
Fiscal Policy Response during the Crisis in Low-Income African Economies

Martine Guerguil, Marcos Poplawski-Ribeiro, and Anna Shabunina

11.1 Introduction

Fiscal policy has traditionally been procyclical in emerging market and developing economies; that is, government spending increases in good times but declines in bad times, possibly exacerbating the business cycle. A large and growing body of literature has linked this outcome to three main (and not inconsistent) factors: financial constraints, political distortions, and technical weaknesses.¹ Because of their limited access to financial markets, governments have no choice but to cut spending and raise revenues in bad times, while in good times, inadequate political and fiscal institutions make it difficult to resist pressures to increase expenditure and lower taxes. Growth forecast errors and weak implementation capacities add to these constraints. The resulting “procyclical bias” is likely to be particularly pronounced in low-income countries (LICs) in sub-Saharan Africa (SSA), given the smaller size of automatic stabilizers and more pervasive governance and administrative limitations.²

In the 2000s, a number of middle- and low-income countries began to graduate from this procyclical bias and conduct acyclical or countercyclical fiscal policies in the face of downturns. This change has been largely attributed to the strengthening of their fiscal frameworks and budget institutions.³ As the global financial crisis broke out, many SSA LICs had built sizable fiscal buffers and were able to implement policies specifically aimed at mitigating the impact of the global slowdown on their economies. The authorities quickly designed ambitious stimulus packages. And international organizations were willing to provide the financing to that end.⁴

This chapter looks at the subsequent implementation of fiscal policies in SSA LICs. More specifically, it asks three questions. Were the fiscal policies implemented in response to the global crisis effectively countercyclical? Was implementation in line with the original plans? And if there were divergences, what were the causes? The answers to these questions feed into the ongoing debate on the role of fiscal policy in LICs and its potential contribution to macroeconomic stabilization, and can provide insights for its future design.

The chapter extends the finding of the literature in two ways. Following Thornton (2008), it is one of the few attempts to focus more specifically on the cyclicity of fiscal policy in low-income economies. SSA LICs have specific features that distinguish them from their higher income neighbors, such as South Africa or Botswana, and are likely to impact fiscal policy implementation, such as access to concessional financing, less diversified tax and public spending structures, and possibly weaker institutions. The chapter also builds on Lledó and Poplawski-Ribeiro (2011, 2013) by analyzing the determinants of budget execution separately for current and for capital spending. Isolating the impact of specific factors on implementation of public investment projects is particularly pertinent since closing the infrastructure gap is now a prominent policy goal in Africa.

We find that SSA LICs have been able to move away from procyclical fiscal policy during the global financial crisis, but the overall fiscal numbers mask two diverging and potentially bothersome trends: the large overexecution of current spending and the even larger underexecution of capital projects. Various factors contribute to this outcome. The quality of governance and budgetary institutions explains a significant part of the deviation between intended and observed current spending, while political factors seem to have more impact on the implementation of investment plans. A possible explanation is that democratically elected governments tend to receive a large share of aid, potentially above their actual implementation capacity, particularly when it comes to the execution of investment projects. This gap between execution of current and capital spending plans, if maintained, could reduce LICs' future fiscal space. Further strengthening of fiscal institutions, including efforts to increase the technical content of investment decisions, could help avoid a return to fiscal procyclicality.

The chapter is structured as follows. Section 11.2 briefly describes the impact of the global financial crisis on SSA LICs and the planned and observed fiscal policy responses. Section 11.3 examines whether the resulting fiscal stance was countercyclical as intended, and section 11.4 looks at the factors behind the deviation between fiscal plans and observed outcomes. Section 11.5 concludes.

11.2 Global Financial Crisis and Low-Income Africa

The decade prior to the global financial crisis witnessed noteworthy economic momentum in SSA. In a region previously plagued by dismal economic outturns, average annual growth accelerated to 5.3 percent over 2000 to 2007. Some low-income African countries even topped the world's growth charts, fueling talk of the emergence of "African lions" (McKinsey Global Institute 2010). The pre-crisis commodity boom explains only part of this new dynamism; activity accelerated across the continent and was observed even in countries where commodities did not account

Table 11.1
Real GDP growth (percent)

	2000–2007	2008	2009	2010	2011	2012
World	4.7	2.9	−0.6	5.0	3.6	3.1
Sub-Saharan Africa	6.3	5.6	2.8	5.3	5.1	5.1
Low-income sub-Saharan Africa	5.3	6.6	5.0	6.4	5.7	6.1

Source: *Fiscal Monitor*, October 2012

Note: Annual averages, weighted by GDP at PPP using 2009 weights and based on data availability.

for a large share of exports. Regained political balance and macroeconomic stability, the latter buttressed by far-reaching policy reforms including trade liberalization, privatization, and fiscal consolidation, were major factors behind this upswing.

The global financial crisis did break the trend. Growth in the region as a whole slowed to 2.8 percent in 2009, the lowest level in fifteen years. The effect on SSA LICs was more subdued, in good part because of their more limited integration with the world economy: the average shortfall in output was only 1.5 percentage points (table 11.1). However, the impact varied considerably across countries, reflecting the different strength of their external trade and financial links. About one-third of the countries (those more reliant on exports and remittances) suffered a substantial downswing, one-third a modest slowdown, while the remaining third was unaffected (some countries even benefitting from the reversal in the pre-crisis food price surge). Given the tenuous links of SSA LICs with international capital markets, very few suffered from financial strains in the aftermath of the crisis (see detailed table in appendix A at the end of this chapter).

The slowdown, when it happened, was also relatively short, with growth rebounding to pre-crisis levels in most cases as soon as 2010. This outcome was in sharp contrast with the slow and hesitant recoveries observed in the past (IMF 2009b) and the prolonged economic slump in advanced economies. The quick rebound in world trade and commodity prices helped, together with the resilience of aid flows (including those from international organizations). In all, the growth impact was significantly shallower, and the recovery faster, than initially anticipated (figure 11.1).

About 60 percent of SSA LICs designed ambitious fiscal stimulus packages to mitigate the impact of the expected negative shock, often with international support (table 11.2). The resulting widening of budget deficits (of about 1.5 percent of GDP over 2008 to 2009) was expected to be temporary. Revenue measures were included in about half the countries and sometimes involved lowering corporate taxes and royalties. Reductions in excise taxes and import duties on food and fuel products and/or increases in direct subsidies of these products were also common,

