

Designing a Small Business Tax System that Enhances Growth: Lessons from Africa

Draft for Discussion

Abstract

This paper analyzes the tax system for small businesses from the standpoint of economic growth. The study presents evidence from three African countries, South Africa, Zambia, and Rwanda, to show that these tax regimes have inhibited growth because of the high effective tax burden stemming from the choice of instruments and administration of the regime. The study relies on two types of analysis. The first is the use of Marginal Effective Tax Rate (METR) analysis which provides a quantitative metric for comparing the impact of the small tax regime to the general tax regime within a country, as well as comparing small business regimes in other countries. In addition, each case study contains a qualitative study of the impact of small tax regime on firms as it is administered in practice. The combination of quantitative and qualitative analysis is designed to give a more complete view of the issue.

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Introduction

For many small entrepreneurs in Africa, the choice to pay tax or remain in the informal sector is simple: most firms will choose to stay in the informal sector if they can because the perceived benefits outweigh the perceived costs. Firms in developing countries in particular rarely see their tax contributions at work in the form of government services. If compliance costs—both financial and time—are added into a firm’s cost-benefit analysis of paying taxes, the disincentive to comply with tax requirements becomes even stronger. On the government’s side, too, there is also a strong disincentive to collect taxes from small businesses, as the cost of monitoring and collecting tax from small businesses usually outweighs the revenues generated by small businesses, and revenue authority resources are usually scarce.

But there are compelling reasons for the small entrepreneur and the government to join the tax net. On the small and medium-sized enterprise’s (SME’s) side, participating in a tax regime brings a firm into the formal sector, and allows the firm to access formal credit markets, government procurement, and access to markets including for export. On the government’s side, by encouraging firms fully enter the formal sector through registering for and paying taxes, government promotes a culture of compliance and sets the stage for the firm to grow and become a bigger taxpayer; additionally, firms in the formal sector are more likely to comply with all other regulations and official obligations than those in the informal sector. Finally, there is extensive evidence that growth is severely hampered by the existence of an informal sector working in parallel with the formal sector.¹

The remainder of the paper is organized as follows. The following section briefly presents a brief background of small business taxation. The second section offers results from the three case studies. The final section presents conclusion and possible next steps.

I. Background

A. The nature of small businesses in Africa

Finding an “optimal tax regime” for small businesses is challenging from both the standpoint of the revenue authority and the taxpayer in any type of country. From a design perspective, it is particularly difficult in developing countries due to the character of small firms and the economic environment. First, the majority of economic output in most Sub-Saharan African countries is produced by the informal sector (in which firms operate under the tax radar); thus the tax base is constantly shifting.² The underlying causes of informality are numerous and range from a conscious decision to avoid

¹ See Palmade and Anayotis (2005).

² A concise definition of an “informal” firm is one which is not registered/licensed and/or does not pay tax. For a more complete definition and discussion of why firms choose to operate informally, see Reichel and Stern (2005).

detection through registration in order to avoid paying tax, to the lack of information on how to register or what advantages are gained by formalizing.

Related to the first point, small firms perceive the tax system as incurring large time and financial cost and thus do not see any incentive to join the tax net even if they could. Small firms face an ‘inverse economies of scale’ impact of paperwork and procedures required for tax authorities (see Blazic 2004). It takes an equal amount of time to register and pay income tax on profit of US\$ 1 million as it does US\$ 100. Yet the opportunity cost of time to a firm with a profit of US\$ 1 million is inconsequential – to a firm with US\$ 100 profit it is likely substantial.

Third, many small firms in developing countries lack the capacity and training to be able to undertake monitoring for tax compliance. Owners and operators of small businesses are more likely to be poorly educated and therefore not have the accounts and records necessary for many tax systems. (However, the requirement to pay tax may force small firms into keeping accounts, which is good management practice in any case).

Finally, from the perspective of revenue authorities, small businesses generate a disproportionately low amount of revenue, relative to large enterprises. Given both the number of firms and the difficulty in finding them (see above), it is not perceived as cost effective to monitor small enterprises especially given limited resources to administer the standard tax system. For this reason, some countries, such as Zambia, do not allow small businesses to participate in the general tax system.

