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Presumptive Taxation in Sub-Saharan Africa:
Experiences and Prospects

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Abstract

Considering the need to broaden the tax base and to increase tax revenue in an efficient, equitable, and cost-effective manner, this paper analyzes presumptive taxation methods and their application in sub-Saharan Africa. Presumptive taxation involves simple techniques to capture income that frequently escapes conventional taxation. Presumptive taxation methods could be used more intensively in sub-Saharan Africa, and presumptive taxes on imports, withholding schemes, and graduated business license fees are most effective in raising additional tax revenue in a way commensurate with efficiency, equity, and administrative expediency. Also, intensified presumptive taxation will need stronger institutional capacity in tax administration.

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1/ Mr. Tadesse was assigned to the African Department under the 1995 summer internship program. We wish to thank, without implication, Gerwin Bell, Victor Thuronyi, and Zühtü Yücelik for useful comments.

As in Alesina and Tabellini (1987), the following assumptions are made. Money demand is given by $M_t = P_t X'$ where X' is independent of the level of distortionary taxes τ . Thus $\pi_t = m_t - m_{t-1}$. The government financing constraint is $G_t = \tau P_t X_t + M_t - M_{t-1}$ which when divided by nominal income gives $g_t = \tau + [(M_t - M_{t-1})/M_t] X'/X_t$. This approximates to:

$$g_t = \tau + \pi_t. \quad (8)$$

That is, government spending can be financed only by taxes and seigniorage. Seigniorage is likely a nonlinear function of inflation, but for simplicity has been linearized here. 1/ One can regard the seigniorage term as incorporating all the means by which the government can raise additional revenue through inflation, such as inflating away debt or bracket creep.

1. Second-best solution

This section analyses the solution when there is a social planner that internalises the effects of policy actions on inflation expectations. One can think of this as the second-best solution in the sense that it is the optimum in the presence of distortionary taxation. 2/ The social planner minimizes the social loss function (equation (1)) through its choice of taxation and inflation, subject to the government budget constraint. This results in the following solution for inflation:

$$\pi_{opt} = \frac{s_g s_x}{s_x s_\pi + s_g s_\pi + s_x s_g} (C - a) \quad (9)$$

where $C = (g^* + w^* + x^* - \log \gamma)$ is constant and independent of the policy weights. Optimal inflation varies negatively with society's weight on inflation and positively with its weight on output and spending (assuming $C - a > 0$). Consequently, observed differences in inflation across countries may reflect differing optimal outcomes arising from differing parameters in the social loss function.

Given that output and government spending can be written as linear functions of inflation, one can write the expected loss in each period as:

1/ It is also assumed that the economy is on the left hand portion of the seigniorage Laffer curve. Beetsma and Bovenberg (1995) analyze the case where inflation does not map into seigniorage revenue one-for-one, but rather seigniorage is a fraction κ of inflation.

2/ See Beetsma and Bovenberg (1995) for more discussion.

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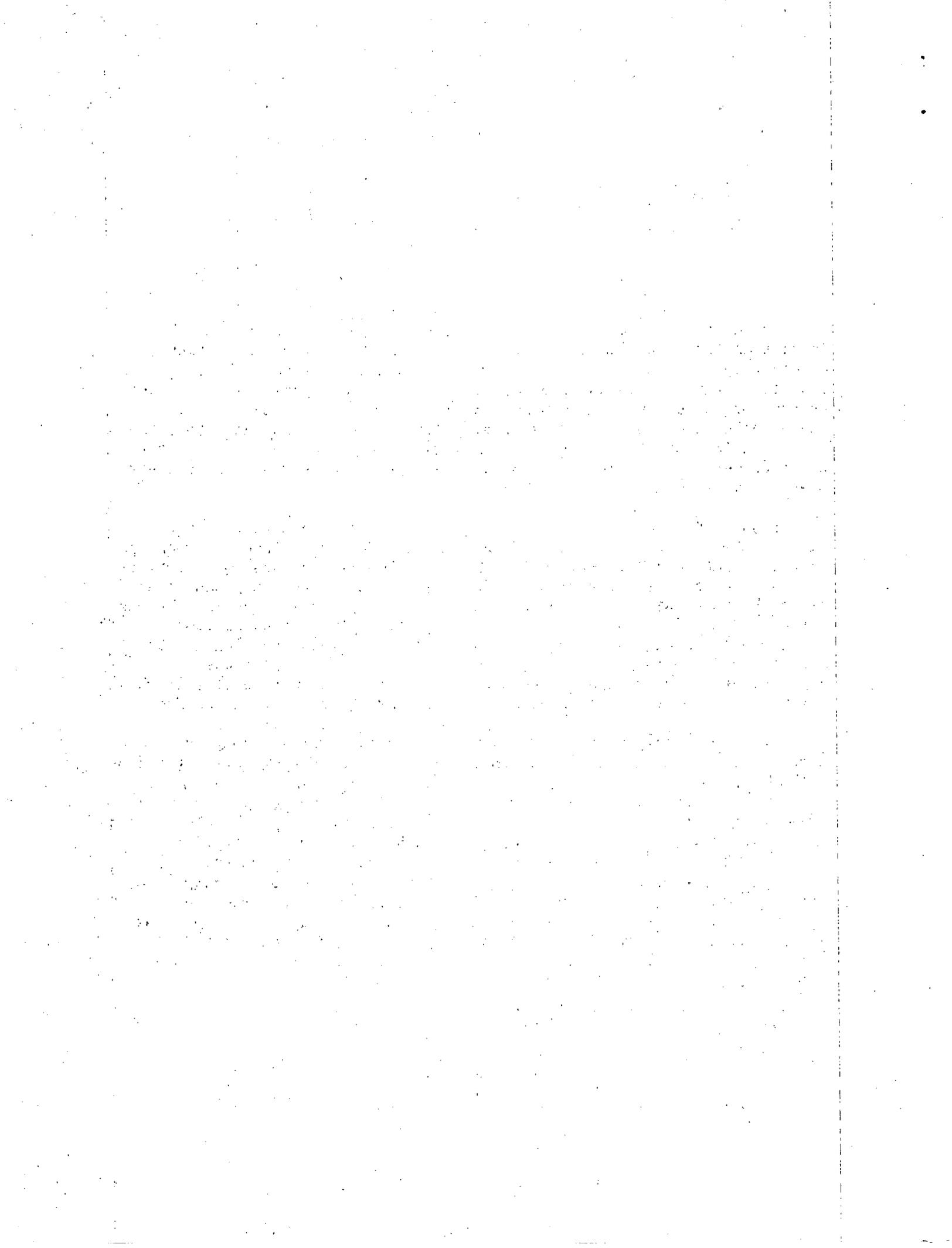
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Summary

Broadening the tax base is important to tax policy reform in sub-Saharan Africa owing to the urgent need to increase government revenue, reduce fiscal deficits, and restore macroeconomic stability. Raising additional tax revenue is often hampered by a large informal sector, the underreporting of income by formal sector businesses and self-employed individuals, and weak tax administration capacity. At the same time, the potential for raising more revenue through the application of presumptive taxation methods to bring hard-to-tax groups into the tax net has not yet been fully exploited in these countries.

Presumptive taxation involves simple and cost-effective techniques to capture domestic transactions and sources of income that frequently escape taxation under conventional norms. These techniques include lump-sum levies on small-scale business activities (standard assessments); the assessment of taxes through indicators or proxies that help estimate a taxpayer's income (estimated assessments); and the collection of minimum taxes irrespective of a taxpayer's actual level of business activity (presumptive minimum taxes). More recently, other methods have gained importance; they include presumptive taxes on imports, withholding schemes designed to capture the incomes of unregistered businesses, and graduated business license fees.

Based on a survey of the relevant literature and IMF country data, this paper analyzes experience gained in the application of presumptive taxation methods in sub-Saharan Africa and elsewhere and arrives at three conclusions. First, there is further potential for the use of presumptive taxation methods in sub-Saharan Africa. Presumptive taxation could increase government revenue in a way commensurate with efficiency, equity, and administrative expediency. Second, the weaknesses of some of the traditionally applied presumptive taxation methods need to be recognized, and presumptive taxes on imports, withholding schemes, and graduated business license fees are recommended over traditionally applied methods. Third, intensified presumptive taxation generally needs stronger institutional capacity in tax administrations in sub-Saharan African countries.



I. Introduction

In sub-Saharan African countries, tax revenue mobilization is often hampered by the existence of a large informal sector, considerable tax evasion, and a weak tax administration. The most important tax bases for government revenue generation in these countries are usually confined to certain segments of the formal part of the economy--exports and imports, the profits and wages of large-scale enterprises, and wages and salaries of the civil service. In contrast, many small- and medium-scale enterprises and self-employed professionals are not registered and do not pay taxes at all, while registered enterprises frequently misreport actual sales and incomes and pay unduly low taxes. Often, tax evasion is substantial because tax rates are set at punitively high levels. All in all, tax authorities in many African countries lose considerable tax revenue.

Broadening the tax base while lowering tax rates has become a generally accepted feature of tax policy reform throughout sub-Saharan Africa, often in the context of macroeconomic stabilization and structural adjustment programs supported by the IMF and the World Bank. The tax base can be broadened in a number of ways, including the application of presumptive taxation.

What is presumptive taxation? In general, presumptive taxation refers to the use of simplified and cost-effective techniques to tax businesses and individuals frequently escaping taxation, either by nonreporting or underreporting of actual incomes. 1/ Traditionally, the most common presumptive taxation methods have been **standard assessments, estimated assessments, and presumptive minimum taxes.** 2/

Standard assessments are presumptive taxation schemes in which a fixed, lump-sum tax is levied on individuals or businesses on the basis of the occupation or business activity in which they are engaged. Different occupations are simply assigned different lump-sum tax dues; these levies correspond to some average income level presumed to be earned by members of a particular occupation or business grouping. **Estimated assessments** rely on the tax authority's estimation of a taxpayer's income; they are particularly relevant for taxing business activities in which the understatement of incomes is chronic and widespread. The estimation of incomes or tax liabilities is usually aided by the use of certain indicators of business

1/ For a general discussion of presumptive taxation see Tanzi and Casanegra de Jantscher (1987), Erbas (1993), Bulutoglu (1995), and Thuronyi (1995).

2/ Presumptive taxation has a long tradition in various European countries, especially in France, where the *forfait* system has been applied for centuries (Tanzi 1981). One of the earliest recorded presumptive taxation levies was England's window tax, which was introduced in 1696; the number of windows of a taxpayer's home served as an indicator for tax assessments (Lapidoth 1977).

activity such as the number of employees, the amount of machinery, and the volume of inventory. Sectoral studies are utilized to establish correlations between indicators and incomes, and often the tax assessor's judgment plays a part in the determination of the tax liability. **Presumptive minimum taxes** involve the levying of specified tax burdens on a firm irrespective of its volume of activity or level of income in a given year. These taxes are levied in lump-sum form, on the basis of a firm's gross receipts (turnover-based presumptive taxation), or on the basis of its assets (asset-based presumptive taxation). More recently, **other presumptive taxation schemes**, utilizing altogether different approaches, have gained more importance in Africa and elsewhere. These include presumptive taxes on imports, withholding schemes designed to capture the incomes of unregistered businesses, and graduated business license fees.

The experiences that have been gained with the application of presumptive taxation in Africa have not been systematically analyzed recently. ^{1/} This paper attempts to provide such an analysis by reviewing the relevant literature and IMF country data. Based on this review we conclude that, in general, there is further potential for the use of presumptive taxation, which could make an important contribution to the objective of increasing government revenue in sub-Saharan African countries in a way that is commensurate with efficiency, equity, and administrative expediency. We also conclude that the weaknesses of some of the traditionally applied presumptive taxation methods need to be recognized, and that presumptive taxes on imports, withholding schemes, and graduated business license fees would appear to be more effective than the traditionally applied methods. Finally, the intensified use of presumptive taxation should generally be accompanied by greater efforts to strengthen the institutional capacity of tax administrations in sub-Saharan African countries.

