

Eradicating Poverty by 2030:

Implications for income inequality, population policies, food prices (*and faster growth?*)

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Motivation & structure of paper

SDGs phrased in exhortational terms, vague on econ polic.

Is $SDG1=0$ by 2030 consistent with long term trends in its
'immediate determinants' (GDP g.r., pop g.r. Gini, FPIs/CPI)?

To answer, develop/simulate simple comparative static model

Simulate (i) GDP growth, (ii) GDP growth + improvements in
pop policies, inequality, food prices.

Improvements are observed 'best performances' over 1985-15

Concl.: many SSA & couple LA countries do not make it due to
low IMF projected GDP g.r. even if extra 1% growth added

Make policy suggest. on ineq, pop growth, food prices' and how
to trigger faster growth

Evolution of measurement of 'immediate determinants' of PHR

$$\begin{array}{ccccccc}
 & + & & - & & +/- & \\
 (1) \Delta H/H_{-1} = f [& \Delta z/z_{-1} & , & \Delta Yc/Yc_{-1} & , & IT &] \quad (\text{ineq is assumed constant})
 \end{array}$$

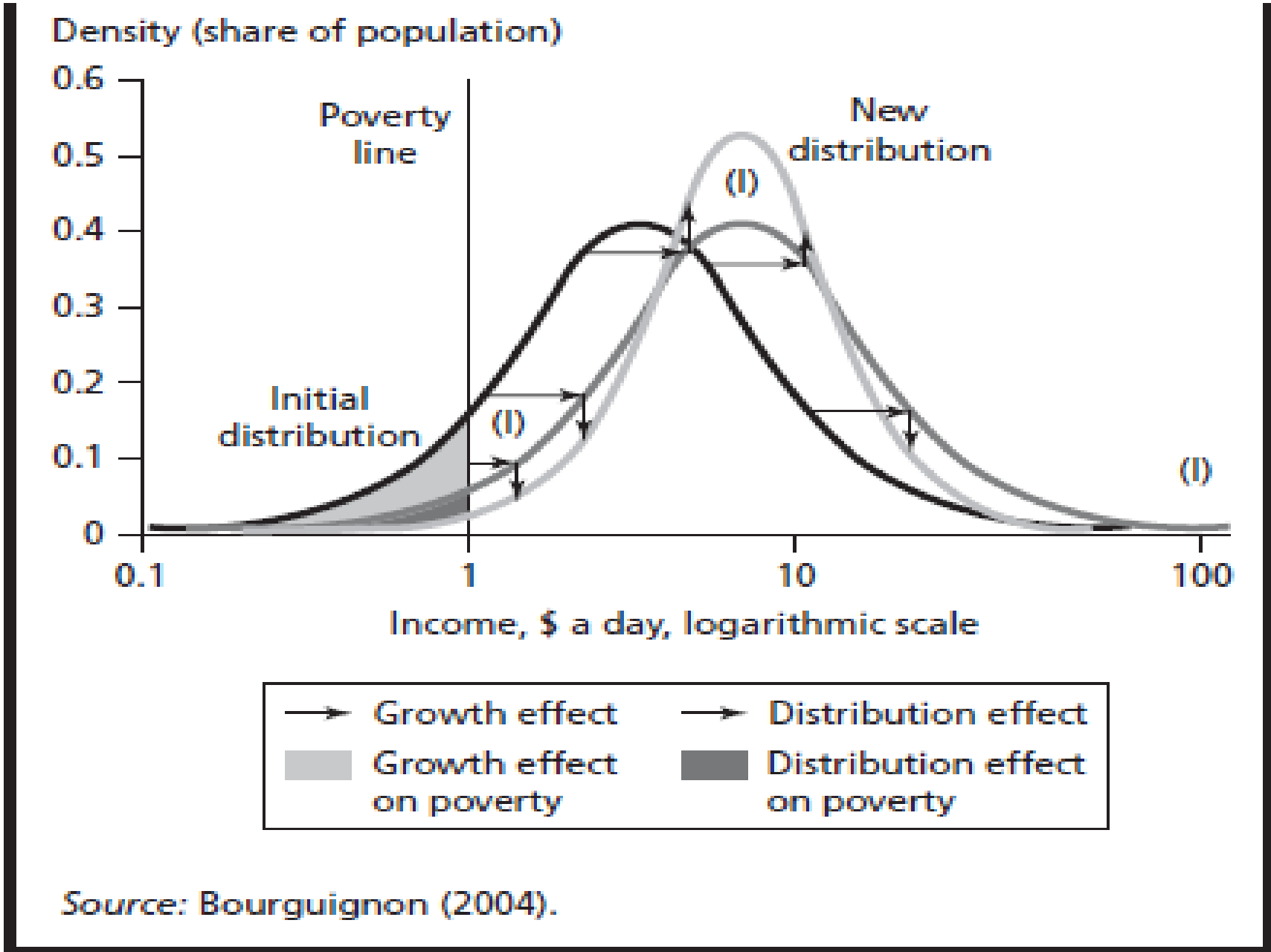
$\begin{array}{ccccccc} + & & - & & + & & +/- \end{array}$

$$(2) \Delta H/H_{-1} = f [\Delta z/z_{-1} , \Delta Yc/Yc_{-1} , \Delta Gini/Gini_{-1} , IT] \quad (\text{ineq. varies})$$

$$\begin{array}{ccccccc}
 & + & & - & & + & & + & & +/- \\
 & & & \swarrow & & \searrow & & & & \\
 (3) \Delta H/H_{-1} = f [& \Delta z/z_{-1} & , & \Delta Y/Y_{-1} & , & n & , & \Delta Gini/Gini_{-1} & , & IT] \quad (\text{makes } n \text{ expl})
 \end{array}$$

$$\begin{array}{ccccccc}
 & + & & - & & + & & + & & + & & +/- \\
 (4) \Delta H/H_{-1} = f [& \Delta z/z_{-1} & , & \Delta Y/Y_{-1} & , & n & , & \Delta Gini/Gini_{-1} & , & \Delta Gini(\text{if FPI/CPI} > 1.25\% & , & IT]
 \end{array}$$

Graphical decomposition of PHR change in 'growth effect' & 'ineq. effect'