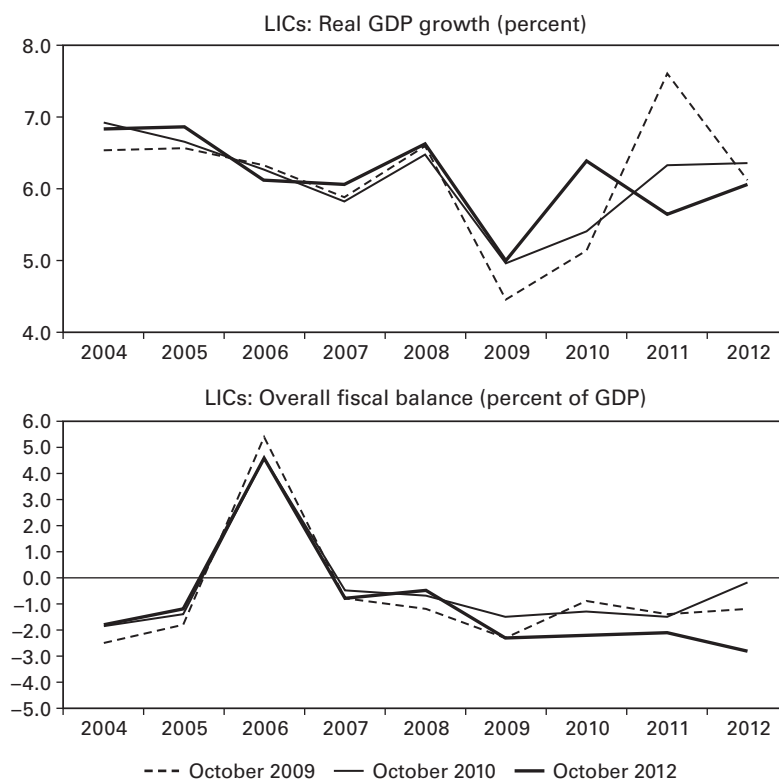


Figure 11.1

Successive vintages of growth and budget deficits forecasts. LICs: real GDP growth (percent); LICs: overall fiscal balance (percent of GDP). Annual averages are weighted by GDP at PPP using 2009 weights and based on data availability.

Sources: *Fiscal Monitor*, October 2012; *World Economic Outlook (WEO)*, October 2010 and October 2009

Table 11.2

Planned fiscal policy responses (percent of countries)

Planned countercyclical response	62
<i>Of which:</i>	
Planned tax measures	50
Planned changes in excise and custom duties or in fuel subsidies	44
Planned pro-poor spending measures	44

Source: IMF staff estimates

often as part of social support programs. Almost all countries in the group planned to step up capital spending (on average, by 3 percentage points of GDP over 2008 to 2010). These ambitious programs, mostly focused on road and energy projects, had been designed before the crisis as part of a drive to close an infrastructure deficit seen as a brake on potential growth. In contrast to experience with previous global slowdowns, when SSA LICs had been forced to trim spending in the face of an unexpected decline in revenue, most countries left their expenditure plans unchanged, thus combining long-term objectives (boosting potential growth) with short-term ones (stabilizing output). Capital spending was, in many cases, the largest element of the planned countercyclical response to the crisis (figure 11.2, upper panel).

In the event, the deficits ended up about 2 percentage points of GDP larger than projected. Revenue fell short of projections by an average of 2.5 percent of GDP, but overall spending was slightly below budget plans (by 0.5 percent of GDP). The degree of budget execution was noticeably different for current and capital spending (figure 11.3 and figure 11.2, lower panel). Capital projects were significantly underexecuted (an average gap of 1.9 percent of projected GDP, or 17 percent, with respect to the budget, with 70 percent of countries falling behind their plans) while current spending went in many cases over planned allocations (by 1.6 percent of projected GDP on average, or 9 percent over budget, in 70 percent of observations/country-years). The under execution of capital spending plans seems to have been noticeably smaller than that recorded in the pre-crisis period (33 percent on average, according to estimates in Briceño-Garmendia et al. 2008). Nevertheless, in practice, and contrary to initial plans, a large part of the stimulus was delivered via an increase in current spending and not through public investment.

11.3 A Shift to Countercyclical Fiscal Policies?

Although standard economic theory suggests that fiscal policy should ideally be countercyclical, many studies have shown that fiscal policy has been procyclical in most developing economies for most of the past decades. Gavin and Perotti (1997) and Thornton (2008) reach that conclusion for Latin America and low-income Africa, respectively, while Kaminsky, Reinhart, and Végh (2004), Akitoby et al. (2004), and Talvi and Végh (2005) show similar results for larger groups of developing economies across the world. This procyclical bias has been attributed to financial constraints, as developing countries are cut off from international credit markets in “bad times,” forcing them to adjust (Gavin and Perotti 1997); political and institutional failures contributing to or failing to control overspending and rent-seeking activities in “good times” (Lane and Tornell 1999; Talvi and Végh 2005); and technical limitations including larger forecast errors and budget rigidities that narrow the scope for automatic stabilizers (Balassone and Kumar 2007).

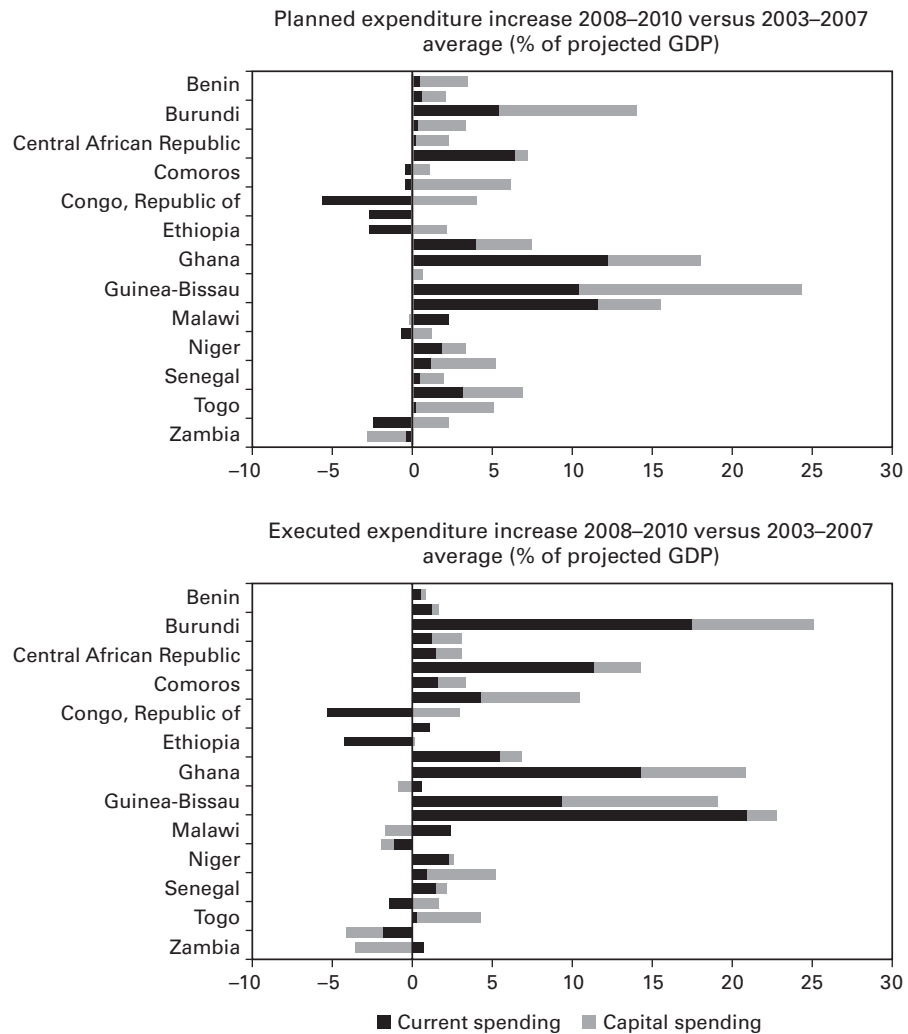


Figure 11.2

SSA LICs: planned versus executed current and capital spending, 2003 to 2008; planned expenditure increase 2008 to 2010 versus 2003 to 2007 average (percent of projected GDP); executed expenditure increase 2008 to 2010 versus 2003 to 2007 average (percent of projected GDP).

