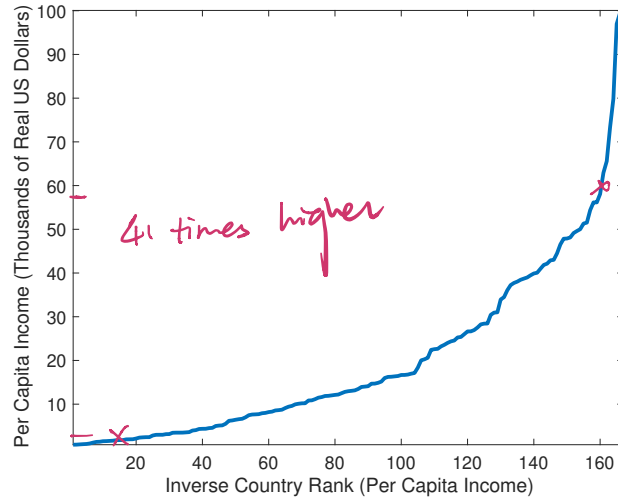# ECON 475
Economic Growth

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Fall 2019

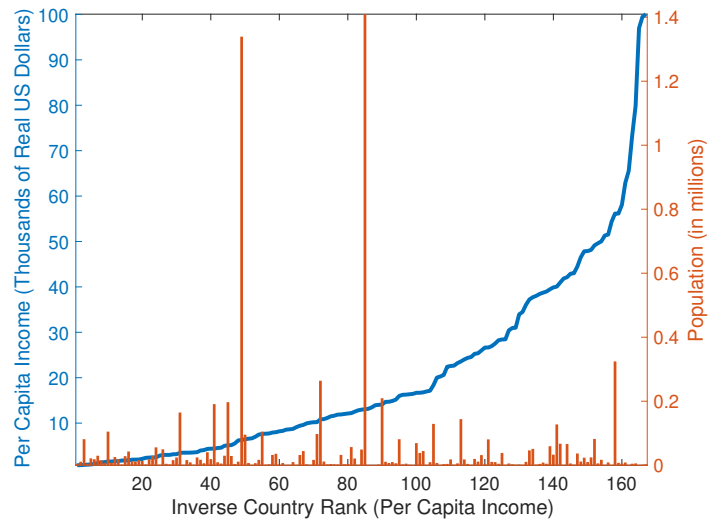# ECON 475: Economic Growth

. . . or why are some countries so much richer than others?

How poor are the poor countries?
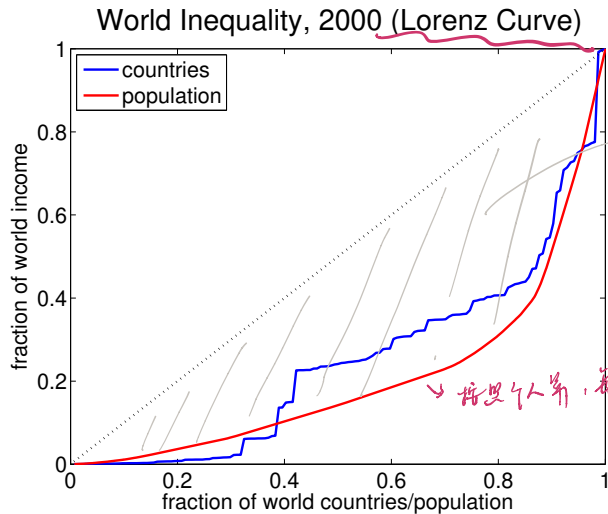
How poor are the poor countries?

How poor are the poor countries?

