INTERNATIONAL MONETARY FUND

African Department



Conference paper prepared by an IMF staff team led by Dominique Desruelle, Ivohasina F. Razafimahefa, and Cemile Sancak. Copyright ©2019 International Monetary Fund

Authors: Gomez Gbedia Agou, Charles Amo-Yartey, Seung Mo Choi, Dominique Desruelle, Claire Gicquel, Trevor Lessard, Giovanni Melina, Shirin Nikaein Towfighian, Francine Nyankiye, Narayanan Raman, Ivohasina F. Razafimahefa, and Cemile Sancak,

CONFERENCE PAPER

"SUSTAINABLE DEVELOPMENT, SUSTAINABLE DEBT"

Key Messages	4
I. Introduction	5
II. Development Progress and Needs	5
III. Debt Dynamics	8
A. Debt Levels	
B. Debt Drivers	
C. Debt Composition	
D. Debt Projections	
IV. The Asset Side	17
V. Where to Make More Progress To achieve Sustainable Development and Sustainable Debt?	19
VI. Conclusion	24
Annex I - Policy Simulations	25
Annex II - Country Case Studies	28
A. Senegal	
B. Côte d'Ivoire	
C. Rwanda	
Annex III - IMF's Role on Development and Debt	35
Annex IV: Debt Sustainability Concepts	38
Annex V. Sub-Saharan Africa: Country Groupings	39
References	40

KEY MESSAGES

While development needs remain large in SSA countries, the financing space has narrowed in recent years. SSA countries have made significant socio-economic progress in the last two decades. Income per capita improved; poverty rates declined; education and health outcomes expanded. However, SSA countries are only about half-way to achieving the Sustainable Development Goals (SDGs). The ability to finance development needs has become more constrained as public debt increased rapidly between 2011 and 2016, albeit stabilizing thereafter. In addition, official development assistance (ODA) has stagnated or even declined.

This paper highlights questions to be explored to allow Sub-Saharan African (SSA) countries to meet their development needs while safeguarding debt sustainability. All stakeholders have roles to play, which can be grouped into five priority areas:

- How can SSA countries make faster progress in raising domestic revenue? While domestic revenues have been steadily improving, the region still has the lowest revenue-to-GDP ratio compared to emerging markets and developing countries in other regions. The tax gap—the distance between tax potential and observed tax ratio—is estimated at 3 to 5 percent of GDP. An improvement of the international taxation system that allows SSA to secure the tax base on inward investment can also boost SSA countries' revenue.
- How can SSA countries invest more efficiently? It has been estimated that about 40 percent of public investment in LICs do not turn into public capital. The Public Investment Management Assessment framework has identified specific weaknesses in SSA countries, particularly on project selection and appraisal, monitoring of assets, PPP management, and multi-year budgeting. The sharing of experience from development partners can also be useful.
- How can SSA countries strengthen debt management capacity and debt transparency? Such an effort is needed as SSA countries are expanding and diversifying financing sources. Transparency in debt financing and project tender ensures that SSA population gets the most value for money from scarce public funds.
- How can development partners meet ODA targets, and should they scale up infrastructure financing, even at non-concessional terms? ODA currently corresponds to 0.3 percent of DAC's GNI, compared with targets of 0.7 percent of DAC's GNI. In addition, development partners have scaled down involvement in infrastructure financing.
- Are initiatives to bring substantially more private finance to SSA robust enough? Innovative frameworks such as de-risking and blended financing can have significant potential.

I. INTRODUCTION

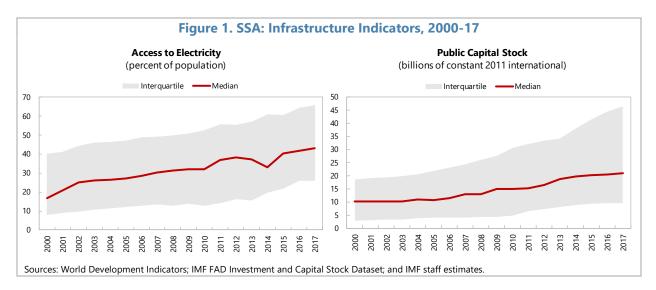
1. Sub-Saharan African (SSA) countries continue to face large development needs while the available financing is constrained by recent debt increases. Despite remarkable socio-economic progress in the last two decades, SSA countries still lag behind other regions; poverty rates are still high, and the infrastructure gap is still large. In the meantime, the fiscal space to address development needs has narrowed. Following a sharp decline under the HIPC/MDRI, public debt accumulated rapidly during 2013-16; it has stabilized thereafter, albeit at an elevated level. In addition, official development assistance has stagnated, even declined; and the focus of ODA has shifted away from infrastructure.

2. This paper proposes for discussion policy avenues to help find the appropriate balance between sustainable development and sustainable debt. Achieving this balance will require efforts from all stakeholders, including SSA national authorities, development partners, and the private sector. The paper will start from an analysis of the magnitude of development needs and the sources of the debt increases. Thereafter, the paper will present some country case studies to illustrate the dual objective of development and debt. Finally, the paper will discuss key policy areas where each stakeholder could make more efforts to allow the financing of development needs without jeopardizing debt sustainability.

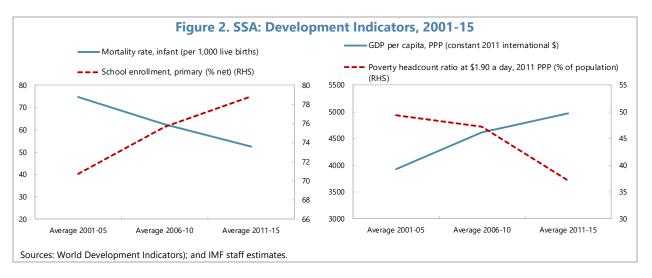
II. DEVELOPMENT PROGRESS AND NEEDS

3. Over the last two decades, sub-Saharan African (SSA) countries have made significant progress in building infrastructure and boosting development outcomes.

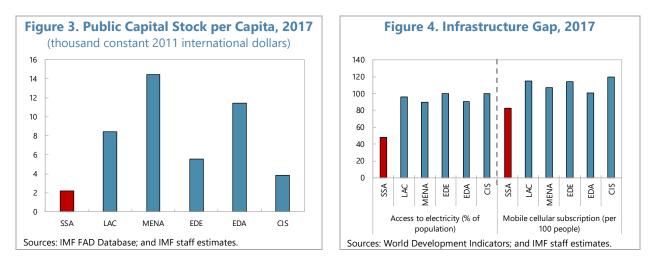
• **Public capital stock almost doubled during the last two decades**. Access to electricity has improved from about 30 percent to 50 percent of SSA population, primarily driven by rising rural access. Infrastructure quality also generally improved, as shown by perception-based indicators such as the World Economic Forum's Global Competitiveness Report.



• Key socio-economic indicators also improved significantly, as countries pursued the Millennium Development Goals. Primary school enrollment rates have increased to close to 80 percent, and infant mortality rates fell from about 100 to about 50 per 1000 live births. Real per capita income has risen by about 40–50 percent on average in the region, while poverty headcounts rates have fallen from about 60 percent to about 40 percent of the population.

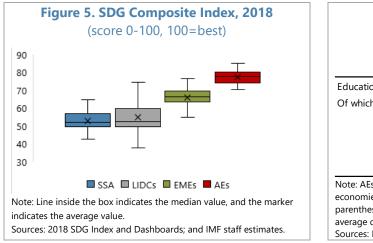


4. **Despite this progress, significant developmental needs remain**. The capital stock in SSA is still far below that in other regions; SSA countries have recorded gaps on every measure of infrastructure compared with their regional peers. SSA has the lowest road density among developing countries. Compounding the problem, infrastructure maintenance costs in SSA are several multiples higher than in other developing regions regardless of the type of infrastructure.



5. The region remains far from achieving the targets set under the Sustainable Development Goals (SDGs). SSA's median composite SDG index score, a measure that tracks performance across all SDG areas, is about 50 percent. In contrast, the Emerging

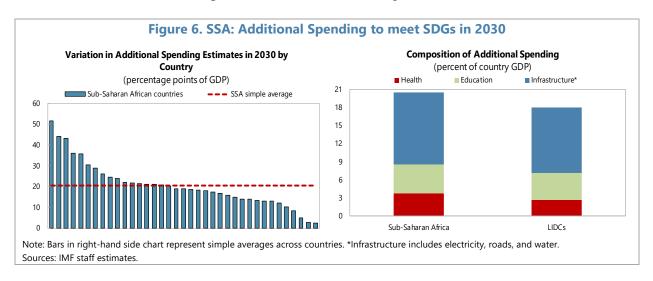
Market Economies (EMEs) and Advanced Economies (AEs) are much closer to the targets as their median scores are 66 and 78 percent, respectively. Furthermore, the variation in SDG scores is somewhat larger within low-income developing countries than within other income groups. Extreme poverty remains higher in SSA than in other regions of the World.



(percent of GDP)				
		LIDCs	EMEs	AEs
		(n=29)	(n=58)	(n=34)
Education,	health, infrastructure	4.9	7.3	15.5
Of which:	Education	2.3	3.2	5.2
	Health	0.9	2.3	7.8
	Transport	0.9	1.5	1.9
	Fuel and energy	0.4	0.2	0.3
	Water	0.4	0.1	0.3
Note: AEs = advanced economies; EMEs = emerging market economies; LICs = low-income developing countries. Sample size in parenthesis. The figures reported correspond to the GDP-weighted				
average country.				
Sources: IMF Government Finance Statistics; and IMF staff estimates.				

