

Assessing Fiscal Space in Sub-Saharan Africa

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Abstract

This paper presents new empirical evidence on how fiscal space in Sub-Saharan Africa has evolved over the past 15 years. Fiscal space is a multi-dimensional concept that is proxied by indicators capturing aspects of fiscal sustainability, balance sheet vulnerabilities, external debt positions, and market perception. The analysis relies on a new comprehensive database developed on a wide array of indicators (28) for a large set of countries in the world—of which 48 are in Sub-Saharan Africa. The analysis finds that, breaking with history, Sub-Saharan African countries were able to conduct countercyclical policies amid the 2008–09 global financial crisis, thanks to built-up liquidity and policy

buffers. The evidence shows that fiscal adjustment efforts in the region were reversed amid the 2014–16 plunge in commodity prices, and oil and minerals and metals exporters saw a sharp deterioration in their primary balance sustainability gap. The paper finds a great deal of heterogeneity in the post–global financial crisis evolution of the fiscal space in the region. In countries with reduced fiscal space, the increase in the number of tax years to repay the debt fully was 1.1 years for the representative country, and in over one-third of the countries, this increase was more than one standard deviation above the median.

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Assessing Fiscal Space in Sub-Saharan Africa*

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1. Introduction

Historically, fiscal policy exhibits a “procyclical bias” in most developing countries—including countries in Sub-Saharan Africa (SSA). Recent evidence shows that government spending in more than 90 percent of developing countries is procyclical during the period 1960-2009 (Frankel, Vuletin and Végh 2013). Furthermore, the degree of procyclicality of government spending in SSA is greater than that of other developing countries—and it is especially more procyclical among countries in the region that are highly dependent on foreign aid inflows (Thornton 2008, Lledó, Yackovlev and Gadenne, 2011).

The procyclical bias of fiscal policies in SSA has been partly attributed to the lack of fiscal space—as measured by either the public debt burden or HIPC countries reaching a decision point (Lledó et al. 2011, Calderon and Nguyen 2016).¹ Having an ample margin of maneuver for the government is crucial: fiscal space helps reduce the procyclicality of government expenditure (World Bank 2015, Konuki and Villafuerte 2016). In sum, having space—as captured by greater access to external borrowing or built-up policy buffers—will reduce the procyclicality of fiscal space or shift the policy stance to countercyclical.

Amid the global financial crisis, countercyclical government spending was an important element of the policy toolkit of Sub-Saharan African countries. For instance, the Government of South Africa adopted a large countercyclical stimulus for public investment for the period 2010-12. Several countries in the region expanded their budget during the post-crisis period to finance growth-enhancing outlays—notably, infrastructure. Government spending on road and energy projects increased by nearly 30 percent in Tanzania during 2009-10, while it increased by about 20 percent in Uganda to support infrastructure and agriculture (Kasekende et al. 2010).

The presence of fiscal space among countries in the Africa region in the run-up to the global financial crisis appears to have played a key role in conducting countercyclical policies. Adequate policy buffers, low public debt burdens and access to global capital markets characterized fiscal frameworks in Sub-Saharan African countries in the runup to the global financial crisis. For instance, resource-abundant countries in the region posted high public savings, public debt burdens declined especially among heavily indebted poor countries (HIPCs), and countries in the region (mostly, frontier economies) had access to global capital markets thanks to global investors searching for yields.

¹ Calderón and Nguyen (2016) also find that the quality of institutions underlying fiscal policy frameworks may explain the reduction of the procyclical bias or explain countercyclical behavior in SSA. Frankel et al. (2013) argue that the strengthening of the institutional framework has enabled some developing countries to escape the procyclicality trap. This includes having: (a) sound fiscal rules that deliver countercyclical, credible and sustainable fiscal plans, (b) transparency in the formulation of medium-term expenditure frameworks, and (c) the ability of the government to carry out announced programs and being held accountable.

Withdrawing policy stimulus and replenishing fiscal buffers in good times has proven to be a challenge for most governments. Countercyclical actions pursued by Sub-Saharan African countries in the downturn failed to be subsequently followed by measures to boost revenues and either contain or rein in spending as they regained and consolidated their growth momentum. Moreover, the plunge in the price of oil, as well as the prices of metals and minerals, sharply reduced government revenues in resource abundant countries—thus leaving them with fewer resources to fund public spending. Consequently, many countries in the Africa region now face the need to undertake fiscal consolidation measures to narrow fiscal deficits and stabilize government debt.

Using a new comprehensive database developed by Kose et al. (2017), this paper examines the evolution of fiscal space in Sub-Saharan African countries over the past 15 years from different perspectives. First, it documents the evolution of indicators of fiscal sustainability, external debt position, and the composition of the public sector's balance sheet for countries in SSA vis-à-vis industrial countries and non-SSA developing countries.

Next, it examines whether fiscal space-related indicators (that is, fiscal sustainability, external debt and balance sheet composition) improved or worsened in the post-global financial crisis period by comparing the magnitude of these indicators in 2010-13 vis-à-vis 2015-16. This comparative analysis is undertaken at the regional level (SSA compared to other developing regions), at the sub-regional level (SSA countries classified by their growth performance) and at the country level.

Finally, it evaluates public debt dynamics in the region by analyzing the evolution of fiscal sustainability gaps (Blanchard 1993, Ley 2009, Kose et al. 2017, World Bank 2017). This exercise compares the sustainability gaps of SSA vis-à-vis advanced economies and other developing regions. It also looks at the performance of public debt dynamics across SSA countries classified by their access to financial markets and their degree of natural resource abundance.

The remainder of the paper is organized as follows. Section 2 discusses the measurement of fiscal spaces. Section 3 describes the evolution of fiscal sustainability indicators in SSA (vis-à-vis other benchmark regions of the world) over the past 15 years. Section 4 characterizes the performance of fiscal space during the post-global financial crisis period. Specifically, it compares indicators of sustainability, balance sheet composition and external debt in 2010-13 vis-à-vis 2015-16. It looks not only at the performance of the region vis-à-vis other benchmark regions but also at SSA country groups classified by: (a) the resilience of their growth path, and (b) the extent of their natural resource abundance. Section 5 examines public debt dynamics in SSA by looking at the emerging pressures from the accumulation of primary deficits over time to unsustainable debt stocks—even if the initial debt by the public sector was low. Finally, section 6 concludes.

2. Measuring fiscal space: Concepts and data

Measuring fiscal space is not trivial. It involves a series of dimensions that range from aspects of sustainability, risks associated to contingent liabilities, maturity and currency risks, share of debt in foreign currency and held by non-residents, solvency, and borrowing costs. To capture all the aspects mentioned above, the analysis undertaken in this paper relies on the novel and comprehensive fiscal space database recently developed by Kose, Kurlat, Ohnsorge and Sugawara (2017).² This database gathers annual information of 200 countries—of which 48 are in SSA—from 1990-2016. It includes 28 indicators of fiscal space classified in four (4) categories:³

- (1) *Fiscal sustainability indicators*. These variables help capture the longer-term capacity of government to repay its obligations. Fiscal sustainability is gauged by examining the general government gross debt (as percentage of GDP), measures of primary, cyclically adjusted and overall fiscal balance (as percentage of GDP). In countries with weak tax administration, the government's capacity to repay/service its debt might be better captured by the magnitude of the tax base rather than the overall level of economic activity. The final two indicators in this group are the debt and fiscal balance as percentage of the permanent component of government tax revenues.
- (2) *Balance sheet vulnerability*. The composition of the balance sheet of the public sector provides information on the exposure to different types of risks (e.g., currency, interest rate, and refinancing, among others). The vulnerability of the public sector's balance sheet is captured by the share of general government debt in foreign currency, the percentage of debt securities held by non-residents, concessional external debt stocks as a percentage of general government gross debt, the average maturity of sovereign debt (in years), and the amount of central government debt maturing in less than a year (as a percentage of GDP).
- (3) *External and private sector debt*. It includes a wide array of indicators that capture the size and composition of the country's total external debt as well as its relationship to international reserves and private sector liabilities. Among the indicators in this category, we have: the total external debt stock (as a percentage of GDP and in relation to international reserves), the share of external debt in foreign currency in total external debt, private external debt stocks (as a percentage of GDP), and short-term external debt stocks (normalized by either total external debt stocks or international reserves—including and excluding reserves).
- (4) *Market perception*. This category includes indicators on the market perception of the ability of governments to roll over or issue debt, and the borrowing costs facing countries in global capital markets. Kose et al. (2017) consider these indicators as high-frequency proxies for

² The database can be downloaded at <http://www.worldbank.org/en/research/brief/fiscal-space>.

³ Note that the description of the different groups of indicators draws heavily from Kose et al. (2017).

fiscal sustainability. It includes the five-year CDS spread and foreign currency long-term debt ratings by major international rating agencies.

We should note that there are issues of insufficient data (on a cross-sectional and time series dimension) for Sub-Saharan African countries —especially in the categories of balance sheet vulnerability and market perception. Hence, our analysis will rest mostly on debt sustainability indicators and external debt. Note that a more comprehensive analysis of the different dimensions of fiscal space for both advanced economies, emerging markets and developing countries can be found in Kose et al. (2017).

3. Evolution of fiscal sustainability in Sub-Saharan Africa, 2000-16

Fiscal sustainability in SSA has seen a dramatic change between 2000 and 2016, and this is observed across all key measures of sustainability. Fiscal sustainability in SSA experienced a broad deterioration in 2008-09, mirroring the trend observed in other country groups—that is, industrial economies and developing countries outside SSA. In the near aftermath of the crisis, there was a slight improvement in the different indicators of fiscal sustainability from 2010 to 2012. More recently, however, fiscal sustainability has weakened in SSA—a pattern of behavior in the region that is tightly linked to the commodity price cycle.