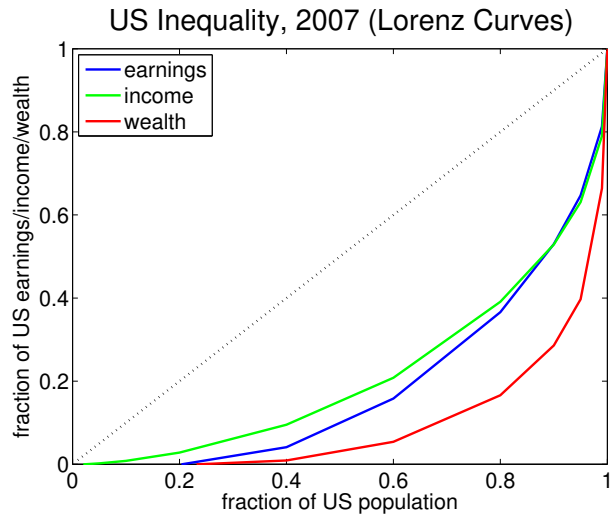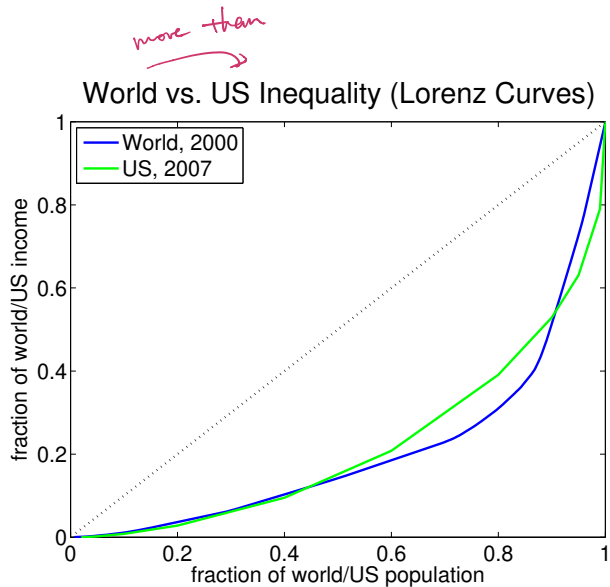# Inequality across countries vs. inequality in the United States

Inequality across countries vs. inequality in the United States

World Inequality, 2000 (Lorenz Curve)

Inequality across countries vs. inequality in the United States

US Inequality, 2007 (Lorenz Curves)

Inequality across countries vs. inequality in the United States

more than

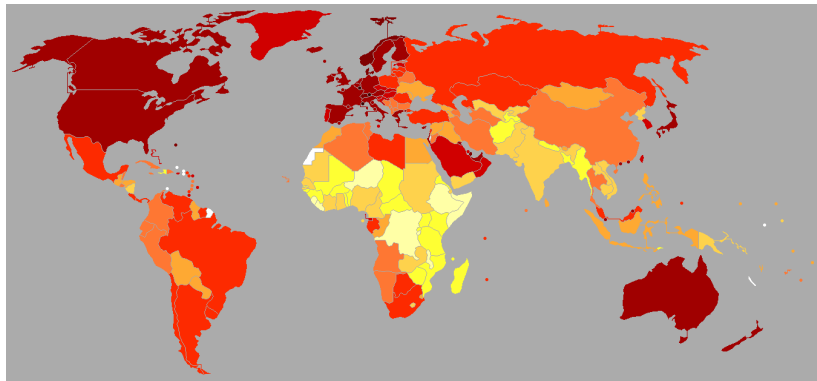World vs. US Inequality (Lorenz Curves)

Inequality across countries vs. inequality in the United States

- ▶ US: poorest 80% receive 40% of total income

- ▶ World: poorest 80% receive 30% of total income

- ▶ Since countries are "home" to many individuals the "granularity" of the Lorenz curve is averaged out when we look at world population rather than countries.

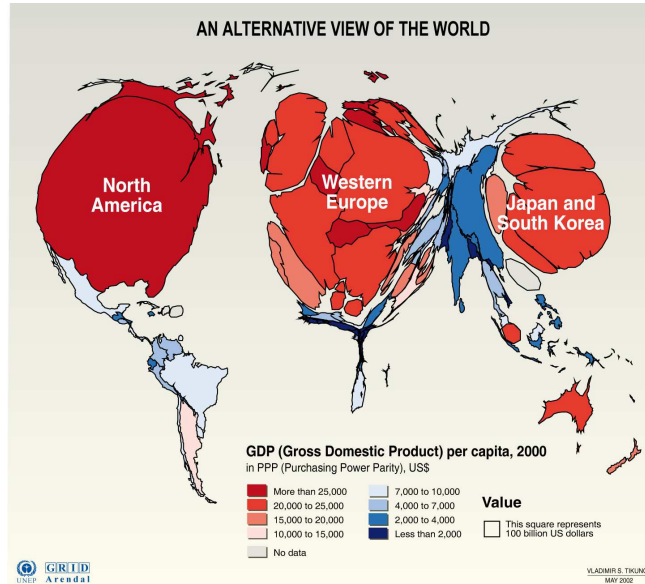- ▶ Which are the factors that make the average individual (worker) in poor countries less affluent (productive)?

