

Growth, Inequality, and Poverty Reduction in Developing Countries: Recent Global Evidence

By

Augustin K. Fosu

Deputy Director, UN University-WIDER

(Research Associate: BWPI, U of Manchester; CSAE, U of Oxford)

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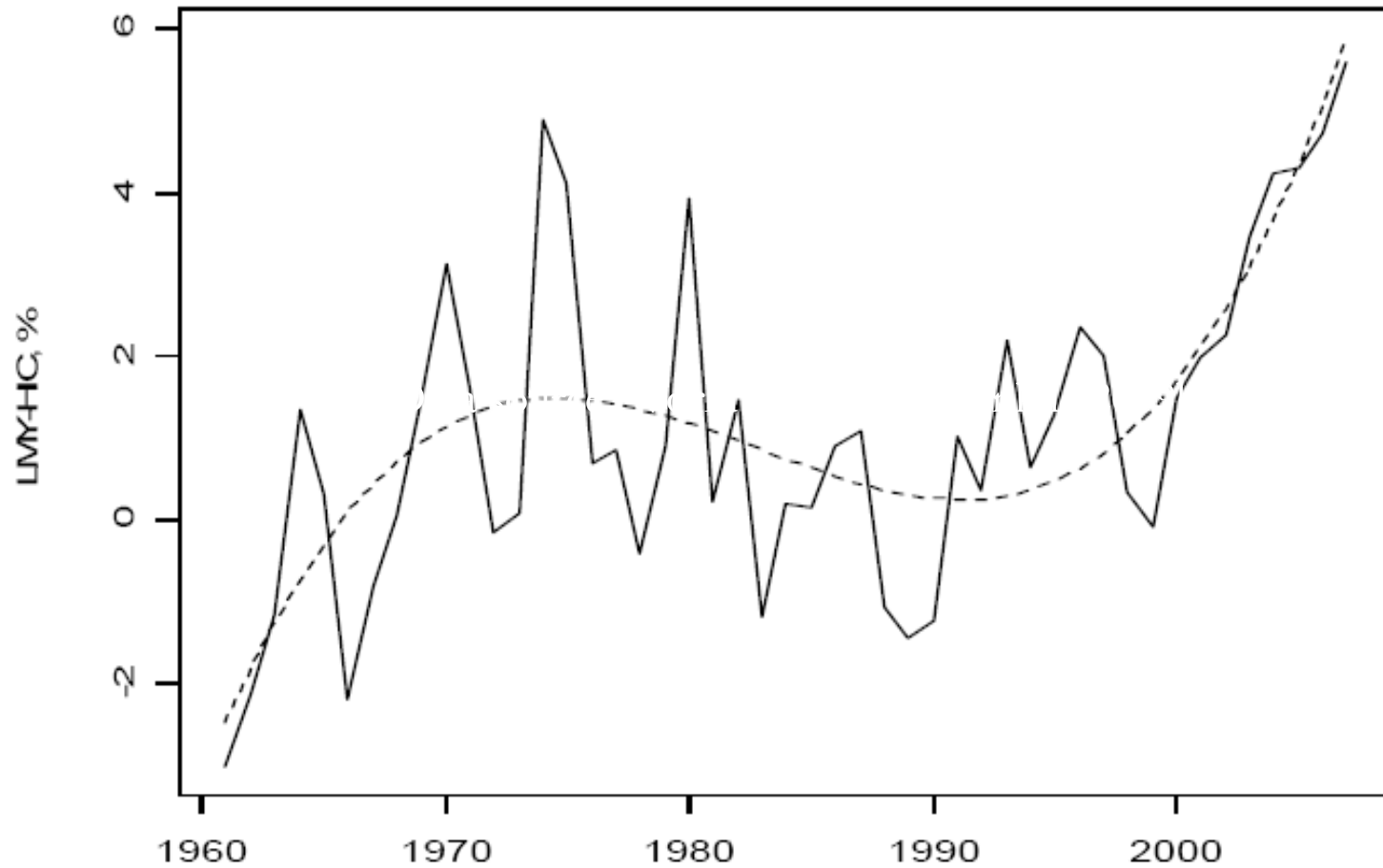
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- Trends in Developing Countries' Relative Growth
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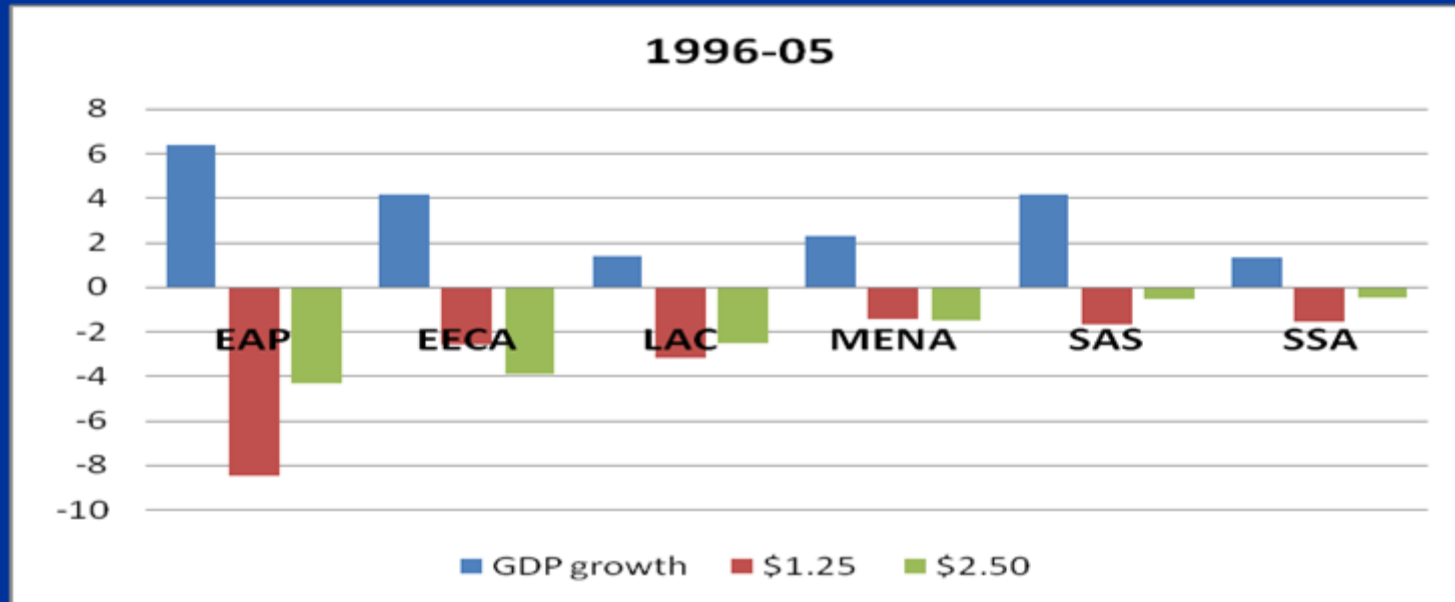
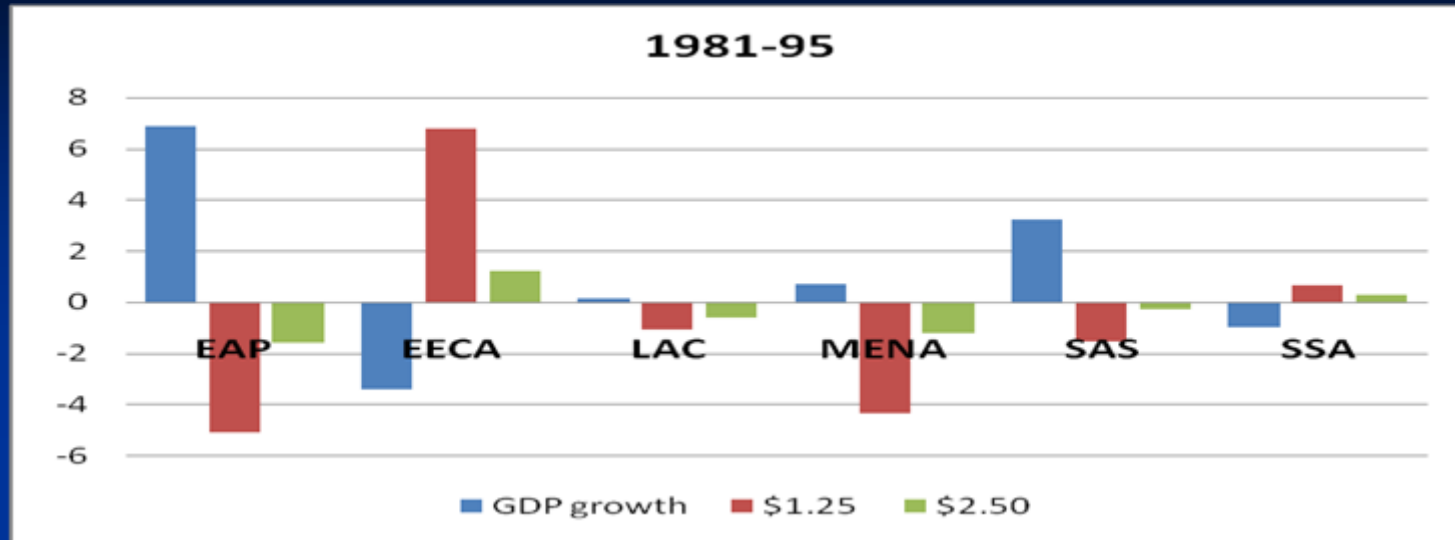
Introduction