Source: IMF staff estimates

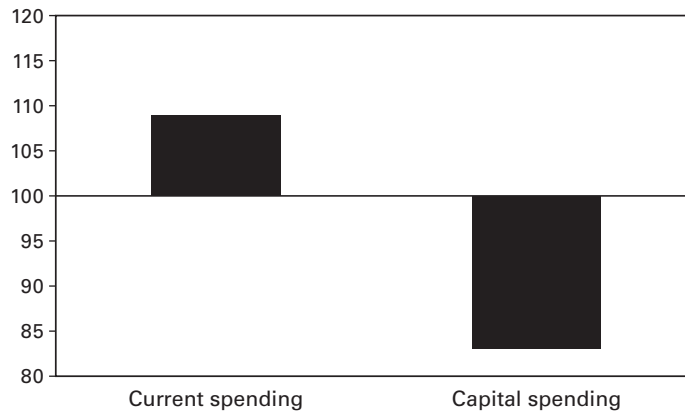


Figure 11.3

Capital and current spending implementation (percent of planned spending)

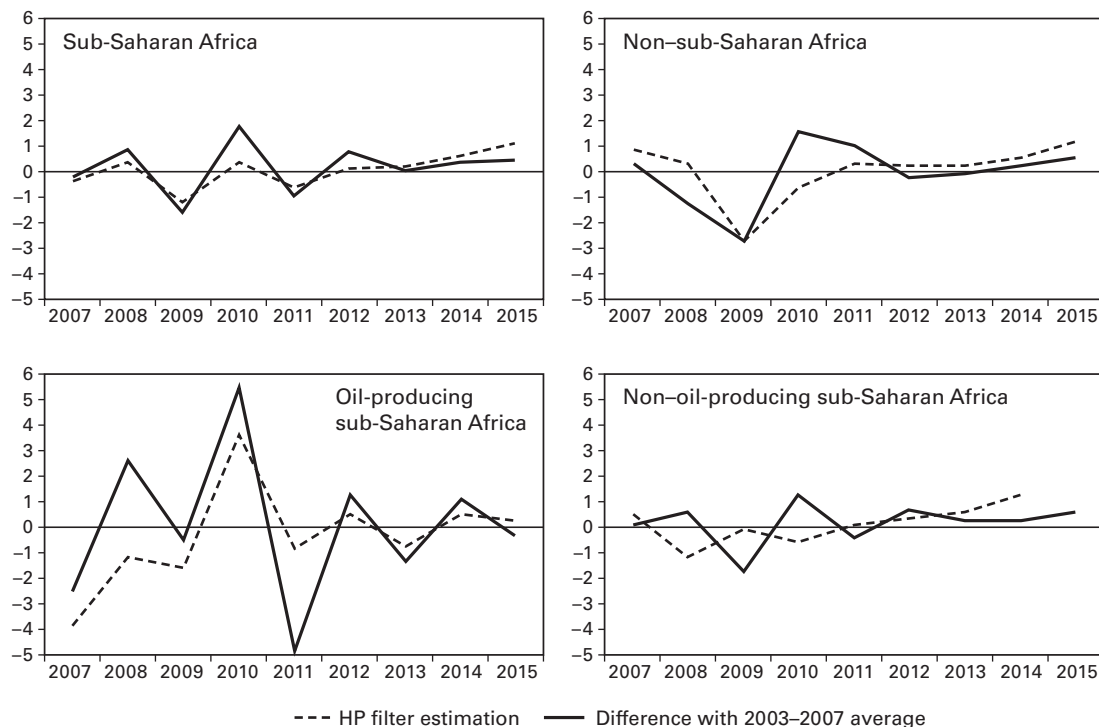
Source: IMF staff estimates

More recent papers have, however, indicated that a number of economies are moving away from the procyclical corner. Frankel, Végh, and Vuletin (2013) conclude that over the 2000s, about a third of developing economies have implemented countercyclical fiscal policies. Lledó, Yackovlev, and Gadenne (2011) find that procyclicality has declined in Africa since 2000. IMF (2010) reports preliminary data suggesting that two-thirds of SSA economies were able to implement a countercyclical response to the crisis in 2009. Our aim is to reassess this conclusion for the subset of SSA LICs in the context of the global financial crisis.

11.3.1 Methodology

Attempting to estimate business cycles in low-income Africa is challenging. One important limitation is the absence of high-frequency data; GDP is in most cases available only on an annual basis, which makes it difficult to obtain precise estimates of the output gap. In addition, output series in SSA tend to show a higher volatility, increasing the margins of error of any trend estimate. The problem is exacerbated here by the short period under consideration in this chapter, as the impact of the global financial crisis was, as mentioned, short-lived in SSA.

To mitigate the impact of these limitations we complement the traditional HP filter-based approach (that compares the level of the cyclically adjusted primary balance (CAPB) with that of the output gap and considers that fiscal policy is countercyclical if the correlation coefficient is positive)⁵ with a nonparametric analysis that compares the growth of real primary government spending with that of trend output growth (the latter estimated as the average growth during the five years before the

**Figure 11.4**

Output gap dynamics (percent of GDP) SSA; non-SSA; oil-producing SSA; non-oil-producing SSA.

Source: IMF staff estimates

crisis).⁶ This additional test cannot, however, fully compensate for the weaknesses of the data, and the results should thus be taken as largely indicative.

11.3.2 Empirical Results

Estimates are computed for a group of 26 LICs in SSA (of which 3 are oil exporters) and a control group of 20 LICs in other regions. (Appendix B at the end of this chapter provides details on data and data sources as well as on the methodologies used in the different estimation exercises.) Figure 11.4 confirms that in LICs, the global financial crisis coincided with a brief but abrupt decline in the pace of activity to below its potential. The crisis hit in 2009, with the output gap at first widening markedly but narrowing shortly thereafter. In SSA LICs, and particularly in oil exporters, activity faltered again in 2011, but rebounded in the following year. These results are consistent across the two methodologies, although the HP filter, which uses a longer time period (1995 to 2017), shows a lesser change in the output gap in SSA.

Table 11.3
Share of country-years with countercyclical fiscal policy (percent)

	2003–2007	2008–2010
SSA total		
HP filter	42%	55%
Nonparametric 1	46%	50%
Non-SSA		
HP filter	40%	61%
Nonparametric 1	47%	56%

Source: IMF staff estimates

The closing of the output gap is also faster under the trend estimate, but in the case of SSA seems largely driven by the oil exporters. Notwithstanding the double dip, the overall shock to non-oil-producing SSA LICs was less destabilizing than in LICs in other regions (and considerably smaller than the shock to advanced economies), likely reflecting the lesser integration of SSA LICs in global trade.

11.3.3 Comparative Statistics

Table 11.3 shows simple estimates of the share of LICs implementing countercyclical fiscal policy. The data are split into two periods, 2003 to 2007 (before the crisis) and 2008 to 2010 (during the crisis), and estimated according to the two approaches described above. Prior to the crisis, well over half of the LICs followed procyclical policies. This proportion is, however, already significantly below that found in studies covering earlier decades, where the share of LICs undertaking countercyclical policies was often minimal. Interestingly, this proportion is roughly similar for the two methodologies and across regions—that is, the performance of SSA LICs is not noticeably different from that of LICs in other regions.

