United Nations
Economic Commission for Africa

Debt Profiles: Africa*

by

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***** Based on an earlier report submitted to UNECA.

ideas for a prosperous Africa

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Workshop on Debt, UNECA

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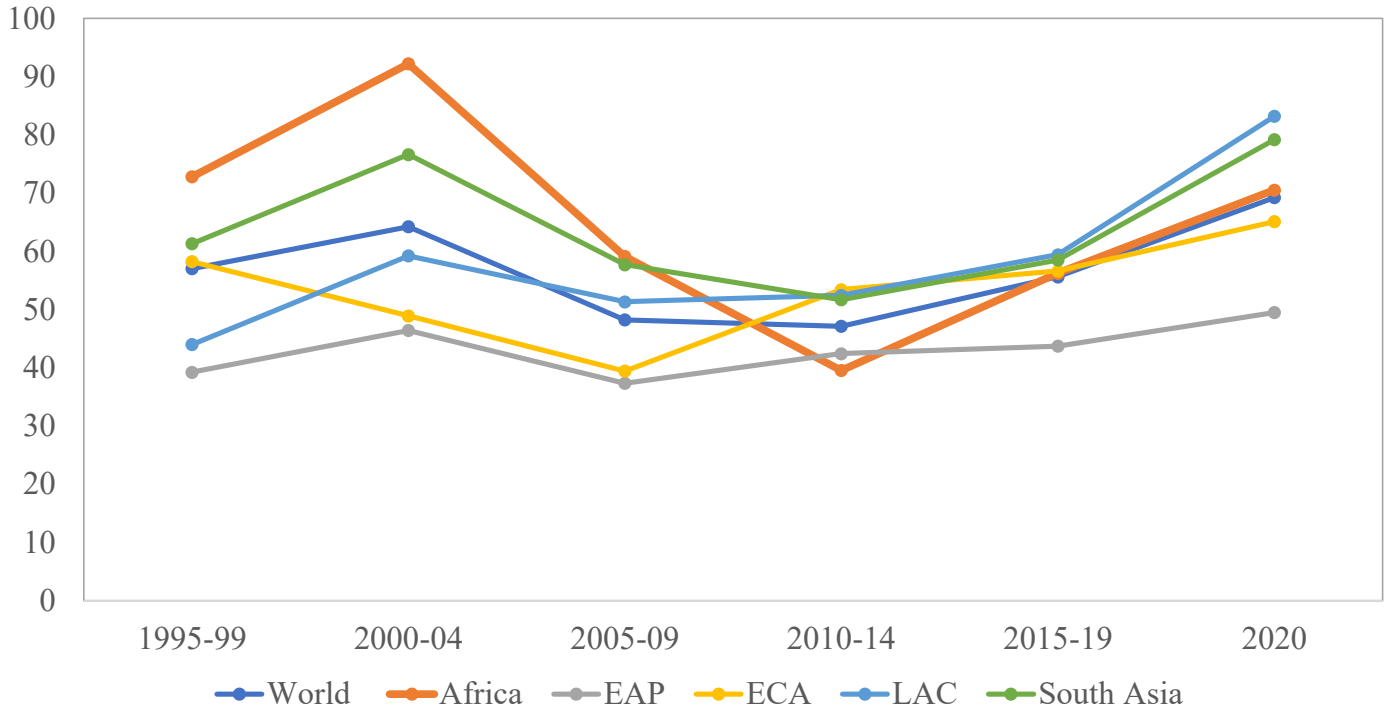
Introduction

- The economic contraction due to **Covid-19 has deepened budgetary imbalances** and **increased the debt burden** generally on the continent.
- However, the imbalances were already apparent even before the pandemic.
- Now, the Russia-Ukraine war is likely to worsen the situation even further.

