

Fiscal Implications of Trade Liberalization

Trade liberalization is a potential source of fiscal instability for African countries because of their high dependence on trade taxes for public revenue. The policy challenge is how to maintain fiscal stability while liberalizing trade. For African governments with inefficient tax administrations, and for those that still rely heavily on trade taxes, the problems can be severe. During the late 1990s many African countries struggled to maintain sustainable fiscal positions even when their government revenues were rising. At the same time, they pushed forward with trade liberalization and their trade tax revenues as a percentage of GDP declined.

How should countries react to falls in revenue as tariffs are cut? This is a critical issue for African countries because many have already carried out considerable liberalization of their trade regimes. Negative fiscal impacts often emerge at later stages of liberalization; the boost to revenues from higher trade volumes, as a result of tariff cuts, will be insufficient to outweigh the revenue-dampening effect of the tax reductions themselves. Nevertheless, in the longer term, well-sequenced trade liberalization, coordinated with a coherent trade and industrial strategy, should lead to substantial growth benefits, so increasing the tax base. But how can the reductions in fiscal revenue be buffered in the short to medium term?

Most of the African countries that made the fastest progress on trade liberalization over the last ten years have seen a significant decrease in their revenues from international trade taxes, but several of these have been able to take appropriate action, as this chapter explains. So although trade liberalization can exacerbate fragile fiscal positions, its negative impacts can be offset or reduced with appropriate policies.

The chapter recommends that trade liberalization be co-ordinated with measures on the revenue and spending side of the budget, including raising domestic indirect and direct taxes, strengthening tax administration and collection, and improving the effectiveness of public spending. It also underlines the fact that the maintenance of a sound macroeconomic environment is critical to preventing fiscal distress during trade liberalization.

Negative fiscal impacts emerge at later stages of liberalization

Africa's deficits persist, despite increasing tax revenues

Many African countries still struggle to achieve fiscal stability, as can be seen in figure 6.1. But between 1995 and 2002 the average annual change in the total tax revenue to GDP

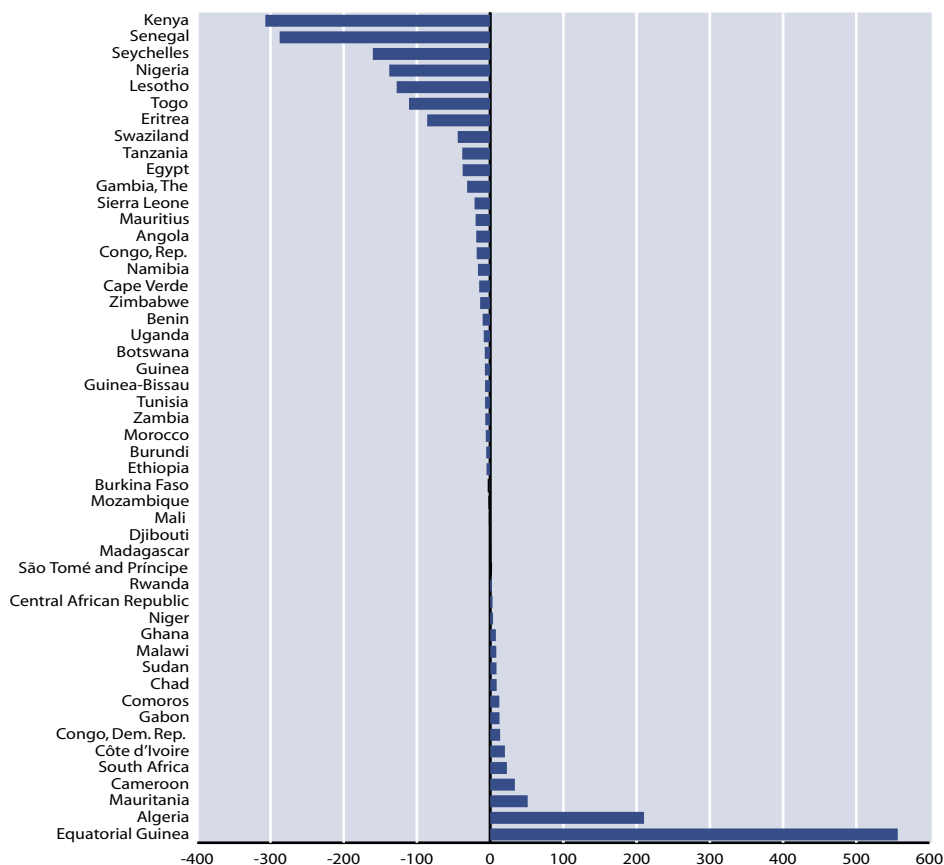
ratio was positive for many countries, indicating progress in expanding the tax base (see figure 6.2). Although a few countries experienced both decreasing revenues and increasing deficits, for most of those whose budget balance deteriorated, revenues grew. Some countries even managed to improve the budget balance in the face of falling revenues.

“ In 10 years, international trade taxes generated 28.2% of total revenues for Africa ”

African countries depend heavily on their trade taxes as a source of revenue. On the continent as a whole, international trade taxes generated on average 28.2% of total current revenues over the last decade; for sub-Saharan Africa the share was 30.5%. This contrasts with 0.8% for high-income OECD countries, 18.42% for lower medium-income countries, and 22.5% for all low-income countries. Also, while the data show a decreasing trend worldwide, in Africa the share has stayed flat or even slightly increased.

Figure 6.1

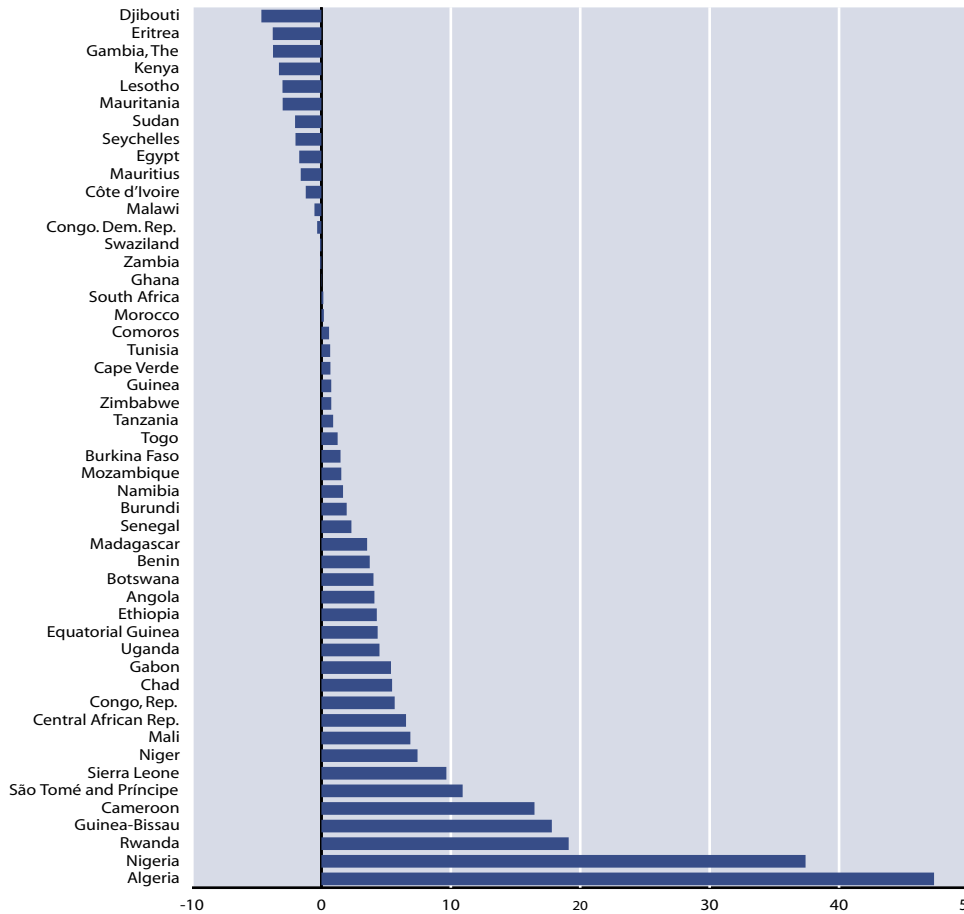
African countries' average annual change in fiscal balance to GDP ratio, 1995-2002



