



Taxation and State Capacity in sub-Saharan Africa

Oliver Morrissey

School of Economics, University of Nottingham and WIDER
non-Resident Fellow

WIDER Development Conference
'Revving up Revenue for Development'
Oslo 06-08 September 2023



Preview – Positive relation between Tax and Capacity

- Two indicators of State Capacity – Tax Capacity & Accountability
- SSA since 2000: increased tax/GDP ratios, improved Tax Capacity, increasing accountability
- Tax capacity not explained by accountability
- Increase tax/GDP improves **vertical accountability [only]** (capturing the quality of elections and party competition)
- Positive effect of taxation on State capacity



Based on two papers

- Drivers of Tax Capacity (Tagem & Morrissey 2023)
 - WIDER project *Institutions, Aid and Fiscal Capacity in Sub-Saharan Africa*
 - Economic structure the most robust determinant of SSA tax/GDP
 - **Capacity** = **trend** component of tax efficiency [actual/potential tax/GDP ratio], captures underlying unexplained changes
 - **Tax capacity increases with** private consumption, resource rents and equal distribution of resources; decreases with corruption
 - Accountability not a direct driver of Capacity
- Taxation and Accountability (Dom, Morrissey & Tagem 2023)
 - Taxation promotes accountability; government responsiveness



Data (both papers)

- Vertical Accountability from Varieties of Democracy (V-DEM) database
 - Captures ability to freely organise in political parties and participate in free and fair elections
 - Placebo tests – horizontal, diagonal, judicial accountability
- Revenue from GRD (UNU-WIDER)
 - Total General Government Tax Revenue
 - Direct Taxes, Indirect (Sales, Trade)
 - Non-tax Revenues (control for resource revenues)