Importance:

- These challenges represent major obstacles to Africa's recovery, threatening to hamper future development prospects in line with the Sustainable Development Goals (**SDGs**) (UN, 2021).
- **Growth implications** of debt:
  - Via **investment**: **Liquidity Constraint Hypothesis** (LCH) and **Debt Overhang Hypothesis** (DOH)
  - Via **productivity**: **Direct Effect of Debt Hypothesis** (DEDH), Linear or Nonlinear (Fosu, 1996, 1999)
  - More recent literature – many on developing economies, and more recently on developed economies (e.g., Reinhart and Rogoff).
- **Fiscal allocation** implications, Africa: Fosu (2007, 2008, 2010)

Trends in public debt by global region, 5-year averages, 1995-2020 (note: HIPC and 2005 MDRI)



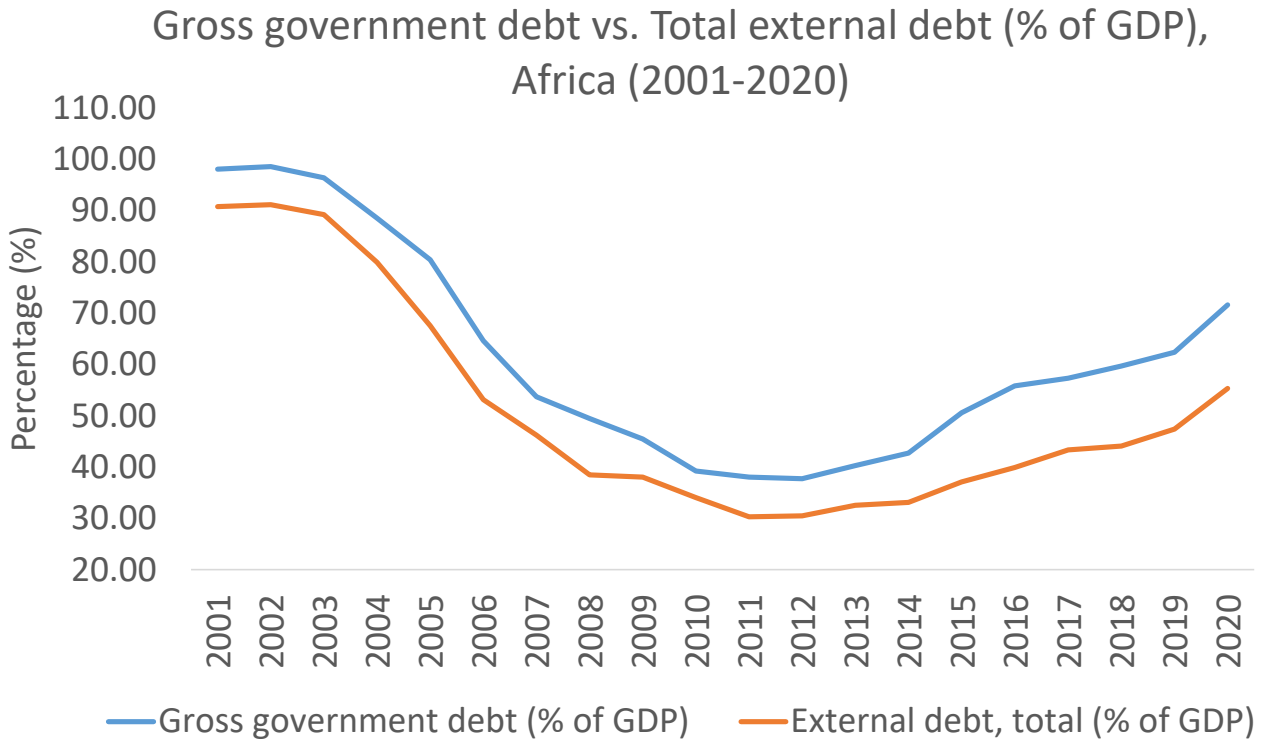
Notes: The values reported are **simple averages** [data source: IMF Fiscal Monitor database (IMF, 2021)].

