




The Global Consumption and Income Project (GCIP): An Introduction and Preliminary Findings

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What is the GCIP?

- The Global Consumption and Income Project aims to create datasets (The Global Consumption Dataset (GCD) and The Global Income Dataset (GID)) containing a portrait of consumption and income of persons over time, within and across countries, around the world
 - We aim for it to be open, transparent and flexible, and to allow for third-party replication, modification and updating
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Features of the GCIP

- The benchmark version estimates the monthly real consumption and income (in \$2005 PPP) of every decile of the population (a 'consumption/income profile') of the vast majority of countries in the world (133) for every year for more than half a century (1960-2012)
 - Includes built-in analytical tools for filling in missing data, creating portraits of aggregates of countries and providing summary statistics
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Applications

- Track historical and contemporary evolution of absolute and relative living standards or to forecast them based on appropriate assumptions
- Calculate *any* poverty measure, *any* inequality measure or *any* measure of the inclusiveness of growth and development over a time period
- Measures exhibiting temporal and spatial variation for use in explanatory analysis of either the causes or consequences of poverty, inequality, or inclusivity of growth and development



GCIP vs. Other Datasets

- The evolution of world consumption or income by country, quantile and year (annual portraits)
 - Broader temporal and geographical coverage
 - Provides separate consumption and income estimates
 - Includes tools for aggregation of user-defined groups of countries
 - Full documentation of our methods and tools, creating a basis for transparent and participatory future development
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Constructing the Datasets

- Step 1: Collect data on relative consumption or income distributions.
- Step 2 : 'Standardize' the distributions by converting consumption into 'equivalent' income distributions or vice versa through regressions.
- Step 3: Obtain or estimate mean consumption and/or income levels from surveys in common units.
- Step 4: Estimate consumption or income profiles by combining mean and distributional information.



Step 1: Collect Data on Relative Distributions

- Collects surveys from UN-WIDER World Income Inequality Database (WIID), Povcalnet, and LIS, for worldwide coverage
- Restrict our universe to per-capita surveys
- For country-years with more than one survey select a single survey by applying a lexicographic ordering of the selection criteria


Lexicographic Ordering of Selection Criteria

We prefer:

- Surveys having mean income or consumption data over those which do not
- For the GCD, consumption surveys over income surveys and vice-versa for GID
- Income surveys that are closer to arriving at total net income after taxes and transfers
- Surveys from Povcalnet over LIS over WIID
- Broader coverage in terms of geographical area, population and higher quality
- Surveys reporting means in Local Currency Units (LCUs) and with known survey source



Step 2: Standardizing Distributions

- Convert income distributions into consumption distributions or vice versa
 - Use data from years where country has distribution data from both an income and a consumption survey to obtain relationship between the two [120 country-years]
 - For each quantile there will be a different relationship
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Step 2 continued: Benchmark regressions (income to consumption example)

Quintile	Co-efficient on Income Quintile Variable	Adjusted R-Squared of Regression	Lower Limit of 95% confidence Interval	Upper Limit of 95% Confidence Interval
1	1.185	0.89	1.11	1.26
2	1.15	0.95	1.1	1.2
3	1.12	0.97	1.09	1.16
4	1.06	0.99	1.04	1.09
5	0.86	0.98	0.84	0.88
N	120			

Example: Mexico 1989 Income Survey

Quintile	Original income shares	Implied consumption shares after application of regression coefficients	Implied consumption shares after adjustment for the adding up constraint
1	3.93	4.66	4.81
2	7.97	9.17	9.46
3	12.28	13.79	14.23
4	19.39	20.61	21.27
5	56.66	48.67	50.23
Sum of shares	100	96.89	100

Step 3: Determine Mean Levels

- Estimate a consumption mean for GCD and an income mean for GID for every country-year, in comparable units
- GCD:
 - Select estimate of the mean from the survey with which we obtained the relative distribution if available
 - Multiply income mean by the share of (nominal) consumption in (nominal) GDP for the country year to get equivalent consumption mean
 - For survey years without survey mean, we interpolate or extrapolate by using the growth rate of consumption/income per capita from national income accounts
 - Convert consumption/income mean to 2005 LCU/month and then into common international units using 2005 PPP conversion factors.

Step 4: Consumption and Income Profiles

- Estimate a Lorenz curve for the survey years (GQ, Beta and Piecewise Linear methods – the latter our own method)
- Using the mean and the estimated Lorenz curve, we deduce the mean consumption/income of each decile to generate a Consumption/Income Profile for the country-year
- For non-survey years we estimate the consumption/income profile by using the appropriate per capita growth rate figures from national income accounts to interpolate or extrapolate from the profiles of the nearest survey-years, calculating a time-weighted average in the case of interpolation

GCD Survey Summary Statistics

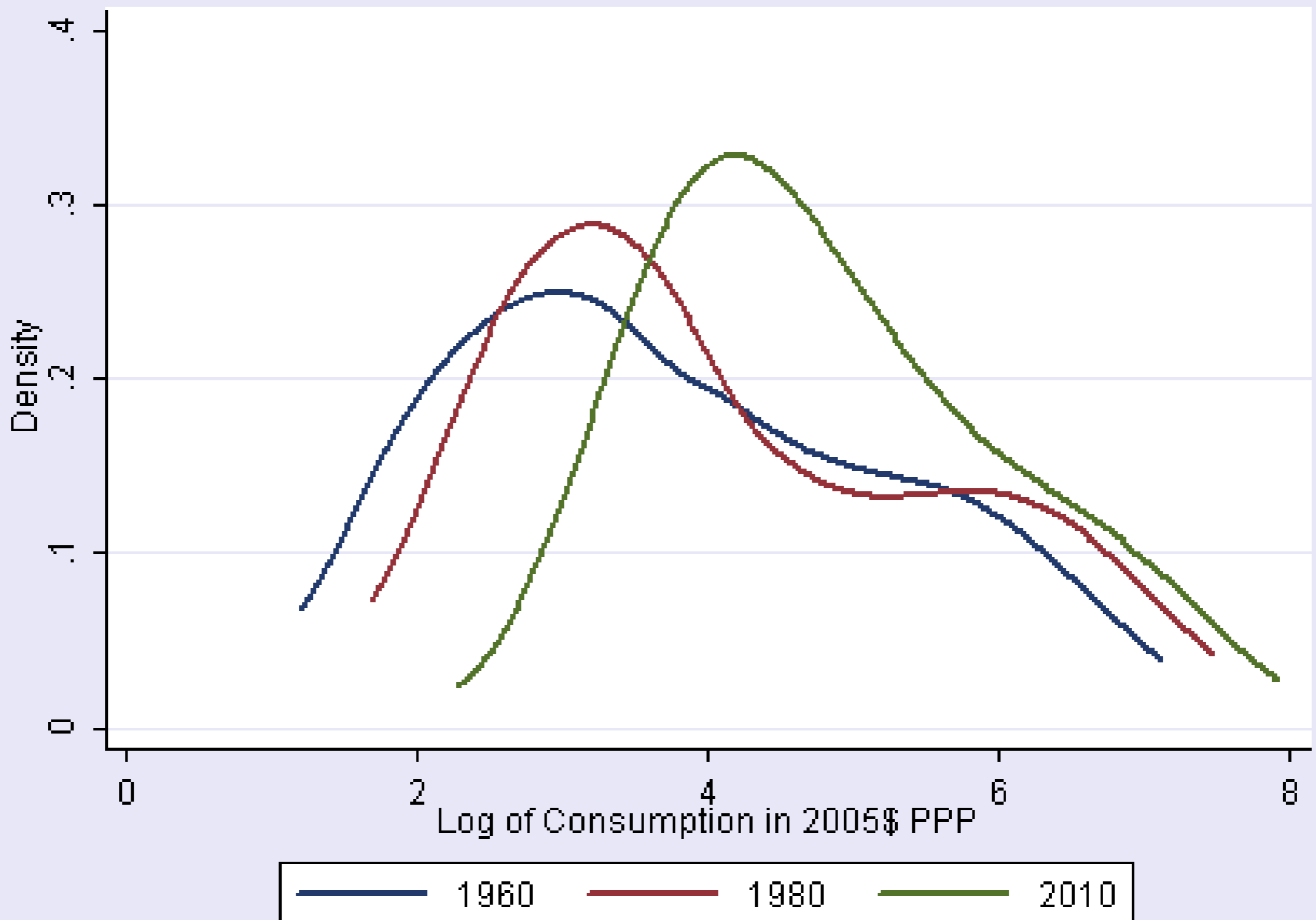
	All Surveys (1960-2012)	1960's	1970's	1980's	1990's	2001- 2012
# of country-year observations	<u>1340</u>	67	67	196	444	566
# of countries	<u>133</u>	35	39	85	121	122
% consumption surveys	<u>45</u>	16	12	29	46	57
% with All Area Coverage	97	94	97	92	97	99
% with All Population Coverage	92	58	63	86	96	98
% surveys with means data	82	30	42	69	85	95
# of countries with no means	0	125	116	67	17	11
Database Source (%)						
LIS	13	3	15	14	13	14
Povcalnet	62	0	1	25	41	75
WIID	38	97	84	60	46	11