The evolution of the *primary balance* of SSA from 2000 to 2016 compared with that of industrial economies and developing countries outside the region (that is, non-SSA developing countries) is plotted in Figure 1. Some basic facts emerge from this figure:

First, all country groups (industrial economies, SSA and non-SSA developing countries) registered a primary surplus in the run-up to the crisis. The primary surplus for the region as whole was 0.6 percent of GDP in 2006-08—which is lower when compared to the surpluses of 1.5 and 1.3 percent of GDP for industrial economies and non-SSA developing countries, respectively. The improvement in the primary surplus of SSA countries is partly driven by the higher fiscal savings of commodity exporters. Evidence shows that the public revenues were more sensitive than expenditures to output expansions driven by commodity price booms in the 2000s (Cespedes and Velasco 2014). Hence, primary the surplus improved among commodity exporting countries in the region —especially, among oil exporting nations (Calderon and Boreux 2016).

Second, all country groups undertook countercyclical fiscal policy measures in 2009-10. The global financial crisis affected growth in emerging markets —although at different degrees and through different transmission mechanisms. GDP growth in Sub-Saharan Africa decelerated significantly from 5.4 percent in 2008 to 2.9 percent in 2009.⁴ The impact of the global financial

⁴ In per capita terms, growth in the region went from 2.5 percent in 2008 to a meager 0.1 percent in 2009. The performance across the region was heterogeneous. However, GDP growth decelerated in 30 of 46 countries in the

crisis across emerging market and developing countries (EMDEs) was diverse. It was mainly transmitted through either a sharp decline in financial flows (financial channel) or the reduction in the demand for exports which, in the case of commodity exporters, also included a plunge in terms of trade (trade channel). In the region, the impact of the global financial crisis was transmitted through the financial channel for those that were integrated into global capital markets (say, South Africa) and through the trade channel—more specifically, declining commodity prices—for most countries in the region, particularly, commodity exporters (Blanchard, Das and Faruquee 2010, Lane and Milesi-Ferretti 2011).

In this context, advanced countries as well as emerging market and developing countries conducted fiscal policies to support aggregate demand.⁵ The primary balance of the SSA region shifted from a primary surplus of 0.6 percent of GDP in 2006–08, to an average deficit of 2.2 percent of GDP in 2009–10. The countercyclical push was even larger among industrial countries—with the primary balance moving from a surplus of 1.5 percent of GDP in 2006–08, to a deficit of 4 percent of GDP in 2009–10.

Third, the primary deficit of industrial economies began to narrow after the 2009-10 fiscal impulse. It declined from -1.7 percent of GDP in 2011-13 to -0.1 percent of GDP in 2015-16. However, this was not the case for SSA. After an initial retrenchment in 2011-12 (where the deficit totaled 1.2 percent of GDP), the primary deficit widened to 2.2 percent of GDP in 2015-16.

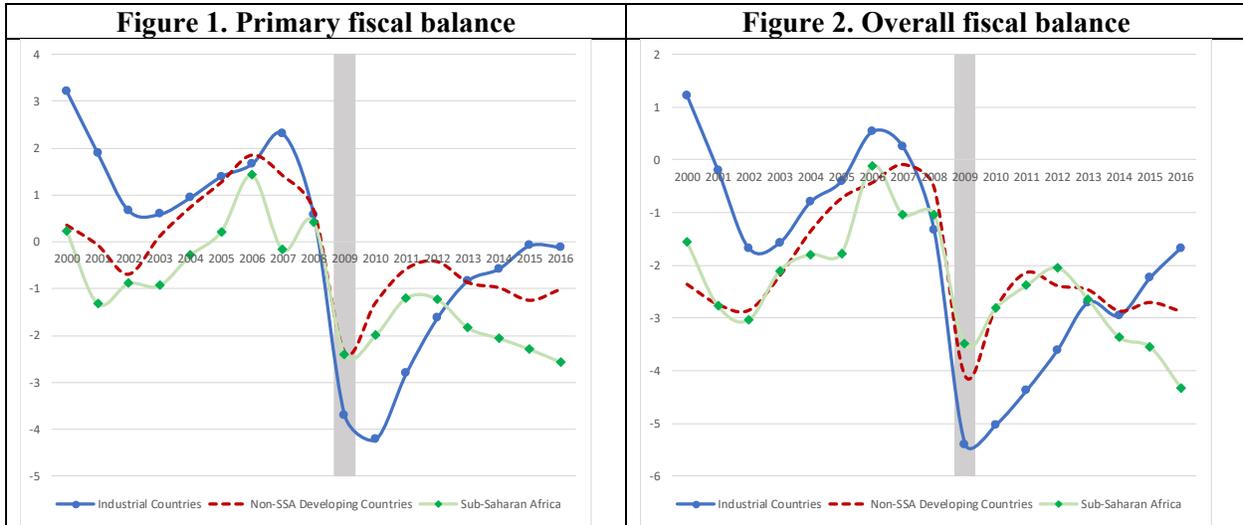
The main features observed in the evolution of primary fiscal balances for industrial economies, SSA and non-SSA developing countries remain invariant when we analyze the *overall fiscal balance*. Note that the overall fiscal balance includes (net) interest payments. Figure 2 plots the evolution of the government balance for all these country groups: they recorded surpluses (although at different levels) in the run-up to the crisis. In 2009-10, industrial economies, SSA and non-SSA developing countries conducted countercyclical policy actions—as reflected by increases in expenditures that offset the evolution of government revenues. Finally, there is a subsequent significant narrowing of the government overall deficit among industrial economies while that of SSA and non-SSA developing countries widened—although the deficit increased at a slower pace in the latter group of countries.

The countercyclical expansion of government spending in 2009-10 was financed through greater revenues (especially for commodity abundant nations), bond issuances, domestic and/or external borrowing. Figure 3 depicts the evolution of *general government gross debt* as a percentage of GDP for industrial economies, SSA, non-SSA developing countries. In the run-up to the crisis (period 2003-07), the gross public debt was stabilized around 50 percent of GDP among industrial economies. Debt repayment and sound debt management practices explained the reduction in the

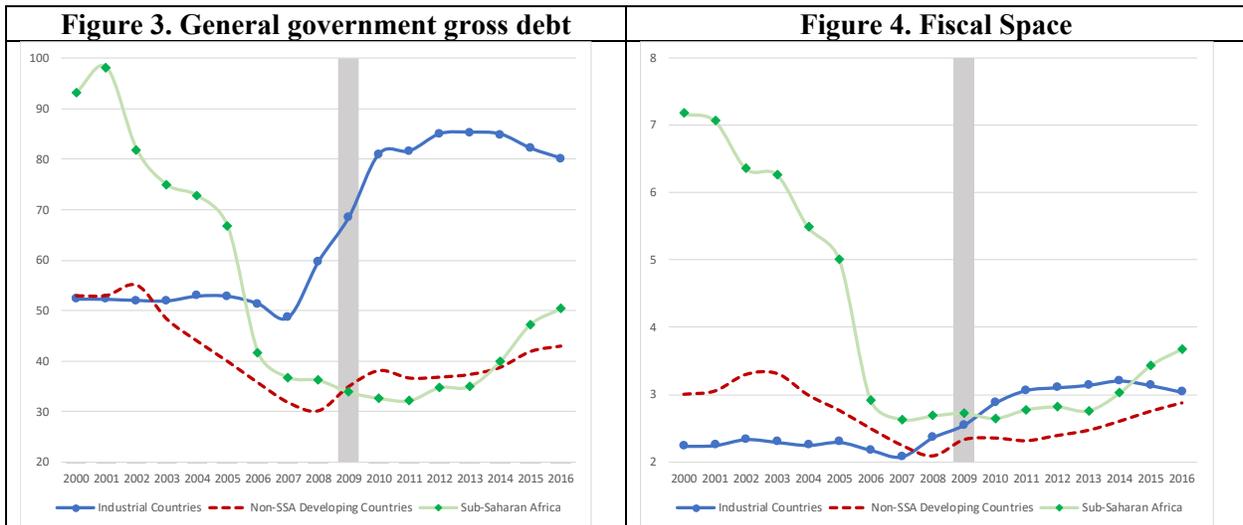
region in 2009 and the corresponding median decline in the growth rate was 3 percentage points. Additionally, 8 of these 30 countries registered a contraction in GDP in 2009.

⁵ There is a great deal of heterogeneity on how governments in the region expanded their expenditures to support economic activity. In some cases, there were increases in capital expenditure (mostly, to finance infrastructure) but, in others, the expansion was primarily driven by current expenditure (financing public payroll).

general government gross debt among non-SSA developing countries. It dropped from 55 percent of GDP in 2002 to about 30 percent of GDP in 2008 (Anderson, Silva, and Velandia-Rubiano 2010). Public debt also experienced a sharp decline in Sub-Saharan African countries, from nearly 100 percent of GDP in 2001 to about 35 percent of GDP in 2008. This reduction was primarily driven by debt forgiveness granted to African countries through the HIPC initiative and Multilateral Debt Relief Initiative (MDRI).



Note: All figures reported are group medians and are expressed as percentage of GDP. Calculations based on data from Kose et al. (2017).