The paper is structured in four sections. Following this introduction, Section II discusses the salient features of African economies that warrant the use of presumptive taxation. Section III then reviews pertinent analytical issues. Section IV summarizes experiences from those African countries that have already made use of presumptive taxation systems; this section also includes a brief summary of the use of presumptive taxation in France, Israel, and Latin America. Section V presents conclusions with regard to the prospects for further use of presumptive taxation methods in sub-Saharan Africa.

^{1/} To our knowledge, only one survey, which is rather outdated, has been undertaken (Malik 1979). The terms Africa and sub-Saharan Africa are used interchangeably throughout this paper.

II. Why Presumptive Taxation?

Tax authorities in most African countries face serious difficulties in their efforts to identify more potential taxpayers and assess their taxable incomes. Conventional measures to assess and collect taxes have been found to be of limited use because of the existence of a large hard-to-tax sector, limited record-keeping by businesses, considerable tax evasion, limited tax compliance, and weak tax administration capacity.

Hard-to-tax groups include farmers, traders, small-scale manufacturing operations and craftsmen, individual professionals such as lawyers and doctors, and many small-scale businesses in service sectors (e.g., taxi or truck operators, garages and repair workshops, restaurants and hotels, bakeries, barbers). Many but not all of these may be classified as members of the informal sector which, depending on different applications of the term, can be defined as comprising (i) those engaged in the production and distribution of prohibited goods and services; (ii) those who evade taxes; and (iii) those whose activities are not recorded in the official national income statistics (Feige 1990).

The share of informal sector activity in relation to recorded GDP can be substantial, indicating that substantial revenue is forgone. Estimates of the size of the informal sector in African countries vary considerably depending on, among other things, the methodology used. However, surveys have shown the informal sector to be as large as 35 percent of recorded GDP in Kenya, 30-33 percent in Tanzania, 32 percent in Ghana, and 27 percent in Nigeria. ^{1/}

Tax authorities experience major problems in identifying informal sector activities, not only because they sometimes include illicit activities, but also because even legitimate activities are difficult to identify when they are mobile (traders), small-scale (basic services) or elusive (craftsmen carrying out small jobs for cash). These difficulties severely limit the personal and business income tax base that is known by, and reported to, the tax authorities. Usually, only a fraction of small businesses register with the tax authorities. Moreover, only a small share of the overall population is on the payroll of formal sector enterprises and the government, where recorded wages and salaries are readily observable and easily taxable through employer withholding schemes.

^{1/} See Main (1989), Richupan (1984), Maliyamkono and Bagachwa (1990). Of course, the informal sector is also an important phenomenon elsewhere. For example, an OECD study found that the "black economy" in Hungary in 1993 accounted for about 30 percent of recorded GDP, and a recent IMF study has found the informal economy in the case of Pakistan to account for 23 percent of recorded GDP (Shabsigh 1995). On the importance of the informal sector in the case of Peru, see Hernando de Soto (1989).

Another major problem is that registered businesses conceal and under-report incomes. Small-scale businesses dealing with cash transactions are notoriously difficult to tax, and not just in Africa. Among professionals, including doctors, lawyers, building contractors, and consultants, the scope for underreporting of incomes is often considerable, even though they may be some of the highest income recipients in a country. Other evasion-prone activities in African countries typically include commercialized agriculture, private sector transporters, and urban real estate owners.

The tax authorities' efforts to ascertain taxable incomes even for registered businesses and individuals is further complicated by the absence of adequate record-keeping by most businesses. While this would not be a major problem for levying specific excises, duties on imports and exports, or traditional taxes such as poll taxes, which are assessed mostly by counting units, it constitutes a severe handicap for anyone trying to assess modern taxes--such as those on personal and business incomes, sales, or the value-added tax (VAT)--all of which are better assessed on the basis of books of account (Goode 1987).

For various reasons, a large number of tax-payers in African countries demonstrate a combination of inability and unwillingness to keep proper accounts and file tax returns. Much of this can be attributed to illiteracy on the part of farmers and small-scale business operators. The task of preparing even simple records on receipts, sales, and costs is generally beyond their capacity, and it is a difficult and long-term process to achieve improvements in this regard. In addition, there is often a general mistrust in government authorities, which in the case of farmers may be well-founded in a number of countries because of still existing high tax burdens on agricultural produce.

Even among large enterprises and well-trained, self-employed professionals, record-keeping practices necessary for effective tax assessment are often not observed. And, if books are in fact kept, they may consist of only rudimentary accounts or they may be unreliable and largely fabricated. This is bound to be common when tax rates are high, and when investigative auditing by the tax authorities is rarely undertaken, or amenable to corruption, or not sufficiently supported by strong penalties and legal action.

In addition to bringing hard-to-tax groups into the tax net, the authorities can broaden the tax base by reducing tax evasion. In general, tax evasion can take three forms (Richupan 1987). Taxpayers can fail to file a tax return and thus avoid paying their tax obligations; they can provide false values of variables that enter into the determination of the tax base; and they can intentionally misinterpret the law in such ways that their tax liabilities are reduced. The first case is common for the many small and elusive groups identified earlier, as well as for those deriving income from illegal sources. The second case consists of concealment of key information from the tax authorities and includes common practices such as underreporting or not declaring sales; inflating wages, purchases, and other

expenses; claiming fictitious capital expenditures; claiming nonexistent dependents; showing false loans; and maintaining two sets of accounts. The third common form of evasion involves actions such as the deliberate application of a wrong (lower) tax rate or claiming tax credits or tax breaks to which the taxpayer is not actually entitled.

Other factors also contribute to tax evasion. The basic reluctance of citizens to pay tax is a general phenomenon. If the citizens perceive that there are very few benefits from the funds collected by government, in terms of social welfare, infrastructure, health or education, this only reinforces their initial reticence to pay taxes. High tax rates, exceedingly complex tax laws, and perceptions (whether valid or invalid) that fellow taxpayers do not comply with the tax laws encourage tax evasion even further. Relaxed national attitudes toward tax compliance (or the prevailing government) do the same. And many weaknesses within the tax administration--such as lax enforcement, unscrupulous tax advisors, overburdened staff, corrupt inspectors, and failure to utilize information from other government departments--can make it easier and more tempting for more taxpayers to seek ways of reducing or eliminating their tax liabilities.

Tax evasion is also highly dependent on the nature of the penalty system. In most theoretical models of tax evasion, the decisions of an income-maximizing (and risk-taking) taxpayer on whether or not to evade taxes are a function of the amount of the penalty and the probability of detection (Richupan 1987, and Tanzi and Shome 1993). A low probability of detection (e.g., with very few audits undertaken by weak and overburdened tax authorities) and modest penalties serve to encourage evasion. Accordingly, the imposition of higher penalties and increased auditing would appear to play a role in reducing the level of tax evasion.

While such measures may help, the key source of tax evasion in African countries--the large group of self-employed and small-scale business activities--strongly suggests the need for doing more than just increasing fines, which are often not paid anyway, or strengthening auditing, which is usually difficult in the light of resource constraints. Alternatively, the objective of reducing tax evasion may be achieved instead by using reasonable, fair, and cost-effective presumptive schemes that assess realistic tax burdens on evasion-prone taxable activities.

III. Analytical and Policy Issues

This section discusses the general concept of presumptive taxation with regard to revenue considerations, effects on economic efficiency and equity, and administrative expediency.

1: Broadening the tax base and increasing government revenue

From a macroeconomic perspective, broadening of the tax base in the context of increasing government revenue is of immense importance. In many

African countries, fiscal imbalances have remained large in relation to GDP and significantly in excess of the levels required for macroeconomic stabilization (Hadjimichael et al. 1995). Excessive reliance on domestic bank borrowing to finance budget deficits has contributed to high inflation and resulted in a crowding out of credit to the private sector. At the same time, external budget financing has often led to the buildup of external debt and unsustainable debt service. Moreover, government budgets in many African countries depend heavily on external grants. Thus, in order to eliminate fiscal imbalances and to reduce "aid dependency," tax and nontax revenue mobilization is of critical importance. Moreover, it is crucial to boost government revenue so as to achieve higher government savings, which will be required to finance necessary investment that could sustain high growth rates (Dhonte 1995).

In general, revenue collection in many African countries during the past ten or twenty years has been disappointing. This is not readily discernible in the unweighted average for sub-Saharan Africa as a group, which increased somewhat between 1980 and 1994 and is distorted by the unusually high ratios in a number of countries (Table 1), but there are about 20 countries with a comparatively low revenue/GDP ratio ([] percent or less during the period 1989-94. Moreover, the revenue/GDP ratio has declined over time in a number of countries.

With respect to the composition of government revenues in African countries, a modest decline in the reliance on trade taxes has occurred. In Africa as a whole, trade taxes as a share of total revenue declined from 34 percent during the period 1975-80 to 30 percent in 1986-92 (Table 2); as a share of GDP, the level of trade taxes declined slightly from 6.5 percent during 1975-80 to 6.1 percent during 1986-92 (Shome 1995). However, many African countries still rely comparatively heavily on trade taxes; Table 2 shows that trade taxes are still considerably more important in Africa than in Latin America or Asia, let alone the OECD. Given the distortionary effects of such taxes on the domestic allocation of resources and international trade, African countries should redouble their efforts to reduce the reliance on trade taxes for revenue purposes.

At the same time, increased efforts are being undertaken to expand the role of domestic indirect taxes, particularly the value-added tax (VAT). ^{1/} As Table 2 shows, the importance of indirect taxes for revenue purposes has increased over time in Africa; their share in total revenue increased moderately from 21 percent during 1975-80 to 22.6 percent in 1986-92. In contrast, the share of revenue from income, profits, and capital gains taxes remained flat at about 30 percent during the whole period. Within the direct tax category, most revenue is generally generated from a small number of larger taxpayers, while a much more numerous, but lower-yielding, group of smaller taxpayers is neglected (Nashashibi and Bazzani 1993).

^{1/} For a discussion on the VAT, see for example Tait (1991).

Table 1. Revenue/GDP Ratios for African Countries, 1980-94

	1980-84	1985-89	1990-94
Unweighted average for all African countries	17.4	18.2	19.1
High revenue/GDP ratios ^{1/}			
Botswana	33.6	49.0	50.7
Seychelles	39.9	45.4	45.7
Lesotho	19.1	35.6	44.4
Namibia	12.7	25.2	31.6
Swaziland	30.3	26.0	29.9
Zimbabwe	25.1	31.0	29.5
Kenya	21.3	24.8	29.0
Angola	...	28.9	27.3
South Africa	22.4	25.9	25.4
Congo	37.5	25.8	23.6
Gabon	31.6	25.2	23.3
Mauritius	22.0	23.0	23.2
Medium revenue/GDP ratios ^{1/}			
The Gambia	18.9	20.9	22.1
Tanzania	20.3	18.1	21.8
Mozambique	28.0	19.3	20.5
Malawi	19.6	17.6	18.5
Zambia	19.7	17.8	18.2
Equatorial Guinea	24.6	14.5	17.9
Cape Verde	15.5	16.0	17.3
Côte d'Ivoire	17.1
Senegal	18.8	17.2	17.1
Nigeria	16.1	12.7	16.7
Burundi	13.9	15.2	16.5
Low revenue/GDP ratios ^{1/}			
Togo	28.9	25.4	15.5
Ghana	6.8	13.6	15.4
Comoros	12.4	13.7	15.2
Mali	10.8	15.2	14.9
Cameroon	20.1	18.8	14.2
Ethiopia	16.7	20.0	13.6
Guinea-Bissau	13.1	10.9	13.4
Guinea	26.9	15.2	13.2
Burkina Faso	1.9	10.8	12.2
Benin	14.8	12.2	11.8
Rwanda	11.7	13.0	10.5
Sierra Leone	12.4	5.4	10.1
Madagascar	12.8	12.8	9.7
Central African Republic	9.6	10.5	9.0
Chad	8.4	7.5	8.9
Uganda	6.1	6.1	8.4
Niger	6.2	10.5	8.1
Sao Tome & Principe	27.1	16.3	5.5
Zaire	8.6	10.2	4.7

Source: Economic Trends in Africa database, August 1995.