In explicit linear terms - and **assuming $\Delta z/z_{-1}$ and $IT = 0$** , (4) becomes

$$\Delta H/H_{-1} = -\alpha \Delta Y/Y_{-1} + \alpha n + \beta \Delta \text{Gini}/\text{Gini}_{-1} + \omega \text{Gini} \text{ (if FPI/CPI rise} > 25\%)]$$

* where α , β are the poverty alleviation ε of growth & Gini, & $\omega = \beta$ an empirical scalar raising Gini by 2 pts in 2030 if FPI/CPI rise $> 25\%$

* α , β are taken from Son-Kakwani's work on smooth theoretical distributions. They vary (a lot) in relation to Gini & z/Y_c (the ratio of the poverty line z and average GDP/ c)

PHR elasticity in relation to a 1 % change in growth rate of GDP/c & Gini

	Poverty Elasticity of growth $\alpha = [\Delta \text{PHR} / \text{PHR}_{-1}] / [\Delta Y / Y_{-1}]$					Poverty Elasticity of inequality $\beta = [\Delta \text{PHR} / \text{PHR}_{-1}] / [\Delta \text{Gini} / \text{Gini}_{-1}]$			
Gini	0.3	0.4	0.5	0.6		0.3	0.4	0.5	0.6
z/Yc									
0.33	-3.9	-2.1	-1.3	-0.8		5.2	3.3	2.4	2.0
0.50	-2.8	-1.6	-1.0	-0.7		2.5	1.7	1.3	1.2
0.67	-2.0	-1.2	- 0.8	-0.5		1.2	0.9	0.8	0.8
1.00	-1.2	-0.8	- 0.5	-0.4		0.2	0.2	0.3	0.4

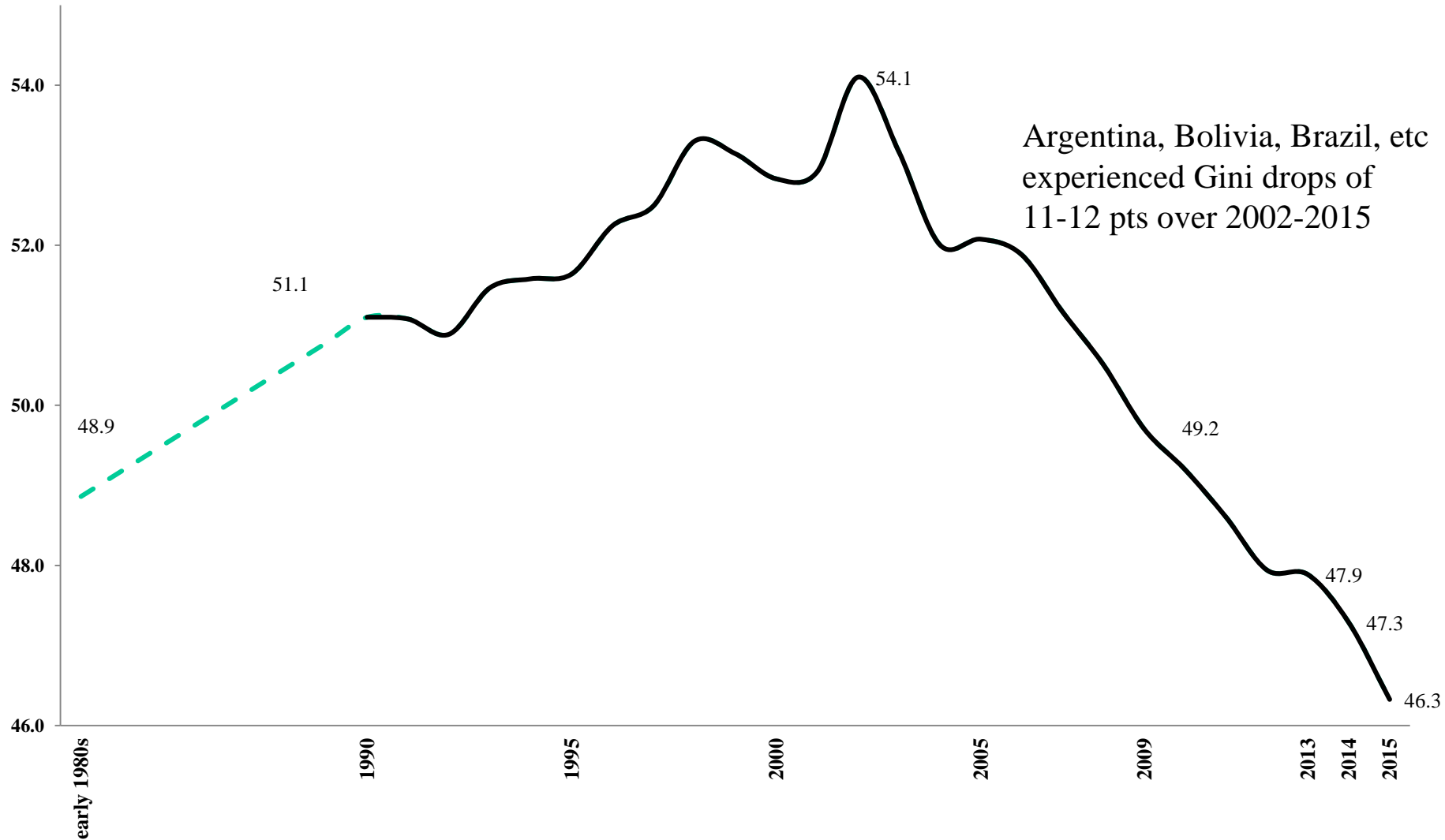
Data used for the simulations

- **Trends in GDP Growth/c.** IMF-WEO 2017 presents such real data for 78 developing countries (with $H > 0$ in 2013) over 1999-16 + projections 2017-22 that I extended to 2030 at same rate.
 - Data show rapid expansion of Asia (8 % yr).
 - LA grew 3.3 % till 2008 but growth was zero or negative in 2015-6.
 - MENA 5.3% & SSA grew at 5.6 % over 1999-2008, but also here growth fell by 2-3 pts due to fall in commodity prices.
- Based on such trends, the WEO 2017 projects average 2017-22 regional GDP real growth of
 - 2 % for Latin America,
 - 3.3 % for SSA and MENA (includes Pakistan & Afghanistan),
 - 2.1 % for the CIS countries
 - Sustained 6.4 % for the emerging & developing countries of Asia.

