived necessity for "stabilization and structural adjustment" in which public finances would have to play a key role (see World Bank 1988, 1991; Blejer and Chu 1989; Tanzi 1990 and 1991a).

In this section we discuss eight examples of major tax reforms in developing countries (namely Korea, Mexico, Colombia, Turkey, Jamaica, Indonesia, Sri Lanka, and Malawi; see Table 7 for references) taken mostly from the 1980s, together with, briefly, three examples from South Asia (India, Pakistan, and Bangladesh) where pressures for tax reform are severe but where substantial reform has not yet occurred.<sup>50</sup> Brief histories of the selected examples of reform are presented in Section 6.1 and general lessons are drawn from them, in a way that links with our earlier theory, in Section 6.2. We must emphasize that tax reforms have been taking place for centuries. Our choice of examples must necessarily be selective and we have chosen only some of those from recent experience.

### 6.1 *Experience of Tax Reform*

Space constraints prevent a detailed discussion of the selected examples and instead we set them out analytically in summary form in Table 7. The examples

were chosen for four reasons: (i) they are reasonably well documented; (ii) they involve significant shifts in tax structure; (iii) they are diverse and cover a wide range of circumstances; and (iv) they illustrate some broad lessons which will be brought out in Section 6.2.

In Table 7 the countries form the rows and we have selected information for the columns which gives a picture of prereform conditions and pressures, central elements of the reform, and outcomes. We discuss the table initially in terms of the columns focusing respectively on prereform conditions, direct taxes, indirect taxes, and administrative aspects of the reforms. We then consider two examples of tax reform in detail (Indonesia, Mexico) because, as we have emphasized, it is important to see the tax system in its entirety. The examples of Bangladesh, India, and Pakistan, where reform has yet to take place, are provided as a contrast.

*Prereform Conditions.* While countries vary greatly in the accumulation of problems and pressures which lead to the decision to embark on tax reform, there are a number of characteristics of tax systems which often appear to be relevant. Their joint effect is to make tax systems unwieldy and ineffective, thus encouraging reform. A number of the problems are related and include: (i) perceived overreliance on particular sources such as the oil sector or customs duties; (ii) narrow bases, particularly for income taxation, as a result of, inter alia, loopholes, lack of clarity of laws, and evasion; (iii) complications in indirect taxation often from a cumulation of ad hoc measures; and (iv) weak administration. These conditions do indeed provide strong arguments in favor of reform but it is interesting that they can be present for extended periods of time without reform actually taking place. Indeed several of them are likely to apply to any developing country

<sup>50</sup> The remark refers to the time of writing (late 1991).

TABLE 7  
EXPERIENCE OF TAX REFORM

Country	Population	GNP/Capita <sup>2</sup>	Date of Reforms	Pre-reform Conditions	Macro Pressures	Policy Reform	Elements of Reform	Outcomes
Republic of Korea <sup>3</sup>	42.1	2,923	1980-1986 (preceded by different reforms in 1961-72 and 1973-79)	<ol style="list-style-type: none"> <li>1) Interventionist policies believed to cause too many distortions and to have outlived their usefulness.</li> <li>2) Growing income inequality.</li> <li>3) Growing private sector resentment at excessive State intervention.</li> </ol>	<ol style="list-style-type: none"> <li>1) Strong adjustment in 1979-80.</li> <li>2) Slight thereafter</li> </ol>	<ol style="list-style-type: none"> <li>1) Wide-ranging institutional reform aiming to strengthen market signals throughout economy</li> </ol>	<ol style="list-style-type: none"> <li>1) Reduction in personal income taxes. Deductions increased.</li> <li>2) Tax treatment of rural vs urban, large vs small firms made more similar. Incentives for strategic industries cut.</li> <li>3) Burden shifted towards indirect taxes.</li> <li>4) VAT had been introduced in an earlier reform (1977).</li> </ol>	<ol style="list-style-type: none"> <li>1) Tax revenue/GDP rose considerably between 1961 and 1986.</li> <li>2) Indirect taxes now responsible for over 70% of revenue. VAT gains importance relative to excises. Income taxation loses importance.</li> <li>3) While corporate taxation approaches horizontal equity, personal taxation at higher brackets becomes more regressive.</li> </ol>

TABLE 7 (Continued)  
EXPERIENCE OF TAX REFORM

Country	Population	GNP/Capita <sup>2</sup>	Date of Reforms	Pre-reform Conditions	Macro Pressures	Policy Reform	Elements of Reform	Outcomes
Mexico <sup>4</sup>	81.9	1,771	1978-1990	<ol style="list-style-type: none"> <li>1) Complex system with an abundance of loopholes, subsidies, and exemptions.</li> <li>2) High marginal rates seen as distorting private decision making and internationally uncompetitive.</li> <li>3) "National Turnover Tax" and excises seen as discouraging investment.</li> </ol>	<ol style="list-style-type: none"> <li>1) Fiscal deficits</li> <li>2) High inflation</li> </ol>	<ol style="list-style-type: none"> <li>1) Started prior to macroeconomic adjustment but towards the end of efforts to control fiscal deficits.</li> </ol>	<ol style="list-style-type: none"> <li>1) Income tax saw a broadening of the base, a reduction of marginal rates, an adjustment of the schedules for inflation, and stronger enforcement.</li> <li>2) Greater integration of corporate and personal income taxation to reduce distortions against equity financing.</li> <li>3) VAT introduced with three different rates.</li> </ol>	<ol style="list-style-type: none"> <li>1) Reforms were overall revenue-neutral at start but now revenue-positive.</li> <li>2) The income tax system was rationalized and simplified, some inflation-proofing was achieved and distortions to investment were reduced. The VAT increased compliance with indirect taxation.</li> <li>3) Vertical equity improved.</li> </ol>
Colombia <sup>5</sup>	29.5	1,241	1986-1988	<ol style="list-style-type: none"> <li>1) High statutory rates, weak administration and the proliferation of loopholes and exemptions.</li> <li>2) Inflation caused the erosion of receipts.</li> <li>3) Disparate personal and corporate taxation had distortionary effects.</li> <li>4) Evasion remained high, and because it was particularly common at the top end, damaged effective progressivity.</li> </ol>	<ol style="list-style-type: none"> <li>1) Not very strong if compared to Latin American context. Reforms could hence afford to concentrate on long-term microeconomic objectives.</li> </ol>	<ol style="list-style-type: none"> <li>1) 1986-1988 reforms influenced by 1986 US tax reform and McLure Report. Focus on simplicity, base-broadening and revenue neutrality with view to creating more effective framework of incentives and market signals in the economy.</li> </ol>	<ol style="list-style-type: none"> <li>1) Personal income tax system simplified. Expense deductions and various other perks and loopholes eliminated. Top rates lowered from 49% to 30%. Corporate rates unified and integrated at 30%.</li> <li>2) Inflation proofing of the schedules carried out.</li> <li>3) VAT introduced in 1975 and subsequently extended and improved.</li> </ol>	<ol style="list-style-type: none"> <li>1) Reforms roughly revenue-neutral. Tax revenue insulated against inflation. Domestic indirect taxation extended.</li> <li>2) Lowered effective tax rates at the top end and successfully simplified and reduced maze of loopholes allowed for under previous complex regulation.</li> </ol>