Table 1. Public Spending, 2016

6. Achieving the SDGs will require significant financing, estimated at an annual additional cost of about 20 percent of SSA's GDP in 2030.¹ Worldwide, meeting the development objectives on education, health, roads, electricity, and water and sanitation will require in 2030 additional annual spending, both private and public, of \$0.5 trillion for low-income developing countries (or about 15 percent of GDP) and \$2.1 trillion for emerging economies (or about 4 percent of their GDP). This combined additional annual spending for LIDCs and EMEs corresponds to about 2.5 percent of the World's GDP. While such spending needs vary greatly across countries, the highest-need economies are located in Sub-Saharan Africa. Given the large infrastructure gap on roads, electricity, and water, these sectors account for about 60 percent of the SDG financing needs in SSA.

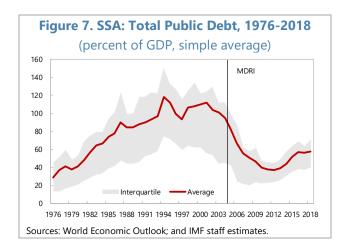


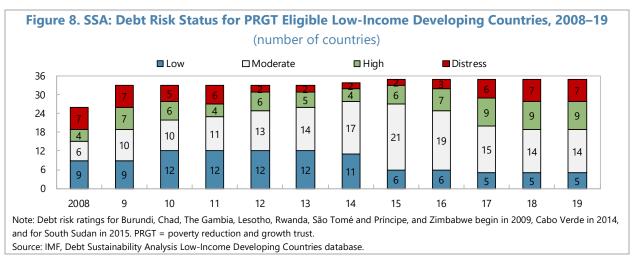
¹ Gaspar, et al. 2019.

III. DEBT DYNAMICS

A. Debt Levels

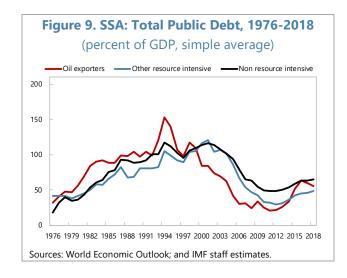
7. While development financing needs remain very large, public debt levels in SSA substantially increased between 2011 and 2016, reducing fiscal space for development spending. Following steep increases in the 1980s and 1990s, the HIPC and MDRI initiatives, combined with other factors, sharply reduced SSA's debt levels from a peak of about 100 percent of GDP in the early 2000s to 35 percent of GDP in the early 2010s. Then, public debt started rising again, reaching an average of about 55 percent of GDP in 2016. In parallel, the number of low-income SSA countries assessed by the IMF and the World Bank to be in debt distress rose from two to six between 2012 and 2016, while the number of low-income SSA countries are period.² Public debt seems to be stabilizing in SSA in the last two years on average.



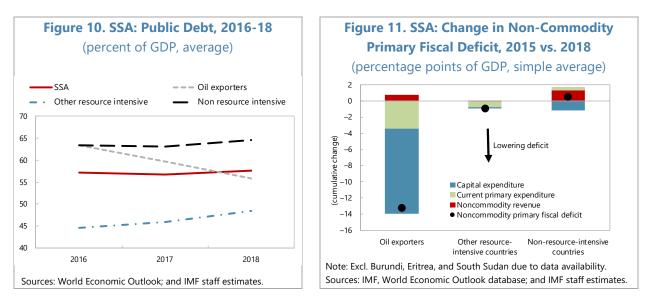


² In 2019, seven countries are in debt distress (Eritrea, The Gambia, Mozambique, Republic of Congo, Sao Tomé and Principe, South Sudan, and Zimbabwe) and nine are at high risk of debt distress (Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Ethiopia, Ghana, Sierra Leone, and Zambia).

8. This rise in public debt was particularly steep for oil exporters, which were deeply hit by the 2014 oil price shock. In these countries, debt-to-GDP ratio doubled between 2013 and 2016. During the same period, the debt-to-GDP ratio of non-resource intensive countries and other resource intensive countries increased at a much slower pace.

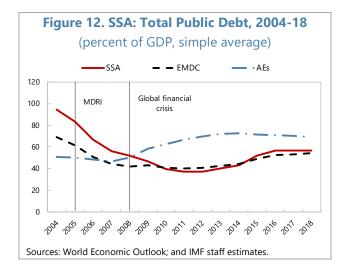


9. The average debt level seems to have stabilized in the last two years. This average stabilization has primarily been driven by oil exporters, which have seen debt burdens decrease by about 10 percentage points of GDP since 2016, due to fiscal consolidation and a recovery in fuel prices). The other groups of countries, namely other resource intensive and non-resource intensive countries, continued to experience debt increases.

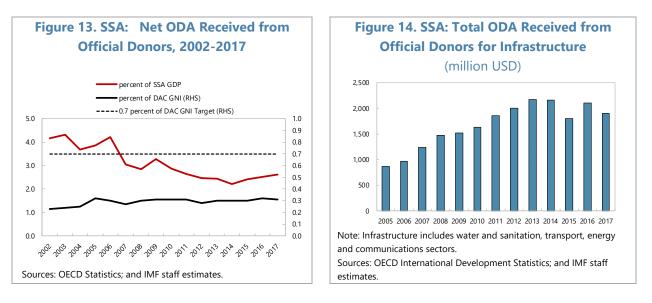


10. The debt increase in SSA took place in a context of a worldwide rise in public

debt. Debt stocks in advanced economies rose sharply during the global financial crisis in 2008 and have remained elevated since. Public debt levels have also been on a rising trend in emerging markets since the start of this decade.



11. The debt increase in SSA also took place in a context of stagnating, or even declining, official development assistance. While ODA has greatly fluctuated during the last three decades, it has remained broadly unchanged for the last two decades relative to the GDP of the donor countries. When measured against the GDP of the recipient SSA countries, which reflects the magnitude of financing need, net ODA inflow declined by about 2 percentage points of these countries' GDP since its peak in the mid-2000s. In addition, financing has declined in recent years in infrastructure sectors (water and sanitation, transport, energy, and communication).





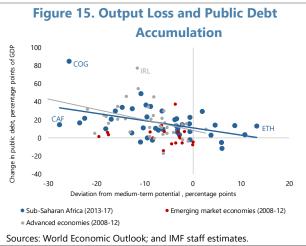
12. The drivers of the debt increase this decade vary considerably across countries.

• In oil exporting countries, the collapses of government revenue and output due to the oil price shock were the main causes of the debt increase. During 2013–16, average

10

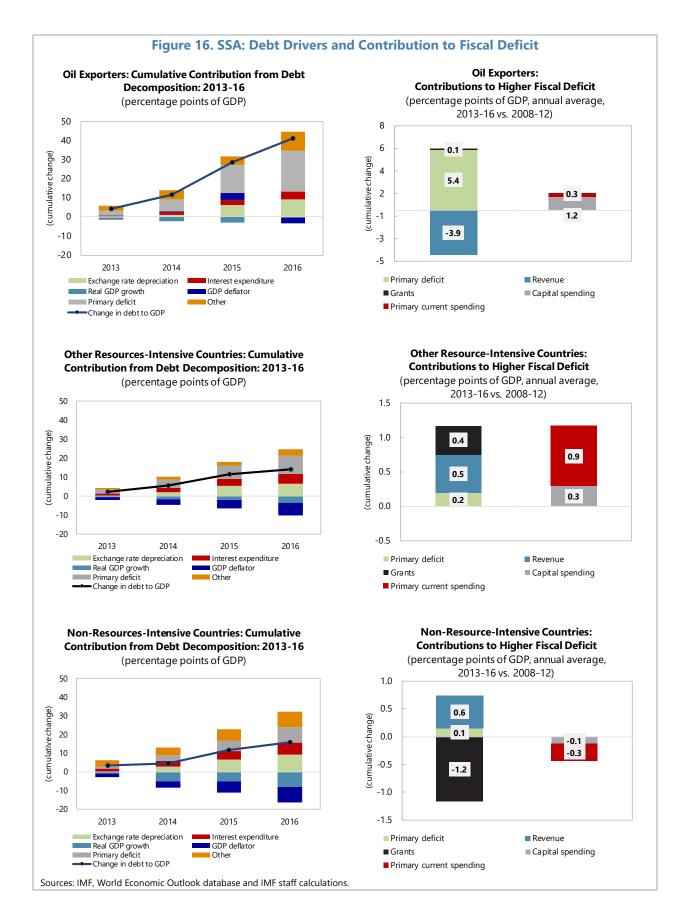
annual government revenue (i.e. tax and non-tax) shrunk by about 4 percentage points of GDP relative to the average of 2008-12. The adverse impact of the output loss on SSA countries' debt ratios is broadly similar to the impact observed in advanced economies and many emerging markets in the aftermath of the global financial crisis.

- In other resource intensive SSA countries, current spending was higher during 2013– 16 relative to previous years by an annual average of about 1 percentage point of GDP. This increase was not fully matched by higher revenues, with an annual average increase of about 0.5 percentage point of GDP.
- In non-resource countries, grants were significantly lower than in previous years by an annual average of about 1 percentage point of GDP. A decrease in spending and an increase in revenue partly attenuated the impact of this fall in grants on the primary deficit.



