New African Debts
and
Natural Resource Dependence

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Background

- African countries: debt overhang in the 1990s and the 2000s
- **Heavily Indebted Poor Countries** (HIPC) scheme for bilateral debt cancellation
- **Multilateral Debt Restructuring Initiative** (MDRI) for multilateral debt cancellation
    $\rightarrow$ freed the African countries from the debt burden
- Out of 39 HIPCs, 33 are Sub Saharan African countries
- To date, 30 countries out of 33 African HIPCs have reached the completion point

African new debts

- Since the 2000s, new access to the international capital market
  - suspended public loans resumed
  - new bank loans
  - issuances of the external bond (Eurobond)
    - → also by the African HIPCs

Guinea (2004), Ghana (2004), Senegal (2009), Zambia (2012),
Uganda (2012), Rwanda (2013), Mozambique (2013), Ethiopia (2014),
Cameroon (2014), Madagascar (2014), Côte d'Ivoire (2014)
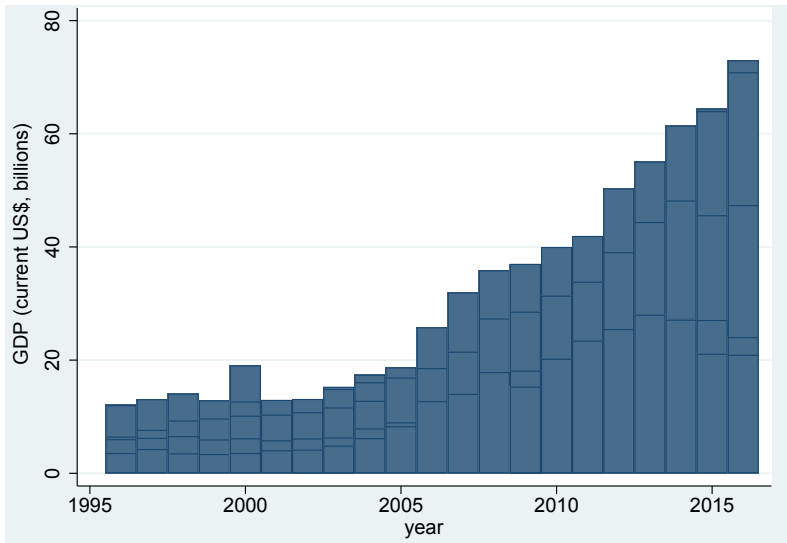
(*International Debt Statistics 2018*)

- Mozambique default (2016)

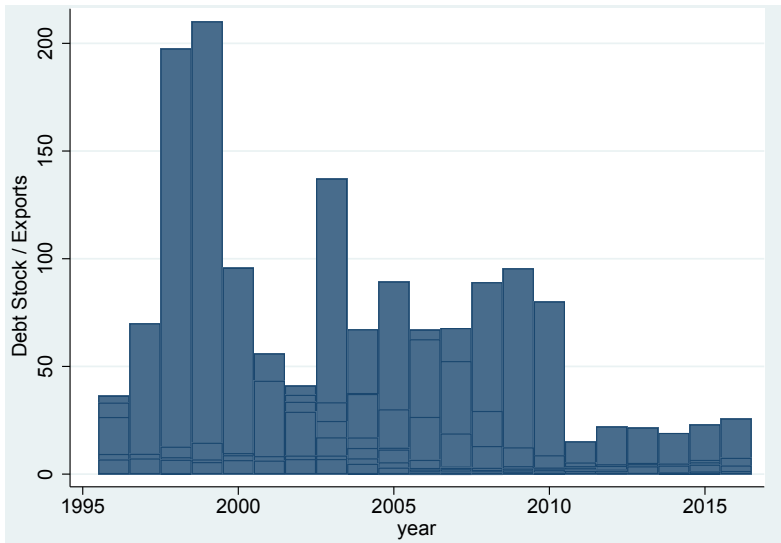# Figure 1: External debt disbursement of the SSA, 1996-2016
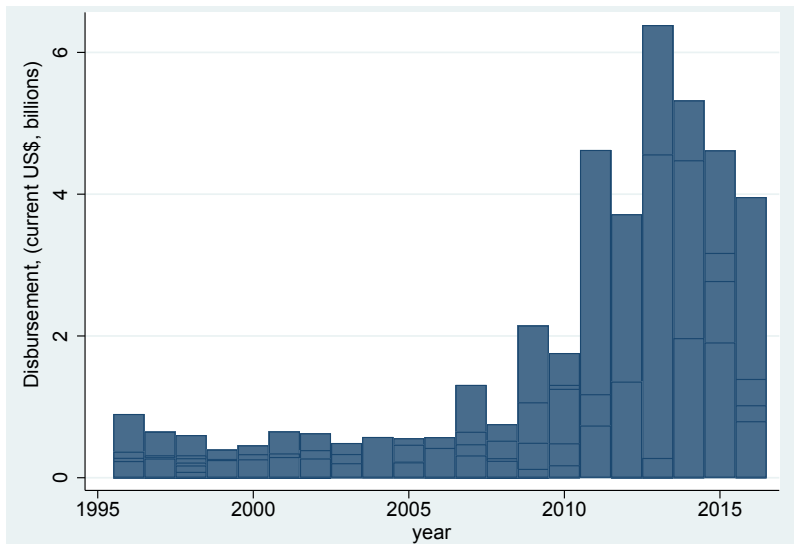
Source: IDS 2018. Sum of 36 sample countries, in current US$, billions.