Tax, Revenue, Efficiency & Capacity



Figure 1a: Tax and Revenue, SSA 1980-2018

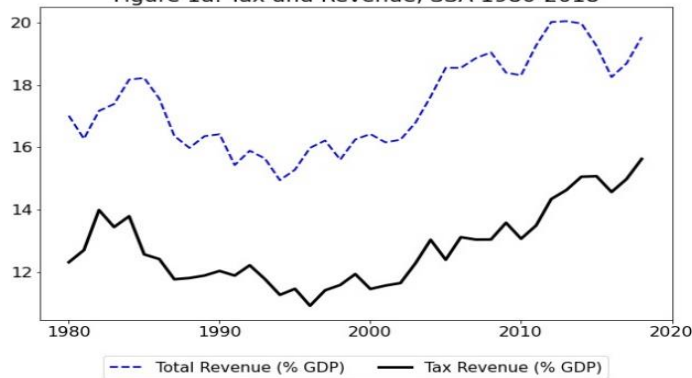


Figure 1b: Tax Capacity and Effort, SSA 1980-2018

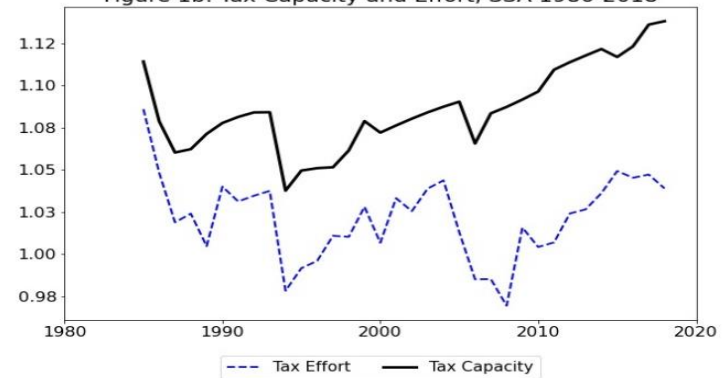


Figure 1c: Low-Income Countries, SSA 1980-2018

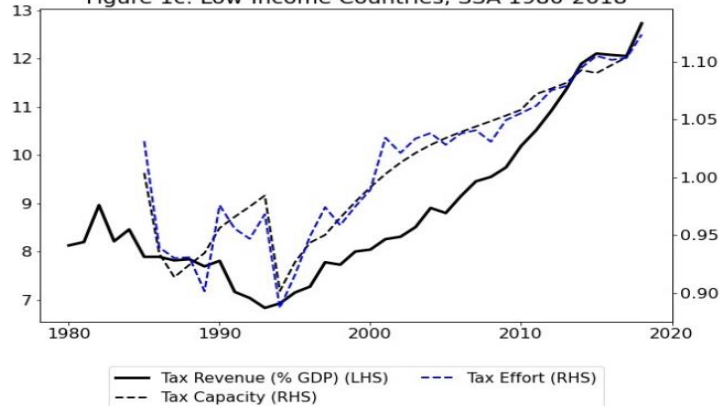
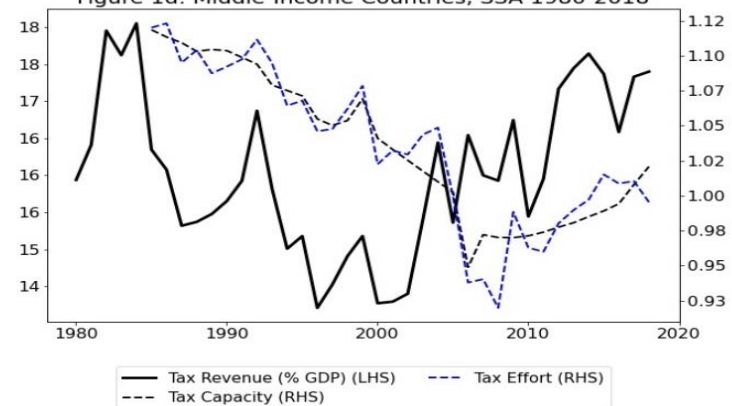
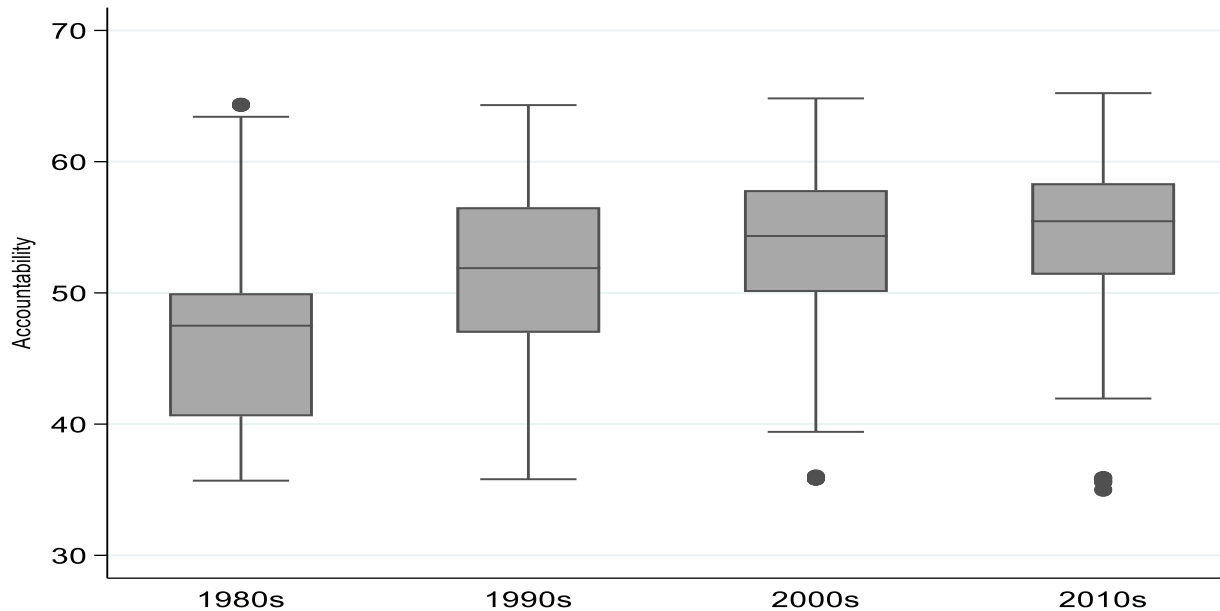