^{1/} Ranked by revenue/GDP ratios for 1990-94; "medium" refers to revenue/GDP ratios within 3 percentage points of the unweighted average for all African countries.

$$E[V_S] = E\left[\pi_{opt}^2 \left(s_\pi + \frac{s_\pi^2}{s_x} + \frac{s_\pi^2}{s_g}\right)\right] \quad (10)$$

$$= [\text{Var}(\pi_{opt}) + (E[\pi_{opt}])^2] \left(s_\pi + \frac{s_\pi^2}{s_x} + \frac{s_\pi^2}{s_g}\right)$$

III. Nash Equilibrium

This section analyzes the Nash equilibrium where the central bank chooses π_t and the government τ_t , taking expectations and each other's actions as given, after the workers have chosen the wage. Expectations are formed rationally. Note that the reaction function of the monetary authority does not internalize the government budget constraint, and correspondingly the monetary authority's role as a source of seigniorage revenue. The reaction functions of the two authorities are:

Monetary:

$$\pi = \frac{\mu}{1+\mu} (\pi^e + \tau + C - g^* - a) \quad (11)$$

Fiscal:

$$\tau = g^* + \frac{\delta_x - \delta_g}{\delta_x + \delta_g} \pi - \frac{\delta_x}{\delta_x + \delta_g} (\pi^e + C - a) \quad (12)$$

These equations imply:

$$\pi_t = \frac{\mu \delta_g}{\delta_x + \delta_g + \mu \delta_g} C - \frac{\mu \delta_g}{\delta_x + \delta_g + 2\mu \delta_g} a_t \quad (13)$$

$$x_t = x^* - \frac{\delta_g}{\delta_x + \delta_g + \mu \delta_g} C + \frac{\delta_g}{\delta_x + \delta_g + 2\mu \delta_g} a_t \quad (14)$$

$$g_t = g^* - \frac{\delta_x}{\delta_x + \delta_g + \mu \delta_g} C + \frac{\delta_x}{\delta_x + \delta_g + 2\mu \delta_g} a_t \quad (15)$$

$$\tau_t = g^* - \frac{\mu \delta_g + \delta_x}{\delta_x + \delta_g + \mu \delta_g} C + \frac{\mu \delta_g + \delta_x}{\delta_x + \delta_g + 2\mu \delta_g} a_t \quad (16)$$

The key result is that, in contrast to the existing literature, inflation and output depend not only on the central bank's weight on output, but also on the fiscal authority's weights. They also depend on the parameters x^* , g^* and w^* which reflect the institutional and political structure of the economy. This suggests that empirical estimates of the relationship between central bank independence and inflation should also control for the fiscal authority's parameters and other institutional parameters such as the output and spending goals.

The average level of inflation is given by:

Table 2. Composition of Revenue for Different Regions, 1975-92

	1975-80	1981-85	1986-92
<u>(In percent of total revenue)</u>			
Trade taxes			
Africa ^{2/}	33.8	29.5	30.1
Asia ^{3/}	24.4	20.7	18.2
Latin America ^{4/}	25.4	21.8	20.7
OECD ^{5/}	4.4	3	2.2
Direct taxes			
Africa	24.9	26	24.8
Asia	26.7	25.2	21.7
Latin America	22.1	20.2	19.1
OECD	33.5	33	32.8
Indirect taxes			
Africa	20.1	21	22.6
Asia	27.3	27.6	25.1
Latin America	25	27.3	27.7
OECD	26.7	27	28.2
Other taxes ^{6/}			
Africa	6.8	7.3	6.9
Asia	2.5	2.1	2
Latin America	17.5	16.3	17.2
OECD	25.9	28.8	29.1
Nontax revenues			
Africa	15.6	16.8	17.8
Asia	18.2	23.3	31.6
Latin America	11.6	15.1	16.9
OECD	8.8	10.3	10.1

Source: Own computations based on Shome (1995).

^{1/} All figures are unweighted averages for the particular regions; totals may not add up to 100 percent owing to rounding.

^{2/} Africa comprises 38 sub-Saharan African countries, plus Morocco and Tunisia.

^{3/} Asia comprises non-OECD Asian countries.

^{4/} Latin America comprises non-OECD Western Hemisphere countries.

^{5/} OECD excludes Mexico, which joined in 1994.

^{6/} Other taxes consist of social security, payroll, and property taxes.

2. Efficiency

A presumptive approach to taxation can result in a tax system that is superior in terms of efficiency to one that relies on actual incomes. The main reason for this arises from the fact that some presumptive taxes take the form of a lump-sum tax on average or "normal" income; that is, the taxpayer is presumed to earn some "average" or "normal" income and the lump-sum presumptive tax levied on the taxpayer corresponds to that "average" income. Thus, an individual or firm making more than a "normal" effort and earning an actual income in excess of "normal" income is able to keep all of the excess income; additional income resulting from additional work effort is not taxed. This contrasts with a conventional tax system where more effort produces a higher actual income which, in turn, generates a higher tax liability.

The positive incentive effects of a presumptive levy have been elaborated decades ago by Italian economist Luigi Einaudi (Tanzi and Casanegra de Jantscher 1987). Einaudi noted that when all taxpayers are taxed on the basis of an "average" income and not on their actual income, they have an incentive to produce above the average, as this excess would be taxed with a marginal rate of zero. He thus argued that taxes based "average" or "normal" incomes are superior to those based on actual incomes since the former avoided the negative incentive effects arising from the taxation of actual incomes.

Sadka and Tanzi (1993) have developed a simple model that shows the efficiency advantages of presumptive taxation. Following their notation, let Z represent actual income earned by an individual, let Y represent an effort index, and let N represent a "normal" income that corresponds to the individual making a "normal" or "average" level of effort. Based on this setup, the individual's actual income for any effort level is given by the following equation:

$$Z = Y * N \quad (1)$$

For a normal level of effort, calibrated to $Y=1$, actual income will be represented by normal income, resulting in $Z = N$. It is clear that Z would be greater than N, if the individual's effort level is above normal, and vice versa. The individual's consumption (X) is given by the individual's after-tax income and can be represented in the following equation, with T as the amount of the tax paid:

$$X = Z - T \quad (2)$$

The individual's utility (U) is a function of both after-tax income (X) and effort level (Y). More precisely, $(Du/Dx) > \text{zero}$ and $(du/dy) < \text{zero}$, so that the individual's utility is represented as a positive function of after-tax income X and a negative function of the effort level (Y). The individual's objective is to maximize utility (U) subject to an after-tax income of X.

The two different tax regimes can be contrasted by comparing the tax liability due from the individual (T) under the two alternatives T_c and T_p . Under a conventional tax system, the individual's tax liability T_c is a function of actual income (Z):

$$T_c = T(Z) \quad (3)$$

In contrast, under a presumptive taxation scheme the individual's tax liability T_p is only a function of the individual's normal income (N):

$$T_p = T(N) = T_{\text{normal}} \quad (4)$$

For an average level of effort, or "normal" level of income, the individual's tax liabilities will be the same under both tax regimes:

$$T_c = T(Z) = T(N) = T_{\text{normal}} \quad (5)$$

However, if the individual's effort is above normal, then actual income (Z) will exceed normal income (N), so that $T(Z) > T(N)$. In this case, the tax liability under a conventional regime $T_c = T(Z)$ will exceed that under a presumptive tax regime $T_p = T(N)$. Since the presumptive approach only taxes normal income, any income above that level is taxed at a zero rate and is thus free, at the margin, of any disincentive effect.

However, this conclusion needs to be qualified in two ways. First, the presumptive tax may not be of the lump-sum variety, in which case the efficiency gains highlighted above would not hold. Second, even if the presumptive levy is of the lump-sum variety, it may not remain as a fixed, absolute amount. Tax authorities may adjust the (lump-sum) tax levies frequently enough in response to presumed increases in the taxpayer's income. If this is done, the marginal rate faced by the taxpayer putting in higher levels of effort is no longer zero. As with normal taxation, a higher presumed income ends up generating a higher lump-sum tax liability, and although the disincentive effect may still be lower than under a conventional tax system, it is no longer possible to say that there is no discouragement to work effort at the margin through presumptive taxation.

3. Equity

Presumptive taxation may lead to greater horizontal and vertical equity. The use of presumptive taxation methods can enhance horizontal equity by facilitating the taxation of the self-employed and informal small-scale business operators, both of whom often escape paying taxes entirely or pay unduly low amounts. As outlined above, recipients of wages and salaries in the formal sector are much more effectively taxed than the self-employed or the informal sector, thanks mainly to withholding schemes. As a result, wage earners tend to be overtaxed in relation to their self-employed equals (Bird and Oldham 1990). The adoption of presumptive taxation, which at least levies a modest tax on the self-employed, can thus lead to greater horizontal equity.

Vertical equity may be enhanced through presumptive taxation of self-employed professionals, whose incomes are often several times the national average but often pay only low taxes because of underreporting of incomes. Presumptive taxation techniques--say, with taxes levied on the basis of a professional's years of experience and hence, presumably, incomes--are likely to collect more revenues than tax regimes that rely on honest reporting from professionals or those that use a low flat-rate levy.

Presumptive minimum taxation based on the ownership of particular assets (e.g., land) may also enhance vertical equity to the extent that the owners of such assets are members of groups judged to have a higher ability to pay and have been avoiding taxes on their personal incomes. For instance, a presumptive minimum tax levied on the value of land may serve as a comparatively effective means of taxing large landholders, even if this may not be the prime motivation for the tax. Presumptive taxes on assets or holdings of wealth may also serve as a tax on the imputed income of particular assets. Thus the imputed income of assets may be captured when presumptive taxation methods are applied. Again, to the extent that such assets are largely owned by those who have a higher ability to pay and escape personal income taxation, the application of a presumptive tax regime may improve vertical equity.

4. Administrative expediency

For a great majority of African countries, conventional tax assessment and collection operations are hampered by weaknesses in the basic administrative functions of the revenue authority. There are usually insufficient staff with the appropriate accounting, auditing, and technical skills to carry out tax assessment and collection; financial resources are scarce; and up-to-date equipment and facilities are lacking (Burgess and Stern 1993). These deficiencies hamper the tasks of taxpayer identification and assessment. With respect to enforcement and collection, a key weakness is sometimes that of inadequate legal structures. The lack of appropriate incentives, especially in the context of low civil service salaries, as well as inadequate follow-up procedures, can also exacerbate enforcement and collection problems.

Weak administrative capacity can do great damage by the way it shapes a country's tax structure. In particular, it can result in an excessive reliance on a certain set of taxes simply because of the ease with which those particular taxes can be assessed and collected. Administrative expediency certainly contributes importantly to the fact that many African countries have so far relied strongly on trade taxes (see Section II.1 above). Other considerations that ought to be given attention, such as the efficiency and equity aspects of these taxes, may thus be ignored or understated for reasons of administrative expediency.

From the tax administrator's point of view, the key motivation behind the use of presumptive taxation is thus to overcome administrative weaknesses that are endemic to many countries in Africa. With accurate

measures of recorded income unavailable for a large segment of the population, conventional tax assessments would entail detailed auditing and investigative assignments. However, even if the requisite technical and manpower resources were available for such an undertaking, it is doubtful that the assessment and collection costs would be worth the effort in terms of additional revenues collected. It is in light of these realities that presumptive taxation turns out to be of great administrative convenience, and a pragmatic approach to increasing tax revenues. If used judiciously, presumptive taxation may be a comparatively cost-effective means to increase the number of taxpayers and thus broaden the tax base; in countries where there is a solid presumptive taxation tradition, the number of presumptive taxpayers may be ten to twenty times higher than the number of those subject to self-assessment on recorded transactions (Bulutoglu 1995).