- Shifting wealth and development
- Poverty reduction as a dimension of development
- Poverty reduction by region and by country: recent evidence for 80 countries = ?
- Roles of income and inequality by country = ?

Trend in Developing-Developed Countries' GDP Growth Gap

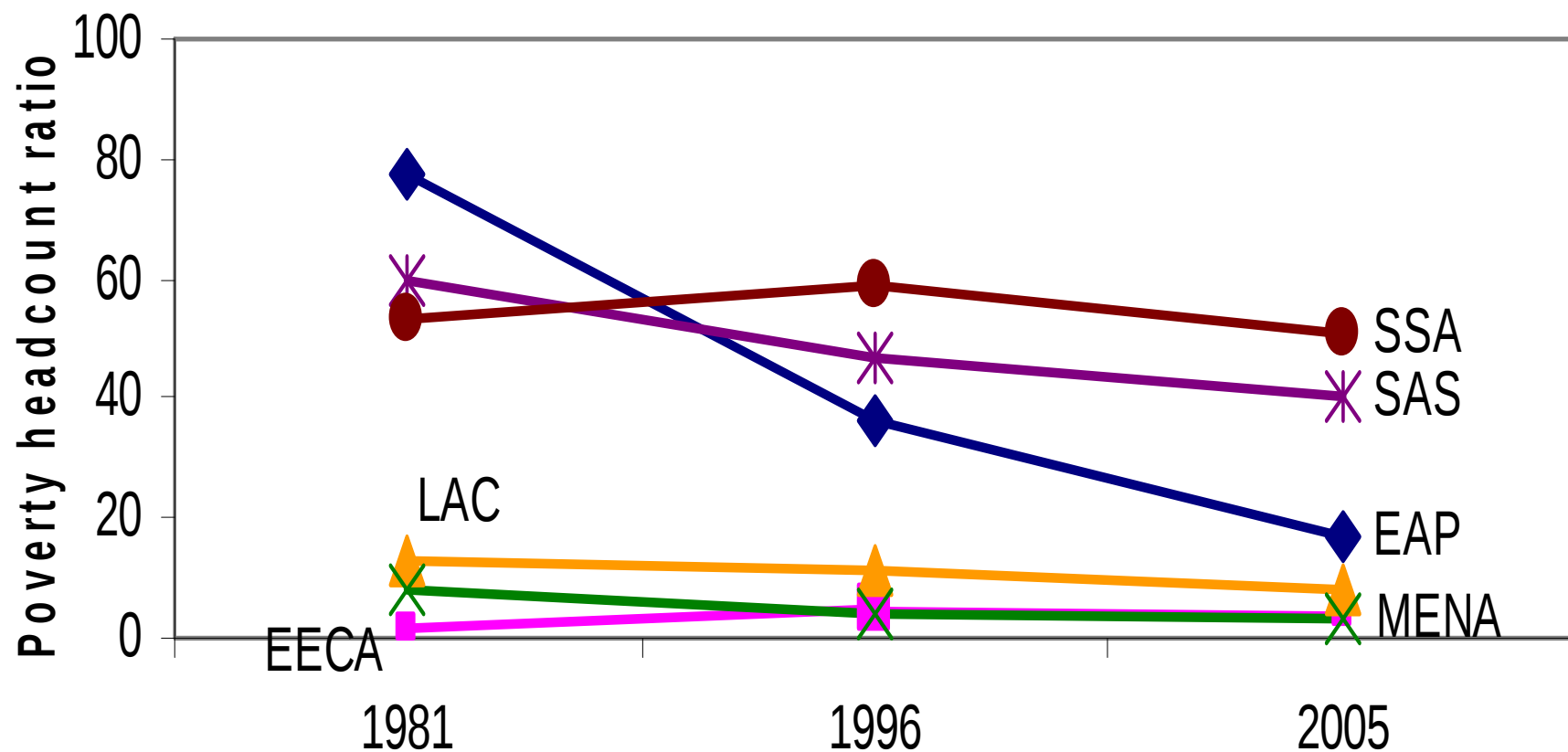


Per capita GDP growth versus poverty reduction by region

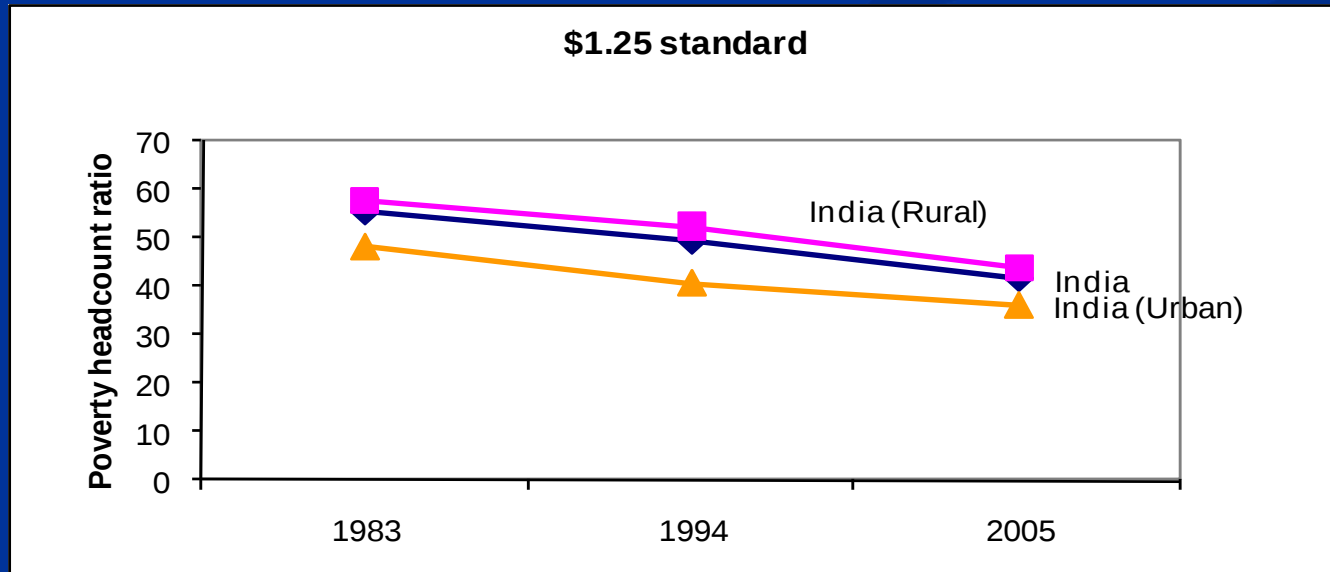
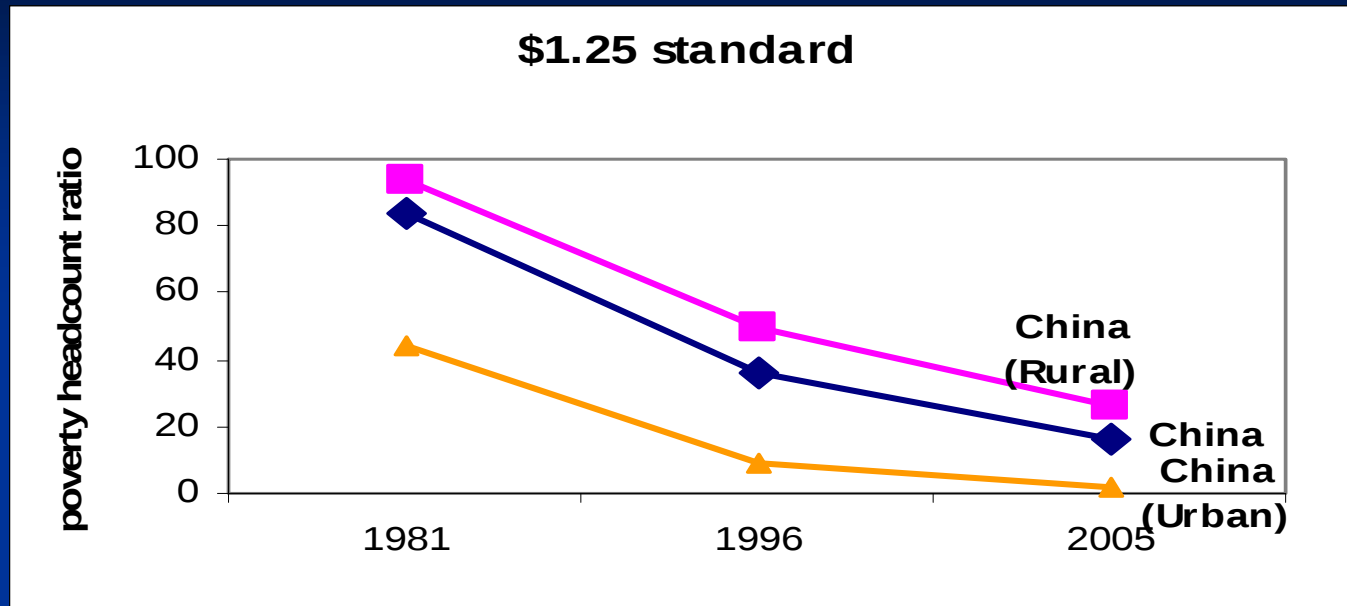