Notes: All figures reported are group medians and are expressed as percentage of GDP. In Figure 4, fiscal space is calculated by the ratio of general government gross debt to average tax revenues (Aizenman and Jinjarak 2010). Calculations based on data from Kose et al. (2017)

Financing countercyclical policy actions led to an increase of the public debt burden, although the rate of expansion was different across the different groups of countries. There was a rapid increase in the public debt position among industrial economies, from 49 percent of GDP in 2007 to 85 percent in 2012. After hitting that peak, the public debt burden stabilized, and it began to decline slowly. In the case of non-SSA developing countries, the gross debt of the public sector has steadily increased from about 30 percent of GDP in 2008 to 43 percent of GDP in 2016. In Sub-Saharan African countries, gross debt by the general government has gradually increased, from about 32 percent of GDP in 2012 to 50 percent of GDP in 2016; that is, it has increased at a faster pace than among non-SSA developing countries. In the post-2009 period, public debt has increased in most Sub-Saharan African countries. For instance, 27 out of 44 countries in the region have experienced an increase in the general government gross debt of more than 10 percentage points of GDP during the period 2010-2016 while in 14 of those countries, the rise in debt exceeded 20 percentage points of GDP.

Recent evidence shows that the post-2009 debt accumulation in Sub-Saharan Africa mainly reflects: (a) widened fiscal deficits, and (b) weaker currencies (World Bank 2018). Widened fiscal deficits capture partly the expansion of infrastructure expenditure in the region and, in other countries, an increase in current expenditure that was permanent rather than temporary (e.g. increase of public wages in Zimbabwe). The weakening of African currencies is partly the result of widened current account deficits. Additionally, lower international commodity prices have put pressure on the exchange rates of commodity exporters in the region.

Figure 4 depicts a broad measure of fiscal space for countries in SSA as well as industrial economies and non-SSA developing countries over the period 2000-16. Fiscal space is typically defined in the literature as “room in a government’s budget that allows it to provide resources for a desired purpose without jeopardizing the sustainability of its financial position or the stability of the economy” (Heller 2005). Operationally, fiscal space is defined as inversely related to the number of tax years it would take to fully repay the public debt (Aizenman and Jinjark 2010). Computing this indicator requires information on the outstanding debt of the government and a proxy for the *de facto* tax base of the economy. Kose et al. (2017) use the general government gross debt position as a proxy for public debt. The *de facto* tax base, on the other hand, is measured by the average tax revenues across several years—thus, smoothing out business cycle fluctuations in the tax base and, hence, tax collection.⁶

The ratio of public debt to average tax revenues (which is inversely related to fiscal space) experiences a turning point for all country groups after the 2008-09 global financial crisis. It signals a tightening of fiscal space for industrial economies, SSA, and non-SSA developing countries (see Figure 4). For instance, the number of tax years that it would take industrial countries to repay their debt increased from 2.2 in 2006-08 to 3.1 in 2015-16. In the case of non-SSA developing countries, the time to repay public debt increased by less than half a year; that is from 2.3 years in

⁶ This ratio captures the relative fiscal tightness of countries (Aizenman and Jinjark 2010).

2006–08 to 2.8 years in 2015–16. Finally, the number of tax years that it would take to repay the general government gross debt in SSA increased from 2.7 in 2006–08 to 3.6 in 2015–16.

4. How did the fiscal space fare in the post-global financial crisis period?

Countries in the Africa region have faced a series of shocks; most notably, the plunge in oil prices, the steady decline in the prices of metals and minerals, rising borrowing costs, among others. They have also accumulated significant macroeconomic imbalances that may require fiscal consolidation measures. This section aims at testing whether the indicators of fiscal space deteriorated in the aftermath of the 2008-09 global financial crisis. More specifically, we test whether a battery of indicators that capture fiscal sustainability, balance sheet composition and external debt worsened in 2015-16 vis-à-vis 2010-13 for Sub-Saharan African countries. It first compares the evolution of fiscal space in the region as a whole vis-à-vis other benchmark regions—notably, industrial economies and non-SSA developing countries. Second, it examines the evolution of fiscal space for country groups within the region according to their extent of natural resource abundance and the resilience of their growth performance.

According to the World Bank (2016), Sub-Saharan African countries can be classified into five groups based on the resilience of their growth path. To quantify this resilience, it compares the average annual gross domestic product (GDP) growth rates of 45 countries in the region during the period 1995-2008 and the average of 2014-16. Countries with a strong GDP growth rate—that is, above the top tercile of the Sub-Saharan African distribution from 1995 to 2008 (5.4 percent)—in recent years (2014-16) and over the longer former period (1995-2008) are classified as *established* countries. *Improved* countries are those with a growth rate below the top tercile in 1995-2008 but with an average GDP growth rate in 2014-16 higher than that of the top tercile. Countries with an average annual growth below the bottom tercile in both periods (that is, below 3.5 percent) are classified as *falling behind*; those where more recent growth performance is below the bottom tercile but growth in earlier periods was above the bottom tercile are denoted as *slipping*; and countries with recent average annual growth between the top and bottom terciles are classified as *stuck in the middle*. Established and improved performers are viewed as exhibiting resilience while the other countries are not.

These groupings were subsequently revisited by using growth rates for 2015–17 (see World Bank 2017b). The inclusion of the more recent period captures better the resilience of economic activity to the plunge in the prices of oil and other commodities, including metals and minerals; unfavorable external and domestic economic conditions; and the adequacy of the economic policy response. The thresholds used to classify these countries remain invariant. A more accurate calculation of central measures (say, medians and/or averages) across the different groups requires

more aggregate grouping.⁷ Hence, we define *resilient countries* as those Sub-Saharan African countries that have an average GDP growth rate in 2015–17 that exceeds the top tercile of the distribution of GDP growth in 1995–2008 (5.4 percent per year). The group of resilient countries includes improved and established countries. The *less resilient countries* are those Sub-Saharan African countries with an average GDP growth rate in 2015–17 that is below the top tercile of the GDP growth distribution in 1995–2008. Within this group, countries with 2015–17 average annual GDP growth that is above the 33rd percentile and below the 67th percentile figures in 1995–2008 are denoted as the middle tercile, and those with annual average 2015–17 GDP growth that is below the 33rd percentile of the growth distribution in 1995–2008 (3.5 percent per year) are denoted as the middle tercile. The middle tercile is equivalent to the stuck-in-the-middle countries (as described in the spring 2017 Africa’s Pulse). The bottom tercile combines the slipping and falling behind countries.

The group of resilient countries comprises seven countries whose share of the regional GDP is about 16 percent. Within the group of less resilient countries, the middle tercile includes 16 countries that account for 20 percent of the SSA’s GDP, while the 21 countries in the bottom tercile account for 64 percent of the region’s economic activity. Some within-group variation is not accounted for in the top and bottom terciles of this country classification. However, the narrative of GDP growth in the region stays qualitatively invariant. As stated above, one of the dimensions of our analysis is to examine the evolution of fiscal space for resilient (top tercile) and less resilient (middle and bottom tercile) countries.

We will conduct tests for the equality of medians in 2010-13 vis-à-vis 2015-16 for a series of indicators of fiscal space classified as follows: (i) fiscal sustainability indicators, and (ii) external debt and balance sheet composition. Indicators of fiscal sustainability include the primary balance, overall fiscal balance, and general government gross debt. These variables are expressed as a percentage of GDP. This group also includes a broad measure of the tightness of fiscal accounts, namely, the general government gross debt as a percentage of average tax revenues. The second group of variables comprises indicators that capture the following: (i) the balance sheet composition, such as concessional external debt stocks (as a percentage of general government gross debt), and short-term debt stocks (as a percentage of total external debt); (ii) external liquidity (that is, short-term debt as a percentage of international reserves); and (iii) total external debt stocks (as a percentage of GDP).

4.1. Fiscal sustainability indicators

Table 1 reports the median and median equality tests of fiscal sustainability indicators in 2010-13 vis-à-vis 2015-16 for SSA on different basis of comparison: (i) the region as a whole vis-à-vis

⁷ For instance, the group of established countries includes only three countries (Ethiopia, Rwanda, and Tanzania), and that of improved countries includes only four (Côte d’Ivoire, Kenya, Mali, and Senegal). The combined weight of these two groups in the GDP of the region is about 16 percent. Computing a median and/or average of the combined group is a more accurate central measure than if computing medians/averages for each group alone—especially since only a few observations are available for 2015–17.

industrial economies and non-SSA developing countries, (ii) SSA country groups by their extent of resource abundance, and (iii) SSA countries classified by the resilience of their growth performance.

Sub-Saharan Africa vis-à-vis Benchmark regions

Fiscal balances for the region as a whole—both primary and overall balances—deteriorated in 2015-16 relative to the period 2010-13. For instance, the primary deficit in SSA widened from 1.6 percent of GDP in 2010-13 to 2.5 percent of GDP in 2015-16. At the same time, the primary deficit of non-SSA developing countries remained almost invariant in 2015-16 (at 0.9 percent of GDP) compared with the average deficit in 2010-13. For industrial countries, by contrast, the fiscal adjustment undertaken in the aftermath of the 2008-09 global financial crisis is reflected in the shift of the primary balance from a deficit of 1.9 percent of GDP in 2010-13 to a surplus of 0.1 percent of GDP in 2015-16.

The ongoing fiscal push of SSA during the post-global financial crisis era is reflected in an increase of the general government gross debt from 34 percent of GDP in 2010-13 to about 50 percent in 2015-16. Gross public debt for non-SSA developing countries, on the other hand, increased at a slower pace—from 39 percent of GDP in 2010-13 to 46 percent of GDP in 2015-16. Finally, the reduction of primary (and overall) deficits among industrial countries was accompanied by a reduction in the general government gross debt from 80 percent of GDP in 2010-13 to 70 percent in 2015-16—although this drop is not statistically different from zero (at either one- or two-tailed tests).

Finally, fiscal space has tightened for both SSA and non-SSA developing countries as captured by the general government gross debt as a ratio to average tax revenues—and the reduction in the fiscal space has been slightly larger among SSA countries. The number of tax-years needed to fully repay the public debt for SSA countries elevated from 2.8 in 2010-13 to 3.6 in 2015-16. The increase in the number of years over the same time period is smaller for non-SSA developing countries; that is, from 2.4 in 2010-13 to 2.9 in 2015-16 (see Table 1).