Figure 2: GDP of the SSA countries, 1996-2016

Source: IDS 2018. Sum of 36 sample countries, in current US$, billions..

Figure 3: External debt stock of the SSA, 1996-2016

Source: IDS 2018. Sum of 36 sample countries, weighted by exports.

African new debts

- New debt has been rapidly accumulated in nominal terms since after 2010
- SSA economies (led by Exports) also expanded

- What is behind the increase of the SSA external borrowing?
- **No worries about the new debts?**

Behind the SSA borrowing

- Low international interest rates
  - Search for high yield, by the international investors
  - International Financial Institutions foster to use private capital for development projects (PPP)
- High premium for domestic issuances of government bond for the SSAs
  - limited domestic capital
  - premature financial development

Figure 4: Interest rates, 1996-2016
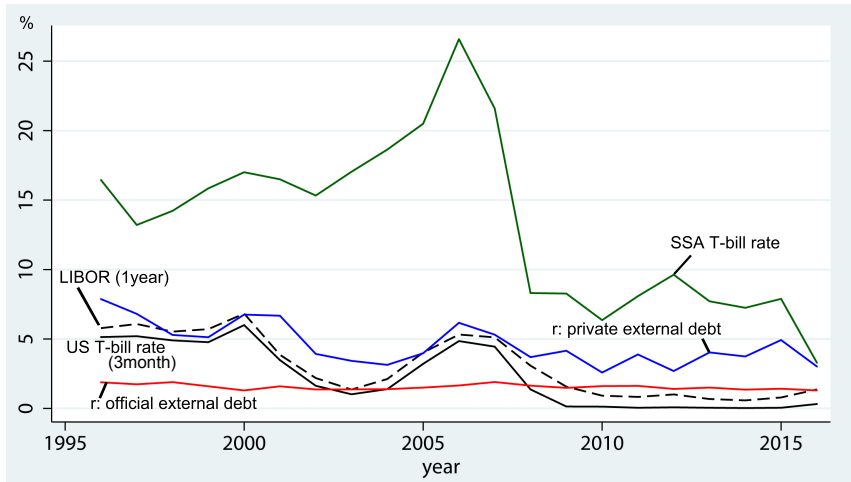
Source: LIBOR, US T-bill rate, SSA T-bill rate are based on IFS, and interest rates for external debt are based on IDS.
Note: SSA T-bill rate is average of 19 countries from the sample. Interest rates for external public and publicly guaranteed debt (to official/private creditors) are average of the sample countries, and the rates are average interest on new external debt commitments.

Conventional challenges of the SSA

Problems of Resource Dependence

- Dependence on natural resource exports
  - ▸ Volatile international commodity prices
    $\rightarrow$ volatile export revenues
- "Resource curse" (Auty 1990, Gelb et al. 1988, Sachs and Warner 2001)
  - ▸ "high economic volatility harms growth"
    (Talvi and Végh 2005, Van der Ploeg and Poelhekke 2009)
- Procyclicality
  - ▸ **procyclical fiscal policy by governments**
    - ⋆ "government procyclicality"
  - ▸ procyclical external borrowing
    - ⋆ "external procyclicality"
  - ▸ procyclical import (current account deficit)

Questions about the SSA external debt

1. Do the natural resource exporters borrow more?
2. Is recent external borrowing pro-cyclical?
3. Is the external borrowing fostering investment, or consumption?

Figure 5: Resource dependence and external debt, 2016
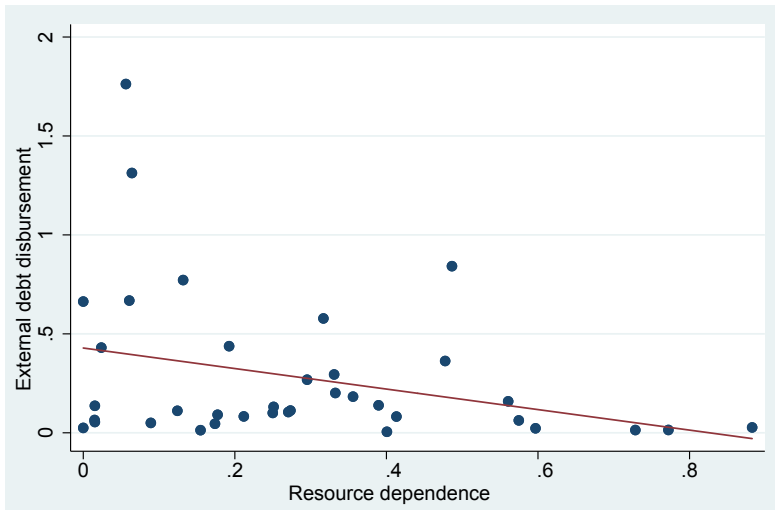
Note: Resource dependence is calculated as resource export divided by total goods export (UNcomtrade).

