

In the Wake of the Global Economic Crisis:

Adjusting to Lower Revenue of the Southern African Customs Union in Botswana, Lesotho, Namibia, and Swaziland



Joannes Mongardini, Dalmacio Benicio, Thomson Fontaine,
Gonzalo Pastor, and Geneviève Verdier

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Abstract*

Following the negative impact of the global economic crisis, the Southern African Customs Union (SACU) is facing a significant decline in revenue collections. This decline will have a large impact on transfers over the medium term to the smaller economies of SACU, namely Botswana, Lesotho, Namibia, and Swaziland (BLNS). This paper provides estimates of the revenue shortfall for each of the BLNS countries and proposes a strategy for the necessary adjustment to preserve fiscal and debt sustainability. It concludes that the challenges of the adjustments are significant, particularly for Lesotho and Swaziland, and that an appropriate mix of revenue and recurrent expenditure measures, with particular emphasis on reducing the wage bill, could restore debt sustainability over the medium term without unduly affecting economic growth and poverty alleviation.

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Introduction

After one hundred years of existence, the Southern African Customs Union (SACU) is facing one of its biggest challenges. Since 2009, the global economic crisis has significantly reduced its revenue outlook, which is having a disproportionate impact on its smaller member countries, and which calls for an appropriate policy response. From fiscal year 2004/05 through 2007/08, customs and excise revenue collections within the union were consistently higher than projected, reflecting booming import growth in the region and resulting in windfall revenue payments from the common SACU pool to Botswana, Lesotho, Namibia and Swaziland (BLNS). This boom turned out to be unsustainable. During the last two fiscal years (2008/9 and 2009/10), revenues (especially customs duty collections) have been lower than anticipated so that the BLNS will be required to make repayments to the common pool in line with the 2002 SACU agreement. This will significantly reduce the BLNS net transfers from the common pool in the near term, from about 5 percent of GDP for Botswana to around 23 percent of GDP for Lesotho. Receipts are expected to recover somewhat thereafter.¹

The size of the required cumulative fiscal adjustment to bring about fiscal and debt sustainability is estimated to be around 6 percent of GDP for Namibia to around 16 percent of GDP for Swaziland. These estimates were discussed by IMF staff with country authorities in 2010, before the publication of South Africa's Medium-Term Budget Policy Statement on

¹Appendix 1 provides a description of the history of SACU and the corresponding revenue-sharing formula.

October 27, 2010. This statement projects higher SACU transfers from the common revenue pool to the BLNS countries over the medium term. However, there are significant downside risks to these revised projections, including a possible change in the SACU revenue-sharing formula, a slowdown in South Africa's economic growth, a reduction in the common external tariff rates because of trade liberalization, and the creation of the Southern African Development Community (SADC) customs union. In this respect, the adjustment estimates in this paper can be seen as a low case scenario.

This paper provides recommendations about the proper fiscal response by the BLNS countries to the decline in SACU revenue. An adequate fiscal response is essential for preserving fiscal and debt sustainability, while safeguarding priority spending for growth and poverty alleviation. The decline in SACU revenue and the case for fiscal adjustment in the BLNS countries are described in Chapter 2. Chapter 3 outlines the international experience with fiscal adjustments, a comparison of the size of government in the BLNS countries, and simulations of different policy adjustments for Swaziland, based on a dynamic general equilibrium model. Chapter 4 discusses the specific strategies the authorities have adopted in the BLNS countries, and how they may be adapted to minimize the impact on growth and poverty alleviation. Chapter 5 provides policy conclusions.

The main conclusions of this paper are that:

- The need for fiscal adjustment from the decline in SACU revenue is sizable, particularly for Lesotho and Swaziland.
- An appropriate mix of fiscal adjustment and financing should ease the adjustment process over the medium term without endangering debt sustainability, growth, or poverty reduction.
- International experience, the comparison with other countries, and the policy simulations presented in this paper all suggest that well-planned permanent expenditure cuts are the most likely to be effective and to have the least impact on growth. In particular, a comprehensive civil service reform to reduce the sizable wage bill seems a priority for all BLNS countries.

The Impact of the Crisis on SACU Revenue and the Need for Fiscal Adjustment

Prior to 2009, all the BLNS countries had several years of strong fiscal performance (Table 1). This was largely underpinned by a vibrant mining sector in the case of Botswana and Namibia and large SACU transfers for Lesotho and Swaziland that helped finance rising spending in percent of GDP. The increase in SACU transfers between the fiscal years 2004/5 and 2007/8 was considered a permanent increase and was thus used mostly to finance recurrent expenditures, including civil service wage increases. The overall fiscal surpluses resulted in comfortable gross international reserve positions, particularly for Botswana and Lesotho. Debt and the debt-service burden are rather moderate in Botswana, Namibia, and Swaziland.

Table 1. BLNS: Benchmark Macroeconomic Conditions , 2004–08

	Real GDP growth rate ¹	Avg. inflation rate ¹	Gross reserves ²	Overall govt. balance ³	Govt. Revenue ³	Govt. Expend. ³	Public sector debt ³
Botswana	2.8	9.2	20.7	1.2	36.8	35.6	8.8
Lesotho	2.9	6.7	5.8	5.9	59.7	53.8	50.4
Namibia	5.1	6.2	2.2	0.5	29.1	28.7	26.5
Swaziland	2.4	7.1	2.8	0.4	37.0	36.6	17.7
Memo item:							
SSA average ⁵	5.8	8.7	3.6	0.1	27.2	27.1	36.0

Source: African Department Regional Economic Outlook database.

¹In percent.

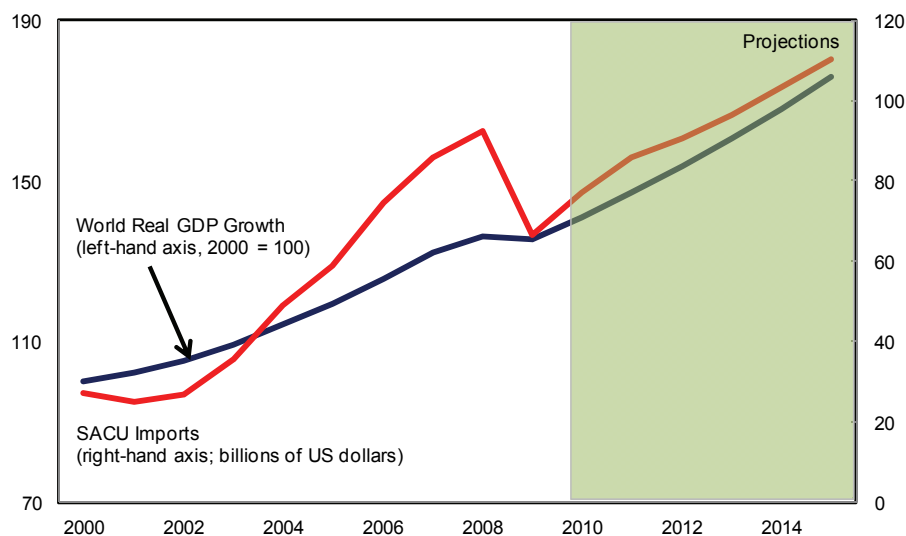
²In imports of goods and services.

³In percent of GDP.

⁴Average for 2006-08.

⁵Gross reserve levels are for SSA oil-importing countries.

Figure 1. World GDP Growth and SACU Imports, 2000–15



Source: Country authorities, *World Economic Outlook*, and IMF staff estimates and projections.

The global economic crisis has had a large impact on SACU imports. Following the onset of the crisis, the dollar value of SACU imports declined at an annual rate of 28.1 percent in 2009 (Figure 1). This reflected the contraction of economic activity in the region. Notwithstanding an incipient recovery in the region in 2010, imports are not expected to return to the 2008 peak until 2012 and will grow broadly in line with world real GDP growth thereafter.

The impact of the import decline on SACU revenue is expected to be larger for the smaller members of the union. First, the decline in customs revenue implies a smaller common revenue pool to be shared across SACU members. This will affect the smaller SACU members the most, given the importance SACU transfers have in percent of total revenue and of GDP in the BLNS countries, particularly Lesotho and Swaziland. Second, the decline in excises will have a smaller negative effect on smaller SACU members, which will partly be mitigated by the development component of the revenue-sharing formula.² Overall, the effect of these two elements makes for a highly

²Excises were not affected as much. Given that South Africa gets almost 98 percent of the excise component of the revenue-sharing formula, the impact on South African revenue transfers has been significantly smaller.

Table 2. BLNS: SACU Revenue Adjustment by Size and Length

	Adjustment Size			Length of Adjustment In years	Distribution of Adjustment (in %)		
	As % GDP	As percent of Government ¹			FY 2010/11	FY 2011/12	FY 2012/13
		Tax revenue	Total Expenditure				
Botswana	-5.2	-12.9	-26.9	2.0	72.0	28.0	0.0
Lesotho	-23.3	-38.1	-46.2	2.0	90.0	10.0	0.0
Namibia	-7.7	-19.4	-23.3	2.0	51.0	49.0	0.0
Swaziland	-15.9	-23.3	-25.3	3.0	69.1	20.6	10.3

Source: IMF staff calculations.

¹Ratios for FY 2009/10.

procyclical revenue-sharing formula for the BLNS countries: the revenue gains during the boom period of 2004/05–2007/08 will now be partially reversed and require a significant fiscal adjustment to maintain fiscal and debt sustainability.

IMF staff estimates a large revenue shortfall for the smaller economies of SACU (Table 2). While the impact on South Africa is expected to be small (0.3 percent of GDP), the SACU revenue shortfall in Lesotho and Swaziland will be 23.3 and 15.9 percent of GDP, respectively, over the next three fiscal years.³ The shortfall in SACU revenue is aggravated by the repayment of the advances for FY 2008/09 and FY 2009/10, which will further depress SACU transfers to the smaller countries until 2011/12 (2012/13 for Swaziland), when a more gradual recovery is expected. For Swaziland, the adjustment is assumed to take longer, given the amount of repayments due to the revenue pool.

A large percentage of the decline in SACU transfers is likely to be permanent. As shown in Figure 1, the increase in SACU imports during 2004/05–07/08 was transitory, reflecting an increase in SACU imports of goods with a high duty component (e.g., automobiles), which is unlikely to be repeated in the near future. In addition, the push for trade liberalization and the introduction of other regional trade arrangements are likely to put downward pressure on SACU revenue over the medium and long term. While it is difficult to

³The fiscal year in each of the SACU countries starts on April 1.

quantify exactly the permanent component of these effects, it is likely to be significantly larger than the temporary component. For this paper, SACU revenues are projected to go back in percent of GDP to the average of the pre-boom period over the medium term. This may turn out to be a low case scenario, given the upside potential for higher SACU imports if domestic demand recovers faster and the recent appreciation of the South African rand strengthens SACU import demand.

There are also significant downside risks of a larger decline in SACU revenue to the BLNS countries than currently estimated. Potential risks include: (i) a possible change in the SACU revenue-sharing formula, which may reduce transfers to smaller SACU members; (ii) a further slowdown in the global economy and South Africa's economic growth; (iii) a reduction in the common external tariff rates because of trade liberalization; and (iv) the creation of a South African Development Community customs union, which may comprehensively change the current revenue-sharing arrangement and adversely affect all SACU members. These downside risks highlight the need for cautious SACU revenue projections in the future and for building up fiscal buffers to offset future shocks.

On the expenditure side, the BLNS authorities implemented countercyclical fiscal policies in response to the global economic crises. These measures helped sustain economic activity in domestic demand (e.g., construction, manufacturing, services sectors), which partially offset the contraction in external demand, like the mining sectors of Botswana and Namibia. In Namibia, the 2009/10 budget combined tax relief for non-mining companies and households (equivalent to 1 percent of GDP) and expenditure increases, including spending on infrastructure and social programs (0.9 percent of GDP) to offset the decline in external demand. The authorities also granted wage increases to the civil service (0.9 percent of GDP). Expenditure rose sharply in Lesotho in 2009/10, to an unprecedented level of 69 percent of GDP. In Botswana overall expenditure increased from an average 37 percent of GDP before the crisis to 46 percent of GDP in 2009/10, driven mainly by a doubling of capital spending in real terms. Most of the expenditure

increases in Swaziland went into wage increases to civil servants. The increased expenditure levels in the BLNS, aimed at cushioning the impact of the global crisis, resulted in higher fiscal deficits for all the countries. Overall, while these policies were well intentioned and did have a mitigating impact on economic activity, they came at the same time as SACU revenues started declining, thereby aggravating the fiscal adjustment needed over the medium term.

In the baseline scenario without a fiscal adjustment, debt ratios in BLNS countries would become unsustainable over the medium term. The revenue shortfall results in a significant widening in fiscal deficits and a jump in the debt-to-GDP ratios of these countries (Table 3). In particular, the debt sustainability analyses (DSAs) for all BLNS countries show that without a fiscal adjustment, debt ratios will continue to rise for the foreseeable future, which would eventually lead to an unsustainable debt position. For Lesotho, the debt-to-GDP ratio would more than double between 2009 and 2015 to over 90 percent (Figure 2). In the case of Swaziland, the debt-to-GDP ratio, at 13.3 percent in 2009, is projected to increase more than sixfold to 75.1 percent by 2015. The increase would be less severe for Botswana and Namibia, given that both countries can count on a significant amount of mineral wealth; however, the impact would still be significant.