B. Small business tax design

The broad consensus on ‘good tax policy’ argues for a simple tax structure, with few exceptions and derogations, which is broadly applied across the whole economy (see Stiglitz (1986)). Applying this argument to small businesses therefore, would favor them not receiving any special treatment in the tax code or its implementation. Yet, given the situation of small businesses and especially the capacity constraints issue it is clear that small businesses should be taxed differently for both efficiency and equity reasons.

Golab (1996) argues that a flat tax system (replacing a number of tax instruments) would benefit small businesses the most. First, because the compliance costs for such a system are far lower and this benefits small firms disproportionately. Second as tax credits and tax incentives tend to benefit larger, better connected and more influential firms.³ Their elimination therefore, allowing the introduction of a lower rate flat-tax, benefits smaller firms. Third, the increase in personal tax exemption benefits small businesses especially as many operate as sole-proprietors. Some versions of the flat tax include the exemption of dividends from taxable income, which eliminates the advantages accruing to debt finance.

International best practice suggests that any special tax regime for small enterprises should offer reduced compliance costs and a reduction in the actual tax burden. This

³ See Broadway, Flatters and Wen (1996) for some evidence from Thailand.

reduction in the actual tax burden is intended both to compensate, to some extent, for the particular difficulties that this sector faces in accessing capital and to act as an inducement to enter the “formal sector”. Experience in transition countries has shown that simplified tax systems generally not only reduce compliance costs bookkeeping, and reporting standards but also considerably lower the actual small business tax burden. Revenue yields mostly are minor and represent a negligible share of total tax collection.⁴

The remainder of this paper takes the experience of three African countries’ small business tax regime (SBT) and draws some conclusions about what works, what doesn’t work, and what could work.

C. Objectives for small business taxation

Conventional objectives for taxation of small businesses include raising revenue for the government budget. Given that small businesses generally do not generate substantial levels of income/consumption tax, most revenue authorities devote their scarce resources to large taxpayers. This paper starts with the assumption that the SBT has a strong impact on a firm’s decision to enter the formal sector and thus grow. To this end, the paper sets the following objectives for SBT:

Development/Growth Goals

- To create a “culture of taxation” and the regularization of the rule of law
- To provide education and training on how to monitor business activities
- To increase the size of the formal sector
- To promote growth

The achievement of these goals suggests a different type of tax system from a large taxpayer scheme, and a slightly enhanced role for the revenue authority to include outreach and education.

II. Country Experience in Africa⁵

The impact of the tax system on small businesses in Africa cannot be understated. In many countries the only interface small entrepreneurs have with the government or more broadly, with the “culture of compliance” is through interaction with the tax authorities.⁶

⁴ See Michael Engleshalk (2005), *Creating a Favorable Tax Environment for Small Business Development in Transition Countries*

⁵ The empirical work in this paper stems from a larger study of the effective tax burden by sector in 8 countries in Africa being carried out by the FIAS (World Bank Group) and UK DFID during 2005-2006. The intention is to update this paper as more country data is collected.

This study focuses on the effects of the tax system—instruments, rates, and administration—on small businesses in three countries: Zambia, South Africa, and Rwanda. Zambia was chosen because its economy is typical of Sub-Saharan Africa, characterized by low productivity, little diversification outside of traditional activities (i.e., highly agricultural, small manufacturing base, etc.) and also with high levels of informality. South Africa is a dual economy, with some highly developed sectors analogous to those in G-8 countries and with a developing country economy characterized by undercapitalized, overly-labor intensive sectors and by a high level of informality. Rwanda is a post-conflict country with much of the economic base in the process of recovery and a high level of informality.

The methodology for each of the studies was both quantitative and qualitative in approach in order to derive a complete picture. The quantitative part made use of the Marginal Effective Tax Rate (METR) analysis (see appendix) to offer a numerical-based comparison between countries.⁷ The qualitative approach was carried out through firm and business/trade group interviews as well as a literature/document review.

⁶Participation in the “culture of compliance” is defined as a firm recognizing and acting on its legal obligations to register and monitor its activities.