Cross-country public debt differences in Africa: Quintiles* on gross debt (% of GDP), latest year (2020)

Quintile Rank	List of Countries	Quintile Rank	List of Countries
1	Botswana, CAR, Comoros, Congo, Dem. Rep., Djibouti, Eswatini, Guinea, Nigeria, South Sudan, Tanzania, Uganda	4	Gabon, Gambia, Ghana, Guinea-Bissau, Morocco, Sao Tome and Principe, Sierra Leone, South Africa, Tunisia, Zimbabwe
2	Benin, Burkina Faso, Cameroon, Chad, Côte d'Ivoire, Equatorial Guinea, Lesotho, Madagascar, Mali, Niger	5	Angola, Cape Verde, Congo Rep., Egypt, Eritrea, Mauritius, Mozambique, Seychelles, Sudan, Zambia
3	Algeria, Burundi, Ethiopia, Kenya, Liberia, Malawi, Mauritania, Namibia, Rwanda, Senegal, Togo		

***Notes: Lowest debt (quintile 1); highest debt (quintile 5).** Countries alphabetically arranged in each quintile.

Trends in **total** and **external** public debt in Africa, 2001-2020



Notes: Data on gross debt (% of GDP) are from the IMF Fiscal Monitor database (IMF, 2021), and on external debt from the International Debt Statistics (IDS) database, World Bank (2021).

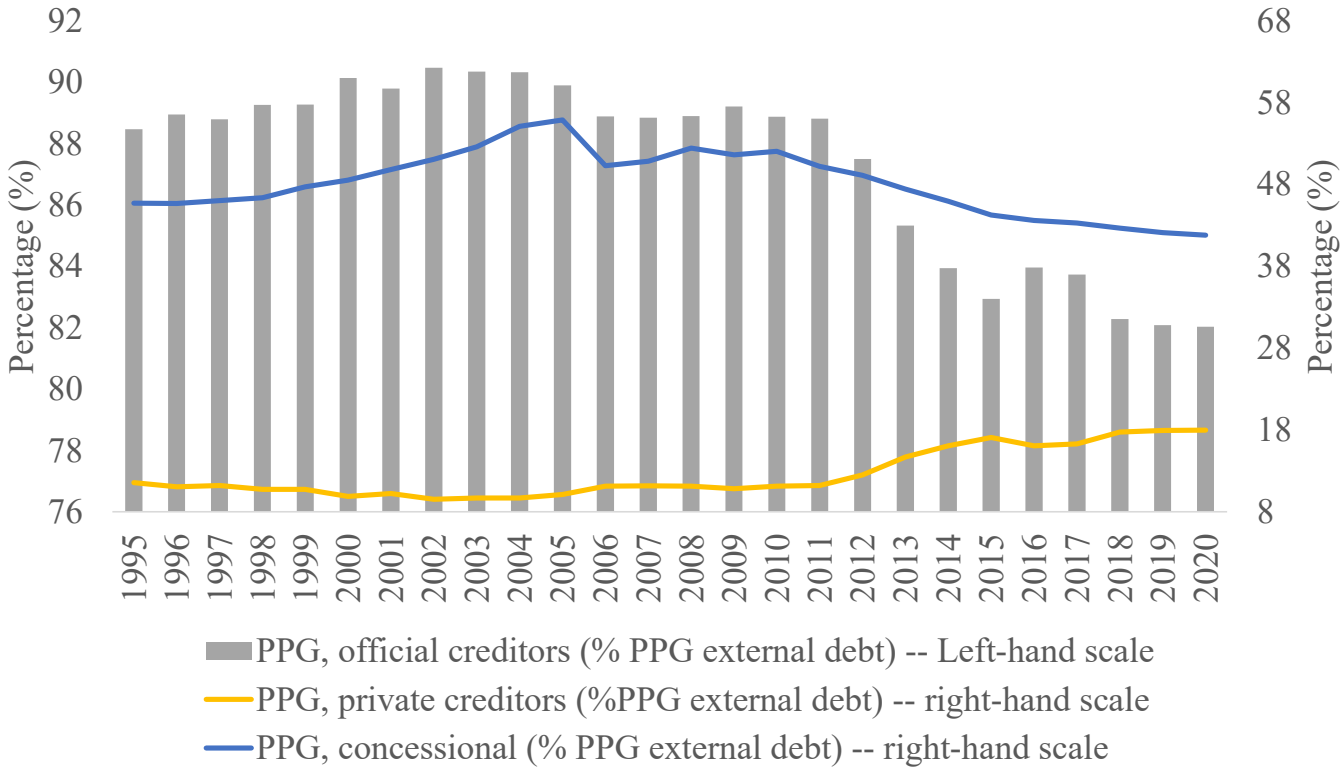
External Debt Composition (2020)