‘continued

- **Poverty line:** 1.90 \$ a day in 2011 PPP\$
- **WB data on 2013 incidence of poverty**
- **Gini data:** income ineq data from Global Consumption and Income Project (GCIP). Produces standardized income Gini for 133 countries 1960-12. Ensures comparability across time/space
- Such standardization entails considerable differences btw GCIP & WIDERS WIID data. → Slower achievement of SDG1
- **Pop data:** Medium variant Population Prospects 2017 UNPOPDIIV
- **FPI/CPI:** use study Cornia-Martorano (2016) on relation btw changes in FPI/CPI for 18 SSA countries 2000-8 (next page).

Average regional decline (7.8 pts over 2002-2015) of Gini coeff. of income ineq, L.A. early 1980s -2015

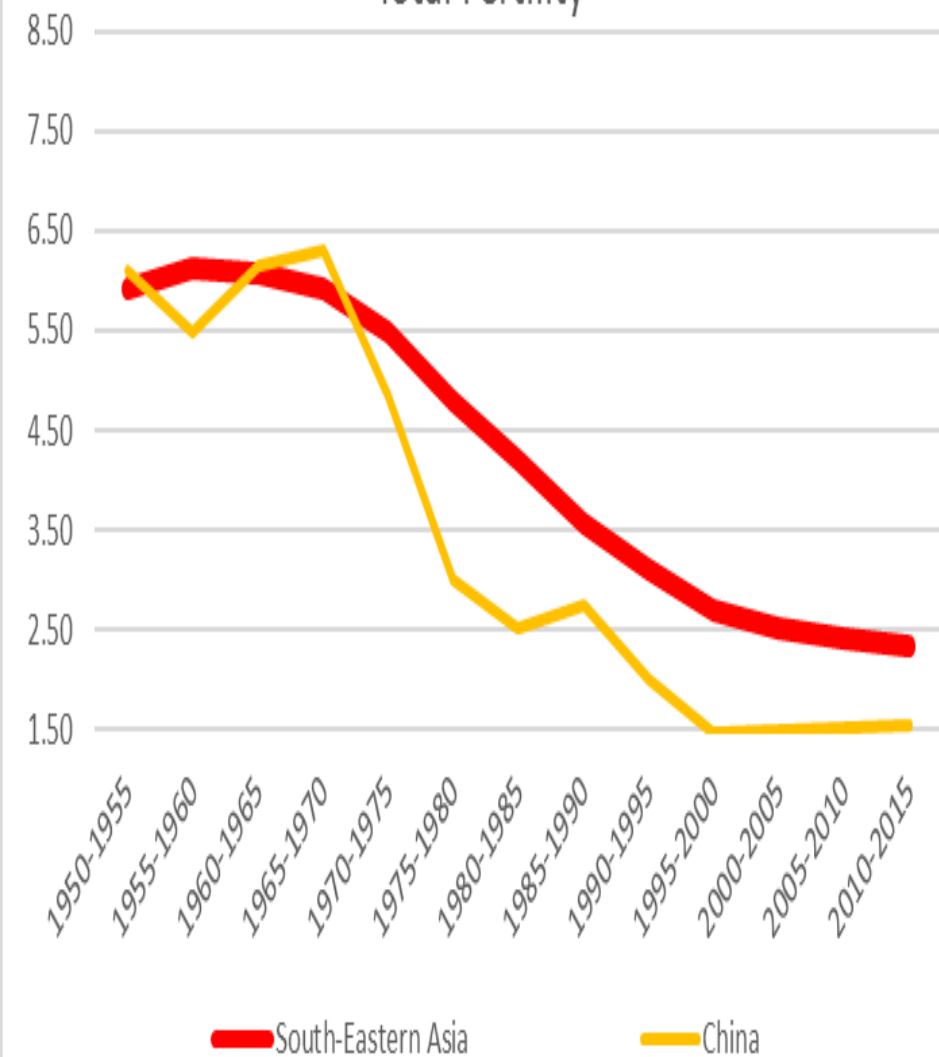


Growth rate of population in %

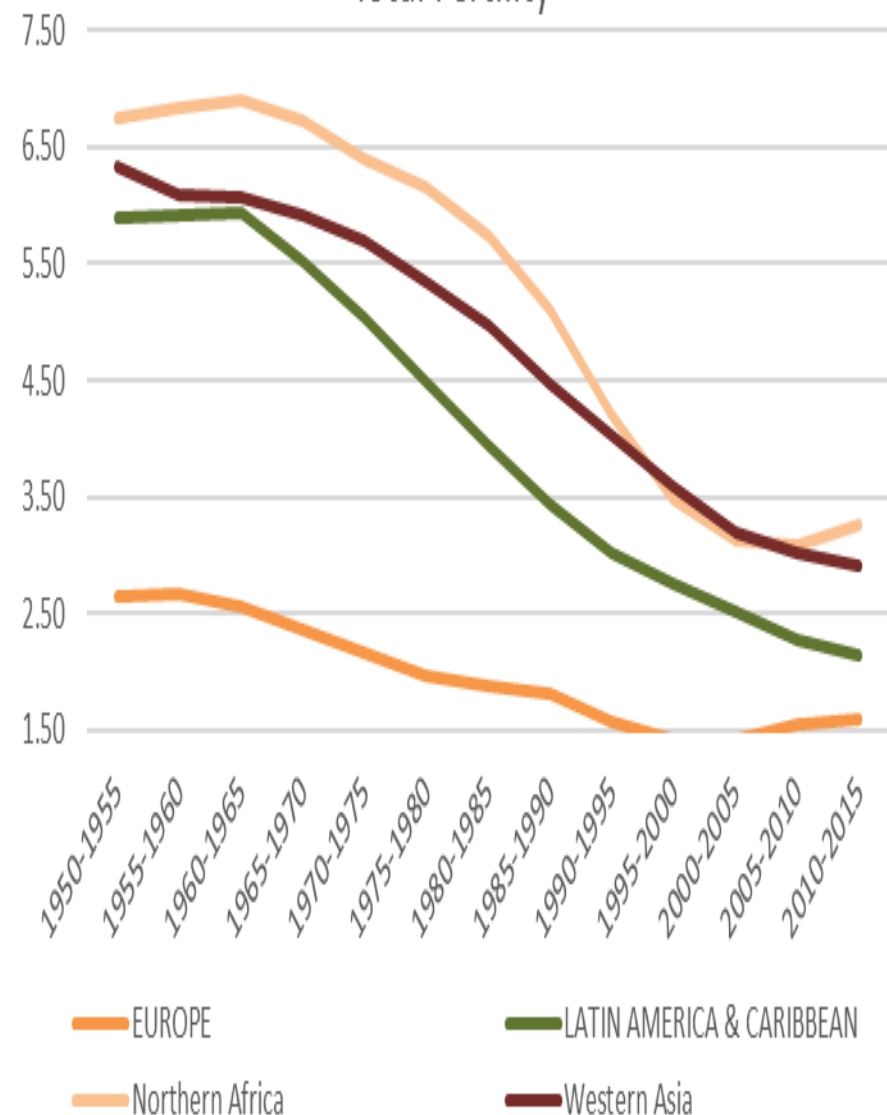
depends on TFR & pop. momentum (% women of fertile age in tot fem non)