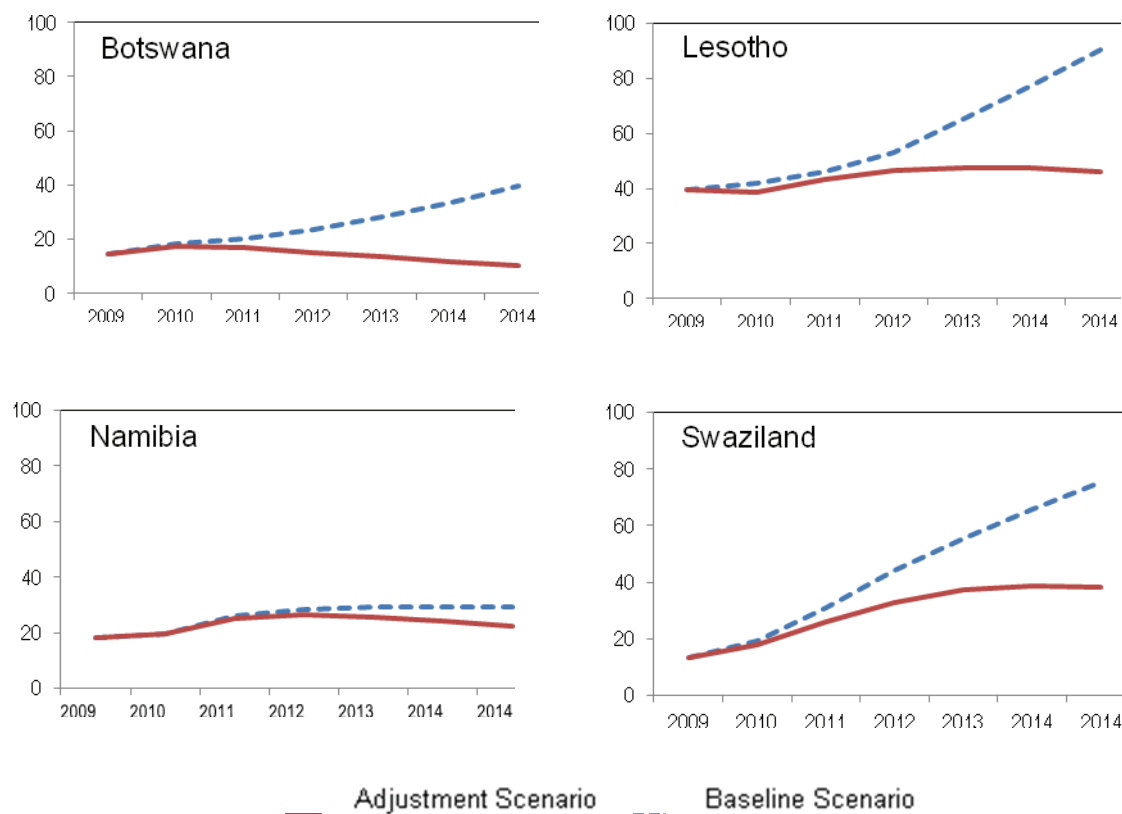
The required fiscal adjustment needed to restore fiscal and debt sustainability is substantial. IMF staff estimates that the needed size of the cumulative fiscal adjustment from 2009 to 2015 to stabilize the debt dynamics varies from around 6 percent of GDP in Namibia, 11 percent of GDP in Botswana, 12 percent of GDP in Lesotho, and 16 percent of GDP in Swaziland. This may again turn out to be a low case scenario if additional SACU revenues materialize. However, if they do, it would be advisable to save most of these revenues to offset future shortfalls, or to spend a portion of the additional revenue on capital projects that may increase growth and reduce poverty and unemployment.

Table 3. SACU: Fiscal Indicators, 2003-12
(Percent of GDP, unless otherwise indicated)

	Average					2010	2011	2012	2013	2014	2015
	2003-05	2006	2007	2008	2009	Projections					
I. Baseline Scenario											
Overall Fiscal Balance (Including grants)											
Botswana	3.1	11.2	4.7	-5.3	-14.4	-7.6	-6.5	-2.9	-2.5	-2.2	-1.6
Lesotho	4.3	15.4	11.7	12.0	-2.9	-14.9	-22.9	-13.5	-14.6	-12.8	-10.2
Namibia	-3.3	2.9	4.8	2.0	-2.8	-8.3	-8.5	-4.9	-3.4	-2.6	-2.0
Swaziland	-3.8	10.4	6.5	-0.2	-7.1	-13.9	-13.9	-14.3	-12.2	-12.1	-11.8
Public Debt											
Botswana	4.4	4.3	4.6	6.4	14.5	18.4	20.3	23.5	28.1	33.6	39.9
Lesotho	63.2	54.2	46.5	53.4	39.6	41.7	46.0	53.2	65.0	77.4	90.1
Namibia	27.1	31.1	23.6	21.8	18.2	19.6	26.1	28.2	29.1	29.3	29.2
Swaziland	19.9	17.3	18.4	16.6	13.3	19.1	31.2	44.0	55.2	65.8	75.1
II. Adjustment Scenario											
Overall Fiscal Balance (Including grants)											
Botswana	3.1	11.2	4.7	-5.3	-14.4	-6.4	-4.6	0.3	2.1	3.3	4.7
Lesotho	4.3	15.4	11.7	12.0	-2.9	-11.8	-18.6	-6.3	-2.8	-0.4	2.6
Namibia	-3.3	2.9	4.8	2.0	-2.8	-8.1	-7.8	-3.8	-1.7	-0.6	0.1
Swaziland	-3.8	10.4	6.5	-0.2	-7.1	-12.8	-9.8	-8.4	-5.1	-3.1	-2.1
Public Debt											
Botswana	4.4	4.3	4.6	6.4	14.5	17.2	17.1	15.3	13.7	11.9	10.3
Lesotho	63.2	54.2	46.5	53.4	39.6	38.6	43.4	46.7	47.6	47.5	45.8
Namibia	27.1	31.1	23.6	21.8	18.2	19.4	25.2	26.3	25.7	24.2	22.3
Swaziland	19.9	17.3	18.4	16.6	13.3	18.0	26.0	32.9	37.1	38.7	38.3
Memorandum Items:											
SACU Revenue											
Botswana	6.4	9.7	9.8	8.7	9.3	6.4	4.3	6.8	6.5	6.5	6.5
Lesotho	22.9	39.5	35.1	36.1	33.1	16.4	12.1	20.0	18.7	19.0	19.6
Namibia	8.5	12.0	12.4	11.3	10.5	6.5	2.8	5.2	7.3	8.2	8.8
Swaziland	15.7	28.4	23.3	25.2	20.3	9.3	9.3	8.9	11.0	11.1	11.4
(Billions of National Currency Units)											
Nominal GDP											
Botswana	48.7	68.3	79.9	89.5	85.6	94.9	104.9	118.4	132.6	145.7	159.2
Lesotho	7.8	9.6	11.2	13.2	14.6	15.6	17.1	19.3	21.3	23.2	25.9
Namibia	42.1	54.0	62.1	74.0	79.3	89.0	98.7	110.9	121.1	132.7	144.5
Swaziland	16.0	18.1	20.8	23.4	25.0	27.0	29.3	31.6	33.5	35.9	38.3

Sources: Country authorities and IMF staff estimates and projections.

**Figure 2. Gross Public Debt Dynamics in the BLNS
Under Baseline and Adjustment Scenarios**



Source: Country authorities and IMF staff estimates and projections.

Based on this adjustment, public debt would stabilize or fall over the medium term as a percent of GDP in all countries. The debt-to-GDP ratio would stabilize at around 10 percent for Botswana, 22 percent for Namibia, 38 percent for Swaziland, and 46 percent for Lesotho. Such levels of debt would ensure that the debt ratios remain manageable and that the debt service ratios do not affect priority spending. The following sections assess the appropriate fiscal adjustment strategy for the BLNS countries to minimize the impact on growth and poverty alleviation.

Theoretical and Empirical Evidence on Fiscal Adjustment Strategies

This section considers the optimal pace and composition of fiscal adjustment from three perspectives: (i) international evidence of previous large fiscal adjustments; (ii) cross-country comparisons of the size of government; and (iii) simulations of policy scenarios based on a dynamic general equilibrium model.

International Evidence of Previous Large Fiscal Adjustments

IMF staff has drawn a number of lessons from the international experience with large fiscal adjustments throughout the years. A credible fiscal adjustment strategy should spell out the government's medium-term debt ratio objectives, the optimal fiscal adjustment path to achieve these objectives, and broad policies underpinning the adjustment path.⁴ The key choice in this context is the target level of the government medium-term debt-to-GDP ratio. The literature on the subject generally agrees that, for emerging economies, a debt-to-GDP ratio of 40–60 percent is usually appropriate.⁵ For these economies, debt ratios that can be sustained are generally considered to be lower than those for advanced economies owing to factors such as lower and more volatile revenue bases, and less favorable

⁴See, for example, Tsibouris et al. (2006) and IMF (2010a).

⁵See IMF (2010a).

debt composition (i.e., higher share of debt that is short term, foreign currency denominated/indexed, or held by foreign residents).

International experience and academic research suggests that large sustained fiscal adjustments primarily relied on permanent cuts in expenditure, which improved the primary fiscal balance and restored debt sustainability without unduly affecting growth (Table 4). Some of these academic findings are highlighted below:⁶

- Econometric analysis using data for the last 30 years and 155 cases of fiscal adjustments suggest that a **balanced reduction of capital and current spending**, with emphasis on a durable lowering of the wage bill, worked best in bringing about fiscal adjustment while mitigating the impact on growth (see Table 4 for selected cases). Medium-term budgetary frameworks tangibly supported the adjustment by providing a road map and benchmark when additional measures were needed. While the evidence on growth is mixed, it is clear that expenditure measures to reduce recurrent spending usually had the lowest impact on economic growth.⁷
- International experience shows that durable fiscal adjustments were also based on **revenue enhancing measures**, particularly in countries with low initial revenue-to-GDP ratios and where the pace of adjustment was more gradual. This allowed for sustained implementation over time of tax policy and administration reforms. In particular, taxation that does not affect relative prices, like a value-added tax, had the least impact on growth and the allocation of resources.
- **Exiting the fiscal stimulus** enacted in the context of the global economic crisis would also improve the primary balance. Withdrawing the stimulus should be relatively easy from a technical perspective, as

⁶Tsibouris et al. (2006) define as *large* those fiscal adjustments that meet either of two criteria: (i) a continuous improvement of the primary balance of the consolidated central government in excess of 6.3 percent of GDP, or (ii) a reduction in the initial size of government expenditure larger than 21.8 percent. These large cases are therefore highly relevant for the BLNS countries.

⁷See IMF (2010b), Chapter 3.

stimulus packages included in many cases time-bound measures (e.g., public investment projects) or contained explicit sunset provisions.

- Reforming **strategic budgetary appropriations**, such as pensions and nonpriority expenditures should also support a successful fiscal adjustment without endangering poverty alleviation. Indeed, pensions and health entitlements in advanced economies represent a sizeable—and rising—share of government spending in need of reform.⁸ At the same time, recent analysis for Botswana indicates that despite high spending levels, outcomes (e.g., educational attainment, effectiveness of social safety nets) are often poorer than in other comparable countries, thus warranting urgent reforms to improve the quality of government spending and increase public savings (Appendix 2).
- **The analysis of individual country experiences also highlights the importance of structural reforms in the fiscal area.** In particular, greater transparency and improved monitoring of the fiscal stance helped focus attention on underlying policies at an early stage and generated political support. Countries with more advanced expenditure management systems faced a less arduous task when undertaking fiscal adjustments by being able to better track and control contingent liabilities and improve debt management.

An improvement in the primary balance, rather than higher economic growth, has been the main factor in the top ten largest reductions in debt ratios in advanced economies over the last three decades (Appendix 3). According to IMF staff analysis, the decomposition of the debt dynamics along its classical accounting framework shows that the contribution of the differential between growth and interest rates was significant only in a few episodes of a rapid growth catch up (e.g., Ireland, Norway, and Spain). The effect of the growth–interest rate differential was more relevant in emerging countries: it was on par with that of primary surpluses when inflation remained below 10 percent, and twice as large with double-digit inflation.

⁸See, for example, Cottarelli et al. (2009).

Table 4. Success of Fiscal Adjustment in Selected Case Studies

Case	Success	Adjustment design	Adjustment execution	Staging	Revenue measures	Expenditure measures
Brazil 1999-2003	Sustained	Revenues	Revenues w/some expenditure measures	Up-front	Increases in taxes on turnover, financial intermediation, petroleum products; increase in the state-level VAT	Efforts to contain personnel and administration expenditures at all levels of government, public investment cuts.
Canada 1999-2003	Sustained	Expenditures	Expenditures w/tax reforms	Gradual	PIT and CIT base broadening and rate reductions; increased excises.	Cuts in subsidies, defense, and wage bill; lower inter-government transfers, with subnational revenue and spending measures.
Cote d'Ivoire 1993-2000	Sustained	Revenues	Mixed, durability due to expenditure restraint	Up-front	Trade tax gains with depreciation; rationalization of VAT.	Wage restraint; lower interest payments with reduced debt stock.
Finland 1992-2000	Sustained	Expenditures	Mixed	Gradual	PIT and CIT base broadening and rate reductions; introduction of VAT.	Cuts in transfers to other levels of government (with revenue-raising measures at local levels); cuts in subsidies and wage bill.
Jamaica 1998-2001	Unsustained	Revenues	Mixed	Up-front	Numerous tax increases and adjustments (e.g., VAT, interest withholding).	Cuts in capital investment and goods and services.
Lebanon 1998-2002	Mixed; large debt burden continued	Expenditures	Expenditures and introduction of VAT	Up-front	Introduction of VAT.	Cuts in capital spending; few significant reforms in civil service, social programs, or expenditure management.
Lithuania 1999-2003	Sustained	Expenditures	Expenditures	Up-front	Payroll tax increase unsuccessful; increased excises; lower CIT rate; increase of PIT nontax minimum.	Suspension of savings restitution payments; reduced budgetary lending to companies; wage restraint; cuts in goods and services and capital spending.
New Zealand 1983-88	Sustained	Expenditures	Mixed	Gradual	PIT and CIT base broadening and rate reductions; VAT introduction.	Cuts in industrial and agricultural subsidies; net lending.
Nigeria 1990-2000	Unsustained	Revenues	Revenues	Up-front	Introduction of VAT and higher oil prices.	Unsustained wage compression (1995-97); increased spending in 1999.
Russia 1995-98	Unsustained	Revenues	Expenditure, with buildup of arrears	Up-front	Revenue performance poor through adjustment.	Cuts in transfers, subsidies, defense spending, and public investment.
Russia 1999-2002	Sustained	Mixed	Mixed	Up-front	Improved oil taxation; centralization of taxes.	Strengthened expenditure control.
South Africa 1993-2001	Sustained	Expenditures	Largely expenditure based; revenue-neutral reforms.	Gradual	Higher VAT; PIT reforms; capital gains tax introduction; improved taxation of mining and financial sectors.	Wage restraint; cuts in defense spending, subsidies, and capital investment; reorientation of spending to social categories.
Zambia 1989-94	Unsustained	Revenues	Revenues	Up-front	Import taxes; receipts from SOEs (dividends, tax arrears).	Recourse to expenditure arrears; little progress on key expenditure reforms.