Source: ECA, from official sources

Figure 6.2

African countries' average annual change in tax revenues to GDP ratio, 1995-2002



Source: ECA, from official sources

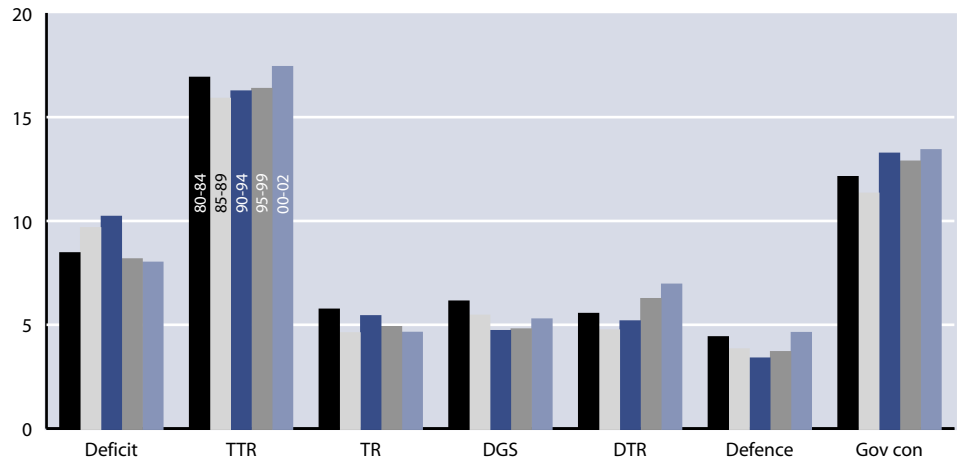
“ The 1990s witnessed moderate progress in trade liberalization ”

The 1990s witnessed moderate progress on trade liberalization in Africa as a result of a combination of unilateral trade reforms and various bilateral, regional, and multilateral trade agreements. The average index of trade restrictions, which captures the average level of tariffs (see Annex A6.1), decreased slightly from 9.8% in 1985 to just over 9% in 1990, and then dropped to around 7% in 2002. The reduction in trade tax rates combined with the weak expansion of the tax base drove trade tax revenues down as a percentage both of GDP and of total government revenues. But this was compensated by higher revenues from the taxation of domestic goods and services and from direct taxes on income and profits (see figure 6.3).

“Tax collection is often hampered by inadequate administrative capacity”

Figure 6.3

African countries' deficit and budget items, 1980-2002 (% of GDP)



Notes: Deficit = fiscal deficit excluding grants; TTR = total tax revenues; TR = trade tax revenues; DGS = taxes on domestic goods and services; DTR = direct tax revenues; Gov con = government consumption. See Annex A6.2 for these and other definitions of variables.

Source: ECA, from official sources

African countries' fiscal problems cannot be blamed solely on the negative fiscal impact of trade liberalization. It is notable that, on average, total tax revenues increased, even as revenues from trade taxes fell. As indicated by the increase in some spending items, such as government consumption and defence expenditure, other factors need to be taken into account in policy formulation and projections of revenue.

The risks and challenges of trade liberalization

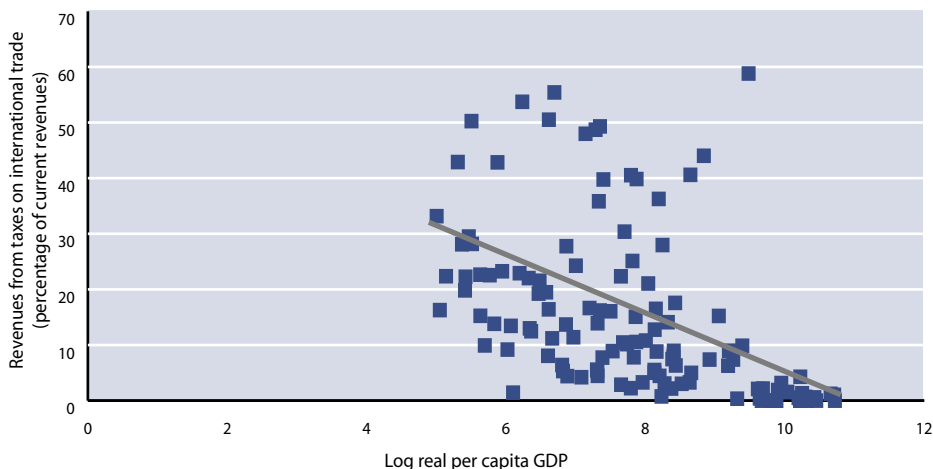
Trade is a source of revenue on which many African governments survive. ECA data demonstrate that reliance on revenues from taxes on international trade is inversely related to income levels (see figure 6.4). In poor countries, the lack of administrative capacity reduces the efficiency of tax collection, while the large size of the informal and subsistence sectors means that a large proportion of transactions cannot be taxed. The influence of powerful lobbies makes some sectors off-limits to the tax authorities. As a result, the domestic tax base is narrow and governments try to meet their fiscal needs by charging high rates on easily taxable sectors such as trade (Kubota, 2000). With governments operating under severe resource constraints, revenue-raising concerns are often cited as a reason for some governments' resistance to trade policy reforms in Africa (Khattry, 2002).

The picture is not all negative, however. Positive fiscal effects can arise from the elimination of trade-related subsidies and tariff exemptions. The effect of cutting tariffs is ambiguous. On the one hand, lower tariffs imply lower tax rates and hence smaller revenues.

On the other hand, the volume of imports tends to expand when tariffs are reduced, and hence the tax base will grow. Which of the two effects is larger will depend on the extent to which import demand increases when tariffs are cut. If the increase is sufficiently high, then revenues will rise.

Figure 6.4

African countries' reliance on trade taxes measured against income levels, 1990-2003 averages



Source: ECA, from official sources

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The effect of cutting tariffs is ambiguous
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The picture may also be complicated by other effects. This is because trade liberalization is often accompanied by a devaluation of nominal and real exchange rates. This raises the domestic value of imports, with a positive impact on revenues, but the domestic cost of government spending programmes will increase. Consumption will switch from tradable to non-tradable goods: revenues from trade taxes will therefore fall and those from domestic indirect taxation will increase. The overall effect of devaluations is, therefore, also ambiguous. Longer-run effects may be driven by enhanced growth performance as a result of trade liberalization. If growth increases, then the increased income levels will translate into a larger base for direct domestic taxation. Table 6.1 summarizes the revenue implications of the different elements of trade liberalization programmes.

When trade restrictions are high, cutting tariffs normally boosts trade volumes and revenues. But as tariffs are cut further the revenue impact will become smaller and then negative. Because many African countries have already liberalized, they cannot expect further substantial increases in trade tax revenue and may see declining revenues. This effect is illustrated by a “Laffer” curve, tracking the relationship between trade restrictions and revenues (see figure 6.5). When the trade regime is very restrictive because of high tariff rates, trade volumes are likely to be severely compressed (to the right of the curve). Reducing the restrictions will result in a strong increase in trade volumes, more than compensating for the lower tax rate, and leading to higher trade tax revenues.