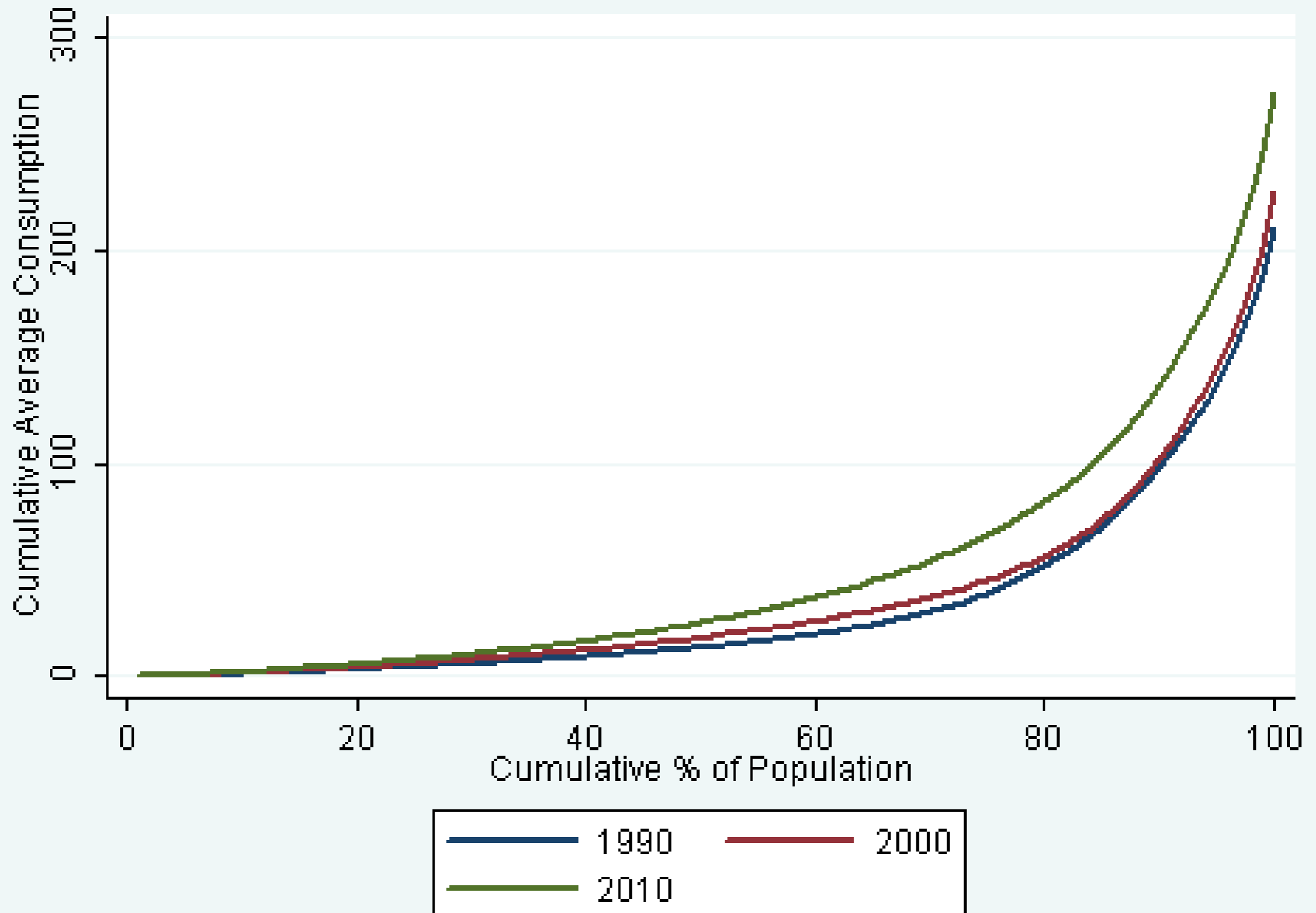
Preliminary results:



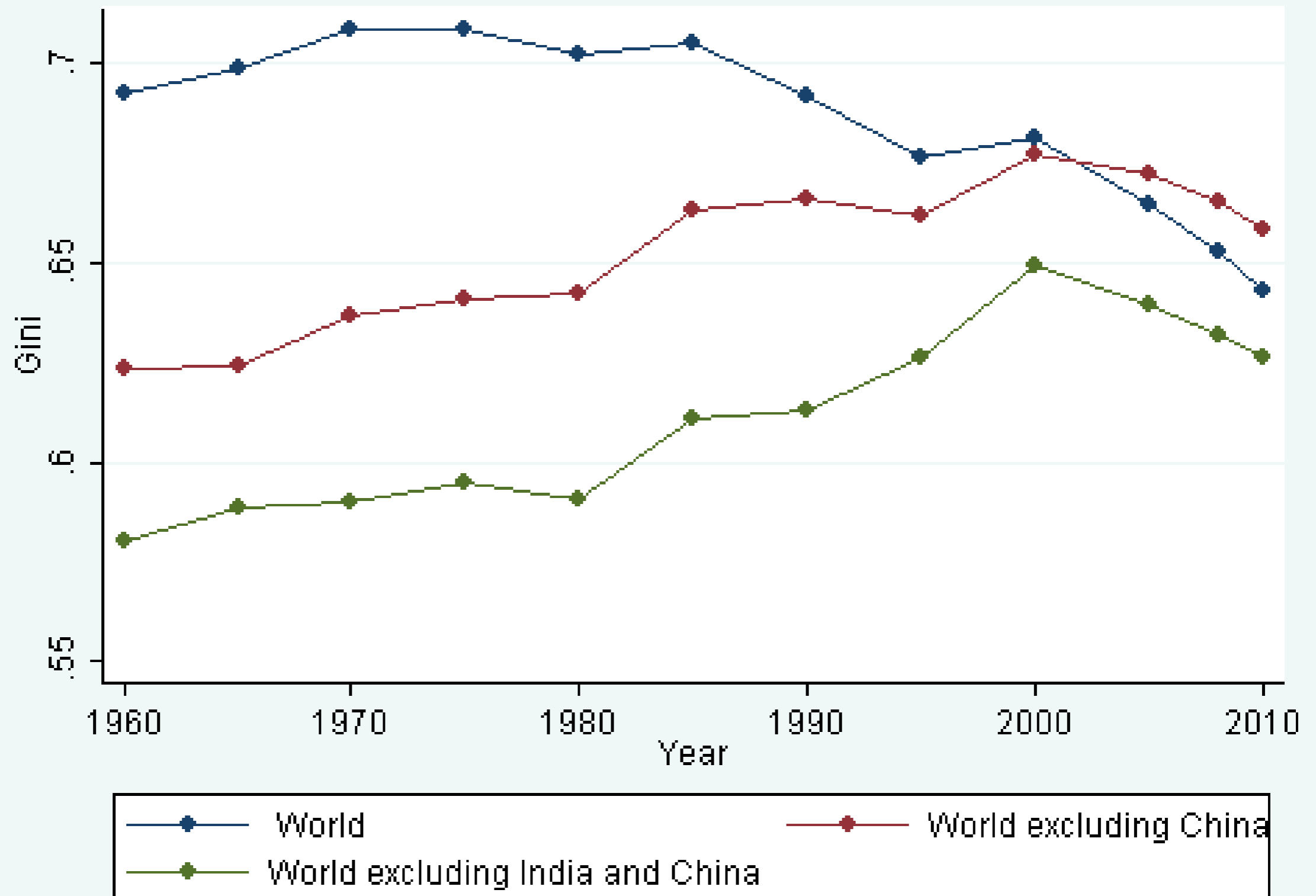
Global Consumption Distribution



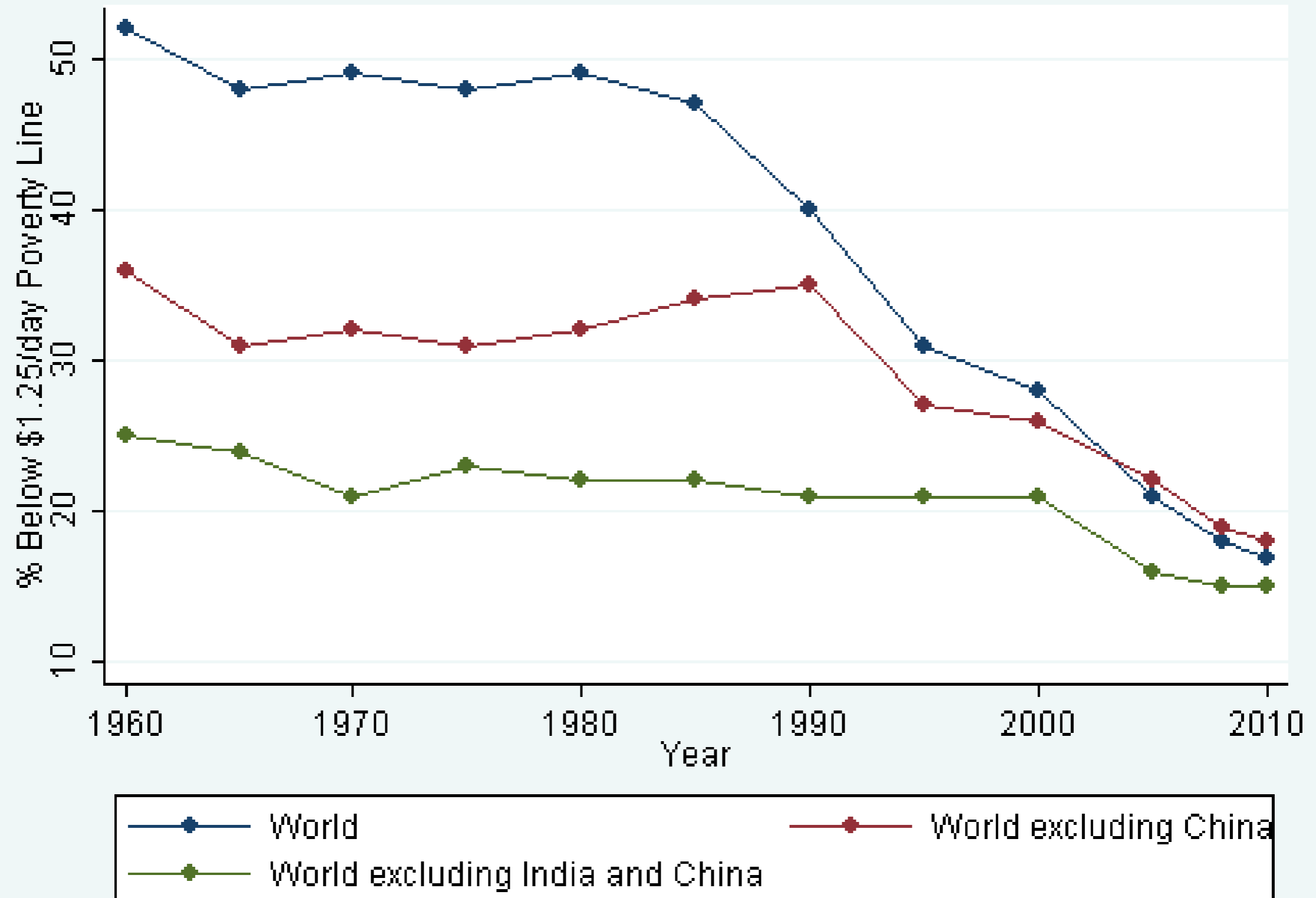
Global Generalized Lorenz Curve



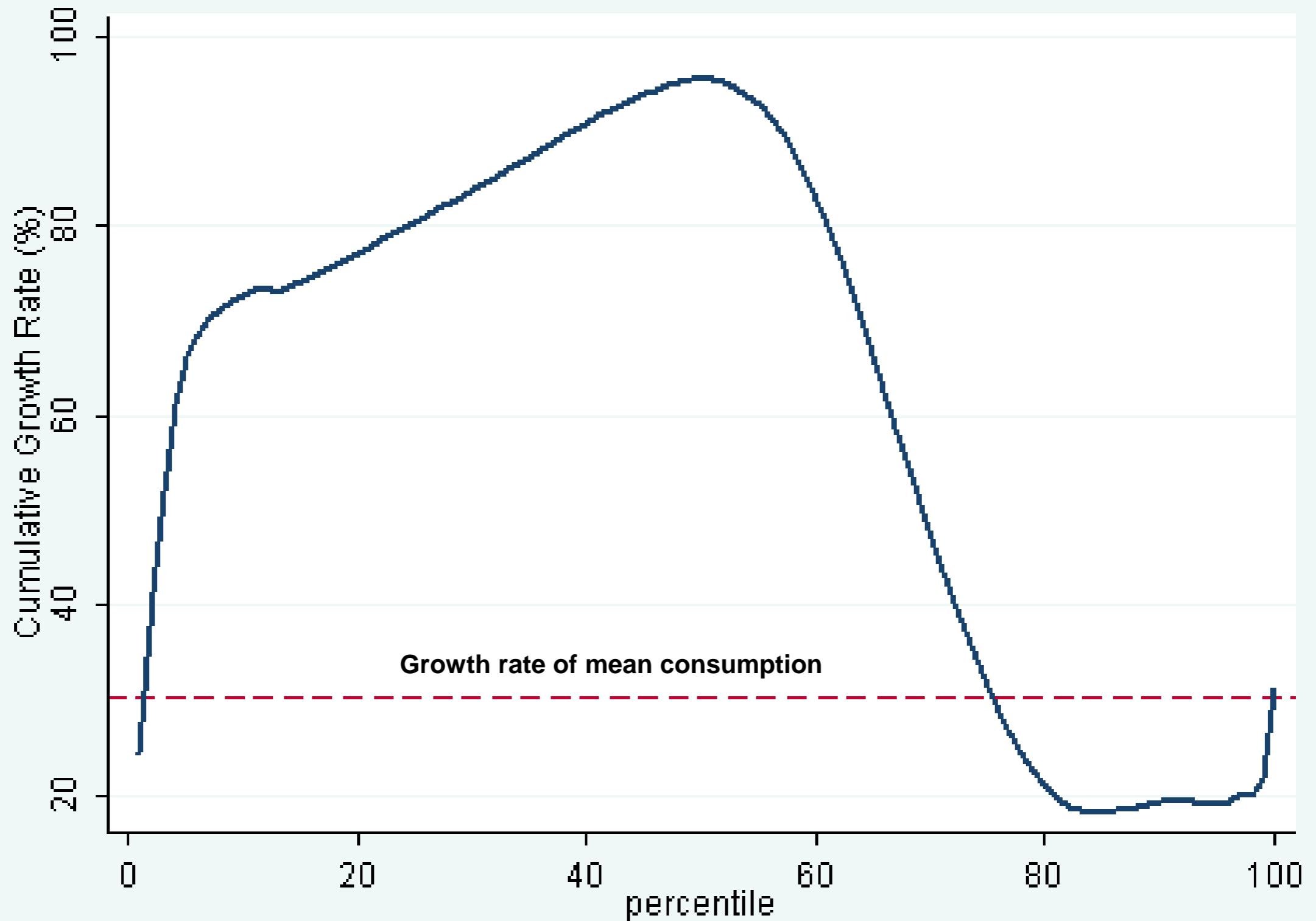
Global Inequality



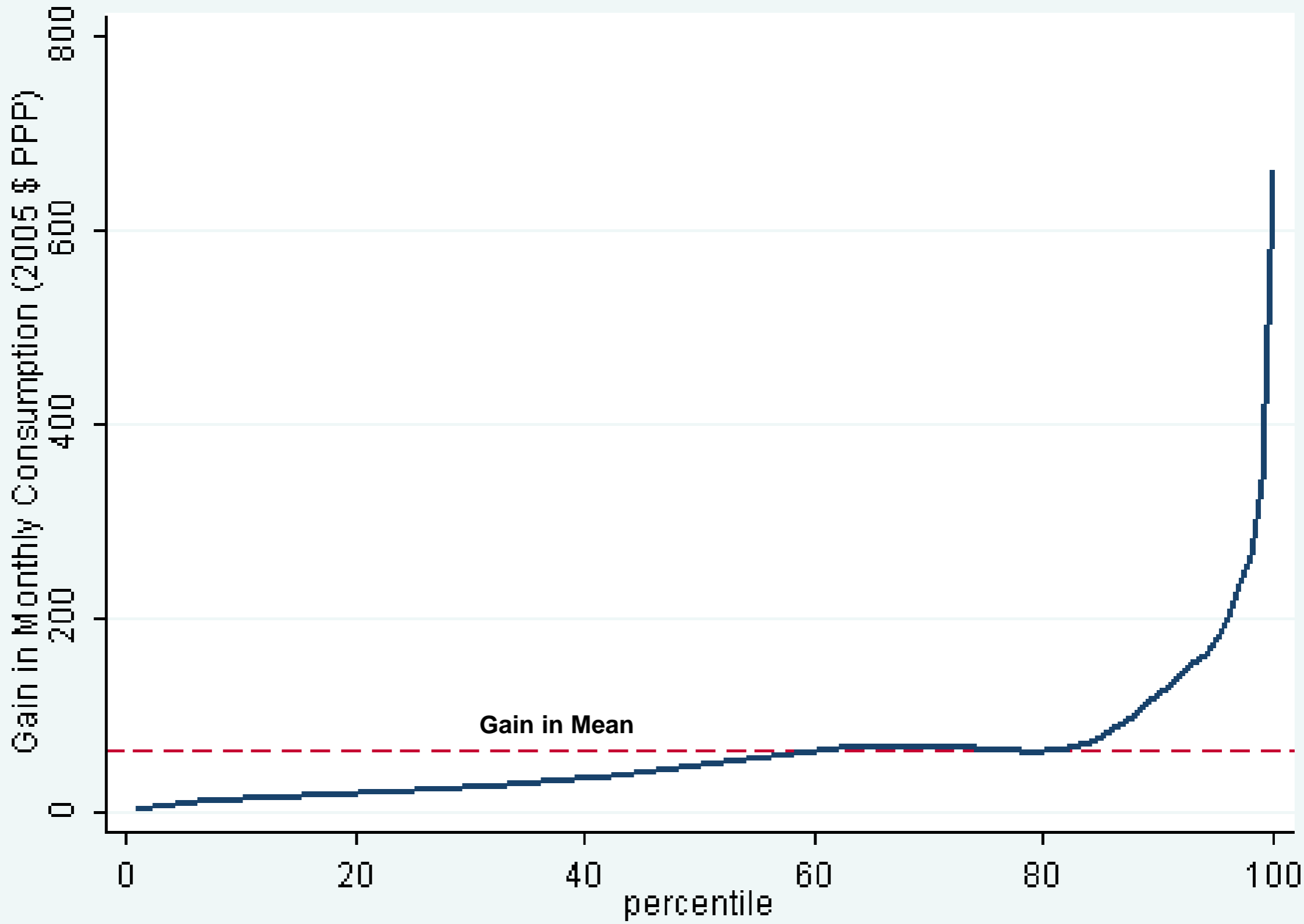
Global Poverty



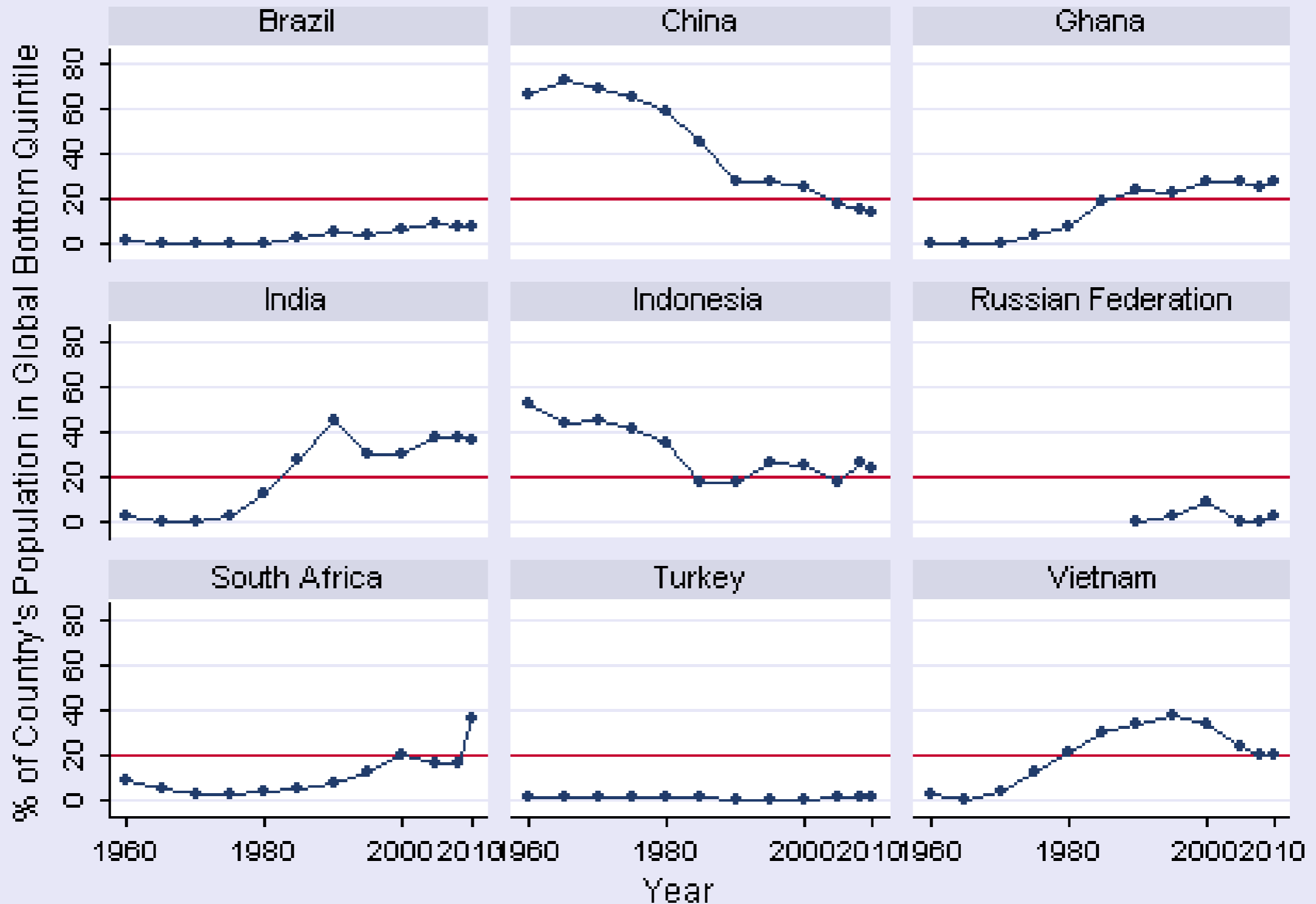
Global Growth Incidence Curve (1990-2010)