Source: Tsibouris, George C., et al. (2006), Table 4.2.

Note: PIT = personal income tax; CIT = corporate income tax; VAT = value-added tax; SOE = state-owned enterprise.

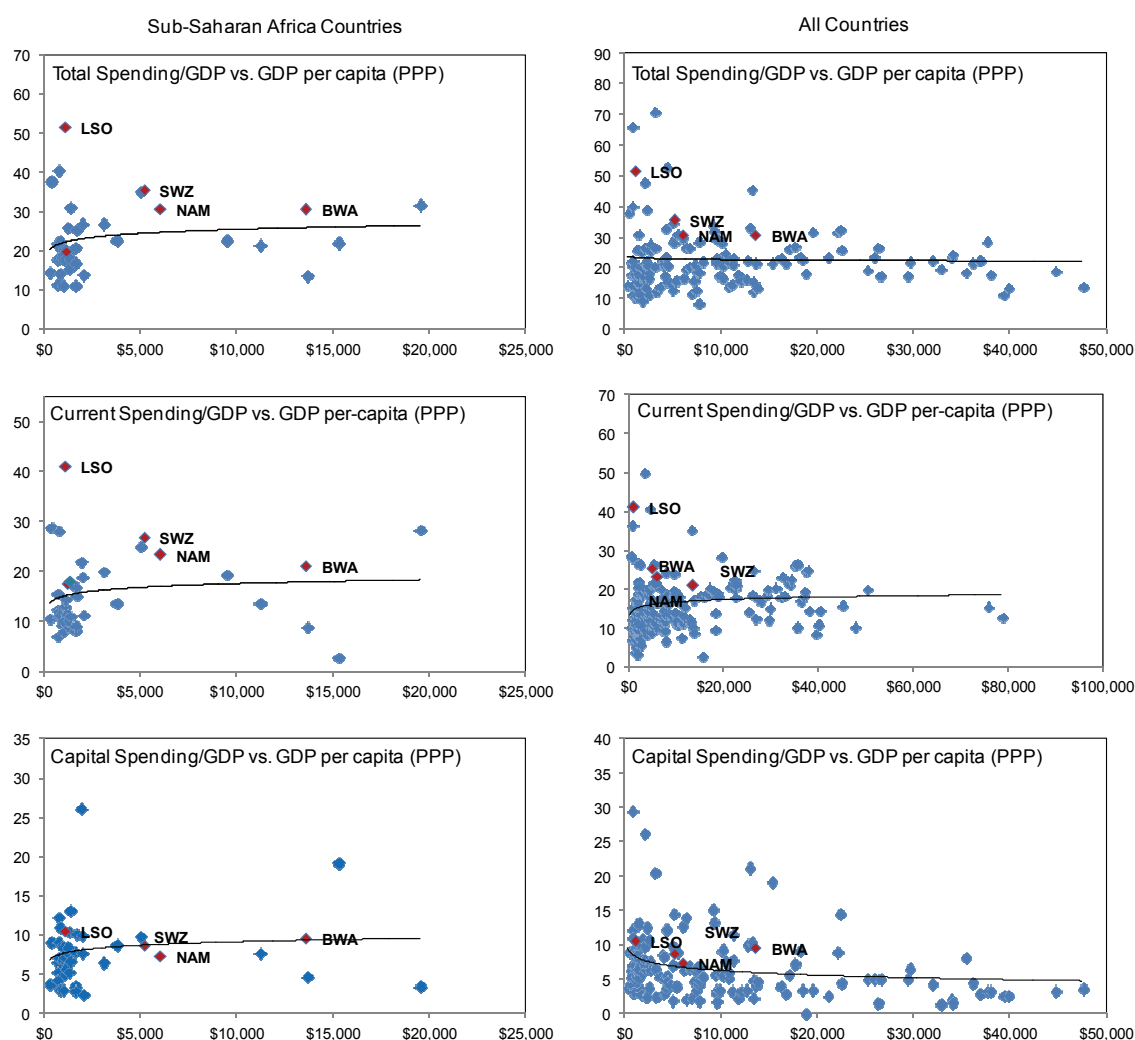
While less relevant to BLNS countries under a fixed peg, IMF staff analysis also indicates that higher inflation should not be part of a debt reduction strategy. Inflation can reduce the real value of the debt, but the seigniorage accruing to the government will depend on the stability of the demand for base money as inflation rises. Also, an unexpected increase in inflation could reduce the real value of government debt in the near term, but interest rates would probably rise with inflation and any maturing debt would have to be refinanced at higher interest rates. Moreover, using high inflation for debt reduction would carry major costs and risks to resource allocation and would have a detrimental effect on growth and poverty alleviation, as the poor suffer the most from high inflation.

Cross-Country Comparisons on Government Spending

International comparisons of government spending ratios highlight some of the main policy challenges confronting the BLNS authorities. Compared against countries in Sub-Saharan African (SSA) and/or all countries in the world (ranked by GDP per capita levels on a Purchasing Power Parity basis) for which data are available, BLNS countries have relatively high government spending ratios to GDP. In particular, current spending ratios are significantly above the “norm” in comparator countries, while capital spending ratios, scattered within a range of 7 to 10 percent of GDP, are broadly in line with public investment levels registered in SSA countries (Figure 3).

The composition bias of total government spending toward recurrent outlays in BLNS countries may have reduced the authorities’ options when designing their fiscal consolidation plan (Figure 4). The ballooning wage bills in recent years reflect a combination of increases in civil service jobs and significant hikes in wages, which may also have affected reservation wages and employment in the private sector. The data also suggest that outlays in goods and services have escalated rapidly in recent years, albeit from a low base, to support the requirements of an increased government labor force in social sectors.

Figure 3. Comparison of Expenditure Levels in the BLNS with the Rest of the World

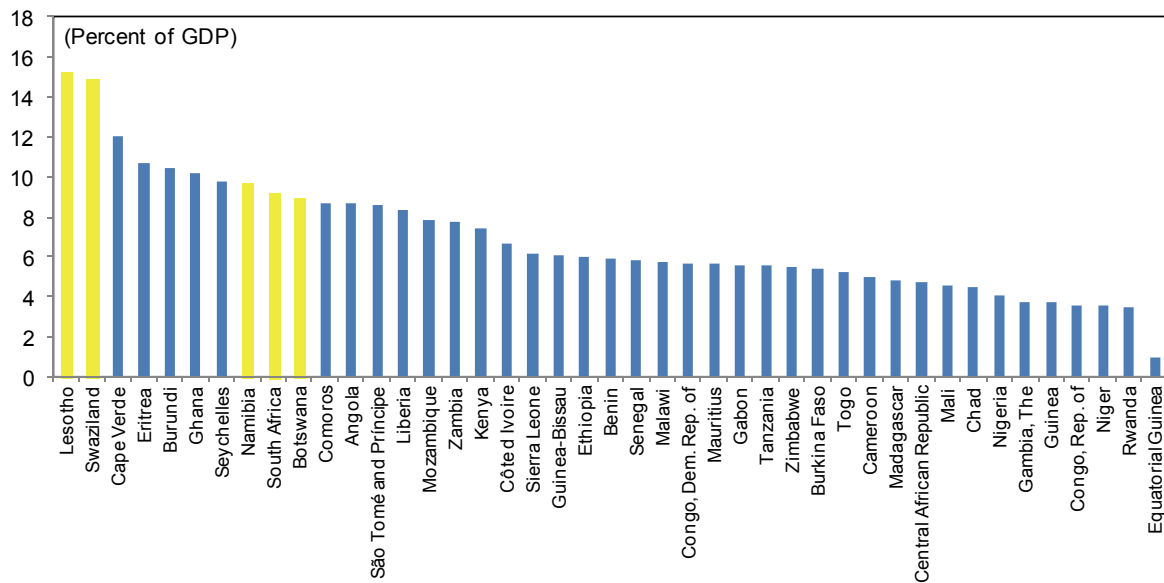


Source: *World Economic Outlook* and IMF staff estimates.

Simulations of Policy Scenarios

This section describes various choices for fiscal adjustment in the BLNS countries using a modified version of the Berg, Gottschalk, Portillo, and Zanna (2010, BGPZ hereafter) model. A dynamic quantitative general equilibrium approach has the advantage of simulating different fiscal adjustment scenarios to determine their impact on output growth, inflation, and the sectoral allocation of resources.

Figure 4. Comparison of Civil Service Wage in the BLNS with the Rest of SSA



Sources: Countries' authorities and IMF staff calculations.

The BGPZ model is a relevant general equilibrium tool because it was originally designed to analyze the macroeconomic effects of large transfers from abroad. Although it has so far been used primarily to examine scaled-up aid scenarios for the Gleneagles initiative,⁹ the model features two characteristics that make it relevant for analyzing the drop in SACU transfers: (i) changes in transfers can induce relative price changes and resource reallocation between traded and nontraded sectors; (ii) market imperfections common to developing economies, including liquidity constrained households and potentially inefficient public investment.

The model has several important features:

- a. Government spending affects **aggregate demand in the short run but also aggregate supply in the medium run**. The government consumes tradable and nontradable goods but also invests in public capital that enters the production function of the private sector and therefore

⁹See, for example, Mongardini and Samake, 2009.

expands the economy's productive capacity. Public investment is only partially efficient, so that resources spent on public investment are not fully converted into public capital.

- b. There is an **externality associated with the production of traded goods**: a contraction in the tradable-goods sector results in a persistent (but not permanent) loss of total factor productivity. Real appreciation can have a negative impact on productivity in the traded sector.
- c. A **fraction of households are liquidity constrained** and cannot smooth consumption.
- d. **Fiscal policy options** include changes in labor income taxation, in recurrent and/or investment spending, while the monetary authorities have a choice of the exchange rate regime they want to pursue (fixed or flexible), and the full or partial sterilization of capital flows. The model unfortunately cannot simulate increases in consumption taxes like VAT, which would be expected to be less distortionary than labor income taxation.

The following fiscal policy responses to the fall in SACU revenues are simulated using the BGPZ model: (i) an increase in the labor income tax rate; (ii) a fall in government spending; (iii) a combination of (i) and (ii). We consider modified versions of the model for each policy experiment:¹⁰

- a. *Scenario (i) – Spending cuts*: government spending g_t is fixed in percent of GDP, and the labor income tax rate τ_t endogenously changes to satisfy the government budget constraint.
- b. *Scenario (ii) – Tax increases*: the tax rate on labor income is fixed at $\tau_t = \tau$, and government spending changes endogenously to satisfy the government's budget constraint.
- c. *Scenario (iii) – Spending cuts and tax increases*: The tax rate responds only partially to the deviation of SACU transfers from its steady state, and government spending endogenously covers the shortfall in revenue by adjusting to satisfy the government budget constraint.

¹⁰Scenarios (i) and (iii) require a modification of the original BGPZ model.

$$\tau_t = \bar{\tau} + \rho^r(\tau_{t-1} - \bar{\tau}) + \gamma^r(A_{t-1} - \bar{A})$$

A description of the model, the scenarios, and the calibration are available in Appendixes 4 and 5.

The model is calibrated to the Swaziland economy.¹¹ In 2009, Swaziland received the equivalent of 20 percent of GDP in SACU revenues. As noted in Table 1, the size of the expected adjustment is about 16 percent over three years. The calibration assumes that the adjustment will average just over 5 percent of GDP for three years. It is assumed in the model that Swaziland's capital account is partially open.

In all scenarios, we assume the shock starts from the steady state. This does not imply a belief that Swaziland is currently at its steady state. Rather, it enables a comparison with a stable counterfactual. In addition, we assume that the steady state is invariant to the SACU shock, that is, the shock is temporary though highly persistent. This is a proxy for assuming that the shock is likely to be permanent as argued above.

We do not assume that capital flows will endogenously respond to the fall in SACU revenues. It is possible that in response to lower official flows, the private sector could offset this decline by attracting higher capital inflows. In the model, the private sector has limited ability to borrow internationally. If, however, the Swaziland private sector is able to attract significant capital inflows independent of the government, the negative growth effects would be less severe.

Because Swaziland operates under a fixed exchange rate regime, the monetary authorities have limited tools to respond to the fall in SACU revenues.¹² They can sterilize the effects of changes in SACU transfers by using government deposits at the central bank to counteract the fall in the

¹¹Note that the steady state is invariant to the policy experiments considered. The adjustment path will differ depending on the policy scenario but all paths will lead to the same steady state.

¹²Swaziland is a member of the Common Monetary Area with Lesotho, Namibia and South Africa.

money supply. However, this will be limited by the level of available gross international reserves.