TABLE 7 (Continued)  
EXPERIENCE OF TAX REFORM

Country	Population	GNP/Capita <sup>2</sup>	Date of Reforms	Pre-reform Conditions	Macro Pressures	Policy Reform	Elements of Reform	Outcomes
Turkey <sup>6</sup>	52.6	1,216	1980-1988	<ol style="list-style-type: none"> <li>Ad hoc evolution of the tax system motivated by the need to raise revenues speedily had engendered complex and irrational system.</li> <li>Inflation caused bracket creep and vertical inequity (in 1980, many taxpayers were on the top, 60% bracket).</li> <li>Virtual impossibility to tax agriculture created horizontal inequity.</li> </ol>	<ol style="list-style-type: none"> <li>Structural trade deficit financed by foreign aid.</li> <li>Persistent fiscal deficits</li> <li>Endemic inflation.</li> </ol>	<ol style="list-style-type: none"> <li>Partial trade liberalization, with quotas abolished in 1984, and duties lowered since.</li> </ol>	<ol style="list-style-type: none"> <li>Reduction in effective income tax rates to compensate for previous bracket creep. Increased rates of corporate tax.</li> <li>VAT introduced with a 12% base rate, deductions for medicines and books, and exemptions for food.</li> <li>Expenditure rebate system introduced for equity reasons.</li> </ol>	<ol style="list-style-type: none"> <li>From 1984 the VAT success caused overall revenues to rise slightly.</li> <li>Presumptive taxation of agriculture was introduced, system was rationalized, and there was increasing compliance with indirect taxation due to the VAT.</li> <li>Evasion of corporate taxation remains significant.</li> </ol>
Jamaica <sup>7</sup>	2.4	942	1986	<ol style="list-style-type: none"> <li>Tax effort seen as too high by international standards.</li> <li>High marginal rates of income tax seen as causing disincentives to work. Large number of loopholes made system effectively regressive at top end. Base was too narrow.</li> <li>Five separate indirect tax acts in existence.</li> <li>Poor administration allowed significant evasion to occur.</li> </ol>	<ol style="list-style-type: none"> <li>Severe fiscal deficits.</li> <li>High inflation in the 1980s, after extended stagflation from 1973 to 1980.</li> </ol>	<ol style="list-style-type: none"> <li>Trade liberalization, as advised by the World Bank.</li> </ol>	<ol style="list-style-type: none"> <li>Income tax structured around a single flat marginal rate of 33%. Allowances replaced by a single standard deduction.</li> <li>Corporate tax rate reduced to 33% in effort to integrate with personal rate. "Incentives" and exemptions reduced to increase intersectoral equity.</li> <li>Reform of indirect taxation postponed.</li> </ol>	<ol style="list-style-type: none"> <li>There was an increase in overall revenues, but possibly largely due to economic upturn rather than reform.</li> <li>Income tax base increased and disincentives to equity financing reduced. Indirect taxation remains irrational and ad hoc.</li> </ol>



TABLE 7 (Continued)  
EXPERIENCE OF TAX REFORM

Country	Population	GNP/Capita <sup>2</sup>	Date of Reforms	Pre-reform Conditions	Macro Pressures	Policy Reform	Elements of Reform	Outcomes
Indonesia <sup>8</sup>	171.4	445	1983-1986	<p>1) Overreliance on oil sector taxes (60% of revenue) and public sector.</p> <p>2) Loopholes in corporate and income tax, and multiple rates in indirect taxation led to disparity in effective rates and inefficiency.</p> <p>3) Enforcement and compliance problems led to widespread evasion.</p>	1) Slight		<p>1) Laws were simplified and made more precise.</p> <p>2) Common rate for personal and corporate income tax established. Many loopholes were closed.</p> <p>3) Self assessment introduced in many areas to ease administration.</p> <p>4) VAT introduced, with different luxury rates. Number of goods subject to higher indirect taxation increased.</p>	<p>1) Overall revenue effect broadly neutral, but share of oil tax revenues falls to 1/3 of total.</p> <p>2) Income tax base increased. VAT revenues rise from 1% to 4% of GNP from 1984 to 1989. Evaluation falls due to built-in cross-checking mechanism.</p> <p>3) Administrative problems remain, but opportunities for evasion at top income ranges curtailed, increasing equity.</p>
Sri-Lanka <sup>9</sup>	16.4	407	1978-1988	<p>1) Income tax base too narrow.</p> <p>2) Quotas prevalent as means of import control.</p> <p>3) Administrative structure considered usually good.</p>	<p>1) Fiscal deficits</p> <p>2) Over-reliance on foreign capital inflows to finance investment.</p> <p>3) Loss of revenue from export taxes.</p>	<p>1) Partial trade liberalization, mostly replacing quotas with tariffs.</p> <p>2) Significant devaluation of the exchange rate.</p>	<p>1) Efforts were made to reduce marginal personal income tax rates and increase exemptions for the poor. Corporate income tax rate reduced from 70% to 50%.</p> <p>2) Business turnover tax, with a broad base, becomes predominant form of indirect taxation.</p> <p>3) Quotas and exchange controls replaced by a rationalized tariff structure, whose proportional importance has risen.</p>	<p>1) There was a positive effect on overall revenues, which averaged 16.2% of GDP from 1971-77, and 19.2% of GDP from 1978-88.</p> <p>2) On balance, there was a shift in the burden from direct to indirect taxation. Trade liberalization was accompanied by a rise in the revenue share of trade taxes due to quota replacement.</p>

TABLE 7 (Continued)  
EXPERIENCE OF TAX REFORM

Country	Population	GNP/Capita <sup>2</sup>	Date of Reforms	Pre-reform Conditions	Macro Pressures	Policy Reform	Elements of Reform	Outcomes
Malawi <sup>10</sup>	7.9	163	1985-1990	<ol style="list-style-type: none"> <li>1) Over-reliance on customs duties for revenue.</li> <li>2) There was a complex system of loopholes in corporate taxation, and income taxes in general concentrated on a small base, mostly urban waged workers, leading to horizontal inequity.</li> <li>3) Weak administrative infrastructure.</li> </ol>	<ol style="list-style-type: none"> <li>1) Balance of payments and fiscal deficits.</li> <li>2) Strong dependence on foreign borrowing.</li> <li>3) IMF and World Bank pressing for trade liberalization.</li> </ol>	<ol style="list-style-type: none"> <li>1) Some elements of trade liberalization.</li> </ol>	<ol style="list-style-type: none"> <li>1) Slow progress on personal taxation, but collection lags and exemptions reduced in corporate taxation.</li> <li>2) VAT introduced</li> <li>3) Some import levies were incorporated into domestic taxation, leaving lower custom duties.</li> </ol> <p>Elimination of export taxes.</p>	<ol style="list-style-type: none"> <li>1) Total tax revenue raised from 17% to 19% of GNP.</li> <li>2) VAT lowered indirect tax evasion. Higher corporate taxation lowered investment.</li> <li>3) Administrative reforms ongoing in 1990, including computerization.</li> </ol>

Sources: <sup>1</sup> Population figures in millions for mid-1987, from World Bank (1989).

<sup>2</sup> GNP per capita in 1987 dollars, from Table 3.1.

<sup>3</sup> Kwang Choi (1990).

<sup>4</sup> Gil Diaz (1987), Aspe Armella (1992).

<sup>5</sup> McLure (1989) and McLure and George Zodrow (1991).

Notes: Changes in tax laws and tax systems take place very often. The interval or years cited indicate periods of intense reform activity, which occasionally was spread over many years. "Macro pressures" refer to prevalent macroeconomic conditions which are thought to have exerted some influence on the timing or nature of the reforms. "Policy reform" gives a synthetic statement of a broader perspective of policy changes within which the tax reforms must be seen.

<sup>6</sup> Kenan Bulutoglu and Wayne T. Thirsk (1990).

<sup>7</sup> Roy Bahl (1989, 1991).

<sup>8</sup> Gillis (1989c), and Mukul Asher (1990).

<sup>9</sup> Glenn P. Jenkins (1989).

<sup>10</sup> Zmarak Shalizi and Thirsk (1990).

selected from, for example, Table 2. There does not appear to be a combination of conditions which will inevitably lead to reform.

In addition to these difficulties of the tax system, Table 7 points to the importance of macro problems and the desire for changes in trade and industrial policy as pressures contributing to reform. A macro crisis is, however, neither necessary nor sufficient for the occurrence of reform. Indeed there are arguments which suggest it may hinder reform. Crisis sometimes acts as a catalyst, in particular when the IMF or World Bank are called upon. On the negative side, governments facing macroeconomic crises may be dominated by short-term concerns and may postpone tax reform, which might be seen as a medium- to long-term venture.<sup>51</sup> It must also be kept in mind that both measures to deal with short-term crises and those associated with tax reform may generate political unpopularity. Layering tax reform on top of austerity may pose political difficulties even for secure governments. Finally reforms may be "tainted" by association with international lending organizations or with particular domestic political parties. New administrations may have the advantage of political goodwill in implementing tax reform (see e.g., Turkey, Mexico).