- **Composition of total external debt**
  - Long-term – **Public** and publicly guaranteed (PPG): **72.2%**
  - Long-term – **Private** nonguaranteed: **7.8%**
  - Use of IMF credit: **11.2%**
  - Short-term: **8.8%**

- **Composition of PPG external debt**
  - **Official** creditors: **82.0%**
    - --Official creditors – **Multilateral**: **49.0 %**
    - --- Official creditors – **Bilateral**: **33.0 %**
  - **Private** creditors: **18.0%**
    - **Bonds**: **9.6 %**
    - Commercial Banks: **6.0%**
    - Other private creditors**: 2.4 %**

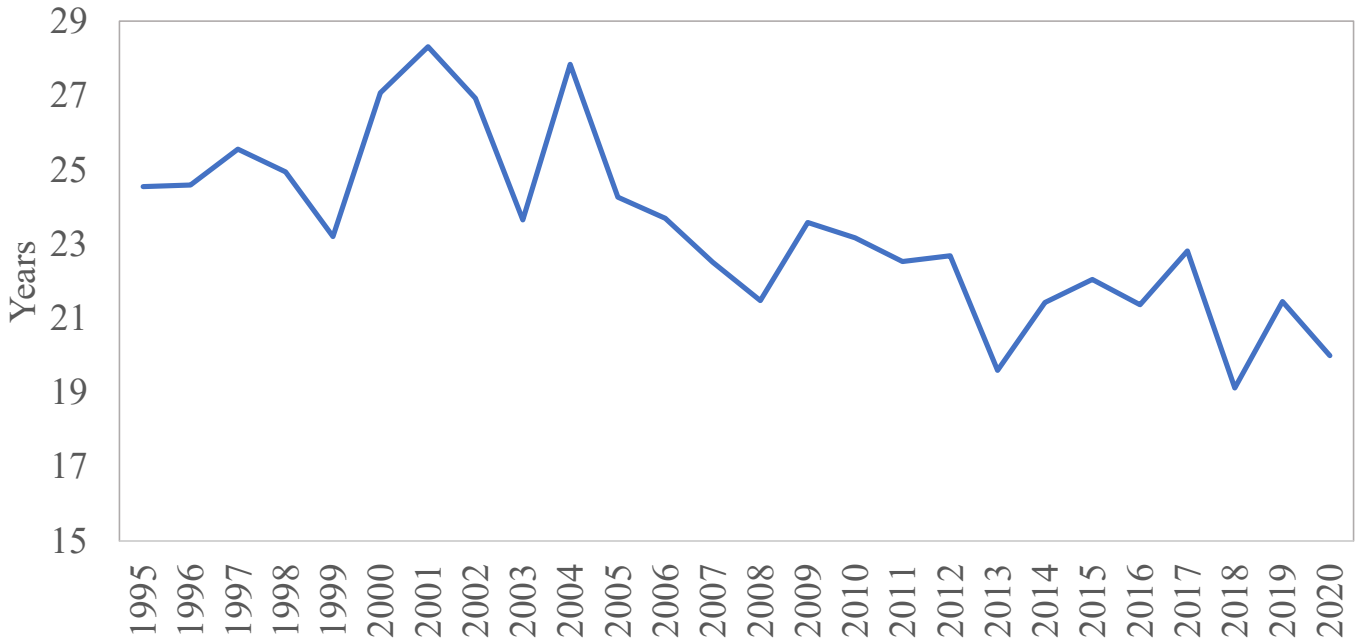
- **Currency composition of PPG external debt**
  - USD: **56.8%** ; Euro: **12.7%** ; Special Drawing Rights: **2.9%**; All other foreign currencies: **27.7%**