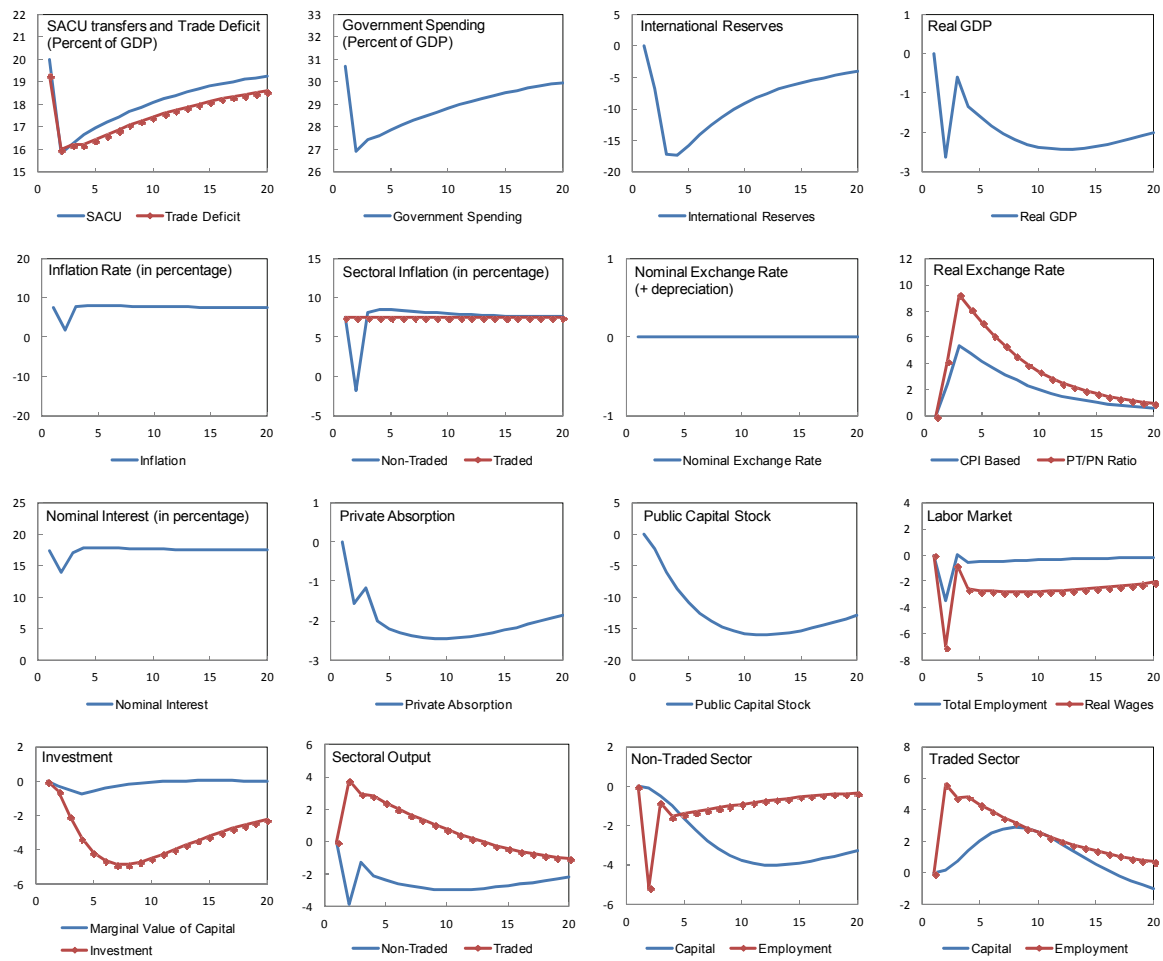
We consider three types of policy experiments: spending cuts, tax increases, and a mix of revenue and expenditure measures. For each fiscal policy option, we analyze two types of monetary policy responses, with and without sterilization of outflows. Figure 5 through Figure 13 show the impulse responses of important macroeconomic variables for the different scenarios following the fall in SACU transfers. The graphs show deviations from the steady state, that is, from a counterfactual with no shock.

Scenario (i): Spending cuts

Consider first a reduction in both recurrent and investment spending (Figure 5). The decline in SACU revenues reduces available financing for government investment generating a fall in public capital. In the short run, because prices are not fully flexible, lower demand results in lower supply of nontraded goods. The resulting real depreciation boosts output in the traded sector—as the relative price of traded goods rises and real wages fall—but not enough to offset the fall in activity in the nontraded sector. The depletion of reserves is driven by the need to keep the nominal exchange rate constant. In the absence of sterilization, the fall in SACU revenues leads to a large decrease in the money supply.

Over time as nominal rigidities dissipate, the recession fades. But the fall in public capital causes a persistent negative effect on GDP. This is reinforced by the fall in private capital induced by the decline in the marginal product of capital, reflecting the negative effect of lower public investment.

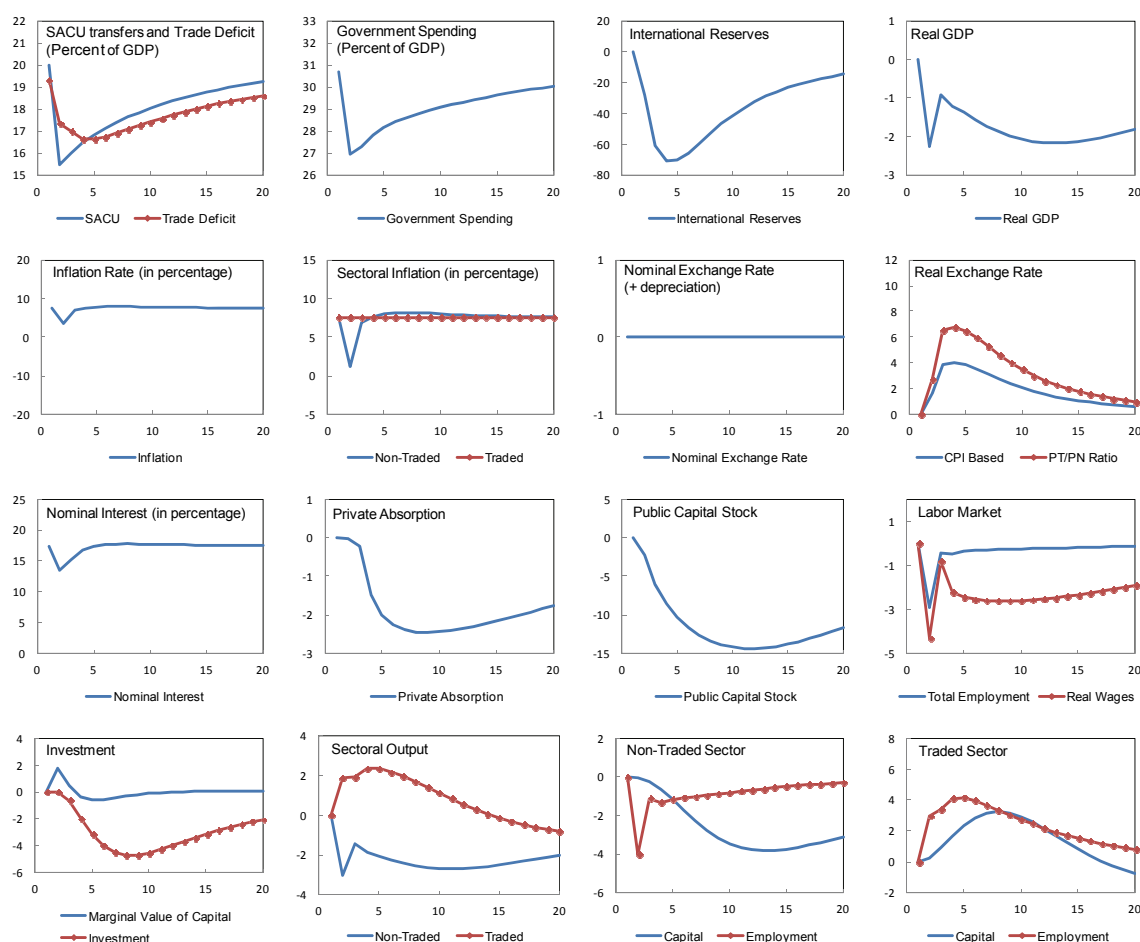
Figure 5. Recurrent and Investment Spending Cuts: No Sterilization



Sources: Swaziland authorities and IMF staff simulations.

As shown in Figure 6, sterilization reduces the degree of real depreciation, resulting in a smaller trade deficit. The fall in output is smaller than in the absence of sterilization because the combination of the reduction in spending and the larger loss of reserves ‘crowd in’ private spending. Although the government fully absorbs the decline in SACU revenues, the monetary authorities ‘finance’ it by reducing the stock of reserves, rather than forcing the government to issue bonds. This negative sterilization leads to an increase in private absorption by keeping interest rates lower than they would be in the previous scenario. As a result, lower government spending leads to

Figure 6. Recurrent and Investment Spending Cuts: Sterilization

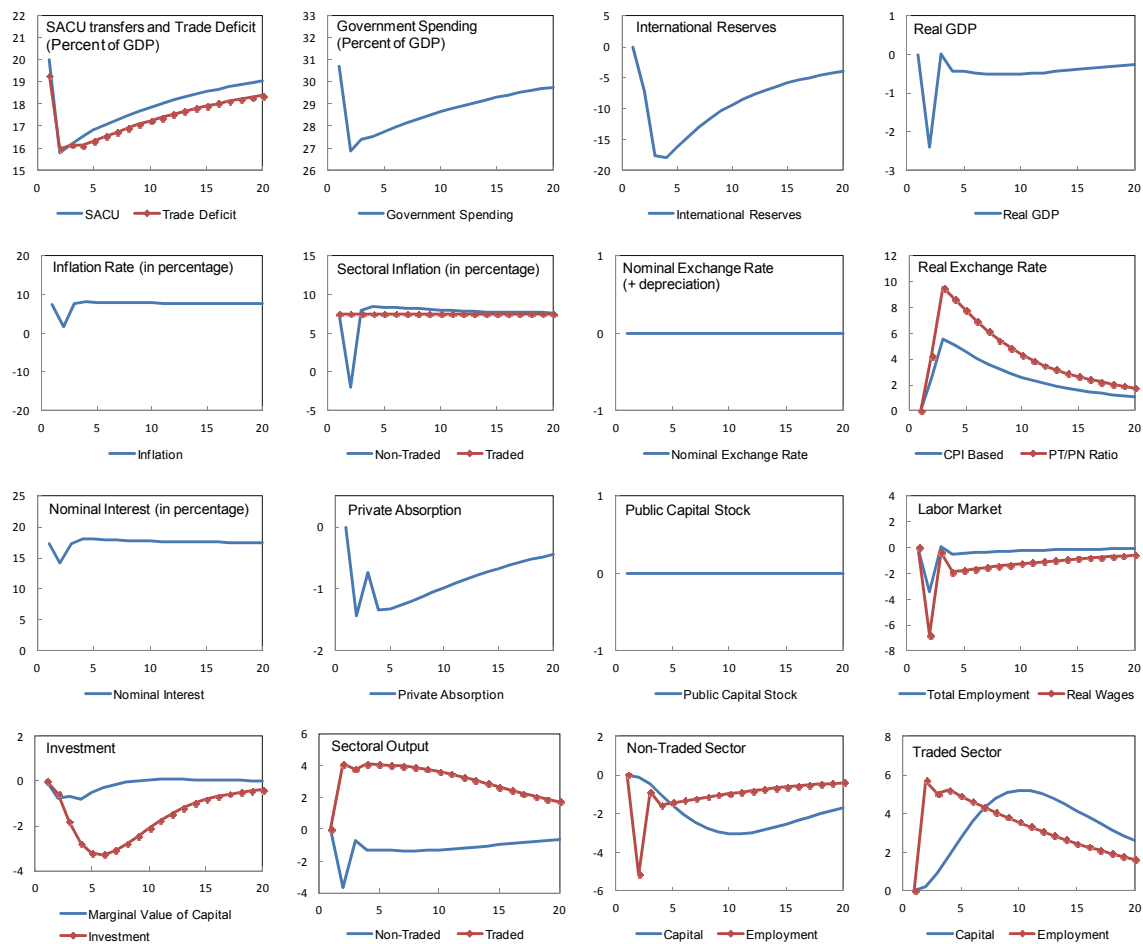


Sources: Swaziland authorities and IMF staff simulations.

higher private spending. But with reserve depletion, this does not translate into higher savings for the economy as a whole as the fall in reserves finances higher private absorption. Sterilization absorbs part of the negative effect on GDP, which falls less than in the absence of sterilization.

Limiting cuts in spending to recurrent expenditures significantly reduces the cumulative fall in GDP. Although the immediate impact on output is similar, the cumulative deviation from the steady state is smaller because public capital remains unchanged. This is true both with and without sterilization (Figures 7 and 8).

Figure 7. Recurrent Spending Cuts: No Sterilization

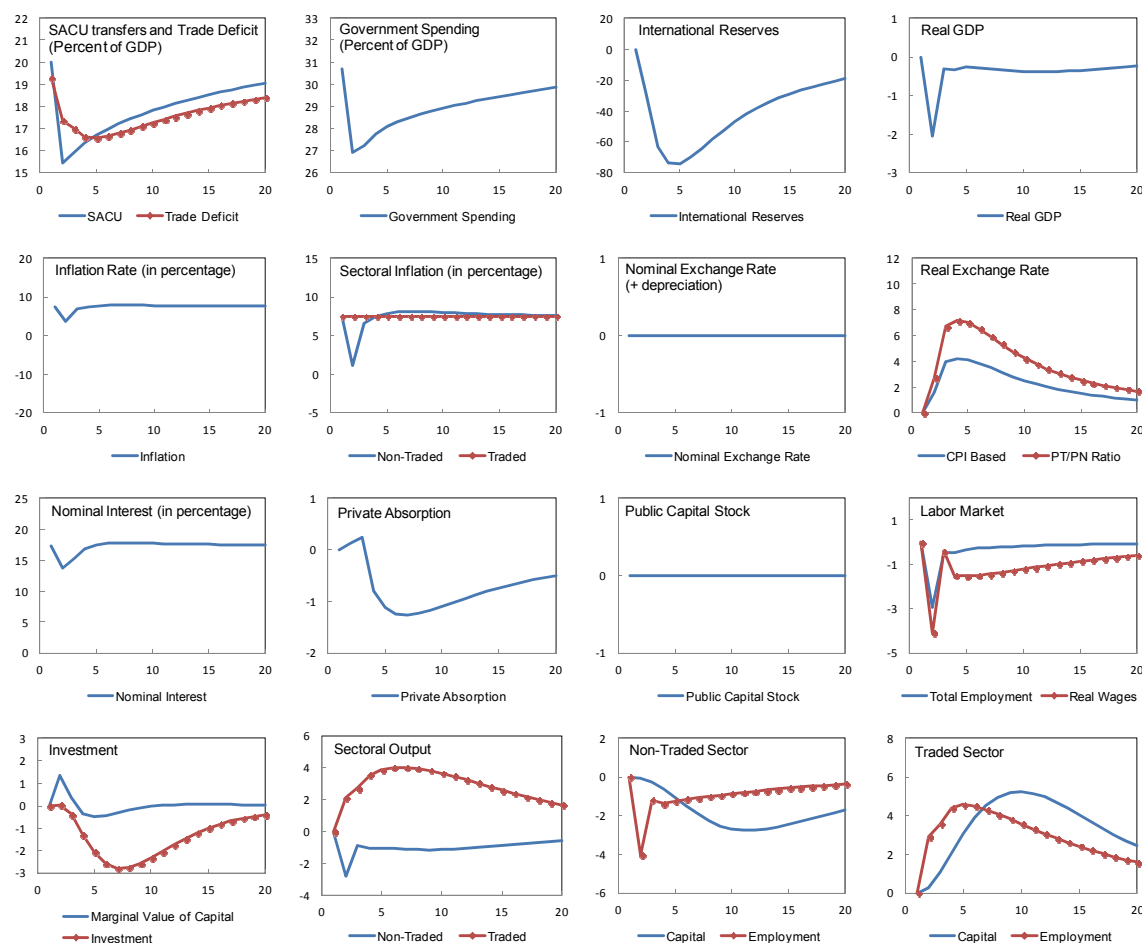


Sources: Swaziland authorities and IMF staff simulations.