Table 6.1**How trade liberalization is expected to affect revenues**

Items in the trade reform package	Impact on revenues
Replace non-tariff barriers with tariffs	Positive
Eliminate tariff exemptions and subsidies	Positive
Reduce tariff dispersions	Neutral/Positive
Eliminate state trading monopolies	Neutral/Positive
Reduce high average tariffs	Ambiguous
Reduce medium or low average tariffs	Negative
Lower maximum tariffs	Ambiguous
Eliminate export taxes	Neutral/Negative
Initial exchange rate depreciation	Neutral/Positive

Sources: Compiled from analysis reported by Sharer et al., 1998, Ebrill et al., 1999, Adam et al., 2001, and Hoekman et al., 2002

However, when the trade regime is already fairly liberalized, further reductions in restrictions will not cause a sufficiently large increase in trade volumes to offset the lower tariffs (to the left of the curve). Overall revenues will therefore decrease (Ebrill et al., 1999; Khattry, 2002; Agbeyegbe et al., 2003; Ekpo, 2003).

Figure 6.5**African countries' trade restrictions and revenues from international trade taxes**

Source: Calculations by ECA

Because higher fiscal revenues lead to lower deficits, the inverse-U relation between trade restrictions and revenues translates into a U-shaped relationship between trade restrictions and the deficit. So for countries that have already carried out some trade liberalization, further liberalization is likely to increase the deficit. This is the case for many African countries.

In figure 6.5, the estimated Laffer curve for African countries shows revenue maximization between 10% and 15% of the index of trade restrictions. This index captures average “realized” tariffs, being defined as trade tax revenues divided by total trade value, variables which are available for a relatively large sample of African countries (see Annex A6.1). The Laffer curve can also be constructed using official tariff rates but with a smaller sample size for reasons of data availability, as discussed in the Annexes. Because of liberalization during the 1990s, many economies are now operating on the upward sloping side of the curve. They will therefore face reductions in revenues as a result of further trade liberalization.

What governments can do in response to falling revenues

Fiscal problems will arise when trade restrictions drop below their revenue-maximizing level of around 10% to 15%. In 2002, there were only four African countries with trade restrictions above 15% and thus on the downward sloping side of the Laffer curve. These were the Central African Republic, Comoros, Lesotho and Burundi. Four others – Mali, Niger, Sierra Leone and Tanzania – had restrictions between 10% and 15%. For the remaining countries, the trade restriction index was below 10%. How can these countries buffer the decrease in revenues that further trade liberalization is likely to bring about?

One strategy is to combine tariff cuts with a point-for-point increase in domestic consumption taxes (Keen and Lighthart, 1999). Under certain conditions this can be shown to lead to an increase in social welfare as well as public revenues. The introduction of a value-added tax (VAT) in particular has advantages over other sales and consumption taxes as it discourages tax evasion and does not hamper the competitiveness of domestic producers compared to foreign firms. Budgetary data indicate that revenues from domestic taxation on goods and services (including VAT) have grown as trade tax revenues have fallen. Direct tax revenues can also be increased through strengthening the tax collection system and eliminating tax holidays and other exemptions, although in poor African States with large informal sectors this is difficult.

The option of expenditure reduction is obviously problematic because many spending items are rigid or else are vital for human welfare. Spending on poverty reduction, the social sectors and infrastructure cannot easily be cut. It may also be hard to reduce government consumption and defence spending. Even if cutting expenditure proves impossible, enhancing the efficiency and effectiveness of existing spending will in the long run help to enhance productive capacity of the economy and therefore increase the tax base.

Fiscal stability during trade liberalization requires a stable macroeconomic environment, with low and predictable inflation and steady growth in per capita GDP. Adverse changes

in the terms of trade will have a negative impact on the fiscal balance. In the long term, reducing vulnerability to such shocks, through diversification of exports and appropriate exchange rate policies, is essential to achieving fiscal stability. The experiences of some fast-liberalizing African countries illustrate these policy responses and are discussed in the following sections.

How fast liberalizers have performed

The moderate pace of liberalization for the continent as a whole hides significant cross-country differences (see table 6.2). A group of fast-liberalizing countries can be identified. These are the ten countries that saw the greatest reduction in the index of trade restrictions between 1995-2002, namely Mauritania, Seychelles, Ghana, Tunisia, Burkina Faso, Equatorial Guinea, Sudan, Mauritius, Morocco, and Senegal. Their experiences are a useful benchmark to assess the extent of fiscal problems arising from trade liberalization. In this section we distil the main policy responses from these countries, while the following section looks at some of the individual country experiences in more detail.

In 1995, all the “fast liberalizers” had fairly low trade restrictions. Only in Sudan, Burkina Faso and Seychelles was the index above 10%, but even for these it was below 15%. The fast liberalizers were on the left side of the Laffer curve in figure 6.5. Further trade liberalization after 1995 led to decreasing trade tax revenues, but most countries did not suffer an increase in their fiscal deficit. Of the ten fast liberalizers, only Seychelles and Mauritius saw an increase in the deficit, net of grants, between 1995 and 2002. The rest were able to reduce their deficits or move from deficit to surplus (see figure 6.6).

Declines in the trade tax revenues of the fast liberalizers are shown in figure 6.7. Changes in total tax revenues were relatively smooth, with sharp decreases only in Sudan, Seychelles and Mauritania. Fast-liberalizing countries were generally able to offset smaller trade tax revenues with other sources of taxation (see box 6.1). Domestic taxes on goods and services increased in most countries. Several countries also managed to raise revenues from direct taxes on income and profits (see figure 6.8). By contrast, non-tax revenues played a limited role in buffering the effect of lower trade tax revenues. Only in Mauritania and Sudan was the share of non-tax revenue in total revenue significantly higher in 2002 than in 1995, in Sudan's case because of the emergence of the oil sector.

Between 1995 and 2002, the ten fast liberalizers generally showed good macroeconomic performances with decreasing inflation and positive growth rates in per capita GDP. The exchange rate black market premium was generally on a downward trend, indicating reduced distortions in the economy. However, the terms of trade fluctuated or declined in most countries as a result of volatile or falling international prices for most exportable goods (see table 6.3). Seychelles had the weakest macroeconomic environment and was the country with the largest deterioration in the fiscal position (see figure 6.6). In Mauritius, despite an otherwise sound macroeconomic environment, the deficit increased because of the public investment programme undertaken by the Government in the early 2000s.

Table 6.2**Average rate of change in African countries' trade restrictions, 1980-2002 (%)**