External Debt Trends: Holders of public and publicly guaranteed (PPG) long-term external debt, Africa (1995-2020)



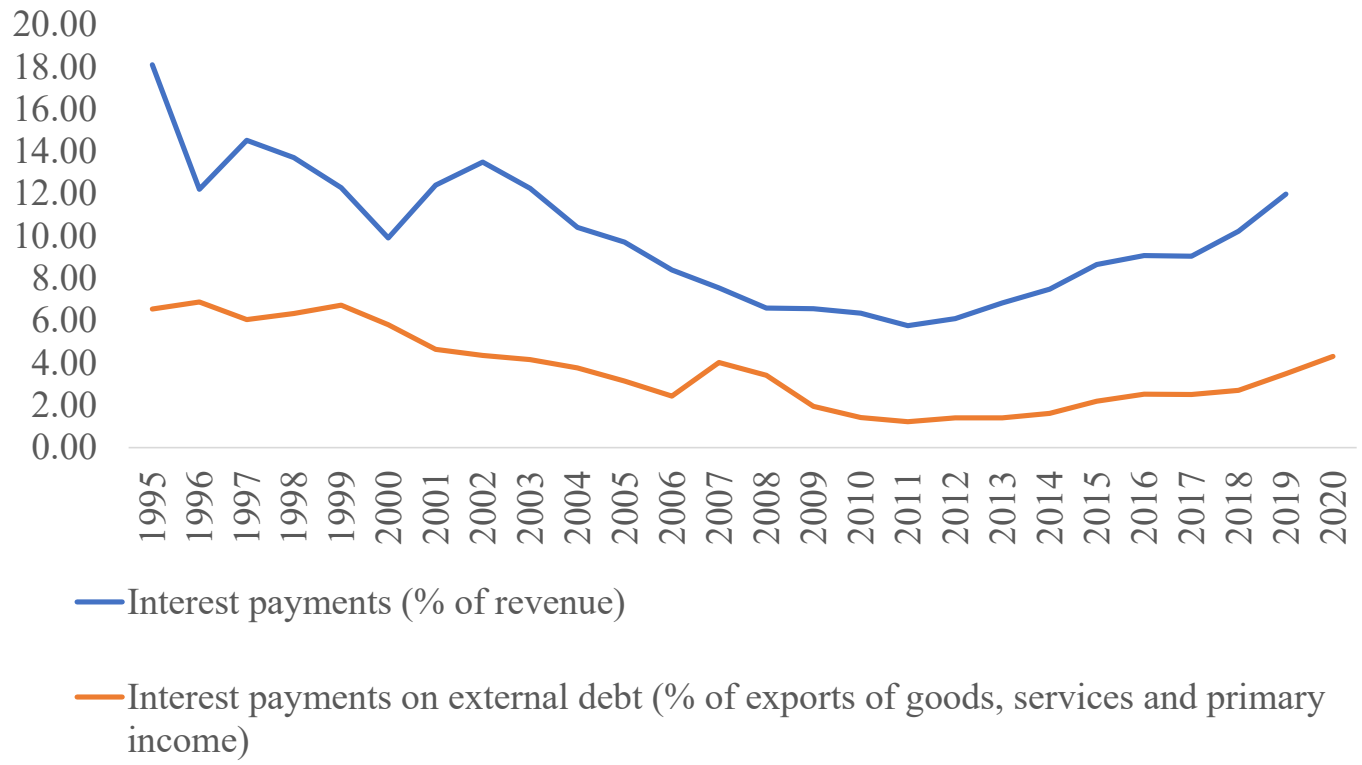
Notes: Left-hand scale: PPG debt from official creditors in percentages; right-hand scale: Concessional debt (% of PPG long-term external debt) and PPG debt from private creditors (% of PPG external debt) in percentages. The variables are the author's computation using data from IDS database, World Bank (2021). The simple averages for Africa are the author's computation.