This course will present data and theories to help us understand the "growth and development problem".
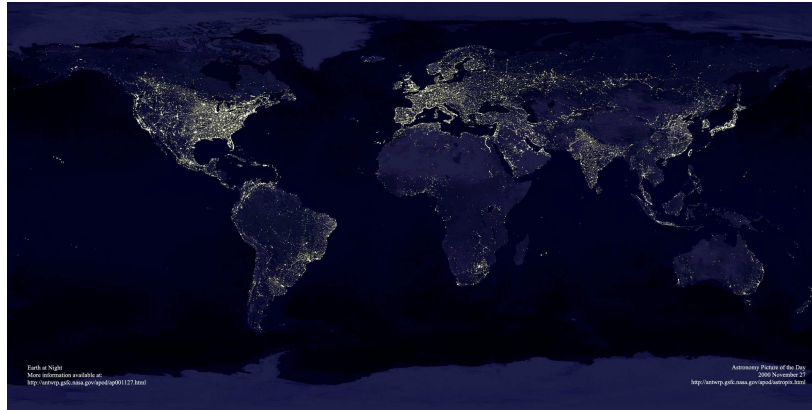
Where are the poor countries?

The darker the richer

Where are the poor countries?

AN ALTERNATIVE VIEW OF THE WORLD

North America

Western Europe

Japan and South Korea

GDP (Gross Domestic Product) per capita, 2000
in PPP (Purchasing Power Parity), US$

More than 25,000
20,000 to 25,000
15,000 to 20,000
10,000 to 15,000
No data

7,000 to 10,000
4,000 to 7,000
2,000 to 4,000
Less than 2,000

Value

This square represents 100 billion US dollars

UNEP GRID Arendal

VLADIMIR S. TIKUNOV
MAY 2002

Where are the poor countries?

When did the rich become wealthy?
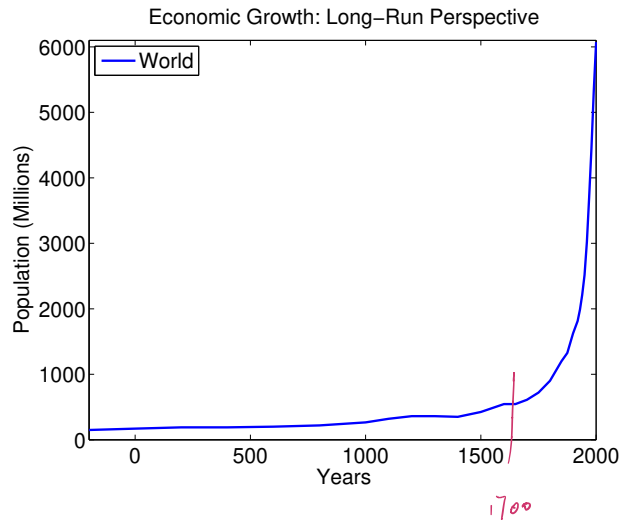
Economic Growth: Long–Run Perspective

When did the rich become wealthy?

Economic Growth: Long−Run Perspective

When did the rich become wealthy?

World Per Capita Income and Growth Rates, 1500-2000

Source: Maddison (2010)
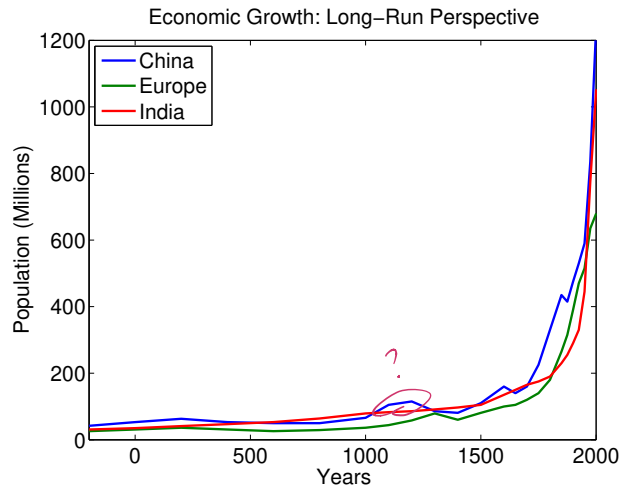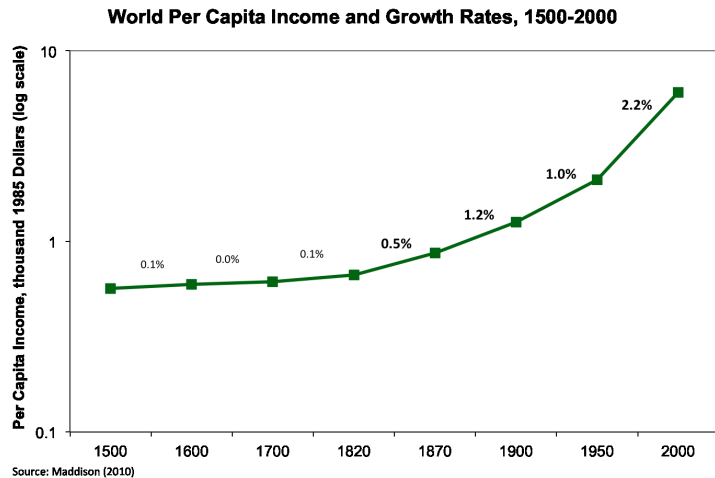
When did the rich become wealthy?