Scenario (ii): Tax increases

The increase in the labor income tax rate (with no change in government spending) results in large real wage losses and employment in the nontraded sector relative to the steady state. Compared to the scenario with spending cuts, however, government spending on nontraded goods remains constant, resulting in a smaller decline in nontraded goods prices and a smaller real depreciation (Figure 9). Nonetheless, employment in the nontraded sector falls by more than in the previous scenario with spending cuts (Scenario (i)) because the increase in the tax rate lowers labor supply.

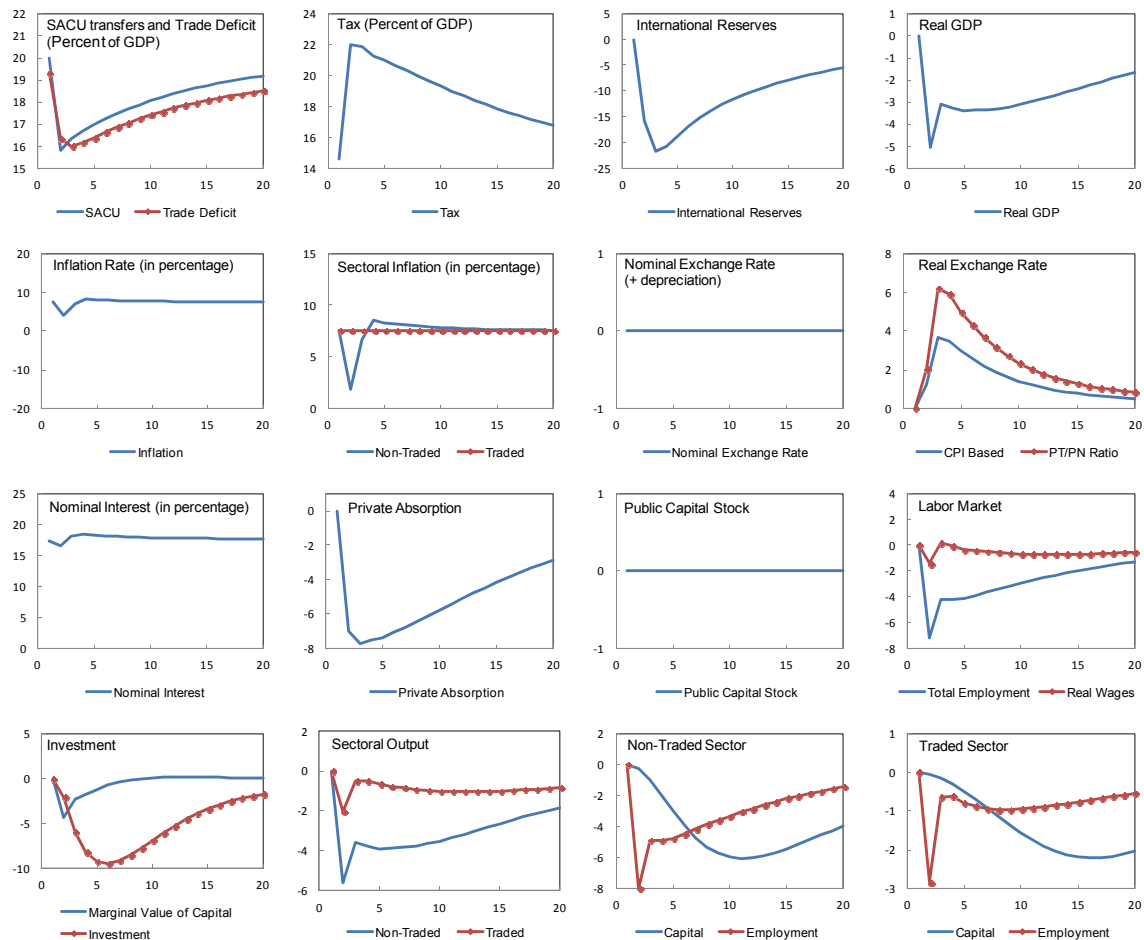
Figure 8. Recurrent Spending Cuts: Sterilization



Sources: Swaziland authorities and IMF staff simulations.

With sterilization (using government deposits to finance the deficit), the increase in the tax burden reduces overall economic activity while higher money supply puts upward pressure on prices—more money chasing fewer goods. This upward pressure is not alleviated by a reduction in government spending, causing a smaller rise in nontraded goods prices and a smaller real depreciation. This smaller real depreciation, in turn, reduces activity in the traded sector by more than in the absence of sterilization (Figure 10).

Figure 9. Tax Increases: No Sterilization

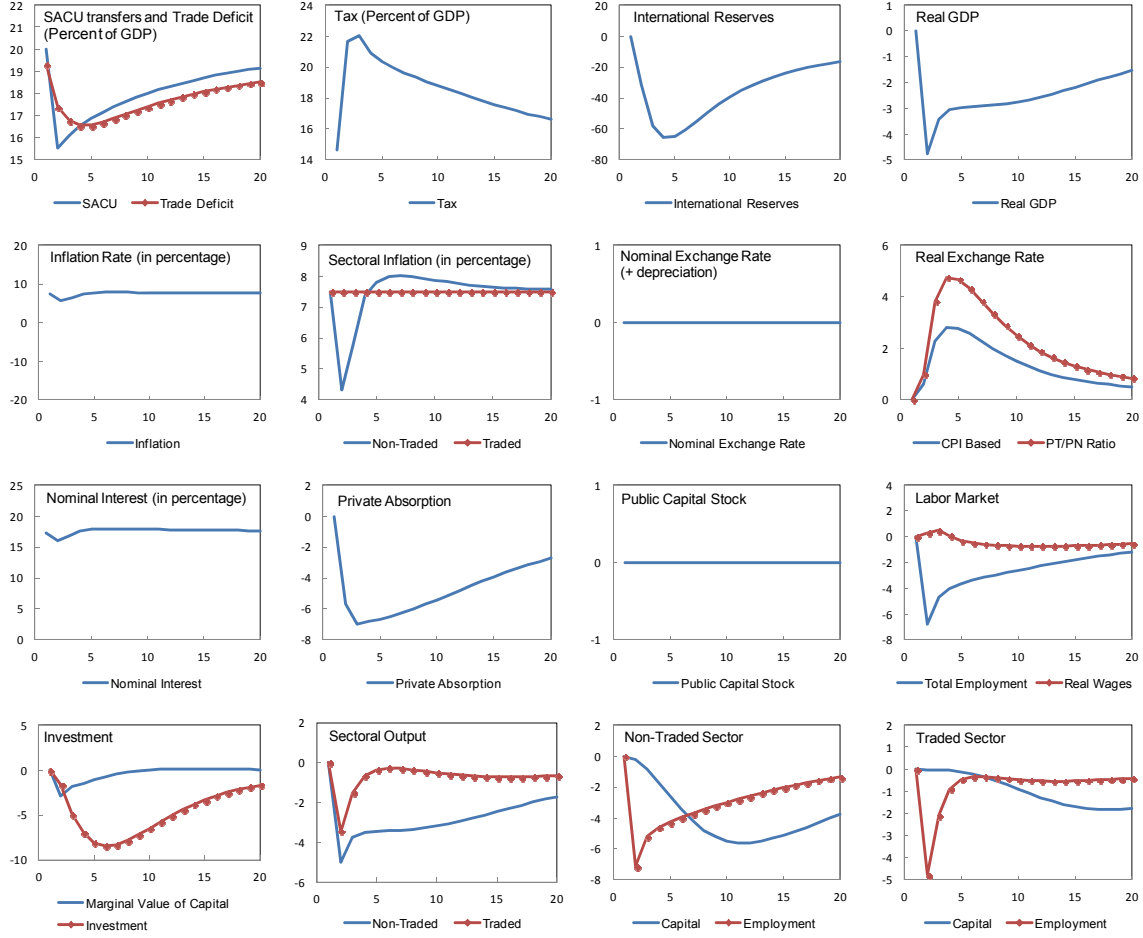


Sources: Swaziland authorities and IMF staff simulations.

Scenario (iii): Spending Cuts and Tax Increases

Combining spending cuts and tax increases results in smaller output losses than in the case of tax increases alone but larger than adjustment with spending cuts alone (Figures 11 and 12). The reduction in expenditures reduces the need for a large tax increase and the resulting fall in employment. This result, however, is not invariant to the calibration. The economic

Figure 10. Tax Increases: Sterilization



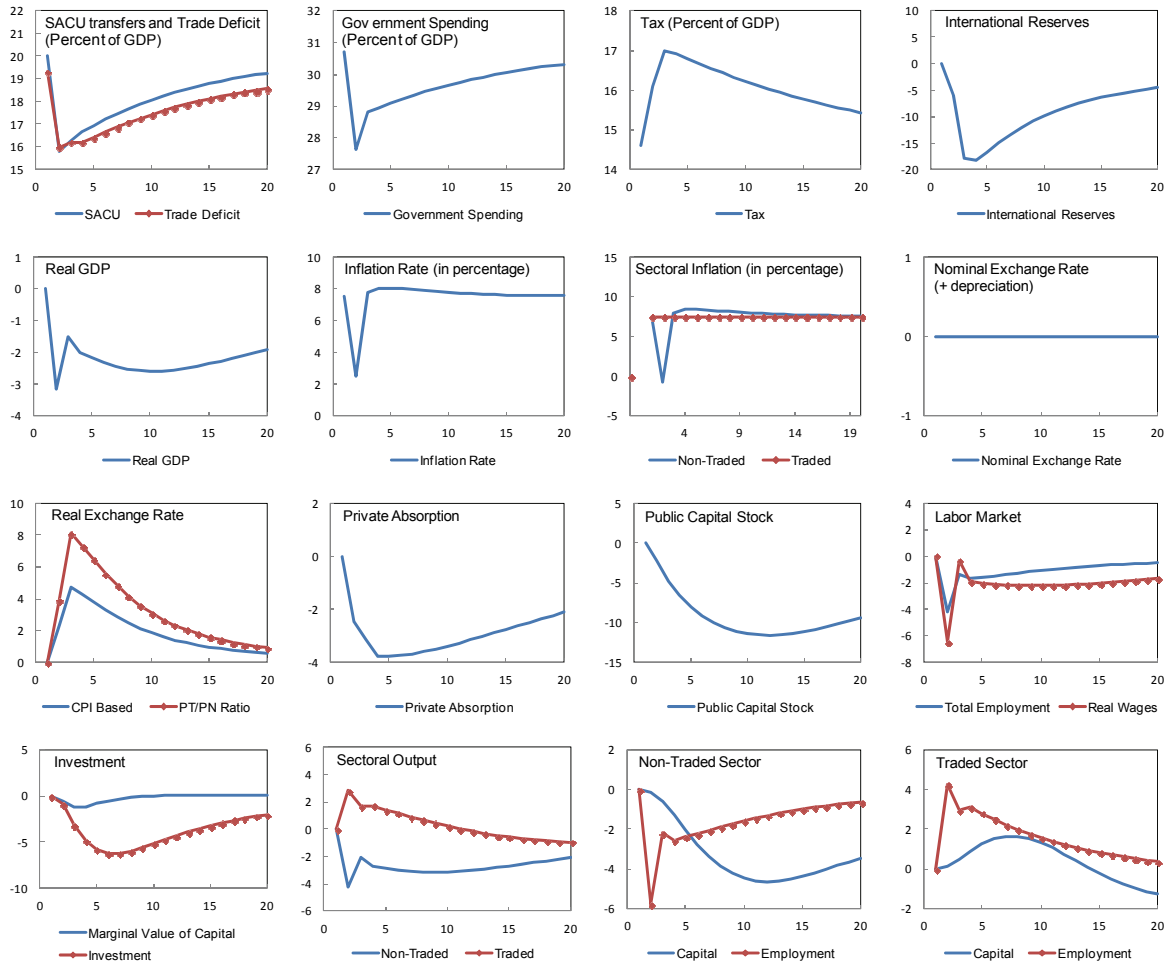
Sources: Swaziland authorities and IMF staff simulations.

response will depend on the degree of persistence of the increase in the tax rate (ϱ^*) and its responsiveness to the fall in SACU revenues (γ^*).¹³

A comparison of the three scenarios allows us to reach the following conclusions for the chosen calibration (Figure 13):

¹³For example, the tax rate could rise so much that government spending could increase following the fall in SACU transfers.