Average maturity on new external debt commitments (years), Africa (1995-2020)



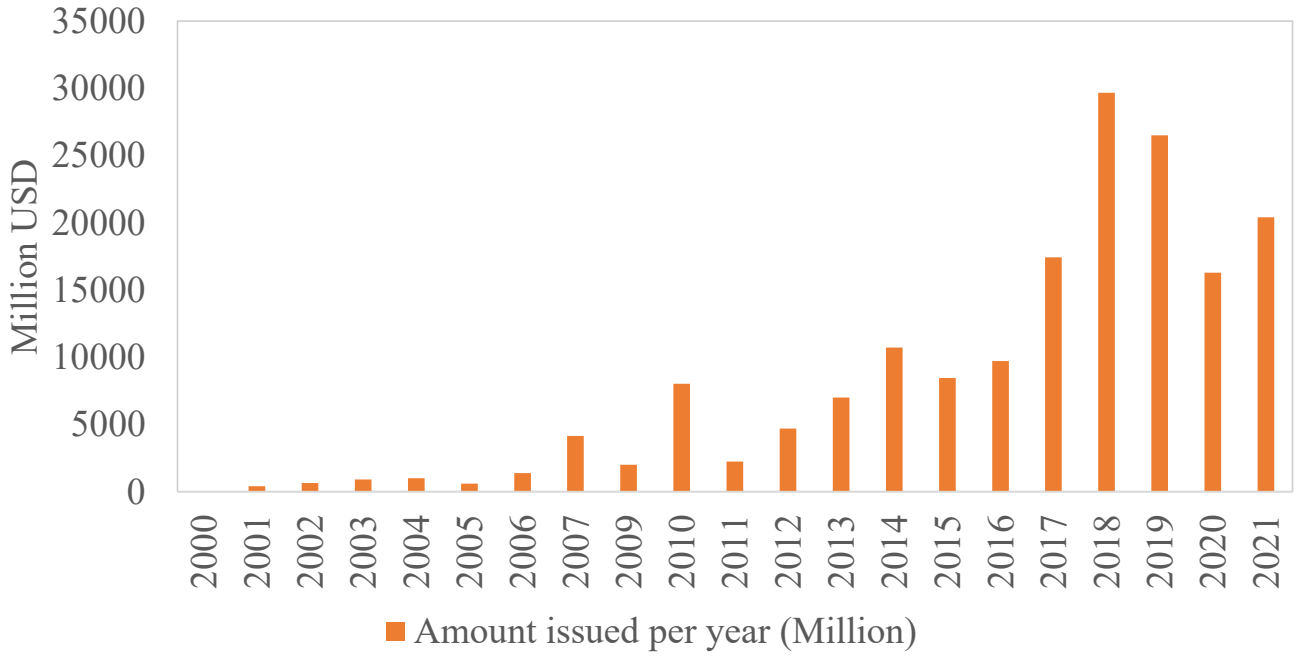
Notes: Maturity for all public and publicly guaranteed loans is the number of years to original maturity date, which is the sum of grace and repayment periods. The data are obtained from IDS database, World Bank (2021). The simple average for Africa is the author's computation.

Debt Servicing: Interest Payments, Africa (1995-2020)



Notes: The data on interest payment on external debt (% of export of goods and services and primary income are obtained from IDS database, World Bank (2021b). The data on interest payment (% of revenue) is from WDI, World Bank (2021a). The simple averages for Africa are the author's computations.

Eurobond issuance: Amount issued per year (total), Africa (2000-2021)



Notes: Author's computation based on data obtained from Bloomberg database (downloaded in February 2022). The currency conversion was done using the annual exchange rate (DEC alternative conversion factor) obtained from the World Development Indicators (WDI), World Bank (2021). The official exchange rate (average) for the year is used when the data are not available from WDI.