The table also shows that the share of countercyclical policy responses grew to well over half the total during the recent crisis. The increase is more pronounced for non-African LICs, but is still significant for SSA LICs. Again, both methods of estimation confirm this trend. A decomposition of the policy responses according to the type of shock (positive or negative) shows that in SSA as well as in other regions, the countercyclical response to negative shocks drives the trend (table 11.4). The movement is particularly pronounced for oil exporters, although this result should be treated with care given the small sample and the different nature of the cycle for commodity exporters. The share of countries following procyclical policies in good times also declined, suggesting that the change in policy responsiveness is not only due to the higher availability of financing.

Table 11.4
Asymmetrical fiscal policy response

HP filter Estimation	Countercyclical fiscal policy ^a			Procyclical fiscal policy ^b		
	Positive output gap shock	Negative output gap shock	Total	Positive output gap shock	Negative output gap shock	Total
2003–2007						
SSA total	21%	21%	42%	32%	26%	58%
SSA non-oil producers	21%	22%	43%	33%	24%	57%
SSA oil producers	0%	17%	17%	33%	50%	83%
Non-SSA	30%	10%	40%	33%	26%	60%
2008–10						
SSA total	19%	36%	55%	21%	24%	45%
SSA non-oil producers	19%	33%	52%	23%	25%	48%
SSA oil producers	17%	67%	83%	0%	17%	17%
Non-SSA	29%	32%	61%	13%	27%	39%

Source: IMF staff estimates

a. Share of cases (countries and years) in which countercyclical fiscal policy was conducted given the 0 output gap shock in the period- and country-group sample specified.

b. Share of cases (countries and years) in which procyclical fiscal policy was conducted given the output gap shock in the period- and country-group sample specified.

The exercise also confirms the small size of automatic stabilizers in LICs (table 11.5).⁷ Reflecting relatively low tax ratio, automatic stabilizers on average account for barely 0.2 percent of GDP in SSA LICs. They are twice as large in LICs in other regions, mainly because their revenue-to-GDP ratios are higher. Automatic stabilizers are also considerably larger among oil exporters. The discretionary change in the primary balance has been on average substantially (1.5 to 3 times) larger than automatic stabilizers across all country groups.

11.3.4 Pooled Regressions

We try to formalize these results for SSA LICs by estimating the reaction function of the CAPB to the output gap. Given the small sample, regressions are estimated using panel fixed effects with ordinary least squares (FE-OLS) with White-heteroskedasticity corrected *t*-statistics. The results are shown in table 11.6. The coefficient beta shows the change in CAPB when the output gap increases by 1 percentage point; it is expected to have a positive sign when fiscal policy is countercyclical. We again split the sample in two time periods (before and after the crisis) and calculate the coefficients for both the planned CAPB and the observed CAPB.

Table 11.5
Automatic stabilizers (percent of GDP)

	SSA non-oil producers	Non-SSA	Oil producers
2003	-0.2	-0.3	-0.2
2004	-0.2	-0.2	0.2
2005	-0.1	-0.2	0.5
2006	-0.1	-0.1	0.7
2007	-0.1	0.1	-0.4
2008	0.0	0.4	-0.7
2009	-0.2	-0.3	-0.6
2010	-0.2	-0.4	0.2

Source: IMF staff estimates

Table 11.6
Fiscal policy and the business cycle in LICs

	CAPB			Planned CAPB
	1996–2007	2000–07	2008–10	2008–10
Output gap	-0.004 (-0.046)	0.082 (0.875)	0.675** (2.291)	
Projected output gap				0.338** (1.754)
Previous year's debt	0.000 (0.074)	0.003 (0.567)	0.012 (0.819)	0.010 (0.656)
Constant	-0.359 (-0.362)	-0.665 (-0.672)	-3.964** (-2.273)	-0.930 (-0.591)
Adjusted R^2	0.367	0.432	0.423	0.699
F	11.623	11.952	.	6.476
Number of observations	189	167	73	60

Source: IMF staff estimates

Note: All regressions are estimated using panel fixed effects with OLS (FE-OLS) with White heteroskedasticity corrected t -statistics in parentheses, rejection of the null hypothesis at *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

The data confirm the shift to countercyclical policies. The coefficient is negative but very small in the years prior to the crisis, suggesting that, on average, fiscal policy tended to be acyclical. In addition, the coefficient is not significant, which may reflect a large variance across countries in the sample. The coefficient becomes positive and significant for the planned as well as for the observed fiscal response to the crisis, thus confirming that the move toward countercyclical policy was both intended and achieved, and was rather widespread. The coefficient is higher for policy outcomes than for policy intent, suggesting that the countercyclical impact was actually larger than intended. This reflects the double impact of, on the one hand, the smaller-than-expected growth slowdown and, on the other hand, the larger-than-planned widening of the deficit—both effects increasing the measure of countercyclicity.⁸ The next section attempts to identify the reasons behind this gap between planned and observed deficits.

11.4 What Explains the Difference between Fiscal Plans and Outcomes?

11.4.1 Theoretical Underpinnings

The literature has identified several factors that may contribute to gaps in the implementation of fiscal policy in LICs. Institutional, political, and capacity constraints figure prominently, but forecast errors also play a role:

- *Institutional and capacity constraints.* The implementation of fiscal policy is closely related to the quality of institutions, particularly those in the budgetary area. Weaker institutions tend to lengthen decision and implementation lags, while the absence of checks and balances gives government officials discretion to deviate from fiscal plans. High turnover and inadequate skills of public employees can also act as drags on implementation. Good governance and good institutions tend to go hand in hand. Gollwitzer and Quintyn (2010) confirm that sound budgetary institutions are most likely to be established in countries with a more effective rule of law for the elites. More recently IMF (2010) finds that planned fiscal adjustments or expansions are less likely to be implemented in SSA the larger they are, the more fragile the rule of law in the country, and the weaker the institutions framing the implementation of the annual budget (see also Lledó and Poplawski-Ribeiro 2013).
- *Political variables.* Electoral years, the political regime, and the length of time an administration has been in office may affect the implementation of fiscal policy. This is more likely to be the case in Africa where political transitions from one administration to another have often been challenging and conflicts have been more frequent than in other regions.
- *Differences between aid commitments and aid disbursements.* Aid has been found to be more volatile than fiscal revenue, and shortfalls in aid and domestic

revenue have tended to coincide. Moreover the informational content of commitments made by donors is limited (Bulíř and Hamann 2003) and donors often have little flexibility to alter their disbursement schedules in the face of (positive or negative) shocks. Aid shortfalls can contribute to delays in public spending, particularly in highly aid-dependent countries, and to changes in spending composition, to the extent that aid was earmarked for specific purposes.

- *Errors in growth and inflation forecasts.* Deviations between projected and observed GDP growth and inflation may also affect the pace of policy implementation through the course of the fiscal year. Output forecast errors can be expected to be larger than in higher income countries, given the weaker forecasting capacity and the higher volatility of output. Forecast errors in CPI inflation may affect fiscal implementation through their impact on revenue.⁹ Growth and inflation forecast errors are likely to affect the pace of budget execution in countries using cash budgeting, as is the case of many SSA LICs.