Country	80-89	90-02	95-02
Mauritania	0.355	-5.947	-14.595
Seychelles	not available.	-9.942	-12.904
Ghana	1.477	-9.26	-12.78
Tunisia	5.72	-6.487	-11.496
Burkina Faso	2.471	-4.286	-11.024
Equatorial Guinea	-18.927	4.346	-10.967
Sudan	not available.	not available.	-10.473
Mauritius	0.282	-6.062	-7.551
Morocco	-4.672	-4.011	-5.932
Senegal	not available.	-7.94	-4.903
Côte d'Ivoire	-9.667	-3.072	-3.937
Mozambique	0.97	-3.598	-3.148
Uganda	-15.891	6.107	-2.967
Lesotho	-3.557	2.888	-2.786
Malawi	28.006	-9.319	-2.613
Kenya	not available.	13.606	-2.155
South Africa	14.105	-6.659	-2.116
Cape Verde	3.558	0.577	-1.978
Ethiopia	-3.184	1.543	-1.099
Cameroon	8.435	-2.24	-0.719
Algeria	5.464	3.459	-0.244
Togo	-2.127	-0.714	-0.208
Eritrea	not available.	-5.377	0.63
Congo	not available.	-4.2	1.202
Egypt	-15.067	0.896	1.286
Guinea	5.985	8.569	1.391
Guinea-Bissau	-39.659	19.145	1.597
Madagascar	0.373	-1.808	2.568
Gambia	-20.382	-0.948	3.005
São Tomé et Príncipe	n.a	0.054	3.271
Africa	-0.239	1.518	3.587
Sub-Saharan Africa	-0.279	1.853	3.671
Djibouti	not available.	n.a	4.498
Zambia	12.256	1.784	4.709
Sierra Leone	26.307	2.543	5.529
Mali	-7.726	4.308	6.262
Gabon	n.a	3.213	7.077
Burundi	not available.	4.83	7.29
Benin	v	5.977	8.683
Niger	4.969	3.574	10.442
Angola	not available.	not available.	11.987
Chad	10.078	3.796	13.04
Nigeria	n.a	not available.	13.378
Comoros	not available.	6.365	16.462
Tanzania	-3.378	9.382	20.368
Central African Republic	-1.456	10.307	22.345
Zimbabwe	not available.	not available.	30.668
Rwanda	4.072	17.065	46.5
Botswana	-8.187	not available.	not available.

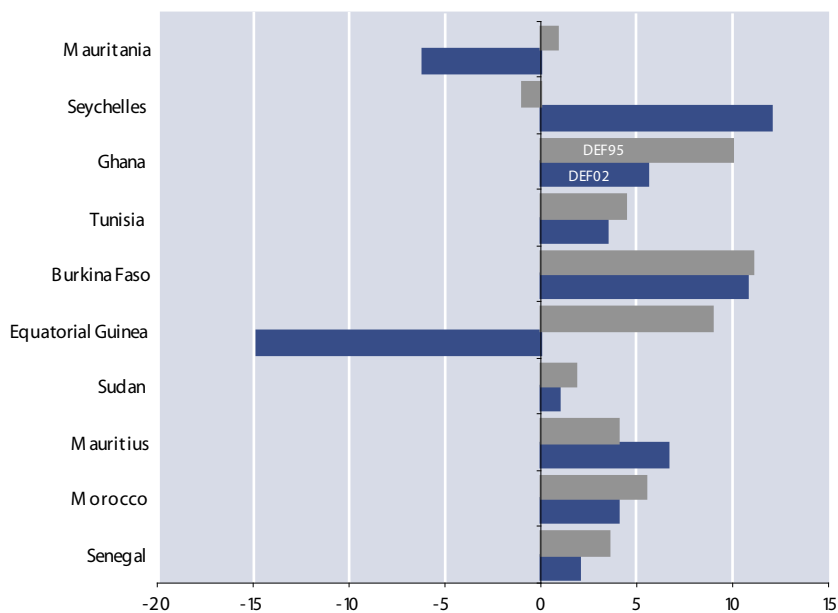
n.a. denotes not available

Note: No data are available for Democratic Republic of Congo, Liberia, Libya, Namibia, Swaziland or Somalia.

Source: Calculations by ECA

Figure 6.6

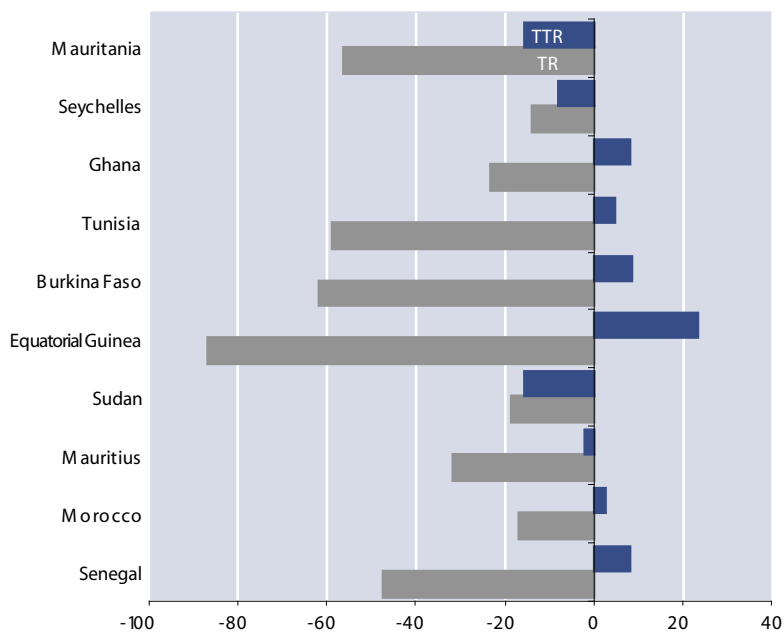
Fiscal deficit (DEF) in fast-liberalizing countries, in 1995 and 2002 (% of GDP)



Source: ECA, from official sources

Figure 6.7

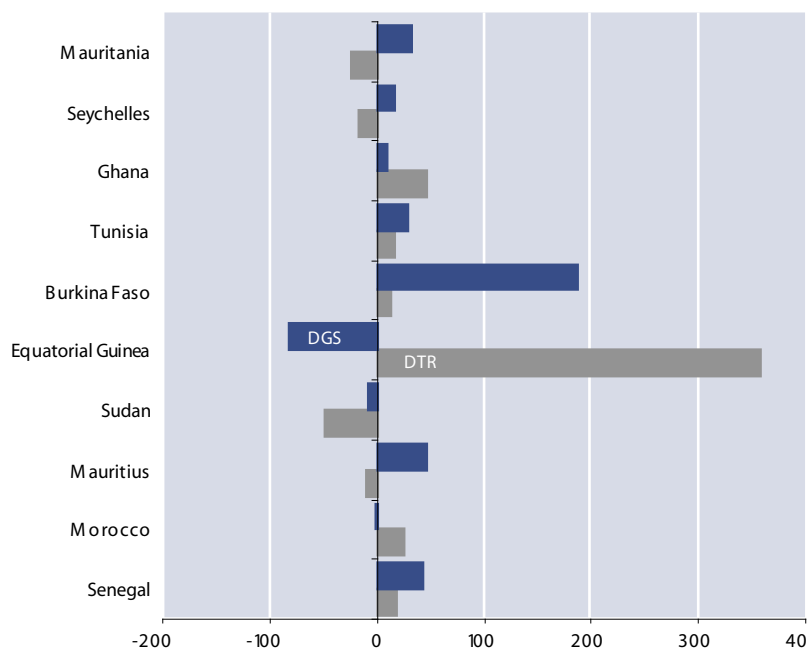
Cumulative change in trade tax revenues (TR) and total tax revenues (TTR) in fast-liberalizing countries, 1995-2002 (%)



Source: ECA, from official sources

Figure 6.8

Cumulative change in domestic direct (DTR) and indirect (DGS) tax revenues in fast-liberalizing countries, 1995-2002 (%)



Source: ECA, from official sources

Table 6.3

Macroeconomic trends in fast-liberalizing countries, 1995-2002

	Black market premium	Terms of trade	Inflation	GPD per capita growth
Mauritania	Decreasing	Deteriorating	Decreasing	Low
Seychelles	Decreasing	Fluctuations	Increasing	Negative
Ghana	Decreasing	Fluctuations	Decreasing ^a	Low
Tunisia	Increasing	Fluctuations	Decreasing	High
Burkina Faso	n.a.	Deteriorating	Decreasing	Low
Equatorial. Guinea	Decreasing	Fluctuations	Decreasing	High
Sudan	Decreasing	n.a.	Decreasing	High
Mauritius	Decreasing	Improving	Fluctuations	High
Morocco	Fluctuations	Improving	Decreasing	Low
Senegal	Decreasing	Deteriorating	Decreasing	High

Notes: Black market premium data end in 2000/01. n.a. denotes non-availability

^a while decreasing, inflation in Ghana remains above 15%. GDP per capita growth is classified "high" if the average annual rate of growth is above 2.5%. Note that Senegal is practically at the threshold (2.59%).