Region	1980-85	1985-90	1990-95	1995-00	2000-05	2005-10	2010-15
Sub-Saharan Africa	2.83	2.80	2.71	2.66	2.67	2.74	2.74
MENA	2.84	2.52	2.29	2.07	2.12	2.47	2.07
South Asia	2.43	2.31	2.09	1.92	1.72	1.49	1.34
Latin.America	2.12	1.92	1.92	1.76	1.54	1.32	1.24
South East Asia	2.29	2.08	1.78	1.56	1.37	1.23	1.21
East Asia	1.41	1.65	1.05	0.66	0.56	0.52	0.49

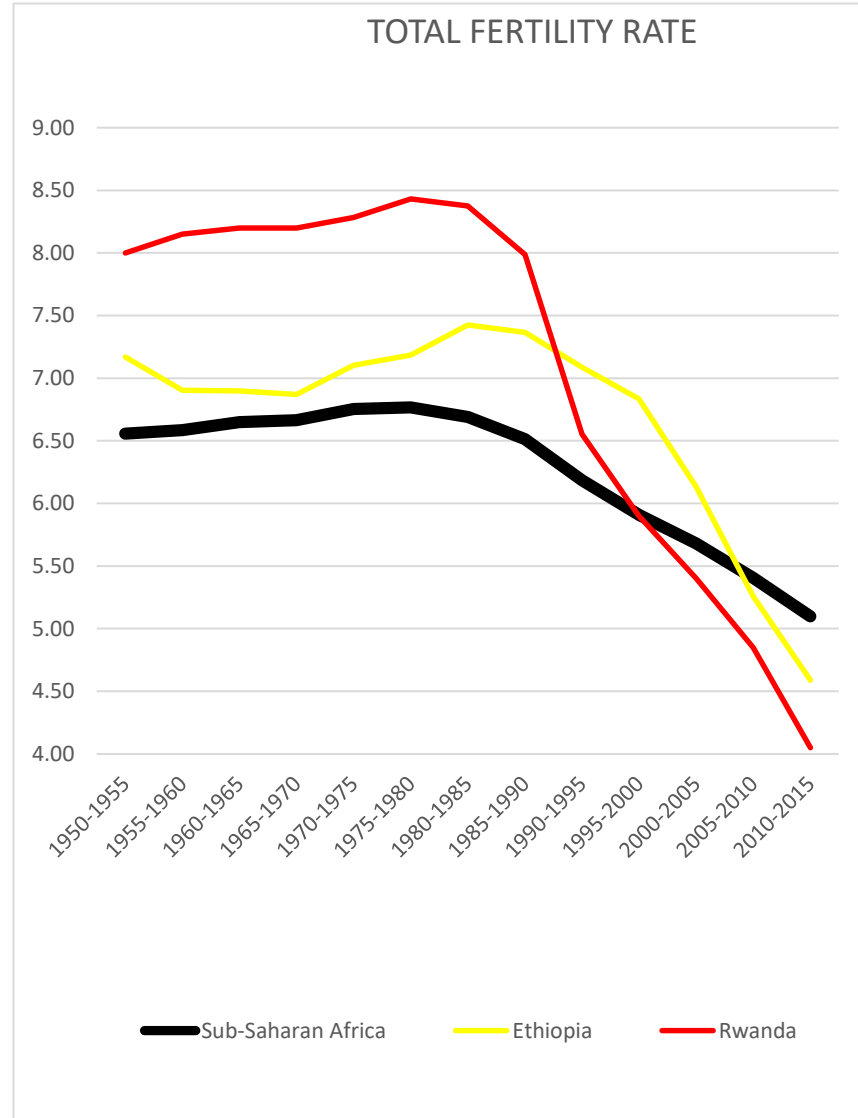
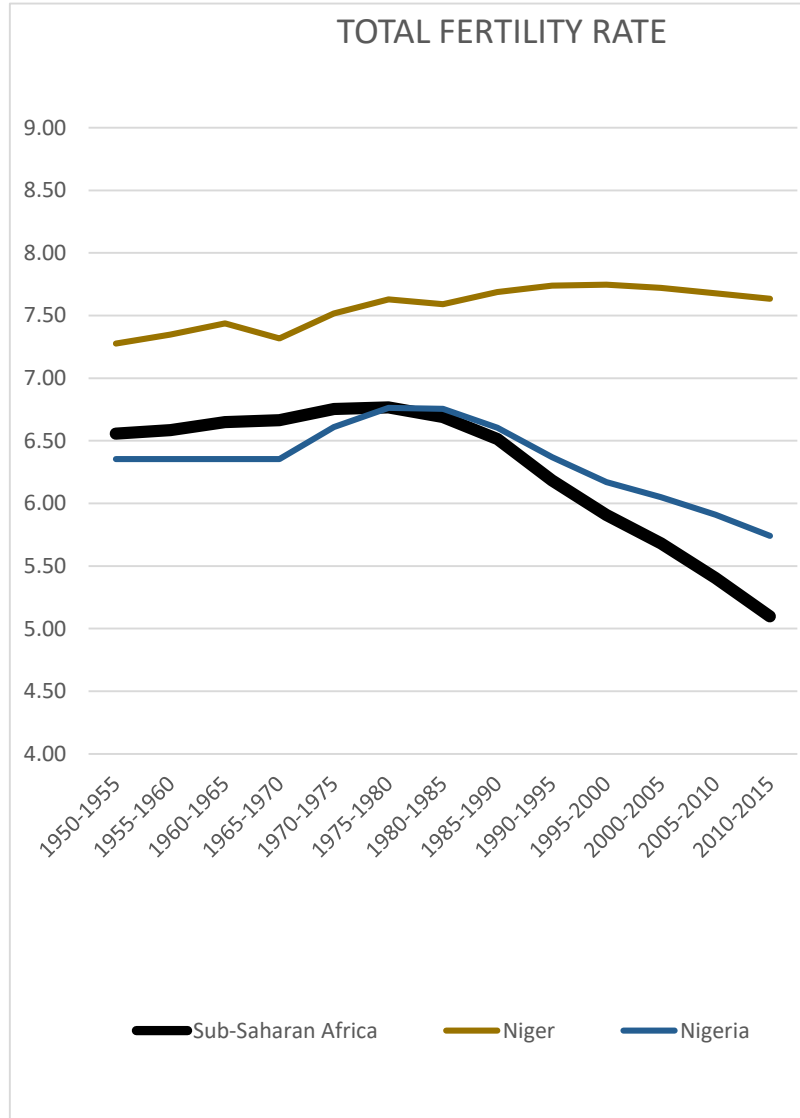
Total Fertility



