

Growth and development

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Outline

1. Concept
 1. History of thought
 2. Differences DCs and LDCs
2. Measurement
 1. GDP per capita: PPP adjusted dollars
 2. HDI: PQLI

Concept: thought

- Until the 1960s: growth and development were considered the same.
- The Solow model:
- 1970s and 1980s: growth and development used completely different methods.
- 1990s, new methods developed: the two sub-disciplines converged again.

Concept: differences

- 1970s and 1980s: something special about developing countries.
- What is a developing country?
- What is different between developed and developing countries?
- Is any of these characteristics specific of today's developing countries?

Concept

- Concept leads to measurement: problematic
- Pragmatic approach: income per capita.
 - WDR: threshold 1996 US\$9,000

Measurement: GDP

- Economists:
 - income (or GNP) per capita = best single indicator of welfare.
 - development ≠ per capita income. Sen: development = freedom.
- Rational: the larger the income, the more choices, (more freedom), the larger the welfare
- Necessary condition, means towards a goal.

GDP

Problems:

1. Illegal activities
2. Underground economy:
3. Non-market activities:
4. GDP per hour (productivity) is a better
5. Distribution
6. Exchange rates
7. Relative prices are different in different countries.

GDP

- Measure of income, not wealth (stock of natural resources)
- Problems 6&7 taken care of by Purchasing Power Parity (PPP) adjusted dollars.
- Generally speaking: the larger the GNP per capita, the larger the welfare. Not true:

$$\text{GDP}(a) = 2 * \text{GDP}(b) \rightarrow$$

$$\text{welfare}(a) = 2 * \text{welfare}(b)$$

PPP adjusted \$

- Based on World Penn Tables (Kravis-Heston-Summers data set, 1988) : joint project of World Bank and Penn
- 400-700 prices : 150 parity indices.

PQLI

- 1979: Morris D. Morris: Physical Quality of Life Index: to overcome the shortcomings of GDP per capita
- "Social" (noneconomic) indicator.
- It uses (same weight)
 - infant mortality,
 - life expectancy (conditional) and
 - literacy rates.

PQLI

- Problems:
 1. same weight: subjective element.
 2. high correlation between PQLI ranking with and GDP per capita ranking (as predicted by econ. theory)

HDI

- In 1990 the United Nations Development Project combine GDP and PQLI into a "socio-economic" indicator.
- It uses (same weight)
 - income per capita (introduces diminishing marginal returns) ,
 - life expectancy, and
 - a measure of educational attainment.
- Method changes from one year to another: not comparable

HDI

- Problems:
- 1. **Subjective**: why these three? Why same weight?
- 2. Life expectancy & schooling = $f(y)$
- 3. **HDI = $f(y)$**
- Correlation between HDI rank and GDP per capita rank: 0.9: "no significant new information".
- Cost.
- Outliers: distribution of income (y is an average)
- All in all, y best single indicator of welfare.

Growth

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Outline

- Economic growth
- Solow model
 - Capital accumulation
 - Population growth
- Technological progress
- Convergence
- “Other” shortcomings

Economic growth

- Relatively new phenomenon.
 - Up to 15th century: no economic growth: no population growth.
 - The 15 to 18: technological progress allows population growth.
 - Since Industrial Revolution: increase in global population accompanied by increase in standards of living

Economic growth

- Some countries started growing mid-18th century.
- Most of the rest after the end of the colonial period (1950s-60s).

Solow model: capital

- Assumption: labour force = population.
- Cobb-Douglas production function: it reproduces certain stylized facts.
- Two conclusions:
 1. Because of diminishing returns to capital, accumulation of capital per se cannot explain sustained growth but ...
 2. differences in investment rates (partially) explain differences in standards of living.

Population growth

- Assumption: population (labour force) grows at rate n .
- Comparative statics.
 - inverse correlation between population growth rate and standards of living.

Technological progress

- Solow: we cannot explain sustained growth of the kind that we have seen during the last two centuries without technological progress
- Solow introduced it in an exogenous way
- Technological progress is "labour augmenting": it increases efficiency of labour (wages): a worker today is equivalent to X workers of 1900.

Technological progress

- Issues:
 1. "Exogenous": confession of ignorance
 2. Model is an "accumulation of capital" model w/o any role for human resources
 3. Measure of technological progress (TFP): Solow residual:

Convergence: unconditional

- Human beings are the same all over the world: basic parameters should be the same for all countries: all countries should go to the same SS
- The lower the initial y , the higher the growth rate should be and vice-versa; i.e., negative relation between y and g
- Ideally: long time series for a large sample of countries.

Unconditional convergence

- Two alternatives:
 1. look at a small set of countries over a long time horizon: negative relation: this is a very biased sample (DCs).
 2. look at a large set of countries over a short time horizon: negative disappear

Conditional convergence

- Basic parameters are not the same: each country goes to ITS OWN SS
- How much of the variation in y do s and n explain? 59% (MRW 1995, $\delta + g = 0.05$)
- The coefficients have the right signs:
 - α implied by the second, 0.34
 - α implied by the first, 0.41

Conditional convergence

- Convergence issue: if a country is "below" its SS, it should grow faster than normal (= 1.4%). MRW (1992) and BS (1992)

Conditional convergence

- Two issues:
 1. proponents of unconditional convergence insists on the need to explain differences

Convergence

2. Are countries at their SS? Some are and some not. Why are some countries out of their SS?
 - Shocks
 - Changes in “fundamentals”: moving from one SS to another

Shortcomings

- Very good model: parsimonious, why it has been around since the 1960s.
- Two assumptions:
 1. Exogeneity of savings: savings rate is determined not only by the level of income per capita but also by its distribution.
 2. Exogeneity of population growth: since Malthus