Table 1: Correlations between output growth and external debt

	ppg disbursement	png disbursement	total
gdpg	-0.002	-0.013	-0.005
	(0.959)	(0.729)	(0.898)
1 year lag of gdpg	-0.008	-0.013	-0.011
	(0.835)	(0.724)	(0.777)
2 years lag of gdpg	0.013	0.003	0.013
	(0.733)	(0.937)	(0.725)
3 years lag of gdpg	0.024	-0.0064	0.022
	(0.542)	(0.873)	(0.574)

Note: P-values are in parenthesis. Debt disbursement is denominated by export value to control the economic size.
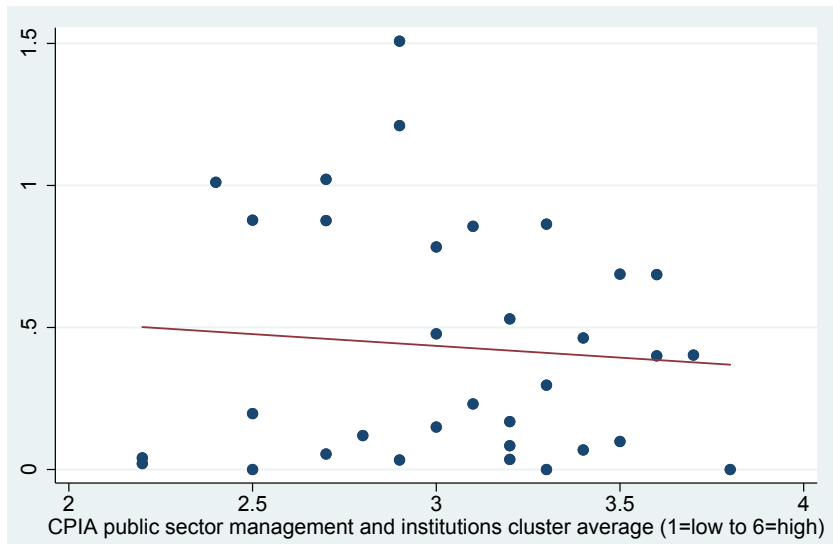
- **No correlation between growth rate and external debt.**

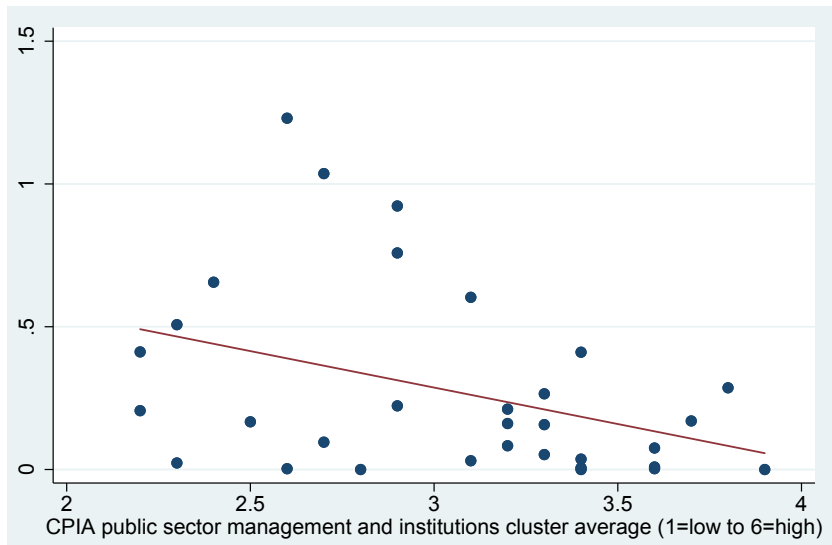Figure 6: Institutional quality and external debt, 2016
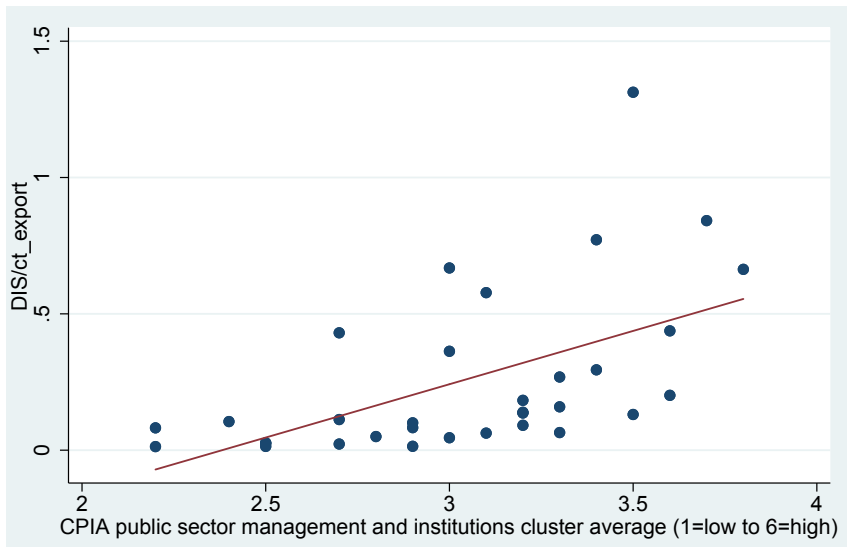
Note: Institutional quality index is taken from the Data Bank of the World Bank.