Eurobond Issuance in Africa, 2000-2021*

- **Participants in the Eurobond Market**
  - Africa (21)
  - SSA (18) ➔ Angola, Benin, Cameroon, Republic of Congo, Cote d'Ivoire, Ethiopia, Gabon, Ghana, Kenya, Mozambique, Namibia, Nigeria, Rwanda, Senegal, Seychelles, South Africa, Tanzania, Zambia
  - Northern Africa (3) ➔ Morocco, Egypt and Tunisia.

- **Top 5 issuers** (number of Eurobonds issued)

  Egypt (35) South Africa (21) Ghana (17) Nigeria (14) Tunisia (13)

***** As of February 2022

Explaining Interest Rates at Issue and African Premium on Eurobonds

- In line with the conventional approach to modelling sovereign bond yields (Mpapalika and Malikane, 2019; Olabisi and Stein, 2015; Nair, 2020; Cevik and Jalles, 2022), a simple baseline model is specified as:

$$Bondspread_{it} = \alpha_1 + \alpha_2\, CreditRating_{it} + \alpha_3 logGDPpercapita_{it-1} + \alpha_4 ReservesGDPratio_{it-1} + \alpha_5\, DebtGDPratio_{it-1} + \alpha_6\, Tenor_{it} + \alpha_7 dummy_i + \mu_i + \epsilon_t + \varepsilon_{it} \quad (1)$$

- Given the important role of institutions in influencing the cost of borrowing in the developing world (Block and Vaaler, 2004; Subramaniam, 2021), model (1) is extended to account for institutional/governance quality, and thus specified as:

$$\boldsymbol{Bondspread_{it} = \beta_1 + \beta_2\, CreditRating_{it} + \beta_3 logGDPpercapita_{it-1} + \beta_4 ReservesGDPratio_{it-1} + \beta_5\, DebtGDPratio_{it-1} + \beta_6 Tenor_{it} + \beta_7 governance_{it} + \beta_2 dummy_i + \rho_i + \theta_t + \delta_{it}} \quad \mathbf{(2)}$$

ϵ_t & θ_t = unobservable time effects; ε_{it} & δ_{it} = idiosyncratic error term assumed to be independently and identically distributed; μ_i & ρ_i = unobservable country specific heterogeneities.

Regression results – OLS and 2SLS; Quarterly (2002 – 2020)

Quarterly (2002-2020)	OLS	OLS	OLS	OLS	IV –Second stage	IV –First stage
VARIABLES	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
	Spreads	**Spreads**	**Spreads**	**Spreads**	**Spreads**	**Ratings**
Africa	4.36***	3.10***	2.19*		1.73**	-0.52
	(4.31)	(3.18)	(1.93)		(2.23)	(-0.52)
HIPC				-1.33		
				(-1.26)		
Credit Rating		**-0.44*** **	**-0.38*** **	**-0.44*** **	**-0.31** **	
		(-5.73)	(-5.13)	(-5.73)	(-2.15)	
Log of GDP Per Capita	-1.59*	-0.02	-0.11	-0.02		3.29***
	(-1.87)	(-0.03)	(-0.14)	(-0.03)		(4.75)
Debt-to-GDP Ratio	**0.42**	**-1.10**	**-0.91**	**-1.10**		**-3.38*** **
	(0.31)	(-0.95)	(-0.82)	(-0.95)		(-2.70)
Reserves-to-GDP Ratio	-5.14**	-1.76	-1.32	-1.76		5.73**
	(-2.09)	(-0.76)	(-0.61)	(-0.76)		(2.39)
Tenor	***ns***	***ns***	***ns***	***ns***		
Government effectiveness			**-1.18** **		**-1.43***	**2.60*** **
			(-2.16)		(-1.87)	(4.59)
Constant	16.44**	9.01	8.57	12.11*	6.38***	-13.87**
	(2.43)	(1.44)	(1.46)	(1.69)	(4.06)	(-2.51)
Observations	413	413	413	413	413	413
R-squared overall	0.839	0.872	0.876	0.872	0.874	0.966
Country effects	Yes	Yes	Yes	Yes	Yes	Yes
Time effects	Yes	Yes	Yes	Yes	Yes	Yes