IV. Presumptive Taxation: African Country Experiences

This section provides an overview of experiences that have been gained with the application of presumptive taxation methods in sub-Saharan Africa which is based on available literature and IMF country data. First, the use of occupation- and sector-specific standard assessments will be discussed; such assessments are among the earliest forms of presumptive taxation in Africa. Next, estimated assessments, in which the tax authorities use indicators of business activity to presume profits or tax liabilities, will be covered, followed by a review of presumptive minimum taxes, including both receipt-based and asset-based methods. Finally, a range of alternative and relatively new presumptive taxation methods will be discussed, including presumptive taxes on imports, withholding schemes aimed at capturing the incomes of unregistered enterprises, and the creative use of business license fees.

1. Standard assessments

Standard assessments prescribe a fixed, lump-sum tax payment to be paid by persons or enterprises engaged in specific trades and professions. Ghana was the first African country to utilize standard assessment systems; in 1963, the Standard Assessment Act was enacted with the objective to tax small businesses and the self-employed. In subsequent years, several African countries proceeded to establish similar occupation-specific standard assessment systems for the same target groups. In the 1960s and 1970s, several federal states in Nigeria, as well as Mozambique, Lesotho, Sierra Leone, and Ethiopia, incorporated such approaches into their tax systems. For example, Ethiopia has applied standard assessments for about 150 different businesses and professions since the 1960s. In Burkina Faso, a tax in the form of an "Informal Sector Contribution" was introduced to collect occupation-specific fixed amounts from all business activities with a turnover of less than a specified threshold. Gabon also began to utilize

lump-sum standard assessments (*impôt forfaitaire sur le revenu*) to tax its small businesses, traders, and individual transport operators. 1/

In Ghana, the Standard Assessment Act decreed that all persons carrying out any trade, business, or profession in any year must register with the Commissioner of Income Tax, and specific lump-sum tax payments based on occupational groupings were established; for example, doctors had to pay ₵500 per year; moneylenders ₵400; lawyers ₵200; carpenters ₵72; tailors and shoemakers ₵48 (Boateng 1971). Thirty-three different occupations and business groupings were covered, all of which had to obtain annual tax clearance certificates--to be displayed on their premises--as proof of tax payment. In principle, the standard assessments were to serve only as minimum tax payments for the various occupational groupings, but in practice, with the tacit acceptance of the tax authorities, the standard assessments increasingly represented final tax liabilities from the various occupational groups covered.

While standard assessments usually prescribe the lump-sum payment by reference only to the taxpayer's occupation, trade, or vocation, levies are sometimes differentiated even for taxpayers within a given occupation. The Standard Assessment Act in Ghana incorporated graduation for some occupational groupings; for example, medical doctors and dentists had to pay varying lump-sum taxes according to the number of years in practice, 2/ while the lump-sum amounts paid by fishermen were calibrated by the length of their fishing vessels. Other methods of calibrating the lump-sum standard assessments have included the use of locality, as in Burkina Faso, reference to the construction of business premises, as in Rwanda's informal sector levy, or the use of freight and seating capacity, as in Ethiopia's standard assessments of transport vehicle owners.

In a number of countries, calibrated lump sum payments are also used to tax agricultural incomes, based on various indicators. For example, in Cameroon, in the tradition of the French *forfait* system, 3/ lump-sum levies for the agricultural sector have been based on the crop planted, area covered, average yield, and number of livestock. In Mozambique, the lump-sum levy depends on whether or not the farmer uses a tractor, on the number of farm employees, and on the type of agricultural activity. In Ethiopia and, since its independence in 1993, also in Eritrea, farmers have to pay a low fixed lump-sum levy which is not calibrated.

The various occupation-specific standard assessments described above have been an attractive tax tool in African countries for a number of

1/ For a detailed summary of standard assessments and other forms of presumptive taxation in African countries, see Appendix I.

2/ The tax was ₵500 for those practicing less than three years, ₵1500 for those practicing more than three years, and ₵2500 for more than six years of practical experience (Boateng 1971).

3/ For details on this system, see Section IV.2.

reasons. First, and probably most important, they are comparatively simple to administer. For example, a fixed lump-sum tax on self-employed professionals such as doctors or lawyers relieves the tax authority of ascertaining or verifying a particular individual's actual income through auditing and investigation; instead, an "average" income is presumed to be earned by members of a particular occupation. Second, as indicated in Section III, lump-sum amounts corresponding to a certain "average" income can have positive incentive effects, since any additional earnings above the "average" presumed income level are effectively taxed at a zero rate. Third, to the extent that such levies capture small businesses and the self-employed who previously escaped taxation, occupation-specific standard assessments are attractive in terms of horizontal equity. Fourth, lump-sum payments minimize opportunities for corruption and collusion since there is no discretion on the side of the tax official; instead, lump-sum taxes are pre-determined and derived from tables or matrices that simply show occupation on one side and a corresponding tax liability on the other. ^{1/} Finally, standard assessment systems can be an effective tool in taxpayer identification; lists of small businesses and professionals can be created, which can potentially be used to make hard-to-tax groups increasingly subject to the regular tax system.

However, standard assessments are not regarded very favorably, either in the public finance literature or by tax administrations. This is due in part to their poor performance with respect to revenue mobilization. When fixed lump-sum levies are determined for occupation or business groupings whose members may have highly divergent incomes, legislation or the tax administration, understandably, tend to set the levies based on the incomes of the poor performers instead of on the basis of true averages. Moreover, the levies are rarely indexed to inflation or updated regularly to account for changing economic conditions. Both these features explain the limited revenue yield of standard assessment taxes. For example, in Ethiopia, the lump-sum levy on small-scale farmers, which is set a very low level, generates only 1 percent of total government revenue, even though this group constitutes about 85 percent of the population and agriculture accounts for approximately 50 percent of GDP.

Standard assessments are also a relatively unpopular tax instrument because they violate important economic principles. First, it becomes impossible to take into account taxpayer-specific conditions such as family size, or exceptional losses in a given year, that would normally be accounted for in conventional tax methods. Second, the regressivity of fixed lump-sum levies is a further disadvantage of standard assessment systems. Imposing the same tax liability on high-income and low-income doctors simply because they both fall in the same occupational category is a serious violation of vertical equity, and of the criterion that tax paid should correspond to an individual's income and ability to pay.

^{1/} A sample of Ghana's standard assessments is provided in Appendix II.

While calibration to some extent corrects for the regressivity of fixed lump-sum levies and enhances vertical equity, this can only be achieved at the cost of administrative simplicity. Devising the criteria for differentiating lump-sum levies implies that more or less detailed studies on the profitability and income patterns of various occupational and business groupings will have to be undertaken on a regular basis. In agriculture, for instance, this would involve rather extensive land surveys and studies that must be updated regularly if the calibration of lump-sum levies is not to be flawed. Given the substantial information and financial and manpower resources required for such exercises, it is not surprising that some tax administrations in African countries resort to the fixed, non-calibrated levy.

To summarize, while standard assessments appear attractive on administrative grounds, they in fact offer limited revenue gains and tend to violate a number of economic principles. In Ghana, where standard assessment has had a longer and more extensive application than anywhere else in Africa, its role in the tax system has gradually been minimized. Businesses and individuals under standard assessment are now required to maintain basic records, and the standard assessment payment serves only as a down payment against a final income tax payable by such taxpayers (Coopers and Lybrand 1991). Appropriately, the standard assessment tax levies are now referred to as the Quarterly Advance Tax Payment. Although several African countries continue to utilize standard assessments, they would not appear to be the most effective means of capturing the incomes of small businesses and the self-employed.

2. Estimated assessments

With estimated assessments, the tax liability is generally estimated for each taxpayer based on certain indicators (indicator-based assessment) or on the basis of whatever detailed information the tax assessor deems to be relevant (best judgment assessment). ^{1/} Estimates can be achieved in two different ways. The tax authority may seek to estimate a taxpayer's income or profits, and then apply the regular personal or business income tax rate to that estimated income level. Alternatively, the tax authority may simply presume a tax liability owed directly.

Estimated assessments are viewed as a somewhat more refined and sophisticated presumptive taxation technique than standard assessments. For example, a firm's tax liability is a function of a variety of indicators of business activity, and is not primarily related to occupational or business grouping, as it is with standard assessments. Also, unlike standard assessments, estimated assessments can generally be adjusted to take account

^{1/} For the latter see United Nations Economic Commission for Africa (1974).

of sudden or severe income shocks faced by a business or an individual. However, estimated assessment methods can involve considerable discretion, unlike standard assessments where levies are standard for a member of a particular occupation or business grouping.

Clearly, the utilization of indicators as a proxy for a taxpayer's actual income is of crucial importance in this context. Theoretically, many indicators could be used to estimate the income of an enterprise or a self-employed professional. The key challenge is to choose "good" indicators, which Rajaraman (1995) defines according to the following three criteria: (i) the level of observability and recordability of that indicator; (ii) the level of concealment, falsification, or substitution of the indicator; and (iii) the correlation of the indicator to income and the stability of that correlation over time. A good indicator would thus be easily observable and recordable, difficult to conceal, falsify, or substitute, and would show an identifiable and stable correlation to income.

Common indicators used by developing countries for estimated assessments include the size of a business's premises; the number of employees; the skill level of employees; the amount of installed machinery; and the level of inventory. Indicators of "service capacity" can be used such as the seating capacity of a restaurant or the number of rooms in a hotel. Transport services can be assessed by taking advantage of easily recordable indicators such as passenger capacity or cargo space. Some creative tax authorities--for example, in Israel and Pakistan--have resorted to the use of a firm's electricity or water bill, obtained from the relevant authorities. More generally, a wide variety of information obtainable from third parties, such as data from a business's wholesale suppliers, are used by a tax authority as an indicator for presuming incomes.

The actual determination of presumed income from particular indicators can be a fairly crude and simplistic undertaking or an elaborate and highly nuanced affair. There is a wide range of considerations that may be addressed. For example, the indicators chosen must obviously be developed on an industry- or trade-specific basis, that is, the most appropriate and relevant indicators should be selected for different business activities. Also, even when dealing with a given business activity, numerous adjustments and calibrations can be made, including those for factors such as location, size, capital base, labor use, and years of operation. This applies to estimated assessment methods that are geared toward estimating income and then applying the regular tax rate, as well as to those that seek to directly specify a tax liability.

African country experiences with estimated assessments have included both variants noted above. Among those where the approach has been to estimate incomes and then apply the regular tax rate are Angola, Chad, Malawi, Madagascar and Malawi. Different categories of taxpayers are covered under these schemes. In Chad, the standard tax rate is applied to the presumed profits of all companies, traders, and farming businesses with turnover less than a designated threshold. In Malawi, the application of

the regular tax rate to estimated earnings is limited to small businesses and small farmers, while in Madagascar it is restricted to companies without proper records. The restriction is more specific in Angola, where the tax laws specify the regular tax rate to be applied to the presumptive profits of all taxpayers who cumulatively: (i) engage as a self-employed person in commercial or industrial activity; (ii) work alone or with no more than three others; (iii) do not keep reliable books; (iv) use no more than two vehicles; and (v) have an annual turnover of less than Nkz 3.5 million.

The application of the second form of estimated assessment is primarily undertaken in francophone African countries, and is analogous to the French *forfait* system (Box 1). Under this form, tax assessment usually involves negotiation between the tax authority and the taxpayer. The typical procedure is for the tax authority to first specify a tax amount based on available information on the taxpayer's gross receipts, number of employees, machinery used, and the like. The taxpayer then accepts or challenges the proposed tax payment; if the assessment is challenged, the taxpayer has to provide documents or other means of verification.