Figure 7: Institutional quality and resource dependence, **2016**

CPIA public sector management and institutions cluster average (1=low to 6=high)

Note: Institutional quality index is taken from the Data Bank of the World Bank.

Figure 8: Institutional quality and resource dependence, **2005**

CPIA public sector management and institutions cluster average (1=low to 6=high)

Note: Institutional quality index is taken from the Data Bank of the World Bank.

Questions about the SSA external debt

1. Do the natural resource exporters borrow more?
   $\rightarrow$ **NO**. Resource exporters borrow LESS.

2. Is recent external borrowing pro-cyclical?
   $\rightarrow$ **NO**. Not correlated with growth rate.
   $\rightarrow$ But correlated with **Institutional Quality**.

$\rightarrow$ ... and **resource dependent countries** tend to suffer from low **Institutional Quality**.

3. Is the external borrowing fostering investment, or consumption?

Empirical analysis: Data

- 36 Sub-Sahara African countries
    including: 28 HIPCs beyond completion point
    excluding: Angola, Liberia, Nigeria, SA, Somalia, Sudan, Zimbabwe
- from 2005 to 2016 (for regression)
    - unbalanced panel data

Table 2: Sample countries

non-HIPC			
Botswana	Cape Verde	Eritrea	Gabon
Kenya	Lesotho	Mauritius	Swaziland
HIPC			
Benin	Burkina Faso	Burundi	Cameroon
Cape Verde	Central African Republic	Chad	Comoros
Congo	Coté d'Ivoire	DRC	Ethiopia
Gambia	Ghana	Guinea	Guinea-Bissau
Madagascar	Malawi	Mali	Mauritania
Mozambique	Niger	Rwanda	Senegal
Sierra Leone	Tanzania	Togo	Zambia
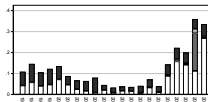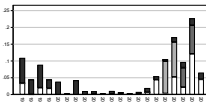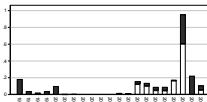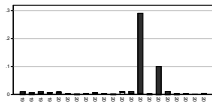
Empirical analysis: Data

Debt statistics
$\rightarrow$ *International Debt Statistics 2018* (World Bank 2018)

- bank loan
  - public ("public and publicly guaranteed," PPG)
  - private ("publicly non guaranteed," PNG)
- bond
  - public ("public and publicly guaranteed," PPG)
  - private ("publicly non guaranteed," PNG)
- bilateral loans
  - concessional /non-concessional
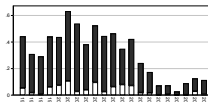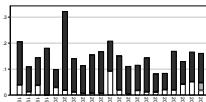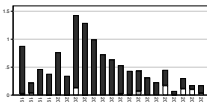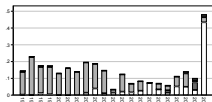- multilateral loans
  - concessional /non-concessional