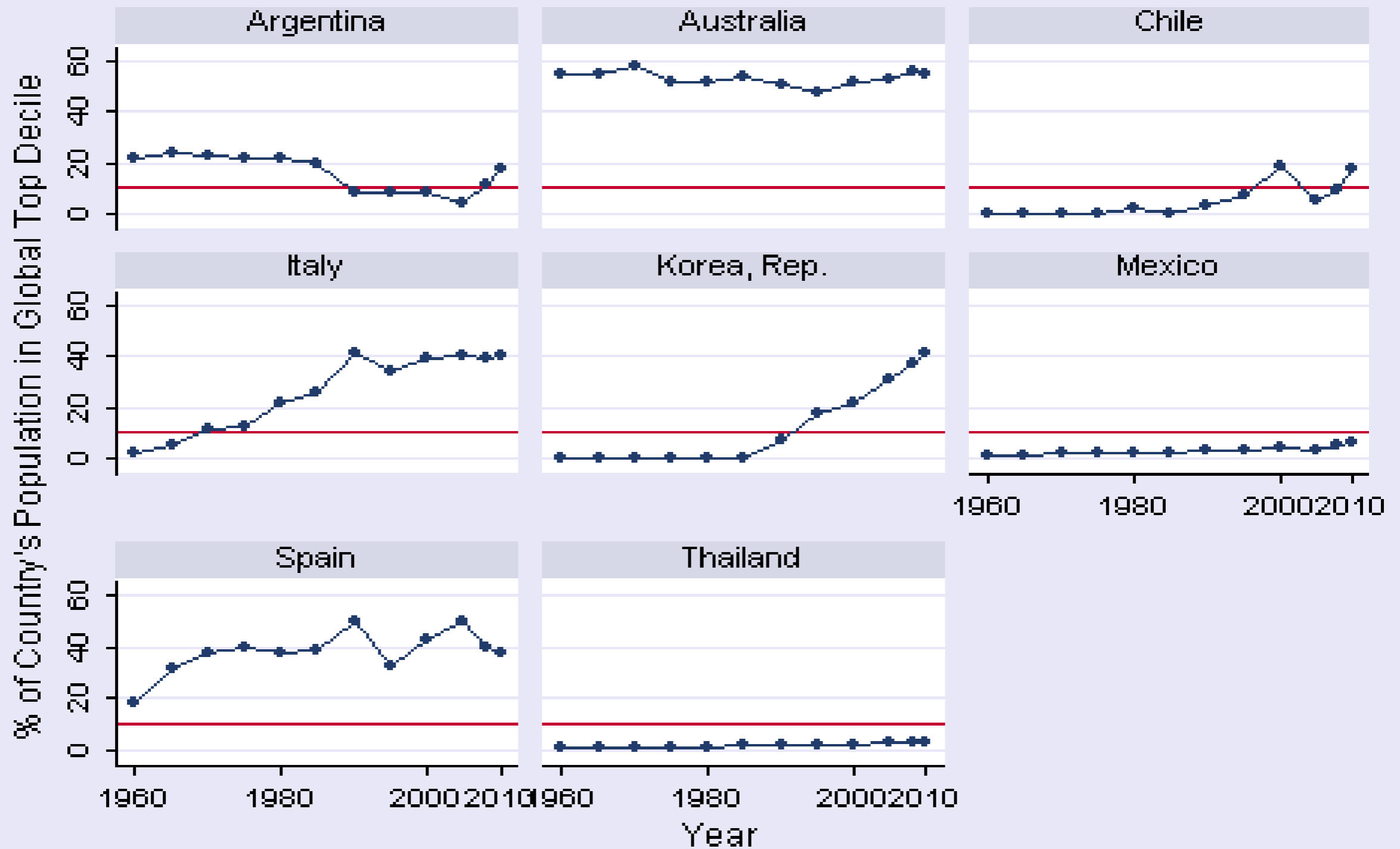
Global Absolute Growth Incidence Curve (1990-2010)