Sub-Saharan Africa by resource abundance

Our analysis of the evolution of fiscal sustainability indicators focuses on three different groups of countries in the region according to their extent of resource abundance: non-resource rich countries, non-oil-resource rich countries, and oil rich countries (see Table 1).⁸

Non-resource rich countries show a slight deterioration of the primary balance —their deficit widens from an average 1.8 percent of GDP in 2010-13 to 2.2 percent of GDP in 2015-16— although this change over time is not statistically significant. The overall government balance also worsened; that is, the deficit increased from 3.2 percent of GDP in 2010-13 to 3.7 percent of GDP in 2015-16 —and this widening of the overall deficit is statistically significant at the 10 percent level under a one-tailed alternative hypothesis. Public debt stocks (as percentage of GDP) increased from 42 percent of GDP in 2010-13 to about 50 percent of GDP in 2015-16 (i.e. an accumulation of debt that is statistically significant). Fiscal space narrowed for this group of countries —as the time that takes to fully repay their debt increased from 3 years of taxes in 2010-13 to 3.6 years in 2015-16.

Non-oil-resource rich countries (that is, countries with abundant mineral ores and metals) posted primary and overall fiscal deficits in 2015-16 that are significantly larger than those in 2010-13; partly, due to the sharp decline of metals and minerals —including iron ore, copper, among others. For instance, the primary deficit widened from 1.7 percent of GDP in 2010-13 to 5.4 percent of GDP in 2015-16. Moreover, the general government gross debt (as percentage of GDP) rose sharply from 27 percent of GDP in 2010-13 to 44 percent of GDP in 2015-16. Finally, the number of tax-years to fully repay the public debt burden increased by more than one year; that is, from 2.5 years in 2010-13 to 3.8 years in 2015-16.

The primary balance of *oil rich countries* shifted from a surplus of 1.1 percent of GDP in 2010-13 to a deficit of 3 percent of GDP in 2015-16. An analogous movement is observed in the overall balance (which went from a surplus of 0.2 percent of GDP in 2010-13 to a deficit of 4.5 percent of GDP in 2015-16). The sharp deterioration of the primary and overall balances might be attributed to the large drop in government revenues (specifically, oil-based government revenues) amid an environment where government expenditure was still trying to support aggregate demand. In this context, general government gross debt of oil rich countries more than doubled: it rose from 21 percent of GDP in 2010-13 to 47 percent of GDP in 2015-16. Finally, we should note that it took 1.3 tax-years for these countries to fully repay their debt in 2010-13. That number considerably increased to 2.5 tax years in 2015-16.

⁸ This paper defines resource-rich countries as those nations with natural resource rents (excluding forests) that exceed 10 percent of GDP over the last decade. That is, the sum of oil rents, natural gas rents, coal rents (hard and soft), and mineral rents should exceed 10 percent of GDP. Estimates of natural resource rents are based on World Bank (2011).

Sub-Saharan Africa by resilience of growth performance

Resilient countries in the region—as defined by 2015-17 GDP growth rates above the top tercile during 1995-2008—posted primary and overall fiscal balances in 2015-16 that were invariant relative to those in 2010-13. For instance, the primary deficit decreased slightly, from 2.2 percent of GDP in 2010–13 to 2 percent of GDP in 2015–16. Additionally, the overall fiscal balance slightly worsened—that is, the overall deficit widened from 3.3 percent in 2010–13 to 3.5 percent in 2015–16—although this deterioration is not statistically significant. General gross government debt also increased, from 39 percent of GDP in 2010–13 to 48 percent in 2015–16, and this increase also appears to be not statistically significant. Finally, the economic performance of resilient countries (top tercile of the SSA growth distribution) in 2015–16 was supported by a still-large fiscal balance (that exceeded 3 percent of GDP) and moderate-to-high levels of debt (median of 48 percent of GDP). This explains a (statistically significant) narrowing of the fiscal space—as the number of years needed to repay fully the public debt burden increased (significantly), from 2.7 years in 2010–13 to 3.4 years in 2015–16.

The performance of *less resilient countries* in the region in terms of fiscal outcomes varies widely between the middle and bottom terciles of the SSA country distribution. The bottom tercile shows a significant widening of the primary and fiscal deficits. For instance, the primary deficit widened from 1.4 percent of GDP in 2010–13 to 3.2 percent in 2015–16. Increasing deficits have come along with rising public debt: the general government gross debt increased from 33 percent of GDP in 2010–13 to 51 percent in 2015–16. The deterioration of fiscal balances and the debt burden translated into tighter fiscal conditions among countries in the bottom tercile. The number of tax years it would take these countries to repay their gross public debt increased from 2.2 in 2010–13 to 3.4 in 2015–16. This increase in the number of tax years is statistically significant at the 10 percent level under a one-tailed alternative hypothesis.

For the middle tercile within the less resilient group of countries, the primary balance slightly deteriorated in 2015–16 vis-à-vis 2010–13, but this deterioration was statistically negligible. However, the overall fiscal deficit for this group of countries widened, from 2.4 percent of GDP in 2010–13 to 3.3 percent in 2015–16 (and this change is significant at the 10 percent level under a one-tail alternative hypothesis). General government gross debt significantly increased over time, from 34 percent of GDP in 2010–13 to 47 percent in 2015–16. The ratio of general government gross debt to average tax revenues increased significantly over time, from 3.0 in 2010–13 to 3.8 in 2015–16.

In sum, bottom tercile countries continued to pursue countercyclical policies in 2015–16 amid the sharp decline of international commodity prices—as captured by the significant widening of fiscal deficits and the expansion of government debt. For the middle tercile, the fiscal impulse was still present (with primary and overall deficits of 1.8 and 3.3 percent, respectively, in 2015–16), but this impulse was not statistically higher than that of 2010–13. Still, the public debt burden significantly increased. This implies that while the fiscal expansion persisted among less resilient

countries (although this expansion was significant only for countries in the bottom tercile), this policy stance took place amid a narrowing fiscal space for both groups.

4.2. Balance sheet composition and external debt position

Table 2 reports the medians of the indicators of balance sheet composition and external debt position for the region, sub-groups within the region and other benchmark regions of the world for the periods 2010-13 and 2015-16. The analysis in this subsection focuses on solely two indicators of the balance sheet composition of governments: concessional external debt as a percentage of general government gross debt, and share of short-term debt as a percentage of total debt.⁹ The discussion of external debt indicators focuses on total external debt as a percentage of GDP, and short-term debt as a percentage of reserves.

Sub-Saharan Africa vis-à-vis Benchmark regions

The balance sheet composition of SSA and non-SSA developing countries remained (statistically) invariant in 2015-16 when compared with 2010-13. During the period 2015-16, about 40 percent of the general government gross debt was concessional while short-term external debt accounts for only 5 percent of total external debt. For non-SSA developing countries, 17 percent of the public debt burden is concessional and short-term external debt represents about 13 percent of total external debt (see Table 2).

In terms of external solvency, SSA and non-SSA developing countries also have very low short-term external debt to international reserve ratios. This ratio has remained unchanged in 2015-16 compared with 2010-13 for both groups of countries. Short-term external debt accounts for 13 and 34 percent of international reserves for SSA and non-SSA developing countries, respectively. Finally, external debt stocks (as percentage of GDP) increased for both groups of countries: it significantly increased for SSA countries from 27 percent in 2010-13 to 32 percent of GDP in 2015-16. For non-SSA developing countries, external debt rose from 45 percent of GDP in 2010-13 to 52 percent of GDP in 2015-16 —although this increase seems to be statistically not significant.

Sub-Saharan Africa by resource abundance

When looking at SSA countries by their extent of resource abundance, we observe that the composition of balance sheets remains invariant in 2015-16 relative to 2010-13. Concessional external debt accounted for 46 percent of gross public debt among non-resource rich countries in 2015-16 while it represented 41 and 18 percent for non-oil and oil resource rich countries. Short-

⁹ The fiscal space database developed by Kose et al. (2017) contains additional indicators of balance sheet composition, such as the share of general government debt in foreign currency, share of debt securities held by nonresidents, and share of central government debt held by nonresidents. Due to the lack of data for Sub-Saharan African countries, the averages for these indicators for 2010–13 and 2014–16 were not calculated.

term external debt as a percentage of total external debt in 2015-16 ranges from 0.6 percent (oil rich countries) to 5.1 percent (non-resource rich countries).

External solvency —as measured by the ratio of short-term external debt to international reserves— also remains invariant in 2015-16 compared with 2010-13. It ranges from 2 percent of international reserves (oil rich countries) to 14 percent (non-resource rich countries). Finally, external debt stocks as a percentage of GDP increased over time for all country groups by resource abundance. However, this increase is statistically not significant for oil and non-oil resource rich countries.

Sub-Saharan Africa by resilience of growth performance

Table 2 reports that the balance sheet composition of resilient countries in the region remained invariant (from a statistical standpoint) from 2010–13 to 2015–16. For instance, the share of concessional debt declined from 56 percent of general government gross debt in 2010–13 to 51 percent in 2015–16, and this decline is not statistically significant. The same occurred with the share of short-term external debt in total external debt—with the ratio increasing slightly (although statistically not significant) from 2.0 to 2.5 percent. On the external debt position, the debt stock and ratio of short-term external debt to reserves not only remained low in 2015–16 for these countries, but also has not varied statistically since 2010–13.

For less resilient countries, the share of concessional debt declined, but the magnitude of the decline is not statistically significant at the 10 percent level (even when conducting tests with a one-tailed alternative hypothesis). The same holds for the share of short-term external debt. Short-term debt represents less than 7 percent of total external debt for both groups. Finally, external debt increased in less resilient countries—although the increase is significant only for the middle tercile.

