Inequality and Growth Revisited

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Evolution of Inequality Measures, 1960s-2000s					
Variable	**1960s**	**1970s**	**1980s**	**1990s**	**2000s**
Gini Coefficient	0.43	0.43	0.41	0.45	0.43
Lowest quintile share	0.054	0.050	0.053	0.043	0.048
Highest quintile share	0.497	0.490	0.488	0.531	0.503

Note: Data are from U.N., World Income Inequality Data Base, and Deininger and Squire/World Bank (1996).

$$\text{GINI} \approx 0.4 \cdot [2 \cdot (Q5\text{-}0.2) + (Q4\text{-}0.2) - (Q2\text{-}0.2) - 2 \cdot (Q1\text{-}0.2)]$$

My previous study from 2000 used panel data for many countries since 1960 to analyze two-way interplay between income inequality and economic performance.

Effect of per capita GDP on inequality involved inverse-U relation known as **Kuznets curve**. Starting from a low value, an increase in per capita GDP raised inequality. This relation eventually flattened out; at sufficiently high per capita GDP, further increases reduced inequality.

I summarized theories for presence of Kuznets curve.

Economic development—including shifts from

agriculture to industry and services and adoptions of

new kinds of technologies—initially benefits

minority of population. Subsequently, as new modes

and methods of production spread, benefits shared

more evenly, and higher per capita GDP reduces

inequality.

At empirical level, my results confirmed presence of Kuznets curve across countries and over time. However, the curve did not explain large part of observed variation in income inequality.

Second direction of effect involved impact of income inequality on economic growth. My discussion summarized existing economic theories, with a focus on four major features: credit-market imperfections, political economy, social unrest, and saving rates.

These theories do not produce clear empirical predictions for overall effect of income inequality on economic growth. I studied relation empirically, employing cross-country regression framework. Regressions included as explanatory variables initial levels of per capita GDP, health, and school attainment, along with other variables.

One conclusion was that overall effect of income inequality on growth was weak; often statistically insignificant. However, some indication that inequality bad for growth in poor countries and good for growth in rich countries. Results may fit with underlying theories. Differing effects for poor and rich might reflect greater impact of credit-market imperfections in poor countries.

Present analysis updates previous research. Now more and better international information on income inequality. I use *World Income Inequality Database*, May 2007, compiled by U.N. This data base builds on Deininger-Squire (World Bank) to include recent observations and supplement earlier data.

Some key questions:

- Have relationships between income inequality and economic performance changed along with "globalization?"

- Does international trade have a regular relationship with income inequality; has this relationship shifted over time?

- Has Kuznets curve—relating inequality to per capita GDP—shifted in recent years?

Regressions for Gini Coefficients
(estimated Kuznets curves)

Explanatory variable	(1)	(2)	Country fixed effects (3)
log(per capita GDP)	0.266** (0.066)	0.292** (0.058)	0.183** (0.067)
log(per capita GDP) squared	-0.0179** (0.0039)	-0.0182** (0.0034)	-0.0121** (0.0040)
Dummy for net income/expenditure	-0.0543** (0.0091)	-0.0393** (0.0082)	-0.0426** (0.0080)
Dummy for individual	-0.0188 (0.0099)	-0.0173* (0.0087)	-0.0215* (0.0085)
Dummy for sub-Saharan Africa	--	0.092** (0.014)	--
Dummy for Latin America	--	0.085** (0.013)	--
Dummy for former colony	--	0.049** (0.011)	--
Openness ratio	--	0.026* (0.011)	0.014 (0.019)
No. observations	54, 78, 91 123, 94	54, 77, 90 120, 92	54, 78, 91 121, 93
R-squared	.14, .18,.24 .27, .47	.35, .39, .59 .57, .66	--
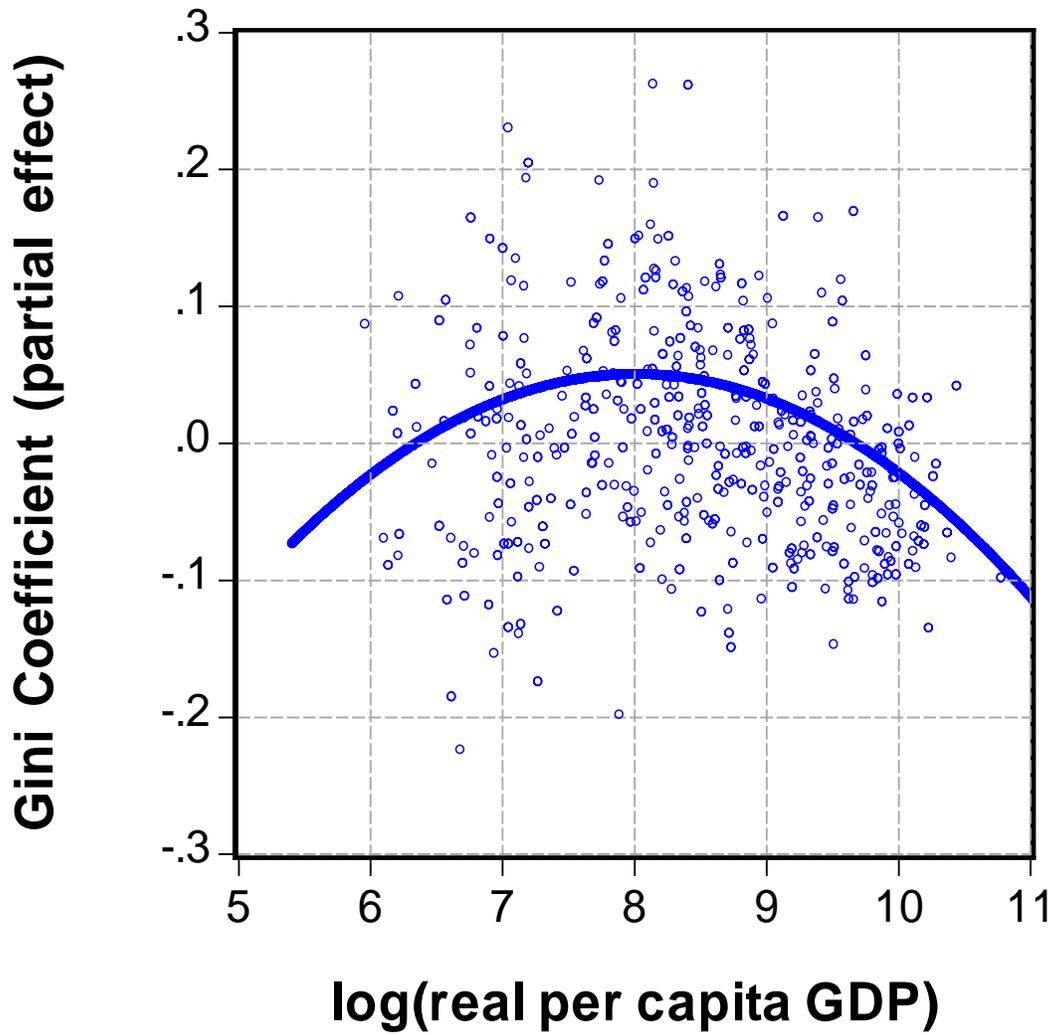
Figure 1