Global Consumption Bottom Quintile



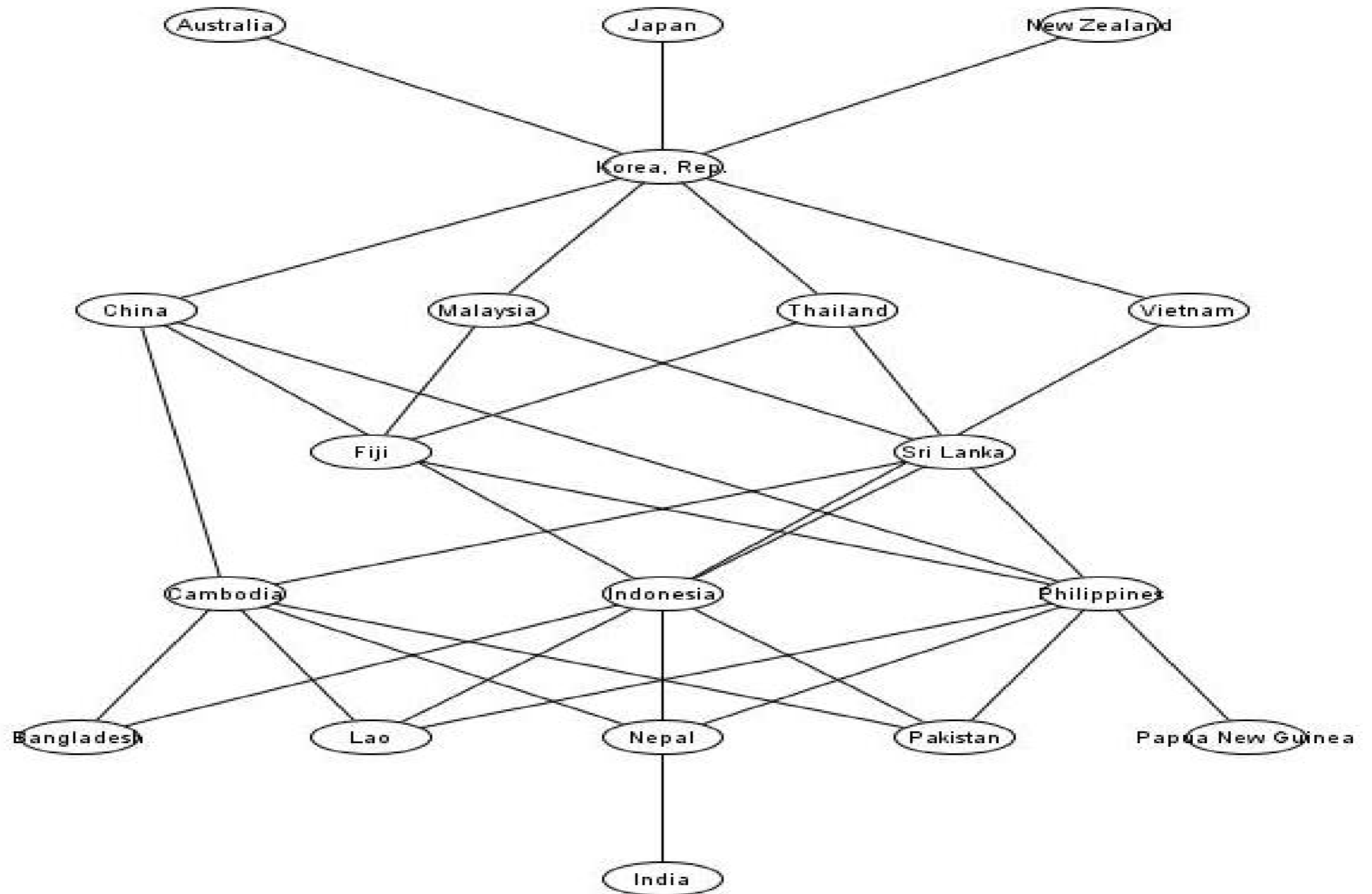
Global Consumption Top Decile



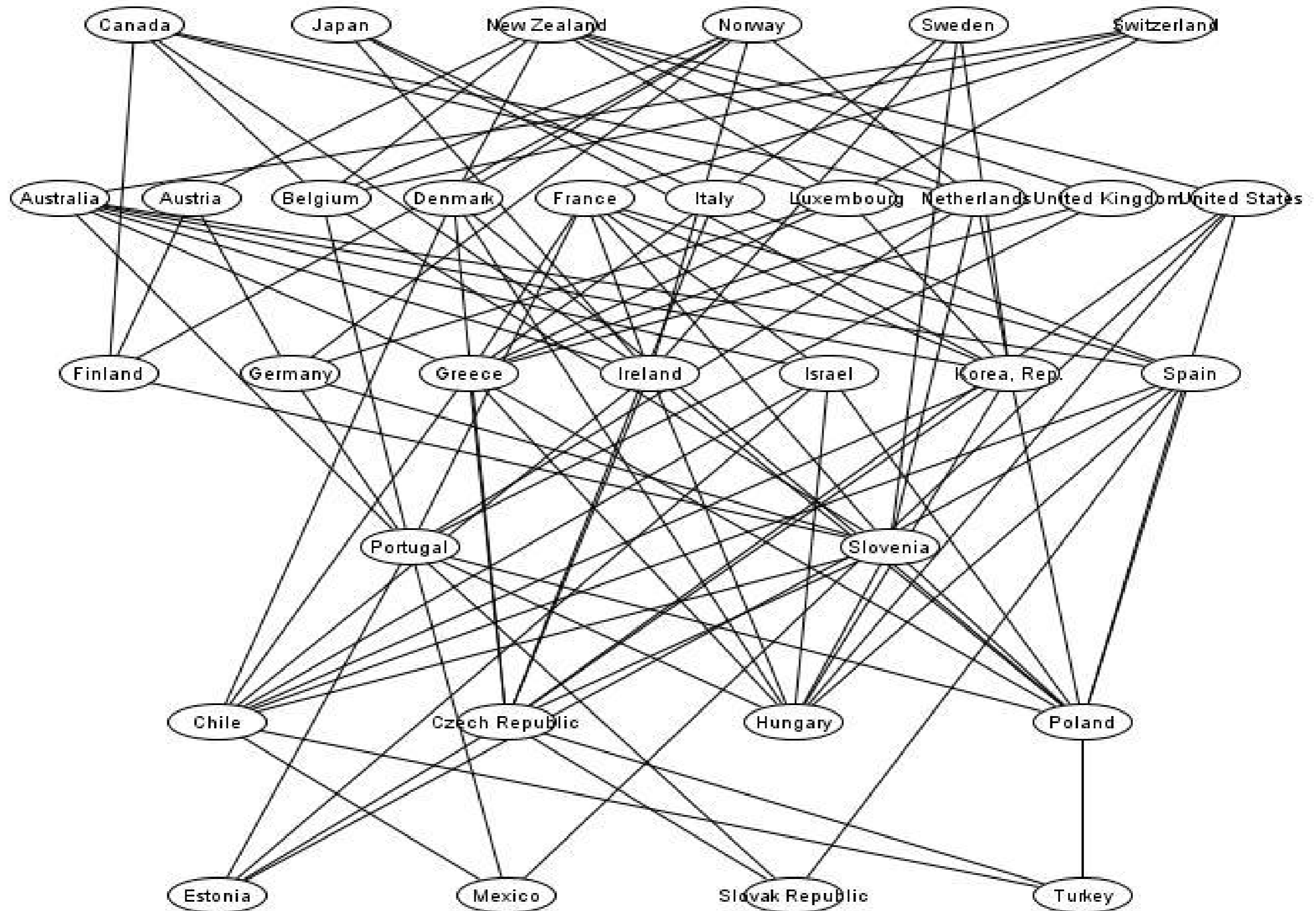
Inequality Estimates

Gini	1980	1990	2000	2010
World	0.70	0.69	0.68	0.64
World excl. China	0.64	0.67	0.68	0.66
World excl. India and China	0.59	0.61	0.65	0.63
Europe and Central Asia	0.36	0.41	0.51	0.43
Latin America	0.52	0.50	0.51	0.47
North America	0.28	0.30	0.33	0.34
Sub-Saharan Africa	0.56	0.54	0.51	0.50
Middle East & North Africa	0.47	0.43	0.43	0.42
South Asia	0.33	0.31	0.36	0.32
East Asia & Pacific	0.72	0.64	0.61	0.54
BRICS	0.60	0.56	0.46	0.50

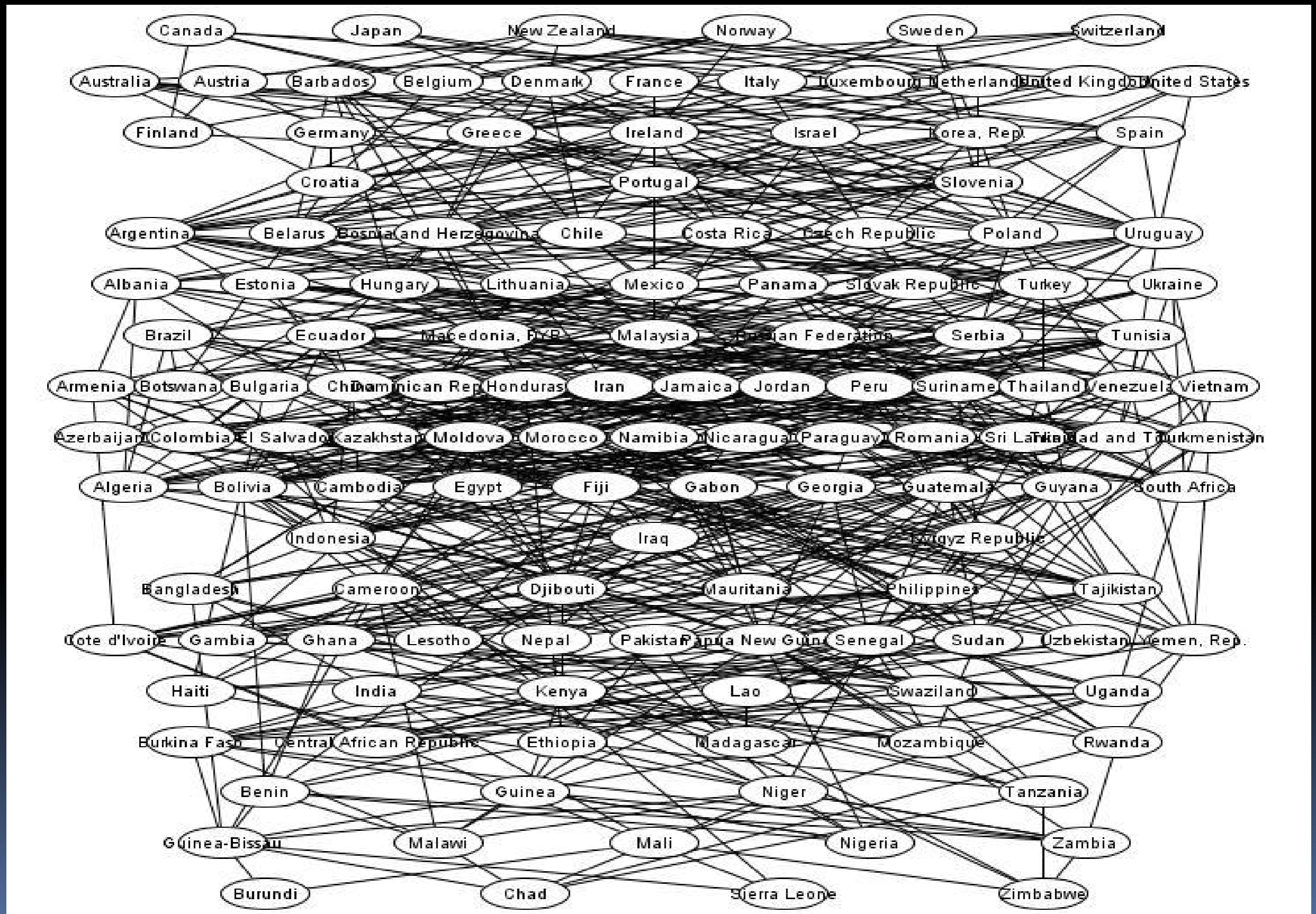
Asia Pacific Hasse Diagram: Consumption Profile & Life Expectancy



OECD Hasse Diagram: Consumption Profile & Life Expectancy



World Hasse Diagram: Consumption Profile & Life Expectancy





GCIP: A Resource for Understanding:

The Evolution of Material Living Standards Within and Across Countries over Diverse Time Scales

The Study of Poverty, Inequality and the Inclusivity of Growth and Development for the world as a whole, within regions, individual countries and diverse country groupings

The Implications of Alternate Assumptions and the Robustness of Conclusions



Causal Determinants of Poverty, Inequality and Inclusivity of Growth and Development (by linking explanatory factors to GCIP descriptive statistics)



Conclusion

- The GCIP is a work in progress that offers diverse possibilities.
 - Flexible in approach and open to alternate methods and suggestions.
 - We seek to build and improve the database -- with the involvement of interested specialists and the world public -- in the months and years to come
 - Follow us in the future on: www.gcip.info
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Additional Graphs and Tables