⁷ Simply put, the marginal effective tax rate sums all of the fiscal obligations (taxes, depreciation, loss carry forward, etc.) and subtracts out any incentives to measure the “effective rate” faced by an additional unit of capital. It measures the impact of a tax system on an incremental unit of capital investment or business activity

Table 1. Summary of METRs for the standard and small tax regimes by country, 2005⁸

Country/Sector	Standard Tax Regime					Small Business Tax Regime
	Manuf	Tourism	Ag	Financial	Mining	No VAT Opt-In
Zambia	0%-10%	0%-10%	10%	25%-35%	0%	20%-25%
South Africa	27%	28%	23%	31%	10%	22%-32%
Rwanda	29%	14%	7%	38%	15%	34%-51%

Sources: Country authorities and FIAS team calculations

Table 2. Summary Small Business Regime Taxonomy: Zambia, South Africa, and Rwanda, 2005

Country	Main Instrument	Replacing	Threshold	Opt-In?	
				Income tax	VAT
Zambia	4% presumptive turnover tax--compulsory	CIT/VAT	\$40,000	No	No
South Africa	Graduated CIT 3 bands (0%, 10%, 29%) No VAT to R20,000 Opt-in to R300,000		\$40,000 CIT \$48,000VAT	n.a.	n.a. Yes
Rwanda	4% turnover tax with Opt-in to CIT and VAT options	CIT/VAT	\$38,000	Yes	Yes

Sources: tax authorities in each country

⁸ The capital weights used in each sector are the same in each country in order to create a consistent data set to be comparable across countries.

A. Zambia⁹

A Sketch of the Tax Regime in Zambia

- Standard Corporate Tax Rate (now) 30%
- VAT standard rate: 17.5%, 0 rate and exempt
- Trade tax (imports), 0, 5, 15 percent
- Small tax regime: under threshold of Kw 200 million (around \$40,000), firms pay 3 percent turnover tax (presumptive), no VAT or CIT opt-in

Tax administration:

- Tax returns for all over Kw200 million threshold required annually
- Audits/inspection in principle 1 x year
- In practice, audits and inspections triggered when VAT refund is requested.

Qualitative assessment

The 3% tax on turnover is a final tax. Businesses with a turnover below K 200 million have been deregistered for VAT with no opt-in alternative (see Table 2). In theory, the prohibition on registering for VAT means that producers and traders with sufficient monitoring capacity cannot reclaim VAT incurred on items for processing or onward sale, ultimately increasing the cost of final production to the consumer. In some cases, VAT recovery could be substantial enough such that the 3% presumptive tax could be operationally higher than if a small business paid VAT; in this event, the effective tax burden could be higher than with a VAT.

Second, small businesses complain that the threshold level for VAT registration is too high. Pitched at K200 million (US \$40,000), when per capita income is only K 1.75 million (US \$375), is a formidable barrier for firms to enter the formal sector (defined in Zambia as a firm with a VAT registration number) and thus encourages even medium-sized firms to remain outside the tax net and avoid even the 3% turnover tax. The exclusion from the VAT system in combination with a high VAT threshold may also have the unintended consequence of locking the small business sector out of the mainstream economy as, it is understood that the public sector and registered traders are unwilling to do business with unregistered traders.

Finally, full registration sometimes confers a commercial credibility or legitimacy in dealings with third parties, which some firms may consider to be worth more than the compliance costs associated with registration, as well as the ability to bid for government contracts.

⁹ At the time of writing Kw 5000 = US\$1

On the administration side, since small businesses are excluded from the tax regime, and those small businesses who do pay the presumptive tax contribute very little to the overall tax take, there is little interaction with the Zambia Revenue Authority (ZRA). Further, the ZRA has little incentive either to administer the presumptive scheme nor help firms graduate to the standard tax regime. And without any perceivable benefit of paying taxes, small firms in Zambia have no incentive to pay taxes at all.

In addition, it is difficult for small businesses to have a collective body to represent them, given the diversity of firms and thus interests. Thus, there is no effective mechanism for small entrepreneurs to voice their tax concerns. Furthermore, the sector is invariably poorly funded and often not in a position to formulate policy in specialist areas, such as tax. Accordingly, this report should not be taken as a representation of the views of any of the parties interviewed during the course of this review.

Quantitative results

The effective tax burden on small business is in the 20-25 percent range (see Table 1), compared to an average METR of about 5-10 percent for most sectors in Zambia. Compared to the two other countries in the sample, the effective tax burden on small businesses is about the same. Although the simplified, presumptive tax regime has the merit of simplicity (reduction of time cost), the effective tax rate suggests that the tax regime would not encourage small firms to enter the SBT and most likely discourages them.