It would appear in general that governments which are more secure and are prepared to take a longer-term view are more likely to embark on tax reform than those which are not. At least half, but not all, of the governments represented

in Table 7 were in relatively strong positions domestically. Finally, in four out of the eight cases tax reform was a logical complement to revisions in trade and industrial policy. In these cases, desire for a more open trade policy was associated with moves to reduce trade taxation and often coupled with reductions in corporate taxation to attract investment. At given levels of expenditure these reductions require, in the long run, an alternative source of revenue.<sup>52</sup>

*Direct Taxation.* Reform of direct taxation has been an integral part of the reform experience of all countries in Table 7. The effect of these measures has not, on the whole, been to increase revenue from direct taxes, and the overall rise of indirect tax revenue (especially VAT) has meant that their relative role has generally been reduced. Instead the measures were intended to promote the taxation of incomes in a more rational (less distortionary, anomalous, or discriminatory) way, requiring less effort, using broader bases with fewer loopholes and providing a more even distribution of liabilities. A common concern in the prereform period was that income tax systems were, and were seen as, ad hoc, irrational, and inequitable and that this contributed to widespread evasion and nonpayment. There have been attempts to reach personal incomes by curtailing opportunities for evasion, especially in the higher income brackets. Different types of realized income (e.g., capital gains, rents, dividends, etc.) have in some countries been included, along with labor income, in the taxable base (for example, Mexico and Indonesia). Deductions, exemptions, and loopholes which had represented significant routes

<sup>51</sup> There is, however, a growing consensus, both among governments and international organizations, that macroeconomic stability is impossible without a profound and permanent correction of the public finances. Tax reform is thus increasingly becoming an essential, short-term consideration as opposed to a secondary, exclusively long-term concern (see e.g., World Bank 1991; Aspe Armella 1992; McKinnon 1991).

<sup>52</sup> It is possible in some cases that reductions in tax rates could increase revenues. This is more likely to occur for a specific element, such as a tax on a particular item, than an across-the-board reduction for a tax category (e.g., all tariffs).

for evasion have been cut back (e.g., Colombia, Mexico) and effective rates have been reduced in order to improve incentives for payment and to adjust for the effects of inflation (e.g., Turkey, Jamaica, and Mexico).

Another major element of the reform of direct taxation has been the integration of the systems of personal income and corporate income taxation. Corporate rates have often been lowered to be compatible with personal rates (see, e.g., Mexico, Colombia, Jamaica, and Indonesia). This has been achieved, for example, by changing the corporate tax rate structure into a single tax rate equivalent to the highest personal tax rate. Integration has been carried out to encourage investment, prevent tax arbitrage, and remove distortions against, for example, equity financing. Greater integration has also had, to some degree, the effect of improving compliance by standardizing liabilities, pooling information, coordinating administrative and enforcement procedures, closing loopholes, and reducing incentives for nonpayment.

*Indirect Taxes.* The emphasis of tax reform for the eight countries shown in Table 7 has been on indirect taxes. Indirect tax reform has been characterized by two prominent and related features. First, in line with a wider economic policy of trade liberalization, there has been a general reduction in the role of trade taxes. Second, particular emphasis has been given to the development of effective systems of taxation of domestic goods and services, especially through the introduction of VAT systems.<sup>53</sup>

The rise of the VAT has undoubtedly constituted the single most important element of tax reform in developing countries over the past decade (see Tait 1988; Cnossen 1991). Five out of the eight re-

forms (Mexico, Turkey, Colombia, Indonesia, and Malawi) in Table 7 involved the introduction of a VAT and Korea had already adopted one in 1977 (see Section 3.1). The introduction was in most cases a considerable success in terms of coverage, revenue, and simplicity relative to the existing system. Table 7 shows that this success covers countries with a range of GNPs per capita and economic structures. In all cases compliance with indirect taxation was felt to be improved and administration simplified. The compliance effects, both through cross-checking within the VAT itself and with the linking of information for the corporate and personal income taxes, do appear to have been significant (for further discussion see, for example, Tait 1988). The revenue effects of VAT introduction can be substantial, even over a short period, with, for example, VAT revenues rising from 1 percent to 4 percent of GDP between 1984 and 1989 in Indonesia.

*Administration.* In most of the countries, notwithstanding substantial tax collections, administrative weaknesses and evasion remain as severe problems. In most of the countries seen in Table 7, the provision of a clear and effective legal structure has been seen as critical for the smooth functioning of administration. Constancy, transparency, and honesty as concerns government policy have been needed to maintain popular support for the reforms. The inclusion of different tax types under a coordinated administrative system has helped with information gathering and enforcement. Self-assessment for income tax purposes has been used effectively in a number of countries (for example, Indonesia), and VAT systems create a good audit trail for the authorities. Of course, shifting costs from the public to the private sector does not make these costs go away. Small businesses can find the VAT, for example, a very frustrating and irksome burden.

*Indonesia and Mexico.* We discuss

<sup>53</sup> Imports and exports can be treated within VAT systems in a nondistortionary manner thus further reducing the role of foreign trade taxes.

briefly two examples of tax reforms taking each as a whole, Indonesia and Mexico. They are both large countries, one low income and the other middle income, both are oil exporters and both carried out their reforms over similar periods (see Tables 2 and 7). Indonesia faced most of the problems listed in our discussion of the prereform conditions. The reliance on oil sector taxes was particularly striking (contributing over 60 percent of revenue). It did not however face severe macroeconomic pressures and was not attempting, simultaneously with the tax reform, to restructure trade and industrial policies and restore macroeconomic stability. Indonesia's tax reform seems to have seen some successes. The income tax system has been improved through reduction of evasion, clarification of the law, self-assessment, closing loopholes, and broadening the base and is now regarded as more equitable. VAT, which has been the major success of the reform, was introduced and now raises 4 percent of GDP and has also assisted in improving the effectiveness of the income tax. As a result of the reforms, oil tax revenue now provides only one-third of government revenue. The overall revenue effects have been broadly neutral, with total government revenue as a percentage of GDP falling slightly from 19 percent to 17 percent between 1983 and 1989 (Mukul Asher 1990). However, revenue is collected in a more coherent and efficient manner which is less dependent on the vagaries of the world oil market.

Mexico's tax reform was introduced in the late 1970s and continues today, a period covering, although it was initiated prior to, the debt crisis. Rising inflation and fiscal deficits were important motivating forces. Measures have included a broadening of the income tax base and the removal of anomalies and distortions, many of which were associated with inflation, excessively high marginal rates, and the operation of a large number of un-

coordinated sales and excise taxes. As regards direct taxation, personal and corporate tax rates have been reduced both to improve compliance and to make them competitive with those of the USA. These reductions have been most marked in the 1989–91 period. The personal income tax base has been broadened to include such sources as capital gains, and auditing and penalties for evasion have increased the number of taxpayers. Corporate and personal tax systems have been brought into closer alignment to prevent, for example, the double taxation of income, and both systems have been inflation-proofed with some success.

The VAT as an *ad valorem* tax has provided inflation protection for government revenue in a way that the specific excises, which it, *inter alia*, replaced, did not. More than 30 federal excise taxes and 300 state taxes were eliminated when the VAT was introduced in 1980, thus simplifying tax administration and leading to improved compliance with indirect taxation. It is also argued for Mexico that the zero-rating of agricultural exports via the VAT provided more efficient incentives than the preceding system. Compared to the previous amalgamation of taxes which were proportional the VAT is slightly progressive. It now raises 2.5–3 percent of GDP.

Sustained commitment to tax reform and fiscal correction have led to reduced inflation and debt, and the macroeconomic stability which prevails in the country today is in large part attributable to the success of the reforms (see Aspe Armella 1992). The overall effect of rationalization has also been to make taxes more progressive.

Tax reform in Mexico has been influenced by its federal structure and its proximity to the USA. Whereas the federal turnover tax and various excise taxes which the VAT replaced had been administered by the states, indirect tax admin-

istration is now the preserve of the federal government. This led to the need to provide incentives to collect VAT revenue and relinquish previous revenue rights. A carrot took the form of a 12 percent share of total federal revenues to be distributed to the states the year that VAT was introduced. The closeness of the large USA economy also meant that individual income tax rates and post-tax returns on liquid assets, import taxes, excises on luxury items, and corporate tax rates had to be consistent with those in the USA to prevent, respectively, evasion and capital flight, smuggling, and diversion of investment.

Broadly speaking, the tax reforms of Indonesia and Mexico have shown important elements of success both on the indirect and direct side. Rationalization of the direct tax system through rate lowering, base-broadening, simplification, and administrative reform has been effective in both countries. However, in Indonesia the personal income tax raises less than 1 percent of GDP and in Mexico the figure is less than 2 percent; the overall tax to GDP ratio in Mexico is only 14 percent and in Indonesia 15 percent (Table 2).<sup>54</sup> The scope for sustained revenue gains through personal income taxes or social security contributions is limited and there is no doubt that in both countries low coverage and evasion remain as major problems.

The main success has been with the increased role of domestic indirect taxation, in particular VAT. Though for the main part revenue effects have been broadly neutral,<sup>55</sup> it is clear that the changes have meant that revenue is now raised in a more rational, equitable, and

less distortionary manner. In both countries dramatic reform of tax administration with the imposition of new management and organizational structures has led to significant improvements in tax collection. On the whole these measures have helped reduce dependence on oil revenue and have contributed to macroeconomic stability.