11.4.2 Methodology and Data

We try to identify separately the determinants of implementation gaps in current spending from those in capital spending. Section 11.2 showed how the rate of execution varied across these two categories, suggesting that different factors are at play in each case. We follow the methodology used by Beetsma, Giuliodori, and Wiertz (2009) and Lledó and Poplawski-Ribeiro (2013) and look at the difference between planned and actual fiscal outcomes for each category and each country. As in this literature, differences between planned and actual spending in a given year t are here computed as a percent of projected GDP. The relationships are estimated in real time to proxy the information sets available to the policy makers at the time they made their decisions. In line with the literature, possible determinants include forecast errors (for growth, inflation, and grants), political variables (election years, the degree of democracy, and years the executive officer has been in office), and institutional variables (rule of law and government effectiveness). An interaction term is added to explore the combined effect of the quality of budgetary institutions (captured in largely time-invariant indicators) with overall government effectiveness. Details of the methodology and data sources are to be found in appendix A.

11.4.3 Empirical Results

Table 11.7 presents the descriptive statistics. As discussed in section 11.2, the current spending gap (here in levels) is negative on average (the observed level is higher than planned), while the capital spending gap (also in levels) is positive, reflecting underexecution. Grants fell short of projections, but by a relatively small amount. Inflation was lower than expected, but real GDP growth was higher. Reflecting the

Table 11.7
Descriptive statistics, 2008 to 2010 (percent of projected GDP, unless otherwise specified)

Variable	Mean	Standard deviation ^a	Minimum	Maximum	Observed
Current spending gap	-1.6	4.7	-16.5	13.3	83
Capital spending gap	1.9	4.0	-6.1	15.6	76
Real GDP gap	-0.3	2.9	-10.7	6.4	72
CPI gap	5.6	11.5	-18.1	39.8	84
Grants gap	0.4	4.0	-17.6	13.5	83
Planned current spending	17.4	6.9	9.3	49.5	83
Actual current spending	18.9	8.8	0.0	52.0	83
Planned capital spending	11.0	6.3	3.2	43.9	76
Actual capital spending	9.2	5.9	0.0	30.8	76
Realized capital spending ^b	8.4	5.1	0.0	27.4	76
Planned capital spending—previous year capital spending ^c	3.1	5.4	-5.6	34.1	76
Planned real GDP ^d	100	0	100	100	72
Actual real GDP ^d	65.1	33.7	0.1	146.4	72
Planned CPI inflation ^d	14.8	12.7	2.0	65.2	85
Actual CPI inflation ^d	8.7	8.4	-2.1	46.2	85
Planned grants	7.4	8.8	0.3	54.0	85
Actual grants	7.2	11.7	0.0	88.3	86
Degree of democracy (polity2) ^e	2.5	5.3	-9.0	10.0	84
Electoral year ^e	0.2	0.4	0.0	1.0	86
Executive years in office ^e	10.6	9.4	1.0	42.0	84
Index rule of law ^e	-0.7	0.6	-1.8	1.0	88
Index government effectiveness ^e	-0.7	0.6	-1.8	0.8	88
Overall categories × government effectiveness ^e	-1.0	1.0	-2.8	1.5	99
Overall stages × government effectiveness ^e	-1.0	1.0	-3.0	1.4	99
PIMI overall index × government effectiveness ^e	-0.8	0.8	-2.5	1.8	90

Source: IMF staff estimates

a. Cross-country and time standard deviation.

b. Variable in percent of actual GDP.

c. Variable in percent of respective (planned or actual) GDP.

d. Variable in percentage.

e. Scalar variable.

heterogeneity of the sample, standard deviations are sizable for about all variables in table 11.7.

Implementation of Current Spending

Table 11.8 displays the panel estimations for current spending. The results of the baseline regressions with only macroeconomic variables are shown in columns 1 and 2; those including political and governance institutions in columns 3 to 8; and the interaction with budgetary indexes in columns 9 and 10. The overall statistics are satisfactory, with significant *F*-tests. All variables enter with the expected signs, confirming their relevance for the estimations.

Forecast errors in real GDP and grants are closely associated with current spending plans deviations. As expected, the coefficients for forecast errors, both in real GDP and in grants, are positive and significant, although not very large. Forecast errors in inflation are generally nonsignificant.

Indicators of the quality of governance and fiscal institutions are found to be related to smaller deviations in current spending plans. Both the rule of law and government effectiveness are associated with better budget implementation, including times when they exist in combination (column 8) suggesting that strong governance and strong budget institutions do contribute to a better execution of current spending.¹¹

The effect of political variables is also significant, but more complex. The dummy on electoral years has a positive and significant coefficient (columns 4 and 5), suggesting a stronger deviation from current spending plans in years when elections are held. In contrast, the indicator showing the number of years the chief executive has been in office yields a significant and negative coefficient, which suggests that the longer the executive has been in office, the smaller the deviations from plans.¹² The degree of democracy has a positive coefficient, suggesting that deviations from plans are more frequent in democracies, although it is only significant when the indicator of the number of years that the chief executive has been in office is also included in the regression.

The fact that the government time in office is inversely related to gaps in current spending is consistent with the positive coefficient for the level of democracy. By definition, democratic governments tend to stay less time in power. In addition, in SSA, the 2000s have seen the emergence of “new democracies” that often had to put in place new or reformed institutions, possibly raising near-term challenges to their implementation capacity.¹³

Implementation of Capital Spending Plans

The panel results for capital spending are shown in table 11.9. Forecast errors in grants again figure prominently, with a coefficient that is significantly larger than

Table 11.8
Panel estimation of determinants of execution of current spending plans

Variables	Baseline/economic			Political and governance institutional variables			Budgetary indexes			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Constant	-1.594*** (-5.68)	-1.518*** (-6.40)	-1.412*** (-3.74)	5.569*** (2.46)	5.421** (2.49)	-6.364*** (-3.70)	-9.585*** (-2.61)	-11.671*** (-2.96)	-9.448*** (-2.48)	-8.844*** (-2.43)
Real GDP gap	0.261**	0.238*	0.272**	0.376***	0.442***	0.249*	0.184	0.202	0.246*	0.244*
CPI inflation gap	(1.97)	(1.66)	(2.20)	(2.67)	(2.67)	(1.93)	(1.31)	(1.57)	(1.83)	(1.78)
Grants gap	0.071	0.026	0.035	-0.011	-0.003	0.038	0.032	0.040	0.031	0.031
Degree of democracy (polity2)	(1.50)	(0.55)	(0.82)	(-0.37)	(-0.11)	(0.79)	(0.69)	(0.84)	(0.57)	(0.57)
Electoral year		0.120*** (2.75)	0.116*** (3.79)	0.081** (1.98)	0.075* (1.76)	0.094** (2.24)	0.114*** (2.91)	0.095** (2.35)	0.180** (2.02)	0.180** (2.04)
Executive years in office			0.106		0.278**					
			(0.90)	1.032**	(2.56)					
			-0.749		1.320**					
			(-0.89)	(2.09)	(2.23)					
				-0.767***	-0.816***					
			(-2.99)		(-3.19)					

Index rule of law	-6.276***	-4.620**									
Index government effectiveness	(-2.68)	(-2.07)									
	-9.405**	-7.678*									
Overall categories × government effectiveness	(-2.16)	(-1.85)									
											-6.104**
Overall stages × government effectiveness	(-1.99)										
											-5.679*
Adjusted R ²	0.10	0.12	0.21	0.50	0.52	0.18	0.20	0.22	0.26	22	22
F-Test of the regression	1.31	9.80***	7.09***	4.53***	4.16***	5.97***	11.74***	5.74***	4.87***	4.83***	4.83***
Number of countries	26	26	25	25	25	26	26	26	22	22	22
Number of observations	66	65	63	63	63	65	65	65	53	53	53

Source: IMF staff estimates

Note: All regressions are estimated using panel fixed effects with OLS (FE-OLS) with White heteroskedasticity corrected t -statistics in parentheses. ***, **, * rejection of the null hypothesis at 1 percent, 5 percent, and 10 percent level of significance, respectively.