Conclusions

The Zambian SBT is the most business-unfriendly regime of the three countries studied. Not surprisingly, the Zambian government estimates that around 80% of all economic activity occurs in the informal sector. First, it is completely inflexible, in that it does not allow firms under the relatively high turnover threshold enter the general tax net under any circumstances. Second, the turnover tax for small businesses is presumptive, which means that even new firms must pay a part of their estimated tax burden up front, even before sales. Third, this restriction, combined with a relatively high tax burden borne by small businesses because of the flat tax with no deductions places a high financial burden on firms in this system. In addition, even if a small firm participates in the SBT, it is not considered tax registered (only those with a VAT number are) and thus does not have access to benefits such as government tenders and secured lending. Finally, given resource and “mandate” constraints, the ZRA does not engage in education and outreach activities to reduce the number of non-registered small business operators.

B. South Africa¹⁰

A Sketch of the Tax Regime in South Africa

- Standard Corporate Tax Rate: 29%
- Secondary tax on corporations: 12.5%
- VAT standard rate: 14%, 0 rate and exempt
- Trade tax (imports), 0, 5, 15 percent
- Other instruments include: dividend taxes, withholding taxes, capital gains.

- Small tax regime (firms must be registered as companies):

	<u>Income tax</u>		<u>VAT</u>	
R 1 to	R35,000	0%	Under R20,000	no-opt in
R35,001 to	R250,000	10%	R20,000 to R300,000	optional
R250,000 and up		29%	R300,000 and up	compulsory

Tax administration:

- Tax returns are required for all businesses (even small)
- Audits/inspection in principle 1 x year
- In practice, audits and inspections triggered when VAT refund is requested.

Qualitative assessment

Our preliminary analysis of small business regime is that although the attempt is made to make the system less onerous than the standard regime in terms of instruments and rates, it fall short of addressing the needs of small business because reporting requirements are the same under SBT as in the general system. This constraint is especially binding for informal firms which are deterred from joining the formal sector more as much due to the compliance costs of monitoring as from the financial obligations. Firm interviews—mainly of formal firms—revealed that tax avoidance is primarily due to lack of “tax literacy”; i.e., the lack of information, education, and skills to comply. It should be noted that some small businesses which participate in the SBT acknowledge that the small tax regime has helped instill a culture of compliance and good accounting practices.

Second, although the system itself, designed to make it easy for businesses to enter and with an “opt-in” option for VAT registration, is still unreachable for many small entrepreneurs. In particular, a business cannot apply for a VAT number unless it has, or is likely to have, a minimum of R20,000 turnover. This creates a chicken and egg situation for small businesses just starting-up. While a formal business plan provides evidence of a likely R20,000 turnover, such plans are beyond the ability of many small businesses. Given that this level of turnover is low, it is unlikely than any businesses even at R20,000 would have the capacity to comply with VAT monitoring.

¹⁰ At the time of writing, US\$1 = R6.23

Third, the statutory definition of a small business corporation is a firm with gross income not exceeding R6 million (there are some ownership restrictions as well)¹¹. The definition itself poses problems for small businesses, especially those which resell or broker transactions as they have high nominal turnover but low levels of value added (for example tour operators); many of these firms would qualify as a small business if the definition of SBC captured this phenomenon.

Finally, from firm interviews, it became clear that the revenue authorities were both effective and responsive in meeting the needs of large and medium tax payer, but not so effective at meeting the needs (education and training) of existing and prospective small business taxpayers. The lack of outreach to small businesses is not unique to South Africa; however, given the government's policy goal to facilitate the growth of small businesses, it is that there is yet a system in place that would offer training and education for small businesses. At the same time it should be noted that the authorities are aware of the issue and plan to address it in the next few years.

Quantitative analysis

Small businesses bear the heaviest tax burden relative to the general tax system, around 32% as measured by METR analysis (Table 1). This rate is higher than the SBT burden in Zambia, and assumes no opt-in to the VAT for comparability. At the same time, the South African Revenue Authority (SARS) indicates that over one-quarter of VAT registrants are below the threshold, suggesting that there is a sizable amount of voluntary compliance in this group. If VAT is opted, then the METR drops to around 16%, demonstrating the impact of VAT and reclaim.