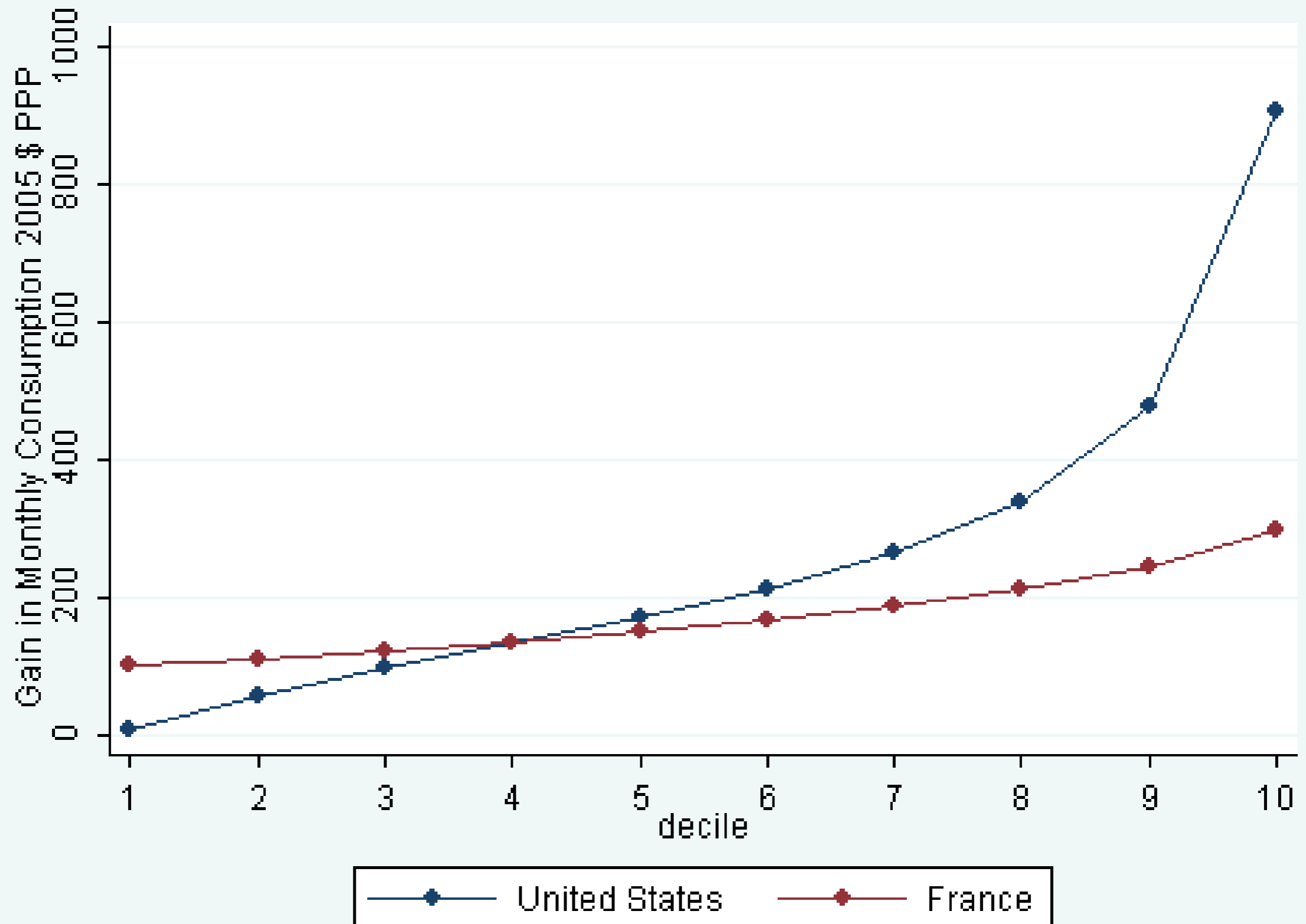
Possible Extensions

- Introduction of top income/consumption estimates
- Going further backward in time
- ‘Real-time’ monitoring of global trends by introducing actual or estimated higher-frequency data
- User-friendly interface for rapid results under alternative choices of assumptions

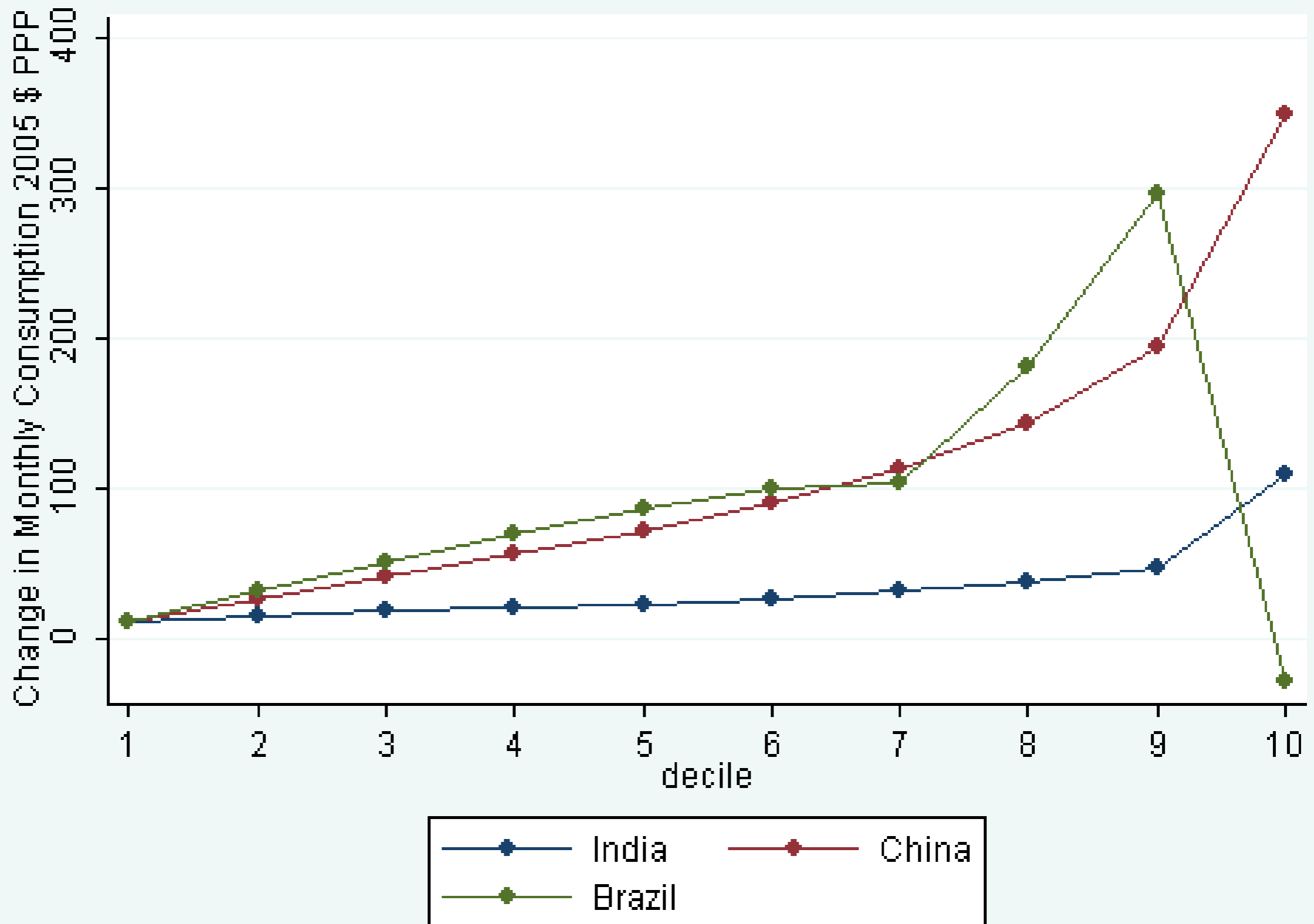
Poverty Estimates (\$1.25/day)

% Below 2005 PPP \$1.25 /day	1980	1990	2000	2010
World	49	40	28	17
World excl. China	32	35	26	18
World excl. India and China	22	21	21	15
Europe and Central Asia	1	2	6	1
Latin America	9	10	10	6
North America	0	0	0	0
Sub-Saharan Africa	53	55	56	46
Middle East & North Africa	9	5	3	2
South Asia	61	76	43	29
East Asia & Pacific	80	49	30	11
BRICS	79	59	35	18

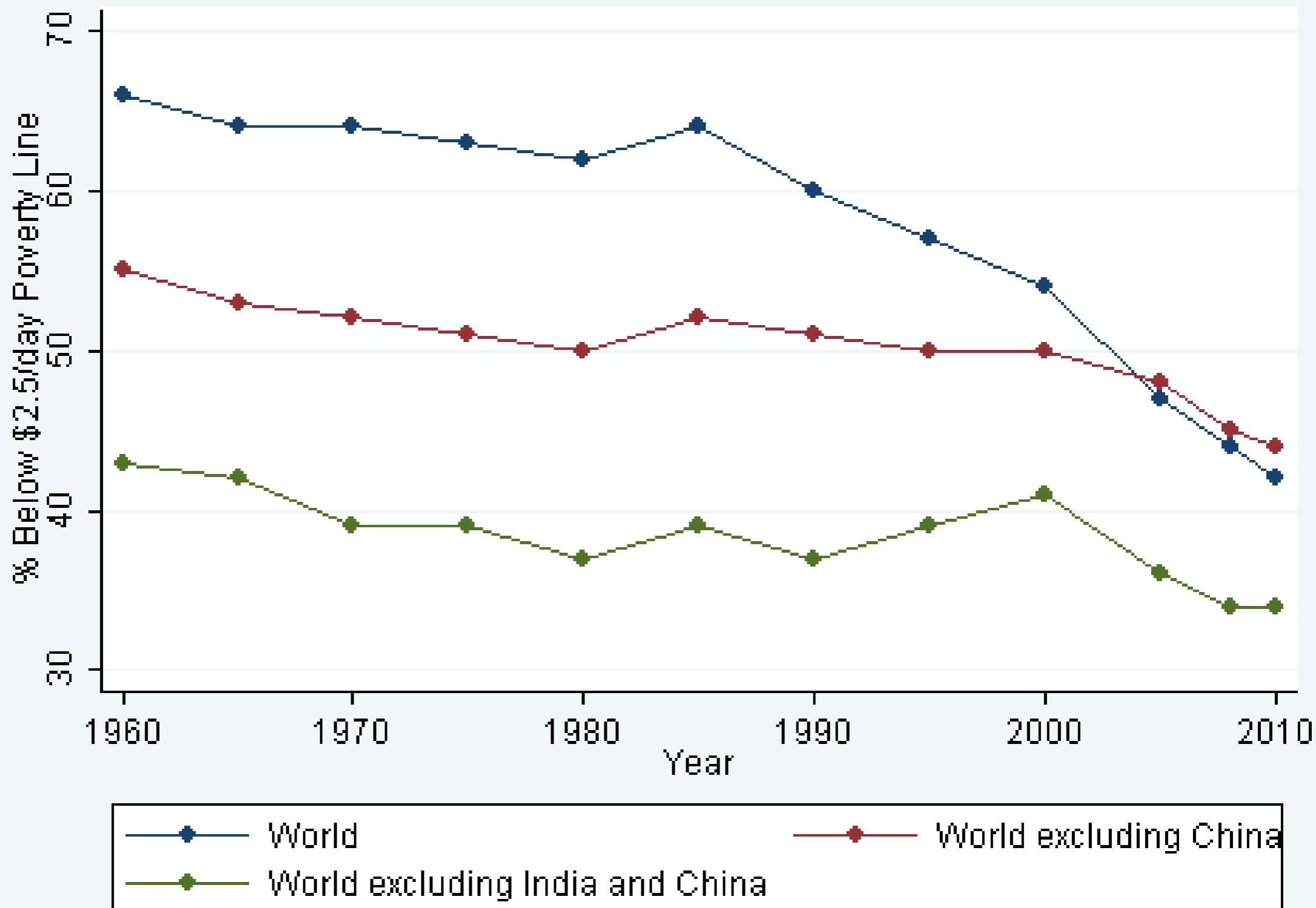
Country GIC (1990-2010)