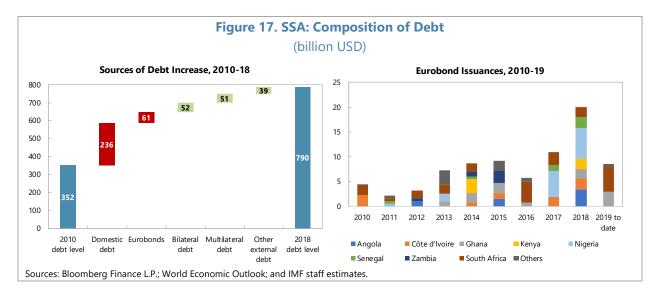
13. Some other factors also contributed to the debt increase.

- Capital spending expanded somewhat in many countries during 2013–16, relative to 2008–12. Only in non-resource intensive countries, capital spending marginally declined.
- Interest payments also increased in most countries, reflecting higher costs of borrowing, which is associated with higher debt stocks and reduced availability of concessional financing, as discussed above.
- Exchange rate movements also played some role.
- Other exogenous factors, such as conflicts and epidemics, have also adversely affected debt dynamics in some countries.



C. Debt Composition

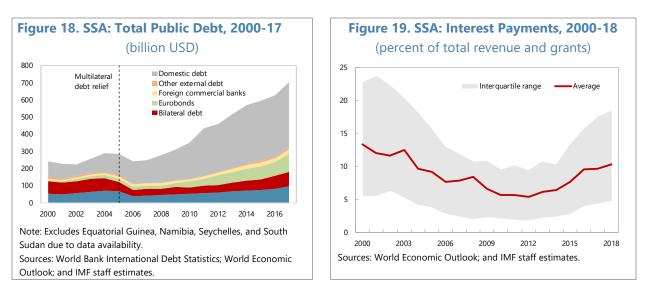
14. Financing of fiscal deficits in SSA have changed markedly this decade, shifting towards commercial sources. Commercial borrowing, including domestic debt and Eurobonds, accounted for nearly 70 percent of the nominal debt stock increase between 2010–18 (about 55 percent and 15 percent respectively).³ Multilateral debt and official bilateral debt, mainly from China, each made up 12 percent of that rise. Many frontier market countries in SSA have accessed the international capital market at an increasing pace. Total Eurobond issuance amounted to more than USD 17 billion in 2018, almost double the amount raised in 2017. Positive growth prospects and an appetite for high yields were key factors behind the steady demand from international investors.



15. The composition of public debt has changed accordingly. Domestic commercial debt now accounts for more than 50 percent of the total public debt stock. Eurobonds, which were negligible until mid-2000s, have become an important funding source, accounting for 15 percent of the public debt. Official bilateral and multilateral debt, which accounted for almost 60 percent of the public debt in the region in the early 2000s, now amounts for a significantly lower share of the public debt as of 2018.

16. The composition of bilateral creditors has also changed with the share of Paris Club creditors declining and that of China and other creditors increasing. The share of government debt from Paris Club creditors declined from 15 percent in 2007 to 3 percent in 2016 in SSA's low-income developing countries. During the same period, the share of government debt from other bilateral creditors rose from 11 percent to 18 percent. These latter creditors are led by China but also include India, Saudi Arabia, and Kuwait. Based on

³ If the largest SSA economies (South Africa, Angola, Nigeria) are excluded, commercial borrowing accounts for about 74 percent of the increase in debt stock (48 percent for domestic commercial borrowing, 26 percent for Eurobonds).

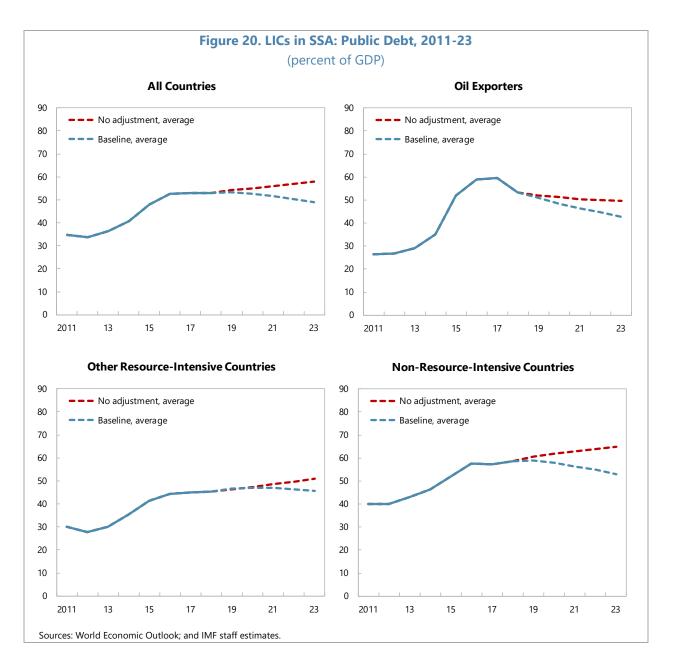


an IMF staff survey, a large share of China's lending has flowed to Angola, Ethiopia, Kenya, South Africa, and Zambia.

17. Mirroring the rise in public debt stock and the shift to commercial sources, debt service payments have also significantly risen in SSA since the early 2010s. On average, the interest payments-to-revenue ratio increased from about 5 percent in 2010 to 10 percent in 2018. For oil exporters, this ratio increased fourfold during that period. A growing number of countries spend more than 15 percent of their public revenues on interest payments.

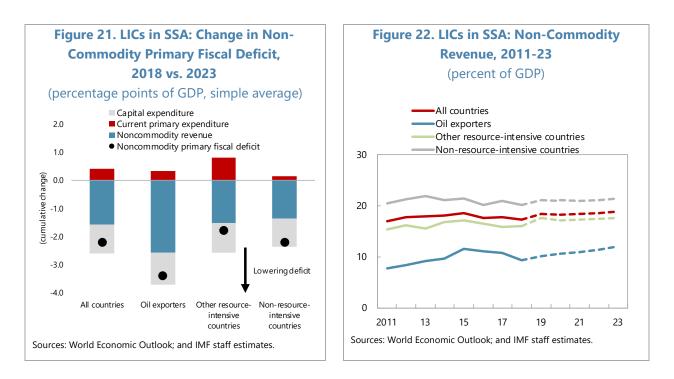
D. Debt Projections

18. The debt-to-GDP ratios are projected to decline in the medium term, on average, if existing fiscal consolidation plans are implemented. From 2019, the debt ratio is projected to decline gradually to below 50 percent in the medium term. This projection is based on a decline in debt-to-GDP ratios in oil exporters and non-resource-intensive countries while the ratio remains at a stable level in other resource-intensive countries. This projected debt path assumes an implementation of existing fiscal consolidation plans. On the other hand, under a "no adjustment" scenario in which primary deficits, real interest expenditure, and other components of debt accumulation remain at their 2016–18 levels, the debt-to-GDP ratio would gradually rise, on average, to about 60 percent in the medium term. This difference between the baseline and the "no adjustment" scenarios underlines the need for countries to effectively implement the fiscal consolidation plans.



19. The projected decline in debt-to-GDP ratios requires a cumulative decrease in

non-commodity primary deficits by more than 2 percentage points by 2023 (Figure 21). The spread between effective interest rates on debt and real GDP growth, or the interestgrowth differential, is negative for most countries, averaging –6 percent for the region. These negative interest-growth differentials ease budget constraints but are not enough to prevent debt from growing. Thus, primary deficits also need to be contained. The projected debt stabilization is expected to be driven by an improvement in non-commodity primary balances by around 2 percentage points by 2023. Oil exporters, whose fiscal situation remains more adverse than that of other country groups, are expected to achieve a cumulative improvement in non-commodity primary deficits by close to 3.5 percentage points of GDP.



20. The projected fiscal consolidation depends largely on revenue mobilization. After a decline in non-commodity revenue from 2015 to 2018, SSA countries are projected to put the revenue back to the level before the commodity-price shock of 2015. Under the current fiscal consolidation plans projected in IMF staff reports following discussions with authorities, oil exporters would increase non-commodity revenue from about 9½ percent of GDP in 2018 to about 12 percent of GDP in 2023 (Figure 22). Other country groupings are also expected to achieve some improvement in revenue mobilization.

21. The required fiscal adjustment seems feasible from a historical perspective. The required decrease in non-commodity primary deficits by more than 2 percentage points was achieved in a majority of historical fiscal adjustment episodes. Also, from a perspective of the debt-stabilizing primary balance, the required adjustment seems feasible. If the planned fiscal consolidation is implemented, debt dynamics would stabilize or be on declining trend. However, for countries that have already undergone large fiscal adjustment, this additional fiscal adjustment may be harder to achieve.

Actual vs. Debt-Stabilizing Primary Balance (percent of GDP)		Cross-Country Ad	•	Features			
		Debt-	Required	(percent of GDP)		Percentile	
	Actual	stabilizing	adjustment		25	50	75
2015-17	-2.9	0.2	3.1	Change in PB at end-episode	2.9	5.0	6.9
2016-17	-2.7	-0.8	1.9	Average annual change in PB	0.9	1.8	2.3
2017	-2.4	-1.8	0.7	Debt at start of episode	28.0	37.0	55.0
Source: IMF	staff estimat	tes.		Duration (years)	2.0	3.0	4.0
				Source: Escolano et al. (2014)			

16

22. However, the projected fiscal paths do not reflect increases in capital investment that are yet commensurate with reaching the SDGs. The existing fiscal plans require significant consolidation. Even with significant revenue mobilization efforts, there would be limited resources to finance much-needed additional capital spending.