Sources: Africa Database (World Bank, 2003); International Financial Statistics (IMF, 2003); Economist Intelligence Unit

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Tax and non-tax
policies counteract
negative fiscal effects
of trade liberalization
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To sum up, some countries were able to counter the negative fiscal effects of trade liberalization with a mix of tax and non-tax policies (see table 6.4). Tax-policy responses mostly involved heavier reliance on indirect domestic taxes. The main non-tax policy response was strengthening macroeconomic performance; non-tax revenues played a limited role. As we see in the next section, responses on the spending side varied. In addition, several countries in the group improved the institutional environment. Better governance, especially in the form of a more efficient bureaucracy, can play a role in achieving fiscal stability. This is because it directly affects the ability of the tax agency to maintain the fiscal base for domestic taxation and to administer the tax system efficiently (see box 6.2).

Table 6.4

Summary of fiscal developments and policy responses in fast-liberalizing countries, 1995-2002

Country	Deficit	Trade tax revenue	Total tax revenue	Domestic direct tax revenue	Domestic indirect tax revenue	GC	Macro ^a	GOV
Mauritania ^b	+/-	-	-	-	+	-	Moderate	=
Seychelles	+	-	-	-	+	+	Weak	n.a.
Ghana	-	-	+	+	+	-	Moderate /weak	+
Tunisia	-	-	+	+	+	+	Moderate	+
Burkina Faso	=	-	+	+	+	=	Moderate/Weak	+
Eq. Guinea	-	-	+	+	-	-	Sound	n.a.
Sudan	-	-	-	-	=	+	Sound	+
Mauritius	+	-	=	-	+	-	Sound	+
Morocco	-	-	=	+	=	+	Moderate	-
Senegal	-	-	+	+	+	-	Sound	+

Notes: GC = government consumption; GOV = government effectiveness (see Annex A6.2 for these and other definitions of variables).

⁺ denotes increase between 1995 and 2002; = denotes no significant change between 1995 and 2002; - denotes decrease between 1995 and 2002.

^a summarizes trends displayed in table 6.3.

^b in Mauritania, the cumulative deficit change between 1995 and 2002 was positive. However, over most of the period, the overall balance was actually worsening. The sharp improvement that drove most of the cumulative change was realized between 2001 and 2002. In that period, also government revenues peaked (IMF, 2003). Estimates for 2003 suggested a further deterioration of the deficit. However, disaggregated data on TTR, DTR and DGS are not yet available for 2002/2003. They thus refer to end 2001.

Sources: Africa Database (World Bank, 2003), International Financial Statistics (IMF, 2003), Economist Intelligence Unit; data on government effectiveness from Kaufmann et al, 2001

Box 6.1

Is VAT an equitable and efficient source of revenue for the state?

Value-added tax has been introduced in some African countries, with varying degrees of success. In several African countries, VAT was introduced as part of overall tax reform during trade liberalization. In some of these countries — Algeria, Morocco, and Tunisia — VAT was administrated quite effectively and helped to boost fiscal revenue.

VAT is widely accepted as having non-distortionary effects on the economy. However, taxing consumption may be more regressive than taxing income, and this is a particular concern in poor countries, especially as in many of their economies commodity taxes have traditionally accounted for a higher proportion of government revenues than income taxes. In addition, VAT tends to be less effective in developing countries that have large informal sectors.

In practice, the revenue performance of VAT and its distributional effects will depend on the tax's specific design and on the quality of its administration. For equity reasons, multiple rates and exemptions can be used, although these complicate the administration of the tax and can lead to efficiency losses. In Ethiopia, studies have shown that VAT is in fact progressive, with the richest 10% of the population facing the highest effective VAT rate. The introduction of VAT has also unlocked new sources of revenue which have supported spending on health, education and poverty alleviation programmes.

Currently, VAT compliance is low in many African countries. In Zambia, for example, non-compliance is estimated at 50% because of the failure by businesses to register as taxpayers or to file tax returns and as a result of under-reporting of sales for tax purposes. The introduction of VAT should therefore be accompanied by the strengthening of tax administration to maximize efficiency. There should be a reduction of bottlenecks, such as delays on VAT refunds to companies, which can negatively affect business liquidity. VAT exemptions should be minimized, to simplify administration, and registration thresholds need to be set at an appropriate level.

Sources: Abed, 1998; Mackenzie, 1991; Munoz and Sang-Wook Cho, 2003; Pellechio and Hill, 1996

“VAT is considered non-distortionary”

Box 6.2

Improving tax administration is the key to higher revenue

Tax evasion lowers fiscal revenue in Africa. Most African countries suffer from a “tax gap” — the difference between the tax payable and that collected — of more than 40%. This is caused by inefficient administration within the taxation system. Improving tax administration could reduce the gap and enhance fiscal revenue. Key problems that need to be addressed in tax administration reform include the lack of financial and material resources, poorly trained staff, ineffective procedures, the absence of effective taxpayer services and corruption.

Tax evasion has a negative externality: businesses may feel that they are facing unfair competition from those evading taxes, reducing their own motivation to pay. Strengthening tax administration therefore has the potential to improve voluntary compliance. Establishing monitoring units

Box 6.2 (continued)

Improving tax administration is the key to higher revenue

for different groups of taxpayers such as small- and medium-sized enterprises has been effective in some cases. Frequent auditing can also improve compliance, as in Uganda, where 60% of firms are audited.

In 1985, Ghana restructured its tax system. Before the reform, morale among staff was low, corruption was rife and qualified personnel were difficult to attract and retain. Under the reform, institutions were restructured, human resource issues, such as pay and incentives, were reviewed and training programmes were put into place. Audit practices were improved and in 1989 the tax system was computerized allowing the introduction of unique taxpayer identification numbers. Following the reform, fiscal revenue increased despite reductions in trade tariffs.

Sources: Abed, 1998; AERC, 1998; Chen and Reinikka, 1999; Tanzi and Casanegra de Jantscher, 1987

Country experiences and lessons

The experiences of the fast-liberalizing countries have several common features, but also some important differences. The effects of trade liberalization in four of these countries illustrate the importance of tax policy responses and macroeconomic stability in containing the negative fiscal impacts of liberalization. In Senegal, early liberalization efforts combined with a poor macroeconomic environment pushed up the fiscal deficit but, in the second half of the 1990s, improving macroeconomic conditions and good tax-policy responses led to improvements in the fiscal situation. Ghana applied a set of policy responses similar to those in Senegal, but against an unstable macroeconomic background. Seychelles and Mauritius suffered from increasing deficits during liberalization over the second half of the 1990s. However, most of the deterioration in the fiscal stance was as a result of external shocks and changes on the spending-side of the budget, rather than from the negative revenue impact of trade policy reforms. In addition to examining the experience of fast liberalizers, it is worth looking at what happened at the other end of the spectrum. The Central African Republic, for instance, experienced fiscal difficulties.

Senegal – higher domestic taxes and an improved macroeconomic environment

The first attempts at trade liberalization in Senegal took place in the second half of the 1980s with a phased reduction in quantitative restrictions along with tariff cuts. This failed to stimulate trade (see figure 6.9) and led to a fall in international trade tax revenues from 4.45% of GDP in 1985/1986 to 3.78% in 1989/1990. As a result, the fiscal deficit (excluding grants) grew from 3.8% in 1985/1986 to 4.4% in 1989/1990. The rising deficit was also exacerbated by a decrease in revenues from domestic taxes on goods and services.