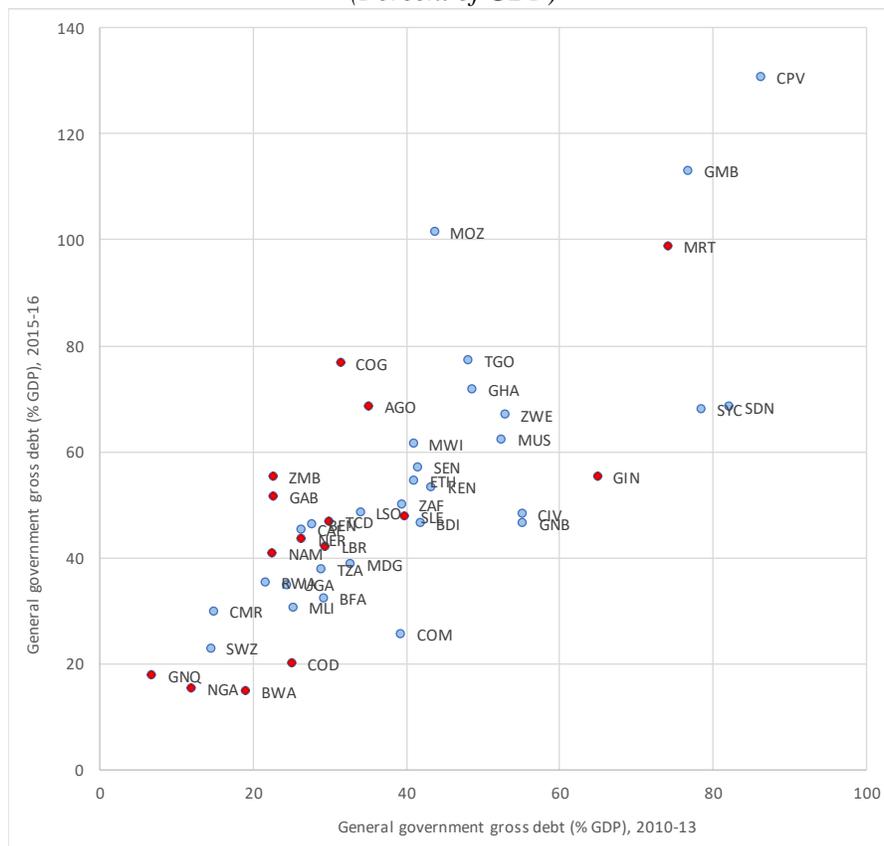
4.3. Need for fiscal adjustment across Sub-Saharan African countries

The analysis in section 3.2 <4.2?> shows that the magnitude of the widening of fiscal deficits and the increase of public debt burden vary across country groups. This section goes beyond the aggregate level and country groups to document the evolution of the fiscal sustainability indicators for 44 countries in the region.

Figure 5 plots the average primary balance (as a percentage of GDP) for 2010–13 vis-à-vis that for 2015–16. Of the 44 countries in the Africa region, 34 experienced a deterioration in the primary balance and 10 registered an improvement. For those with declining performance, the median deterioration of the primary balance was 2.3 percentage points of GDP; the median increase for the second group of 10 countries was about 1.4 percent of GDP. The countries in the region with the largest deterioration in their primary deficits were the Republic of Congo (which moved from

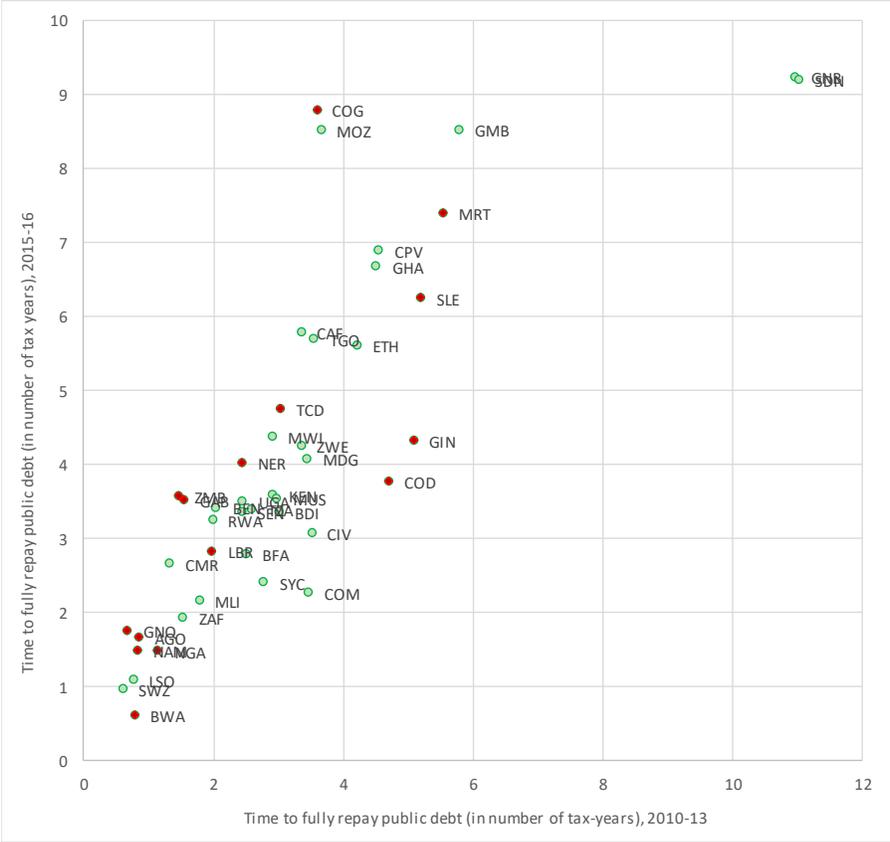
The Gambia (from 77 to 113 percent of GDP).¹⁰ Other notable countries with high public debt burdens are Mauritania (99 percent of GDP in 2015–16) and Ghana (72 percent of GDP in 2015–16). The public debt burden increased in Ghana despite improvements in the primary surplus. This reflects the substantial size of interest payments. In contrast, Sudan, Guinea, and the Comoros experienced a decline in the general government gross debt that exceeded 10 percentage points of GDP—specifically, 14, 10, and 14 percentage points of GDP, respectively. However, their average levels of public debt in 2015–16 were very different—with the Comoros at 26 percent of GDP, Guinea at 55 percent, and Sudan at 69 percent.

Figure 6. General Government Gross Debt Across SSA Countries, 2010-13 vs. 2015-16
(Percent of GDP)



Saharan African countries in 2010–13 vis-à-vis 2015–16. Most countries in the region (36 of 44) have a reduced fiscal space—as proxied by an increase in the number of tax years needed to repay the public debt burden. From 2010–13 to 2015–16, the median increase is about 1.1 years for countries with tighter fiscal conditions. However, these central figures mask the wide variation across countries. For example, in over one-third of these countries (13 out of 36) the increase is more than one standard deviation above the median. The countries with the largest increase in the number of tax years required to pay off the entire debt burden from 2010–13 to 2015–16 were the Central African Republic (from 3.3 to 5.8), The Gambia (from 5.8 to 8.5), Mozambique (from 3.7 to 8.5), and the Republic of Congo (from 3.6 to 8.8). The findings suggest that in some countries (Sudan and Guinea-Bissau), it takes more than 9 years to repay their public debt burden (about 9.2 years), despite the reduction in this ratio for these countries when compared with 2010–13. For Botswana, Swaziland, and Lesotho, it would take at most one tax year to repay fully their general government gross debt stock.

Figure 7. Fiscal Space Across Sub-Saharan African Countries, 2010-13 vs. 2015-16
(General government gross debt as a ratio of average tax revenues)



Notes: Red dots represent resource rich countries while green dots represent non-resource rich countries. Fiscal space is calculated by the ratio of general government gross debt to average tax revenues (Aizenman and Jinjark 2010). Calculations based on data from Kose et al. (2017).

5. Debt dynamics in Africa: Analyzing the fiscal sustainability gap

This section examines the evolution of public debt dynamics by assessing the fiscal sustainability gap—e.g. see Blanchard (1993), Ley (2009), and Cotarelli and Escolano (2014). This summary indicator compared the country’s actual primary balance with its debt-stabilizing balance. Under certain macroeconomic and financial scenarios, the debt-stabilizing primary balance captures the long-term and cumulative impact of sustained fiscal deficit on public debt stocks (World Bank 2017).

We describe the evolution of the fiscal sustainability gap from 2003 to 2016 for Sub-Saharan African countries. Specifically, we conduct two types of comparisons: (a) an international comparison, where the region is benchmarked to other developing regions, and (b) within-region benchmarking for countries classified by their extent of natural resource abundance and access to markets. The analysis of fiscal sustainability gaps not only entails movements in fiscal balances and public debt stocks but also country fundamentals that influence the long-term debt stabilizing ratio (e.g. growth prospects and the future profile of interest rates).

5.1. Measuring fiscal sustainability gaps¹¹

The fiscal sustainability gap aims to capture the emerging pressures from the accumulation of widening fiscal deficits over time to unsustainable debt stocks—even if the level of public indebtedness was low. This gap signals the amount of fiscal adjustment required to reach a debt target under different macroeconomic scenarios (Kose et al. 2017, pp. 5).