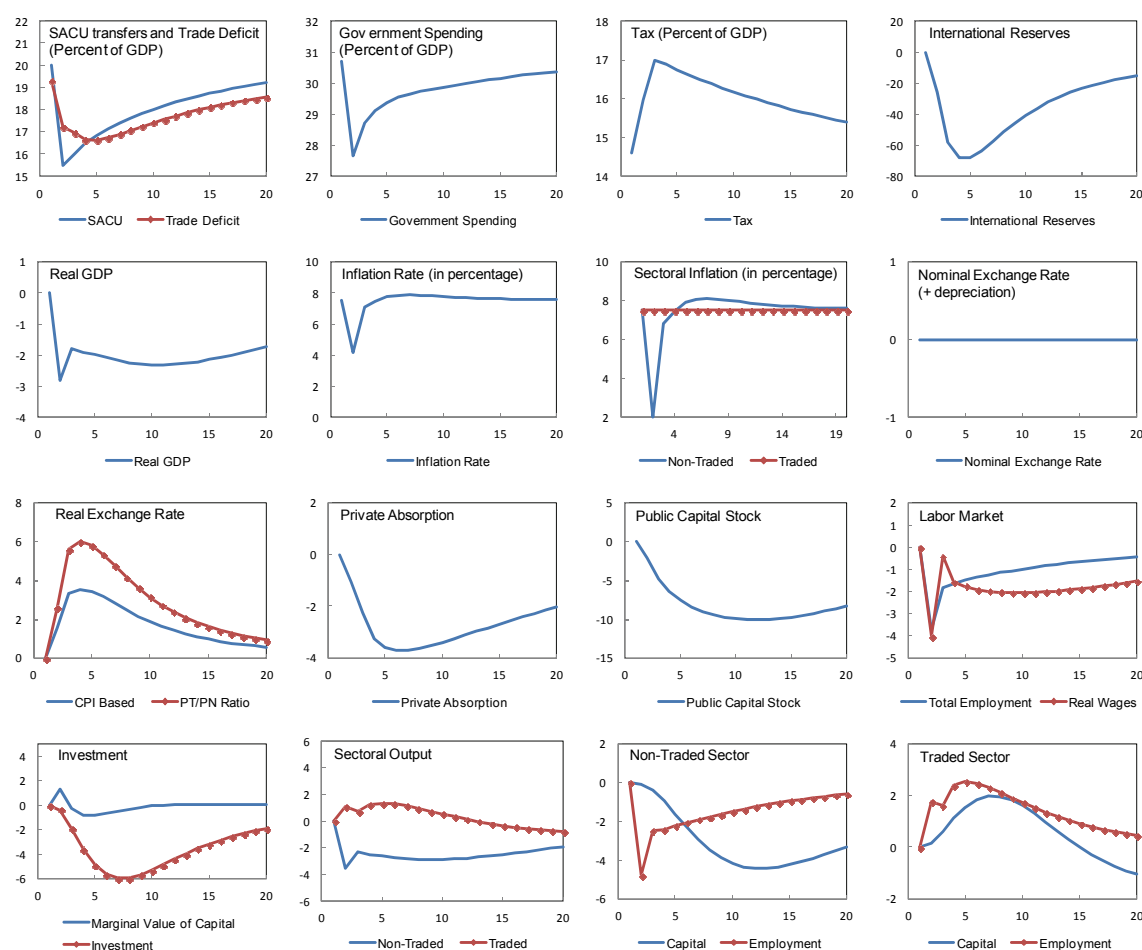
Figure 11. Spending Cuts and Tax Increases: No Sterilization



Sources: Swaziland authorities and IMF staff simulations.

- a. **Tax increases on labor have a larger negative impact on output than spending cuts.** After 20 years, the cumulative output loss from a tax increase amounts to a 54.3 percent deviation from the steady state relative to less than 40 percent for reductions in expenditures, assuming the central bank does not sterilize the outflow.

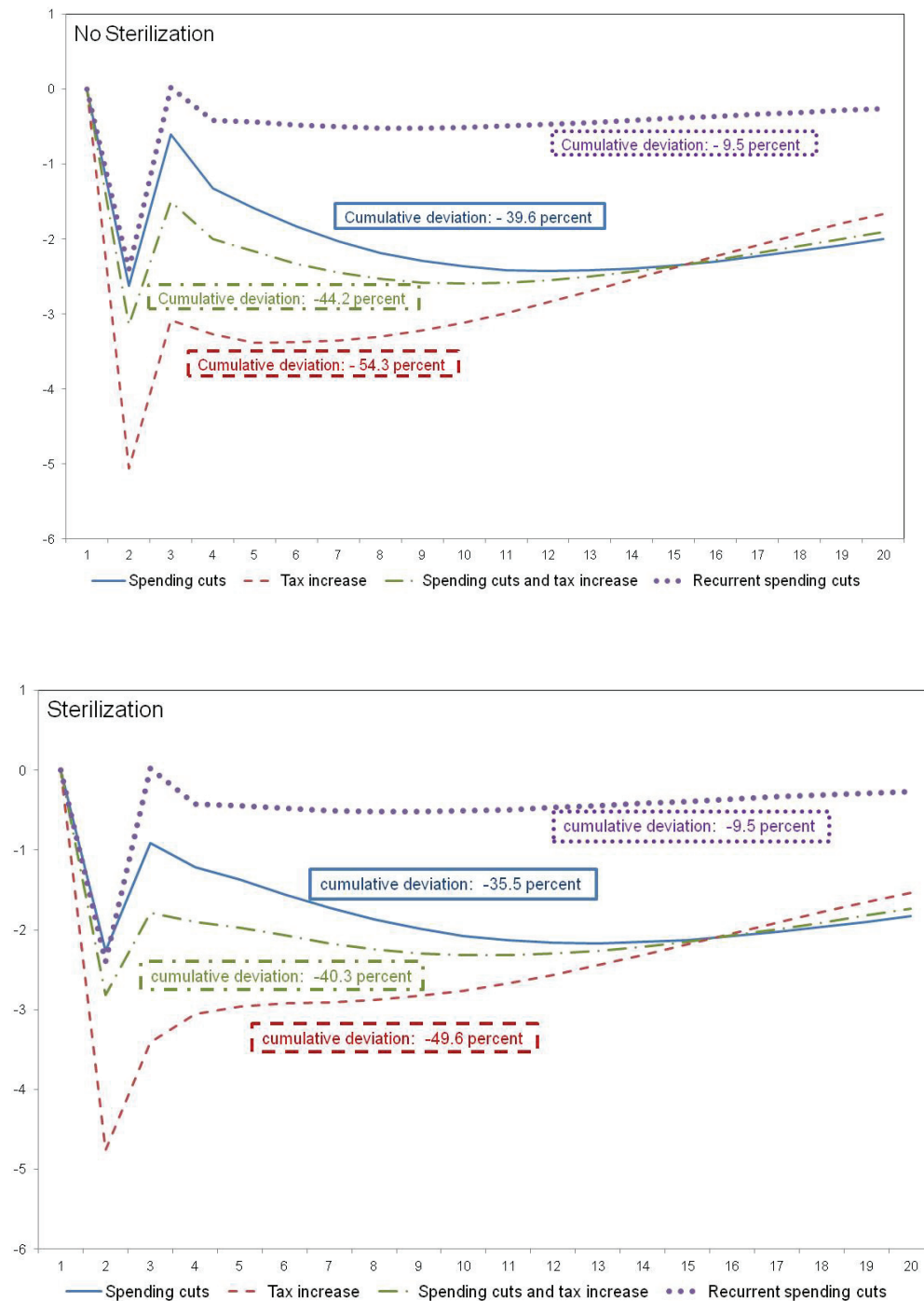
Figure 12. Spending Cuts and Tax Increases: Sterilization



Sources: Swaziland authorities and IMF staff simulations.

- b. **Concentrating expenditure cuts on current expenditures results in the smallest output loss.** The 20-year output loss is less than a temporary 10 percent deviation from the steady state.
- c. **By reducing government deposits to finance the deficits, sterilization mutes the fall in output in the short run.** However, given the fixed exchange rate regime and limited capital mobility in the BLNS countries, the impact of sterilization is small in magnitude and short-lived, as the corresponding reduction in gross international reserves may call into question external stability.

Figure 13. Cumulative Output Loss after 20 Years
(Deviations in percent of GDP from steady state)



Sources: Swaziland authorities and IMF staff simulations.

- d. **A combination of tax increases and spending cuts mutes the output loss relative to tax increases alone but magnifies it relative to spending cuts.** As noted above, this is partly the result of calibrated parameters and in practical policymaking would depend on the extent to which the adjustment is heavily weighted on tax increases or expenditure cuts.

Overall, the simulations confirm the evidence from the empirical literature in the section above that recurrent spending cuts have the smallest output loss than in any other policy scenario. The cumulative output loss is estimated at less than 10 percent over 20 years, compared to the steady state without shocks. This is the same whether the authorities use their government deposits to finance the deficit or not, because sterilization has an impact only in the short run. This compares to cumulative output losses of 35–40 percent in the policy scenario of overall spending cuts, including on capital spending, which underscores the importance of safeguarding investment spending. Labor tax increases have the largest cumulative output loss of between 50 and 54 percent of steady state output, because they distort the allocation of labor and capital. However, increases in consumption-based taxes, like VAT, are likely to have a much smaller impact on growth because they are by definition less distortionary.

These results are subject to a number of caveats. First, the simulation for Swaziland may be less relevant to other SACU members. Second, the magnitude of the dynamic responses of macroeconomic variables is heavily dependent on the calibration. Successful calibration usually has high data requirements that are difficult to satisfy when analyzing low-income countries. The results may be better interpreted as indicating the hierarchy of policy scenarios in terms of output losses and of the direction of dynamic changes rather than their magnitude. In addition, certain policy options may not be available to the Swaziland government. For example, sterilization of SACU flows has a limit to the extent that the reserves of the central bank of Swaziland are limited, and an excessive drawdown of reserves may call into question external stability.

These simulations, however, do underscore that fiscal policy choices would heavily affect the size of the output loss associated with the loss of SACU revenues in BLNS countries. The model suggests that increasing labor taxes would result in larger output losses.¹⁴ Expenditure-oriented options would reduce the extent of output loss, particularly if capital expenditures remain unchanged. This suggests that a policy of adjustment should focus on cost saving in recurrent expenditures, particularly a comprehensive civil service reform aimed at reducing the wage bill, to minimize the impact on growth and poverty alleviation.

¹⁴The model, however, analyzes only the effects of changes in labor income tax rate. Analyzing the effects of consumption or profit tax rates is left for future research.

Specific Adjustment Strategies for the BLNS Countries

As shown in Chapter 2, the fiscal adjustment needs in BLNS countries are large and range in the order of 2 to 16 percent of GDP. This requires a significant adjustment effort by the authorities over the medium term to achieve fiscal and debt sustainability, particularly in Lesotho and Swaziland.

The BLNS authorities have so far outlined different strategies for adjusting to the permanent loss of SACU revenues (Table 5). These strategies rely on a series of tax increases and expenditure cuts to achieve the required adjustment path. On the revenue side, they include the introduction of VAT (Swaziland), increases in VAT rates, taxes, and stamp duties (Botswana, Lesotho, Swaziland), and improved tax administration (Botswana, Lesotho, Namibia, and Swaziland). On the expenditure side, they include cuts in capital spending (Botswana, Namibia, Swaziland), measures to reduce the wage bill (Lesotho, Swaziland), and cuts in nonpriority current spending (Lesotho, Namibia, Swaziland).

The authorities' adjustment strategies provide a potential roadmap for the needed adjustment, which may not mitigate the impact on growth and poverty alleviation. These strategies all meet the required adjustment, except for Swaziland where more upfront revenue and expenditure measures are needed to reduce the ballooning deficit. However, the significant reliance on tax increases (albeit nondistortionary) is likely to make the adjustment more painful in terms of growth and poverty alleviation, given the theoretical and evidence as well as the simulation results for Swaziland in Chapter 3 that cuts in recurrent spending have the least impact on growth. Refocusing the authorities' measures in favor of permanent cuts in nonpriority recurrent spending is therefore warranted to mitigate the impact of the adjustment.

Table 5. Matrix of Fiscal Measures in the BLNS

Country	Staging	Revenue measures	Expenditure measures	Structural measures
Botswana	Up-front: More than 40 percent of required fiscal consolidation is expected to occur in the next two fiscal years; 2012/13 will see a reduction in nonmineral primary balance in the order of 8.4 percent of nonmineral GDP.	Options for boosting non-SACU revenues include: (a) Increase specific duties on fuel; (b) Increasing the VAT rate to 12 percent; broadening the base of VAT by reducing exemptions and number of zero-rated items; (c) Revamping property tax; (d) Improvements in tax administration through introduction of large-taxpayer unit.	The brunt of adjustment will focus on expenditure (especially capital spending) cuts: (a) Substantial cuts in development spending as recent capital projects approach completion; (b) Public service salary and hiring freeze.	Phasing out of extra budgetary funds. Introduction of results-based budgeting. Adoption of medium-term expenditure framework.
Lesotho	Front loaded: more than four-fifths of adjustment is expected to take place in the two initial fiscal years of the program, by the end of which the non-SACU balance is expected to improve by 8.1 percent of GDP.	Due to already high non-SACU revenues (27 percent of GDP), the focus of revenue measures will be mainly on improving tax administration: (a) Improve tax administration and compliance with support of the U.S. Treasury Department, strengthened collection of tax arrears; enhanced intelligence, investigation, and audit functions; (b) Profiling of large taxpayers; (c) Increase in administrative fees and charges (0.3 percent of GDP); (d) Increase in fines (0.1 percent of GDP).	Fiscal adjustment will focus on curtailing non-priority expenditure to achieve a level of expenditure that is consistent with lower SACU revenues: (a) Containing the growth of wage bill; (b) Reduction in goods and services; (c) Reduction in transfers and subsidies; (d) Postponement of payment to defined contribution pension scheme; (e) Comprehensive expenditure review with the view to eliminating noncore functions and nonproductive expenditure over medium-term.	Strengthening public financial management to enhance efficiency of public expenditure in light of reduced resources.

Namibia	A sharp upfront reduction in expenditure in 2011/12–2012/13 (4.9 percentage points of GDP) with a view to bringing government expenditure to 28 percent of GDP by 2012/13.	Improving the value-added tax (VAT) compliance and introducing tax audits, expanding the mineral tax to all minerals and introducing an environmental levy.	Reorienting stimulus spending in favor of capital projects and improving the quality of public expenditures in general. Other measures involve a reduction in non-wage, non-interest current expenditure to their average level of the past five years by trimming nonpriority spending and accelerating the reforms of SOEs, as well as containing the wage bill within budgeted levels.	Strengthening public financial management and the budget process. Steps have been taken to move to program budgeting. A new chart of account is being finalized, and four pilot line ministries have been identified to roll out program budgeting.
Swaziland	Need to consolidate expenditure. Proposed reductions in spending and freezing of the wage bill not fully implemented.	Making the Revenue Authority operational and introducing the VAT. Better efforts at collecting taxes and expanding the tax base.	Fiscal adjustment with a focus on expenditure restraint. Reduction of the wage bill through civil service reform, and restraint in salary increases. Expenditure cuts on goods and services, and the gradual phasing out of transfers and subsidies to public enterprises such as the Central Transport Authority (CTA).	Modernization of the ministry of finance. (i) Consolidation of expenditure reporting; (ii) improve the quality of public expenditures; and (iii) consolidate the budget process to limit the use of supplementary budgets.

Sources: Country authorities and IMF staff.