Figure 1d: Middle-Income Countries, SSA 1980-2018

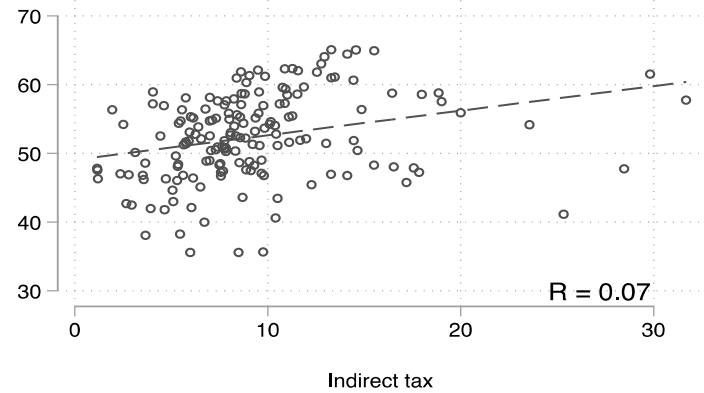
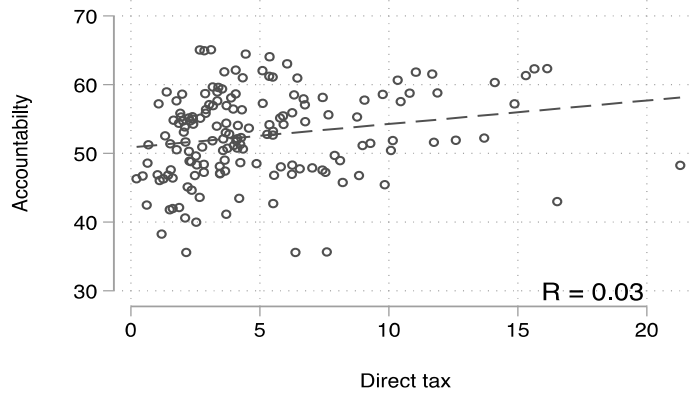
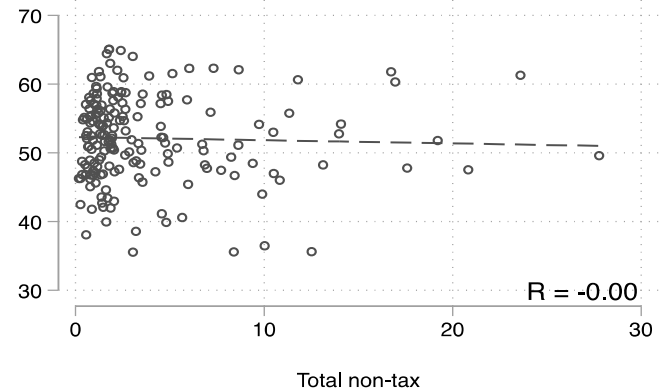
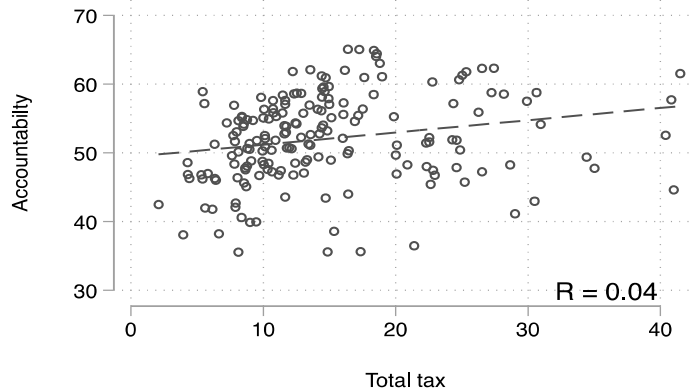


SSA Vertical Accountability per decade



Notes: Boxplots of the vertical accountability scores per decade display the interquartile range (between 25th and 75th percentile) and the median. The ends of the whiskers represent the upper and lower values within 1.5 times the interquartile range beyond the 25th and 75th percentile. Any points beyond this are considered outliers and receive their own markers.