Trends in poverty (headcount ratio) by region, \$1.25: 1981-2005

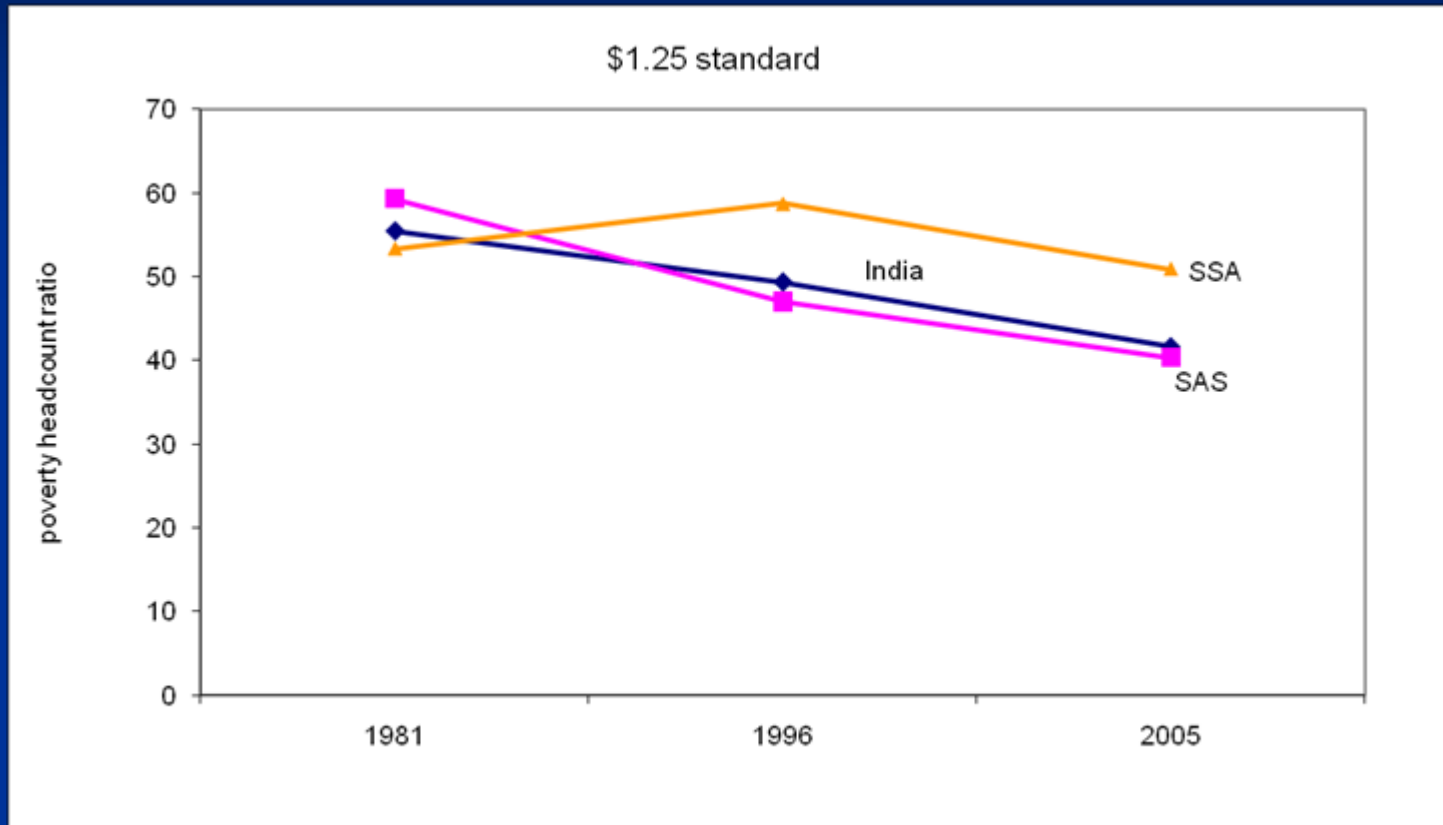
\$1.25 standard



Trends in poverty (headcount ratio), \$1.25: China vs. India, 1981-2005

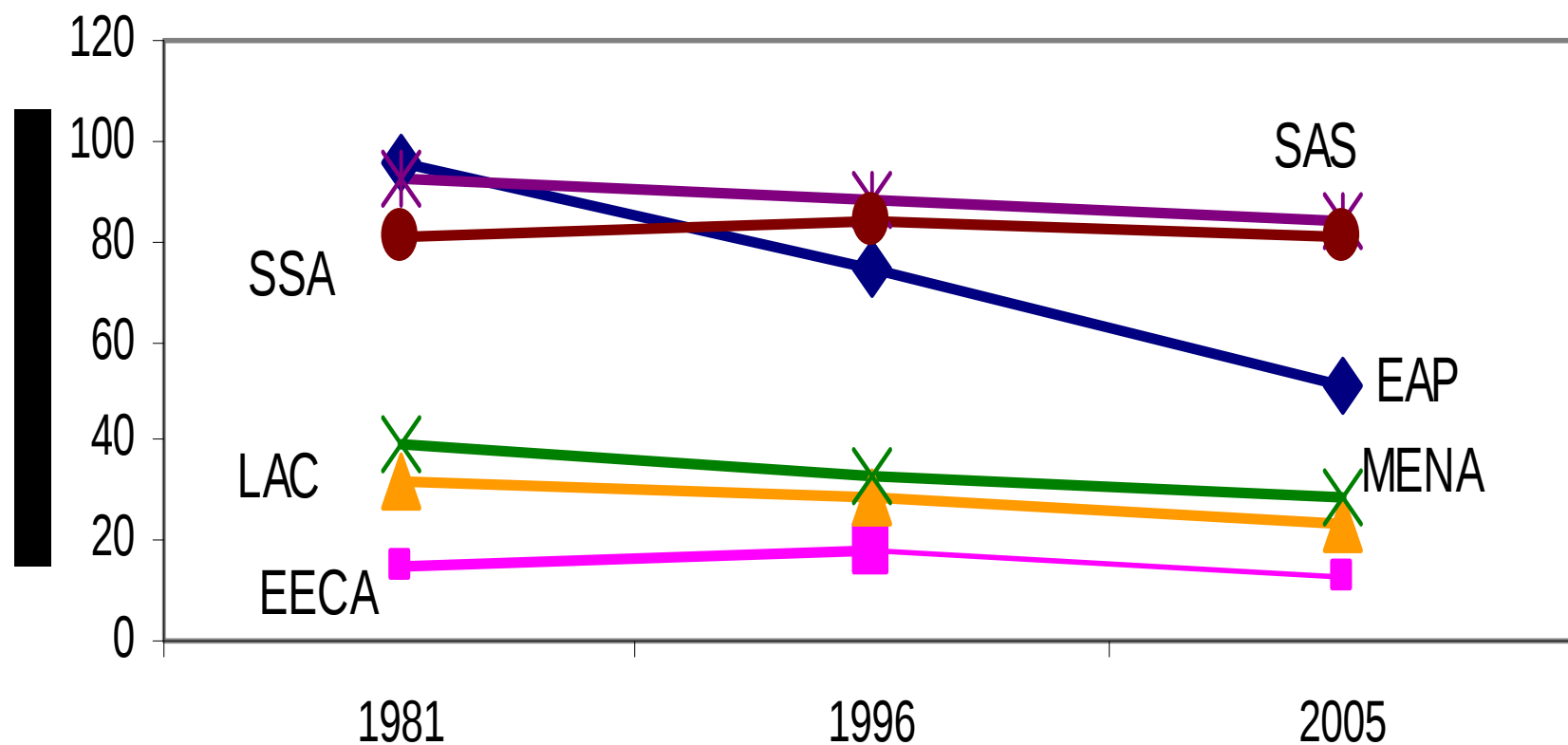


Trends in poverty (headcount ratio), \$1.25: India vs. SAS and SSA, 1981-2005



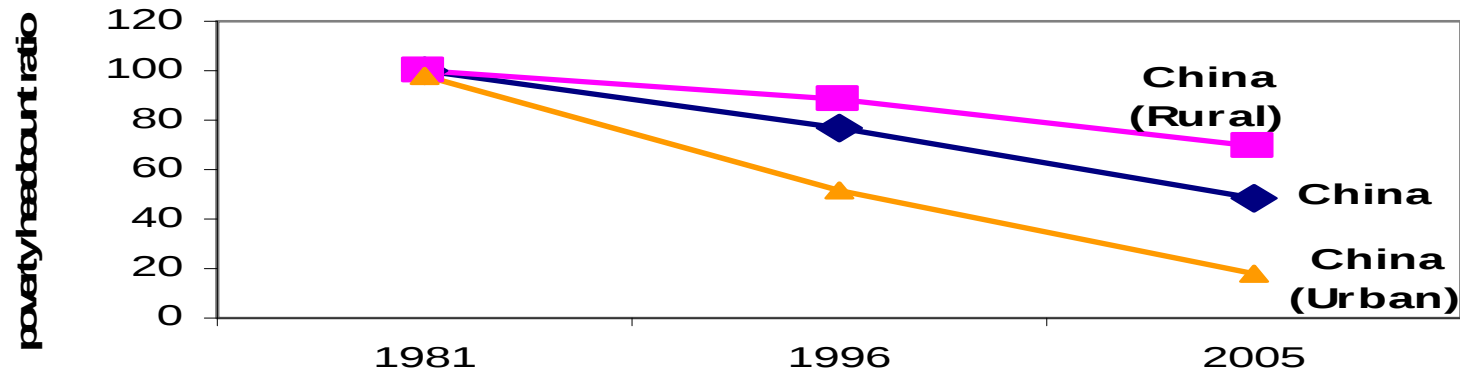
Trends in poverty (headcount ratio) by region, \$2.50: 1981-2005