A more recent phase of trade liberalization began in 1994. In that year, following a prolonged economic and financial crisis, the CFA franc (the common currency in the sub-

region) was devalued, heralding a phase of economic recovery. A further decisive push to liberalization came with the adoption of a common external tariff by the West African Economic and Monetary Union (UEMOA) in 1997, with full implementation in January 2000. The index of trade restriction decreased from 7.06% in 1997 to 6.15% in 1999 and 4.12% in 2000. A similar downward trend is seen in the IMF index of trade restrictiveness, which fell from 8 in 1997 to 6 in 1998 and 1999 and then to 5 in 2000.

The impact on trade tax revenues of the second wave of liberalization was sharp: these fell from 5% of GDP to 2.5% between 1995 and 2002. The policy response was to increase revenues from domestic taxes (see figure 6.10). In particular, the reliance on taxes on goods and services increased through VAT reform (rates were unified in September 2001). On the expenditure side, government consumption decreased and the public sector wage bill was cut from 48% of the total budget to 34%.

Improved macroeconomic performance also helped to buffer the impact of the decline in revenues. Per capita GDP returned to positive growth of 2.5% between 1995 and 2002, after several years of contraction. Aggregate GDP growth was above 5% after 1994 and averaged just under 5% between 1995 and 2002, following six years of low and negative growth. The inflationary consequences of devaluation were quickly stabilized. Inflation jumped to 32% in 1994, but was reduced to 7.85% in 1995 and 2.75% in 1996. It has remained fairly low since then, despite moderate increases in the early 2000s. The black market premium also fell from 6% to 1%.

The overall fiscal outcome from such responses was positive. Total tax revenues increased from 15.7% of GDP in 1995 to slightly more than 17% in 2002. The deficit fell from 3.5% of GDP in 1995 to 1.8% in 2002 although it reached 3.2% in 2001. The 2002 outturn and estimates for 2003 show continuous progress towards balance.

Ghana – macroeconomic instability hampers fiscal performance

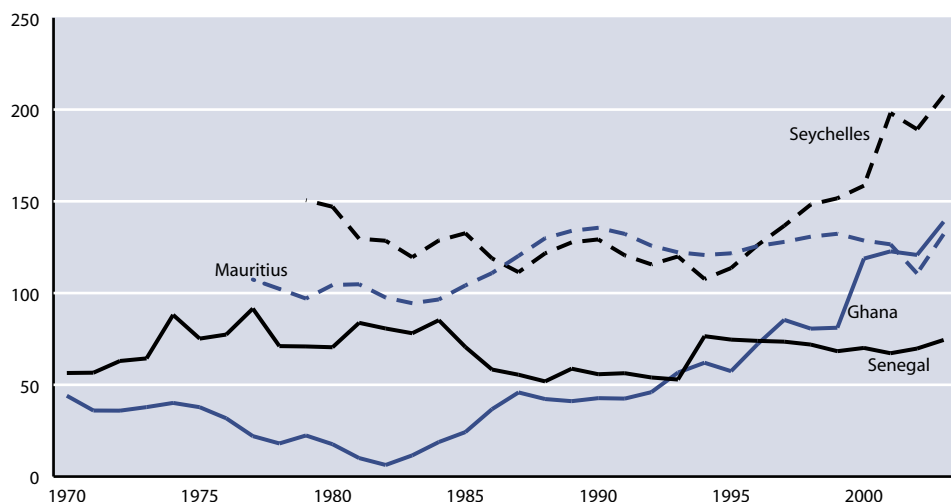
Ghana has a long history of monetary and fiscal instability. There were large swings in inflation during the 1990s, with the rate never falling below 10% and a peak of 60% in 1995. Inflation declined during the second half of the 1990s, reaching 15% in 2002. The fiscal deficit fluctuated above 10% of GDP for much of the 1990s and only in 2000 returned to the single-digit level. High and unpredictable inflation and large deficits hampered overall economic performance and forced Ghana into low-growth equilibrium (ECA, 2003). After wide fluctuations during the 1970s and early 1980s, the real GDP per capita growth rate has stabilized since 1985 at below 3%.

Given this fragile macroeconomic environment, the risk that trade liberalization would push the country back into a situation of growing deficits and fast growth of monetary aggregates was, and still is, high. Between 1995 and 2002, the index of trade restriction declined from 8% to around 2.5%. Helped by favourable trends in international prices and the terms of trade, trade as a percentage of GDP doubled between 1995 and 2002 (see figure 6.9).

“ VAT reform increased the reliance on taxes on goods and services ”

Figure 6.9

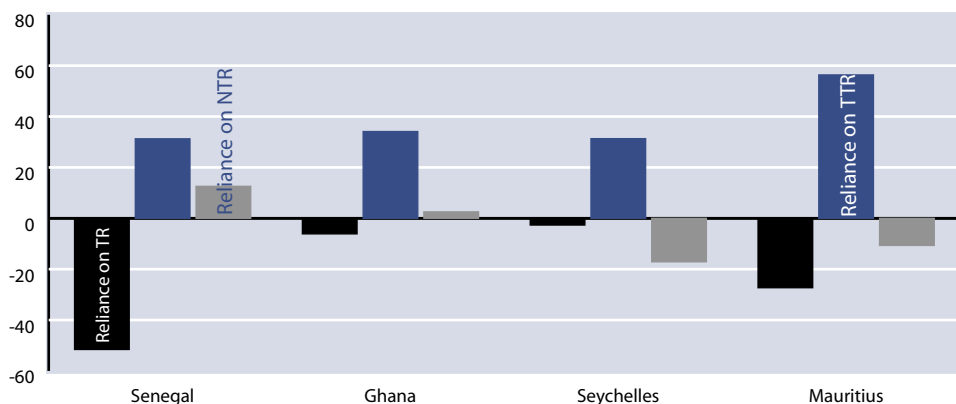
International trade in four fast-liberalizing countries, 1970-2003 (% of GDP)



Source: ECA, from official sources

Figure 6.10

Cumulative change in tax and non-tax revenue reliance in four fast-liberalizing countries, 1995-2002 (%)



Notes: TR = trade tax revenues; TTR = total tax revenues; NTR = non-tax revenues (see Annex A6.2 for definitions of variables).

Source: ECA, from official sources

International trade tax revenues went up between 1995 and 1998 as trade volumes, clearly compressed in the pre-liberalization regime, began to grow. Thus, the expansion of the tax base was initially sufficiently strong to more than offset the effect of lower tax rates. During the period, total tax revenues as a percentage of both GDP and government revenues also increased, while the reliance on non-tax revenues fell from 28% to about 14%. Despite this, the deficit increased.

In the late 1990s, trade liberalization began to have a negative impact on trade tax revenues, which fell by 45% between 1998 and 2002. Appropriate responses had to be put in place to prevent further deterioration of the fiscal stance. As in Senegal, domestic taxation increased as reliance on trade tax revenues went down. After an initial fall between 1998 and 1999, total tax revenue was kept stable through increases in taxes on domestic goods and services and higher direct taxation. The reliance on non-tax revenues also increased (see figure 6.10). Government consumption remained fairly stable between 1995 and 1999 at around 8% of GDP. The level of consumption later declined, as attempts were made to cut overall expenditure in response to lower trade tax revenues. The share of the budget allocated to public sector wages fell slightly between 1995 and 2001, although in 2002 expenditures again increased because of grade adjustments in the Ghana Education Service and the payment of duty allowances to public health system operators.