Table 11.9
Panel estimation of determinants of execution of capital spending plans

Variables	Baseline/economic						Political and governance variables				Budgetary indexes and PIMI			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)				
Constant	1.507* (1.93)	1.393*** (2.85)	-0.045 (-0.05)	1.832 (0.49)	1.435 (0.47)	9.725** (2.41)	18.094*** (2.98)	3.906 (1.48)	3.744 (1.55)	5.711* (1.77)				
Real GDP gap	0.384* (1.79)	0.210 (0.98)	0.379** (2.29)	0.259 (0.96)	0.417** (2.32)	0.190 (0.84)	0.275 (1.42)	0.418** (2.33)	0.418** (2.33)	0.387*** (2.76)				
CPI inflation gap	0.159* (1.69)	0.011 (0.16)	0.032 (0.45)	0.005 (0.07)	0.023 (0.32)	-0.009 (-0.18)	-0.017 (-0.37)	0.071 (1.08)	0.071 (1.07)	0.075 (1.16)				
Grants gap		0.724*** (5.71)	0.695*** (5.70)	0.701*** (5.71)	0.687*** (5.58)	0.764*** (10.23)	0.819*** (8.27)	0.466*** (3.26)	0.467*** (3.25)	0.591*** (4.20)				
Degree of democracy (polity2)			0.626**		0.663**									
Electoral year			(2.24)		(2.22)									
Chief executive years in office			1.230 (1.22)	0.994 (0.54)	1.679 (1.05)									
Index rule of law				-0.060 (-0.15)	-0.176 (-0.51)			11.336** (2.12)		10.709** (2.24)				

Index government effectiveness																						4.369 (1.15)			
Overall categories × government effectiveness																							1.602 (0.65)		
Overall stages × government effectiveness																								1.479 (0.65)	
PIMI overall index																									4.198 (1.08) 0.51 8.17***
Adjusted R ²	0.12	0.56	0.59	0.56	0.58	0.60	0.60	0.61	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
F-Test of the regression	2.13	10.11***	6.60***	9.59***	100.38***	39.14***	31.58***	31.58***	7.72***	7.72***	7.72***	7.72***	7.72***	7.72***	7.72***	7.72***	7.72***	7.72***	7.72***	7.72***	7.72***	7.72***	7.72***	7.72***	7.72***
Number of countries	24	24	24	24	23	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	18
Number of observations	62	61	61	61	60	61	61	61	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	45

Source: IMF staff estimates

Note: All regressions are estimated using panel fixed effects with OLS (FE-OLS) with White heteroskedasticity corrected *t*-statistics in parentheses. ***, **, * rejection of the null hypothesis at 1 percent, 5 percent, and 10 percent level of significance, respectively.

that found for current spending. An absolute difference of 1 percent of projected GDP between expected and received grants is associated with a deviation of around 0.7 percent of projected GDP between planned and actual capital spending. This is in line with Bulíř and Hamann (2003), who argue that aid volatility accounts for higher spending volatility.

Indicators of the quality of institutions and governance play a much less prominent role in explaining deviations from capital spending plans than for current spending plans. Only the rule of law retains significance, while indicators of government effectiveness are not found to exert significant influence. This may reflect the fact that decisions on public investments are often taken at the political level, and may be less closely linked to the regular budget institutional process.

Among political variables, unlike in the case of current spending, only the degree of democracy is found to be significant, once more with a positive sign. The indicator for the number of years the chief executive or the party has been in power has again a negative sign, but it is not significant in any of the estimations. The fact that deviations from current as well as capital spending plans are more frequent in democracies is consistent with the “new democracy” hypothesis mentioned above. In addition, new governments may be inclined to embrace ambitious investment plans, while also facing large demand pressures, explaining why they may tend to overexecute current spending plans at the expense of capital spending plans. Finally, democratic countries tend to receive more aid than nondemocratic ones, irrespective of their implementation capacity. This is corroborated by table 11.10, which shows a positive correlation between the degree of democracy and the level of actual grants. Underexecution is likely to be more prominent for aid-financed capital spending than for aid-financed current outlays, given their longer execution time span and higher reliance on technical inputs (for project selection, engineering design, and procurement, among other steps).

Table 11.10

Correlation matrix between current and capital spending gaps, degree of democracy, and actual level of grants, 2008 to 2010

Variable ^a	Current spending gap	Capital spending gap	Degree of democracy	Actual grants
Current spending gap	1.00	0.29	-0.11	-0.31
Capital spending gap	0.29	1.00	0.08	0.04
Degree of democracy (polity2)	-0.11	0.08	1.00	0.22
Actual grants	-0.31	0.04	0.22	1.00

Source: IMF staff estimates

a. Cross-country and time standard correlation.

11.5 Concluding Remarks: The Once and Future Fiscal Space

This chapter brings some evidence that LICs in SSA have been able to move away from procyclical fiscal policy during the global financial crisis. Their fiscal policy response may have mitigated the impact of the crisis in the region, a noteworthy achievement. However, overall fiscal numbers mask two diverging and potentially bothersome trends: the overexecution of current spending and the underexecution of capital projects. The regression results suggest that both political and institutional variables may explain part of the deviation between intended and observed current spending, with good governance and institutions contributing to better execution, while political regime change may challenge implementation capacity. Institutional variables seem to have less effect on the implementation of capital spending plans, but political variables remain relevant, possibly reflecting the higher aid flows received by democratic governments, irrespective of their implementation capacity.

The gap between implementation of current and capital spending plans could reduce LICs' future fiscal space. Increases in current spending are often difficult to reverse, particularly in LICs where social safety nets tend to be underdeveloped. Higher current spending thus is most likely to reflect a higher wage bill or new price subsidies, which increase spending rigidity and reduce the capacity to use fiscal policy to respond to the next crisis. Figure 11.1 illustrates how, although growth remained above trend in 2011 and 2012, fiscal deficits did not narrow.

The underexecution of capital spending is a relatively common occurrence, including its occurrence in advanced economies. What is bothering in the case of SSA LICs is that the underspending occurred at a time of higher aid flows. Given the size of unmet demands, in the absence of strong firewalls, capital spending underexecution could thus end up feeding current spending overexecution.

Finally, the projected path of aid flows may also reduce fiscal flexibility in SSA LICs in the future (figure 11.5). Significant additional external financing was made available during the crisis, including augmented financing from the IMF and front-loaded disbursements from many donors. Aid helped the financing of fiscal stimuli in 2009 and 2010, but is projected to decline gradually, though steadily, in the years to come. Moreover the profile of concessional financing is also expected to change, with concessional project loans partially compensating for a pronounced decline in budget support loans. Given the trend in underexecuting investment projects, the change in the composition of aid could significantly constrain access to concessional resources in the near future. Further strengthening of fiscal institutions, including efforts to bring investment decisions under their purview, will be needed to avoid a return to fiscal procyclicality.