Conclusions

On balance, the South African SBT offers limited flexibility for firms to choose the combination of tax instruments that suits them. At the same time, the effective rate is faced by small businesses is high relative to the standard South Africa tax regime (as measured by METR), as well as compared to Zambia's SBT--especially for those firms which cannot enter the VAT system. In addition, compliance/monitoring requirements for income tax is the same for small as well as for large taxpayers, and may be beyond the accounting capabilities of many small entrepreneurs

¹¹ These include: the shareholders do not hold shares in other companies (with certain exclusions) and not more than 20% of the income from the corporation is from investment income or from personal services.

C. Rwanda¹²

A Sketch of the Tax Regime in Rwanda

- Standard Corporate Tax Rate 30%
- VAT standard rate: 18%, 0 rate and exempt
- Trade tax (imports), 0, 5, 15, and 30 percent
- Small tax regime: under threshold of Rwf 20 million (about US\$36,000), firms can opt to pay a 4 percent turnover tax (presumptive) in lieu of standard CIT (30%) or PIT (up to 30%), VAT opt-in at any time.

Income tax regime

0	-	360,000	0%
360,001	-	1,200,000	20%
1,200,001 and above	-		30%

Tax administration:

- Self-assessed annual tax returns for all taxpayers with a Tax Identification Number (registered for CIT), monthly monitoring for VAT
- Audits/inspection in principle 1 x year
- In practice, audits and inspections triggered when VAT refund is requested.

Qualitative assessment

Of the three countries studied, Rwanda has the most flexible tax regime for small businesses; small businesses with an expected turnover of less than the threshold of Rwf 20 million have the option of paying either corporate income tax of 30% or the presumptive tax of 4% on turnover. Under the presumptive regime, small businesses have the obligation of withholding PAYE (Pay As You Earn) and dividend tax. However, given their small size and their difficulty to maintain proper accounting records there is a great incentive to underreport turnover as well as to arbitrage between salaries and dividends.¹³

A presumptive turnover tax can simplify tax administration and compliance costs and hence benefit both tax administrators and taxpayers. However, a high turnover tax, such as that in Rwanda, may play a negative role by encouraging small firms to avoid paying the tax via under-reporting of gross revenues causing additional revenue authority auditing. This interaction may form a vicious circle, diverting resources from both government and business to the 'hide and catch' game. The result could be an unhealthy tax environment that encourages expansion of the informal economy.

¹² As of the time of writing Rwf 530 = US\$ 1.

¹³ At present, the tax authorities are considering changes to the personal income tax scheme, with a view to shifting the tax burden for small enterprises out of the CIT to the PIT.

Even when informed and profitable small businesses opt for the corporate income option, in practice there is considerable confusions about the nature of expenses that qualify for deduction from taxable income. As a result, many small businesses tend to opt for the presumptive regime instead. Although this simplifies the tax administration, it does not contribute to creating or strengthening a culture of compliance among small businesses.

In addition, although small businesses are not required to register for VAT, staying out of the VAT net may be more of a tax burden than paying the tax. Non-registration often creates breaks in the VAT chain resulting in small businesses not being able to claim back VAT on (imported) inputs. Small businesses therefore may suffer a substantive VAT burden. This burden is compounded by taxes and fees at the municipal or district levels which tend to be very significant for small business. However, in order to enter the VAT net, a taxpayer must submit monthly reports; this reporting requirement is well beyond the capacity of most small businesses.

Finally, although the RRA has an effective program of community information dissemination, perhaps one of the best in Africa, it does not target small businesses, thereby missing a potentially large source of growth in the economy. As in other Sub-Saharan African countries, much of the economy is made up of small businesses, most of which are informal. A recent study of informality in Rwanda suggests that tax compliance and recording requirements are strong deterrents to registering a business and paying taxes.¹⁴ By neglecting this large sector of the economy, the RRA ignores future sources of sustainable, domestically generated economy growth. This shortcoming may be addressed during 2006 when the joint public-private initiative of Business Development Centers is launched with a view to training prospective entrepreneurs in basic business practices (including accounting) and outreach.