\$2.50 standard

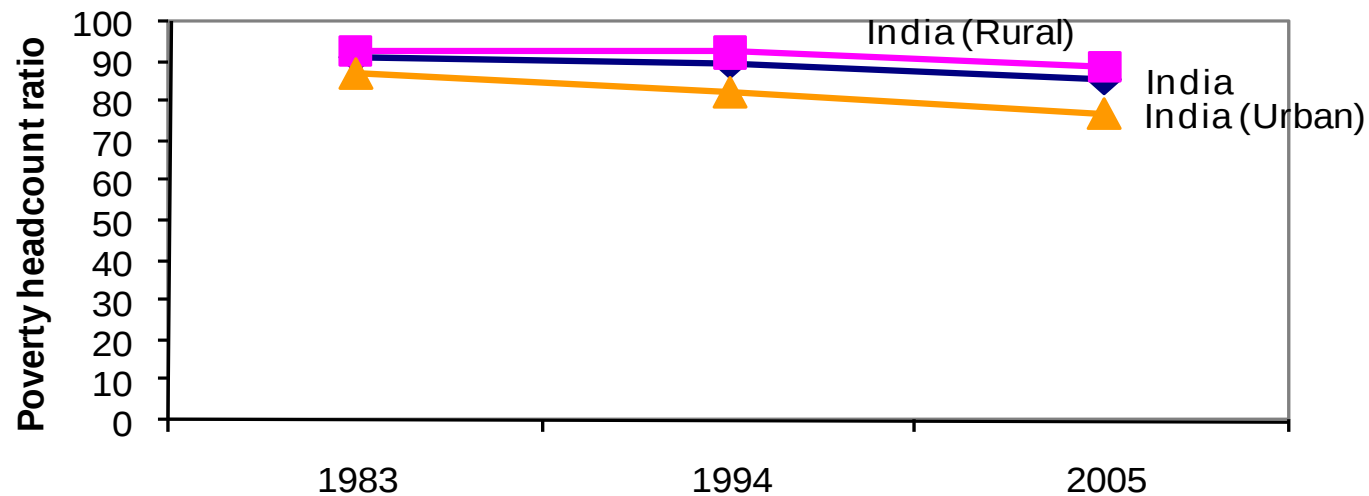


Trends in poverty (headcount ratio), \$2.50: China vs. India, 1981-2005

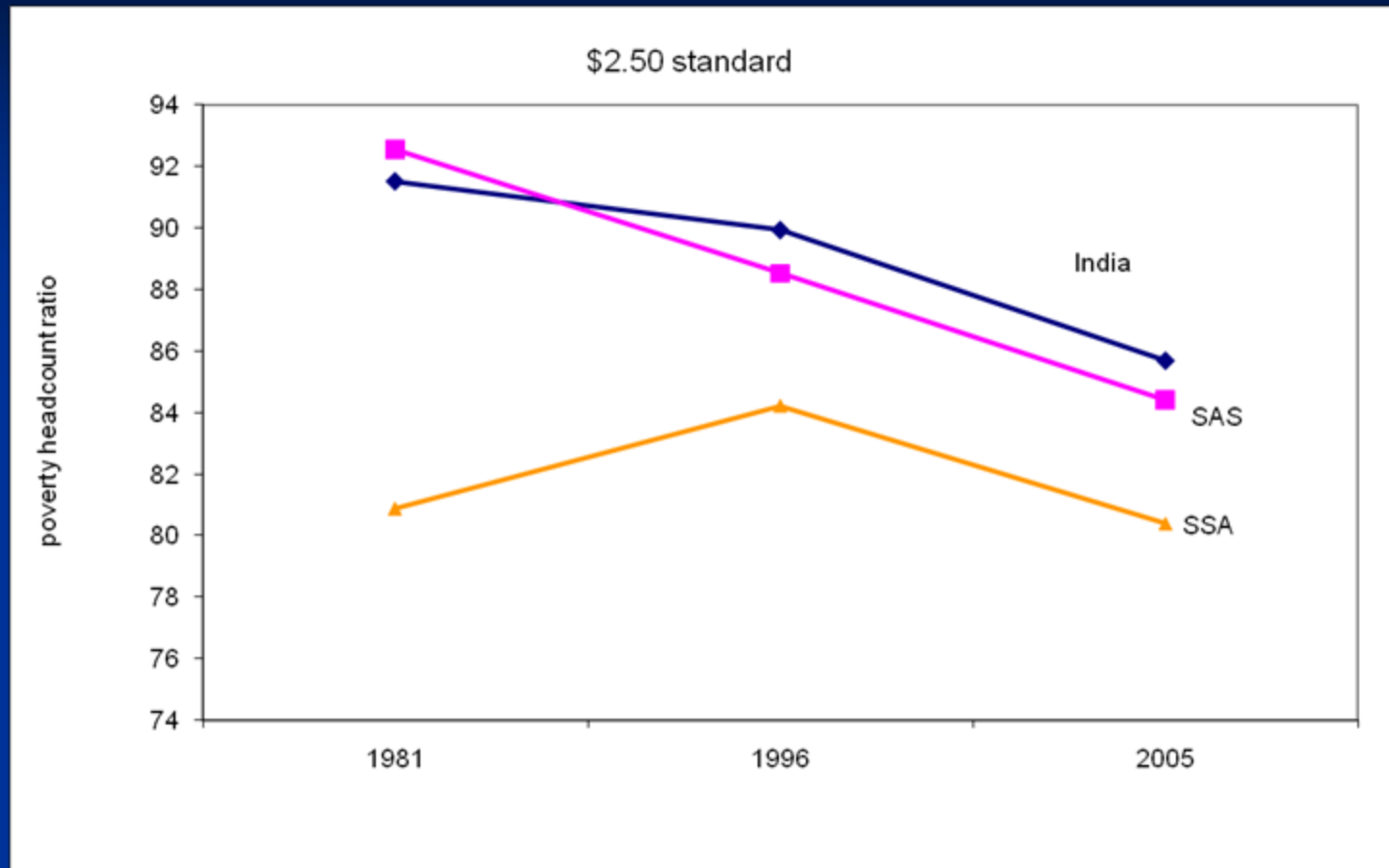
\$2.50 standard



\$2.50 standard



Trends in poverty (headcount ratio), \$2.50: India vs. SAS and SSA, 1981-2005



Progress on Poverty by Country, early-mid-1990s to present [Source: Fosu (2010)]

Decile	Poverty growth	Poverty growth	Decile	Poverty growth	Poverty growth
	\$1.25 (min-max)	\$2.50 (min-max)		\$1.25 (min-max)	\$2.50 (min-max)
1.	Azerbaijan	Azerbaijan	6.	Burkina Faso	Cambodia
	Estonia	Latvia		CAR	CAR
	Jamaica	Mexico		Egypt	Côte d'Ivoire
	Latvia	Poland		Lao PDR	India-Urb.
	Poland	Russian Fed.		Nepal	Mali
	Russian Fed.	Tunisia		Panama	Peru
	Tunisia	Ukraine		Sri Lanka	Swaziland
	Ukraine	Venezuela		Uganda	Uganda
2.	Belarus	Brazil	7.	Cambodia	Dominican Rep.
	Costa Rica	Chile		Dominican Rep.	Ethiopia
	Malaysia	China-Urb.		India-Rur.	India-Rur.
	Mexico	Costa Rica		Lesotho	Kazakhstan
	Romania	Ecuador		Mauritania	Lao PDR
	Thailand	Estonia		Mozambique	Morocco
	Uruguay-Urb.	Jordan		Niger	Mozambique
	Venezuela	Romania		Philippines	Niger
3.	Armenia	Cameroon	8.	Bangladesh	Bangladesh
	Cameroon	Egypt		Burundi	Burkina Faso
	Chile	El Salvador		Guinea-Bissau	Burundi
	China-Urb.	Honduras		India-Urb.	Iran
	Ecuador	Indonesia-Urb.		Madagascar	Madagascar
	Indonesia-Urb.	Jamaica		Morocco	Nigeria
	Jordan	Nicaragua		Nigeria	Tanzania
	Pakistan	Thailand		Peru	Zambia
4.	Brazil	China-Rur.	9.	Colombia	Albania
	China-Rur.	Ghana		Côte d'Ivoire	Armenia
	Indonesia-Rur.	Kenya		Iran	Colombia