For example, in Niger taxpayers are subject to an estimated assessment if they have not kept proper records and if their turnover is less than CFAF 5 million. Taxpayers who have fulfilled the necessary bookkeeping requirements may still choose the estimated assessment. Under this scheme, the tax assessors visit individual businesses and refer to the labor employed, equipment used, and level of inventory, as well as past experience and the records of similar businesses to arrive at a tax liability. The taxpayer may contest this estimated assessment, in which case a review must be requested from a special commission consisting of three tax officials and three business representatives. Once the *forfait* assessment is settled, however, it remains unchanged for a period of two years.

In Burkina Faso, the threshold figure below which the *forfait* method applies is much higher than in Niger (CFAF 15 million). Tax agents make site visits to registered businesses whose turnover falls below this threshold level in order to observe and record the relevant characteristics for the estimation of a tax liability. Data for the mid-1980s show that 78 percent of businesses in Ouagadougou, the capital, were assessed under this presumptive scheme; the comparable figure outside the capital was 91 percent (Syracuse University 1986). The widespread use of estimated assessments shows that many enterprises in the small but "modern" business sector are unable or unwilling to keep proper accounting records. In a number of eastern and southern African countries--including Lesotho, Swaziland, Tanzania, Uganda, and Zambia--estimated assessments are applied in the agricultural sector. For example, in Uganda a graduated personal tax is used by reference to the crop planted and the acreage cultivated; similarly, the incomes of livestock owners are estimated on the basis of the head count of livestock holdings (Aguirre et al. 1981).

$$\pi_N = \frac{\mu \delta_g}{\delta_x + \delta_g + \mu \delta_g} C \quad (17)$$

It depends positively on the central bank's weight on output, μ . This is the standard time consistency problem: the more weight the central bank places on output, the greater the incentive to create surprise inflation. Since this is perceived by the workers, in equilibrium, there is higher inflation but no gain in output except through the seigniorage channel (see below). When the central bank's weight on output is zero ($\mu = 0$), then equilibrium inflation is zero. In that case, the loss function is like that of the Reserve Bank of New Zealand, where the focus is formally only on price stability.

As long as the central bank places any weight on output ($\mu > 0$), the output and expenditure targets, x^* and g^* , and the workers' real wage target w^* influence average inflation. In such cases, inflation depends positively on the spending target g^* : an increase in the target increases distortionary taxation on the margin thus reducing output and hence increasing the incentive to inflate. Inflation also depends positively on output and wages, as a higher output (employment) target and/or a higher real wage target increase the desire to inflate. It depends negatively on the ratio of the fiscal authority's weights (δ_x/δ_g). An increased weight on the government spending target relative to the output target means that the level of distortionary taxes is increased on the margin, thus reducing output and increasing the incentive of the central bank to inflate. Table 1 summarizes the influence of the parameters on the economy.

The average level of output and government spending fall short of their respective targets, reflecting the tradeoff at the margin the fiscal authority faces between spending and output. The difference between realized and targeted output is decreasing in μ , and decreasing in δ_x/δ_g . An increase in μ means that the central bank places more weight on the output objective, thus inflating the economy more. This has no direct effect on output as inflation expectations also adjust. However, increased inflation has an indirect effect on output through the corresponding increase in seigniorage revenue, which reduces the need for distortionary taxation, thus increasing output. As mentioned above, this effect is not internalized by the central bank.

The preferences of all the policymakers also affect the variances of inflation and output. The variance of inflation is given by:

$$\sigma_\pi^2 = \left[\frac{\mu \delta_g}{\delta_x + \delta_g + 2\mu \delta_g} \right]^2 \sigma_a^2 \quad (18)$$

It depends positively on μ and negatively on δ_x/δ_g , while the variance of output depends negatively on μ and δ_x/δ_g :

$$\sigma_x^2 = \left[\frac{\delta_g}{\delta_x + \delta_g + 2\mu \delta_g} \right]^2 \sigma_a^2 \quad (19)$$

**Box 1. Estimated Assessments: The French Forfait System
and Israel's Tachsiv**

One of the most developed systems of estimated assessments is France's forfait system. This presumptive taxation scheme targets four key groups: farmers; unincorporated business enterprises; professionals with turnover below a designated threshold; and small enterprises. Estimation of farmers' income largely takes the form of "collective estimates" that are established for groups of farmers differentiated by the type, location, and size of their farming. The estimation approach used for professionals is based on the concept of "normal" income; the tax liability is based on the income that the professional is normally (on average) expected to earn, without account for any exceptional losses or gains.

For unincorporated businesses and small enterprises, greater reliance is placed on "individual-specific estimates," so that a particular taxpayer's basic records and business indicators are the primary means of ascertaining incomes. Detailed monographs, prepared on a regional basis, and available for each trade or business activity subject to the *forfait* system, are also used. Estimation generally proceeds as follows: (i) the taxpayer declares the annual sales volume through a compulsory form to the tax authority; (ii) the tax authority corrects or accepts the taxpayer's turnover declaration; (iii) the tax authority uses monographs, particularly information on profit margins by trade, locality--and so on--to determine taxable income (Bulutoglu 1995). The taxpayer may then contest the tax authority's assessment, but if it is acceptable, the tax liability is fixed for two years. As should be apparent, taxpayers subject to the *forfait* system are not relieved of all record-keeping duties. But, those with more elaborate books and records are free to seek assessment under the regular system. It is reported, however, that many do not, suggesting that the tax and non-tax-related burdens of the *forfait* system are lighter than those of the regular tax system (Lapidoth 1977).

In Israel estimated assessments are carried out with the use of a *tachsiv* (plural *tachsivim*), a tax assessment guide utilized by tax inspectors as a device for computing tax liabilities. This guide has been used in Israel since the 1950s, and it is applied as the means of tax assessment for more than one hundred business and occupational groupings. The *tachsiv* for each business group is prepared, often over several years, after extensive research and many visits to a sample of businesses. Appropriate indicators are selected and specified, and guidelines are laid out as to how a tax inspector should use the indicative factors to ascertain a firm's taxable income. An illustrative sample of indicators, as reported by Lapidoth (1977), includes the number of employees, location, and seating capacity (e.g., for restaurants, cafes, barber shops); skill of workers (e.g., for carpenter's workshop or garages); nature of equipment used (e.g., for truck and taxi drivers); and water consumption (e.g., for ice-producing companies).

Box 1: (concluded)

There are a number of notable features about Israel's experience with *tachsivim*. First, the elaborate preparation and continual updating of the *tachsiv* has been a task requiring considerable time and effort by officials at the revenue authority. The system has been developed over several decades and has not been the outcome of a quick-fix administrative effort. Second, and partly because of this, the *tachsivim* have become entrenched and established as the "conventional" taxation system for a large number of business activities, thus forestalling efforts to move taxpayers toward a declarative and record-keeping regime. Third, despite the failure to encourage record-keeping, the *tachsivim* appear to be substantial revenue-earners. A suspension of the system in 1975, with a view to forcing taxpayers to be assessed on the basis of filed returns, was soon followed by its reintroduction in light of immediate revenue shortfalls (Rajaraman 1995). The contribution of income taxes to total tax revenues in Israel is, at 46 percent, one of the highest among developing countries, which is partly due to the widespread use of the well-designed *tachsiv* system.

Although estimated assessments have proven to be a pragmatic tax tool, they also have a number of disadvantages. First, there is a tendency for a crude and excessive reliance on indicators such as labor or capital. If the number of employees or the level of machinery becomes the predominant basis for the tax estimation procedure, the tax levied is no longer effectively taxing income. Instead, the incidence of the tax turns out to be on the specific factors, and not on the income generated from their use. This can carry adverse effects with respect to employment generation or capital usage, as firms limit their use of these inputs in order to reduce tax liabilities (Goode 1987).

Second, the administrative aspects of estimated assessments--selecting appropriate indicators, studying sectoral profitability, and establishing specific correlations between indicators and presumed incomes--are generally difficult, time-consuming, and costly. Many tax administrations in African countries may not be in a position to rely on sufficient external sources of data, which may simply not be available, or to compile data on their own.

Third, estimated assessments involve some degree of discretion on the part of tax assessors who presume incomes and assess tax liabilities. This clearly is an invitation to corruption, considering the generally low level of civil service salaries and the fact that tax administrations often lack adequate budgetary support and effective management. Discretion also leads to inconsistencies, with taxpayers at similar income levels ending up with substantially different tax burdens, or, equivalently, taxpayers at very

different income levels having to pay similar tax liabilities. In such cases, rather than enhancing horizontal equity, presumptive assessments may end up worsening it.

3. Presumptive minimum taxes

Presumptive minimum taxes are levied under the assumption that a taxpayer can be assigned some minimum level of income in any given year. These taxes are used in many developing countries, including about 20 in Africa, where minimum taxes for businesses have taken one of five forms. ^{1/} The lump-sum levy is used in a number of countries to assess minimum corporate profit tax liabilities; this levy may or may not be graduated. For instance, in Benin, all companies, regardless of their size or volume of operations, must pay a minimum tax of CFAF 200,000. In Côte d'Ivoire, this amount is set in at a substantially higher level (CFAF 1 million). In contrast, in Equatorial Guinea, Malawi, and Senegal the lump-sum minimum taxes are not the same for all companies but are graduated depending on turnover. A second form of the minimum tax is the application of a percent rate on gross receipts. This tax is used in the Central African Republic, Chad, Ghana, Guinea, Niger, Sierra Leone, and Togo, with rates ranging from 1 percent of turnover (Niger) to 5 percent of turnover (Ghana). A third variant involves the use of a lump-sum minimum plus a percentage of gross receipts. Only a few countries in Africa follow this approach; in Madagascar, for example, the minimum tax is set at MF 200,000 plus 5 percent of turnover for a large number of manufacturing and service activities. The fourth form is the greater of the lump-sum levy and a specified percentage of gross receipts; it is used by a number of francophone West and Central African countries, including Burkina Faso, Cameroon, the Central African Republic, the Comoros, Congo, and Gabon. For example, in Burkina Faso, the minimum tax is at least CFAF 100,000 or 0.5 percent of the turnover, whichever is greater. Finally, the minimum tax can be based on the tax liability that is the highest, considering different tax bases. In Nigeria, for instance, the minimum tax liability due of companies is 0.5 percent of gross profits, 0.5 percent of net assets, 0.25 percent of paid-up capital, or 0.25 percent of turnover, whichever is highest.

Minimum taxes have also been applied extensively at the level of the individual, with a particular view to capturing the incomes of professionals and the self-employed. In a few African countries, including Burkina Faso, Burundi, Cameroon, and Equatorial Guinea, minimum taxes on individuals are prevalent in the form of minimum personal levies or minimum personal taxes. In several countries, minimum taxes are levied on self-employed professionals either in lump-sum form (Burkina Faso, Central African Republic, Congo, Equatorial Guinea, Ghana, Madagascar, and Malawi) or as a percentage of the professional's turnover (Cameroon, Chad, Gabon, The Gambia, Niger, Nigeria, and Zambia).

^{1/} For details on presumptive minimum taxes used in African countries, see Appendix III.

There have been several motivations for the application of minimum taxes in the forms described above. Tax authorities in many African countries are often troubled by enterprises that are engaged in very lucrative activities but declare only little or no income from these activities. Large manufacturing firms may be among such businesses; they keep operating as seemingly viable enterprises but often show losses for income tax purposes. The basic idea of a minimum tax is thus to ensure some minimum level of tax payments from such enterprises, irrespective of loss claims, creative accounting, or special tax provisions that the owners might use to their advantage. However, while minimum taxes can be effective as a safeguard against complete tax evasion and the underreporting of profits by some companies, they can also tend to freeze companies' tax liabilities at the minimum levels (Aguirre et al. 1981). As regards the potential impact on government revenue, there are indications that presumptive minimum taxes can be an effective instrument to raise more revenue. In a number of Latin American countries, the introduction of asset-based presumptive taxation has been quite successful (Box 2). In Africa, Lesotho has introduced a tax on "minimum chargeable income" in 1993 for those taxpayers with low reported taxable income but visible signs of substantial wealth; the calculation of the tax is largely based on assets owned, but also on some consumption expenditures (Thuronyi, forthcoming). Since this tax has only been introduced very recently, there are no indications yet regarding its success in terms of raising additional revenue.