Quantitative results

The METR analysis (Table 1) shows that small businesses in Rwanda face a higher METR than large firms. Compared to the other countries in the study, the effective tax burden in Rwanda is the highest, ranging from 30-50 percent depending upon whether the firm chooses to pay CIT or the presumptive turnover tax (the latter is higher).¹⁵ This result, coupled with the fact that many small business do not register for VAT (and hence cannot claim input tax credits), means that small business in all sectors may face a higher METR, compared to large firms in any sector, with or without investment allowance. In particular, small firms in non-financial sectors can incur a METR more than double that for large firms.

Conclusions

¹⁴ FIAS is in the process of studying the barriers to formalizing in Rwanda.

¹⁵ If we assume a ratio of taxable income to turnover of 10 %, a 4% turnover tax is equivalent to a 40% corporate income tax.

The Rwanda SBT offers flexibility and choice of opting partially (CIT only) or totally into the standard system for those small businesses with sufficient capacity. At the same time, there are two features of the system which are strong deterrents for small businesses to enter. First, the simplified, presumptive tax on turnover option, while requiring little capacity carries a much higher tax burden than the standard regime; essentially, there is a financial reward for having the capacity to comply with monitoring requirements. Second, at present the high degree of informality and low level of outreach done by the tax authorities suggest that in addition to capacity constraints, many small firms do not have enough information to be able to enter the tax net even if they had the desire and necessary skills to comply.

III. Conclusions and implications: using the lessons from Africa to design a best practice small business tax system

The characteristics of small businesses in Sub-Saharan African countries, mainly the high level of informality, poverty, and lack of access to education, together imply that taxing these firms appropriately is difficult at best. This paper builds on the argument that moving firms from the informal sector to the formal sector has positive effects on economic growth (informal firms are inefficient, and often do not have adequate access to finance and markets). Thus, bringing small businesses into the tax net helps achieve this purpose.

In the three countries studied, none of current SBT schemes is “growth neutral” and more likely, are growth negative. That is, small firms have little incentive either to join the SBT (and move out of informality), pay a high financial cost (relative to the standard regime), and pay a disproportionately high time cost (relative to capacity and benefits accrued to joining the tax net). The four main culprits are 1) lack of flexibility to choose the regime (small or standard) which best fits the firm based on capacity and type of business, 2) the rates of the simplified tax, 3) the presumptive aspect of the simplified system, and 4) the failure of the SBTs to facilitate capacity building and training on business accounting practices with a view toward helping firms graduate to the standard tax regime.

Analysis of the positive and negative features of the case studies imply that there is a best practice SBT that would encourage small businesses to enter the tax net. The remainder of this section presents suggested design, instruments/rates, and revenue authority role for a best-practice SBT.

A. Small Business Tax Design

Since small businesses will not be the major source of revenue for the government, the goals of such a system must be different than those standard tax regime participants; the difference in focus necessitates a difference in design of the SBT. The design of the SBT therefore should be such that it encourages firms to join the regime; i.e., it should be clear to firms that they will receive benefits for joining the culture of compliance which at least neutralize the fiscal and time cost of paying taxes. For example, firms receive training on

how to set up simple accounting systems which facilitate compliance requirements, as well as build capacity. This training is also an investment for the tax authority because as the firm grows, it is likely that it will pay more taxes. The following is a list of suggested best-practice design features of an SBT designed to foster small business growth:

- SBTs and revenue authorities should focus on capacity building especially in the monitoring system.
- An optimal SBT would include a graduated system of taxation and introduction into culture of compliance supported by education on basic business operations, accounting, and monitoring (simple turnover, low rate). Emphasis for new taxpayers should be on learning and monitoring.
- As capacity and output grow, offer a more sophisticated tax system which may be more advantageous (adding VAT, or some reclaim ability) as a reward for better monitoring. Emphasis should be on widening instruments and movement toward the standard tax regime.
- Simplified alternative tax regimes should be non-presumptive. Presumptive tax systems can cause significant cash flow problems especially for new small businesses and for SMEs in sectors with variable output (for example, agricultural producers).