“
Liberalization can
produce higher tax
revenues
”

The case of Ghana illustrates how the fiscal effects of trade liberalization interact with broader macroeconomic factors. When liberalization produced higher tax revenues between 1995 and 1998, the deficit increased because a lax fiscal policy pre-dated liberalization. Eventual progress on fiscal stabilization was made thanks to tax reforms introduced in 1999, even as trade liberalization began to have a negative impact on revenues.

Seychelles and Mauritius – policy responses blunted by low growth and high spending

Seychelles and Mauritius are the two fast-liberalizing countries that saw significant deteriorations in their fiscal positions between 1995 and 2002. In both, revenues from trade taxes fell as trade restrictions were reduced.

In Seychelles, trade liberalization led to a modest fall in trade tax revenues (see figure 6.10). Trade tax revenues fell from 12.5% of GDP in 1995 to 9.8% in 1996 and then stabilized at above 10% of GDP. With the exceptions of 1994 and 1995, the deficit was high throughout the 1990s. However, the peaks seen between 1998 and 2000 when the deficit ranged between 15% and 24% of GDP occurred when revenues from trade taxes were fairly constant and total tax revenues were even increasing.

Fiscal problems in the Seychelles were heavily influenced by broader macroeconomic factors. The economy is driven by the tourism and tuna-fishing sectors, which were both sluggish between 1998 and 2002. Tourism suffered again following the 11 September attacks in 2001, but it was equally damaged by cost factors, reflecting the overvaluation of the currency, and these pushed tourists towards competing destinations such as Madagascar, Mauritius and Comoros. Falling income levels reduced the tax base; revenues from direct taxation fell by around 2% of GDP between 1999 and 2001/2002. At the same time, there were increases in government consumption, social welfare expenditure and the public sector wage bill, forcing total spending upwards.

In Mauritius, trade tax revenues fell between 1995 and 2002 while reliance on domestic taxes increased (see figure 6.10). A small decrease in revenues from direct taxes on profits and incomes was more than compensated for by higher indirect taxes, especially by the

increase in the VAT rate from 10% to 12% in 2001. Non-tax revenues fell from 15.3% of total revenues in 1995 to 5.4% in 1996, and then peaked at over 14% in 1997 and 1998 before returning to around 10%.

The fiscal deficit rose in 1996 and 1997 as tax and non-tax revenues fell before returning to around 4% of GDP. In 2001 and 2002, the deficit rose to over 6% of GDP. With total revenues almost unchanged, the upsurge in the deficit resulted from higher capital spending.

In both countries, the fiscal impact of trade liberalization was exacerbated by poor growth performance (in Seychelles) and by higher public spending (in Mauritius). Despite attempts to buffer the impact of trade liberalization by increasing domestic taxation, these other factors hampered fiscal stabilization and led to larger imbalances.

Central African Republic – a non-liberalizing example

In several African countries the index of trade restrictions increased over 1995-2002. Some non-liberalizers experienced fiscal difficulties. In cases such as the Central African Republic, this stemmed from the fact that countries were operating on the downward sloping side of the Laffer curve (see figure 6.5). Increased restrictions compressed trade and led to a contraction in revenues. The index of trade restriction in the Central African Republic increased from 8.1% in 1996 to 14.3% in 2001. Trade dropped from 44% of GDP in 1997 to only 27% in 2001. The cumulative change in trade tax revenues was close to zero, with 2001 revenues being slightly below their value in 1995, and much below their 1998 value (see table 6.5). Among the group of countries that also saw increases in trade restrictions, Burundi experienced similar outcomes.

Table 6.5
Central African Republic: trade restrictions and fiscal developments, 1995-2002

	TR	TTR	DGS	DTR	TR reliance	TTR reliance	NTR reliance	
Cumulative change (%)	-1.10	6.90	8.52	20.80	-15.70	-7.56	197.10	
	1995	1996	1997	1998	1999	2000	2001	2002
GDP growth	4.90	-8.10	7.50	3.90	3.60	1.80	1.00	0.80
GDP per capita growth	3.84	-6.67	2.74	2.53	1.82	0.91	0.05	-1.15
Inflation	19.19	3.72	1.61	-1.89	-1.41	3.20	3.83	2.30
Deficit	-11.40	-4.96	-6.30	-8.61	-8.68	-9.27	-7.94	n.a.

Estimates for 2003: Aggregate GDP growth -0.7%, Inflation 3.2%, per capita GDP -2.61%

Notes: TR = trade tax revenue; TTR = total tax revenue; DGS = taxes on domestic goods and services; DTR = direct tax revenues; NTR = non-tax revenues.

Source: ECA, from official sources

The revenue structure of the Central African Republic changed in response to its decreasing international trade tax revenues. The fall in trade taxes was compensated for by greater reliance on non-tax revenues. Total tax revenues as a percentage of GDP went up as a result of increasing revenues from indirect and direct taxation. These fiscal developments took place against a difficult macroeconomic background. Real GDP growth fell before stagnating in the early 2000s and real per capita GDP started to decline in 2002. Although inflation fell from 19.2% in 1995 to 2.3% in 2002, this was the result of the economic slowdown. The fiscal deficit fell, but it remained well above 6% of GDP throughout the period. The policy response was successful in preventing further deterioration of the fiscal stance.

“Improving the tax administration increases the leverage of the economic base”

Conclusions

Because African countries rely on international trade taxes for a large share of their total revenues, the policy challenge is how to maintain fiscal stability when liberalizing trade. The experience of industrial economies shows that at advanced stages of economic development the revenue side of the budget can be structured in such a way to achieve a stable fiscal position even with negligible revenues from trade taxes. However, it is clear that for developing and low-income economies the problem is more complicated: bottlenecks and structural constraints exist, which limit the domestic economic base and the ability to tax it. This explains both the high reliance on trade taxes and the resistance to trade liberalization by some governments.

Trade liberalization is most likely to pose serious fiscal problems at later stages. Early liberalization can actually result in increasing revenues, as the trade-increasing effects of lower tariffs may be sufficiently strong to compensate for reduced tax rates. Countries operating at a level of trade restriction above a given threshold will see increases in revenues as a result of trade liberalization, but most African countries are now below this threshold. Further trade liberalization will therefore lead to smaller trade tax revenues. Without appropriate responses, this will push down total tax revenues, with adverse effects on the fiscal deficit. The experience of fast-liberalizing countries provides some lessons on the type of responses that can be implemented:

- The decrease in trade tax revenues can be matched by an increase in revenues from domestic indirect taxation. In particular, most countries have increased reliance on VAT, which reduces the possibility of evasion and does not hurt the external competitiveness of domestic producers.
- Tax administration should also be strengthened in order to increase both the leverage on the existing economic base and the economic base itself. This will involve reducing inefficiencies in tax administration and collection, eliminating tax holidays and reinforcing co-operation with tax agencies in other countries.
- The macroeconomic environment heavily affects the fiscal deficit. By achieving a sound macroeconomic stance (e.g. low and predictable inflation, high GDP growth), countries can progress toward fiscal stability even during fast

liberalization. Careful management of the spending side of the budget is required, to avoid sharp rises in government consumption.

- The fiscal stance is also affected by the quality of governance, especially the efficiency of the bureaucracy and the stability and predictability of the political environment. Effective institutional reform is likely to help fiscal consolidation.

This mix of tax and non-tax policy interventions can buffer the negative fiscal effects of liberalization, without the need to cut crucial spending items related to infrastructure development, poverty reduction, social security and welfare.