*Pressure Without Reform.* Finally in our discussion of the experience of tax reform we point briefly to three large countries where, notwithstanding severe problems with the existing system of the kind associated with the countries discussed in Table 7, reform has not occurred. These are India, Pakistan, and Bangladesh. The three countries share a legal structure for taxation inherited from the British colonial period in undivided India. In all three countries this has remained largely intact, although they have had different experiences as regards total revenue. India collects around 17 percent of GDP in taxes, Pakistan around 13 percent, and Bangladesh 8 percent (figures for the mid-1980s—see Ahmad and Stern 1987, and 1991).<sup>56</sup>

The Indian constitution divides taxes into a central list and a state list. The constitution is taken seriously in India. States guard their rights jealously and the Center does not want to give up its revenue sources. The constitution thus places considerable constraints on reform. Domestic indirect taxes raise around 11 percent of GDP, split roughly in half between the central excises (mostly on

<sup>54</sup> The share of corporate income taxation is larger due mainly to the importance of the mineral sector in both countries.

<sup>55</sup> Tax revenues, however, have recently increased as a share of GDP in Mexico in the 1988–91 period (Aspe Armella 1992).

<sup>56</sup> In comparing these figures with those of Table 2 it should be emphasized that only central taxes have been included in that table and revenues collected at lower administrative levels (for example, state for India and province for Pakistan) are thus unrepresented in that table (see Section 5.5). For Pakistan and Bangladesh the collections at this lower level are negligible but for India another 5–6 percent of GDP is added, largely from state sales taxes and excises on alcohol, which are under state control (see Raja J. Chelliah 1989).

large-scale production) and the state taxes. An attractive reform would be to integrate indirect taxes into a single coherent system such as the VAT, but constitutional constraints make this difficult and the states would not wish to give up their revenue rights. These rights were relinquished with some difficulty in the case of VAT introduction in Mexico. This provides an important lesson—a tight constitutional specification of permitted taxes can inhibit innovation and reform. India introduced in the mid-1980s a modification of the central excise system called MODVAT which allows for some rebating and partially mitigates the cascading effect of this system but its scope is fairly narrow. Notwithstanding the constraints on reform and widespread evasion, the proportion of GDP raised in tax revenue by India has not been outstandingly low by the standards of developing countries (see Table 2), and has increased significantly over recent decades. An important question, however, is whether government revenue is being raised in an efficient manner and there the answer is clearly negative.

Constraints on reform in Pakistan and Bangladesh have not come from respect for the constitution. On the other hand the administrations appear to be weaker than in India and the political systems less stable. Government may have reasoned that the administration is too weak and the dangers of political unpopularity too great to risk embarking on a major reform. On the administrative side this conclusion would not seem to be justified, at least for Pakistan. A number of poor countries with weak administrations have carried out reform with some success (take for example the case of Malawi in Table 7). Yet Pakistan has consistently ducked the problems of reform, it always appearing attractive to postpone that particular problem. However, the magnitude of the deficits in Pakistan together

with the strong dependence on trade taxation is making reform in that country an urgent priority.

Bangladesh's revenue problems have been greatly eased by foreign aid. Bangladesh has managed to raise similar quantities in external assistance (around 8 percent of GDP) to those raised internally through the tax system. With an essentially free external source of finance of such importance, the incentive to embark on reform of internal revenue raising, with its attendant political dangers, is considerably weakened.

## 6.2 *Lessons from Tax Reform in Developing Countries*

We have discussed briefly the experience of eight countries where tax reform has taken place (see Table 7). They come from Central and South America, Africa, and Asia. Some are very large countries, others small islands, some are diversified, others have a strong dependence on particular sectors, some are poor and some are richer. Their experiences have been very different, but we can nevertheless draw out some common themes.

*Direct Taxes.* Principles of equity and efficiency suggest that the base for income taxation should be the sum of incomes an individual or household receives from all sources. This task, for understandable reasons, seems to be beyond most developing countries. Reforms have been largely pragmatic, aimed mainly at reducing evasion and involving rationalization of the method of assessment and collection through, inter alia, administrative reform, stronger enforcement, base-broadening, reduced differentiation and reductions in marginal rates. In part, one might see the expansion of VAT, which is a tax on wages and profits, as part of this pragmatic response. Income taxes can be collected more successfully from large corpora-

tions, which is where many developing countries have concentrated their efforts. This can be supplemented with reform of the administration. We do not, however, find the same degree of linkage between economic principles and public finance practice that we find for indirect taxes.

*Indirect Taxes.* As we saw in Section 3, there has been a long-run movement over time away from import duties and towards domestic taxes. This is in the direction indicated by theory as being more efficient, although such movement is dictated in large part by the growth of administrative capabilities and the domestic production base. Within domestic taxes we have seen in the last three decades a remarkable expansion of the value-added tax as the basis for indirect taxation. It has been seen to have many advantages including: a broad base; built-in administrative checks; allowance of a neutral treatment of imports and domestic supplies; the rebating of exports; avoidance of the taxation of inputs thus encouraging efficiency in domestic production activities; and encouragement to keep records and thus help improve management and organization. The VAT has been a major part of the tax reform in six of the eight countries considered, and all of the larger ones.

With the advantages we have described, we may naturally ask why the VAT has not been adopted elsewhere. The argument usually advanced against it is its involvement of very many agents throughout the productive chain, many of whom may not be in the habit of keeping proper records. There is no doubt that this is indeed a major problem, but experience shows that it can be exaggerated. It is impressive how successful many countries which have introduced VAT have been in the collection of revenues. There are a number of ways of cutting through the administrative prob-

lems, including the introduction of VAT first at the import and manufacturing stage, and then progressing to the wholesale and retail, and the use of presumptive methods. Experience has taught that administrative abilities in developing countries should not be underestimated. While it is foolhardy to suggest that everything is possible, one must at the same time avoid the corresponding mistake of assuming that current administration is so poor that nothing is possible except a simplification of the existing system.

While we have seen that broad-based indirect domestic taxation is not only desirable but also possible in many countries, we cannot assume that it is a realistic option everywhere. Countries under heavy revenue pressure may have to continue to rely on import duties while the domestic indirect tax system is developed although, as we have seen, the transition need not be of great length. In this case, too, experience and theory come together in pointing the way. Quotas are inferior to import duties and if quotas are not auctioned, an opportunity for revenue for the government is missed. Very high import duties run into problems of loss of revenue through substitution away from the imported commodities and smuggling. Hence the tax reformer will be well advised to begin a study of commercial policy by reviewing, and recommending abolition of all the quotas, and by examining import duties to see whether revenue could not be increased by reducing the highest ones.

This is not to say that import duties should be uniform or that they should be adjusted so that effective protection is uniform; that is not the lesson from theory (see Section 4). But it is sensible to review those which are outstandingly high. A number of countries have found that reducing these very high import duties has led to an increase in revenue



from those goods. Even if one rationalizes import duties, however, the problems of the inefficiencies they create cannot be eliminated. It is difficult to organize import duties so that they fall on consumer goods only. If they fall on inputs then we have the problems of cascading and inefficiency. Further, it is not easy to organize domestic taxation so that domestically produced and imported goods are subject to the same tax, unless one has a system like the VAT which is organized to do exactly that. Theory would recommend a move in this direction. One contribution that theory and empirical study can make to the analysis of a complex system is the calculation of the cumulative effect of taxes on prices, which will clarify some of the consequences of government action (see Ahmad and Stern 1986 and 1987).

*Administration.* We have already argued that one must be careful to take a balanced view of administration—one can make the mistakes of assuming both that too much and too little is possible. We will review here some lessons from tax reform for administration.

It is much easier to stop people from receiving money than to collect it from them afterwards. Withholding may be an important canon for the taxation of incomes generated by companies and the financial sector.<sup>57</sup> One can withhold taxes on wages, interest, and dividends at source. This may mean some distortions in the sense that individuals may be paying different marginal rates on different sources of income, or there may be some violations of equity, but these are probably minor compared to the revenue and administrative gains.

The tax laws to which individuals are subject should be transparent and rea-

sonably stable over time. Tax reform measures should be publicized in advance of implementation and, to the extent possible, agreed by those who will be affected (e.g., private sector institutions, unions, farmers, etc.). Penalties for evasion should be transparent and enforced from the start. The successful implementation of fiscal policy depends critically on government credibility. Haphazard implementation of apparently arbitrary taxes, rates, and codes breeds resistance.