IV. THE ASSET SIDE

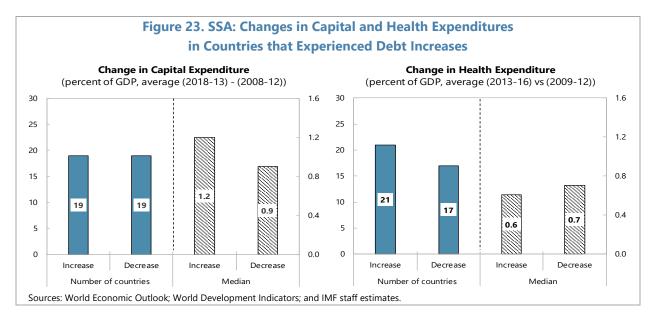
23. Public debt, when used appropriately, can be a useful instrument to build human and physical capital to meet development objectives. Judicious public borrowing can help fund essential and catalytic investments in infrastructure, health, education and other essential public services, which can lead to higher income and offset the cost of debt service. Difficulties arise when public investments are not undertaken efficiently; the returns on investments do not materialize; the public sector does not capture enough of the investment returns; or borrowing terms exceed returns from the investment. It is thus essential to strike the appropriate balance between meeting development needs and not excessively relying on public debt financing to meet these objectives. On the one hand, an overly rapid pace of borrowing can lead to soaring debt service, which can consume too large a share of government revenue and crowd out resources for subsequent social and developmental priorities. On the other hand, an overly stringent borrowing policy would obstruct development and economic growth.

24. The rise in public debt in SSAs was associated with a build-up of infrastructure and social capital in some but not all countries. An analysis of SSA countries show a positive correlation between increases in debt, on the one hand, and, increases in the stocks of human and physical capital, on the other hand. However, these correlations are not as strong as they should be, and they vary significantly across SSA countries.

- The debt increase in SSA since the early 2010s has helped build capital and productive capacity in some SSA countries. For countries that witnessed a debt increase since 2013, about half had a level of public investment spending higher during the period 2013–18 relative to the period 2008–12; the average magnitude of the investment increases is somewhat larger than that of the investment decreases (Figure 23). If allocated efficiently to productive projects, such investment spending should support growth in the medium and long run and help improve debt dynamics. Some countries focused on priority investment projects aimed at diversifying the economy and boosting medium-term growth. Several countries have managed to do so while containing debt vulnerabilities and remaining at low or moderate risk of debt distress. In other cases, the scaling up of investment spending has been associated with a rising risk of debt distress.
- The debt increases also seem to have been associated with a strengthening of human capital in some countries. More than half of the countries that witnessed a debt increase during 2013–18 had a higher level of health spending during this period

relative to the period 2008–12. Some countries that were hit by disease crises experienced exceptional hikes in health spending, including Sierra Leone and Liberia.

• Nonetheless, some countries experienced debt increases without enhancing investment in physical and human capital.



25. Some country cases studies indicate that an appropriate use of borrowed resources can support development while containing debt vulnerabilities (Annex II).

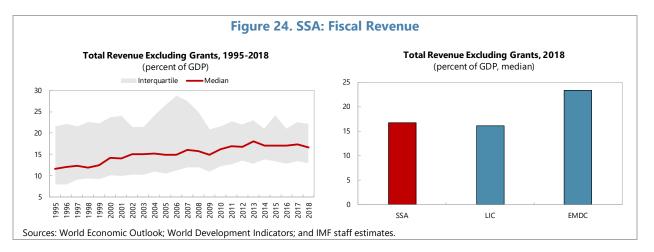
Senegal has enjoyed a period of strong growth since 2014, supported by significant public investment in a new airport, railway and highways. The financing has relied on a mix of domestic revenue mobilization and borrowing to create space for these investments. Public debt has increased substantially but debt vulnerabilities have remained contained. In Côte d'Ivoire, public borrowing accelerated since 2012 and was used to a large extent to bolster infrastructure investments. The impact of the new borrowing on debt vulnerabilities was attenuated by a strong economic growth and revenue collection effort. In Rwanda, public debt rose sharply over 2013–18 with the implementation of an anticipated scaling up of public investment. The public investment push was supported not only by careful borrowing and spending policies but also by strong domestic revenue mobilization, while grants were coming down. The country's development strategy led to high and inclusive growth, while keeping debt sustainable. Nonetheless, countries eventually have to make the switch from a growth model led by public investment to one led by private investment and higher productivity. This is critical to ensure sustainability of public debt in the long run.

V. WHERE TO MAKE MORE PROGRESS TO ACHIEVE SUSTAINABLE DEVELOPMENT AND SUSTAINABLE DEBT?

26. The reduction in fiscal space brought about by the significant rise in SSA debt during 2013-16, combined with the magnitude of SSA's development needs, make it clear that more needs to be done by SSA countries, their development partners, and the private sector to foster robust but sustainable development. The topics below propose some avenues for reflection for the participants of the conference on "Sustainable Development, Sustainable Debt" to be held on December 2, 2019 in Dakar, Senegal.

27. How can SSA countries make faster progress in raising domestic revenue?

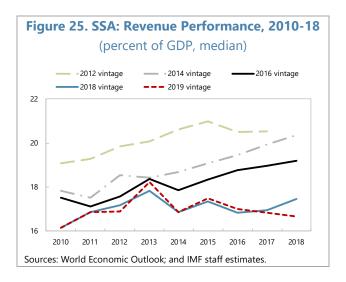
• **Improving revenue mobilization would lessen reliance on debt financing**. While domestic revenues, excluding grants, in SSA have been steadily improving from 14 percent of GDP in the 1990s to more than 18 percent in 2016, the region still has the lowest revenue-to-GDP ratio compared to emerging markets and developing countries in other regions. A recent IMF analysis found that SSA countries have a tax gap, that is to say the distance between frontier and observed tax ratio, of between 3 to 5 percent of GDP.⁴ Many technical assistance reports for SSA countries confirm this range of potential increase in tax revenue. Furthermore, SSA countries are estimated to have a lower frontier than emerging market and developing countries in other regions and could implement structural reforms, including governance reforms, to shift the revenue frontier in the medium term. An IMF study estimates that countries with the lowest levels of corruption collect 4 percent of GDP more in tax revenues than countries with the highest levels of corruption at similar income levels.⁵



⁴ *Domestic Revenue Mobilization in Sub-Saharan Africa: What Are the Possibilities?* Chapter 2, IMF Regional Economic Outlook: Sub-Saharan Africa, May 2018. A tax revenue frontier is an estimate of the revenue that a country could reasonably be expected to raise given characteristics such as income level, trade openness, governance indicators, income inequality, spending on education and corruption levels.

⁵ IMF, 2019.

- Revenue collection outturns have consistently underperformed projections.
 - Bolstering revenue collection requires a combination of tax policy and revenue administration measures. Successful experiences in revenue mobilization have relied on efforts to implement broad-based value-added taxes, gradually expand the base for corporate and personal income taxes, and implement a system to tax small businesses and levy excises on a few key items. Property taxes and modern technologies may also be useful. Extractive industries, which represent an important share of economic activity in SSA countries, also have potential to be an efficient and substantial source of domestic revenue. Revenue administration measures based on adequate risk management (i.e. allocating resources where revenue potential is greatest) and taxpayer segmentation (starting with a large taxpayer office) have proven effective. Tackling corruption and strengthening the legitimacy of tax collection are also critical. Strengthening core competencies of customs administration—such as the valuation of goods, cargo control, customs transit procedures, and the administrative control of import duty and tax exemption regimes—are also critical for raising compliance with customs-related obligations that have a direct revenue impact.



• Strengthening international taxation can also boost government revenue in SSA countries. Africa is home to a large share of natural resources, which are mostly exploited by multinational enterprises (MNEs). While extractive industries represent an important share of economic activity in SSA countries, their contribution to domestic revenue remains limited. Both macro-level and country-level evidence point to profit shifting and base erosion by MNEs, through the systematic exploitation of tax and regulatory loopholes. Corrective policy measures to address these revenue shortfalls need to, at the minimum, protect against base erosion on inbound investment and could include the setting-up of transfer pricing regulations applicable to inter-company transactions, introduction of effective thin capitalization rules, and

restrictions on the use of tax incentives.⁶ Competition to attract investment by offering advantageous fiscal terms is corrosive and a regional approach to limiting this competition would greatly assist in revenue mobilization.