Figure 9: PPG debt disbursement (weighted by exports)
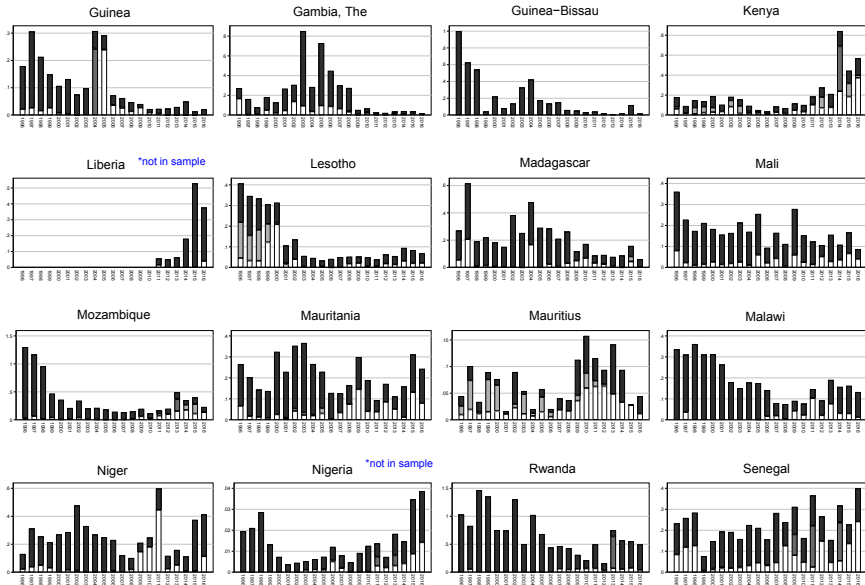
Data source: *International Debt Statistics 2018* (World Bank 2018a).

Continued from Figure9.

Data source: *International Debt Statistics 2018* (World Bank 2018a).

Continued from Figure9.
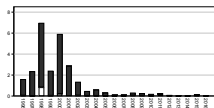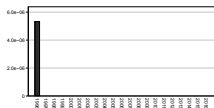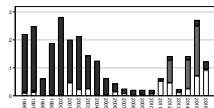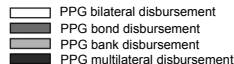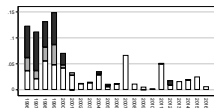
Data source: *International Debt Statistics 2018* (World Bank 2018a).

Figure 10: PNG debt disbursement (weighted by exports)
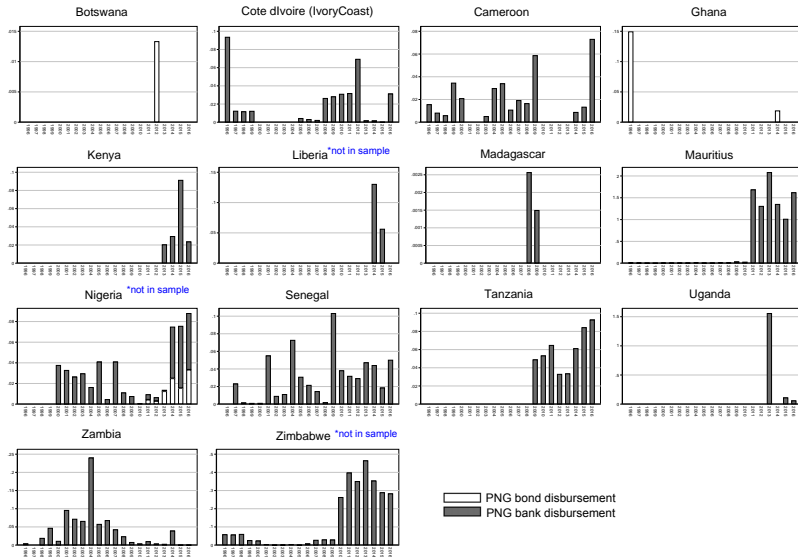
Data source: *International Debt Statistics 2018* (World Bank 2018a).
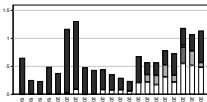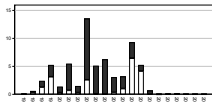
Background of the model

- The capital externally raised
  $\rightarrow$ often used to finance trade deficit
    - **What are imported?**
- Wall (1968)
    - if the import is to serve for economic growth, that needs to be not **consumption goods** but **capital goods**
- **Government** fiscal policy and **consumption** is an essential part of procyclicality
- Domestic investment should be the purpose of debt

Model and variables

- Dependent variables
  - capital goods import (**ct.k**)
  - gross fixed capital formation (**gfkf**)
    $\rightarrow$ to capture domestic **investment**

- Dependent variables
  - consumer goods imports (**ct.cons**)
  - private consumption (**p.cons**)
  - government consumption (**gov.cons**)
    $\rightarrow$ to capture **consumption**

Benchmark (fixed effect model)

$$\Delta \textbf{Investment}_{i,t} = \alpha + \beta_1 \textbf{Debt} + \beta_2 \textbf{X}_{i,t} + \lambda_i + \varepsilon_{i,t} \qquad (1)$$

$$\Delta \textbf{Consumption}_{i,t} = c + \theta_1 \textbf{Debt} + \theta_2 \textbf{X}_{i,t} + \mu_i + \epsilon_{i,t} \qquad (2)$$