4. Presumptive taxes on imports

Presumptive taxes on imports are levied with the objective of capturing the incomes of both registered and unregistered importers. For importers that are unregistered by the tax authorities, the payment represents a final profit tax on presumed income. In contrast, for the registered group, it represents a down payment on their final tax liability; for this group, the presumptive import tax is primarily useful from the standpoint of the tax authority as a device for speedier and assured payment.

In Africa, mostly following IMF advice, several countries have begun to levy presumptive taxes on imports as a means of taxing incomes associated with import transactions. Generally, the tax carries a low rate with the import value as the tax base; for example, 1 percent in Senegal, 2 percent in Niger, 3 percent in Benin, and 5 percent in Côte d'Ivoire. Owing to the two different target groups, some countries apply different tax rates. For example, the Comoros levies a 5 percent presumptive tax on the value of all goods brought in by unregistered importers, while a 1 percent levy is applied for registered importers as an advance tax payment. The differentiation in rates is intended to push importers toward registering with the tax authority, but even without differential rates, the presumptive import tax may pressure an importer to register imports, if the amount that has to be paid exceeds the normal tax liability.

**Box 2. Successful Asset-Based Presumptive Taxation in Latin America:
Replicable in Africa?**

In a number of Latin American countries, presumptive minimum taxes are levied on gross assets, rather than on gross receipts or in lump-sum form, as in most African countries. Such presumptive minimum taxes depend on the value of a taxpayer's assets and not, as would be the case with ordinary income taxation, on the income that the taxpayer actually derives from the ownership of those assets.

Asset-based presumptive minimum taxes have been applied in Latin America primarily to deal with the underreporting of profits by corporations and transfer pricing practices by multinational enterprises (Rajaraman 1995). 1/ In 1988, Mexico initiated the trend by levying a 2 percent minimum presumptive tax on all corporations, and within a few years, a number of other countries (including Argentina, Bolivia, Costa Rica, Ecuador, Panama, Peru, Uruguay and Venezuela) also instituted such taxes, with rates in the range of 1-3 percent. 2/ The taxes are creditable against the final tax liability computed by means of declarative norms. The base for the computation of the tax is gross assets as in Argentina, gross fixed assets as in Costa Rica, or net assets as in Colombia; the calculation of the asset base may be on a year-end basis as in Venezuela or on a year-average basis as in Mexico.

The introduction of asset-based presumptive minimum taxes in Mexico has been described as an unqualified revenue success; indeed its revenue contribution there is believed to have accounted for the speedy adoption of this tax in the other Latin American countries mentioned above (Rajaraman 1995). However, its replicability in many African countries may be limited since adequate records on companies' physical assets are lacking. Moreover, given that many African countries are among the most underbanked in the developing world, there would be a very limited base to target in terms of financial assets. Nevertheless, in African countries where tax administration capacity is relatively well advanced, asset-based presumptive taxation as applied in Latin American countries may be *considered as a tax policy option.*

1/ Asset-based presumptive taxes, though not always in the form of a minimum tax, are also applied on individuals, for example, in Belgium and Turkey. The French tax on the basis of "external signs of wealth," while also taking into account certain consumption expenditures, is largely based on asset holdings (Thuronyi, forthcoming).

2/ Presumptive minimum taxes of 1-2 percent have been recommended by IMF missions to Western Hemisphere economies as a means of ensuring adequate revenue generation from the corporate sector (IMF 1995).

In Ethiopia, such a tax has been levied so far solely at the customs office at the airport in Addis Ababa; registered importers are exempt from the tax, while unregistered importers have their business profits estimated by the customs office, and they are taxed according to the rate schedule applicable to the general business profits tax schedules for individuals. The introduction of this tax on a country-wide basis is envisaged in the near future. The Ethiopian experience may be suggestive: revenue from this tax increased threefold over three years, and the tax would appear to become an important, and comparatively easily collected, source of revenue. Since a large number of importers may not be registered with the tax authorities and as the volume of their trading/retailing operations may be large, the potential for revenue generation from import levies appears substantial in many other African countries.

5. Withholding schemes

In recent years, some African countries have introduced withholding schemes with the objective of capturing the incomes of unregistered businesses and individuals. 1/ Withholding is essentially a form of down payment for the actual total tax liability, and thus it is not necessarily a presumptive taxation scheme. However, it can be characterized as such, since the withheld amount constitutes a final tax levy on the presumed income of businesses that are unregistered with the tax authority. 2/

Withholding schemes could be applied in a number of different ways. For example, government departments renting office space, houses, or other facilities could be requested to withhold a specified amount of money from the landlord and to remit this directly to the tax authorities. Similarly, the incomes of building contractors, professionals, or others engaging in transactions with the government could be made subject to a withholding scheme. Even more broadly, any domestic payment by government institutions to private suppliers of goods and services could be subjected to withholding. Furthermore, large public and private domestic manufacturers and wholesale suppliers could be required to collect a fixed percentage of the sales prices with each sale.

For several years, Côte d'Ivoire has applied a 5 percent advance on various taxes (Accompte sur Divers Impôts), which is withheld by

1/ An extensive use of withholding in most developing countries is already applied in the formal sector of the economy to the wages of large scale enterprise and government employees. Typically, three-fourths or more of personal income taxes are collected by withholding on wages and salaries in the formal sector (see Richupan 1987). Tanzi and Shome (1993) have stressed the importance of withholding at source for minimizing tax evasion within the conventional income tax system.

2/ The presumptive import tax discussed above could therefore also be characterized as a withholding scheme.

manufacturers, wholesalers, and merchants on the sales of a large number of consumer and industrial goods. Tax payments under this system are creditable toward an enterprise's final income tax liability if it is registered; otherwise, payments represent a final tax on the incomes of unregistered firms. Benin and Senegal have introduced similar withholding taxes on purchases from wholesalers, with rates in both countries set at 3 percent.

6. Graduated business license fees

Some African countries have also begun to assign a greater role to business license fees as a (partial) means of taxing business incomes. Most countries in Africa charge license fees in a large number of business sectors, but only few countries rely on these license fees as an instrument of income taxation with meaningful contributions to revenue generation. In these cases license fees tend to be graduated, usually on the basis of indicators such as the firm's floor space, the rental value of premises, or the number of employees. While graduated business license fees may only be rather crude substitutes for proper income taxation, they are comparatively cost-effective means of capturing taxable incomes, and they can be administered comparatively easily at local government levels. Moreover, they may also improve vertical equity by bringing informal sector businesses into the tax net.

Where license fees on businesses are exploited as revenue sources, tax authorities have come up with a number of effective ways to calibrate the levy to some measure of a firm's income and ability to pay. In Benin, a business license tax (*taxe professionnelle unique*) targeting small enterprises is based on the rental value of a firm's premises. The implementation of this tax has been particularly successful, since it was carried out in tandem with a donor-supported computerization program of the urban property register. In addition to serving for town planning purposes, this program has made it possible to locate and identify properties, activities, and individuals, and make them subject to taxation. The tax base for all small enterprises is now computed on the basis of this detailed register, and all taxpayers who are included have even been relieved of the obligation of filing returns. The authorities' efforts have, at the same time, been concentrated on continuously updating the urban property register to account for periodic changes in a property's size or market value (Bodin 1994).

A similar business license tax exists in the Comoros, where it is based on 10 percent of the rental value of the premises and levied in addition to a flat fee that, depending on the type of business activity, ranges from CF 5,000-300,000. In Guinea, the so-called license duty tax, which applies to all commercial, industrial or professional activities, consists of a fixed charge plus an ad valorem charge based on the rental value of the premises used for commercial purposes. Indicators used in other countries for indexing business license fees include the number of workers employed

(Congo), as well as the amount, and power, of the firm's machinery (Côte d'Ivoire).

The fact that business licensing arrangements involve routine, often annual, contacts between a government authority and the taxpayer may be exploited quite effectively for tax collection purposes. In particular, renewal of particular licenses and permits can be made contingent upon proof of tax payment. Such an enforcement mechanism must, however, be carried out only if the taxpayer's accounts are well maintained and up to date so as to prevent unnecessary bureaucratic delays for businesses (Bird 1983). Collaboration with the licensing authorities, which often include the health, tourism, or transportation ministries, might also take the form of using a common location for licensing and tax collection, and sharing of information.

Increased collaboration with licensing authorities can be particularly significant in light of the fact that licensing agencies for traders and service providers typically have substantially larger (even if only partial) listings of businesses and individuals than do tax authorities. One study on Lesotho has compared the total number of traders and service providers registered with the licensing agency to the total number who filed tax returns by going through the records of the respective authorities. It found that only 350 of a total of 6244, or just 4 percent, of licensed traders and service providers had filed returns with the tax authority (Malik 1979). This large and probably not atypical "compliance gap" was possible since the issuance and renewal of the licenses was separate from, and not dependent upon, the payment of taxes.

V. Conclusions

An important objective for many sub-Saharan African countries is to increase government revenue through a broadening of the tax base in a way that is compatible with efficiency, equity, and administrative expediency. In these countries, raising additional revenue has usually been hampered by the existence of a large informal sector and the underreporting of incomes by formal sector businesses and self-employed individuals; it has been shown that in a number of sub-Saharan African countries the untaxed second economy is estimated at about 30 percent of recorded GDP.

Based on the survey of experiences that have been gained with presumptive taxation methods in Africa and elsewhere, three major conclusions can be drawn. First, in general, presumptive taxation would not appear to have received adequate attention in the context of tax policy reforms in sub-Saharan Africa. Presumptive taxation could help increase government revenue and ensure more efficient and fairer tax systems. Second, not all forms of presumptive taxation are likely to make similarly important revenue contributions, and even when they do, not all forms are necessarily worth pursuing, taking efficiency and equity considerations, as well as administrative expediency, into account (Table 3). Third, all

efforts to intensify the use of presumptive taxation methods must be accompanied by strengthening the capacity of tax administrations.

The intensified use of the presumptive taxation schemes is recommendable in many sub-Saharan African countries, given the persistence and significance of hard-to-tax groups, the considerable scope of tax evasion, and weak tax administrations. As noted earlier, with respect to hard-to-tax groups, the judicious application of simplified and cost-effective presumptive taxation methods is generally more practical than directing efforts toward taxing members of these groups under regular income tax schemes. Also, in the African context, presumptive taxation may be advantageous compared with conventional methods of income taxation, especially if estimation methods are based on relatively simple and straightforward rules or guidelines. Moreover, through presumptive taxation methods there may be substantial spillover effects in terms of facilitating the movement of informal small-scale enterprises and business operators into the formal sector (Bulutoglu 1995).

In terms of their effectiveness, we conclude that **standard assessments** would appear to deserve lowest priority in the context of tax policy reforms in sub-Saharan Africa, for the following reasons. First, they are not very effective in generating more revenue because they are rarely updated and because they are usually levied at rather low levels, which does not take into account the considerable divergence in actual incomes of members of different business or occupational groups. Second, in setting equivalent tax burdens on all members of a particular occupation or business grouping, they grossly violate principles of vertical equity. Efforts to enhance vertical equity by introducing graduation in standard assessments can be self-defeating if undertaken with extensive administrative resources, or remain highly flawed if done with the minimum of sectoral studies. Third, the standard assessment method offers little or no incentive for businesses and individuals to convert, or "graduate," into the normal, declarative tax regime. Indeed, the tendency is for those subject to standard assessments to push for continued assessment under this simple and usually more generous tax regime, as exemplified by the Israeli experience.