A Kuznets Curve:
Effect of per capita GDP on Gini Coefficient

Regressions for Economic Growth

Explanatory variable	(1)	(2)	(3)
log(per capita GDP)	-0.0248**	-0.0228**	-0.0359**
	(0.0029)	(0.0029)	(0.0057)
1/(life expectancy at age one)	-4.02**	-4.04**	-3.23**
	(1.10)	(1.07)	(1.08)
upper-level school attainment (years)	0.0022	0.0013	0.0016
	(0.0015)	(0.0015)	(0.0014)
openness variable	0.0099**	0.0103**	0.0091**
	(0.0034)	(0.0033)	(0.0032)
terms-of-trade change	0.112	0.120	0.109
	(0.066)	(0.064)	(0.064)
rule-of-law indicator	0.0251**	0.0260**	0.0275**
	(0.0065)	(0.0064)	(0.0064)
log(total fertility rate)	-0.0173**	-0.0111*	-0.0133*
	(0.0051)	(0.0054)	(0.0052)
investment ratio	0.035	0.032	0.035
	(0.025)	(0.024)	(0.024)
Gini coefficient	--	-0.036**	-0.297**
		(0.014)	(0.098)
(Gini coefficient)* log(per capita GDP)	--	--	0.0316**
			(0.0118)
no. observations	47, 66	47, 66	47, 66
	71, 70	71, 70	71, 70
R-squared	0.35, 0.50	0.37, 0.49	0.36, 0.50
	0.44, 0.12	0.43, 0.22	0.48, 0.27
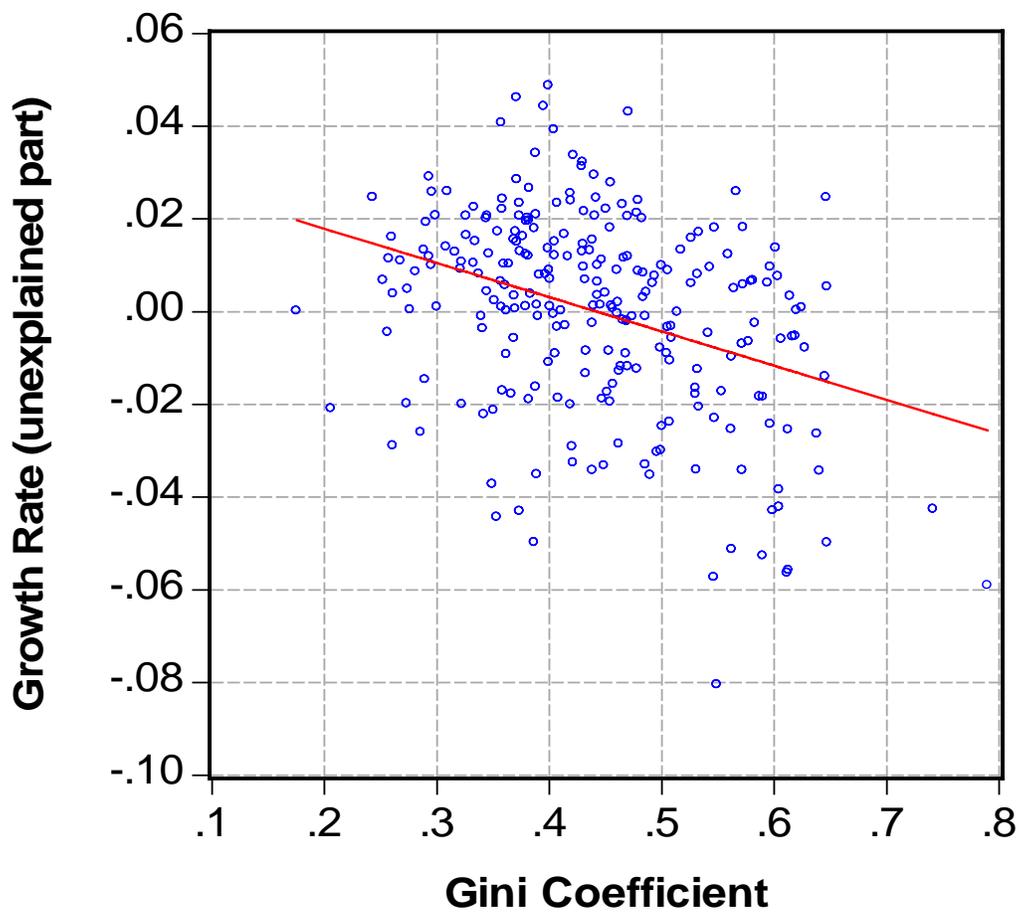
Figure 2