Figure: Scatter plots of tax and accountability





Empirical Specification and Results

- Baseline FE model

$$Acc_{it} = \alpha_i + \delta_t + \beta_1 Tax_{it} + \beta X_{it} + \varepsilon_{it}$$

- FE lagged dependent variable (FE-LDV) - tax levels are (conditionally) uncorrelated with past accountability

$$Acc_{it} = \alpha_i + \delta_t + \beta_1 Tax_{it} + \beta X_{it} + \gamma Acc_{i,t-1} + \varepsilon_{it}$$

- Instruments

- exchange rate pressure index (ERPI) [weights ΔE and ΔRes]
- Terms of Trade shocks (ToT)
- Heteroskedasticity-based internal instrument (Lewbel)
- Test if large shocks coincide with an election

Table 1: Effect of Taxation on Accountability



	[1]	[2]	[3]	[5]
	OLS	FE	FE	FE-LDV
Tax	0.162***	0.232***	0.201***	0.083***
NTR	-0.133***	-0.033	-0.012	-0.010
Aid (% GNI)			0.594*	0.173
L.VA				0.714***
LT effect				0.289
N	1,639	1,639	1,526	1, 508
Groups	47	47	47	47
Adj. R ²	0.040	0.398	0.379	0.708

Notes: All regressions include country and year fixed effects; Robust standard errors in parentheses clustered at the country-level for [2]-[5]. L.VA is one-year lagged vertical accountability; LT is the long-term effect. GDP per capita and Tax² insignificant.

2SLS Effect of Taxation on Accountability



	[1]	[2]	[4]	[5]
	OLS-FE	Lewbel EI	2SLS-FE	Lewbel EI
Total Tax	0.156**	0.222***	0.580**	0.098**
Aid (% GNI)	0.741**		0.485	0.741***
Exports			3.066***	1.998***
N	1,327	1,203	978	978
Groups	44	39	36	36
Adj. R ²	0.346			
Endog test <i>p</i> -value			0.025	
KP F-stat			30.56	
Hansen J <i>p</i> -value		0.595	0.485	0.806

Notes: 2SLS estimates; Lewbel EI uses both internal and external (ERPI and ToT shocks) instruments. NTR, GDP_{pc}, Imports insignificant. IV valid.



Effect of Taxation on Different Accountability Measures

	I	II	III	IV
	Vertical	Diagonal	Horizontal	Judicial
Tax	0.076***	-0.002	0.002	-0.004
NTR	-0.016	-0.015	-0.021	-0.024
L.Acc	0.733***	0.913***	0.846***	0.868***
N	1,616	1,616	1,616	1,616
Groups	47	47	47	47
Adj. R ²	0.733	0.934	0.832	0.755

Determinants Vertical Accountability



	[2]	[3]	[4]	[5]
Tax	0.184***	0.211***	0.184***	0.177***
Aid (% GNI)	0.042	0.118**	0.042	0.057
Growth	0.013	0.021*	0.015	0.014
Neo-patrimonialism index	-0.721***			-0.538***
Critical media		0.460***		0.249***
Civil society participation			0.462***	0.061
N	47	47	47	47
Groups	1,507	1,501	1,501	1,501
Adj. R ²	0.520	0.483	0.463	0.550

Notes: OLS estimates, coefficients in terms of standard deviation. Insignificant: NTR, GDPpc, urban population, Equal distribution of resources.

Neo-patrimonialism combines clientelism, unconstrained presidents and regime corruption



Conclusions

- Taxation is positively linked with accountability (**vertical**)
- Support for a causal interpretation – **increased tax/GDP promotes greater vertical accountability**
- Tax explains about 10% of increase in accountability
 - Affects change rather than level
- Direct taxation and total indirect taxes significant – taxpayers motivated by perceived tax burden
- No effect from sales taxes or trade taxes
- No effect of resource/non-tax revenue

References

- Dom, R., O. Morrissey & A. Tagem (2023), Taxation and Accountability in sub-Saharan Africa, School of Economics, University of Nottingham, *CREDIT Research Paper 23/05* (www.nottingham.ac.uk/economics/credit)
- Tagem, A. and O. Morrissey (2023), Institutions and Tax Capacity in Sub-Saharan Africa, *Journal of Institutional Economics*, **19** (Special Issue 3): 332-347 (June 2023)

Adds to evidence in other studies:

- Prichard, W., Salardi, P. and Segal, P. (2018), Taxation, non-tax revenue and democracy: new evidence using new cross-country data, *World Development* **109**: 295–312
- Ricciuti, R., A. Savoia and K. Sen (2019), What Determines Administrative Capacity in Developing Countries? *International Tax and Public Finance*, **26**(5): 972–98
- Ricciuti, R., Savoia, A., & Sen, K. (2019), How do political institutions affect fiscal capacity? *Journal of Institutional Economics*, **15**(2), 351-380