Self-assessment does throw burdens on individuals and firms, but in many cases those can be burdens which have some benefit to them in the long run, in terms of their own management and organization. It provides substantial relief to the administrative authority, which can rely on random checks and presumptive methods when carrying out those checks. Increased dependence on self-assessment can be important in the reform of direct taxes but is also an integral part of the VAT method.

It is important to go for simple, well-defined bases. We saw that the measurement of total personal income from all sources was difficult and that it may be simpler to proceed component by component rather than attempting to aggregate them together. One can use the handles of interception, i.e., control of the passage of a good, as in the case of excises and customs. For countries with very weak administration it may be that this must remain the major source of revenue for some time, though one should not underestimate scope for greater integration with domestic taxation. We should emphasize the importance both of presumptive methods for taxing hard-to-reach groups and of keeping the differentiation of rates within reasonable bounds. We should also stress the quality of, and incentives facing, administrators. The period of reform may well be a time when

<sup>57</sup> Withholding also minimizes the collection lag which can significantly reduce the real value of tax revenue in high inflation countries (see Section 5.4).

administration can be improved. There have sometimes been dramatic advances in revenue when incentives (carrots and sticks) for tax collectors to collect tax have been improved together with an improvement in the quality of personnel and the resources at their disposal.<sup>58</sup> Finally, one must establish and implement stiff penalties for evasion.

*Politics.* A tax reform will not be successful unless there is the political will to carry it through and some degree of acceptance and support by the population. The acceptance may well be related to the perceived honesty and efficiency of government expenditure and a judgment as to the equity of the tax system itself. Where corruption and self-interest pervade the expenditure side, not only are they likely to be present in tax administration as well, but will also seriously undermine public willingness to be taxed. Tax reform may well overcome some resistance if the newer taxes are seen to be more equitable by the populace, but this cannot by itself overcome public perception of misuse of funds. It may be that expenditure reform and administrative reform have to be coupled with tax reform (see Section 2.1). It is partly for this reason that tax reform is often associated with incoming governments, where, at least in the initial stages, acceptance of and enthusiasm for reform is heightened. Once implemented, continuity is an attractive feature of tax systems and different types of taxes should not be too closely associated with one political regime or another. Not only would such association create opposition by those who do not support

the political party in government, but also high variability in liabilities over time, as the tax burden is shifted from one group to another during political transition. Tax instability creates uncertainty and disrupts business, commerce, and the management of personal finances.

There is, unfortunately, often a real tension between economically efficient taxes and taxes which are attractive to politicians. For example, protective import duties can benefit small sections of the population which may in turn pass that benefit to politicians. The losers are dispersed throughout the economy in the form of those who have to pay higher prices for what they consume. They may be difficult to organize and they may not perceive the accumulation of small losses very clearly. The taxation of agriculture is often unsatisfactory as direct methods (e.g., a land tax) encounter stiff resistance. Generally indirect taxes are less visible to consumers than direct taxes since they do not involve a direct payment (at least by households) to the government and the tax is simply part of the total price paid by the purchaser.

From the economic point of view, the best taxes are the most direct and the least avoidable. These are precisely the taxes which generate the most opposition. It is privately rational for an individual to campaign very strongly against an unavoidable redistributive tax that falls on him in the hope that it may be replaced by an avoidable tax which falls on someone other than him. The land tax is a clear example where this problem arises.

## 7. Conclusions

Our review of taxation and development began with the suggestion that the objectives of taxation should be similar for developed and developing countries: to raise resources for government expen-

<sup>58</sup> For example, in the latter half of the 1980s Ghana's tax administration underwent radical reform. This involved bonuses for meeting revenue targets, the recruitment of qualified accountants, and greater stringency in dismissing errant staff. It is claimed that largely as a result of these changes tax revenue rose by 7 or 8 percentage points of GDP over a three-year period (personal communication from Finance Ministry Officials, Nov. 1990).

diture in a way that is administratively feasible, equitable, and efficient. The main differences between developed and developing countries then, lie not in the objectives of government but in the constraints facing government. The weakness of administration, limited experience with taxation, poor accounting, the low level of monetization in the economy, the high share of agriculture, and the fact that "tax handles" are generally few in number relative to developed countries, together imply that some aspects of tax analysis for developing countries will have a different structure and emphasis. Broadly speaking, however, we argued that similar techniques and methods could be used for the analysis of taxation in both developed and developing countries, though, where models are used, their special features might look rather different, reflecting the above differences.

In Section 2 the close relationship between taxation and expenditure was emphasized. We argued that it was a mistake to see the tax problem as simply one of financing a given aggregate expenditure. On the expenditure side, our review of arguments concerning the role of the state pointed to substantial and important areas of government expenditure, implying that the problem of raising resources will be a major one in less-developed countries. While expenditure must be controlled, this challenge cannot be tackled simply by reducing expenditure to negligible levels. Attention also needs to be paid to the composition of expenditures. Finally in Section 2 we reviewed the different possible sources of finance available to the government, namely raising government revenue, internal and external borrowing, and printing money. Debt and money finance often prove to be unsustainable sources of revenue and in the long run there is no real substitute for taxation, broadly defined, for raising revenue.

We saw in Section 3 that developing countries are already collecting substantial amounts in government revenue, amounting to 20 percent or 25 percent of GDP, with 17 percent or 18 percent coming from tax revenue, and 5 percent or so of GDP from non-tax revenue. These are, however, aggregate figures, and there is very substantial variation both across and within continents. Generally speaking, total government revenue in developing countries is about 10 percentage points of GDP below industrial countries where government revenue averages between 30 percent and 35 percent of GNP, with only a small amount of this coming from non-tax sources. If only taxation is considered, levels in less-developed countries are a little over a half those in industrial countries (18.05 percent compared to 31.21 percent of GDP). Within developing countries we found that there was a weak but significant relationship between the tax ratio (tax revenue to GDP) and GNP per capita but no significant relationship for industrial countries. This suggests that economic structure may constrain taxation expansion in developing more severely than in developed countries, and this view is supported by, for example, the existence of a strong relationship between the tax ratio and the shares of agriculture and of imports.

The structure of taxation in developing countries looks radically different from that of developed countries. For developing countries we have roughly two-thirds of tax revenue coming from indirect taxes, split roughly equally between domestic taxes and trade taxes. The remaining one-third consists largely of the corporate income tax. For developed countries, however, roughly two-thirds comes from direct taxes, with personal income tax and social security payments constituting the bulk of this. The structure we have described for developing countries constitutes an average and

there is enormous variation between countries in their sources of revenue. As far as movement over time is concerned, there seems to be a gradual move away from trade taxes to domestic sales taxes as domestic economies develop and, correspondingly, tax tools can be fashioned to tax domestic production and transactions. It seems, however, that the personal income tax has developed only slowly and in some countries has stagnated or declined as a fraction of GDP and tax revenue.

We examined formal tax theory and models in Section 4 and argued that the objective of positive tax analysis should be the design of feasible reforms and the tracing of the effects of tax changes through to changes in not only revenue but also household real income (and, more generally, living standards) i.e., the identification of who gains and who loses, and by how much. For developing countries the critical assumptions in that analysis would concern the availability and coverage of tax tools, the institutional and sectoral structure of the economy, and the way in which domestic markets, particularly the labor market, function. While a calculation of the detailed effects on final consumers (now and in the future) might often prove overambitious, given the availability of data and prior work on the economy, it should be kept firmly in mind as an ultimate goal. Positive tax analysis for developing countries has concentrated largely on indirect taxes, public-sector pricing and the corporation tax, reflecting the main sources of revenue, rather than on labor supply, risk-taking, and saving, which have been the prominent topics in developed countries where direct taxation dominates.

In our normative discussion in Section 4 we showed how theories of optimal taxation could be analyzed to derive basic principles and we set out nine such guiding principles for tax policy which we

suggested were useful for both developed and developing countries. As well as providing such guiding principles, the normative analysis also tells us where to look for key issues in judging policy and helps us to structure the detail of our applied investigations.

We also discussed in Section 4 theories of political economy which attempted to model and explain the way in which governments behave, rather than the ways in which governments should behave. We emphasized that such theories required essentially the same type of empirical investigation as an approach which was explicitly normative. From the perspective of public choice or political economy we will want to know who will be likely to support or oppose a change and, from the normative, we have to compare the gains to gainers with the losses to losers.

