SOUTHERN METHODIST UNIVERSITY

Economic Development

Macroeconomics Perspectives

Professor Thomas Osang

Lecture Notes (Incomplete)

SMU

1. Introduction

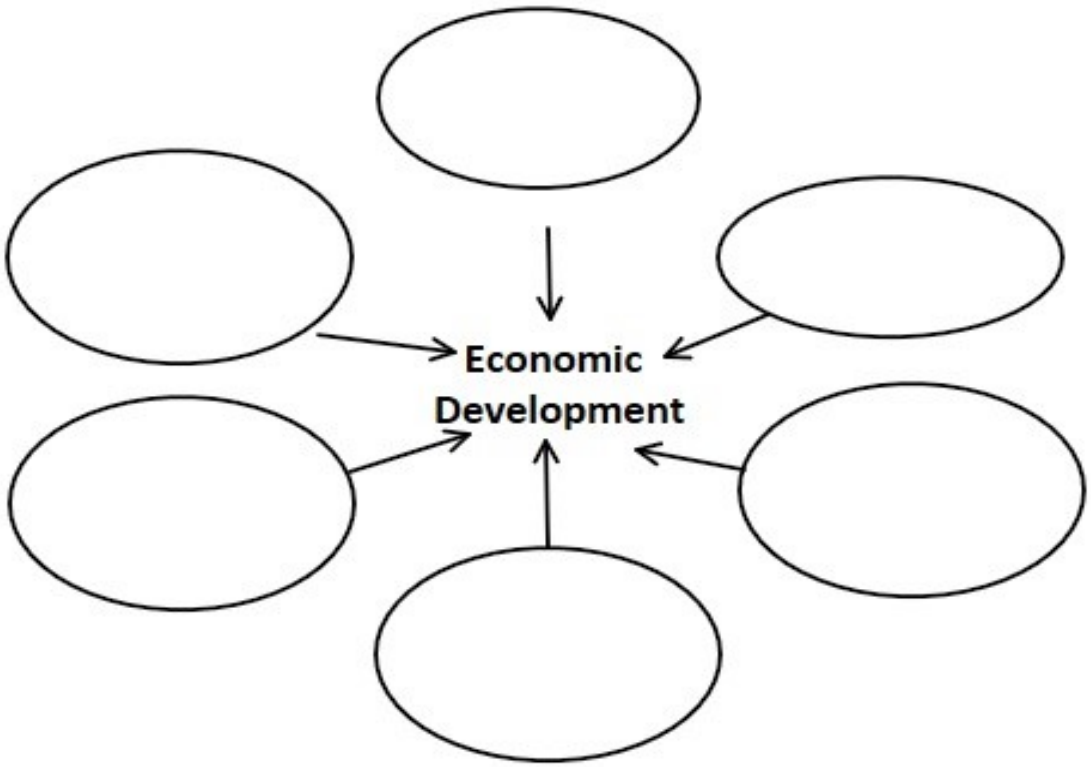
1.1 Methodology of this Course

- **Data Based**

- **Theory Based**

- **Flow Experience**
    - **Mihaly Csikszentmihali: Cofounder of Positive Psychology**

- **Economic Development combines information and knowledge from many fields in economics**



1.2 Measurement of Development

Q: How do we measure economic development?

The measurement of economic development is surprisingly difficult and not without controversy.

To demonstrate this, let us look at much simpler measurement problem: A country's success at the Summer Olympic Games. Here: Rio de Janeiro Summer Olympics 2016

Even though this appears to be a straightforward exercise, there are indeed many ways to tackle this measurement task:

- In the U.S., we rank countries by **total medal count**:
    -
    -
    -
    -
    -
- In many other countries, countries are ranked by **types of medals** (Gold medals, then Silver, then Bronze)
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    -
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    -
- Countries with smaller populations prefer a ranking based on **total medals per capita**:
    -
    -
    -
    -
    -
    - 44. US
    - 77. China
    - 87. India (2)

Classification of Countries by Development Status

1) Countries are divided into developed countries (DCs) and less developed countries (LDCs)

2) WB divides countries even further:

DCs		World Bank classification
LDCs		

3) Number of countries per group, GDP, Population, GNI cut-off

2014	#	GDP (in trill. USD)	Population (in bill)	GNI per Capita (USD)
HIC				> 12,736
		( )	( )	
UMIC				< 12,736; > 4,125
		( )	( )	
LMIC				< 4,125; < 1,045
		( )	( )	
LIC				< 1,045
		( )	( )	
World				

Conclusion: To account for the differences in population size across countries, the economic development literature uses **output per capita** to measure development status:

Here, we discuss four common approaches to rank countries in terms of their economic development status:

- Gross Domestic Product Per Capita (Nominal USD)
- Gross Domestic Product Per Capita (PPP adjusted USD)
- Human Development Index
- Unemployment Rate

1.2.1 Gross Domestic Product

Gross domestic product is the sum of all goods and services produced within a country's boarder in a particular time (quarter, year)

Table 1: Ranking of countries by GDP-PC (in constant 2005 USD)

Gap between rich and poor countries: Max-Min Ratio! $\frac{MAx}{Min} =$

Q: Why is income per capita so low at the bottom of the ranking?

A: several reasons:

1) Informal sector not counted

2)

3)

4)

Note: GDP_PC (in nominal USD) likely **overstates** the development gap between rich and poor countries.