- $\Delta Investment_{i,t}$: investment (first difference)
- $\Delta Consumption_{i,t}$: consumption (first difference)
- Debt : vector of public debt disbursements (bank, bond, bi, multi)
- $X_{i,t}$: vector of controls
  - grants, technical grants, FDI inflow, exchange rate, resource dependence/revenue, institutional quality
- λ_i, μ_i: country-specific time-invariant effect
- $\varepsilon_{i,t}, \epsilon_{i,t}$: error term

Benchmark regression: Investment 2005-2016

	(1) gfkf	(2) gfkf	(3) ct_k	(4) ct_k
fdi	-0.01	-0.00	-0.01	-0.00
	[0.08]	[0.09]	[0.03]	[0.03]
tech_grant	4.19***	4.23***	0.74	0.78
	[1.21]	[1.29]	[0.45]	[0.48]
grants	0.03	0.01	0.01	0.01
	[0.06]	[0.06]	[0.02]	[0.02]
ppg_bi_dis	0.14	0.14	-0.11	-0.13
	[0.21]	[0.22]	[0.08]	[0.08]
ppg_bd_dis	0.22	0.22	0.02	0.02
	[0.16]	[0.17]	[0.06]	[0.06]
ppg_bk_dis	0.30	0.23	-0.01	-0.05
	[0.27]	[0.28]	[0.10]	[0.11]
ppg_mi_dis	-0.20	-0.26	0.08	0.07
	[0.33]	[0.36]	[0.12]	[0.13]
D.resource	0.05*	0.05	0.02**	0.02**
	[0.03]	[0.03]	[0.01]	[0.01]
resource_r_ct	-0.53**	-0.52**	-0.17**	-0.18**
	[0.22]	[0.24]	[0.08]	[0.09]
mpd_ex_r	-1.76***	-1.78***	-0.70***	-0.74***
	[0.31]	[0.33]	[0.11]	[0.12]
chinloan	-0.34***	-0.34***	-0.00	-0.01
	[0.08]	[0.09]	[0.03]	[0.03]
D.CPIA_public		0.85**		0.40***
		[0.40]		[0.15]
_cons	0.29*	0.30*	0.08	0.10
	[0.17]	[0.18]	[0.06]	[0.06]
r2	0.328	0.342	0.272	0.301
N	386	355	424	389

Note: Standard deviations are in parenthesis. *, **, ***
denotes 10%, 5%, 1% significance level, respectively.

Results in sum

Investment:

- **External borrowings is not affecting to domestic investment** since after 2005
- In **resource dependent** countries, investment tend to be **low**
- But **resource revenue** increases tend to **increase investment**
- Chinese loans are negatively correlated with investment
- Improvement of institutional quality is associated with higher investment

Benchmark regression: Consumption 2005-2016

	(1) gov_cons	(2) gov_cons	(3) ct_cons	(4) ct_cons	(5) p_cons	(6) p_cons
fdi	0.06	0.07	0.00	-0.00	-0.14	-0.16
	[0.06]	[0.07]	[0.02]	[0.03]	[0.22]	[0.25]
tech_grant	0.40	0.35	1.01***	1.07***	-1.79	-1.28
	[0.89]	[0.95]	[0.34]	[0.37]	[3.33]	[3.57]
grants	0.02	0.02	-0.01	-0.02	-0.06	-0.12
	[0.04]	[0.05]	[0.02]	[0.02]	[0.15]	[0.17]
ppg_bi_dis	-0.29*	-0.31*	0.05	0.04	-0.07	-0.20
	[0.16]	[0.16]	[0.06]	[0.06]	[0.58]	[0.61]
ppg_bd_dis	0.06	0.07	-0.04	-0.05	-0.84*	-0.85*
	[0.12]	[0.13]	[0.05]	[0.05]	[0.46]	[0.48]
ppg_bk_dis	0.28	0.29	-0.16**	-0.18**	1.67**	1.44*
	[0.20]	[0.21]	[0.08]	[0.08]	[0.75]	[0.78]
ppg_mi_dis	0.62**	0.65**	0.09	0.09	0.65	0.44
	[0.25]	[0.27]	[0.09]	[0.10]	[0.88]	[0.95]
D.resource	0.08***	0.08***	0.02**	0.02**	0.05	0.06
	[0.02]	[0.02]	[0.01]	[0.01]	[0.08]	[0.08]
resource_r_ct	0.06	0.07	-0.05	-0.05	-0.83	-0.90
	[0.16]	[0.18]	[0.06]	[0.07]	[0.61]	[0.66]
mpd_ex_r	-1.22***	-1.25***	-0.22***	-0.24**	-4.59***	-4.84***
	[0.22]	[0.24]	[0.09]	[0.09]	[0.82]	[0.88]
china_loan	-0.03	-0.03	0.04	0.04	0.82***	0.78***
	[0.06]	[0.07]	[0.02]	[0.02]	[0.23]	[0.24]
D.CPIA_public		0.17		0.18		1.79
		[0.30]		[0.11]		[1.10]
_cons	0.06	0.05	-0.02	-0.01	1.35***	1.50***
	[0.12]	[0.13]	[0.05]	[0.05]	[0.45]	[0.48]
r2	0.231	0.240	0.236	0.248	0.206	0.213
N	398	367	424	389	424	389

Note: Standard deviations are in parenthesis. *, **, *** denotes 10%, 5%, 1% significance level, respectively.