There may also be a case against employing standard assessments schemes since they are primarily geared to small-scale, usually single-person, businesses whose incomes are low and often barely taxable. Except for a few professional occupational groupings (e.g., medical doctors, dentists, lawyers), Ghana's standard assessment has, for instance, targeted small-scale craftsmen and others who are most likely to be living at or just above subsistence levels. For small craft producers and those engaged in small-scale manufacturing, agriculture, or commerce, the tax administration should not venture to provide disincentives to their activities, as even a modest presumptive tax levy will undoubtedly do. The tax administration may in fact seek to ensure that these activities are free from tax-related disincentive effects since they usually employ a large portion of the labor

Table 3: Summary and Assessment of Presumptive Taxation Methods in Sub-Saharan Africa as of August 1995

Presumptive Taxation Method	Description	Prominent User Countries in Africa	Primary Target Groups	Potential Impact on Revenue Mobilization	Administrative Costs
Standard assessments	Lump-sum levies based on occupation or business grouping. Levies may or may not be calibrated for particular business groupings.	Ghana, Ethiopia, Sierra Leone, Lesotho, Nigeria, Burkina Faso, Gabon, Cameroon.	Small scale businesses in the industrial and services sectors, and small scale farmers.	Low.	Uncalibrated: Low. Calibrated: Medium.
Estimated assessments	Taxes based on an estimate of a taxpayer's income; entails the use of indicators and discretion on the part of the tax assessor.	Many African countries, but especially the franco-phone countries, Angola, Chad, Malawi, Madagascar.	Small scale businesses with turnover below designated thresholds; enterprises without records; small scale farmers.	If done simplistically: Low. If done elaborately: Medium to high.	If done simplistically: Low. If done elaborately: Medium to high.
Presumptive minimum taxes	Taxes levied on the presumption that taxpayers can be assigned some minimum level of income in any given year. Levied in lump-sum form, as a percentage of gross receipts, as a percentage of gross assets, or as some combination of the above.	Mainly francophone African countries (see Appendix III).	Large scale formal sector firms in industrial and services sectors.	Medium.	Low.
Presumptive import taxes	An income tax on the presumed earnings of importers; amounts to a downpayment for registered importers, but is a final tax liability for unregistered importers.	Senegal, Niger, Benin, Côte d'Ivoire, Ethiopia, Comoros.	Importers unregistered with the tax authorities.	Medium to high, depending on extent to which importers are evading income taxation.	Low.
Withholding schemes	The use of withholding techniques to capture the incomes of unregistered businesses and individuals.	Côte d'Ivoire, Benin, Senegal.	Unregistered businesses in the industrial and services sectors.	Medium.	Low.
Business license fees	Tax levies associated with the granting of business licenses and as a means of taxing business incomes.	Benin, Comoros, Congo, Côte d'Ivoire, Guinea.	Businesses in services sectors that face regular registration and licensing requirements.	Medium to high.	Low.

Table 1: Effects of Changing the Parameters on the Economy

	$\uparrow\mu$	$\uparrow\delta_x$	$\uparrow\delta_g$	$\uparrow x^*$	$\uparrow g^*$	$\uparrow w^*$
Inflation	\uparrow	\downarrow	\uparrow	\uparrow	\uparrow	\uparrow
Output deviation ($x-x^*$)	\uparrow	\uparrow	\downarrow	\downarrow	\downarrow	\downarrow
Govt spending deviation ($g-g^*$)	\uparrow	\downarrow	\uparrow	\downarrow	\downarrow	\downarrow

force, have good returns to investment, are often the only poverty-alleviating safety net, and have the capacity to improve on technologies and output as overall demand rises (Goode 1987).

Moreover, the use of standard assessments has been criticized as an excessive widening of the tax net that only compounds problems of tax administration and collection (Anderson 1987). It has been noted that the greater and more dispersed the number of taxpayers, the more visible and pronounced the tax administration's weaknesses become. Deficiencies arising from shortages of staff and resources may also be aggravated in such scenarios.

Also, any effort to capture the largest possible number of taxpayers, which seems necessary if standard assessments are to be effective in revenue generation, would entail the administratively demanding task of launching an extensive national registration campaign to identify all potential (small-scale) taxpayers. In Ghana, for instance, even after roughly a decade of introducing the standard assessments, only 99,000 out of an estimated 2.2 million self-employed businessmen were covered by the presumptive levy (Malik 1979). This suggests that the task of identifying and registering small business operators, generally through extensive field censuses and the use of taxpayer identification numbers, is at least as important as the utilization of presumptive taxes as such. To date, only few African countries have launched extensive taxpayer registration campaigns, which are very useful, but also very expensive. 1/

In summing up, the case against an ambitious tightening of the tax net through standard assessments is quite strong. If applied at all, graduation should be applied extensively in order to enhance vertical equity and expand the revenue contribution of standard assessments. Such graduation is best introduced if based on adequately prepared matrix tables arranged for each sector or occupation grouping. While the information requirements for such matrices may be much less stringent than those for estimated assessments, they still require careful study and attention. Moreover, standard assessment tables would have to be updated frequently or indexed to take inflationary developments into account. In Ethiopia, for instance, considerable revenue is forgone because standard assessments have not been updated for more than a decade; there are indications that for many areas of activity, standard assessments could be increased by at least 300 percent in light of changed economic conditions during the 1980s and 1990s.

Regarding estimated assessments, we conclude that they should only be used if certain preconditions are met. First, estimated assessment schemes require detailed and regularly updated sectoral studies, if they are not to be flawed. Therefore, to keep the task feasible, estimated assessments

1/ The countries where taxpayer registration campaigns have been launched include Benin, Côte d'Ivoire, Kenya, Senegal, and Uganda.

should primarily be focused on a limited number of groups or sectors, and not across all sectors, as is usually the case in francophone African countries. A number of criteria may be used in determining the sectors that should receive speedier attention than others. It has been suggested that sectors deserving higher priority are those that (i) cover a large number of businesses; (ii) offer more than one indicator to calculate incomes; (iii) offer a reasonable number of sources of information; (iv) are noticeably prosperous; and (v) whose indicators involve measures of quantity rather than quality (Musgrave 1990). Any effort toward employing estimated assessments would have to be carried out over a period of several years, for a few sectors at a time, and from a list ranked in descending order by evasion (Rajaraman 1995).

Second, excessive reliance on labor and capital indicators should be avoided in light of the potentially adverse effects on the use of these inputs, and on related business decisions. Third, estimated assessments which deliberately set high tax burdens with a view to encouraging bookkeeping should be avoided, as they are more likely to drive businesses away from the tax authorities altogether. Furthermore, given the strong reliance on indicators, estimated assessments would seem to work best when they use information and documentation from third parties, especially from other government agencies. This would require more intensive collaboration and cross-checking between tax authorities and other government institutions.

In many African countries that make use of estimated assessments, inadequate attention to the many considerations noted above has resulted in presumptive schemes not yielding the anticipated results. It has been noted that conditions relating to information collection and cross-checking have almost never been met, and in francophone Africa estimated assessments in the form of the *forfait* system have served either as a potent source of corruption or an arbitrary method of calculating tax liabilities (Baldet 1990).

With respect to the taxation of land through standard assessment and estimated assessment methods, evidence suggests that achievements have been rather modest in terms of raising revenue. While in theory presumptive taxes on land could serve as very effective tax instruments with relatively few distortions, since they are usually in lump-sum form, in practice, these taxes have not resulted in major increases in revenue owing to the reasons stated above.

Compared with standard assessments and estimated assessments, **presumptive minimum taxes** would appear to be more effective in many Sub-Saharan African countries. Presumptive minimum taxes have reportedly had a considerable positive impact on revenue in those countries where they have been introduced. However, unlike the other presumptive schemes, these taxes mostly target large and registered enterprises, while leaving the great number of informal sector businesses and self-employed individuals outside the tax net, with potentially adverse effects on horizontal equity. The

application of presumptive minimum taxes is therefore primarily geared towards reducing under-reporting of tax liabilities of large scale formal sector businesses.

The three relatively new presumptive taxation methods discussed in this paper--presumptive import taxes, withholding schemes, and business license fees--would appear to have the greatest potential for intensified use in African countries where the administrative requirements of standard or estimated assessments cannot be met. These presumptive schemes are capable of closing some important gaps in the tax net, and they offer a number of advantages over other presumptive taxation methods. The case for their expanded use is supported by the following arguments.

First, given the often weak tax administration capacities in many African countries, they are particularly appropriate because their application requires only limited additional administrative duties, especially in comparison with other presumptive taxation methods.

Second, they use existing institutions and administrations such as customs and business registration bureaus which, given historical tax collection patterns in African countries, are usually comparatively strong and well established. Collecting presumptive import levies can be undertaken fairly easily by customs offices, while business license levies can be collected alongside existing agencies and government departments involved in the licensing and registration of business activities. The application of withholding tax schemes, with domestic manufacturers withholding tax from their bulk purchasers, is simply an extension of what such firms already do effectively to employees' wages.

Third, they target activities in which informal sector operators are often heavily involved, such as importing or bulk purchasing from domestic wholesalers. For instance, the presumptive import tax would effectively tax a large number of importers who often have no specific business premises, but who earn significant incomes from the sale and distribution of imported goods. Similarly, withholding schemes on the sales of domestic manufacturers can capture the incomes of unregistered traders who often play a dominant role in the retail distribution of a large number of consumer and durable goods.

Fourth, they address the collection and arrears problems of tax authorities by imposing a prepayment of tax liabilities even on registered taxpayers. This represents a case where presumptive schemes, in addition to covering two key gaps in revenue collection, that is, nonreporters and underreporters, also address a third gap, that relating to delinquents. The number of delinquent taxpayers who are registered but do not make (adequate) tax payments in time can be substantial. ^{1/} By reducing long collection

^{1/} For example, in the CFA countries, the stock of arrears is estimated to be more than 30 percent of total annual tax receipts (Baldet 1990).

lags and ensuring greater compliance, presumptive import taxes and withholding schemes can cut tax administration costs considerably. Besides, speedier payments in the context of high inflation prevents tax liabilities from losing their value in real terms.

Fifth, they tend to push evaders into registering with the tax authorities, making the presumptive tax a bridge to the conventional tax system. As indicated above, in some African countries unregistered importers face higher taxes than formal sector importers; in such cases there is a strong incentive for them to register with the authorities in order to become subject to the lower rate and pay the presumptive import tax as a down payment which will be credited against the final tax liability.

Last but not least, these three newer presumptive taxation methods promise to be substantial revenue-earners. Revenue expansion is likely since these methods effectively capture the transactions of unregistered importers and traders, and since the opportunities for delinquency are sharply reduced.