28. How can SSA countries invest and spend more efficiently?

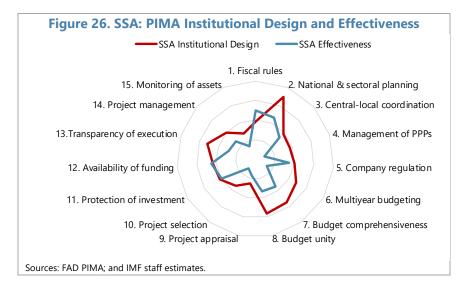
- Studies have shown that about 40 percent of public investment in LICs do not turn into public capital.⁷ Moving from the lowest quartile in a framework that ranks public investment management quality to the highest doubles the impact of a one-time 1-percentage point increase in the public investment-to-GDP ratio on output from 0.3 percentage point to 0.6 point.
- The Public Investment Management Assessment framework has identified specific weaknesses in SSA countries, particularly on project selection, monitoring of assets, PPP management, and multi-year budgeting.^{8,9} Measures to improve investment efficiency could include investment appraisal and prioritization based on a cost-benefit analysis, stronger governance to tackle corruption and leakages, competitive bidding and transparency, the credibility of multiyear budgeting, the registration of infrastructure assets, and efforts to improve absorptive capacity. Fiscal transparency also needs to be improved, including in public procurement, to ensure that the SSA population gets the most value for money from scarce public funds.
- Multilateral development banks and bilateral aid agencies have a wealth of knowledge on project selection, design, and execution, which might be better leveraged. Transforming that knowledge into freely and accessible information on "do's" and "don'ts", cross-country cost databases, unit cost analyses, and other products could be of great help to build institutional capacity on public investment management in SSA and other regions of the world. For instance, information on cost of projects can be shared across authorities and partners to guide efficiency decisions (e.g. cost of road construction per km).

⁶ Côte d Ivoire, for instance, denies intragroup royalty payments and service fees exceeding 5 percent of turnover.

⁷ IMF (2015a).

⁸ Public Investment Management Assessment, Review and Update, IMF, 2018;

⁹ Barhoumi et al. (2018) "Public Investment Efficiency in Sub-Saharan African Countries. What lies ahead?", IMF, African Department, Washington D.C.



29. How can SSA countries strengthen debt management capacity and debt transparency?

- Improved debt management is important in helping to ensure low debt service cost at an acceptable degree of risk and supporting the development of domestic financial markets. Effective debt management can also enhance debt transparency and medium-term planning. Moreover, the increased complexity of the SSA debt profile underscores the importance of effective debt management.
- While there have been improvements, available evidence suggests that there are still significant gaps for debt management capacity and debt transparency in SSA countries. Broadly, the issues countries face include (a) lack of strong legal frameworks which clearly define the delegation of authority to undertake debt management activities, (b) lack of audits, (c) poor data administration and internal control, and (d) low staff capacity.

30. How can development partners meet their ODA commitment, and should they scale up infrastructure financing, even at non-concessional terms?

• The scale of the needs in SSA countries points to the importance of further support from international partners. ODA represents currently about 0.3 percent of aggregate DAC GNI. Stepping up efforts to increase ODA and making additional concrete efforts towards the ODA targets of 0.7 percent of aggregate DAC GNI could contribute significantly to reducing the SDG financing gap. Such efforts could provide additional resources to cover about a quarter of the SDGs financing needs in SSA.

• Development partners have reduced infrastructure financing in recent years. Given the large infrastructure gap and the associated large financing need, it may be necessary for development partners to re-boost financing in this area. Such financing could be at non-concessional terms for projects that are expected to exhibit high rate of return.

31. Are initiatives to bring substantially more private finance to SSA robust enough?

- Even in a favorable scenario where public resources could be significantly scaled up, a large financing gap for SDGs would remain. Private finance could help fill in this financing gap through two channels: direct investment and lending. Direct investment could be attracted through bold domestic reforms to improve the business climate, such as good governance, stable macroeconomic environment, and investment-friendly regulatory and legal frameworks. But even in a perfect business environment, returns may remain structurally too low in some development sectors, such as water and sanitation; some public support will be needed to crowd-in private finance. The Compact with Africa initiative is important in this regard, as are initiatives to develop "de-risking" instruments, including first-loss provisions, risk guarantees, or blending facilities. These initiatives can help improve the risk-return profile of private projects.
- Beyond the issue of addressing the financing gap, a scaling-up of public investment may not translate into large and long-lasting growth benefits in the absence of a pickup in private investment. The combination of public and private investment and capital stock is necessary to ultimately increase productivity of the tradable sector in order for externally financed investments to be sustainable. The country will need to produce tradable goods to generate the foreign exchange needed to repay these investments.

32. Some broad estimates on the sources of financing to meet the SDGs could be as follows. From the country perspective, mobilizing tax revenue could add 5 percentage points of GDP in financing; this is an ambitious but realistic goal in many countries. Increasing spending efficiency could yield 2.5 percent of GDP in savings; this estimate refers to increasing efficiency in non-SDG areas, which would provide space to finance the SDGs (as the estimate for spending needs already assumes improved efficiency in SDG areas). Thus, countries' own efforts to boost revenues and enhance spending efficiency could finance about half of the spending scale-up required in LIDCs. Assuming that aid is scaled up to reach 0.7 percent of GNI, aid could finance from one quarter to half of the spending needs, depending on how well aid is targeted. If distributed according to the current allocation, the remaining financing gap of one-quarter could be financed by the private sector. Increasing private investment in the order of 4-5 percent of GDP is reasonable based on historical experience, particularly given the relatively low levels of private investment in some LIDCs.

VI. CONCLUSION

33. SSA countries have made significant socio-economic progress in the last two decades but the region remains far from achieving the SDGs. Meanwhile, public debt has risen sharply in the last ten years constraining the fiscal space for development needs in the future. Achieving the SDGs will require significant financing estimated at an annual additional cost of about 20 percent of SSA's GDP in 2030. This paper proposes for discussion actions that would allow Sub-Saharan African (SSA) countries to find the right balance between sustainable development and sustainable debt. It explores the roles of all stakeholders in achieving this balance, including country authorities, development partners, and the private sector.

34. The proposed actions are grouped into five areas for the reflection of the participants at the conference on "Sustainable Development, Sustainable Debt": (i) How can SSA countries make faster progress in raising domestic revenue? (ii) How can SSA countries invest more efficiently? (iii) How can SSA countries strengthen debt management capacity and debt transparency? (iv) How can development partners reach their ODA targets, and should they scale up infrastructure financing, even at non-concessional terms? (v) Are initiatives to bring substantially more private finance to SSA robust enough? A collective reflection followed by decisive actions by all stakeholders in these areas could put SSA countries on the right path to achieving the SDGs while safeguarding debt sustainability.

ANNEX I - POLICY SIMULATIONS

This analysis simulates the impacts of policies that can help optimize the trade-off between public investment scaling-ups and debt sustainability.¹⁰ The analysis is conducted through the following steps. High investment efficiency ensures that public investment translates into public capital stock. High rate of return ensures that public capital stock contributes to economic growth. Strong economic growth, combined with favorable borrowing conditions, alleviates or offsets the impact of investment costs on debt sustainability. SSA governments, with support from other stakeholders, can implement policies at each of these steps to maximize economic outcomes and minimize the pressure that the cost of public investment puts on public debt.

Scaling-up of public investment translates into build-up of public capital stock if appropriate PFM policies are in place. Spending on public investment does not always imply an equivalent increase in the stock of public capital; this gap reflects the degree of public investment efficiency.¹¹ The low investment efficiency may be due to weak capacity, cost overruns, corruption, and wider governance weaknesses. The gap between the observed and maximum public investment efficiency varies significantly, estimated at 27 percent for a variety of countries across income categories. ¹² This gap is significantly larger in LICs at nearly 40–45 percent, i.e., on average 40–45 percent of investment expenditures do *not* turn into public capital.¹³ The Public Investment Management Assessment (PIMA) can help identify strengths and weaknesses in public investment management practices with a view to designing and implementing policies to bolster investment efficiency.

The appropriate selection of public investment and the ensuing public capital stock determines the rate of return on economic growth. Public capital raises the marginal productivity of private capital (and labor) and, through this channel, stimulates private investment and ultimately GDP. However, the extent to which increases in public capital translate into higher GDP growth depends on its *rate of return*, which in turn depends on the extent to which the specific installed infrastructure is useful for the economy and boosts the productivity of the private production factors. Project selection is key to ensure a high rate of return of public capital. Building capacity of public officials in this area and adopting reforms geared to improve governance and guarantee the highest level of transparency in the selection process can make a significant difference.

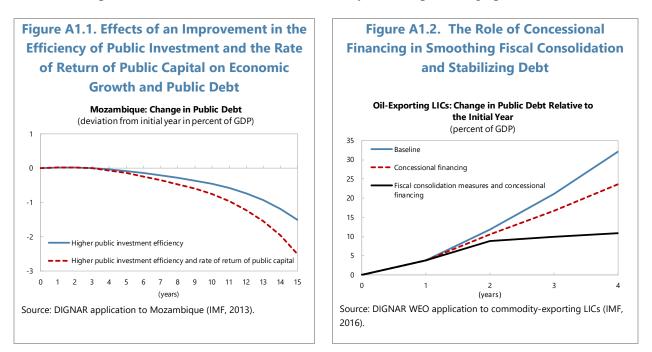
¹⁰ The analysis uses the **D**ebt, Investment, and Growth (**DIG**) model (Buffie et al., 2012), and its extension to **NA**tural-**R**esource (**DIGNAR**) abundant countries (Melina et al., 2014).

¹¹ Hulten (1996), Pritchett (2000).

¹² Making Public Investment More Efficient, IMF Policy Paper, May 2015.

¹³ Arestoff and Hurlin's (2006)

A model application to the case of Mozambique shows that enhancing investment efficiency and its rate of return can improve growth and debt dynamics.¹⁴ The Mozambique study simulates the macroeconomic implications of policies that improve investment efficiency by 10 percent-age points and other policies that enhance rate of return from public capital by 5 percentage points (Figure A1.1). The two sets of policies are assumed to happen at the same time where a public investment scaling-up program is rolled out. The combined effects of the two measures result in an additional ¹/₄ percentage point of non-resource GDP growth in a 15-year horizon. By boosting growth, the combination of the two sets of policies reduces the debt-to-GDP ratio by about 3 percentage points.