Current spending levels are unsustainable, thus underscoring the need to reduce spending to levels (in percent of GDP) before the boom of 2004–08. Fiscal consolidation is therefore needed to preserve sustainability over the medium term. The debt-to-GDP ratio should be the anchor for fiscal policy, and setting a target based on optimal fiscal measures of consolidation should be considered with respect to the primary balance, which can stabilize the debt-to-GDP ratio. In Botswana and Namibia, this primary balance should exclude revenue flows from mineral wealth, because nonrenewable resources should be saved to generate permanent income for intergenerational considerations.

Measures to bring down the level of spending should be carefully considered before relying on measures to enhance revenue. For the BLNS countries, the authorities are aware that most of the adjustment needs to come from lower public spending, particularly regarding wages and transfers, because SACU and mineral revenues are on a declining trend and the scope for raising non-SACU and nonmineral taxes is limited by the relatively small size of the private sector. In addition, the simulation results in the previous chapter suggest that lower output losses would result from reductions in recurrent expenditures. Options for boosting non-SACU tax revenues in the BLNS should be limited to nondistortionary taxation, like the value-added tax (VAT), to limit the impact on growth and broadening the tax base. In Swaziland, the introduction of VAT would bring the country in line with other SACU members. The other countries could consider broadening the base for VAT by reducing exemptions and the number of zero-rated items. Tax administration could also be further improved by, for example, establishing a large-taxpayers unit. Specifically for Namibia, expanding the mineral tax to all minerals, including diamonds, and introducing an environmental levy could be considered. There is also a need to streamline overlapping fiscal rules to provide clearer guidance for fiscal policy.¹⁵ But the

¹⁵For instance, to guide fiscal policy during the medium-term expenditure framework —MTEF (2010/11–2012/13), the Namibian authorities adopted the following fiscal rules: (i) a public debt-to-GDP ratio of 25–30 percent annually; (ii) an average budget deficit of 5 percent of GDP; (iii) public expenditure levels below 30 percent of GDP; (iv) interest payments capped at 10 percent of government revenue; and (v) contingent liabilities below 10 percent of GDP annually.

scope for fully offsetting the decline in mineral and SACU revenues is limited by the modest size of the nonmining private sector. For Botswana, there is a need to rationalize the capital budget and enhance the quality of spending in the education sector, so as to maximize the effectiveness of recurrent expenditure. For Lesotho, the priority is to reduce the wage bill and rationalize the expenditure on goods and services, transfers, and subsidies.

Within the BLNS, fiscal adjustment to date has been uneven. In Botswana, adjustment—as presented in the 2010/11 fiscal budget—is based on significant spending restraint, including a substantial cut in development spending, as recent projects approach completion, and the government is implementing a civil service salary freeze. The VAT rate has also been increased from 10 to 12 percent. In Lesotho, in the context of an Extended Credit Facility arrangement with the IMF, the authorities have increased administrative fees, charges, and fines; and on the expenditure side they contained the growth of the wage bill, goods and services, and transfers. In Namibia, the fiscal adjustment to the lower SACU revenue is expected to start with the 2011/12 budget, mainly on the expenditure side. The Swaziland authorities have recently developed a fiscal adjustment roadmap that sets out a plan to improve tax administration, introduce comprehensive civil service reform, and improve the quality of spending to realize further savings.

Concluding Remarks

This paper has laid out the challenges of fiscal adjustment for BLNS countries, in the context of a substantial drop in SACU revenue. The need for fiscal adjustment is sizable, particularly in Lesotho and Swaziland. An appropriate mix of fiscal adjustment and financing should ease the adjustment process over the medium term without endangering debt sustainability, growth, or poverty reduction. The main challenge will be in choosing the appropriate measures to bring about the necessary increase in the primary balance and identifying noninflationary sources of deficit financing. Given the fixed exchange rate regime in BLNS countries and limited capital mobility, the impact of monetary sterilization through the drawdown of government deposits on output is likely to be small and short-lived.

International experience, the comparison with other countries, and the policy simulations for Swaziland presented in this paper all suggest that well-planned permanent expenditure cuts are most likely to be effective. A comprehensive civil service reform to reduce the sizable wage bill seems a priority for all BLNS countries. While recent increases in the wage bill may reflect more appropriate staffing in education and health services, the evidence is not robust as to the quality of the increased spending. Also, current spending levels in BLNS are relatively high by international standards. Another area of fiscal adjustment refers to large budgetary allocations to goods and services and untargeted social safety nets. Revenue increasing measures, particularly taxes on labor, are likely to have a larger negative impact on growth and may be harder to sustain. If additional SACU revenue were to materialize over the medium term, it would best be saved to smooth out future fluctuations in SACU receipts or used to increase capital expenditure, so as to enhance potential growth and reduce poverty. The BLNS authorities are working on all these fronts, and the IMF staff stands ready to support their efforts.

1

A Brief History of the SACU Agreement and the Revenue-Sharing Formula

The SACU dates back to 1910, when Basutoland, Bechuanaland, South Africa, and Swaziland signed an arrangement in Potchesftroom, South Africa's old capital.¹⁶ This agreement lasted until the British protectorates gained independence in the mid-1960s. It was then renegotiated, culminating in the 1969 agreement, which preserved an important element of import dependence by the smaller member countries on South Africa, although it also included a revenue-sharing formula for the division of customs and excise revenue collected in the union.

Namibia formally joined SACU in 1992 after attaining independence from South Africa in 1990. However, political conditions in South Africa were already changing at that time, auguring for an eventual revision of the agreement at the earliest possible time. Negotiations for a new SACU agreement began in late 1994, months after the formation of the first South African government of national unity.

Cementing a new SACU agreement took almost eight years of “stop-and-go” negotiations. Reportedly, discussions among country representatives covered the new institutional arrangement (including accountability and voice in policy decision making in the customs union) and a new revenue-sharing formula. The new SACU agreement was signed in October 2002. It became effective in July 2004 following the completion of technical annexes and ratification by all member countries.

The new SACU agreement, containing a total of 51 articles, covers three main areas: governance and administration, economic policy and regulatory issues, and revenue sharing. The thrust of the new SACU agreement is to facilitate the development of common policies and strategies for member

¹⁶See, for example, Gaomab and Hartman (2006), Grynberg (n.d.), and Senatla, Chankuluba, and Chepete (2010) on the history of SACU.

states in a global economy, while ensuring an equitable sharing of revenue from customs, excise, and additional duties.

The new SACU revenue-sharing formula deals with customs and excise revenues separately through two distinct components, and establishes a third “development” component. Total customs revenues collected are to be paid into a common revenue pool (administered through the South African Revenue Fund) and distributed according to each country’s share of total intra-SACU imports (i.e., each country’s total imports from the other SACU members).¹⁷ The customs component for the current financial year (t) is distributed to all member states in relation to each member state’s intra-SACU imports for the most recent financial year ($t - 2$). No adjustments are made owing to revisions of import data, but adjustments are made if actual customs duties collected are different from the initial estimates up to two years ($t + 1$ and $t + 2$). Countries that import most from within the union receive the largest share of the customs pool, thereby providing implicit compensation for the presumed “cost-raising” effects of the customs union. A fixed share (initially 15 percent) of total SACU excise collections (also paid into the common revenue pool and distributed across member countries net of administration costs) amounts to a development component. This component is allocated using the per capita GDP of each country.¹⁸ The remaining SACU excise revenues are distributed on the basis of each country’s share of total SACU GDP for the most recent calendar year ($t - 2$)—a proxy of the value of excisable goods consumed.

As noted, the new revenue-sharing formula includes significant changes to the manner in which revenue shares are calculated, managed, and distributed. The shares of each component for each member are estimated from the most recent and actual trade, GDP, and GDP per capita data. These shares are applied to agreed customs and excise forecasts, with adjustments necessary over the next two years to reflect revised/actual tax collections.

The SACU Revenue-Sharing Formula

The formula for sharing customs revenue is described in the 2002 SACU Agreement. The total share (S) of SACU revenue to each member country (i) from the common revenue pool is calculated as follows:

¹⁷In practice, the amounts distributed are net of administration costs from running the SACU Secretariat, the Tariff Board, and an ad hoc tribunal set to settle disputes arising from the application of the agreement.

¹⁸As noted in Appendix 1, the members’ shares in the development component are adjusted for differences in GDP per capita, that is, adjusted by a factor of 10 to control the bias in favor of the poorer member countries and ensure revenue stability for all parties.

$$S_i = C_i + E_i + D_i$$

where:

$$C_i = (M_i / M) * C$$

$$E_i = (GDP_i / SACUGDP) * (E-D)$$

$$D_i = 20 * (1 - (GDPP_i / SACUGDPP - 1) / 10) / 100 * E$$

and:

C_i = the share to each member of total customs duties collected in SACU C, where M_i is the CIF value of the goods imported by each member from other SACU members as a share of total intra-SACU imports M (*The Customs Component*)

E_i = the share to each member of total excise duties E collected in SACU less the development component D (currently 15 percent of total excises) (*The Excise Component*)

D_i = the share of the development component to each member of the total excise duties collected in SACU distributed as a share of the member country's per capita GDP as a share of per capita SACU GDP (*The Development Component*)

GDP_i = GDP of country i

$GDPP_i$ = GDP per capita of country i

SACUGDP = GDP of all SACU

SACUGDPP = average GDP per capita of SACU

M = total intra-SACU imports

M_i = total intra-SACU imports of country i

2

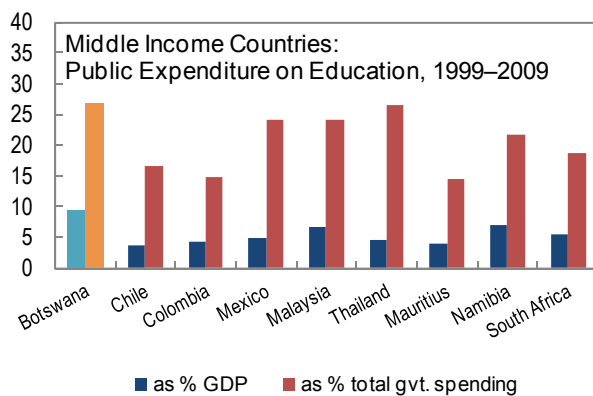
Botswana: Diminishing Returns to Public Expenditure¹⁹

Botswana's rapid economic growth during the 1970s and 1980s was largely the result of high public investment in human and physical capital. The associated gains—in terms of building the basic infrastructure and the provision of education, health, and other services that were virtually nonexistent at independence in 1966—are remarkable. Over time, however, public investment has become less efficient in promoting long-term growth. Returns have declined as the public sector has grown and engaged in a widening range of public investment that extends well beyond the provision of core public goods. Simultaneously, the attention paid to project appraisal and evaluation has weakened as project implementation capacity has become stretched and buoyant diamond revenues and repeated budget surpluses relaxed the government budget constraint. The postponement of maintenance expenditures and a loose definition of what constitutes investment have further debilitated the quality and efficiency of public investment spending.

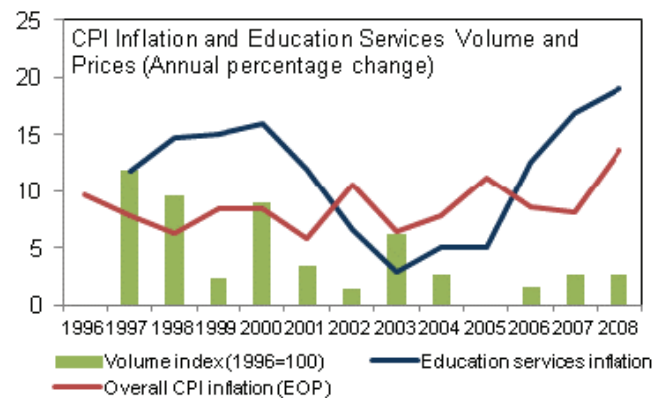
Education is one area where returns to public spending appear to be lower than in some other middle-income countries. Botswana allocates nearly a quarter of its annual public spending to education, and spending per student is significantly higher than in other middle-income countries. High rates of literacy and enrollment in secondary schools have been among the system's accomplishments. However, less than 60 percent of those enrolling in secondary school complete their schooling. Other measures of educational attainment are also no better than average compared with other countries in the region, despite higher spending. Costs are also increasing, as measured by the high and rising implicit price deflator for education services.

Social safety nets are another area where value for money appears weak. Social safety net programs account for about 10 percent of government spending, or 3–4 percent of GDP, and are designed to address risks related to malnutrition, HIV/AIDS, unemployment, disability, and old age.

¹⁹Source: Botswana: Staff Report for the 2010 Article IV Consultation.



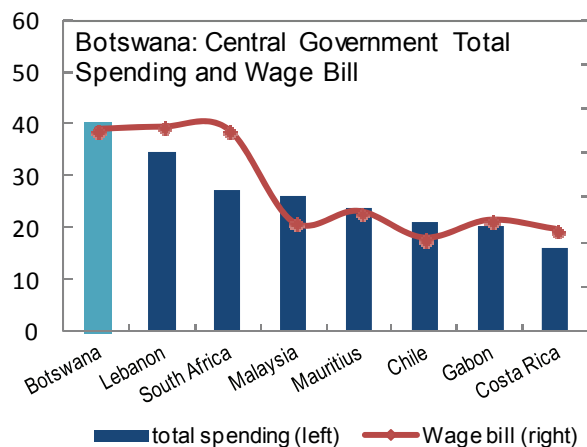
Source: Botswana Ministry of Finance, Development, and Planning and IMF staff estimates.



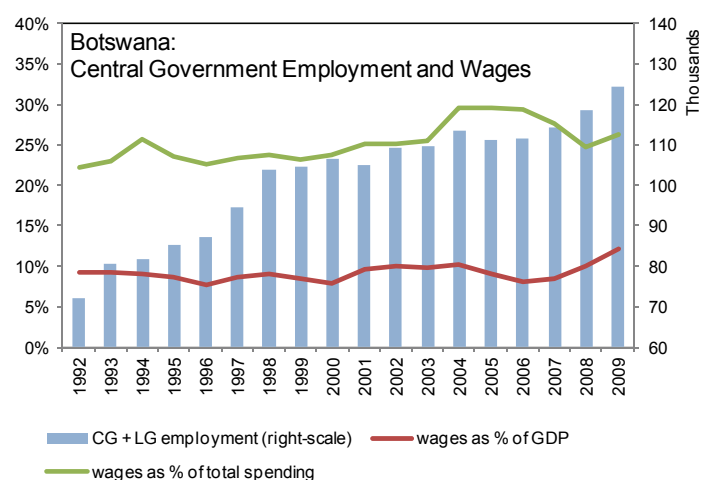
Source: Bank of Botswana and IMF staff estimates.