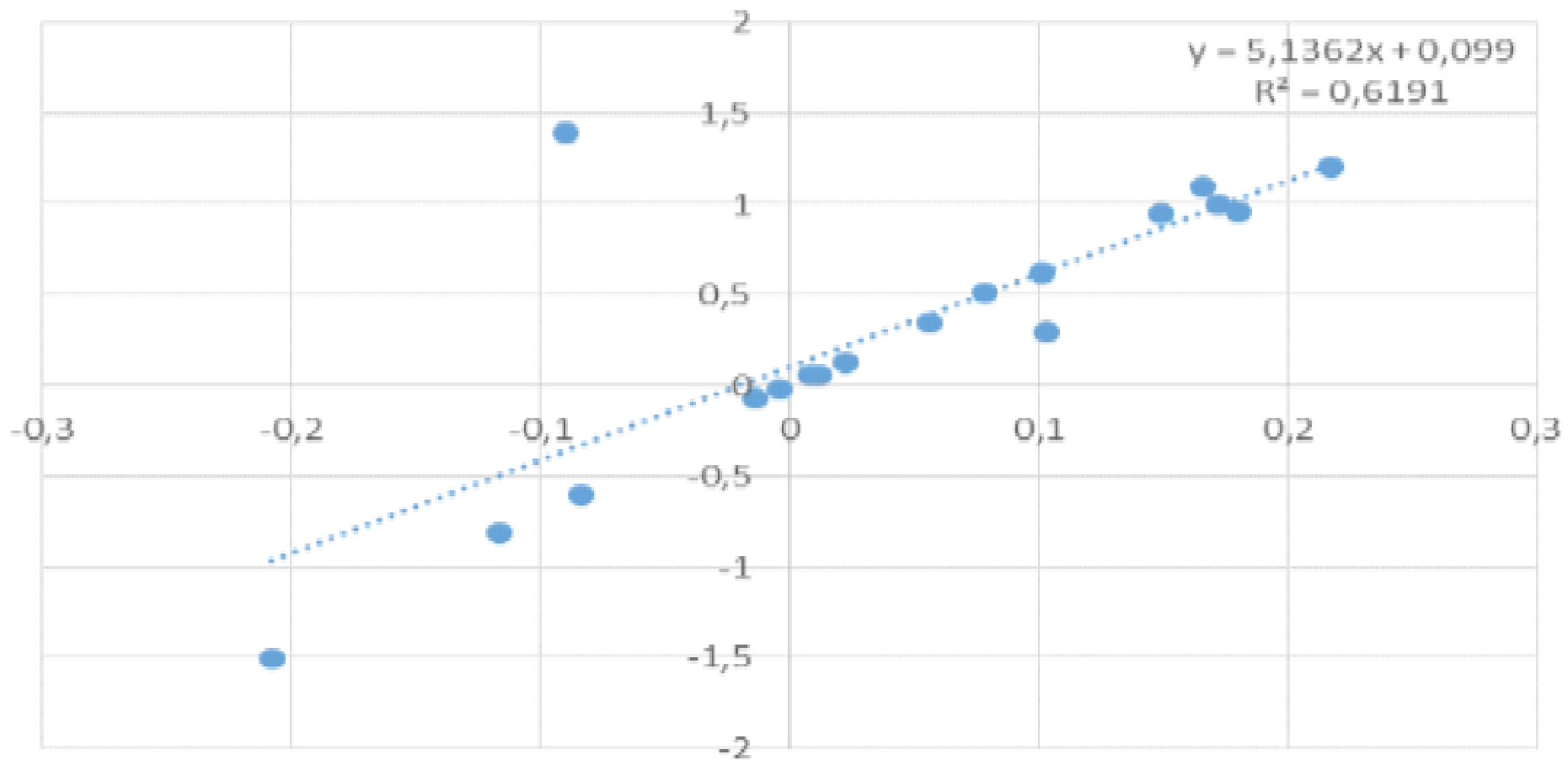
Total Fertility



Total fertility rates in SSA vs other regions



continued FPI/CPI



First difference in FPI/CPI ratio (x axis) vs Gini (y axis)