	Kazakhstan	Mauritania		Kyrgyz Rep.	Guinea
	Moldova	Pakistan		Mongolia	Guinea-Bissau
	Nicaragua	Paraguay		Tanzania	Lesotho
	Paraguay	Sri Lanka		Turkey	Mongolia
	Vietnam	Vietnam		Zambia	South Africa
5.	El Salvador	Indonesia-Rur.	10.	Albania	Argentina-Urb.
	Ethiopia	Malaysia		Argentina-Urb.	Belarus
	Ghana	Moldova		Bolivia	Bolivia
	Honduras	Nepal		Djibouti	Djibouti
	Kenya	Panama		Georgia	Georgia
	Mali	Philippines		Guinea	Kyrgyz Rep.
	Senegal	Turkey		South Africa	Uruguay-Urb.
	Swaziland			Yemen	Yemen

‘Growth-Poverty Transformation Efficiency Vectors’, by country

Country	Efficiency Vector	Country	Efficiency Vector
Albania	(2, 8, 10, 9)	Kyrgyz Rep.	(5, 10, 9, 10)
Argentina-Urb.	(9, 9, 10, 10)	Lao PDR	(3, 6, 6, 7)
Armenia	(1, 10, 3, 9)	Latvia	(1, 1, 1, 1)
Azerbaijan	(1, 2, 1, 1)	Lesotho	(5, 10, 7, 9)
Bangladesh	(4, 8, 8, 8)	Madagascar	(9, 5, 8, 8)
Belarus	(2, 3, 2, 3)	Malaysia	(4, 9, 2, 5)
Bolivia	(8, 7, 10, 10)	Mali	(4,1, 5, 6)
Brazil	(8, 5, 4, 2)	Mauritania	(9, 5, 7, 4)
Burkina Faso	(4, 6, 6, 8)	Mexico	(8, 2, 2, 1)
Burundi	(10, 7, 8, 8)	Moldova	(4, 6, 4, 5)
Cambodia	(2, 5, 7, 6)	Mongolia	(3, 9, 9, 9)
Cameroon	(7, 1, 3, 3)	Morocco	(6, 8, 8, 7)
CAR	(10, 1, 6, 6)	Mozambique	(2, 4, 7, 7)
Chile	(3 , 6, 3, 2)	Nepal	(7, 2, 6, 5)
China-Rur.	(1, 2, 4, 4)	Nicaragua	(5, 4, 4, 3)
China-Urb.	(1, 1, 3, 2)	Niger	(10, 4, 7, 7)
Colombia	(9, 7, 9, 9)	Nigeria	(7, 8, 8, 8)
Costa Rica	(6, 4, 2, 2)	Pakistan	(7, 3, 3, 4)
Côte d'Ivoire	(10, 4, 9, 6)	Panama	(6,. 8, 6, 5)
Djibouti	(10, 10, 10, 10)	Paraguay	(10, 8, 4, 4)
Dominican Rep.	(3, 7, 7, 7)	Peru	(6, 5, 8, 6)