1.2.2 Gross Domestic Product per capita (PPP adjusted)

PPP: Purchasing Power Parity

Problem with using nominal exchange rates:

Nominal Exchange rates are determined by supply and demand for currency, which is driven primarily by demand and supply for **tradeable goods and services**.

Problem: **Non-tradeable goods and services**, such as food from local restaurants, housing, and other local services, do not affect the exchange rate, but prices of non-tradeables matter for people's living standard.

→ 7 weighted avg. btw 2 bundles

Solution: Use PPP Adjusted Exchange Rate to account for cost of living differences

This means that we use PPP-adjusted exchange rate to convert foreign income into USD income.

Q: How to construct a PPP-adjusted exchange rate?

A: See example below:

Products (in USD)	average Price	Weights	Weighted Price average
Milk ½ gall.	$ 1.8	1/3	$ = $ 0.6
Bread 1 unit	$ 2.50	1/2	$ = $ 1.25
Cheese ½ Pd.	$ 4.00	1/6	$ = $ 0.67
			= $ 2.52
Products (in Euro)			
Milk ½ gall.	€ 1.20	1/3	€ = € 0.4
Bread 1 unit	€ 2.00	1/2	€ = € 1
Cheese ½ Pd.	€ 3.00	1/6	€ = € 0.5
			= € 1.90

Issues: ① Consumption bundles are different in diff. nations

② Weights differ in reality btw. nations

PPP $2.52/€ 1.90 = $ 1.33 /€

PPP €1.90/$ 2.52 = € 0.75/$

Note: Weights must be the same across countries, which may be unrealistic for some country pairs.

PPP is biased toward the US.

Table 2: Ranking of countries by GDP-PC (in constant 2011 PPP Dollars)

Gap between rich and poor countries: $\frac{MAx}{Min} = 169$

Note: Table 1 & 2 are 1-Dimensional

1.2.3 Human Development Index (HDI)

Human development index is constructed by United Nation.

It is a multi-dimensional measure at "human development"

Four Basic Components of HDI

- Life expectance at birth → measure of health
- Average years of schooling → measure of education (backward looking)
- Expected years of schooling → measure of education (forward looking)
- GNI-PC (in PPP$) → measure of income/output

Steps of constructing HDI

1) Construct an index of each basic component: $\frac{\text{actual-min}}{\text{max-min}} = \text{index} \in [0,1]$

   Example: US GNI per capita index

   US: 54,141
   Liechtenstein: 97,336
   CAR: 663

   $\frac{54{,}941 - 663}{97{,}336 - 663} = 0.56$

2) Aggregate the two education indices into a single Education index (EI)

3) Aggregate health index (HI), education index (EI), and income index (II) into a single index known as HDI $\in [0,1]$

Table 3: Ranking of countries by HDI

Gap between rich and poor countries: $\frac{MAx}{Min} = \frac{.953}{.354} = 2.7$

Note: HDI likely **understates** the development gap between rich and poor countries.

1.2.4 Unemployment Rate

Note: Unemployment rate is one of the most noticed and discussed measure of economic performance.

Table 4: Ranking of countries by unemployment rate

Gap between rich and poor countries: $\frac{MAx}{Min} = 197$

Problem with unemployment rate as a measure of development

- Lack of uniform definition of the unemployment rate (but WB use ILO definition)
- No differentiation between full-time and part-time workers
- Some employed workers are underemployed (i.e., they would like to work more if they could)
- Some workers are counted as employed even though they are not working (e.g., workers receiving government-paid early retirement packages in the Netherlands)
- Measurement errors (it's a survey based measure: employment status is self-reported)

Note: Unemployment rate may be questionable indicator of development since

- low unemployment mat occur in poor countries due to lack of unemployment insurance (e.g. Vietnam, Cambodia)
- high unemployment may occur in rich countries due to strong welfare system (e.g. Europe)

Table 5: Pros and Cons of different Economic Development Measures

Criteria:

- **Objectivity**
- **Coverage**
- **Dimensionality**
- **Development Gap**
- **Adjustment for cost of living**
- **Measurement error**

Chosen measure

	Pros	Cons
GDP-PC in nominal USD -1	- Objective Measure - good coverage -	- One dimension - Overstates development gap - no c.o.l. adjustment
GDP-PC in PPP USD +1	- good coverage - reasonable development gap - c.o.l adjustment	- somewhat subjective - One dimension -
HDI 0	- good coverage - Multi-dimensional - c.o.l. adjustment	- very subjective - understates development gap - uses inputs (edu., health) as output measures
Unemployment rate -1	- reasonable dev. gap - very important measure	- limited coverage - One dimension - Measurement error -

1.3 Long-Term Growth Rates and Development Take-Offs

Table 5: Ranking of countries by average growth rate of GDP_PC (in const. USD) from 1960-2015

We use US growth rate as benchmark: 2.03% per year

Number of Countries with stronger growth than US:

These countries were able to ……shrink……. development gap compared to US

Some of these countries actually ….surpass…….. US in terms of GDP_PC (see Table 1).

Examples:

Number of countries with weaker growth than US:

These countries experienced a ….growth……. development gap compared to US

Number of countries with negative growth rates:

These countries not only experienced a ….growth……. development gap compared to US. They also became ……worse…….. compared to their level of development in 1960.

Graphs: Development Take-Off Examples

- China vs India and Bangladesh
- India vs Bangladesh
- South Korea vs Colombia