Inequality & Growth

Crieff Hydro

10 January MMXIII

Jelte Harnmeijer & Lucia Lavric

jelte@realfuture.org

Overview

- Introduction
  - Inequality & Growth
  - How studies into inequality differ
- Objective
- Results to date
- (Pre-emptive) Conclusions
- Onward work

Introduction

- 'Inequality' has received significant attention from economists
- Of particular interest is the relationship between growth and inequality

Introduction

- The relationship between growth and inequality is …
  - Negative
    - Alesina & Rodrik (1994); Persson & Tabellini (1994); Perotti (1996)
  - Positive
    - Li & Zou (1998); Forbes (2000)
  - Insignificant
    - Deininger & Squire (1996)
  - Non-linear
    - Barro (2000); Benabou (2000)

Introduction

Studies into inequality differ in respect of:

- Domain
  - Global
    - "Why are some countries rich and others poor?"
    - "Is overall inequality increasing or decreasing in the world?"
  - Regional
  - National

Introduction

Studies into inequality differ in respect of:

- Measure of Wealth
  - Expenditure
  - Income
    - Net of taxation
    - Gross

Introduction

Studies into inequality differ in respect of:

- Unit of Analysis
  - Individual
    - Taxpayer
    - Income earner
    - May exclude 'economically inactive'
  - Household
  - Family

Introduction

Studies into inequality differ in respect of:

- Measure of Inequality
  - Ratios of Percentiles
  - Aggregated indices
    - Gini index
    - Theil index

Objective

Does the use of newer and more methodologically homogeneous inequality country panel data have a bearing on selected tests of relationship between inequality and growth?

Controls

$$X_{it}$$

Study	*Variable*	*Description*
Perroti (1996)	*ln (GDP (t))*	Natural log of per-capita Real GDP
	PPP I(t)	PPP value of investment deflator
	msec (t)	Average years of male secondary education
	fsec (t)	Average years of female secondary education

Controls

$$X_{it}$$

Study	*Variable*	*Description*
Barro (2000)	*ln (GDP (t-1))*	Natural log of per-capita GDP
	ln (GDP (t-1))^2	Squared natural log of per-capita GDP
	govconsump (t)	Government consumption
	secedu (t)	Average years of secondary education
	teredu (t)	Average years of tertiary education
	fert (t)	Fertility
	termstrade (t)	Terms of Trade
	rulelaw (t)	Rule of Law index
	democ (t)	Democracy index
	democ (t)^2	Squared democracy index
	spanportcolony	Spanish or Portuguese colony dummy
	colony	Other colony dummy
	invshare (t)	Investment share

Datasets

g_{it}

- World Bank
  - Deininger & Squire (1996)
  - Classed into 4 distinct quality categories
    - 45 countries in high-quality subset
    - 655 observations
  - Includes different measures of wealth
    - Income (Gross & Net)
    - Expenditure
  - Includes different units of analysis
    - Individuals
    - Households

Datasets

g_{it}

- University of Texas Inequality Project (UTIP)
  - Galbraith & Hum (2008)
  - 151 countries in dataset
  - 3513 observations
  - Highly unbalanced
  - Includes a single measure of wealth
    - Gross Income
    - Includes a single unit of analysis
    - Households

Datasets Compared

g_{it}

- World Bank
  - Includes different measures of wealth
  - Includes different units of analysis
  - These differences are commonly ignored or 'transformed' to household units in many studies

- University of Texas Inequality Project (UTIP)
  - Includes a single measure of wealth
  - Includes a single unit of analysis

Preliminary Results

$$\gamma$$

$$(y_{it+a} - y_{it})/a = \alpha y_{it} + X_{it}\beta + \gamma g_{it} + \upsilon_i + \varepsilon_{it}$$

Specification	Estimation	Dataset	γ
Perotti (1996)	Fixed Effects	IBRD (1996)	+0.190 (0.069)
		UTIP (2008)	+0.126 (0.046)
	Random Effects	IBRD (1996)	-0.000 (0.026)
		UTIP (2008)	-0.008 (0.038)
	Pooled OLS	IBRD (1996)	-0.017 (0.023)
		UTIP (2008)	-0.042 (0.039)

Preliminary Results

$$\gamma$$

$$(y_{it+a} - y_{it})/a = \alpha y_{it} + X_{it}\beta + \gamma g_{it} + \upsilon_i + \varepsilon_{it}$$

Specification	Estimation	Dataset	γ
Barro (2000)	Fixed Effects	IBRD (1996)	+0.201 (0.041)
		UTIP (2008)	+0.151 (0.043)
	Random Effects	IBRD (1996)	+0.103 (0.034)
		UTIP (2008)	+0.103 (0.033)
	Pooled OLS	IBRD (1996)	+0.096 (0.033)
		UTIP (2008)	+0.103 (0.033)

(Pre-emptive) Conclusions

• Thus far, using the newer and more methodologically homogeneous inequality dataset has little effect on tests into the relationship between inequality and growth

Onward work

- Use non-PPP adjusted GDP data
- Investigate possible unbalanced panel problems using the newer (UTIP) dataset
- Add First Differences estimation
- Add Arellano & Bond (1991) GMM estimation
- Add selected non-linear functional forms for inequality variable:

$$(y_{it+a} - y_{it})/a = \alpha y_{it} + X_{it}\beta + \phi(g_{it}) + \upsilon_i + \varepsilon_{it}$$