B. Instruments/rates

An alternative tax for small businesses should result in a low effective tax burden to discourage participation but not so low that it allows for tax evasion by larger firms. In addition,

- The system should employ a single, simple tax instrument which is easily measurable (turnover) to replace income and consumption taxes because it's simple and monitoring obligations are minimal.
- Instruments should be easy to use and the definition of what is required should be clear (i.e., definition of turnover).
- The large tax system should be open to all who can meet monitoring requirements—especially VAT.
- From the tax authority side, compliance costs should be minimized, but investment into education and outreach, especially the informal sector, is essential (eg: Rwanda).
- From the taxpayer side, ease of compliance, which stems in part from education and training is as important as the rates and instruments.

C. Enhanced role for the tax authority

The tax authority is the first point of official contact for many small businesses especially in Sub-Saharan Africa. In a sense, the revenue authority has the power to encourage or discourage firms from entering the tax net. Currently, some revenue authorities passively discourage small business participation by making the system both time and financially

costly. This result is due to the revenue authorities' mandate, which is to raise revenue to finance the government; as a result, human and financial resources for this purpose are allocated accordingly.

In this paper we argue that should the revenue authority expand its mandate to include education and outreach of small taxpayers. In addition to offering education on how to comply with the law and basic accounting skills, the revenue authority could also educate firms on what becomes available (access to finance, markets, cooperatives, etc.) once they enter the tax net. These activities would produce short and long run results. In the short run, the number of small firms in the tax net would rise, and capacity building would occur. This would have some impact on short-run economic growth. But in the long run, many of these firms will grow and become larger taxpayers. The net result would be an increase in revenue for the government and higher economic growth in general. Thus, the enhanced role of the tax authority can be seen as an investment into long-run growth.

APPENDIX

METHODOLOGY FOR ESTIMATING THE MARGINAL EFFECTIVE TAX RATES

1. The effective tax rate on capital can be decomposed into an effective corporate tax rate on capital and an effective personal tax rate on capital. The effective aggregate tax rate on capital is a rate combining effective corporate and personal tax rate on capital.
2. For each of the two types of investments mentioned above, our estimates are made for two major sectors: the manufacturing and service industries. The simulation for each sector is undertaken for both regular taxable firms and tax-holiday firms.
 1. The concept
3. The effective tax rate measures the impact of a tax system on an incremental unit of capital investment or business activity. It incorporates the effects of not only statutory tax rates and related tax treatments (e.g. tax depreciation, tax credit, tax deductibility, tax holidays, etc.) but also various economic factors interacting with these tax treatments (e.g. financial costs, the inflation rate, and the structure of investment, etc). In other words, the effective tax rate is a summary indicator of the overall tax burden imposed by a tax system on an investment within a certain economic environment.
4. The calculation of effective tax rate is based on the assumption of profit-maximization. Profit-maximizing firms base their investment/business decisions on the foreseeable incremental net revenue at the present value. Taxes reduce the portion of the profits accruing to the investor, while tax allowances mitigate such a reduction in accrued profits. Due to the interaction between these statutory tax provisions and the actual economic/industrial conditions (e.g., financing condition, capital structure, input structure of production, etc.), the effective tax rates can vary by industry even under the same tax regime. Furthermore, as mentioned above, for a cross-jurisdiction comparison, the difference in effective tax rate may reflect not only the variation in tax regimes but also other differences in the economic and financial climates. In practice, different rates of inflation, and ways of accounting for it, often create very large differences in the effective tax rate.
5. For profit-maximizing firms, the gross rate of return on capital (net of economic depreciation) must be equal to the financing cost of capital, adjusted for taxes. The size of this adjustment for taxes on a new investment is the effective tax rate on capital. For example, if the gross-of-tax rate of return to capital is 20 per cent and the net-of-tax rate of return is 10 per cent, then the effective tax rate on capital is 50 per cent.
6. It should be noted that the analysis of effective tax rate provided in this study deals with only 'profitable' firms. By 'profitable' we mean those firms that have taxable income, if not granted a tax holiday. This assumption is important because a tax holiday is irrelevant to an unprofitable firm that does not have to pay income taxes.