In Section 5 we discussed constraints and pressures on tax systems in developing countries. Weaknesses in the basic administrative functions of identification, assessment, enforcement, and collection often undermine the effectiveness of tax systems in developing countries. We also emphasized the extensive scope of non-compliance and evasion in less-developed as opposed to developed countries. Irrespective of how well a tax system is designed on paper, tax reform cannot be expected to be successful unless it addresses these problems. We found that the ability of powerful groups to block reforms greatly aggravates problems of administration and evasion by constraining the tax tools available to the government. Macroeconomic laxity, manifesting itself in inflation, causes severe problems for the tax system. It also in large part arises from the weaknesses of public finance and expenditure control. The openness of many developing countries creates further stringent constraints on tax options. For example, the kinds

of taxes that Mexico can expect to administer are going to be closely related to income-earning opportunities in the USA.

Finally, in Section 6 we examined the experiences of a number of countries which have attempted tax reform in the recent past. We saw that tax reform was most likely to come about when some or all of a number of preconditions existed: (i) a desire to diversify away from high rates and a narrow base for revenue; (ii) widespread evasion; (iii) increasingly irrational and severe complications; (iv) extreme revenue pressure; and (v) a change in economic strategy involving, for example, trade liberalization, or macroeconomic stabilization.

We saw that, generally speaking, the reform of indirect taxation had been rather more successful than that of direct taxation. As administrative abilities grow and as the economy becomes more monetized with an increasing domestic base for taxation, domestic indirect taxation will replace the taxation of foreign trade. Within domestic indirect taxation, a movement to a system like the VAT, which is noncascading and does not interfere with production efficiency, has become increasingly attractive and has indeed been implemented in many countries. As far as direct taxes are concerned, rationalization of the method of collection and closer alignment of the individual and corporate bases can mean that, relative to the cumbersome systems that exist in many countries, revenue can be collected in a less distortive manner with less effort. A tax system that is rationalized is easier to enforce and as a number of countries have shown, returns to more effective enforcement can be very substantial.

Our analysis has shown that there are feasible revenue-raising tools for the governments of developing countries which perform fairly well relative to the criteria

we set out. We would argue, particularly for indirect taxes, that there are available reasonable compromises between what is theoretically attractive, administratively reliable, and politically possible. Consider an indirect tax system based on the following elements: (i) a VAT with one or two rates and some exemptions; (ii) excises on alcohol, tobacco, petroleum products, and some luxury goods; and (iii) direct support for certain groups, possibly through subsidized rations. It is a system which is broadly consistent with the economic principles set out in Section 4 and is capable of being administered by most less-developed countries. It can raise the necessary revenue, provide the appropriate industrial incentives, cope with externalities, and protect the poor. It may be supplemented by temporary tariffs to maintain revenue or where infant industry arguments have genuine empirical support (and other more direct means of support are unavailable). In general, however, as administrative capabilities permit, there should be a move away from reliance on foreign trade taxes to greater use of domestic indirect taxes.

It is much less easy to prescribe a direct tax system which lives happily with both the theory and what is administratively possible. An exception would be a land tax but this is often ruled out for political reasons. Corporate taxation is likely to remain a mainstay of taxation in less-developed countries. But the measurement of personal and small-business income from any one source, let alone from several, is extremely difficult, except for individuals whose occupations are entirely as employees in the more formal sectors. Even there, fringe benefits and evasion can cause severe problems.

To summarize, although there exists no unflawed and detailed tax package fit for universal prescription, it is evident

that the combination of theoretical, administrative, and political considerations can, when supported by careful empirical analysis, provide reasoned assessment and informed advice. We ignore any one of these elements at our peril.

Work on taxation and development has shown great advances in the last twenty or thirty years, both from the perspective of what governments have achieved and in terms of the application of analytical economics. The reform of the tax system and the control of expenditure are at the heart of most structural adjustment problems. Indeed, without fiscal stabilization, structural adjustment will surely fail. The countries of Eastern Europe, of the former Soviet Union, and those elsewhere relaxing or dismantling tight control of the economy must find, and are finding, that new tax systems are an urgent requirement of transition. The lessons of theory and the experience of developing countries have much to offer these countries too.

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## APPENDIX

TABLE 2  
TAX REVENUE BY TYPE OF TAX  
(percent of GDP)

GNP per Capita (1987 \$)	Years	Income Taxes				Domestic Taxes on Goods and Services				Foreign Trade			Other Taxes			
		Total Taxes	Indi- vidual	Cor- porate	Other	Total	Gen- eral, Turn- over, VAT	Ex- cises	Other	Total	Im- port Dut- ies	Ex- port Dut- ies	Other	So- cial Se- cur- ity	Wealth & Prop- erty	Other
<b>Industrial Countries</b>																
Switzerland	21310	19.62	3.00	2.45	0.55	0.00	4.02	3.03	0.65	0.34	1.51	0.00	0.00	10.20	0.88	0.00
United States	18580	18.45	10.39	8.58	1.81	0.00	0.75	0.00	0.61	0.14	0.34	0.34	0.00	6.81	0.17	0.00
Luxembourg	17780	38.84	16.24	11.07	4.83	0.33	9.94	5.35	4.14	0.45	0.03	0.03	0.00	10.33	2.25	0.05
Norway	17450	38.41	9.31	3.96	5.35	0.00	18.34	9.51	6.92	1.92	0.25	0.23	0.02	10.00	0.43	0.08
Iceland	16890	22.57	2.40	1.81	0.58	0.00	12.62	8.36	2.36	1.90	4.07	3.84	0.01	1.24	2.19	0.06
Japan	15840	20.69	8.57	4.77	3.79	0.00	2.19	0.00	1.91	1.28	0.19	0.48	0.00	8.54	0.74	0.47
Sweden	15613	37.59	7.55	5.38	2.11	0.10	12.68	7.39	4.54	1.74	0.23	0.23	0.00	12.89	4.22	0.03
Canada	15070	17.32	10.13	7.96	1.93	0.24	3.56	2.40	1.04	0.11	0.78	0.78	0.00	2.85	0.00	0.00
Denmark	14910	36.34	15.76	12.10	2.29	1.37	17.45	10.16	4.85	2.44	0.03	0.02	0.00	1.54	1.58	0.00
Finland	14670	27.03	9.21	8.61	0.59	0.00	13.40	8.28	4.62	0.50	0.25	0.25	0.00	2.99	1.11	0.08
Germany	14440	27.44	5.12	4.06	1.06	0.00	6.49	3.80	2.34	0.36	0.00	0.00	0.00	15.77	0.05	0.00
France	12910	38.25	7.32	4.98	2.31	0.03	12.17	8.63	2.61	0.94	0.01	0.01	0.00	17.41	1.27	0.07
Austria	11970	31.74	6.62	5.44	0.99	0.19	9.29	6.19	2.39	0.71	0.49	0.48	0.01	12.80	2.14	0.39
Netherlands	11790	45.75	13.11	9.57	3.54	1.00	11.06	7.82	2.56	0.68	0.00	0.00	0.00	20.32	1.06	0.20
Belgium	11470	43.09	16.66	13.92	2.73	0.00	10.17	7.20	2.14	0.83	0.01	0.01	0.00	15.37	0.88	0.00
Australia	11180	24.87	16.88	14.05	2.54	0.30	6.46	2.39	4.02	0.05	1.39	1.33	0.03	0.00	0.14	0.00
United Kingdom	10540	33.64	14.49	10.23	4.26	0.00	11.45	6.03	4.56	0.86	0.02	0.02	0.00	6.85	0.81	0.01
Italy	10430	37.75	13.69	11.08	2.57	0.03	8.60	4.83	2.47	1.30	0.01	0.01	0.00	14.05	0.78	0.63
New Zealand	7870	33.63	22.95	19.64	3.05	0.25	8.53	4.87	3.23	0.43	1.33	1.28	0.03	0.00	0.79	0.04
Ireland	6290	37.29	14.24	12.81	1.43	0.00	13.03	3.01	4.02	1.00	3.08	3.38	0.00	5.58	1.36	0.00
Spain	6010	25.20	6.43	4.94	1.45	0.05	5.85	2.89	1.48	1.48	1.06	1.05	0.00	11.39	0.45	0.03

TABLE 2 (Continued)  
TAX REVENUE BY TYPE OF TAX  
(percent of GDP)