Simulated improvement in SDG1 immediate determinants

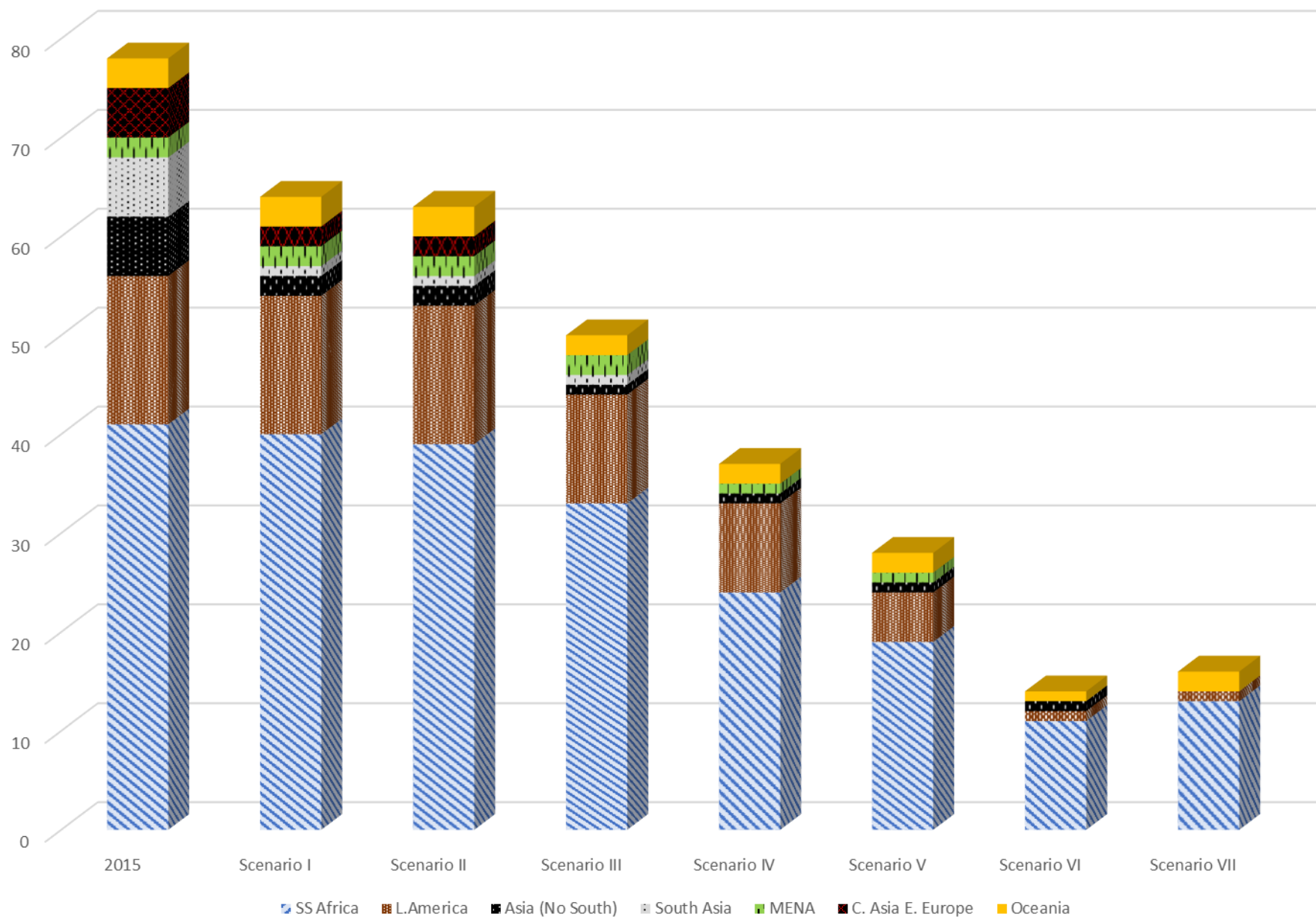
- Elasticities taken initially as constant –then endogenized
- GDP growth: IMF WEO. Then add additional 1% growth
- For the rest simulate for all ‘best hystorical performances’ observed during the last 3 decades, i.e.
 - Gini drop of 20% (50% more than Brazil 1998-15)
 - Population growth slower than 13% than projected by UNPop Div medium variant to 2030 (China last 30 yrs)
 - FPI/CPI: assume no change or $FPI/CPI=1.25$ by 2030

Simulation of stepwise results

number of countries NOT reaching goal of PHR = 0% by 2030

		Scenario I	Scenario II	Scenario III	Scenario IV	Scenario V	Scenario VI
	Countries With PHR > 0 in 2013	IMF GDP growth	IMF GDP growth + 13% slower population growth	IMF GDP growth + 20% lower Gini + 13% slower pop. growth	IMF GDP growth + 20% lower Gini + 13% slower pop. growth + endogenous of α , β	As scenario IV + FPI/CPI=1	As scenario V + additional 1% GDP growth over IMF GDP growth
		FPI/CPI =1.25 by 2030				FPI/CPI =1.00 by 2030	
		No endogenization of α and β			With endogenization of α and β		
Sub-Saharan Africa	41	40	39	33	24	19	11
Latin America & C.	15	14	14	11	9	5	1
East Asia	6	2	2	1	1	1	1
South Asia	6	1	1	1	0	0	0
MENA	2	2	2	2	1	1	0
C. Asia & Eastern .	5	2	2	0	0	0	0
Europe	5	2	2	0	0	0	0
Oceania	3	3	3	2	2	2	1
Total	78	64	63	50	37	28	14
Marginal effect: PHR decline over prior scenario	...	-14	-1	-13	-13	-9	-14

Countries Unable to hit SDG1 Target in 2030



Commenting the results

- IMF(pessimistic?)projected GDP g.r. for SSA/LA reduce n. countries exiting poverty by 2030 by only 14 over 78
- 13% slower increase in pop growth by 2030 in relation to medium variant has negligible effect as this projects huge pop increase in SSA. Pop policy to be kept in place there for 2 or more generations
- A 20% Gini decline in relation to 2013 level (as in Brazil over 1998-2012) has visible effect (13 countries exit poverty) . Still 50/78 do not make it

Commenting the results

- Similar effect observed with endogenization of α and β , yet 37 countries of 78 do not hit SDG1
- Setting $FPI/CPI = 1$ also extracts another 8 countries from poverty (as Gini falls by another 2 pts)– still 28 do not hit SDG1 (19 SSA, 5 LA)
- For them GDP low g.r. projected by IMF (2% in LA, 3.1% in SSA- where pop growth is 2.7 %)
- In these regions hitting SDG1 requires growth acceleration