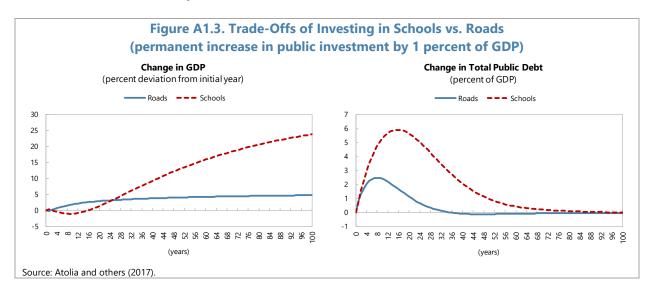
The macroeconomic impact of public investment scaling-ups often depends on the strength of complementary reforms, including those implying mobilizing domestic revenues. Such complementary reform can help contain public debt surges related to

investment scaling-ups. Sub-Saharan African (SSA) economies need to substantially raise revenues to support their fiscal-consolidation, debt-reduction, and diversification strategies. Although IMF (2018b) documents a gradual improvement in revenue mobilization over the past three decades, the average revenue-to-GDP ratio in SSA countries is still lower than in other regions of the world. A model simulation shows that increases in non-oil tax revenues could create fiscal space for scaling up public investment, while reducing debt pressures.

Investment in social infrastructure may provide larger benefits than physical infrastructure in the long run, from the perspectives of economic growth and debt dynamics. SSA countries, as many other developing countries, tend to invest less on social

¹⁴ IMF, 2013.

infrastructure—such as schools, hospitals and universities—and more on physical infrastructure—such as roads, railways, ports, water, power, and telecommunications. On average, an investment in roads, instead of schools, produces faster economic growth for the first 13 years. Eventually, after 13-24 years, the growth dividends from an investment in schools overtake the gain from similar spending for roads. The peak of the public debt increase associated with investment in schools is three-times larger than that associated with investment in roads (Figure A1.3). The reason lies in upfront fiscal costs and the greater delay with which schools increase output and government revenues, which poses greater risks to debt sustainability.



Addressing this time-horizon dilemma and the ensuing debt sustainability concerns require the help of development partners in the form of grants and concessional financing. Studies have found that concessional loans can help with fiscal consolidation and debt stabilization, in the context of low commodity prices.¹⁵ Model simulations suggest that commodity-exporting LICs could face lower growth rates and rapid surges in public debt— about 30 percentage points of GDP in 3 years—given the declines in government's oil-related revenues. Against this background, improving revenue mobilization, through better tax administration and a broader tax base, as well as measures reducing current expenditures, could help mitigate the effects of reduced oil-related revenues on fiscal balances. In addition, concessional financing could help address the remaining fiscal gap and contain increases in the interest burden and sovereign risk premia, helping stabilize public debt over the medium term. According to illustrative simulations, for an average oil-exporting LIC, additional concessional financing of 5 percent of GDP could significantly slowdown public debt accumulation and improve debt dynamics by more than 5 percentage points of GDP in the medium term (Figure A1.2).

¹⁵ IMF-WEO, 2016.

ANNEX II - COUNTRY CASE STUDIES

A. Senegal

Senegal has enjoyed a period of strong growth since 2014. Growth exceeded 6 percent for five consecutive years between 2013 and 2018, turning Senegal into one of the fastest growing economies in sub-Saharan Africa—a clear break from the previous decade which saw average annual growth of less than 4 percent. The economic upswing has also broadly translated into improved living conditions, with poverty declining by 4-7 percentage points between 2011 and 2017, and tangible improvements in life expectancy and infant mortality. However, less-than-expected progress was made in reducing inequality, access and quality of education, and maternal health.

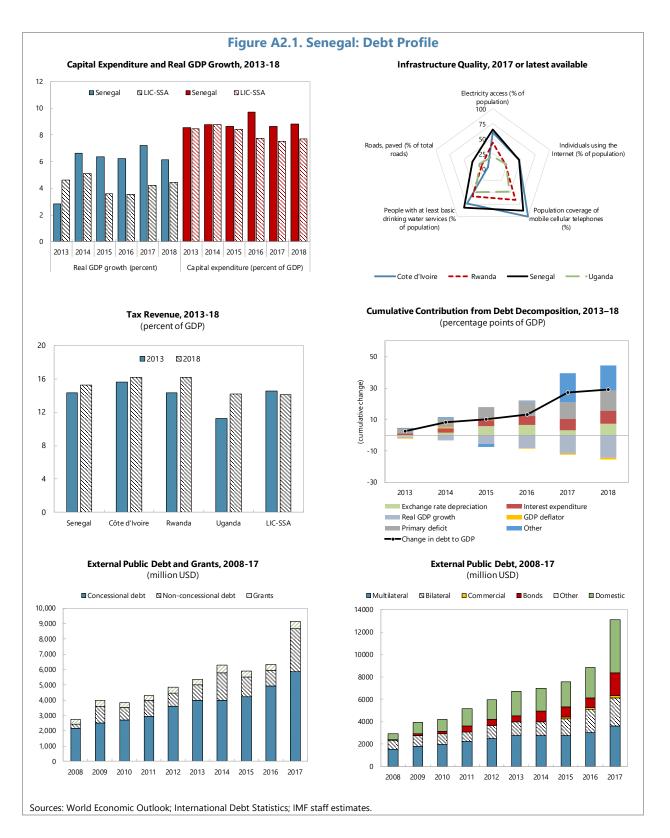
Growth has been supported by significant public investment. Public investment spending averaged about 9 percent of GDP between 2013 and 2018, about 0.5 percentage points higher compared to the previous 5-year period (see chart). These investments have resulted in a significantly improved transportation infrastructure, including a new airport, railway and highways. Senegal scores better than peers on physical infrastructure indicators in general (see chart), while the recent Public Investment Management Assessment (PIMA) also points to good quality of its infrastructure. Furthermore, major discoveries of off-shore oil and gas fields have triggered substantial investments in the sector (both public and private) with production expected to begin in 2022. Electricity supply and access have increased substantially although comparatively high production costs still weigh on the country's competitiveness. An ambitious gas-to-power plan, expected to be helped by the new gas discoveries, is to reduce costs substantially over the medium-term.

Senegal has relied on a mix of domestic revenue mobilization and debt financing to create space for these investments. The tax-to-GDP ratio increased gradually between 2013 and 2016 before its decline in 2017-18. As a result, this ratio is only slightly higher in 2018 compared to 2013 (chart). Revenue mobilization benefitted from better revenue administration and tax policy reform during the first years of the *Plan Sénégal Emergent* (*PSE*), notably in 2012 when the authorities simplified the income tax, strengthened the VAT, and reduced tax exemptions. Revenue mobilization efforts stalled in 2017-18 but are picking up again in 2019. New impetus is expected as the authorities are working on a comprehensive medium-term revenue strategy with the objective to boost the tax revenue ratio from 15 percent in 2018 to 20 percent of GDP by 2023.

Public debt has increased substantially, partly due to expanded debt coverage. Over the last ten years, the debt-to-GDP ratio increased from below 20 percent of GDP in 2008 to 61.6 percent of GDP at end-2018. This is at least in part due to authorities' welcome efforts to broaden the coverage of public sector debt statistics. Since 2017, the reported public debt goes beyond the central government and includes para-public entities and state-owned enterprises. This widening of the debt perimeter explains about 11 percentage points of the

debt-to-GDP increase. Other sources of the debt increase include execution of some spending outside the budget. The authorities are making good progress to address these issues enhance fiscal transparency. Senegal's debt composition recently shifted towards external debt (49.5 percent of GDP) with the issuance of two Eurobonds in 2017 and 2018 for a total of US\$ 3.3 billion (about 14 percent of GDP).

Looking ahead, it will be important to stabilize the debt ratio while continuing with priority investments to meet the objectives of the second phase of the Plan Sénégal Emergent. To this end, fiscal policy should remain prudent and adhere to a fiscal deficit of 3 percent of GDP, in line with the WAEMU criterion. Improved domestic revenue mobilization should be an essential part of this fiscal strategy, as this will create the fiscal space for sustained and high public investment spending while limiting financing needs. Reforms to improve the business environment, facilitate private investment, and promote exports will help boost economic growth, which in turn would contribute to a favorable evolution of debt sustainability indicators. Lastly, there is room to improve debt management through (i) enhanced coordination between the Ministry of Finance and Budget and the Ministry of Economy, Planning and Cooperation on all debt-related matters, (ii) favoring market-based financing, notably through regular issuances on the regional bond market instead of relying on non-concessional external financing, and (iii) favoring concessional external financing over often costly external direct or syndicated bank lending.