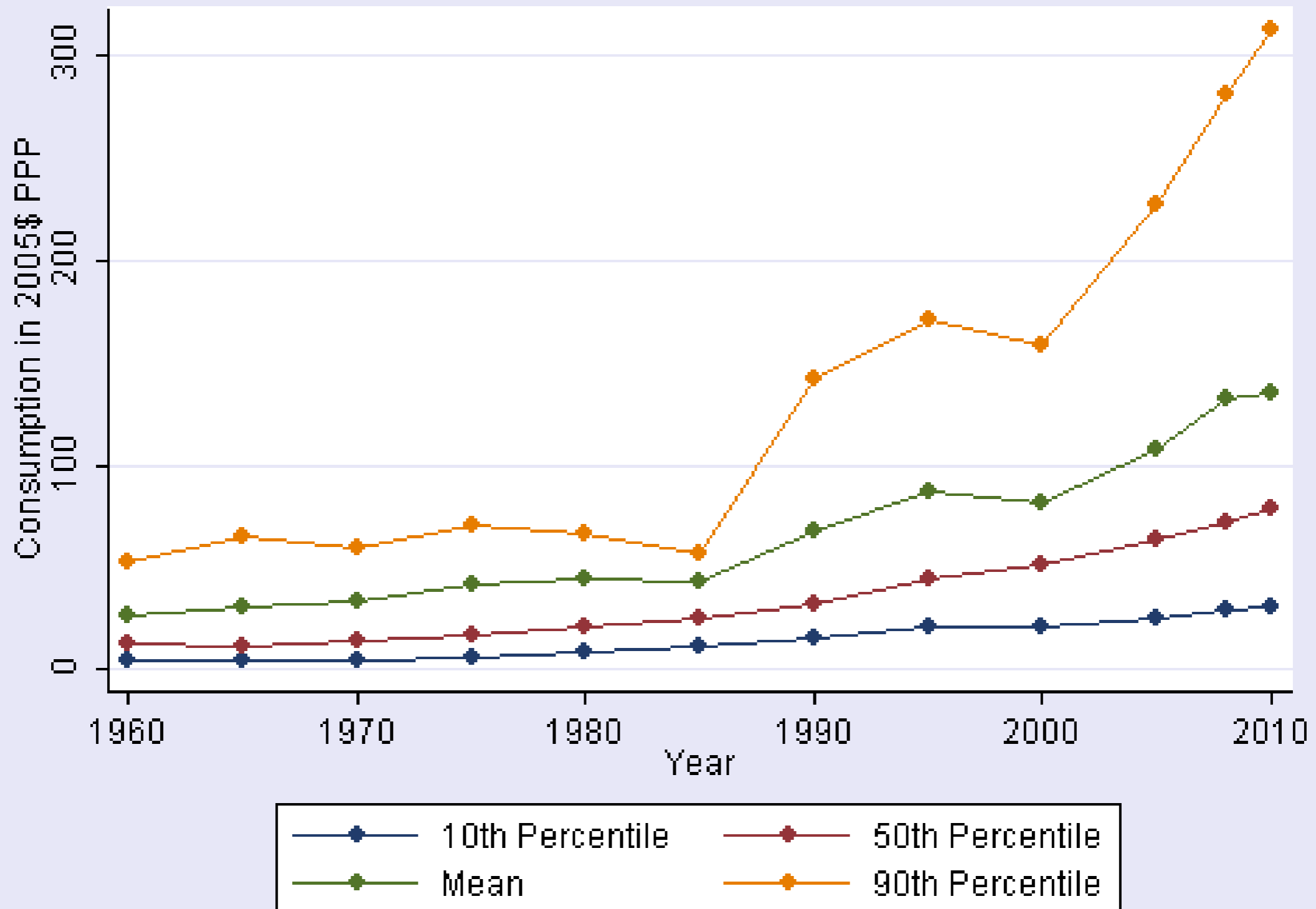
Country GIC (1990-2010)



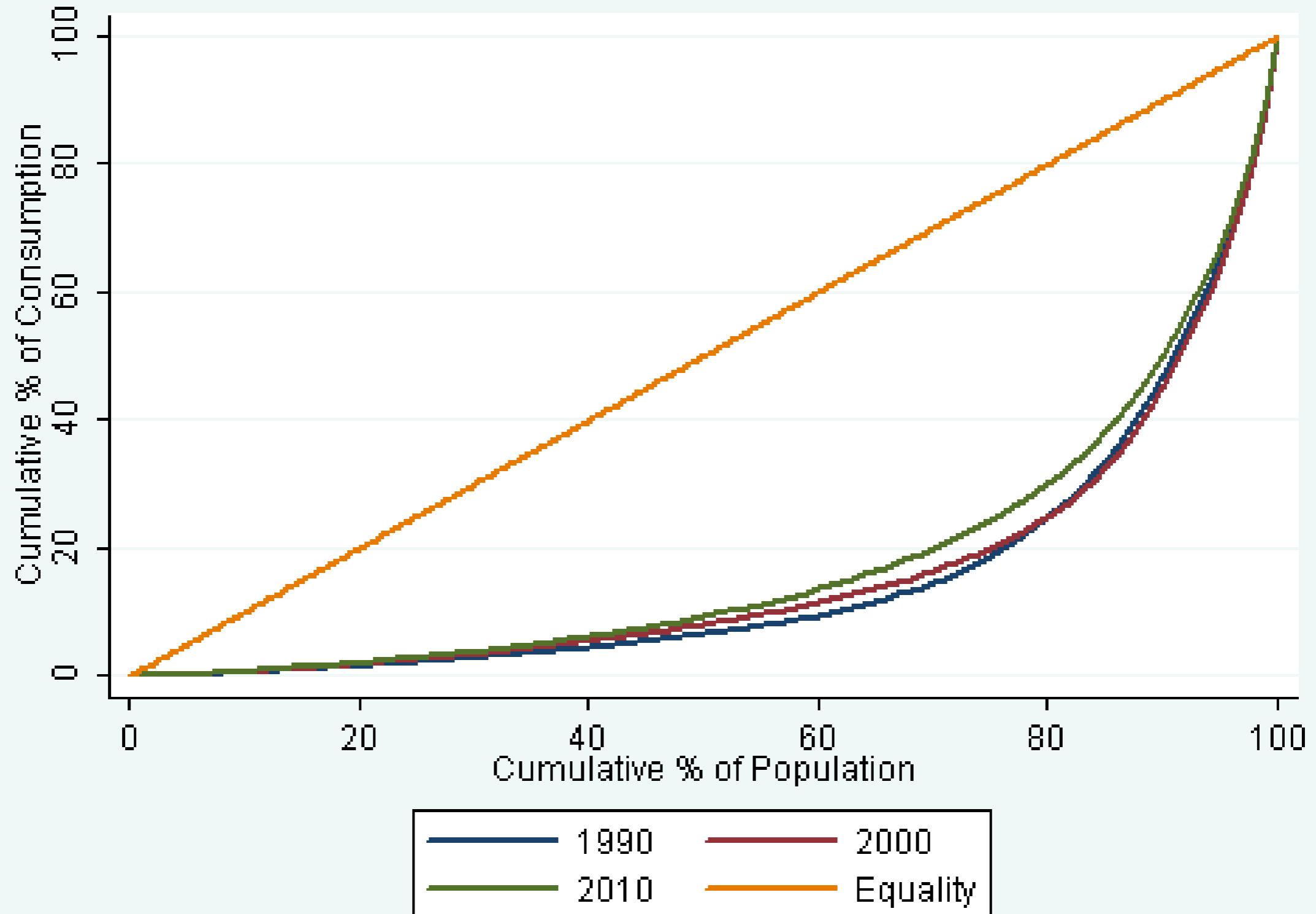
Global Poverty



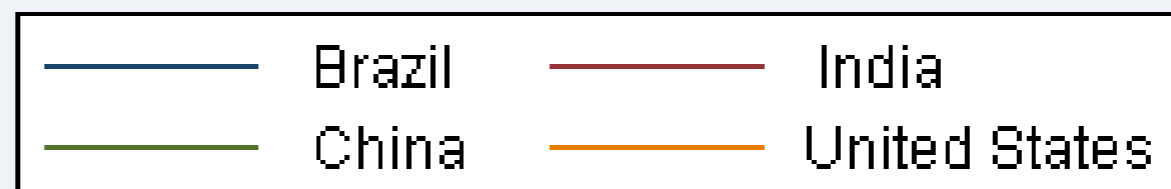
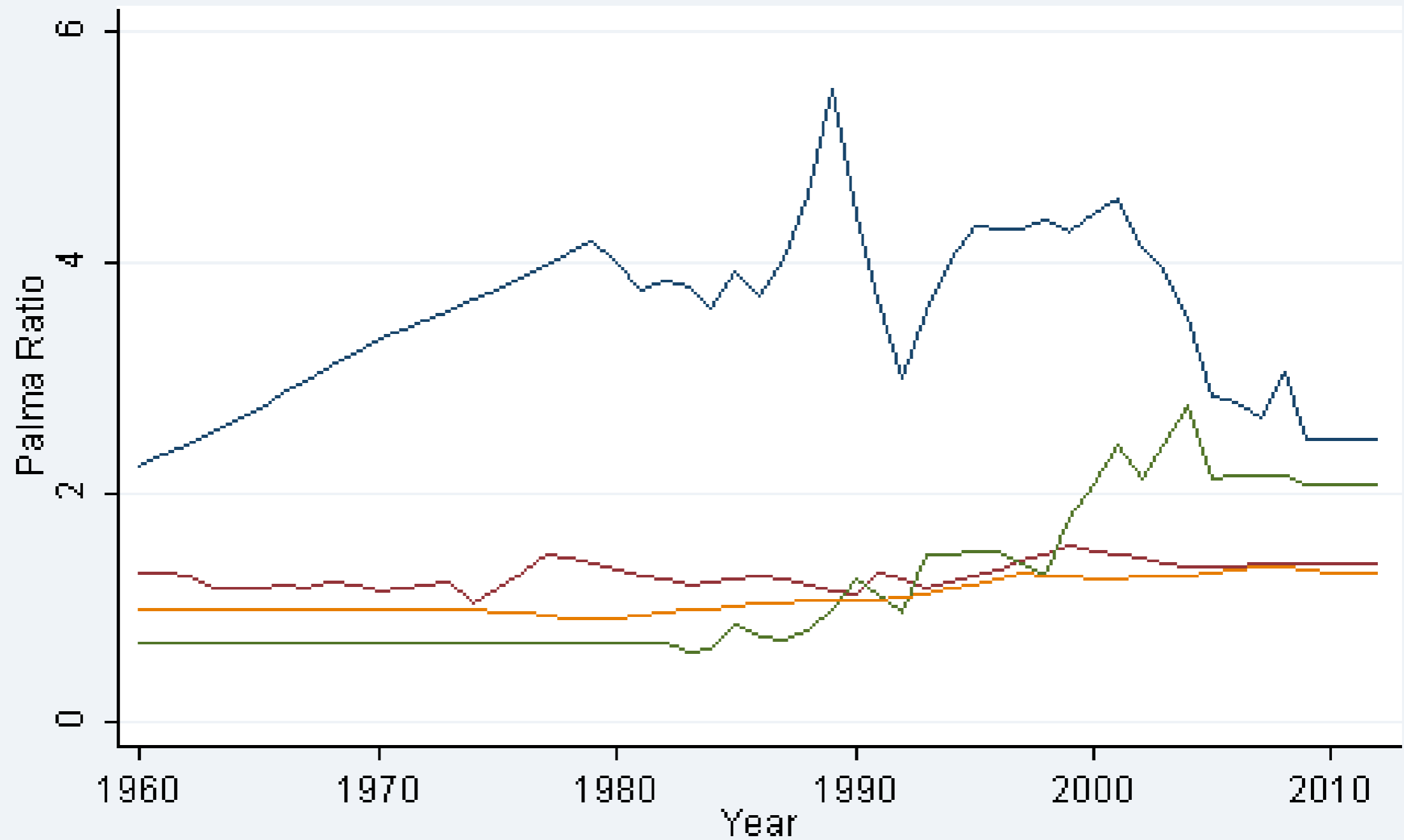
BRICS Aggregate