The primary sustainability gap (psg) for country i in year t is defined as follows (Kose et al. 2017):

$$psg_{it} = pb_{it} - \left(\frac{r_i - g_i}{1 + g_i} \right) \bar{d}_i$$

where pb is the primary balance (as percentage of GDP), r is the nominal interest rate, g is nominal GDP growth, and \bar{d} is the target of the debt-to-GDP ratio. In this paper, the gaps are computed based on current growth rates and interest rates—see Kose et al. (2017) for a more detailed description. The debt stabilization level considered in this paper for developing countries (including SSA) and advanced countries (AEs) is the peer-group median for both emerging market and developing countries (EMDEs) and advanced economies (AEs) correspondingly.¹²

¹¹ This section draws heavily from Kose et al. (2017).

¹² Kose et al. (2017) calculate the primary sustainability gap under 5 different assumptions for growth rates, interest rates, and the targeted debt ratio; namely: (i) country-specific medians for GDP growth and interest rates over the 1990-2006 period, (ii) GDP growth and interest rates at their current levels, (iii) the nominal interest rate is computed as a country-specific standard deviation over the country-specific median, and the nominal GDP growth as a country-specific standard deviation below the country-specific median, (iv) country-specific minimum nominal interest rates and maximum nominal GDP growth rates, and (v) country-specific medians for nominal interest rates, nominal GDP growth, and the target debt ratio.

According to the definition of the primary balance sustainability gap stated above, positive values indicate that the primary balance, if sustained, would help reduce the general government gross debt burden over time. On the other hand, a negative primary balance sustainability gap would signal a primary balance that would increase the stock of government debt over time.¹³

5.2. Primary Balance Sustainability Gap in Sub-Saharan Africa: International Comparison

Most developing country regions, with the sole exception of South Asia, have experienced fairly sound fiscal positions in the run-up to the global financial crisis—that is, during the period 2003–08. Sizable primary surpluses in almost all regions across the world enabled countries to reduce or stabilize their level of public debt before the crisis hit the global economy.

All regions implemented countercyclical fiscal policy measures in 2009, thus leading to a deterioration of their primary balances. In the aftermath of the 2008–09 global financial crisis, fiscal balances slightly improved as green shoots emerged and countries started recovering although at different speeds during the 2010–13 period. However, fiscal balances deteriorated—especially among emerging markets and developing countries—from 2014 to 2016 amid falling commodity prices.

Post-crisis debt ratios have broadly increased to their pre-crisis levels in most regions, except in the Middle East and North Africa (MENA) and South Asia (SA) regions. Although the effects of the global financial crisis have receded, many developing countries (especially commodity-exporting countries) have been unable to stabilize their debt to pre-crisis levels, and their primary balance sustainability gaps have deteriorated.

Figure 8 reports the primary sustainability gaps for SSA and other developing countries regions from 2003 to 2016, and examined over four distinct periods: (a) run-up to the crisis (2003–08), (b) crisis period (2009), (c) near aftermath of the crisis (2010–13), and (d) episode of plunging commodity prices (2014–16). As stated above, this sustainability gap is calculated based on the primary balance that stabilizes the stock of debt at a specific target; in turn, that target for all the developing regions (including SSA) is defined as the historical median value of the debt stock for the developing countries.¹⁴ Some key findings emerge from figure 8.

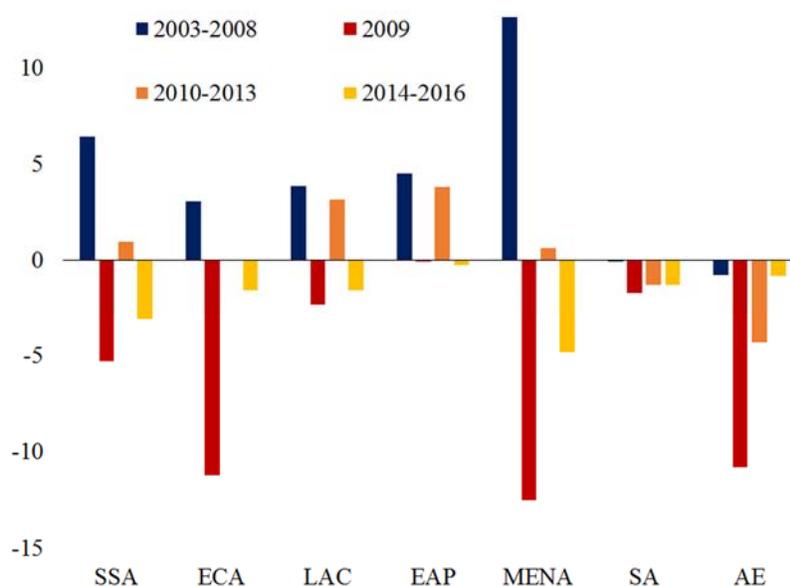
First, most developing regions, except South Asia, exhibited a positive primary balance sustainability gap in the run-up to the crisis. During 2003–08, many developing countries narrowed their primary deficits or turned them into surpluses that helped steadily lower their level of debt. For instance, SSA registered a positive primary balance sustainability gap of 6.5 percent of GDP—higher than that of Latin America and East Asia. Furthermore, some low-income countries in SSA

¹³ For more details on the concept and modeling of the fiscal sustainability gap, see Kose et al. (2017) and World Bank (2017).

¹⁴ Kose et al. (2017) note that this approach, compared with benchmarking against each economy’s own historical median, implies more favorable debt targets in economies with debt below the peer-group median (in this case, the developing country group) and less favorable debt targets in economies with debt above the peer group median.

and Latin America benefitted from debt relief initiatives, that is, HIPC and MDRI. General government gross debt among these countries declined sharply between their HIPC decision and completion dates (World Bank 2017).

Figure 8. Primary Balance Sustainability Gap
(Percent of GDP)



Notes. Primary sustainability gaps are computed based on current growth rates and interest rates as in Kose et al. (2017). The debt stabilization considered is the peer-group median for both emerging market and developing countries (EMDE) and advanced economies (AE) correspondingly. GDP weighted averages. SSA: Sub-Saharan Africa, ECA: Eastern Europe and Central Asia, LAC: Latin America and the Caribbean, EAP: East Asia and the Pacific, MENA: Middle East and North Africa, SA: South Asia, and AE: Advanced Economies. Calculations based on data from Kose et al. (2017).

Second, we observe a sharp reversal in the general government debt dynamics following the global financial crisis. Debt-reducing fiscal positions in developing countries in 2003–08, as captured by their positive primary balance sustainability gaps, turned into debt-increasing fiscal positions—thus reflecting the large countercyclical policy actions in 2009. SSA’s primary balance sustainability gap shifted from 6.5 percent of GDP in 2003–08 to -5.3 percent in 2009. This large deterioration of the primary balance sustainability gap was experienced in all other world regions except South Asia. In the latter region, the fiscal sustainability gap is still negative, but it widened from -0.1 to -1.7 percent of GDP.

Third, fiscal dynamics slightly improved in the 2010–13 recovery period for most regions in the world. In 2010–13, the primary balance sustainability gap in SSA became positive, at 1 percent of GDP. The largest turnarounds in the fiscal sustainability gap (moving from negative to positive) were achieved by Eastern Europe and Central Asia, and the Middle East and North Africa.

Fourth, fiscal dynamics deteriorated again among developing countries in 2014–16, as international commodity prices took a plunge. Primary balance sustainability gaps turned from positive in 2010–13 to negative in 2014–16 in all developing regions except South Asia, where they remained negative and invariant between the two periods. The sustainability gap shifted from debt-stabilizing primary surpluses of 1 percent of GDP in 2010–13, to debt-increasing primary deficits of 3.1 percent of GDP in 2014–16.

In sum, the pattern of debt sustainability in SSA is comparable to that of other commodity-exporting regions. This finding implies that fiscal outcomes in SSA fluctuate with the commodity price cycle. Prior to the global financial crisis, the region recorded primary surpluses, as commodity prices were on the rise; the region recorded primary deficits after the 2014–15 slowdown in commodity prices. Although debt levels remain below those in the late 1990s—when several international debt relief initiatives were implemented—they have been rising more rapidly than in other regions since 2009. On average, the primary balance sustainability gap was negative post-crisis, reflecting the debt sustainability challenges facing the region.

5.3. Primary Balance Sustainability Gap across Sub-Saharan African Countries

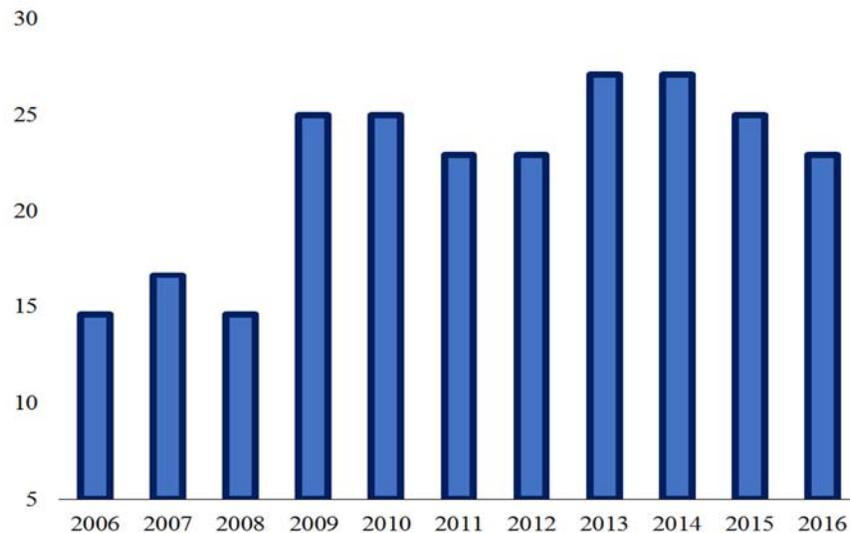
The primary surpluses recorded by the SSA region prior to the global financial crisis were reversed to deficits after the crisis. However, the regional averages hide differences in fiscal outcome patterns across countries. Figure 9 shows that the share of countries with negative primary fiscal balance sustainability gaps went from about 15 percent in 2006 to more than 27 percent in 2014.