Results in sum

Consumption:

- **Bilateral loans are negatively correlated with government consumption**
  - → counter-cyclical to government consumption (aid)
- **Multilateral loans are strongly & positively correlated with government consumption**
  - → pro-cyclical to government consumption
- **Resource revenue** increases tend to **increase consumption**
- But resource dependence does not affect consumption
- Chinese loans are positively correlated with private consumption
  - → Endogeneity?
- Private consumption is most affected by the exchange rate
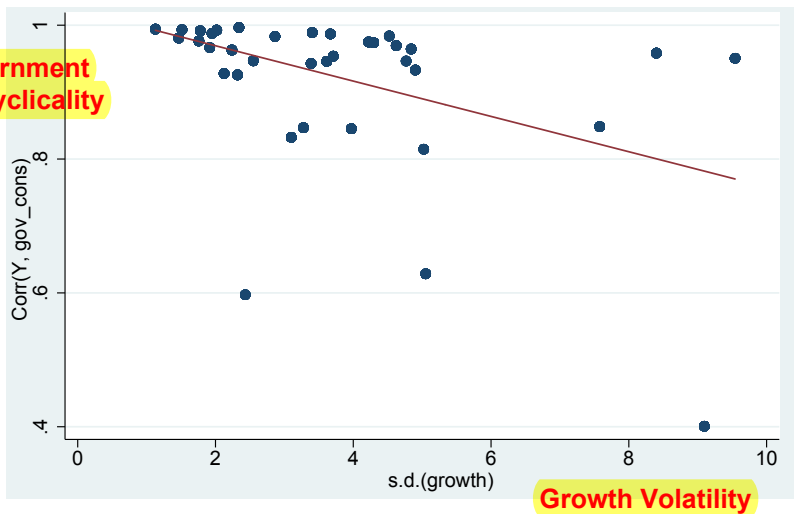
Procyclicality and Volatility ?

- **Growth volatility harms long-term growth**.

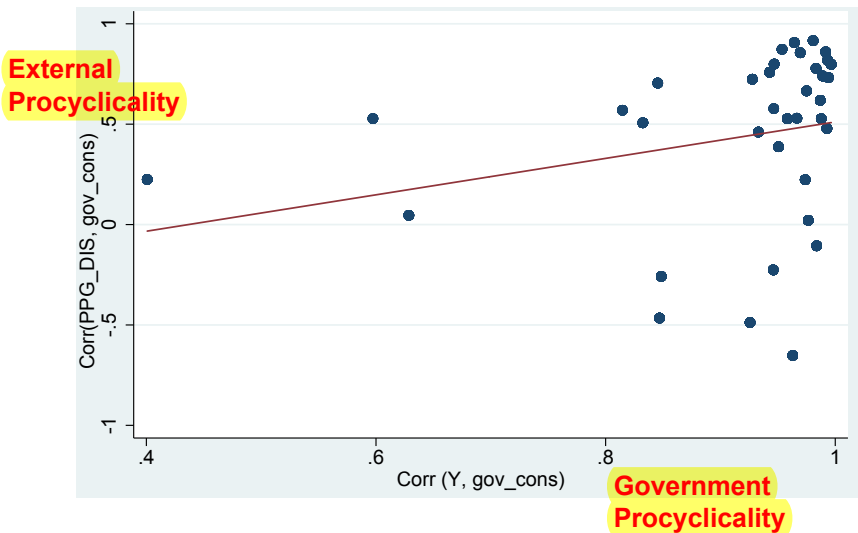Figure 11: Growth volatility and mean growth rate (1996-2016)
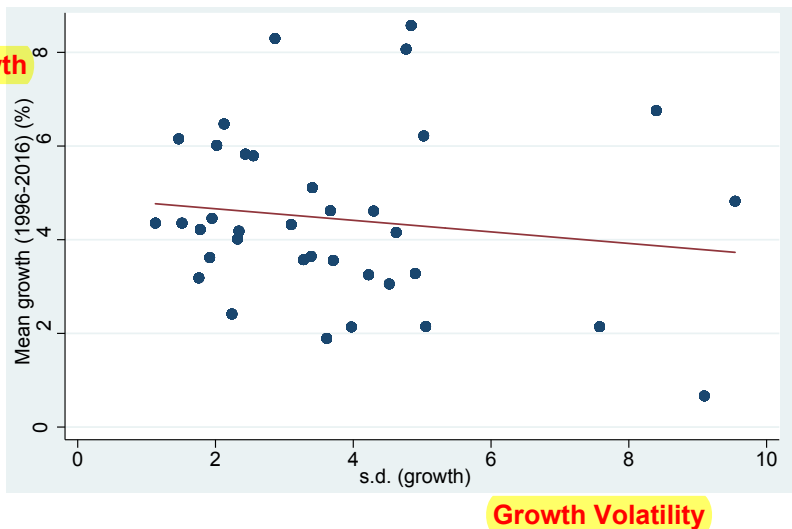
- **...but regarding the sample SSA, the higher the government procyclicality, the lower the growth volatility**.