‘Growth-Poverty Transformation Efficiency Vectors’, by country

Country	Efficiency Vector	Country	Efficiency Vector
Ecuador	(8 , 2, 3, 2)	Philippines	(6, 6, 7, 5)
Egypt	(5, 6, 6, 3)	Poland	(2, 1, 1, 1)
El Salvador	(8, 5, 5, 3)	Romania	(4, 1, 2, 2)
Estonia	(1, 3, 1, 2)	Russian Fed.	(3, 8, 1, 1)
Ethiopia	(5, 7, 5, 7)	Senegal	(7, 5, 5, 5)
Georgia	(1, 10, 10, 10)	South Africa	(8, 9, 10, 9)
Ghana	(6, 3, 5, 4)	Sri Lanka	(3, 5, 6, 4)
Guinea	(8, 10, 10, 9)	Swaziland	(9, 2, 5, 6)
Guinea-32.Bissau	(10, 9, 8, 9)	Tanzania	(5, 10, 9, 8)
Honduras	(7, 3, 5, 3)	Thailand	(5, 6, 2, 3)
India-Rur.	(2, 7, 7, 7)	Tunisia	(3, 4, 1, 1)
India-Urb.	(2, 7, 8, 6)	Turkey	(4, 7, 9, 5)
Indones-Rur.	(7, 4, 4, 5)	Uganda	(3, 4, 6, 6)
Indones-Urb.	(7, 3, 3, 3)	Ukraine	(5, 3, 1, 1)
Iran	(4, 9, 9, 8)	Uruguay-Urb.	(8, 9, 2, 10)
Jamaica	(9, 2, 1, 3)	Venezuela	(10, 2, 2, 1)
Jordan	(6, 6, 3, 2)	Vietnam	(1, 1, 4, 4)
Kazakhstan	(2, 8, 4, 7)	Yemen	(6, 10, 10, 10)
Kenya	(9, 3, 5, 4)	Zambia	(9, 9, 9, 8)

Models and Estimation

- (1) $p = b_1 + b_2y + b_3yG^I + b_4y(Z/Y) + b_5g + b_6gG^I + b_7g(Z/Y) + b_8G^I + b_9Z/Y$

- (2) $E_y = b_2 + b_3G^I + b_4Z/Y$

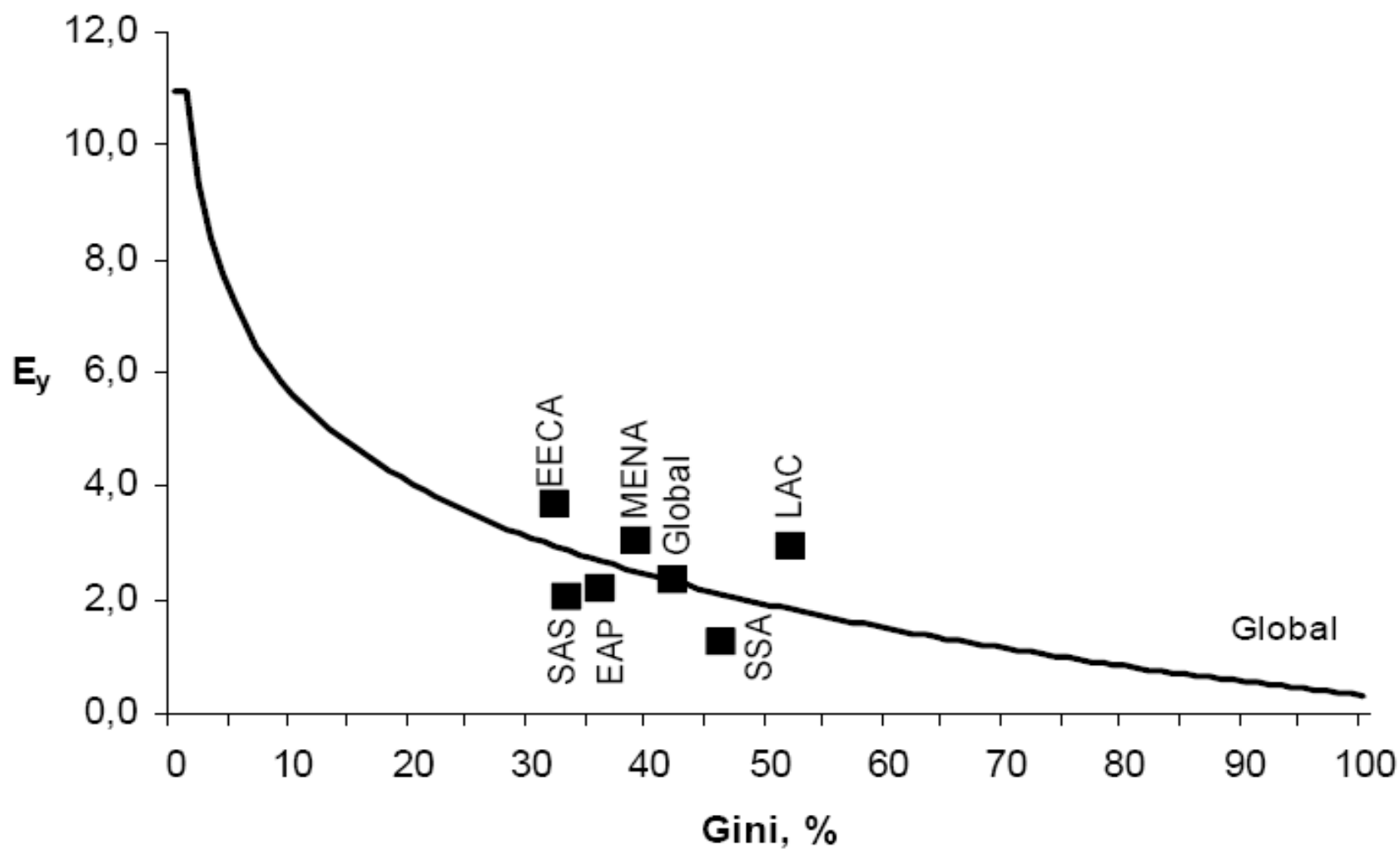
- (3) $E_g = b_5 + b_6G^I + b_7Z/Y$

For \$1.25 standard:

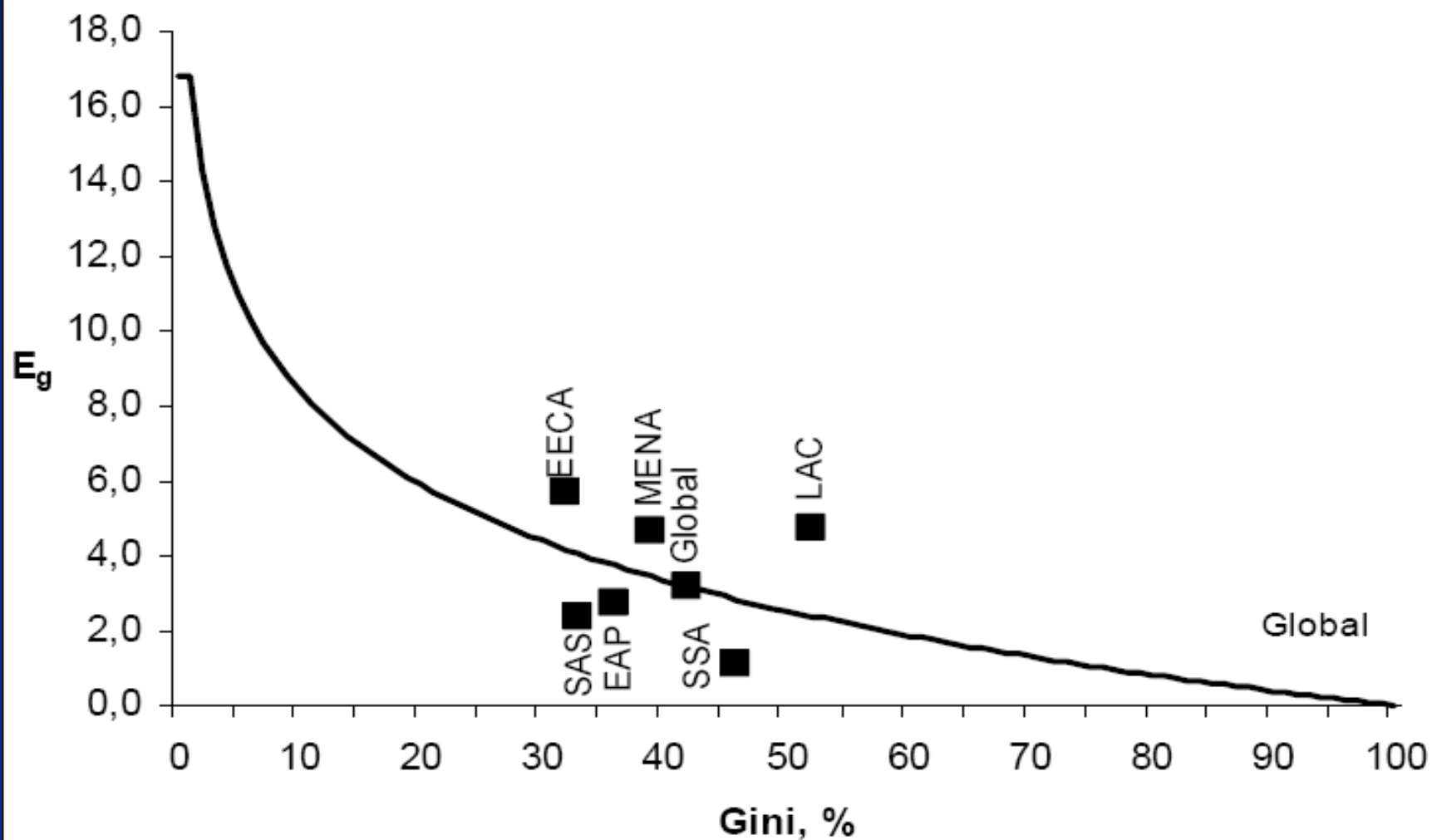
- (4) $E_y = -9.757 + 2.307 G^I + 1.333 Z/Y$