Presumptive Taxation Methods in African Countries as of August 1995

Country	Presumptive Taxation Method
Angola	Regular tax applied to the presumptive profits of all "Group B" and "Group C" taxpayers. "Group B" and "Group C" taxpayers are those who cumulatively: (a) engage as self-employed individuals in commercial or industrial activity; (b) work alone or with no more than three others; (c) do not keep reliable books; (d) use no more than two vehicles; (e) have annual turnover less than NKz 3.5 million.
Benin	Business tax (<u>Taxe Professionnelle Unique</u> , TPU) based on the rental value of firm's premises. There is a 3percent tax levied on imports, which serves as a pre-payment for registered firms paying profit taxes but is a final payment for all unregistered importers/enterprises.
Burkina Faso	All small taxpayers whose turnover is less than CFAF 5 million and sellers whose turnover is less than CFAF 15 million may ask to be assessed presumptively, in which case assessment is valid for two years. This presumptive tax is known as the "Informal Sector Contribution," and takes the form of a lump-sum levy varying from CFAF 3,000 to CFAF 100,000 depending on class of activity and locality.
Burundi	System of presumptive assessment applied to all companies with turnover less than BF 5 million and to service companies with turnover less than BF 10 million. Presumptive tax also applied to professional incomes.
Cameroon	For agricultural enterprises, an optional lump-sum presumptive assessment exists that is determined on the basis of crop, area, average yield per acre, and number of livestock. Agricultural enterprises choosing not to be presumptively assessed pay a 15 percent tax based on returns. Also, the following groups are, unless they choose otherwise, assessed presumptively: small businesses and crafts with turnover less than CFAF 20 million; commercial traders with turnover less than CFAF 5 million; and noncommercial (i.e., professional) profits with turnover less than CFAF 7.5 million.
Cape Verde	Presumptive methods applied: (i) as a preassessment for those not considered corporations for tax purposes (ii) if returns are not filed, taking into account the volume of business activity or normal production and market conditions.
Chad	Standard tax rate applied to the presumed profits of all companies with turnover less than CFAF 15 million and for sales and farming businesses with turnover less than CFAF 60 million. Noncommercial profits, i.e., from professional activity, are calculated on a presumptive basis.
Comoros	A 5 percent presumptive tax is levied on all imports by unregistered importers; and a 1 percent levy is applied on registered importers as an advance tax payment. Business license tax is based on 10-30 percent of rental value of premises, in addition to a flat fee ranging from CF 5,000 to 300,000.
Congo	All small-scale companies with turnover less than CFAF 10 million and those involved in sales with turnover less than CFAF 40 million are assessed, in most cases on a lump-sum basis, under the <u>Regime du Forfait</u> . The business license tax is indicator-based, ranging from CFAF 1100 to 220,000 depending on number of workers employed, number of machines used, and machine power.
Côte d'Ivoire	All small-scale companies are taxed on a presumptive basis. Also, a 5 percent tax (<u>Accompte sur Divers Impôts</u> , ASDI) is collected by customs on imports, and by wholesalers on their sales. The tax is a final payment for unregistered importers and buyers; for registered ones, it represents a prepayment on their VAT or profit tax liability.
Equatorial Guinea	There exists an option for an estimated income assessment (<u>Regimen a Destajo</u>).
Eritrea	Assessment mostly based on self-declared income, except for certain sectors where presumptive taxes, in the form of lump-sum levies, are applied.
Ethiopia	Presumptive tax levies for all "Category B" and "Category C" businesses. "Category B and C" includes taxpayers with gross sales less than Br 250,000 a year. Presumptive taxes on imports with reference to Standard Assessment Guide.

Presumptive Taxation Methods in African Countries as of August 1995 (concluded)

Country	Presumptive Taxation Method
Gabon	Lump-sum levy on informal sector activities, called <u>Impôt Forfaiture sur la Revenu</u> , ranging from CFAF 11,000 to CFAF 300,000 depending on type of activity. It is applied only to taxpayers whose turnover is less than CFAF 30 million, and to sellers whose turnover is less than CFAF 80 million.
Guinea	Minimum lump-sum tax of 3 percent on turnover (<u>Impôt Minimum Forfaitaire</u>) with turnover in excess of GF 20 million.
Kenya	Presumptive tax on 5 percent of gross sales of agricultural farms (abolished in January 1994).
Liberia	There are established estimates for taxpayers who do not keep records of their income. In such cases, profits--which will be subject to the normal tax rate--are estimated to equal any of the following: (a) 30 percent of a firm's total assets; (b) 15-50 percent of a firm's capital; (c) 15-50 percent of a firm's estimated income determined on net worth basis.
Madagascar	Companies without proper records or not providing information on time are presumptively assessed.
Malawi	Many small businesses and small farmers are assessed through a tax on estimated earnings.
Mali	Presumptive tax on road transporters whose turnover is less than CFAF 5 million or who own fewer than four cars. This takes the form of lump-sum levies, ranging from CFAF 110,000 to CFAF 450,000, depending on vehicle capacity and age.
Mozambique	Specific levies established for businesses in "Group A" and "Group B," by occupation group. Presumptive tax assessed on agricultural activities (service cooperatives, livestock, forestry) by reference to many indicators including, among others, use of tractor, number of employees, and nature of activity.
Niger	Presumptive assessment of taxable income (<u>Forfait</u>) is made for small businesses with turnover less than CFAF 10 million and for traders, landlords, and farmers with a turnover below CFAF 30 million. Small-scale taxpayers in these categories may opt for actual assessment if they meet record-keeping requirements. Special import levy to capture the incomes of importers unregistered with the tax authorities. The levy is 2 percent on the value of imports which, for registered firms, is creditable against profit tax payments; for those not registered it is a final tax payment.
Nigeria	Presumptive taxation used in the services sector.
Rwanda	Extensive use of business license tax (<u>Patente</u>). Lump-sum levies for self-employed businesses, with levy varying by economic activity, location and construction of premises. Distinctions for lump-sum levies are made by type of trader (wholesaler, retailer, importer, exporter). For transporters, presumptive tax is based on 3 percent of the value of new vehicle.
Senegal	Depending on the type of good, an import tax of 1, 2, or 3 percent is levied as a means to capture income of importers. The tax is creditable against the VAT for registered taxpayers.
Sierra Leone	Occupation-specific levies, from a Standard Assessment Guide, on self-employed individuals with well-defined occupations (e.g., taxi, mechanic, butchery, cattle trader). However, the tax commissioner can, if tax due from individual would be higher, apply tax on actual income.
Togo	Presumptive assessment of businesses whose turnover is less than CFAF 10 million and for sellers whose turnover is less than CFAF 30 million. Special levy on imports by nonregistered taxpayers. Presumptive tax on highway carriers equal to 12 percent of their turnover. Lump-sum levies on public enterprises in lieu of taxes on their profits and profit shares.
Uganda	Small taxpayers, traders, and professionals make provisional tax payments on accounts of income tax, which is later determined by the authorities. A minimum graduated tax is levied by local governments, ranging from USh 6000 to USh 80,000. Farmers' income is presumptively determined on basis of acreage, crop, and cattle ownership.

Sources: IMF country data.

Ghana's Standard Assessment

Occupation/Business grouping	Standard tax (Cedi per annum)
Carpenter	72
Tailor	48
Shoemaker	48
Goldsmith	10
Hairdresser	36
Seamstress	36
Butcher	72
Fitter	48
Kente weaver	72
Bookseller	72
Electrician	72
Money lender	400
Auctioneer	20
Wine and beer seller	72
Lumber and timber seller	100
Surveyor	2
Midwife	100
Radio repairer	72
Proprietor of private school	300
Commissioner of Oath	24
Second-hand spare parts dealer	48
Watch hawkler or clock hawkler	48
Watch repairer	24
Pharmacist (self-employed)	300
Wig makers and stylists	100
Draughtsman in private practice	10
Professional photographer	60
Taxi owner (per taxi)	60
Owner of slot machine (per machine)	200
Doctor	
Group 1: less than three years' practice	500
Group 2: three to six years' practice	1,500
Group 3: more than six years' practice	2,500
Lawyer	
Group 1: less than three years' practice	200
Group 2: three to six years' practice	600
Group 3: six to ten years' practice	1,000
Group 4: more than ten years' practice	2,000
Accountant	
Group 1: less than three years' practice	500
Group 2: three to six years' practice	1,000
Group 3: more than six years' practice	2,000
Fisherman	
Vessel up to 32 feet	60
Vessel up to 59 feet	1,000
Vessel up to 100 feet	1,200
Vessel over 100 feet	2,000

Source: Boateng 1971

Presumptive Minimum Taxes in African Countries as of August 1995

Country	Presumptive Minimum Tax Characteristics
Benin	CFAF 200,000.
Burkina Faso	CFAF 100,000 or 0.5 percent of turnover, whichever is greater.
Burundi	1 percent of turnover.
Cameroon	CFAF 600,000 or 1 percent of turnover.
Central African Republic	CFAF 300,000 or 1.2 percent of turnover, whichever is highest, for agricultural companies; CFAF 1.5 million or 1.2 percent of turnover, whichever is highest, for all other companies; 2 percent of turnover for coffee exporters and gold mining enterprises.
Chad	1.5 percent of turnover.
Comoros	CFAF 500,000 for companies with turnover less than CFAF 50 million; CFAF 1 million for companies with turnover above CFAF 50 million.
Congo	0.5 percent of turnover for companies with turnover less than CFAF 10 million; 1 percent of turnover for companies with turnover above CFAF 10 million.
Côte d'Ivoire	CFAF 2 million or 0.1 percent of turnover for companies in water, electricity, and oil industries; 0.15 percent of turnover for companies in banking and insurance sector; 0.5 percent of turnover for other businesses in other sectors.
Equatorial Guinea	CFAF 300,000 for turnover below CFAF 50 million; CFAF 600,000 for turnover of CFAF 50-100 million; CFAF 1 million for turnover of CFAF 100-500 million; CFAF 2 million for turnover above CFAF 500 million.
Gabon	CFAF 600,000 or 1.1 percent of turnover, or 40 percent of profits, whichever is highest.
Gambia (The)	2 percent of turnover, or 50 percent of profits.
Ghana	5 percent of turnover, except for companies in first five years.
Guinea	3 percent of turnover for enterprises more than GF 20 million of sales.
Madagascar	MF 200,000 plus 5 percent of turnover for agriculture, industry, mining, tourism, and transportation; MF 800,000 plus 5 percent of turnover for all other sectors.
Malawi	K 500-10,000 depending on turnover.
Rwanda	3 percent of invested capital.
Senegal	CFAF 500,000 for turnover below 500 CFAF million; CFAF 1 million for turnover above CFAF 500 million.
Sierra Leone	10 percent of turnover. 15 percent of turnover if accounts are not kept
Togo	1.5 percent of turnover.

Source: IMF country data.

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The increase in the variance of output when the inflation aversion of the central bank is increased reflects the tradeoff between flexibility and commitment highlighted by Rogoff (1985) and Lohmann (1992). When central bank independence is increased to reduce the time consistency problem, the willingness to respond to output shocks is decreased.

The general presumption in the literature is that the decline in inflation as a result of increasing central bank independence must always decrease the value of the loss function (except in terms of the loss of flexibility discussed above). However, this relies on the specification of the loss function solely in terms of the central bank's objectives. Here, although the inflation rate is clearly zero when the central bank is fully independent, society is not necessarily better off in this case. The expected loss in each period is:

$$\begin{aligned}
 E[VS] &= E\left[\pi_N^2\left(s_\pi + \frac{s_x}{\mu^2} + s_g\left(\frac{\delta x}{\delta g\mu}\right)^2\right)\right] \\
 &= [\text{Var}(\pi_N) + (E([\pi_N]))^2] \left(s_\pi + \frac{s_x}{\mu^2} + s_g\left(\frac{\delta x}{\delta g\mu}\right)^2\right)
 \end{aligned}
 \tag{20}$$

The first part of this term is increasing in μ ; however, the second part is decreasing in μ , because whilst more central bank independence reduces the level and variance of inflation, it also decreases output and government spending.

Consequently, if the central bank were to commit to zero inflation (set $\mu=0$), while inflation would be at its optimum level of zero, output and government spending would fall short of the optimal level. Again, whether society is better off or not depends on its relative weights on the three objectives. As Beetsma and Bovenberg (1995) point out, imposing another distortion in a second best world does not necessarily improve welfare.

It should be noted that the model above does not allow for any direct distortionary effects of inflation. Taxes are the only distortion present. Hence the conclusion that a decline in inflation may increase the loss function may be overstated if higher inflation has a distortionary effect on output. For instance, inflation may have a negative impact on productivity so that the productivity shock a_t may be a function of inflation (see, e.g., Howitt in Lipsey (1990), and Selody (1990)).

1. Optimal central bank independence

The optimal structure of the central bank has been discussed since Rogoff (1985) showed that the appointment of a "conservative" central banker can reduce the time-consistency problem. Lohmann (1992) extended Rogoff's analysis to allow for a better tradeoff between credibility and flexibility. Like Rogoff, she argues for the appointment of a more conservative central banker but argues for only partial independence in the sense that the government can override the central bank in response to large shocks. Walsh

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