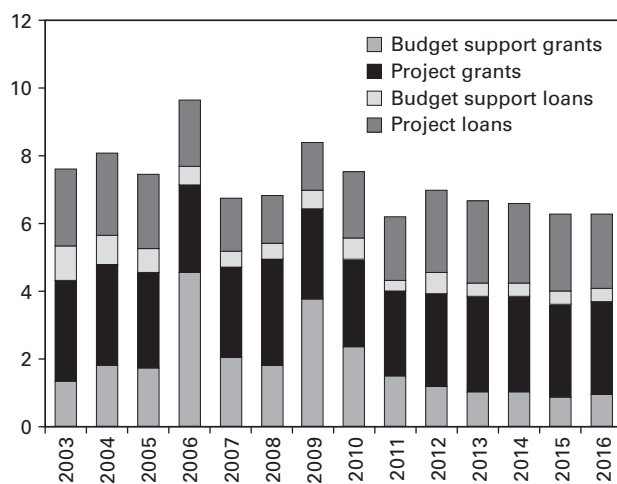


Figure 11.5 Concessional financing, composition, and projections (percent of GDP). Averages are for low-income countries and fragile states in Africa, with oil producers excluded. Source: Authors' calculations; IMF staff estimates and projections

Appendix A: Real GDP Growth in Sample Countries

Table A11.1

Real GDP growth in sample countries (percent)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Benin	6.0	4.3	5.7	4.0	5.3	4.9	6.2	4.4	4.0	3.1	2.9	3.8	4.6	5.0	2.7	2.6	3.5	3.5
Burkina Faso	5.7	11.0	6.3	7.3	6.2	2.9	6.6	4.4	7.8	4.5	8.7	6.3	4.1	5.8	3.0	7.9	4.2	7.0
Burundi	-7.9	-8.0	0.4	4.8	-1.0	-0.9	1.7	2.4	2.5	3.8	4.4	5.4	4.8	5.0	3.5	3.8	4.2	4.2
Cameroon	3.3	5.0	5.1	5.0	4.4	4.2	4.5	4.0	4.0	3.7	2.3	3.2	3.4	2.6	2.0	2.9	4.2	4.7
Central African Republic	4.9	-8.1	7.5	3.9	3.6	1.9	0.6	-0.6	-7.1	1.0	2.4	3.8	3.7	2.0	1.7	3.0	3.3	4.1
Chad	-0.8	2.1	5.7	7.0	-0.7	-0.9	11.7	8.5	14.7	33.6	7.9	0.2	0.2	1.7	-1.2	13.0	1.8	7.3
Comoros	3.6	-1.3	4.2	1.2	1.9	1.4	3.3	4.1	2.5	-0.2	4.2	1.2	0.5	1.0	1.8	2.1	2.2	2.5
Congo, Democratic Republic of	0.7	-1.1	-5.4	-1.7	-4.3	-6.9	-2.1	3.5	5.8	6.6	7.8	5.6	6.3	6.2	2.8	7.2	6.9	7.1
Congo, Republic of	4.0	4.3	-0.6	3.7	-2.6	7.6	3.8	4.6	0.8	3.5	7.8	6.2	-1.6	5.6	7.5	8.8	3.4	4.9
Côte d'Ivoire	5.6	8.1	5.7	4.5	1.8	-4.6	0.0	-1.6	-1.7	1.6	1.9	0.7	1.6	2.3	3.7	2.4	-4.7	8.1
Ethiopia	6.1	13.2	3.5	-4.0	6.0	5.9	7.4	1.6	-2.1	11.7	12.6	11.5	11.8	11.2	10.0	8.0	7.5	7.0
Gambia, The	-3.4	6.1	4.9	6.5	6.4	5.5	5.8	-3.2	6.9	7.0	-0.3	0.8	4.0	6.5	6.7	5.5	3.3	-1.6
Ghana	4.0	4.5	5.2	5.1	4.7	4.2	4.5	4.7	5.1	5.3	6.0	6.1	6.5	8.4	4.0	8.0	14.4	8.2
Guinea	4.7	5.2	5.2	4.6	4.5	2.9	3.8	4.2	1.2	2.3	3.0	2.5	1.8	4.9	-0.3	1.9	3.9	4.8
Guinea-Bissau	4.4	4.6	6.5	-27.2	7.6	7.5	2.0	-1.3	0.4	2.8	4.3	2.1	3.2	3.2	3.0	3.5	5.3	-2.8
Liberia	...	...	...	...	...	...	2.9	4.5	-28.4	4.1	5.9	9.0	13.2	6.2	5.3	6.1	8.2	9.0
Malawi	13.8	10.0	6.6	1.1	3.5	0.8	-4.1	1.7	5.5	5.5	2.6	2.1	9.5	8.3	9.0	6.5	4.3	4.3
Mali	2.4	7.4	5.3	4.4	5.7	-3.3	11.9	4.3	7.6	2.3	6.1	5.3	4.3	5.0	4.5	5.8	2.7	-4.5
Mozambique	2.2	14.8	11.1	11.8	8.4	1.5	12.3	9.2	6.5	7.9	8.4	8.7	7.3	6.8	6.3	7.1	7.3	7.5
Niger	-6.6	5.1	0.5	12.7	1.0	-2.6	8.0	5.3	7.1	-0.8	8.4	5.8	3.1	9.6	-0.9	8.0	2.3	14.5
Rwanda	24.5	11.6	14.9	8.3	5.1	6.5	8.5	13.2	2.2	7.4	9.4	9.2	5.5	11.2	4.1	7.2	8.6	7.7
Senegal	5.4	2.0	3.1	5.9	6.3	3.2	4.6	0.7	6.7	5.9	5.6	2.4	5.0	3.7	2.1	4.1	2.6	3.7
Tanzania	3.6	4.5	3.5	3.7	3.5	4.9	6.0	7.2	6.9	7.8	7.4	6.7	7.1	7.4	6.0	7.0	6.4	6.5
Togo	6.8	7.7	3.8	-2.3	2.6	-1.0	-1.6	-0.9	5.0	2.1	1.2	4.1	2.3	2.4	3.5	4.0	4.9	5.0
Uganda	11.3	9.1	5.5	3.8	8.2	5.4	7.0	7.6	6.6	6.6	8.6	9.5	8.6	7.7	7.0	6.1	5.1	4.2
Zambia	-2.8	6.9	3.3	-1.9	2.2	3.6	4.9	3.3	5.1	5.4	5.3	6.2	6.2	5.7	6.4	7.6	6.6	6.5
Average	4.8	6.9	4.5	3.2	4.2	2.9	5.4	4.2	4.0	6.8	6.9	6.1	6.1	6.6	5.0	6.4	5.7	6.1

Source: *Fiscal Monitor*, October 2012

Note: Country averages are weighted by GDP at PPP using 2009 weights and based on data availability.

Appendix B: Data Sources and Methodologies

Data and Data Sources

Actual (observed) macroeconomic variables for 26 SSA LICs and a control group of 20 LICs in other regions are taken for each year from 2008 to 2012 from the Fall *World Economic Outlook* (WEO) issues while planned (projected) variables come from a survey of authorities' intentions undertaken by the African Department of the IMF. Fall vintages of the WEO are used because by that period most countries already have a draft of the fiscal budget for the year ahead. One reason to use the previous-year forecast vintage of the WEO for planned changes in fiscal policy is that these forecasts embody the best IMF staff estimates of national authorities' feasible and sustainable fiscal plans. In line with international definitions, LICs are defined as countries with a per capita income below \$1,160 (the cutoff level for access to concessional financing from IDA) during 2008 to 2010.