Conclusion

- The current structure of debt in many African countries is a matter of increasingly great concern:
  - ✓ a shift toward **less** concessional, **more** private borrowing.
  - ✓ large portions denominated in **foreign currency**, thus exposing many African countries to foreign exchange risks.
  - ✓ higher **interest rates on private** loans reflecting greater debt burdens and **increased risks of default**.
- The surge in **Covid-19** induced health and other related spending as well as in revenue loss has **exacerbated fiscal imbalances** and accelerated the indebtedness of countries.
- The debt-servicing challenges are likely to shift budget **allocations away from social spending** in the areas of health and education, with negative implications for poverty and inequality (Fosu, 2007, 2008, 2010).

Conclusion

- African countries pay a **premium of about 2.0 percentage points** in their holdings of sovereign Eurobonds, after accounting for relevant factors.

- As many African countries have been recently **downgraded by rating agencies**, increased interest burden is expected, which will exert further stress on their **fiscal space**.

- Macroeconomic management (MM) is important, but ensuring **good governance/institutional quality (GG/IQ)** is critical as it would affect borrowing costs not only directly, but also indirectly through credit ratings.
- **Furthermore**, GG/IQ is likely to affect MM as well.

Policy Recommendations

- Appropriate policy choices for countries may include:

  - **fiscal reforms; building coherent and effective framework for debt management; increasing domestic revenue mobilization; reprioritization of public expenditure; investing in growth-enhancing projects that would make future debt service much more feasible.**

- For countries with the ability to borrow externally, **relying more on concessional loans and ensuring transparency of debt instruments** will help limit vulnerabilities.

- It may be time to consider making relatively **non-risky denominations, such as SDRs**, significant portions of the debt-finance portfolio, especially for low-income countries, while ensuring that a significant amount of the portfolio is geared toward productive infrastructural investment.

THANK YOU!

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Ideas to Action

Appendix Table A13: Summary statistics

	All sample		Africa	Non-Africa	T-test for equality of mean	
	Mean (Std.)	**Min - Max**	**Mean**	**Mean**	**Mean Difference (p-value)**	
Coupon rate at issue	5.72 (2.00)	0.13 -- 12.88	6.88	5.52	1.37	(0.00)***
Bond spread (%)	2.91 (1.84)	-1.77 -- 11.25	4.15	2.69	1.46	(0.00)***
Credit Rating (Avg. Score)	12.82 (3.83)	4.00 --24.00	10.99	13.14	-2.15	(0.00)***
Log of GDP Per Capita	8.87 (0.93)	6.06 -- 11.32	8.05	9.02	-0.97	(0.00)***
Debt-to-GDP Ratio	0.52 (0.30)	0.00 -- 1.61	0.49	0.53	-0.04	(0.39)
Reserves-to- GDP Ratio	0.20 (0.21)	0.02 -- 1.20	0.12	0.21	-0.10	(0.00)***
Tenor	16.89 (9.72)	2.00 - 100	13.49	17.49	-4.00	(0.00)***
Government Effectiveness	0.03 (0.59)	-1.26 -- 1.95	-0.31	0.09	-0.41	(0.00)***
N	**413**		**62**	**351**	**-**	**-**

Data

- The sample consists of unbalanced quarterly panel data on 82 countries covering the period 2002 and 2020.

- The analysis uses coupon rates at issue of USD-denominated sovereign bonds issued on the international market and characterized by simple coupon structure (floating, fixed/flat trading).

- Bond spread is computed using the interest rate on the contemporaneous US Treasury bond with the same years to maturity.

- The yields at issue, the maturity and issue dates and the data on the sovereign credit ratings from Fitch, Moody's and S&P are from Bloomberg database. The macroeconomic indicators are obtained from the World Bank, WDI database.