Commenting the results

- Can GDP growth acceleration be a solution? Yes in SSA/ LA
- For instance with a simulated +1% rise in GDP g. r. above IMF projections, the N of countries not hitting SDG1 falls to 14 (11 from SSA).
- But how to promote faster growth in globalized unstable economy with re-primarized dependent economy syndrome ?
- Need to revisit growth paradigms, no maximalism – but redefine some rules

Policies to cut Gini & speed up growth

- Broad agreement on social /sectoral policies – lack of agreement on economic paradigm.
- **(i) Pre-market shifts in path-dependent** *social norm*
- *election of inclusive regimes,*
- *new political coalitions,*
- *affirmative action (‘quotas’ ‘reservations’),*
- *universal-compulsory-free education for all,*
- *Peace Reconciliation Commissions (South Africa),*
- *promotion of MDG-SDGs (in culturally globalized world)*

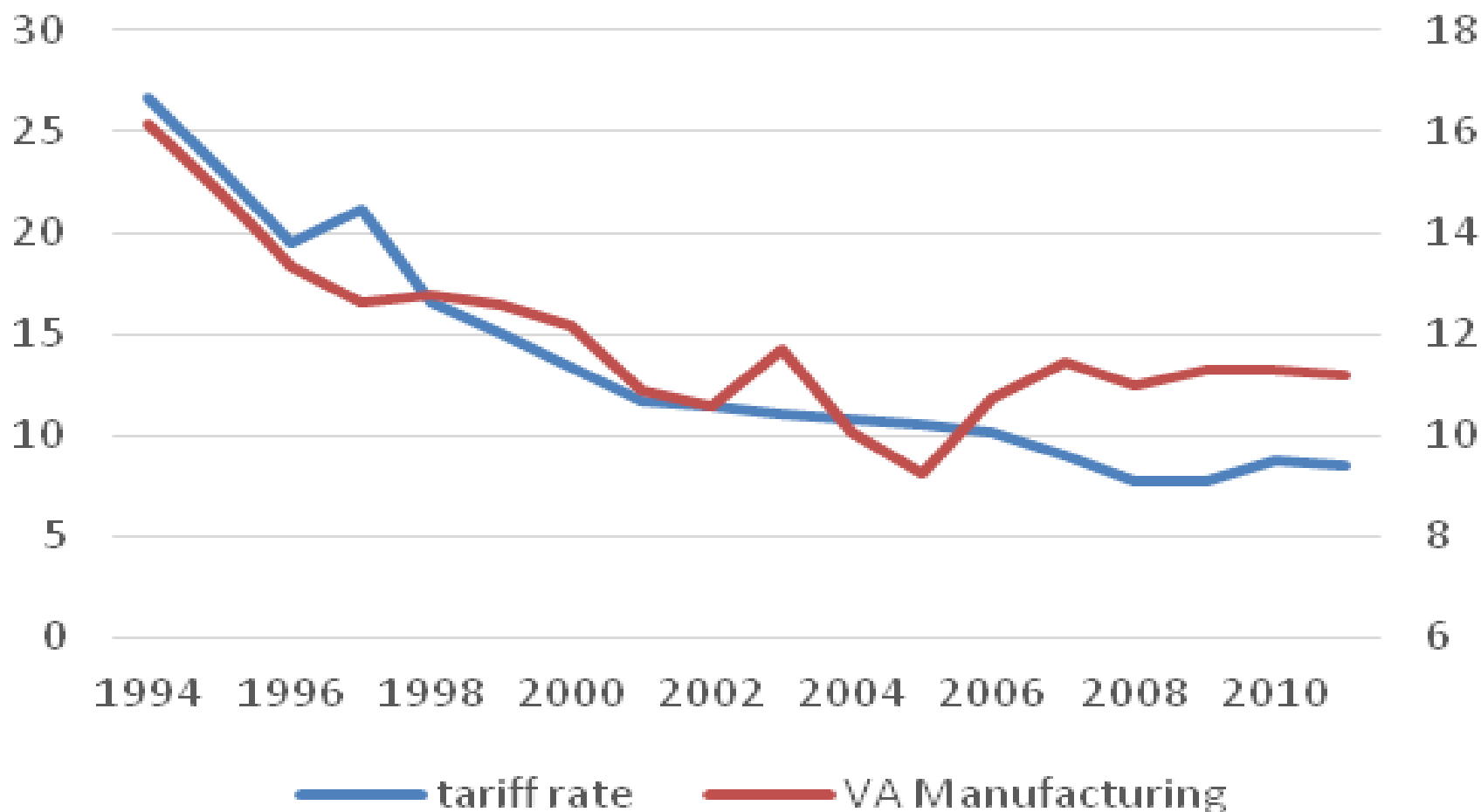
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- (ii) Changes in primary distribution of income via asset redistribution (land, physical, financial & human capital)
- (iii) improve functioning of dualistic factor mkts that affects the level of skilled & unskilled wages, land rents, and interest rates. For example:
 - develop cadaster & land registration
 - improve access to credit,
 - if chronic ‘surplus labor’, use active/passive policies to soak it up through public works, etc

(iii) Macro policies

- **distribution-sensitive macro-policies:**
 - (countercyclical fiscal-monetary policy, active tax policy, low real i.r.
 - Key is choice of the exchange rate -affects massively the distribution of income. No unique solution, but stable SCRER promotes employment in tradeable sector where poor are employed.
- complex is choice of trade regime. In SSA/LA decline in tariff rates accompanied by fall of v. a. share of manufacturing.
- Should free trade be accompanied by compensation for the losers? Who pays ? Domestically (only in expanding econ..)
- Finally, prudential regulation of domestic banks and control of capital account + reserves accumulation) needed to avoid the highly-disequalizing effects of financial crises.