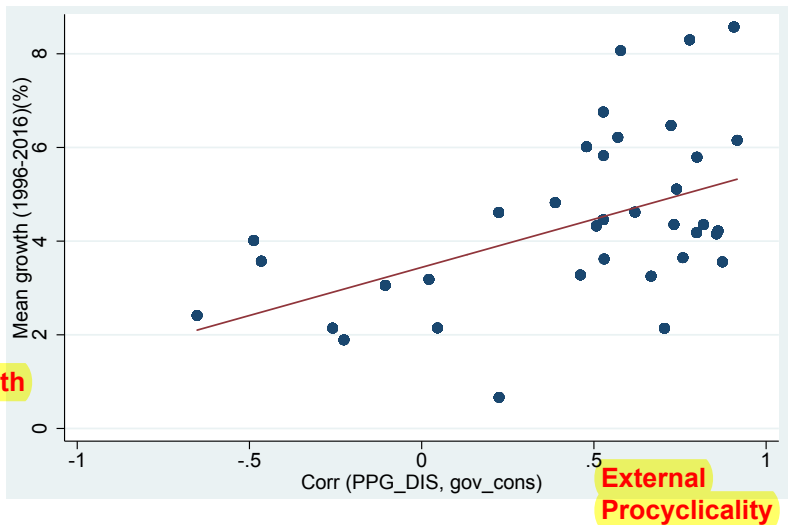Figure 12: Growth volatility and government consumption procyclicality

- **Government procyclicality is supported by external debt**.

Figure 13: Government procyclicality and external procyclicality

- **In sum, the higher the external procyclicality, the higher the long-term growth**.

Figure 14: Correlation with external procyclicality and mean growth rate
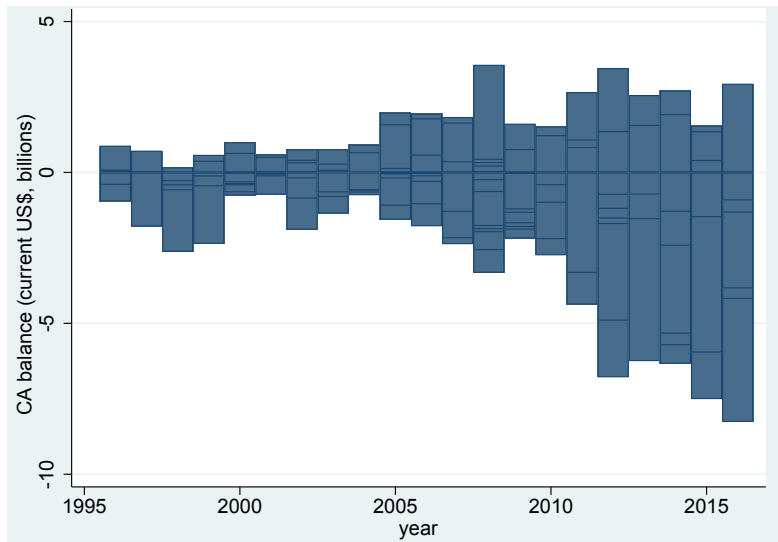
Conclusion and future tasks 1

- Procyclical government consumption is not harming growth...?
  - importance of government as an economic actor in the SSA
  - reflection of the weak private sector
- Procyclical government consumption is **enabled by external borrowing** (external procyclicality).
  - reflection of the thin tax base and weak tax collection
  - External borrowing is supporting stabilization of economies.
  - HIPCs scheme and the debt relief was meaningful.

Conclusion and future tasks 2

- Recent economic growth of the SSA countries are **consumption-led**
    - and the consumption is mainly **led by the government**
- **Is this the new African model of growth?**

However, dependence on external borrowing is risky.

Figure 15: Current account balance of the SSA, 1996-2016

Source: IDS 2018, sum of 36 sample SSA countries.

Conclusion and future tasks 3

- Hard currency for debt repayment needs to be earned.
- Future roll-over risk with higher international interest rates.
- **External borrowing must be invested** for future revenue.
  - ▶ Debt and public management capacity needs to be enhanced.
    → **institutional quality**?

Thank you.

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