During 2014–16, fiscal space narrowed; in nearly 25 percent of the countries in the region, primary balances are below the threshold required to stabilize their debt to 2008 levels.¹⁵ Fiscal outcome dynamics may also vary across countries, depending on their ability to access international financial markets. Moreover, several countries in the region rely heavily on commodity exports, but differences may emerge between energy-rich countries, minerals and metals abundant countries, and resource-poor countries.

Countries in SSA have increasingly resorted to international capital markets to finance part of their development needs. However, debt sustainability will be challenging in the near future for most African countries, as the protracted low commodity prices since mid-2014 and expected rising external borrowing costs, due to normalization of monetary policy in advanced economies, are likely to put pressure on public finances. Figure 10 depicts the primary balance sustainability gap across Sub-Saharan African countries according to their access to financial markets. In this case, the sustainability gap is benchmarked against each country's 2008 debt burden.

Figure 9. Share of SSA Countries with Negative Primary Fiscal Balance Sustainability Gaps (percent)

¹⁵ If sustainability gaps are computed using the overall fiscal balance, more than two-thirds of the countries in the Africa region have fiscal balances below the threshold required to stabilize their debt to 2008 levels.



Notes: Primary balance sustainability gaps are computed based on current growth rates and interest rates as in Kose et al (2017). The debt stabilization considered is the 2008 debt level of each country in the region. The sample includes 37 SSA countries. Calculations based on data from Kose et al. (2017).

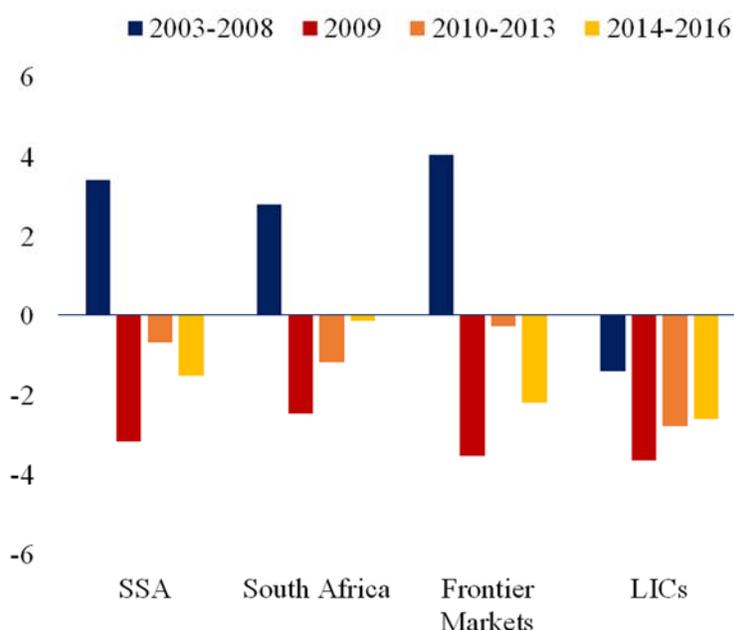
In South Africa, the only emerging market in the region, the economy continues its path to recovery although at a slower pace than other emerging markets. The adjustment of the primary balance was a deliberate fiscal policy effort, partly to defend the investment grade rating—which was lost in April 2017. However, public debt has risen post-crisis and averaged 49 percent of GDP over 2014–16, a significant increase from its pre-crisis level. This increase reflects weak growth performance coupled with an increase in borrowing costs induced by the risk of a sovereign downgrade. Sustainability gaps shifted from a debt-stabilizing primary surplus of 3.4 percent of GDP in 2003–08, to a debt-increasing primary deficit of 1.2 percent of GDP in 2010–13. Gradually, this sustainability gap converged to zero in 2014–16 (figure 10).

In small, pre-emerging frontier markets, large pre-crisis surpluses became deficits after the crisis, with sharp deteriorations over 2014–16. However, this was not accompanied by large increases in public debt, as was the case in South Africa. The relatively low increase in public debt ratios in frontier markets reflects robust growth performance in countries such as Côte d’Ivoire, Ethiopia, and Tanzania. However, frontier markets in SSA have increasingly large shares of external debt denominated in foreign currency, and are therefore exposed to external shocks. Monetary policy is expected to normalize in advanced economies; hence, the external debt burden in frontier market economies is expected to increase. Debt-increasing fiscal deficits across frontier markets in Africa widened to 2.2 percent of GDP in 2014–16, after contracting to a deficit of 0.3 percent of GDP in 2010–13.

The fiscal position of low-income countries was different from that of frontier markets prior to the crisis. Low-income countries had the highest debt levels in the Africa region, and their primary fiscal balances were slightly in deficit. Due to the lack of fiscal space, these countries

had the weakest countercyclical response in the region. Debt gradually declined from 2000 to 2013, due partly to the implementation of relief initiatives, such as the HIPC initiative and the MDRI. However, debt has been increasing since 2014, narrowing the fiscal space in these countries. Although low-income countries already had debt-inducing primary deficits prior to the crisis (of about 1.4 percent of GDP), the deficits widened in the post-crisis period to an average 2.7 percent of GDP in 2010–16 (figure 10).

Figure 10. Primary balance sustainability gap: Access to financial markets
(percent of GDP)



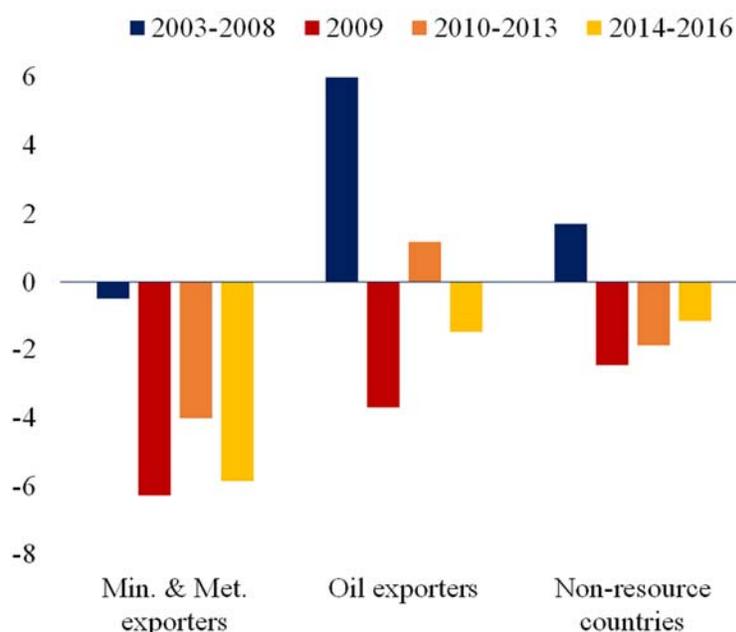
Notes: Primary balance sustainability gaps are computed based on current growth rates and interest rates as in Kose et al (2017). The debt stabilization considered is the 2008 debt level of each country in the region. The sample includes 37 SSA countries, where data is available, of which 23 frontier market countries, 13 LICs and South Africa. GDP-weighted averages. SSA: Sub-Saharan Africa; LICs: Low Income Countries. Calculations based on data from Kose et al. (2017).

Figure 11 presents the primary balance sustainability gap across Sub-Saharan African countries classified by their extent of natural resource abundance. Large differences emerge in the fiscal dynamics of minerals and metals exporters, oil exporters, and non-resource rich countries. Again, the sustainability gap is benchmarked against each country’s 2008 debt burden. In minerals and metals exporting countries, the fiscal outcomes are similar to those in low-income countries, reflecting the large proportion of low-income countries in this group. Debt-increasing primary deficits have widened considerably, from 0.5 percent of GDP prior to the crisis to 5.9 percent in 2014–16 among minerals and metals exporters.

Oil exporters recorded large surpluses pre-crisis, helped by the oil price boom. These reversed to deficits as the global financial crisis hit and the price of oil declined. The subsequent recovery

from the crisis was accompanied by a rebound in the price of oil from 2010–13; oil exporters accordingly rebuilt fiscal buffers. However, the plunge in the price of oil in 2014–15 weighed on their public finances, with large deficits averaging about 3 percent of GDP over 2014–16. The ample fiscal space available prior to the crisis has narrowed (with negative primary balance sustainability gaps), although the debt ratios remain the lowest in the SSA region. Specifically, the sustainability gap shifted from debt-reducing primary surpluses of 6 percent of GDP prior to the crisis (2003–08) to debt-increasing primary deficits of 1.5 percent of GDP in 2014–16.

Figure 11. Primary balance sustainability gap: Natural resource abundance
(percent of GDP)



Notes: Primary balance sustainability gaps are computed based on current growth rates and interest rates as in Kose et al (2017). The debt stabilization considered is the 2008 debt level of each country in the region. The sample includes 37 SSA countries, where data is available, of which 6 countries are classified as oil exporters, 13 as metals and minerals exporters and 18 as non-resource countries. GDP-weighted averages. Calculations based on data from Kose et al. (2017).

Non-resource rich countries recorded relatively small fiscal surpluses along with high debt pre-crisis and limited fiscal space. Consequently, the response to the crisis was weaker in these countries than in other groups. Although there were efforts to rebuild fiscal buffers in these countries after 2009, debt has been rising and averaged 51 percent of GDP over 2014–16, which is higher than the pre-crisis average of 45 percent of GDP. Still, debt-increasing primary deficits have gradually declined, from 2.5 percent of GDP in 2009 to 1.2 percent in 2014–16.