Political variables include the degree of democracy (extracted from the Polity IV dataset); years of the chief executive (or her party) in power (extracted from the updated version of the World Bank Database of Political Institutions; Beck et al. 2001); and a dummy for years of election (constructed with the information available at <http://africanelections.tripod.com/index.html>). Institutional variables include indicators of governance and of institutional capacity. Governance measures (rule of law and government effectiveness) come from the dataset of World Governance Indicators of the World Bank (see Kaufmann, Kraay, and Mastruzzi 2010). Institutional capacity indicators come from the datasets constructed by Dabla-Norris et al. (2010).

Methodologies for the Estimation of Cyclicalities

The first approach is to estimate correlation coefficients between the level of the cyclically adjusted primary balance (CAPB, measured as a share of potential GDP) and that of the output gap. A co-movement between the change in the output gap and the change in the CABP is taken as indicative of a countercyclical fiscal policy. The output gap is estimated with the Hodrick–Prescott (HP) filter with the smoothing parameter of 100 over the period 1995 to 2017. Including five years of forecast reduces the problem of endpoints common to the HP filter. The CAPB is estimated as the difference between cyclically adjusted revenue (with a revenue elasticity of 1) and primary (noninterest) expenditure, a reasonable assumption for LICs given the quasi-inexistence of output-sensitive income support programs.

Given the small sample, regressions are estimated using panel fixed effects with OLS (FE-OLS) and White heteroskedasticity corrected t -statistics, as follows:

$$\widehat{capb}_{i,t} = \hat{\alpha}_i + \beta_1 ygap_{i,t} + \beta_2 d_{i,t-1} + \varphi_{i,t}, \quad (11.1)$$

where i denotes the country, $\widehat{capb}_{i,t}$ denotes the CAPB, $ygap_{i,t}$ denotes the output gap, and d denotes the lagged value of public debt. A positive change in the output gap corresponds to economic recovery and a negative value to economic recession; a positive change of the CAPB represents a strengthening of the fiscal accounts.

A similar formula is used to estimate the expected countercyclical effect of the budget plans designed before the crisis (compared to the projected output gap):

$$\widehat{capbBP}_{i,t} = \hat{\alpha}_i + \beta_1 ygapBP_{i,t} + \beta_2 d_{i,t-1} + \varphi_{i,t}, \quad (11.2)$$

where i denotes the country, $\widehat{capbBP}_{i,t}$ denotes the planned CAPB, $ygapBP_{i,t}$ denotes the projected output gap, and d denotes the lagged value of public debt.

The second approach, following Kaminsky, Reinhart, and Végh (2004) and IMF (2009b), compares the growth of real primary spending with that of trend output and assumes that fiscal policy is countercyclical in cases where real spending growth is positive but output growth is below trend. The measure of trend growth is free of the structural breaks that tend to distort HP-filtered results. To minimize risks of capturing such structural breaks, we take as trend growth the average real GDP growth in the five-year period prior to the crisis (2003 to 2007). Government spending (which is arguably more representative of the fiscal policy stance in LICs, given the low tax ratios and infrequent use of tax rates as short-term policy instruments) is deflated by the GDP deflator.

Methodology for the Estimation of Determinants of Deviations between Intended and Observed Fiscal Outcomes

The dependent variable in this case is the difference between planned and actual fiscal outcomes (gap). For each country, differences between planned and actual spending in a given year t are computed as a percentage of the projected GDP. The relationships are estimated in real time to proxy the information sets available for the policy makers at the time they made their decisions (see Cimadomo 2012):

$$gap_{j,t} = g_{j,t}^p(t, t^p) - g_{j,t}^a(t, t^a), \quad (11.3)$$

where j denotes the country; $g_{j,t}$ the type of government spending (current or capital), with $(g_{j,t}^p)$ the planned level, envisaged at the time the budget is formulated or (t^p) , and $(g_{j,t}^a)$ the actual level, based on the latest available fiscal outturns at (t^a) .

In view of the limited number of observations per country a panel setup is used. We start with a parsimonious specification where the implementation gaps (in absolute value, so that we capture both over- and underexecution) are only a function of the forecast errors in macroeconomic assumptions in growth, consumer price inflation, and grant (in percent of GDP). We then add political variables ($pol_{j,t}$) and institutional variables ($cap_{j,t}$) to this baseline. The empirical model can be described as follows:

$$abs(gap_{j,t}) = \alpha_j + \lambda_t + \beta_1 abs(x_{j,t}^p - x_{j,t}^a) + \beta_4 debt_{j,t-1} + \beta_6 pol_{j,t} + \beta_7 cap_{j,t} + \varepsilon_{j,t}, \quad (11.4)$$

where α_j and λ_t stand for the country and time fixed effects, respectively, and $x_{j,t}^a$ is a vector capturing the relevant macroeconomic variables in logs (real GDP growth, inflation, and grants). As before, superscripts indicate whether the variable is forecasted or corresponds to its actual (outturn) value, and subscripts indicate the country and the year to which the forecast/outturn is made. $\varepsilon_{j,t+1}$ is an i.i.d. error term.

As institutional indicators are largely time invariant, following Rajkumar and Swaroop (2008), an interaction term is introduced between the WGI index of government effectiveness and the indexes of quality of budgetary institutions. The underlying intuition is that the combination of an effective government with good budgetary procedures would allow an implementation closer to the initial plans (Burnside and Dollar 2000; Lledó and Poplawski-Ribeiro 2013).

The empirical model (11.4) is estimated using fixed effects ordinary least squares (FE-OLS). We use robust standard errors to avoid heteroskedasticity owing to potential measurement errors in the fiscal implementation gaps. A statistical procedure is also applied to identify outlier countries. When an observation (from either independent or dependent variables) is either above the sample average plus three times the sample standard deviation or below the sample average minus three times the sample standard deviation, it is excluded from the sample (replaced by a missing value).

Notes

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1. See, in particular, Akitoby et al. (2004); Kaminsky, Reinhart, and Végh (2005); Talvi and Végh (2005); Ilzetzki and Végh (2008); IMF (2009b).
2. Thornton (2008); Allen (2009).
3. Frankel, Végh, and Vuletin (2013); IMF (2010); Lledó, Yackovlev, and Gadenne (2011).
4. IMF (2009a).
5. See, for example, Fatás and Mihov (2003); Galí and Perotti (2003). Given the short sample period, we use level (rather than first differences) in the estimates.
6. See appendix B; Kaminsky, Reinhart, and Végh (2004); IMF (2009b).
7. Estimated as the difference between the headline and the cyclically adjusted primary balance.
8. The statistically insignificant coefficient for debt is among others related to the debt relief delivered to some countries in the sample during the period analyzed.
9. For an analysis of the relationship between fiscal policy and inflation in SSA, see Baldini and Poplawski-Ribeiro (2011); Cáceres, Poplawski-Ribeiro, and Tartari (2013).
10. These results are in line with Lledó and Poplawski-Ribeiro (2013). Further a horse race among other WGI governance variables is performed, and the results are available upon request.

11. The same robust result is obtained if one includes the number of years the government party is in office.
12. About half of the SSA countries in our sample changed political regime in the 2000s, and about one-third became democracies, according to the Polity IV dataset.
13. Hence any potential measurement error here concerns the deviation of the dataset from the policy makers' datasets, not the accuracy with which the data approximate the eventual outcomes of variables such as output.

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