- (5) $E_g = 14.391 - 3.649 G^I - 2.754 Z/Y$

Income elasticity, E_y , \$1.25 Headcount



Inequality elasticity, E_g , \$1.25 Headcount



Explaining Poverty Growth: Countries experiencing poverty reduction, (\$1.25 Headcount ratio)

Country	Region	Pov _g	A	B	A+B
			E _Y *dlnY	E _G *dlnG	Pred Pov _g
Armenia	EECA	-7.122	8.580	-13.363	-4.783
Azerbaijan	EECA	-62.506	-11.656	-27.118	-38.774
Belarus	EECA	-24.964	-17.208	16.707	-0.501
Brazil	LAC	-7.142	-5.505	-3.198	-8.704
Burkina Faso	SSA	-2.557	-1.220	-0.715	-1.936
Burundi	SSA	-0.252	-0.881	-0.007	-0.888
Cambodia	EAP	-1.890	-3.354	1.813	-1.541
Cameroon	SSA	-9.001	-8.362	-1.497	-9.859
CAR*	SSA	-2.823	1.454	6.023	7.476
Chile	LAC	-8.168	-5.124	-3.304	-8.428
China-Rur.	EAP	-7.103	-7.872	1.268	-6.603
China-Urb.	EAP	-17.681	-19.252	6.686	-12.566
Costa Rica	LAC	-12.160	-10.217	0.181	-10.036
Dominican Rep.	LAC	-1.827	-2.453	1.434	-1.020
Ecuador	LAC	-9.377	-12.016	1.402	-10.614
Egypt	MENA	-2.356	-4.829	3.228	-1.601
El Salvador	LAC	-3.469	-5.377	-2.338	-7.714
Estonia	EECA	-61.350	-14.269	13.219	-1.050
Ethiopia	SSA	-4.384	-1.848	-4.188	-6.035

Countries experiencing poverty reduction (\$1.25), continued

Ghana	SSA	-3.802	-5.636	1.463	-4.173
Guinea*	SSA	-0.722	0.722	2.081	2.803
Honduras	LAC	-3.677	-6.394	0.032	-6.362
India-Rur.	SAS	-1.634	-2.650	1.466	-1.184
India-Urb.	SAS	-1.091	-2.438	2.056	-0.382
Indonesia-Rur.	EAP	-7.399	-7.968	2.048	-5.920
Indonesia-Urb.	EAP	-7.779	-8.254	1.559	-6.694
Jamaica	LAC	-24.763	-14.958	7.789	-7.169
Jordan	MENA	-14.189	-4.137	-4.806	-8.943
Kazakhstan	EECA	-6.680	1.097	-3.014	-1.917
Kenya	SSA	-3.364	-6.101	2.645	-3.456
Lao PDR	EAP	-2.363	-3.390	1.597	-1.793
Latvia	EECA	-75.503	-23.416	10.401	-13.015
Lesotho*	SSA	-1.313	4.383	-3.391	0.992
Madagascar	SSA	-0.554	-1.505	0.057	-1.448
Malaysia	EAP	-14.984	9.512	-15.174	-5.661
Mali*	SSA	-4.292	-0.529	2.602	2.073
Mauritania	SSA	-2.012	-4.510	2.262	-2.248
Mexico	LAC	-23.738	-15.623	-0.456	-16.080
Moldova	EECA	-6.122	-4.710	1.146	-3.564
Mozambique	SSA	-1.422	-2.403	-0.158	-2.561
Nepal	SAS	-2.706	-6.678	3.336	-3.342

Countries experiencing poverty reduction (\$1.25) continued

Nicaragua	LAC	-6.005	-5.026	-1.609	-6.635
Niger	SSA	-1.555	-3.107	0.297	-2.809
Nigeria	SSA	-0.882	-0.047	-1.060	-1.107
Pakistan	SAS	-9.458	-9.174	2.646	-6.528
Panama	LAC	-2.717	-2.044	-1.239	-3.283
Paraguay	LAC	-5.639	1.079	-4.127	-3.048
Peru	LAC	-0.787	-6.203	3.548	-2.654
Philippines	EAP	-1.811	-2.972	0.608	-2.364
Poland	EECA	-29.323	-32.323	4.229	-28.094
Romania	EECA	-17.192	-22.965	5.992	-16.973
Russian Fed.	EECA	-34.218	-1.930	-13.718	-15.648
Senegal	SSA	-4.359	-3.032	-0.445	-3.477
Sri Lanka*	SAS	-2.242	-6.977	7.533	0.556
Swaziland*	SSA	-3.725	-0.808	2.582	1.774
Thailand	EAP	-19.411	-4.251	-1.229	-5.480
Tunisia	MENA	-18.653	-10.268	-1.927	-12.196
Uganda	SSA	-2.475	-3.995	1.533	-2.462
Ukraine	EECA	-32.890	-17.240	-15.845	-33.085
Uruguay-Urb.*	LAC	-35.553	3.075	3.982	7.057
Venezuela	LAC	-14.272	-13.057	-5.479	-18.536
Vietnam	EAP	-7.779	-8.194	0.607	-7.587
	Mean	-11.406	-6.072	-0.022	-6.094

Countries experiencing poverty increases (\$1.25)

Country	Region	Pov _g	A	B	A + B
			E _Y *dlnY	E _G *dlnG	Pred Pov _g
Albania	EECA	16.077	-2.916	8.253	5.338
Argentina-Urb.	LAC	11.700	4.135	2.177	6.312
Bangladesh	SAS	0.184	0.257	-0.174	0.083
Bolivia	LAC	10.552	-3.176	10.742	7.566
Colombia*	LAC	1.676	-2.113	1.865	-0.248
Côte d'Ivoire	SSA	1.448	-7.903	13.516	5.613
Djibouti	MENA	22.929	26.000	6.973	32.973
Georgia	EECA	12.207	13.203	5.474	18.677
Guinea-Bissau	SSA	7.174	8.655	1.222	9.877
Iran*	MENA	0.190	5.142	-5.748	-0.606
Kyrgyz Rep.	EECA	1.442	20.209	-17.896	2.313
Mongolia	EAP	1.748	2.673	-0.189	2.484
Morocco	MENA	0.119	-0.705	1.205	0.500
South Africa	SSA	4.019	1.370	1.491	2.861
Tanzania	SSA	2.204	6.203	0.297	6.500
Turkey*	EECA	2.352	-4.349	1.976	-2.373
Yemen	EAP	10.409	15.401	-1.721	13.680
Zambia	SSA	0.439	0.633	0.064	0.696
	Mean	5.937	4.595	1.640	6.236

Explaining Poverty Growth: Countries experiencing **poverty reduction**, (\$2.50 Headcount ratio)