However, they cover only a small portion of the poor (19 percent) and many beneficiaries are nonpoor households (57 percent). Better and more regular information (for example, poverty assessments and household income and expenditure surveys) is needed to improve targeting of beneficiaries.

The large size of the public sector is undermining the competitiveness of the economy as a whole, by increasing costs, particularly wages. Government spending, averaging 35 percent of GDP during the past decade, is among the largest in Africa. The public sector outbids the private sector for available labor, exerting upward pressure on economy-wide labor costs, and contributes to high unit labor costs and unemployment. While government workers constitute 40 percent of the total formal workforce, they claim more than 54 percent of total wages paid. The reservation wage that workers demand before accepting employment has risen because workers expect salaries significantly higher than the market clearing levels in the nongovernment sectors of the economy.



Source: Botswana Ministry of Finance, Development, and Planning, and IMF staff estimates.



Source: Botswana Ministry of Finance, Development, and Planning, and IMF staff estimates.

3

Public Debt Arithmetic

The change in public debt can be expressed in the following form:

$$\Delta D = (I - P) + A \quad (1)$$

Where I is interest payments; P is the primary surplus; and A is other items besides the budget deficit that affect indebtedness, for example, privatization receipts, devaluation losses, and issuance of bonds for recapitalizing banks.

Equation (1) is useful in helping to identify the key determinants of the change in nominal debt. However, to facilitate an analysis of debt dynamics and the sustainability of debt, it is useful to rewrite (1) in terms of ratios to GDP. Dividing both sides of (1) by Y , the nominal GDP, and defining:

$$I = iD_{-1}; \text{ and} \quad (2a)$$

$$Y = (1 + g)Y_{-1} \quad (2b)$$

where i is the nominal interest rate and g is the growth rate of nominal GDP, we obtain:

$$D/Y - D_{-1}/(1+g)Y_{-1} = iD_{-1}/(1+g)Y_{-1} - P/Y + A/Y \quad (3)$$

Equation (3) can be rewritten as:

$$\Delta d = -p + (i - g) d_{-1}/(1 + g) + a \quad (4)$$

where $d = D/Y$, $p = P/Y$, $d_{-1} = D_{-1}/Y_{-1}$, and $a = A/Y$

**Table 6. Decomposition of Large Reductions in Debt-to-GDP Ratios
in Advanced and Emerging Economies**

Episodes	Starting Debt Ratio	Debt Reduction	Ending Debt Ratio	Primary Surplus	Growth-Interest Rate Differential	Residual
Ireland (1987–2002)	109.2	77.1	32.2	53.3	31.1	-7.4
Denmark (1993–2008)	80.1	58.1	22.0	51.3	-26.7	33.4
Belgium (1993–2007)	136.9	53.0	84.0	70.2	-25.2	8.0
New Zealand (1986–2001)	71.6	41.8	29.8	52.1	-8.9	-1.4
Canada (1996–2008)	101.7	39.0	62.7	39.3	-19.2	18.9
Sweden (1996–2008)	73.2	35.2	38.0	21.0	-4.6	18.7
Iceland (1995–2005)	58.9	33.6	25.4	17.4	4.7	11.4
Netherlands (1993–2007)	78.5	32.9	45.6	27.5	-8.3	13.7
Spain (1996–2007)	67.4	31.4	36.1	21.6	11.5	-1.7
Norway (1979–1984)	56.5	21.4	35.1	24.2	11.7	-14.5
Average	83.4	42.3	41.1	37.8	-3.4	7.9
<i>Emerging Market Economies</i>						
<i>Inflation >= 10 percent a year</i>						
Serbia (2001–2008)	114.5	82.8	31.6	-3.8	74.8	11.9
Bulgaria (1996–2007)	96.4	77.7	18.7	37.5	21.5	18.7
Poland (1993–1998)	84.3	47.7	36.7	3.3	50.6	-6.3
Turkey (2001–2007)	77.6	38.1	39.4	29.7	12.0	-3.6
Hungary (1993–2001)	88.7	36.5	52.2	22.6	37.0	-23.0
Chile (1989–1998)	46.8	33.9	12.9	35.7	29.5	-31.2
Ecuador (1991–1997)	88.7	26.9	61.8	10.7	24.0	-7.8
Sri Lanka (1989–1997)	105.1	22.1	83.0	-14.1	62.8	-26.6
Romania (1999–2006)	30.3	11.9	18.4	1.8	22.1	-12.0
India (1993–1998)	79.5	9.4	70.1	-8.2	19.5	-2.0
Average	81.2	38.7	42.5	11.5	35.4	-8.2
<i>Inflation < 10 percent a year</i>						
Egypt (1991–1997)	93.5	60.3	33.2	18.5	40.3	1.5
Paraguay (1989–1997)	72.9	51.5	21.3	-1.8	39.4	13.9
Thailand (1986–1996)	95.5	44.5	51.0	31.6	13.4	-0.6
Tunisia (1987–1992)	90.9	44.5	46.4	13.9	30.3	0.3
Indonesia (2000–2008)	53.6	43.3	10.3	33.4	19.1	-9.1
Uruguay (2002–2008)	100.9	41.7	59.2	31.6	20.0	-9.9
Georgia (1999–2007)	102.1	39.4	62.6	-3.5	44.7	-1.7
South Africa (1998–2008)	57.2	34.7	22.5	13.9	34.0	-13.1
Jordan (2002–2008)	73.6	29.0	44.6	12.1	10.4	6.5
Panama (1990–1998)	48.5	21.2	27.3	30.2	3.6	-12.6
Average	78.9	41.0	37.9	18.0	25.5	-2.5

Sources: IMF, World Economic Outlook database and IMF staff estimates.

Notes: Figures are in percent of GDP. The episodes listed represent the largest year-to-year reductions in the debt-to-GDP ratio over the past three decades that were separated by at least 15 years. The interest rate used in the computation of the growth-interest rate differential is the "effective" interest rate, calculated as the ratio of government interest payments to the previous period's ending debt stock. For emerging markets, known episodes of debt default, exchange, or rescheduling were dropped. The inflation rate cut-off of 10 percent refers to the average inflation rate prevailing during the episode.

On the basis of the debt dynamics in (4), the main contributors to large fiscal adjustments can be derived. Table 6 shows a decomposition of the main contributors to successful fiscal adjustments for advanced economies and emerging markets, subdivided into episodes with more or less than

10 percent inflation. What the evidence shows is that changes in the primary surpluses contributed the most in advanced economies to bring about the necessary fiscal adjustment, while the growth–interest rate differential was less relevant. This is less clear in episodes with high and low inflation in emerging markets, where increases in primary surpluses played a lesser role in the growth–interest rate differential.

4

Model

The BGPZ model features an infinite-horizon small open economy consisting of households, two production sectors with firms producing traded and nontraded goods, a government, and a central bank.

Households: There are two types of households.

- a. A fraction of households can smooth consumption by varying their asset holdings of government bonds, money balances, and foreign assets.
- b. The remaining share of households is liquidity constrained and can essentially consume only its current labor income.

Production:

- c. Nontraded-goods sector: Firms operating in this sector face monopolistic competition and nominal price rigidities. Nontraded goods are produced using labor and private and public capital.
- d. Traded-goods sector: firms operating in this sector face perfect competition and flexible prices. Traded goods are produced using labor and private and public capital. There is learning-by-doing in the traded-goods sector. Increases in activity will temporarily increase sectoral total factor productivity. This captures potential Dutch disease effects from capital inflows and the resulting real appreciation.

The central bank: The central bank manages money growth in a way consistent with price stability and intervenes in the foreign exchange market to control the level of reserves in three ways: (i) it converts the value of SACU transfers in domestic currency; (ii) it buys and sells reserves in a way that is consistent with the exchange rate regime (for example, in the case of Swaziland, the central bank must buy and sell reserves to maintain the fixed exchange rate regime); and (iii) it buys and sells reserves in a way that is consistent with its long-run desired ('optimal') level of reserves.

Government: The government spends on consumption and investment (of both traded and nontraded goods— $p_t^g g_t$) and interest payments on government debt held by consumers $\left(\frac{(i_{t-1}-1)b_{t-1}^c}{n\pi_t}\right)$. It can finance this spending by taxing labor income $(\tau_t w_t l_t)$, using the domestic currency value of SACU transfers $(s_t A_t^*)$, drawing down its assets (drawing on deposits held at the central bank $\left(d_t^g - \frac{d_{t-1}^g}{n\pi_t}\right)$ or issuing debt $\left(b_t - \frac{b_{t-1}}{n\pi_t}\right)$:

$$p_t^g g_t = \tau_t w_t l_t + s_t A_t^* - \left(d_t^g - \frac{d_{t-1}^g}{n\pi_t}\right) + \left(b_t - \frac{b_{t-1}}{n\pi_t}\right) - \left(\frac{(i_{t-1} - 1)b_{t-1}^c}{n\pi_t}\right)$$

where p_t^g is the price of government consumption, g_t is the basket of nontraded and traded goods consumed by the government, τ_t is the labor income tax rate, $w_t l_t$ is labor income, s_t is the exchange rate, A_t^* is the foreign currency value of SACU transfers, n is the gross rate of technological progress, π_t is the gross inflation rate, b_t is domestic debt, i_t is the interest rate on domestic debt and b_t^c is domestic debt held by consumers. SACU transfers follow an AR(1) process:

$$A_t = \bar{A} + \rho^A (A_{t-1} - \bar{A}) + \epsilon_t^A$$

where $0 < \rho^A < 1$ and ϵ_t^A is an exogenous decrease in SACU transfers at time t . Government spending can be used for consumption or investment. There are two types of public investment. $x_t^{gs} = \mu_s \bar{g}$ is a fixed fraction of steady state government spending and $x_t^{gA} = \mu_A (g_t - \bar{g})$ is the fraction of public investment associated with SACU transfers. The scenarios considered in this paper are based on modifications of the government budget constraint.

In Scenario (i), the labor income tax rate τ is fixed and a negative shock to SACU transfers ($\epsilon_t^A < 0$) must be offset by a reduction in government

spending. The reduction in public capital can be shut down by setting $\mu_A = 0$ when A_t falls so that the government must maintain the steady state level of investment in public capital after the shock and concentrate spending cuts on recurrent expenditures. In Scenario (ii), $g_t = \bar{g}$ is fixed at its steady state level, and the labor income tax τ must adjust to satisfy the government budget constraint. Finally, in Scenario (iii), the labor income tax only partially responds to the fall in SACU revenues:

$$\tau_t = \bar{\tau} + \rho^\tau(\tau_{t-1} - \bar{\tau}) + \gamma^\tau(A_{t-1} - \bar{A})$$

so that government spending must also offset the remaining shortfall necessary to satisfy the government budget constraint.

APPENDIX

5

Calibration

The model for Swaziland is calibrated based on the steady-state values described in Table 7 and the parameters in Table 8.

Table 7. Steady-State Values

National Income accounts (as a share of GDP)	
Consumption	93.5
Traded sector	37.0
Nontraded sector	56.5
Private investment	10.2
Traded sector	4.0
Nontraded sector	6.2
Government Spending	30.7
Government consumption	23.2
Government investment	7.5
Government spending on traded goods	9.2
Government spending on nontraded goods	21.5
Trade Balance	-3.0
Exports	66.9
Imports	69.8
Value added in the nontraded sector	50.2
Value added in the domestic traded sector	84.2
Government accounts (as a share of GDP)	
Spending	32.6
Taxes	30.2
SACU transfers	20.3
Seigniorage	0.0
Interest payments	1.0
Government debt	19.0
Held by the central bank	6.8
Government deposits at the central bank	0.6
Central Bank Accounts	
Government debt held by the Central Bank	3.2
Government deposits at the Central Bank	0.6
Net Foreign Assets (Reserves)	19.9
Assets (as a share of GDP)	
Real money balances (Base money/Broad money)	22.5
Foreign assets held by the private sector	0.1
Government bonds held by the private sector	0.0
Annualized Inflation, nominal depreciation	7.5
Annualized Nominal interest rates	9.5
Annualized Real interest rates	5.2
Trend growth	7.0
Annualized real interest rate	9.1
Annualized short-term interest rate	17.3

Sources: Swaziland authorities and IMF staff estimates.

Table 8. Parameter Calibration

Parameter	Value
Discount rate for the rule of thumb consumers	0
Labor share in nontraded sector	0.7
Labor share in traded sector	0.7
Public capital share in nontraded sector	3
Public capital share in traded sector	3
Depreciation rate (nontradable sector)	0.015
Depreciation rate (tradable)	0.015
Depreciation rate of public capital	0.02
Efficiency of public sector	0.4
Efficiency of SACU-financed investment	0.4
Investment adjustment costs, nontraded sector	25
Investment adjustment costs, traded sector	25
Learning-by-doing (LBD) externality parameter	0.1
Productivity in the traded sector at the steady state	1
Persistence of LBD externality	0.1
Inverse of the Frisch labor supply elasticity	1.5
Interest semielasticity of money demand	8.5
Measure of optimizing consumers	0.666666
Elasticity of substitution between traded and nontraded goods	0.89
Elasticity of substitution between varieties	12
Elasticity of substitution between the two types of labor	1
Degree of capital mobility	500
Persistence of SACU transfers	0.9
Average size of SACU adjustment (in percent of steady state GDP) over quarter of adjustment	-5
Number of quarters of adjustment	40
Spending response to the aid surge. Preferred calibration = 1	1
Persistence of real deposit accumulation	0.9
Persistence of real debt accumulation	0
Persistence of tax increases (ρ^T)	0.2
Responsiveness of tax increases to changes in SACU transfers (γ^T)	-0.1
Sale of dollars from the aid surge.	1
Weight of exchange rate target on reserves	100000
Persistence of reserve accumulation	0.9
Inflation targeting coefficient from implicit interest rate rule	1.5
Degree of sterilization	0 or 0.5

Sources: Swaziland authorities and IMF staff estimates.

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