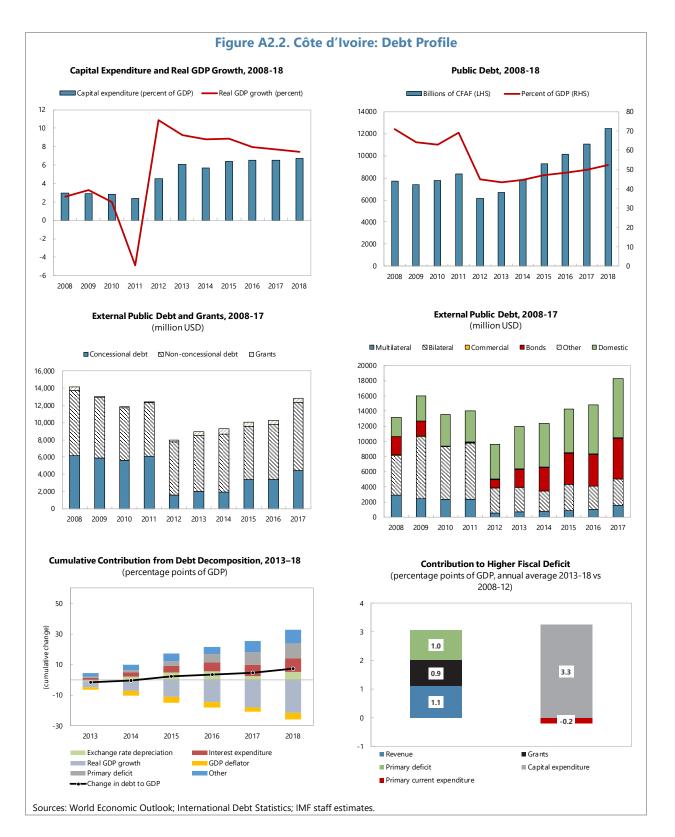
B. Côte d'Ivoire

After the HIPC debt relief in 2012, public borrowing accelerated and was used to a large extent to bolster infrastructure investments. After the HIPC completion point, public debt gradually picked up from about 43 percent of GDP in 2013 to over 50 percent of GDP in 2018. Along with Public-Private Partnerships (PPPs), the additional resources from the new borrowing supported public investment spending, which expanded from an annual average of about 3 percent of GDP during 2008–12 to about 7 percent of GDP during 2013–18. The public investment projects and PPPs—such as the third bridge in the economic capital Abidjan or Soubré hydroelectric power dam—have focused on narrowing infrastructure and public services gaps, which had widened over the 2000 decade's political strife.

The impact of the new borrowing on debt vulnerabilities was attenuated by strong economic growth and revenue collection effort. After the 2010–11 political crisis, economic growth rebounded and has remained very strong, averaging about 9 percent during 2012–18. This growth performance was supported by a combination of factors, including initial pent-up domestic demand, debt relief, the rebound of agriculture, and a positive external environment (in terms of export revenues, foreign investments and debt market conditions), combined with a decisive effort to expand public investment and improve the business climate to support private investment. Government fiscal revenue mobilization ratios have improved somewhat, thanks to revenue enhancing measures such as administrative improvements, greater reliance of e-services to collect taxes, and strengthening risk management. Thus, although nominal public debt increased noticeably by 19 percent during 2013–18, the country has remained at moderate risk of debt distress.

Going forward, domestic revenue mobilization and fiscal consolidation are warranted to finance investment and preserve macroeconomic stability. Cote d'Ivoire has used up a large part of the borrowing space opened up by the HIPC debt relief in 2012, as the country is approaching the high end of the moderate debt vulnerability risk rating and is getting closer to the relevant thresholds, particularly for the debt service-to-revenue ratio. In a context where Cote d'Ivoire needs to reduce the fiscal deficit to the WAEMU regional norm of 3 percent of GDP from 2019, the government will need to further rationalize expenditures and ramp up domestic revenue mobilization, so as to create the space for development spending while preserving its moderate risk of debt distress. In addition, there is room to strengthen debt management and monitoring capacities, reduce reliance on external sources of deficit financing, and develop domestic and regional capital markets. The share of concessional debt is bound to decline as the country gains access to international markets and buttress its status of frontier economy.

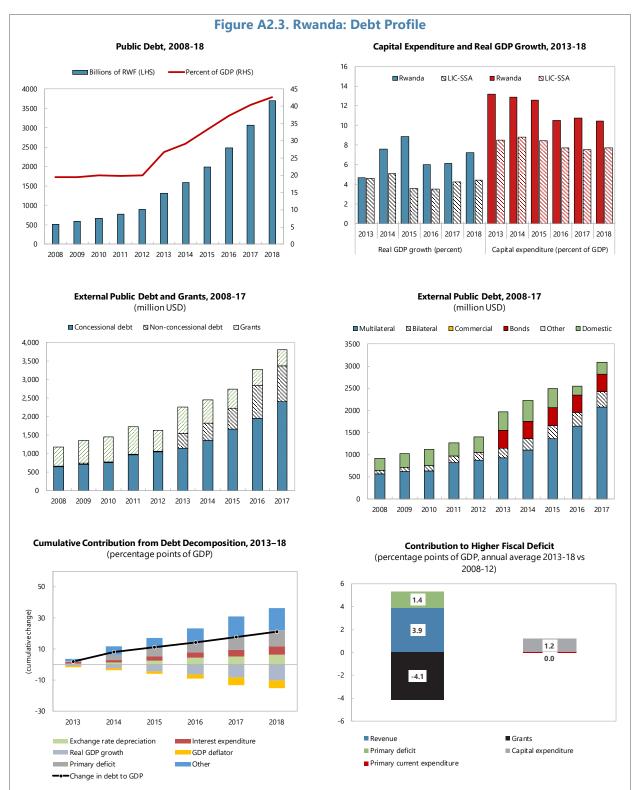
Meanwhile, the strong economic growth still needs to translate into an improvement of social outcomes. Despite high growth rates, poverty has declined only slightly since 2012. The efficiency of public expenditure needs to be boosted to improve outcomes such as primary school enrollment, human development index, and life expectancy at birth, which have all improved but stay below SSA averages.



Rwanda's debt rose sharply over 2013–18 with the implementation of an anticipated scaling up of public investment. The scaling up included implementation of several large investment projects, with the country maintaining investment at around 11 percent of GDP on average during 2013-18, significantly above peers. The public investment projects (e.g. irrigation, agriculture efficiency, business tourism, roads, water, electricity) have tangibly and significantly influenced growth potential, and were selected via a thorough interministerial vetting process.

The public investment push was supported not only by careful borrowing and spending policies, but also by strong domestic revenue mobilization, while grants were coming down. Domestic revenue increased by 5 percentage points of GDP over the course of 2013–18, relative to the average of 2008–12, which largely offset a sharp reduction in grants of 6 ppt of GDP over the same period. Total nominal public debt and guarantees increased from about 29 percent in 2013 to about 50 percent of GDP in 2018 (40 percent on NPV terms). On the backdrop of high and sustained export and GDP growth, the country has remained at low risk of debt distress. Multilateral creditors continue to account for the largest share of debt stock, with concessional debt accounting for 70 percent of external debt. Rwanda issued a Eurobond in 2013.

The country's development strategy led to high and inclusive growth. Rwanda's growth has been high, averaging 7.5 percent during the last decade, supported by investment in agriculture, tourism, export diversification and higher value-added activities. The strong macroeconomic policy management and the ambitious development strategy led to high and inclusive growth, reduced the poverty rate (from 60 to under 40 percent) and improved living standards. Growth in 2018 was 8.6 percent.



Sources: World Economic Outlook; International Debt Statistics; IMF staff estimates.

ANNEX III - IMF'S ROLE ON DEVELOPMENT AND DEBT

The IMF's various interactions with member countries are intended to support them in their development goals while safeguarding macro-stability and debt sustainability. The IMF has three core activities: surveillance, capacity building, and lending. Each of these activities include components that aim at supporting economic growth, and ultimately development, while simultaneously bolstering macroeconomic stability and debt sustainability.

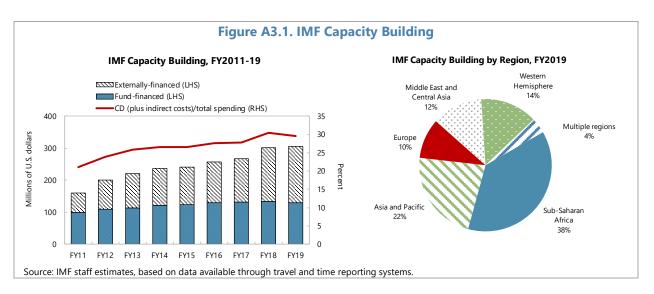
Development:

The IMF engages in both bilateral and multilateral surveillance, each placing an important emphasis on growth and development. Bilateral surveillance for individual countries provides an in-depth analysis of the economic potential, key bottlenecks, and policies that could bolster growth and development. Flagship reports such as the WEO/REO¹⁶, as well as other Fund products provide insightful analysis on how to catalyze investment, promote growth, and create jobs. These bilateral and multilateral analyses complement each other.

The IMF provides lending through programs/arrangements, which aim at making resources available to a Fund member so that they have the financing needed to afford them the opportunity to correct imbalances in their economy without resorting to measures that are destructive to the current and future development of the country. IMF-supported programs are aligned and support country's development plans. IMF financing to many SSA countries, from the Poverty Reduction and Growth Trust, is at concessional terms, currently with zero interest rate. Moreover, IMF-supported programs are increasingly making tangible efforts to protect the most vulnerable in society and safeguard critical investment spending by including specific targets in these areas as part of the program design.