Country	Region	Pov _g	A	B	A + B
			E _Y *dlnY	E _G *dlnG	Pred Pov _g
Azerbaijan	EECA	-34.310	-6.751	-10.520	-17.271
Brazil	LAC	-4.584	-2.916	-1.657	-4.573
Burkina Faso*	SSA	-0.251	-0.220	0.384	0.164
Burundi	SSA	-0.091	-0.403	0.004	-0.398
Cambodia	EAP	-0.950	-1.720	0.530	-1.189
Cameroon	SSA	-3.598	-3.553	-0.476	-4.028
CAR*	SSA	-0.585	3.331	3.724	7.054
Chile	LAC	-8.414	-2.864	-1.695	-4.559
China-Rur.	EAP	-2.576	-4.267	0.218	-4.049
China-Urb.	EAP	-8.945	-11.826	2.341	-9.485
Costa Rica	LAC	-5.367	-5.804	0.087	-5.717
Côte d'Ivoire*	SSA	-0.799	-4.468	5.227	0.759
Dominican Rep.	LAC	-0.384	-1.367	0.704	-0.663
Ecuador	LAC	-5.108	-6.359	0.681	-5.678
Egypt	MENA	-2.757	-2.929	1.272	-1.657
El Salvador	LAC	-3.202	-2.877	-1.130	-4.007
Estonia	EECA	-4.808	-8.786	6.054	-2.733
Ethiopia	SSA	-0.329	-0.862	-0.870	-1.732

Countries experiencing poverty reduction (\$2.50), continued

Ghana	SSA	-1.934	-2.827	0.374	-2.454
Honduras	LAC	-3.332	-2.816	0.015	-2.801
India-Rur.	SAS	-0.348	-1.555	0.362	-1.194
India-Urb.	SAS	-0.609	-1.348	0.625	-0.724
Indonesia-Rur.	EAP	-1.779	-4.790	0.492	-4.298
Indonesia-Urb.	EAP	-3.079	-4.432	0.461	-3.972
Jamaica	LAC	-3.934	-8.820	3.551	-5.269
Jordan	MENA	-7.169	-2.362	-2.226	-4.589
Kazakhstan	EECA	-0.434	0.660	-1.277	-0.617
Kenya	SSA	-2.337	-2.844	1.114	-1.729
Lao PDR	EAP	-0.569	-1.931	0.377	-1.554
Latvia	EECA	-14.682	-14.792	4.564	-10.228
Malaysia	EAP	-1.796	5.429	-7.437	-2.008
Mali*	SSA	-0.971	2.035	2.048	4.083
Mauritania	SSA	-1.784	-2.269	0.867	-1.402
Mexico	LAC	-10.397	-8.712	-0.225	-8.938
Moldova	EECA	-1.835	-2.745	0.442	-2.302
Morocco	MENA	-0.437	-0.412	0.538	0.126
Mozambique	SSA	-0.299	-0.339	-0.463	-0.802
Nepal	SAS	-1.127	-3.115	0.309	-2.806

Countries experiencing poverty reduction (\$2.50), continued

Nicaragua	LAC	-2.809	-2.267	-0.764	-3.031
Niger	SSA	-0.417	-1.239	-0.093	-1.332
Nigeria	SSA	-0.260	-0.017	-0.159	-0.177
Pakistan	SAS	-2.215	-5.260	0.704	-4.556
Panama	LAC	-1.391	-1.103	-0.634	-1.738
Paraguay	LAC	-2.662	0.596	-2.001	-1.405
Peru	LAC	-0.886	-3.547	1.684	-1.863
Philippines	EAP	-1.103	-1.536	0.243	-1.294
Poland	EECA	-28.956	-19.851	1.832	-18.018
Romania	EECA	-4.749	-14.568	2.463	-12.104
Russian Fed.	EECA	-12.270	-1.118	-6.746	-7.864
Senegal	SSA	-1.676	-1.048	-0.076	-1.123
Sri Lanka	SAS	-2.089	-4.051	2.819	-1.232
Swaziland*	SSA	-1.051	1.854	1.810	3.664
Thailand	EAP	-3.677	-2.382	-0.569	-2.951
Tunisia	MENA	-6.878	-5.910	-0.867	-6.777
Turkey	EECA	-1.273	-2.546	0.921	-1.625
Uganda	SSA	-0.982	-1.729	0.096	-1.633
Ukraine	EECA	-27.105	-10.807	-6.959	-17.766
Venezuela	LAC	-8.416	-7.359	-2.569	-9.928
Vietnam	EAP	-2.784	-4.122	0.097	-4.025
	Mean	-4.399	-3.570	0.010	-3.560

Countries experiencing poverty increases (\$2.50)

Country	Region	Pov _g	E _Y *dlnY	E _G *dlnG	Pred Pov _g
Albania	EECA	0.473	-1.826	3.478	1.652
Argentina-Urb.	LAC	3.515	2.434	1.082	3.517
Armenia*	EECA	2.608	4.591	-5.798	-1.207
Bangladesh	SAS	0.069	0.147	-0.044	0.103
Belarus*	EECA	3.203	-11.339	7.023	-4.316
Bolivia	LAC	2.450	-1.833	4.943	3.110
Colombia*	LAC	0.543	-1.109	0.945	-0.164
Djibouti	MENA	13.644	15.438	3.060	18.498
Georgia	EECA	7.745	7.864	2.437	10.301
Guinea	SSA	0.367	-0.079	2.496	2.417
Guinea-Bissau	SSA	2.170	3.373	0.460	3.833
Iran	MENA	0.180	2.988	-2.717	0.271
Kyrgyz Rep.	EECA	5.284	10.554	-8.791	1.763
Lesotho*	SSA	0.728	1.319	-1.514	-0.195
Madagascar*	SSA	0.193	-0.381	-0.041	-0.423
Mongolia	EAP	1.008	1.566	-0.071	1.495
South Africa	SSA	0.870	0.678	0.749	1.427
Tanzania	SSA	0.346	3.091	0.003	3.094
Uruguay-Urb.	LAC	4.096	1.853	1.954	3.807
Yemen	EAP	7.417	8.991	-0.771	8.219
Zambia	SSA	0.046	0.082	-0.018	0.064
	Mean	2.712	2.305	0.422	2.727

Some Country Simulation Illustrations

India: Linkage between GDP and Income Matters

Scenario	Link between GDP and Income Growth	Contribution of Income Growth to Poverty Reduction
Current Situation	Weak (2.5% annually)	<2.5% annually
Simulation	Strong (4.8% annually)	>10.0% annually

Bolivia: Rising Inequality Hurts

Scenario	Income Inequality	Poverty Headcount Ratio (\$1.25)
Current Situation	Rising by 2.2% annually	Rise by 7.6% annually
Simulation	No rise	Fall by 3.2% annually

Russian Federation: Falling Inequality Helps

Scenario	Income Inequality	Poverty Headcount Ratio (\$2.50)
Current Situation	Falling (by 2.3% annually)	Fall by 12.3% annually
Simulation	No fall	Fall by only 1.1% annually

Burkina Faso vs. Chile: Low Income is a Bane; High Income is a Boon

BURKINA FASO	Income Inequality (Gini Coefficient)	Income growth	Income Level	Income Elast.	Inequality Elast.	Poverty Headcount Ratio (\$1.25)
Scenarios						
Current Situation	0.51 (and fell by 2.75% annually)	1.5% annually	Lower Income (\$40/month)	-0.794	0.260	Fall by 2.6% annually
Simulation			<u>The same as Chile's</u>	-3.82	6.51	Fall by 23.63% annually
CHILE						
Current Situation	0.55 (and fell by 0.57% annually)	1.5% annually	Higher Income (\$387/month)	-3.419	5.779	Fall by 8.2% annually

Broad Summary

- Major differences in regional trends in poverty
- Growth has mattered a great deal
- Indeed, on average, growth has been the main driver of poverty reduction globally
- BUT, there are major differences across countries
- The relationship between GDP and income has mattered
- Initial inequality has mattered
- Initial income has mattered (low-income ctrys need help!)
- Income growth has mattered
- Inequality changes have mattered
- Countries matter!

CONCLUSION

Patience and Perseverance