Global Consumption Lorenz Curve



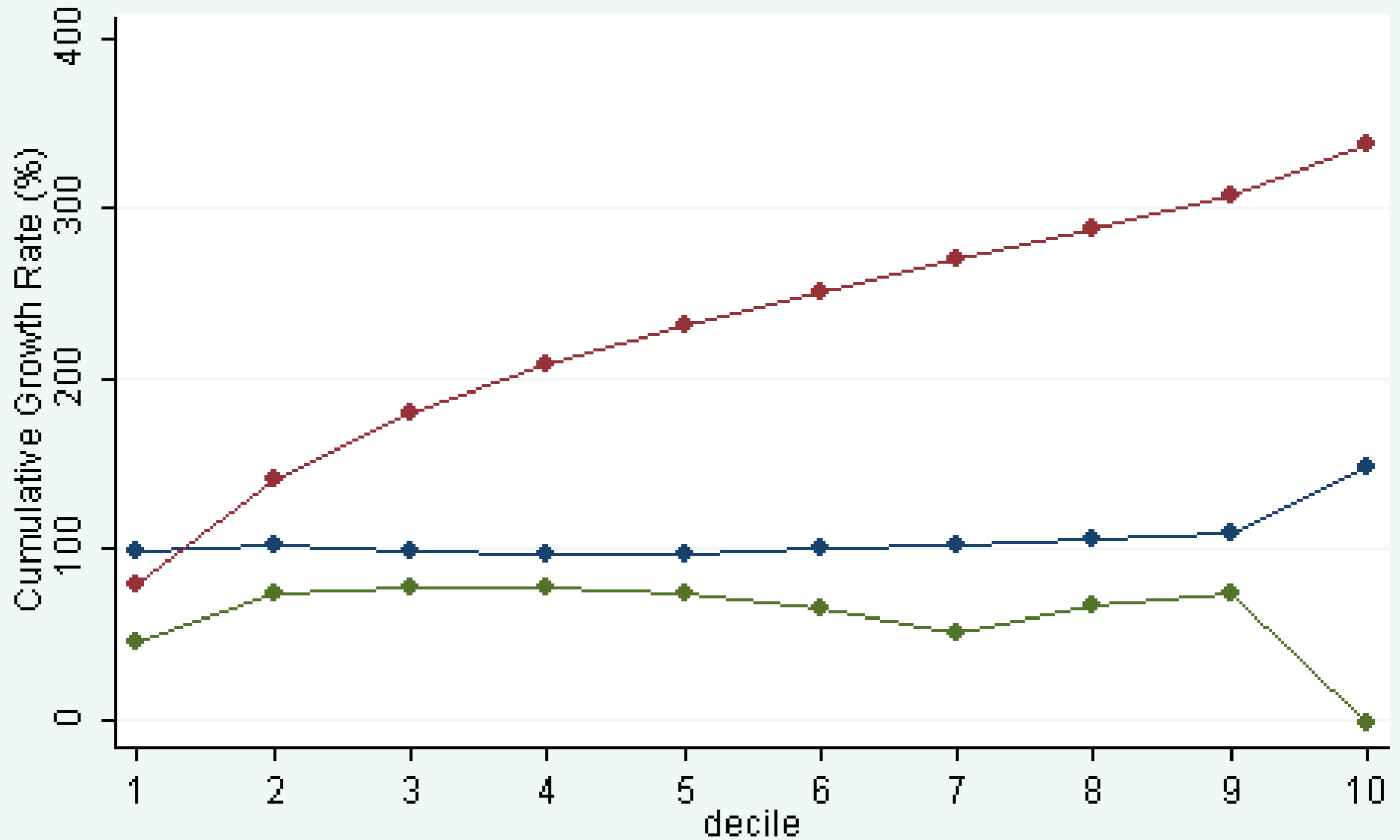
Palma Ratios (Share of top 10%/Share of bottom 40%)



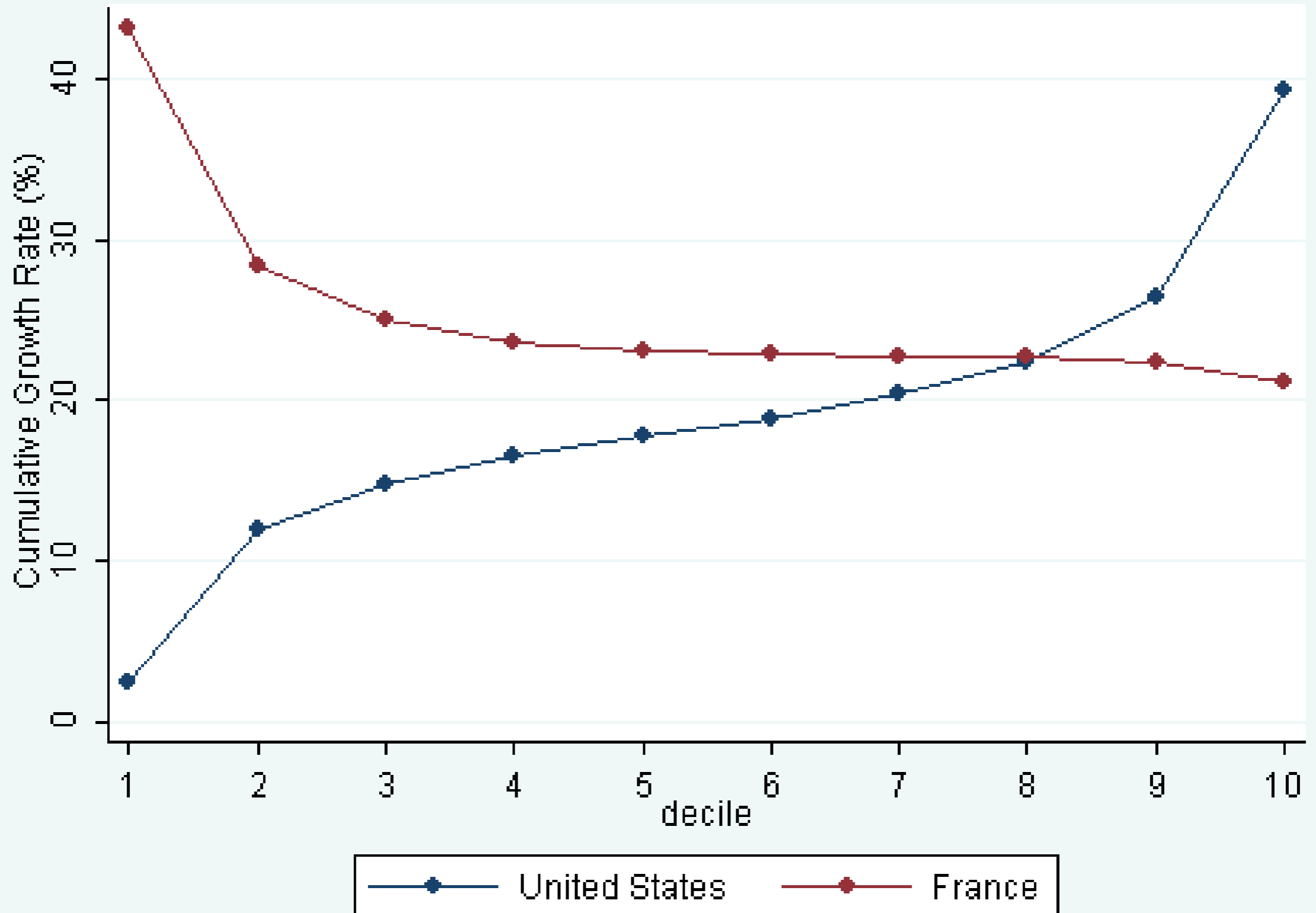
Poverty Estimates (\$2.50/day)

% Below 2005 PPP \$2.50 /day	1980	1990	2000	2010
World	62	60	54	42
World excl. China	50	51	50	44
World excl. India and China	37	37	41	34
Europe and Central Asia	3	5	16	5
Latin America	27	28	26	17
North America	1	1	0	1
Sub-Saharan Africa	77	81	82	77
Middle East & North Africa	36	33	30	21
South Asia	92	96	83	78
East Asia & Pacific	85	78	62	33
BRICS	91	83	69	49

Comparative Country GIC (1990-2010)



Comparative Country GIC (1990-2010)



Global Consumption Top Decile