The IMF's third pillar, capacity development (CD), is integrated and complimentary to its surveillance and lending role. The IMF delivers CD in its core areas of expertise to improve the capacity of economic institutions, such as central banks and finance ministries, so that they are more effective at developing and implementing policies that lead to greater economic growth and stability. The IMF continues to expand the amount of CD it delivers, with SSA economies being the largest recipients.

¹⁶ See for example, <u>https://www.imf.org/en/Publications/REO/SSA</u> and <u>https://www.imf.org/en/publications/weo</u>

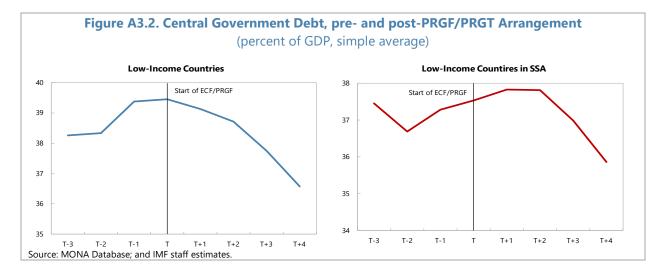


Debt:

For *bilateral surveillance*, analysis of debt is required. Such analysis provides insights on the country's debt vulnerabilities, including the sources of such vulnerabilities. The Debt Sustainability Framework for LICs (LICs-DSF) was reviewed recently to enrich IMF policy dialogue with the authorities with the aim of comprehensively analyzing debt vulnerabilities. The IMF and World Bank are developing a multi-pronged approach to address emerging debt vulnerabilities. This work aims to (i) strengthen debt analytics and early warning systems to help countries better understand vulnerabilities; (ii) strengthen debt transparency to give countries a more complete picture of their debt; (iii) strengthen capacity on debt/fiscal risk management to help countries deal with existing debt more effectively; and (iv) conduct reviews of the IMF Debt Limits Policy and the IDA Non-Concessional Borrowing Policy to ensure the international community finances development in a sustainable way without putting debt sustainability at risk.

For IMF lending, the Fund provides direct financing to a member country to facilitate adjustment and minimize the disruptive costs that often accompany efforts to restore stability. IMF lending is often catalytic, crowding in other external sources of finance, and for LICs, borrowing from the Fund takes place at a much lower, concessional rate, to further assist with debt sustainability. Fund supported financial program can also be instrumental in supporting the authorities' goal in reversing an unsustainable accumulation of debt and restoring debt to a sustainable path; a brief analysis of IMF-supported programs in LICs shows that debt levels decrease during or immediately after the program period (Figure A3.2).

The IMF provides extensive technical assistance on debt issues supporting various reforms such as (i) widening the perimeter of reported public debt to ensure fiscal risks are wellunderstood and adequately accounted for when assessing vulnerabilities; (ii) strengthening debt management and assessment capacity so countries adopt a medium-term strategic view



on debt that reduces risks and lowers costs; and (iii) developing vibrant and robust domestic debt markets and instruments to reduce the reliance on foreign financing.

ANNEX IV: DEBT SUSTAINABILITY CONCEPTS

The IMF uses the so-called Debt Sustainability Analysis (DSA) to assess the risk of debt distress of countries. For countries that normally rely on official external financing on concessional terms, public debt sustainability analysis is typically undertaken using the Low-Income Country Debt Sustainability Framework (LIC-DSF), conducted jointly by World Bank and Fund staff.

The DSF uses indicative thresholds, linked to the country's debt carrying capacity, to analyze the risk of external debt distress. Thresholds are (statistically determined) bounds above which the risk of debt distress is considered elevated. The external risk rating is assigned by comparing the projected evolution of the four external debt burden indicators, both under the baseline and stress scenarios, to their respective thresholds. Thresholds depend on countries' debt carrying capacity. Countries with stronger capacity benefit from higher thresholds—as follows:

	Table	A4.1. External Debt	Thresholds	
Debt carrying		PV of external debt (in percent of)		nal debt service ercent of)
capacity	GDP	Exports	Exports	Revenue
Weak	30	140	10	14
Medium	40	180	15	18
Strong	55	240	21	23

The DSF uses benchmarks for total public debt to help flag risks from broader debt exposures. Benchmarks for total public debt help guide the analysis of risks stemming from domestic debt. Total public debt is the sum of external debt and public domestic debt. While external debt remains the largest component of total public debt in most LICs, a systematic analysis of total public debt is needed because: (i) domestic debt is an increasingly important source of financing for many LICs (with its short-term nature creating rollover and interest rate reset risks); and (ii) non-residents have increased their participation in local and regional debt markets, blurring the distinction between domestic and external debt. Total public debt benchmarks vary with countries' debt carrying capacity as follows:

Table A4.2. Total Public Debt Benchmarks			
Debt carrying capacity	PV of total public debt (percent of GDP)		
Weak	35		
Medium	55		
Strong	70		

Oil exporters	Other resource-intensive countries	Non-resource-intensive countries
Angola	Botswana	Benin
Cameroon	Burkina Faso	Burundi
Chad	Central African Republic	Cabo Verde
Congo, Rep. of	Congo, Dem. Rep. of	Comoros
Equatorial Guinea	Ghana	Côte d'Ivoire
Gabon	Guinea	Eritrea
Nigeria	Liberia	Eswatini
South Sudan	Mali	Ethiopia
	Namibia	Gambia, The
	Niger	Guinea-Bissau
	Sierra Leone	Kenya
	South Africa	Lesotho
	Tanzania	Madagascar
	Zambia	Malawi
	Zimbabwe	Mauritius
		Mozambique
		Rwanda
		São Tomé and Príncipe
		Senegal
		Seychelles
		Тодо
		Uganda

ANNEX V. SUB-SAHARAN AFRICA: COUNTRY GROUPINGS

REFERENCES

- Arestoff, F. and C. Hurlin. 2006. "Estimates of Government Net Capital Stocks for 26 Developing Countries, 1970-2002," World Bank Policy Research Working Paper 3858.
- Atolia, M., B. G. Li, R. Marto and G. Melina. 2017. "Investing in Public Infrastructure: Roads or Schools?" *IMF Working Papers* 17/105. International Monetary Fund, Washington, D.C.
- Buffie, E.F., A. Berg, C. Pattillo, R. Portillo, and L. F. Zanna. 2012. "Public investment, growth, and debt sustainability: putting together the pieces." *IMF Working Paper* 12/144. International Monetary Fund, Washington, D.C.
- Esfahani, H. S. and M. T. Ramirez. 2003. "Institutions, Infrastructure, and Economic Growth," Journal of Development Economics, Vol. 70(2), pp. 443-477.
- Foster, V. and C. Briceño-Garmendia. 2010. "Africa's Infrastructure: A Time for Transformation" (Agence Francaise de Developement and the World Bank).
- Gaspar, V., D. Amaglobeli, M. Garcia-Escribano, D. Prady, and M. Soto, 2019, "Fiscal Policy and Development: Human, Social, and Physical Investment for the SDGs," IMF Staff Discussion Note/19/02.
- Hulten, C. 1996. "Infrastructure Capital and Economic Growth: How Well You Use It May Be More Important Than How Much You Have." *NBER Working Paper*, No. 5847.
- International Monetary Fund (IMF). 2013. "Mozambique Staff Report", *IMF Country Report* 13/200. International Monetary Fund, Washington, D.C.
- International Monetary Fund (IMF). 2015a. "Making Public Investment More Efficient" *IMF Board Paper*, International Monetary Fund, Washington, DC.
- International Monetary Fund (IMF). 2015b. "Financing for development: Revisiting the Monterrey Consensus," *IMF Policy Paper*, International Monetary Fund, Washington, DC.
- International Monetary Fund (IMF). 2016. "Recent Developments and Prospects", in *World Economic Outlook*, Chapter 1, April 2016. International Monetary Fund, Washington, D.C.
- International Monetary Fund (IMF). 2018a. "Macroeconomic Developments and Prospects in Low-Income Developing Countries—2018," International Monetary Fund, Washington, DC.
- International Monetary Fund (IMF). 2018b. "Domestic Revenue Mobilization in Sub-Saharan Africa: What Are the Possibilities?", in *Regional Economic Outlook—Sub-Saharan Africa*, Chapter 2, April 2018. International Monetary Fund, Washington, D.C.
- International Monetary Fund. 2018c. "Public Investment Management Assessment–Review and Update," International Monetary Fund, Washington, D.C.
- International Monetary Fund. 2019, "*Curbing Corruption*", in *Fiscal Monitor*, Chapter 2, April 2019. International Monetary Fund, Washington, D.C.
- Melina, G., S. C. S. Yang, and L. F. Zanna. 2014. "Debt Sustainability, Public Investment and Natural Resources in Developing Countries: The DIGNAR Model." *IMF Working Paper* 14/50. International Monetary Fund, Washington, D.C.

- Melina, G., S. C. S. Yang, and L. F. Zanna. 2016. "Debt Sustainability, Public Investment and Natural Resources in Developing Countries: The DIGNAR Model." *Economic Modelling*, Vol 52 (Part B), pp. 630–49.
- Pritchett, L. 2000. "The Tyranny of Concepts: CUDIE (Cumulated, Depreciated, Investment Effort) is Not Capital," *Journal of Economic Growth*, Vol. 5, pp. 361-384.
- Zanna, L.F., E.F. Buffie, A. Berg, C. Pattillo, and R. Portillo. 2019. "Borrowing for Growth: Big Pushes and Debt Sustainability in LICs." Forthcoming in the *World Bank Economic Review*.