6. Conclusions

This paper examines the evolution of fiscal space in Sub-Saharan African countries using a novel and comprehensive database developed by Kose and co-authors (2017). Fiscal space is a multidimensional concept that is proxied by a wide array of indicators capturing aspects such as: (i) fiscal sustainability, (ii) balance sheet vulnerability, (iii) external and private debt position, and (iv) market perception.

The insufficient availability of data at the cross-sectional and time-series dimensions for Sub-Saharan African countries restricts our analysis to eight indicators that proxy areas (i), (ii) and (iii). Unfortunately, important risks currently affecting debt profiles in the region (e.g. currency and maturity) are not evaluated due to the lack of data availability. From our analysis, several stylized facts emerge:

First, Sub-Saharan African countries, breaking with history, were able to conduct countercyclical fiscal policy measures thanks to previously built fiscal space in the run-up to the 2008-09 global financial crisis. Healthy primary balances, reduced public debt burdens, and access to global capital markets allowed countries in the region to have ample margin to conduct policies to support aggregate demand amid the global financial crisis. The primary balance sustainability gap in SSA shifted from an average of 6.5 percent of GDP in 2003–08 to -5.3 percent in 2009. Countries in the region spend resources without following strict rules and medium-term plans. This is in line with evidence that ambitious plans tend to exhibit larger implementation gaps—and, hence, fiscal plans are not entirely realistic when designed (Lledó and Poplawski-Ribeiro 2013).¹⁶

Second, fiscal adjustment efforts in SSA—as captured by a positive but small primary balance sustainability gap in 2010-13—reversed amid a plunge in commodity prices in 2014-16. There are large differences in the fiscal dynamics by resource abundance, however. Primary balance sustainability gaps deteriorated sharply among oil and metals and minerals exporting countries in the region in 2014-16, reflecting a reversal of primary surplus or widened primary deficits, increased debt ratios, rising borrowing costs and more modest growth prospects. For example, in oil exporters, the sustainability gap shifted from debt-reducing primary surpluses of 1.2 percent of GDP in 2010-13 to debt-increasing primary deficits of 1.5 percent of GDP in 2014-16. Minerals and metals exporters continued to post negative primary balance sustainability gaps amid a recovery in commodity prices in 2010-13, and this group saw a worsening of the sustainability gap to -5.9 percent of GDP in 2014-16, a nearly 2 percentage point deterioration. By contrast, non-resource rich countries saw a slight narrowing of their negative primary balance sustainability gap, from 1.9 percent of GDP in 2010-13 to 1.2 percent of GDP in 2014-16.

¹⁶ Strong institutions combined with sound budget implementation procedures are associated with smaller implementation gaps in revenue collection and overall balance among SSA countries.

Third, there is a great deal of heterogeneity in the evolution of fiscal space across SSA countries. Fiscal space has narrowed for most countries in the region in 2015-16. In this context, the median increase from 2010-13 to 2015-16 in the number of tax years to fully pay the public debt was 1.1 years in countries with tighter fiscal conditions. These central figures mask the wide variation across countries. For example, in over one-third of the countries with narrowing fiscal space (that is 13 of 36) the increase in tax years is more than one standard deviation above the median. In Central African Republic, Mozambique, and the Republic of Congo the increase in the number of tax years exceeded 2.5 years. In contrast, it would take at most one tax-year to fully repay the general government gross debt position for some countries in the region (e.g. Botswana, Swaziland, and Lesotho).

Fourth, the empirical literature shows that institutions help reduce fiscal implementation gaps, fiscal indiscipline, and fiscal procyclicality (e.g. Lledó and Poplawski-Ribeiro, 2013; Calderon and Nguyen 2016). In turn, evidence shows that fiscal capacity —as proxied by tax effort— leads to better institutions (as it lowers corruption and red tape). This implies that some African countries in the post-2009 period can be trapped in an equilibrium of lower fiscal capacity and lower government quality that may hinder their ability to make fiscal institutions work (Baskaran and Bigsten 2013). Rules may help reduce cyclicity of fiscal policy and restore fiscal discipline; however, their design matters. About 21 countries in the region have numerical rules —either a combination of balanced budget and debt rules in most countries (e.g. Côte d’Ivoire and Senegal) or an expenditure rule (e.g. Namibia and Botswana). However, those rules do not account for the intertemporal nature of fiscal policy, fluctuations in commodity prices (at least for the commodity exporters with rules) and, by definition, they are rigid and tend to be procyclical (i.e. a feature of numeric targets). The evidence shows that the impact of fiscal rules on the cyclicity of fiscal policy depends on their design —that is, flexibility in design matters. Investment-friendly rules (i.e. shielding public investment from rule effects) are stronger in bad times and when the rule is enacted at the national level. Inclusion of cyclical adjustment features in spending rules also helps reduce procyclicality (Guerguil et al. 2017).

Finally, this paper has documented the narrowing of the fiscal space across countries in SSA. Calderon and Chuhan-Pole (2017) are currently examining the deep determinants of fiscal space for countries in the region. This analysis will enhance our understanding of whether structural features or complementary policies help explain the formation of fiscal space. The aim of this work is to help inform policy discussions on how to restore fiscal space in Sub-Saharan African countries.

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Table 1. Fiscal Space in SSA Countries, 2010-13 vs. 2015-16: Fiscal Sustainability Indicators

Fiscal Indicators	Primary Balance			Fiscal Balance			General Government			Time to fully repay public		
	(% GDP)			(% GDP)			Gross Debt (% GDP)			debt (in tax-years)		
	2010-13	2015-16	Difference	2010-13	2015-16	Difference	2010-13	2015-16	Difference	2010-13	2015-16	Difference
	Median	Median	(p-value)	Median	Median	(p-value)	Median	Median	(p-value)	Median	Median	(p-value)
Industrial Economies	-1.9	0.1	(0.001)	-3.7	-1.4	(0.000)	80.4	69.6	(0.603)	2.9	3.0	(0.862)
Developing countries (excl. SSA)	-0.9	-0.9	(0.956)	-2.5	-2.7	(0.489)	38.8	45.9	(0.017)	2.4	2.9	(0.001)
Sub-Saharan Africa (SSA)	-1.6	-2.5	(0.009)	-2.6	-4.2	(0.000)	34.4	49.7	(0.000)	2.8	3.6	(0.000)
SSA by Resource Abundance												
Non-resource rich	-1.8	-2.2	(0.421)	-3.2	-3.7	(0.148)	41.6	49.7	(0.006)	3.0	3.6	(0.001)
Non-oil resource rich	-1.7	-5.4	(0.043)	-2.4	-5.3	(0.043)	26.9	43.6	(0.009)	2.5	3.8	(0.149)
Oil resource rich	1.1	-3.0	(0.125)	0.2	-4.5	(0.004)	21.4	47.0	(0.097)	1.3	2.5	(0.077)
SSA by Growth resilience												
Bottom Tercile	-1.4	-3.2	(0.001)	-2.4	-4.7	(0.005)	32.6	50.8	(0.000)	2.2	3.4	(0.186)
Middle Tercile	-1.6	-1.8	(0.829)	-2.4	-3.3	(0.130)	33.5	47.3	(0.017)	3.0	3.8	(0.005)
Top Tercile	-2.2	-2.0	(0.743)	-3.3	-3.5	(0.743)	38.7	48.3	(0.743)	2.7	3.4	(0.003)

Note: The null hypothesis of the median equality test is that of no statistical difference across periods. GDP = gross domestic product; SSA = Sub-Saharan Africa. The p-value reported in this table is that of a two-tailed test. Source: Calculations based on data from Kose et al. 2017.

Table 2. Fiscal Space in SSA Countries, 2010-13 vs. 2015-16: Balance Sheet Composition and External Debt

Fiscal Indicators	Concessions Ext. Debt (% GG Gross Debt)			Short-term External Debt (% Total)			Short-term External Debt (% International Reserves)			External Debt Stocks (% GDP)		
	2010-13	2015-16	Difference	2010-13	2015-16	Difference	2010-13	2015-16	Difference	2010-13	2015-16	Difference
	Median	Median	(p-value)	Median	Median	(p-value)	Median	Median	(p-value)	Median	Median	(p-value)
Industrial Economies	34.8	32.8	(0.409)	991.1	862.5	(0.906)	192.2	175.3	(0.409)
Developing countries (excl. SSA)	22.4	16.7	(0.314)	13.6	13.3	(0.876)	34.5	33.5	(0.926)	44.5	51.8	(0.299)
Sub-Saharan Africa (SSA)	42.3	40.1	(0.972)	6.2	5.2	(0.875)	11.6	13.0	(1.000)	27.3	31.6	(0.037)
SSA - Resource Abundance												
Non-resource rich	56.0	45.7	(0.406)	7.8	5.1	(0.733)	14.5	13.8	(0.841)	28.6	31.6	(0.123)
Non-oil resource rich	41.2	41.3	(0.754)	6.6	3.6	(0.934)	20.3	8.4	(0.268)	28.1	31.7	(0.402)
Oil resource rich	15.2	17.6	(0.920)	0.9	0.6	(0.920)	1.2	2.1	(0.920)	18.8	27.2	(0.920)
SSA - Growth resilience												
Bottom Tercile	37.4	24.6	(0.330)	4.0	3.0	(0.957)	5.0	5.8	(0.843)	25.6	31.7	(0.299)
Middle Tercile	56.2	50.9	(0.271)	9.9	6.1	(0.199)	22.1	17.1	(0.323)	27.9	34.1	(0.199)
Top Tercile	55.5	51.0	(0.447)	2.0	2.5	(0.688)	8.0	13.0	(0.923)	26.1	31.1	(0.229)

Note: The null hypothesis of the median equality test is that of no statistical difference across periods. GDP = gross domestic product; SSA = Sub-Saharan Africa. The p-value reported in this table is that of a two-tailed test. Source: Calculations based on data from Kose et al. 2017.