2. Methodology

7. The standard method used to estimate effective tax rates has been extensively documented¹⁶. The formula based on this method has been modified by incorporating some miscellaneous taxes such as capital tax, property tax, and tax on transfer of property¹⁷. The following are general formulas used in this study.

i) Effective tax rate (t)

8. The effective tax rate on a given type of capital is defined as the proportional difference between the gross-of-tax rate of return required by a firm (r^G) and the net-of-tax rate of return required by an investor (r^N). r^G is the difference between the marginal revenue product (or user cost, in equilibrium) and economic depreciation. The after-tax rate of return is the weighted average of the return to debt and equity securities held by the investor. Thus, the effective tax rate (t) is defined as

$$t = (r^G - r^N)/r^G \quad (1)$$

ii) The real cost of financing (r^f)

9. For foreign investors, the non-indexed real cost of financing (r^f) is defined by

$$r^f = [\beta' i' (1 - U') + (1 - \beta') \rho'] * (1 - \gamma) / (1 - x) + \gamma * [i(1 - U) - \pi + \pi'] - \pi' \quad (2)$$

10. When a country requires firms to index their interest deductions, the cost of finance is defined as:

$$r^f_{indexed} = [\beta' i' (1 - U') + (1 - \beta') \rho' - \pi'] * (1 - \gamma) / (1 - x) + \gamma * [(i - \pi)(1 - U)] \quad (2.a)$$

with β' = debt to assets ratio in home country, β = debt to assets ratio in the host country, i' = cost of debt in home country, U' = the statutory corporate income tax rate in home country, ρ' = cost of equity in home country, γ = the ratio of debt raised in host country to total investment fund, x = weighted average withholding tax rate in host country, i = cost of debt in host country, U = statutory corporate income tax rate in host country, π' = inflation rate in home country, and π = inflation rate in host country. That is, the cost of financing to a foreign investor is the weighted average of costs of its investment fund taken from home country and the debt raised abroad. The former is the weighted average cost of financing at home net of withholding tax payable in host country, and the latter is the cost of debt in host country adjusted by income tax deductibility and difference in inflation rate between home and host countries.

¹⁶ Boadway, Bruce, and Mintz (1984, 1987) and Mintz (1990).

¹⁷ Chen and Mintz (1993).

iii) The net-of-tax rate of return on capital (r^N)

11. For a foreign investor,

$$r^N = [\beta' i' (1-U') + (1 - \beta') \rho' - \pi'] (1-\gamma) + \gamma (i - \pi) \quad (3)$$

12. This is the net-of-tax rate of return on capital required by fund suppliers including foreign investor itself and creditors in host countries.

13. Applying (3) to equation (1), respectively, results in the effective corporate tax rate on capital for domestic investors and that for foreign investors.

iv) The gross-of-tax rate of return (r^G) on capital

A. Depreciable assets

14. The users cost of capital for multinationals investing in depreciable assets (machinery and structures) is:

$$r^G = (1+tm)(r^f + \delta)(1-k)(1-A)/[(1-U)(1-tg)] + tp/(1-tg) - \delta \quad (5')$$

For depreciable assets that are indexed, the term A is denominated by the real indexed cost of finance, r^f_{indexed} .

B. Inventory

15. The users cost of capital for multinationals investing in inventories is:

$$r^G = (1+tm)(r^f + U\pi\zeta)/[(1-U)(1-tg)] \quad (6)$$

with tm = sales tax on inventory where it is applicable, and $\zeta = 1$ for FIFO accounting method and 0 for LIFO.

C. Land

16. The users cost of capital for multinationals investing in land is:

$$r^G = (1+tm)r^f/[(1-U)(1-tg)] + tp/(1-tg) \quad (7)$$

v) Aggregation

17. The effective tax rate for a given industry is the difference between the weighted average of gross-of-tax rate of return by asset type and the net-of-tax rate of return (which is the same across asset type within the industry) divided by the gross-of-tax rate of return on capital. That is, the marginal effective tax rate for industry i (t_i) is calculated as follows:

$$t_i = (\sum_j r_{ij}^G w_{ij} - r_i^N) / \sum_j r_{ij}^G w_{ij} \quad (8)$$

where j denotes asset type (i.e. investments in buildings, machinery, inventories, and land), w_{ij} denotes the weight of asset type j in industry i .

18. The above are general formulas used in this study. Due to the variance among different jurisdictions, some variables in the formulas can be zero for some jurisdictions. For example, in many countries there is no gross-receipts tax and hence $tg = 0$ in equations (5) - (7).

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