Annexes

A6.1 Tax Revenues and Trade Restrictions

Trade restriction index

A problem widely debated in the literature is how to measure trade liberalization (Rodriguez and Rodrik, 1999; Dollar and Kraay, 2001). Trade volumes are likely to reflect factors in addition to trade policy measures. At the same time, information on statutory tariffs is often fragmented for African countries. A feasible alternative is to look at the effective rate of taxation on international trade, which is a measure of average “realized” tariffs (Khattry, 2002). Trade tax revenues are a function of the tariff rate and the tariff base:

$$\text{Trade tax revenues} = \text{tariff rate} \times \text{tariff base}$$

Here, the tariff base is trade values, so:

$$\text{Trade tax revenues} = \text{tariff rate} \times \text{trade values}$$

Re-arranging gives the index of trade restriction:

$$\text{Tariff rate} = \text{trade tax revenues} / \text{trade values}$$

This gives an idea of “realized” tariffs: the measure is based on how much tariff revenue is actually collected. The measure will differ from official tariffs because of imperfect collection and measurement errors.

Data are available to construct the index for fairly long time periods for most African countries. There are limited data on official tariffs and tariff revenue. But for overlapping periods and countries, the index correlates strongly with the tariff rates reported in Dollar and Kraay (2001).

Estimation

Much of the analysis of the fiscal implications of trade liberalization has focused on the estimation of correlations between trade restrictions (and/or volumes of trade) and revenues from trade tax revenues (and/or total tax revenues). The regression model for this type of analysis usually includes a large number of control variables. From a comparative survey of the existing literature, the following are identified as the most widely-used regressors:

(a) the terms of trade index, (b) the real effective exchange rate index, the initial level of per capita GDP, (c) sector shares of GDP, (d) the level of revenues from other forms of taxation, (e) the level of major spending items (typically government consumption in percent of GDP), and (f) indicators of trade restrictions and trade volumes in both linear and non-linear form.

The trade tax revenues regression equation will therefore include all of the above, plus an indicator of institutional quality to proxy for the administrative capabilities of the tax agency. The results of the panel estimation are reported below in the table A6.1. Dynamic models, estimated by the Generalized Method of Moments estimator of Arellano and Bond (1991), produce results that are not qualitatively different from those retrieved from static equations. Because several of the control variables in the basic model happen to display non-significant coefficients, estimates obtained from a more parsimonious specification of the model are also reported. It can be seen that the non-linear effect of trade restrictions and volumes does persist.

The last column of the table displays the estimated coefficient from a regression of total tax revenues. When estimating such a model, the inclusion of trade tax revenues among the set of regressors raises a problem of multi-collinearity. This is obvious since several variables (especially those related to external shocks and competitiveness) affect total tax revenues mostly through their impact on trade tax revenues. To overcome the problem, the total tax revenues regression includes a small set of controls in addition to trade tax revenues. The estimated coefficients confirm that holding revenues from indirect taxation constant, the correlation between trade tax revenues and total tax revenues is positive.

The regression was repeated using average official tariff rates. This reduced the sample size because of limited official tariff data, reducing statistical significance. The results are qualitatively unchanged, indicating a non-linear relationship as before. Experimenting with the set of controls (for instance, dropping one of the controls that do not pass a zero restriction test) reveals that the coefficient on squared official tariffs is in fact different from zero in most specifications. This is unsurprising since the two measures are conceptually identical, although will differ empirically because of measurement errors.

A6.1 Econometric results

	TR	TR	TR	TR	TTR
TOT	0.369786 ^c	-0.19952	0.505052 [*]	-0.35654	
REER	-0.5941 ^c	-0.39826	-0.51747 [*]	-0.42944	
GDP p.c.	0.089759 ^c	0.143462 ^b	0.451289 ^b	-0.73926	
Institution	0.074514	0.214104	0.361056 [*]	0.573442 ^c	-2.05217 ^b
Agriculture	-0.04326	0.060569			
DGS	-0.04936	-0.00618			
GC	0.048376	0.04221			
Urban					0.084466 ^c
ITR	0.804888 ^b		0.901305 ^b		
(ITR) ²	-0.02476 ^c		-0.03057 ^a		
TRADE		0.08677 ^b		-5.36E-05 ^b	
(TRADE) ²		-0.00033 ^b		0.054565 ^b	
TR					1.00995 ^a

Notes: See A6.2 table for definitions of variables. The dependent variable is total revenues from trade taxes in per cent of GDP (TR) for the first four columns and total tax revenues in per cent of GDP (TTR) for the last column. Constant term is not reported.

^a denotes significance at 1% level.

^b denotes significance at 5% level. ^c denotes significance at 10% level.

Source: Calculations by ECA

A6.1: Econometric results

The data set used for this chapter is a panel of annual observations taken over the period 1980-2002/03. All African countries are included with the exception of Democratic Republic of Congo, Eritrea, Liberia, Libya and Somalia, for which no data are available on several of the variables of interest. Variable definitions and abbreviations are given in the table below.

The panel has been assembled from a variety of sources. The World Bank's Africa Database provides time-series for most of the variables over the period 1980-2001. Strings for each country have been updated using the IMF *International Financial Statistics 2003* and *Government Financial Statistics 2003*, the IMF *World Economic Outlook 2003*, the IMF Country Reports produced in 2002 and 2003, and the Economist Intelligence Unit. Clearly, when combining data from different sources, a preliminary check of consistency of the series was undertaken. This check also involved, for sufficiently long strings, a test of structural breaks. Data on political and institutional variables are from Kaufman et al. (2001) and the Polity IV Database. Finally, the data on non-African countries are obtained from various issues of the *World Development Indicators* of the World Bank.

For 2003, most of the data are still projections or estimates. For this reason, the analysis generally focuses on the period up to 2002. Moreover, in a limited number of cases (i.e. Central African Republic) data on some of the fiscal variables are produced with a one- or two-year lag (i.e. none of the sources in 2003 reports data after 2001). However, 2002 is the reference year for the large majority of countries and variables, and hence in the text it is commonly indicated as the end of the sample period

A6.2 Description of the data set and variables

Variable	Abbreviation	Definition
Deficit	DEF	Fiscal deficit excluding grants (% of GDP)
Lagged deficit	LDEF	One period lagged value of deficit
Age dependency ratio	DEP
Inflation	DCPI	Annual rate of change of consumer price index
Total tax revenues	TTR	Total revenues from taxation (% of GDP)
Trade tax revenues	TR	Revenues from taxes on international trade (% of GDP)
Taxes on domestic goods and services	DGS	Revenues from domestic taxation of goods and services, including revenues from VAT and other indirect taxes on consumption (% of GDP)
Direct tax revenues	DTR	Revenues from direct taxes on domestic profits and incomes (% of GDP)
Non-tax revenues	NTR	Revenues from sources other than domestic and international taxes, including revenues from entrepreneurial activities of the public sector, administrative fees, and fines (% of total government revenues)
Government consumption	GC	Consumption expenditure of central government (% of GDP)
Grants	GRANTS	Total grants received by the country (% of GDP)
Population	POP	(Log) of total population
Agriculture share	AGR	Contribution of the agricultural sector to value added GDP (%)
Urbanization	URB	Total population share of population living in urban areas (%)
Terms of trade	TOT	(Log) index of terms of trade. An increase in the index denotes improvements in the terms of trade
Shocks to terms of trade	DTOT	First difference of TOT
Real effective exchange rate index	REER
International trade	TRADE	Total trade (exports plus imports) of goods and services, excluding financial services (% of GDP)
Trade restriction index	ITR	Effective tax rate on international trade, measured by revenues from trade taxes as a percentage of trade volumes
Major political changes	POLCH	Dummy variable taking value 1 in year t if in that year a major political change was observed. Major political changes include: (a) change in the institutional system, (b) change in the ideological orientation of the government, (c) change in the degree of democracy of institutions
Government effectiveness	GOV	Indicator of the effectiveness of government, broadly defined to include the efficiency of the bureaucracy, the credibility of government statements and policies, the reliability of the public administration, all obtained from survey data

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