Malawi: tariff rate (left scale) & manufact. v.a. share (right scale)



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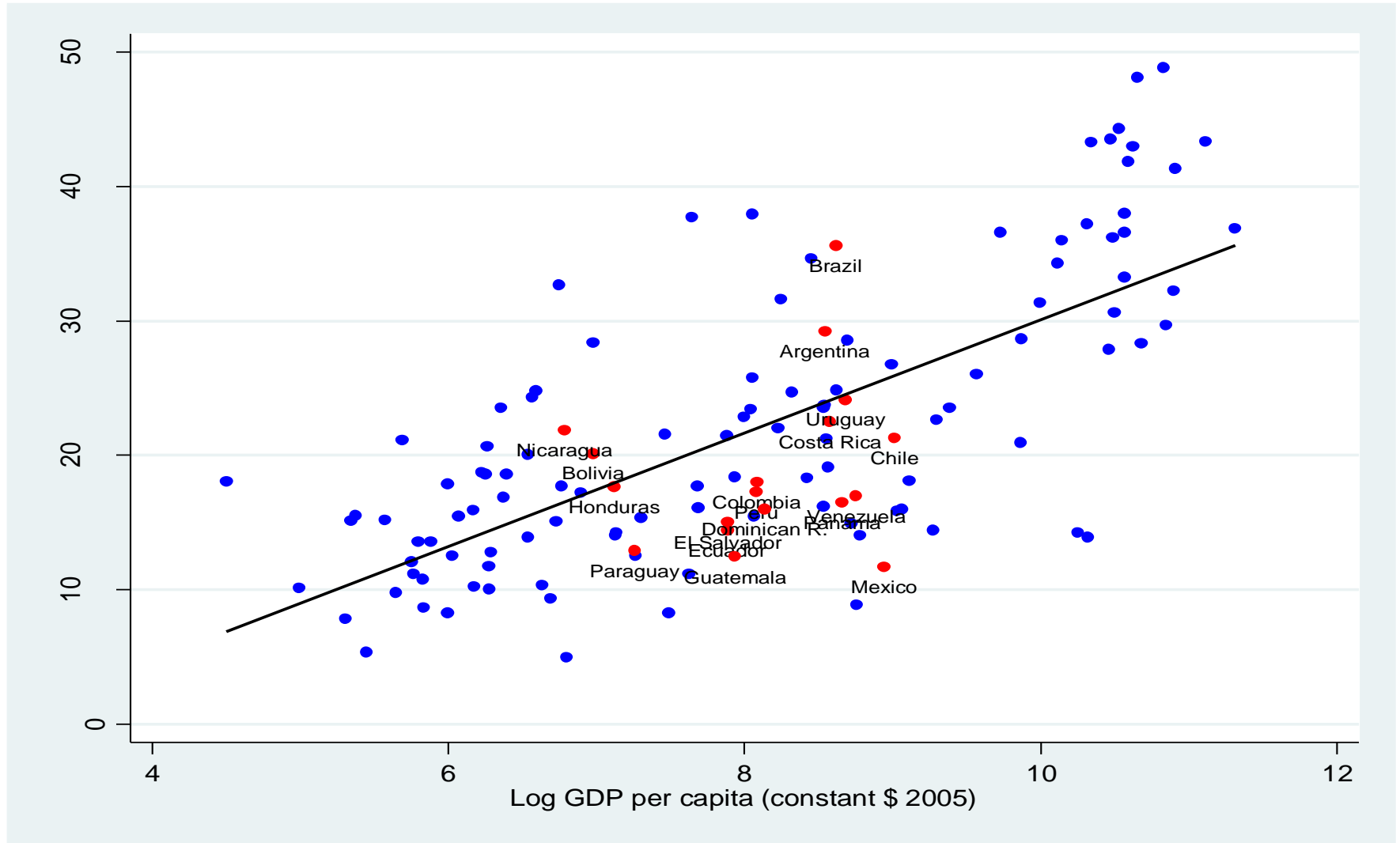
- deal also with impact of **technological change** that raise the skill premium, and raise capital share (
 - by increase supply of skilled labor
 - R&D (public-private sponsored)
- economic policies may try to influence the **pattern of growth** (the sectoral endogenous structure of production) via industrial policies

Continued

- **(iv) Redistributive Policies**

- human capital
- ensure against shocks
- reduce poverty for unable to work
- To be effective redistributive policies need revenue to fund them. Tax /GDP ratio rose 2-4 pts in SSA-LA. Aid stagnant.
- But several countries have tax/GDP ratio below an econometrically determined ‘global norm’ (see figure).
- SDG1-compatible policies should therefore focus also on a sustainably higher tax/GDP ratio, progressive direct/ind.taxes, efficient tax admin

GDP/C and tax /GDP ratio



(iv) **Controlling Pop Growth** (if needed)

Based on examples of Rwanda, Ethiopia, Bangladesh :

- Raise 'demand' for family planning through awareness campaigns → spontaneous fall of the 'desired family size',
- NGO workshops with beneficiaries of reproductive services to inform families of advantages of responsible motherhood; increase female education, cut gender bias in econ/pol area.
- 'supply' of contraceptive together with creation of community-level health care to ease access to birth control.
- Public/aid funds for purchase of contraceptives
- increase of the minimum age of marriage from 15 to 18 years
- compulsory registration of births,
- promotion of collection and research of demographic data.

(v) **Control food price rises**

(a) Global interventions:

- restrictions on speculative hedge funds based on food items,
- limits production of bio-fuels on land good for food ,
- emphasis on investing in global agriculture (Russia, Arg. Angola).

(b) Greater emphasis on agric. at the national level.

- increase medium-long-term investments in agr R&D, rural -infrastructure, and market access for small farmers.

(c) Macro measures.

- caps on food prices, reducing restrictions on food imports. Such policies may backfire in the medium term

(d) Targeted food subsidies.

- public procurement agreements with wholesalers
- creation of national and regional buffer stocks.

Tentative conclusions:

Can SDG1 be reached by all by 2030?

- Under IMF's GDP growth projections alone 64 out of 78 countries mostly in SSA-LA unlikely to reach target
- improvement (to 28/78) if inequality, pop. growth and ratio FPI/CPI improve along with historically observed 'best performances'. Strong effect of inequality reduction, limited effect (over 15 yrs) of simulated decline in pop growth rate
- Increase in 1% in GDP growth over IMF's pessimistic projections reduce this number to (14/78). A lot
- Yet, implausible that highly fragile countries with high ineq and n and low GDP growth prospects (and conflicts) will make it
- **Question: how to restart growth in a re-premierized dependent unstable economy?**

Thank you for your attention