GNP per Capita (1987 \$)	Years		Domestic Taxes on Goods and Services										Foreign Trade			Other Taxes			
	1984	1986	Income Taxes					Gen. Sales, Turnover, VAT					Total	Imports Duties	Exports Duties	Total	Social Security	Wealth & Property	Other
			Total Taxes	Individual	Corporate	Other	Total	Excises	Other										
<b>Developing Countries</b>																			
Oman	5326	1984	10.45	8.72	0.00	8.65	0.06	0.32	0.00	0.00	0.00	0.32	1.18	1.18	0.00	0.00	0.00	0.23	0.00
Barbados	5451	1984	30.22	9.35	3.76	5.16	0.43	7.46	4.79	0.27	2.40	4.80	4.80	4.24	0.05	0.40	3.83	1.66	3.11
Cyprus	5330	1986	21.33	5.24	3.73	0.87	0.64	4.66	0.00	3.20	1.46	4.50	4.50	4.50	0.00	0.00	4.45	1.00	1.48
Malta	4191	1985	24.76	8.65	4.70	3.87	0.08	2.00	0.00	1.12	0.87	7.35	7.35	7.35	0.00	0.00	5.88	0.79	0.09
Greece	4015	1983	32.63	6.38	4.76	0.87	0.75	12.73	6.79	4.83	1.11	0.34	0.34	0.00	0.00	0.00	12.07	0.82	1.91
Iran I.R. of	3802	1984	8.81	2.52	0.27	2.25	0.01	1.39	0.13	0.38	0.88	1.94	1.94	1.87	0.00	0.07	1.88	0.95	0.13
Venezuela	3233	1984	21.06	13.75	0.85	12.03	0.88	1.45	0.00	1.40	0.05	4.48	4.48	1.40	0.00	3.09	0.89	0.38	0.09
Korea	2923	1986	15.53	4.87	2.66	2.21	0.00	6.87	3.41	2.11	1.34	2.67	2.67	2.67	0.00	0.00	0.41	0.20	0.35
Portugal	2874	1985	30.73	7.13	2.29	1.30	3.54	11.81	5.24	2.24	1.33	0.81	0.81	0.81	0.00	0.00	8.17	0.98	2.38
Cabon	2776	1983	27.46	18.04	1.20	16.34	0.50	2.44	1.93	0.00	0.51	6.22	5.72	5.72	0.50	0.00	0.00	0.64	0.12
Yugoslavia	2541	1984	6.85	0.00	0.00	0.00	0.00	4.27	4.27	0.00	0.00	2.58	2.58	2.58	0.00	0.00	0.00	0.00	0.00
Argentina	2412	1984	16.92	0.92	0.03	0.03	0.86	7.24	2.58	4.41	0.25	0.86	1.40	0.86	1.40	0.25	4.79	0.93	0.54
Surinam	2274	1984	22.41	9.37	5.91	3.46	0.00	2.52	0.00	1.52	0.99	7.93	5.72	1.55	0.65	1.65	0.38	0.56	0.84
Uruguay	2259	1984	19.51	1.57	0.55	0.83	0.19	9.05	5.33	3.63	0.08	2.66	2.66	1.96	0.24	0.46	5.37	0.95	0.84
Panama	2242	1984	22.15	6.41	0.00	0.00	6.41	4.38	1.63	1.85	0.90	3.07	2.79	2.79	0.24	0.04	7.30	0.46	0.54
Brazil	1982	1985	15.91	4.31	0.21	1.28	2.83	4.40	0.63	2.53	1.24	0.55	0.41	0.41	0.14	0.00	5.63	1.02	0.00
South Africa	1870	1984	23.61	13.53	7.41	5.83	0.29	8.19	6.14	1.99	0.07	0.79	0.79	0.75	0.04	0.00	0.35	0.44	0.32
Malaysia	1832	1986	18.27	8.98	2.31	6.66	0.02	4.43	1.43	1.73	1.27	4.20	4.20	2.61	1.58	0.00	0.18	0.10	0.39
Mexico	1771	1985	13.94	3.98	1.82	2.14	0.01	9.85	2.84	2.30	4.71	0.80	0.76	0.76	0.04	0.00	1.85	0.10	0.00
Costa Rica	1662	1984	19.16	2.66	2.37	0.10	0.20	6.48	3.19	3.22	0.07	4.57	4.57	2.73	1.73	0.11	5.42	0.08	0.29
Syrian Arab Rep.	1648	1985	13.91	6.58	0.08	5.86	0.00	1.76	0.10	0.13	1.32	1.52	1.52	1.42	0.10	0.01	0.00	1.54	2.51
Fiji	1603	1986	19.01	9.07	6.28	2.47	0.32	3.19	0.00	2.47	0.63	6.45	6.45	6.44	0.02	0.00	0.00	0.03	0.26
Jordan	1560	1985	18.02	3.00	n.a.	n.a.	0.14	3.75	0.00	3.15	0.60	9.31	8.31	8.31	0.00	0.00	0.00	0.96	2.01
Mauritius	1500	1986	19.70	2.19	1.04	1.15	0.00	4.12	1.52	1.41	1.18	11.63	9.03	9.03	2.30	0.10	0.96	0.93	0.08
Peru	1449	1985	10.94	1.94	n.a.	n.a.	n.a.	8.27	1.69	4.46	0.11	2.61	2.43	2.43	0.17	0.00	0.00	0.60	0.39
Belize	1374	1982	20.16	5.20	3.89	1.77	0.00	2.58	0.00	1.64	0.94	10.65	9.79	9.79	0.59	0.27	0.00	0.27	1.45
Chile	1358	1984	22.44	3.28	1.14	2.14	0.00	11.81	8.74	3.03	0.04	2.82	2.62	2.62	0.00	0.19	2.21	0.44	1.76
Colombia	1241	1985	10.99	3.25	1.61	1.64	0.00	3.43	2.66	0.71	0.07	2.16	1.97	1.97	0.13	0.06	1.19	0.54	0.42
Turkey	1216	1986	15.00	7.42	5.15	2.27	0.00	5.67	4.23	0.50	0.96	1.22	1.22	1.22	0.00	0.00	0.00	0.05	0.64
Tunisia	1180	1985	24.60	4.79	1.97	2.06	0.76	7.03	4.18	2.48	0.37	8.65	8.37	8.37	0.14	0.14	2.55	0.92	0.66
Botswana	1078	1985	33.75	24.06	2.25	18.97	2.83	0.76	0.56	0.00	0.20	8.88	8.86	8.86	0.03	0.00	0.00	0.05	0.00
Ecuador	1054	1985	14.23	8.06	0.00	6.67	1.08	2.96	2.28	0.64	0.04	2.83	2.53	2.53	0.06	0.25	0.00	0.19	0.19
Djibouti	1008	1984	24.39	4.66	2.79	1.86	0.01	15.39	9.13	4.08	2.18	1.65	1.62	1.62	0.03	0.00	0.00	1.50	0.54
Cameroon	965	1985	14.92	7.12	1.75	7.38	0.01	2.60	1.24	1.12	0.23	3.50	3.01	3.01	0.45	0.03	1.10	0.39	0.25
Guatemala	949	1986	8.56	1.53	0.40	1.12	0.01	2.77	1.15	1.11	0.37	3.60	2.56	2.56	0.90	0.14	0.00	0.15	0.50
Paraguay	948	1985	8.39	1.27	0.00	1.26	0.03	2.54	0.74	1.69	0.11	1.10	1.10	0.98	0.00	0.13	1.21	0.94	1.09

TABLE 2 (Continued)  
TAX REVENUE BY TYPE OF TAX  
(percent of GDP)