**Effect of Income Inequality on
Economic Growth**
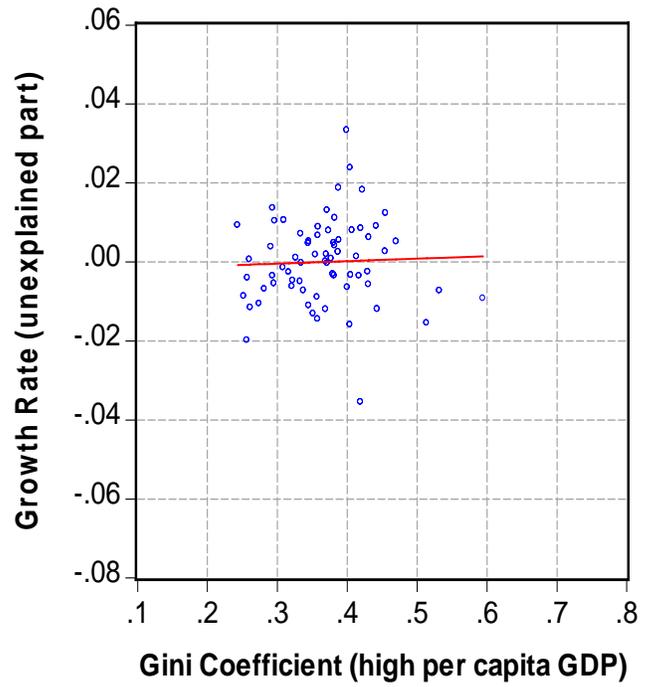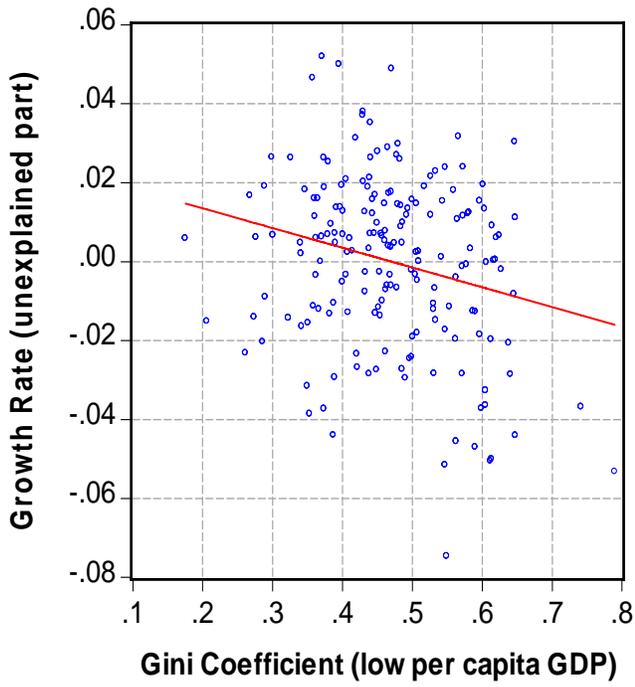
Figure 3

Effects of Income Inequality on Economic Growth: Two Ranges of per capita GDP