GNP per Capita (1987 \$)	Years		Domestic Taxes on Goods and Services										Foreign Trade			Other Taxes					
	1978	1986	Income Taxes			Gen. Sales, Turnover, VAT				Other			Total	Im- port Du- ties	Ex- port Du- ties	Other	So- cial Se- cur- ity	Wealth & Prop- erty	Other		
			Total Taxes	Indi- vidual	Cor- porate	Total	Ex- cises	Other	Other												
<b>Developing Countries</b>																					
873	1978	1980	26.99	17.21	2.96	14.21	0.03	2.69	2.46	0.17	0.07	4.57	4.46	0.07	0.04	1.56	0.54	0.41			
855	1986	1988	11.52	2.51	0.90	1.46	0.15	4.61	2.92	1.48	0.31	3.71	0.98	2.73	0.00	0.00	0.66	0.04			
850	1986	1988	14.74	3.18	1.63	1.55	0.00	7.84	2.81	4.34	0.68	3.35	3.15	0.17	0.03	0.00	0.25	0.12			
834	1985	1987	12.70	2.48	1.00	1.47	0.00	4.48	0.00	3.89	0.59	4.97	4.28	0.45	0.24	0.51	0.12	0.14			
828	1984	1986	32.24	4.87	n.a.	n.a.	n.a.	18.05	3.38	9.90	4.77	3.57	2.21	0.02	1.34	4.03	1.31	0.41			
743	1984	1986	20.10	3.26	1.69	1.27	0.30	4.49	2.23	1.28	0.98	7.62	5.44	2.18	0.00	1.25	1.90	3.41			
<b>Papua New Guinea</b>																					
732	1985	1987	17.96	9.51	5.70	3.78	0.00	2.77	0.00	2.49	0.28	5.29	4.70	0.57	0.03	0.00	0.00	0.00			
701	1984	1986	26.87	7.62	3.98	3.03	0.60	2.16	1.92	0.00	0.24	16.91	16.87	0.04	0.00	0.00	0.06	0.12			
681	1985	1987	20.05	4.26	2.38	1.70	0.18	9.77	5.42	3.63	0.73	3.24	3.04	0.17	0.03	1.14	0.58	1.05			
616	1985	1987	23.63	5.83	0.52	4.64	0.67	4.33	0.00	4.01	0.32	5.39	5.27	0.12	0.00	5.40	0.36	2.31			
592	1985	1987	10.86	3.02	0.97	1.55	0.50	4.78	1.08	2.70	1.00	2.75	2.54	0.09	0.12	0.00	0.07	0.23			
<b>Yemen Arab Rep.</b>																					
581	1986	1988	13.54	2.31	1.46	0.81	0.03	2.23	0.00	1.84	0.39	6.59	6.59	0.00	0.00	0.00	0.24	2.16			
<b>Western Samoa</b>																					
560	1984	1986	26.24	7.01	n.a.	n.a.	n.a.	4.10	0.00	3.80	0.30	14.96	13.83	0.14	0.99	0.00	0.09	0.08			
515	1984	1986	26.26	12.42	7.49	4.46	0.47	8.96	5.84	3.04	0.09	4.55	4.47	0.00	0.08	0.00	0.11	0.22			
510	1982	1984	18.02	3.88	2.31	1.02	0.55	5.40	3.72	1.36	0.32	7.19	7.06	0.11	0.01	0.64	0.79	0.12			
488	1984	1986	5.92	0.12	0.05	0.06	0.01	2.96	0.25	2.66	0.04	1.28	0.88	0.17	0.23	1.02	0.06	0.48			
451	1984	1986	18.57	7.40	5.70	1.58	0.11	5.03	0.40	2.25	2.39	5.56	5.51	0.03	0.02	0.00	0.15	0.43			
445	1986	1988	15.04	9.17	0.69	8.28	0.20	4.23	2.93	0.97	0.33	1.21	0.90	0.09	0.00	0.00	0.24	0.14			
<b>Solomon Islands</b>																					
421	1986	1988	20.72	7.04	5.18	1.86	0.00	0.55	0.01	0.14	0.40	13.20	10.25	2.94	0.00	0.00	0.00	0.12			
407	1986	1988	17.13	2.42	0.77	1.65	0.00	7.95	5.53	2.28	0.14	6.12	5.22	0.90	0.00	0.00	0.65	0.00			

TABLE 2 (Continued)  
TAX REVENUE BY TYPE OF TAX  
(percent of GDP)

GNP per Capita (1987 \$)	Years		Income Taxes				Domestic Taxes on Goods and Services				Foreign Trade			Other Taxes				
			Total Taxes	Total	Indi- vidual	Cor- porate	Other	Total	Gen- eral Turn- over, VAT	Ex- cises	Other	Total	Im- port Dut- ies	Ex- port Dut- ies	Other	So- cial Secur- ity	Wealth & Prop- erty	Other
Ghana	394	1985	11.33	2.61	1.00	1.61	0.00	3.31	0.69	2.57	0.05	5.39	2.36	3.02	0.01	0.00	0.01	0.01
		1987	40.49	14.37	4.64	9.39	0.00	13.96	10.23	2.59	1.14	4.62	1.74	0.18	2.70	6.42	0.83	0.29
Guyana	370	1983	12.95	1.64	0.45	1.09	0.09	1.11	0.93	0.00	0.17	9.91	7.59	2.08	0.23	0.00	0.23	0.07
Comoros	372	1984	38.29	4.43	3.09	1.34	0.00	5.73	4.82	0.42	0.51	28.04	27.99	0.05	0.00	0.00	0.01	0.06
Lesotho	371	1985	9.17	6.45	0.01	6.35	0.23	0.92	0.00	0.92	0.00	1.79	1.78	0.01	0.00	0.00	0.00	0.01
Nigeria	358	1985	10.01	1.53	0.60	0.93	0.00	4.84	1.75	2.67	0.42	2.81	2.38	0.43	0.00	0.03	0.24	0.57
Haiti	344	1984	15.28	0.48	n.a.	n.a.	n.a.	3.87	0.00	0.00	0.00	10.49	9.52	0.04	0.93	0.00	0.00	0.44
Maldives	335	1985	17.96	5.99	n.a.	n.a.	n.a.	7.95	5.58	1.67	0.71	3.77	3.19	0.58	0.00	0.00	0.00	0.24
Kenya	335	1984	13.02	1.96	n.a.	n.a.	n.a.	5.70	1.02	4.68	0.00	5.33	5.13	0.14	0.07	0.00	0.04	0.00
Pakistan	311	1985	11.30	2.08	0.98	1.09	0.01	5.17	0.13	5.00	0.04	3.97	3.85	0.03	0.10	0.00	0.07	0.00
India	303	1984	23.82	10.20	2.24	7.17	0.78	2.72	2.13	0.31	0.28	8.77	6.93	0.25	1.58	1.83	0.23	0.07
Togo	294	1985	5.52	1.44	0.63	0.80	0.00	1.40	0.00	1.14	0.26	2.63	2.52	0.11	0.00	0.00	0.01	0.04
Sierra Leone	261	1984	11.74	0.74	0.05	0.69	0.00	2.74	2.17	0.43	0.14	8.26	1.03	6.64	0.59	0.00	0.00	0.00
Uganda	247	1979	13.05	2.74	1.20	1.35	0.18	3.59	0.00	3.43	0.16	5.24	3.64	1.60	0.01	0.22	1.19	0.07
Burundi	241	1986	20.91	6.36	1.76	4.01	0.59	8.26	5.28	2.83	0.10	6.14	3.73	3.13	0.38	0.00	0.14	0.01
Zambia	212	1985	7.42	0.73	n.a.	n.a.	n.a.	4.88	4.14	0.01	0.72	1.81	1.81	0.00	0.00	0.00	0.00	0.00
Myanmar	210	1983	15.70	4.85	1.62	2.95	0.05	9.20	9.06	0.00	0.23	1.23	1.18	0.01	0.03	0.00	0.13	0.29
Tanzania	199	1984	12.45	1.51	0.55	0.84	0.11	4.56	3.04	1.33	0.19	3.62	2.39	1.16	0.06	0.72	0.75	1.30
Mali	190	1984	16.36	2.64	1.15	1.24	0.25	1.25	0.00	0.60	0.65	12.31	11.40	0.91	0.00	0.00	0.11	0.05
Gambia, The	176	1984	12.47	2.34	1.45	0.37	0.52	2.27	0.88	0.85	0.54	5.37	4.71	0.25	0.41	1.28	0.38	0.82
Burkina Faso	164	1986	7.15	1.04	0.77	0.28	0.00	2.77	0.95	1.80	0.02	2.74	1.84	0.84	0.06	0.00	0.23	0.36
Bangladesh	163	1985	17.74	7.37	2.60	4.77	0.00	6.39	5.52	0.60	0.27	3.86	3.48	0.38	0.00	0.00	0.02	0.09
Malawi	160	1986	7.78	0.81	0.55	0.25	0.02	3.66	2.02	1.16	0.47	2.77	2.62	0.15	0.00	0.00	0.53	0.01
Nepal	153	1985	22.97	7.44	3.64	3.78	0.02	4.40	3.27	1.07	0.06	10.16	6.82	3.32	0.01	0.21	0.28	0.48
Zaire	127	1985	17.77	6.98	1.93	4.59	0.46	5.46	1.83	3.57	0.06	4.77	2.92	1.85	0.00	0.00	0.42	0.14
Ethiopia		1987																

Sources for Tables 2-5: IMF Government Finance Statistics Yearbook (1989), IMF Bureau of Statistics Data.

Notes: Percentages represent unweighted averages across all years in the intervals indicated in the "years" column. Revenues are those of the central government. Subnational government revenue is thus (largely) unrepresented. These statistics were prepared by Christine Wu of the IMF Fiscal Affairs Department, from IMF sources, to follow the format of Tanzi (1987).