grow one by one

Evolution of Per Capita Income, 1750-1990

save rate

Legend:
- Africa
- US
- Mexico
- Japan
- China
- East Asia

Growth miracles
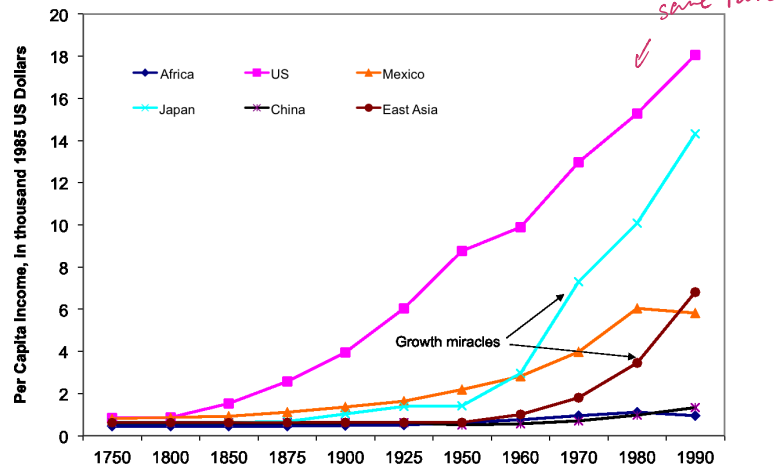
Source: Lucas (2002)

Even Today: Large Disparity in the Growth Rate of Per-Capita Income

Average Growth Rates, 1960–2000
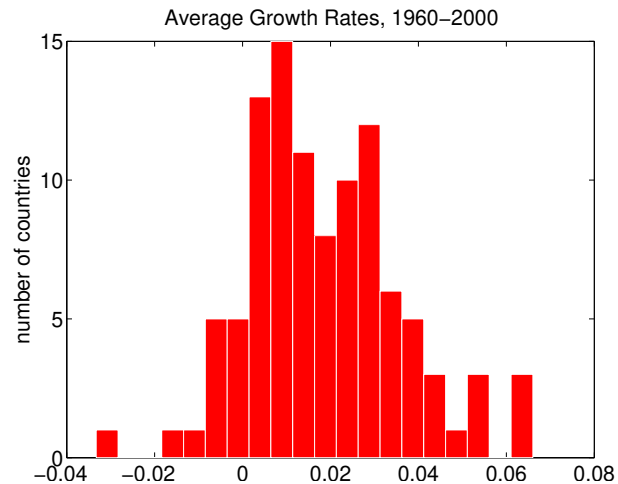
The Power of Growth Rates

How long does it take to double income?

$$y\left(T\right) = \left(1+g\right)^{T} y\left(0\right)$$

$$T = \frac{\ln\left[\frac{y(T)}{y(0)}\right]}{\ln\left[1+g\right]}$$

The Power of Growth Rates

How long does it take to double income?

$$T = \frac{\ln[2]}{\ln[1+g]} \approx \frac{0.7}{g}$$

Arithmetic foundation for the *Rule of 70*.

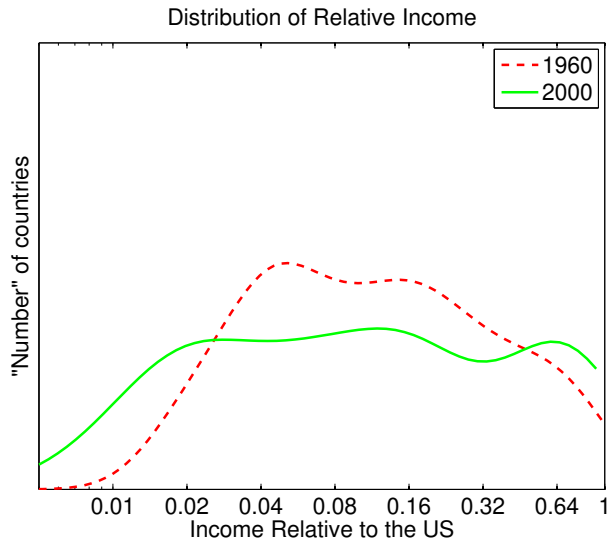# The Power of Growth Rates

How long does it take to double income?

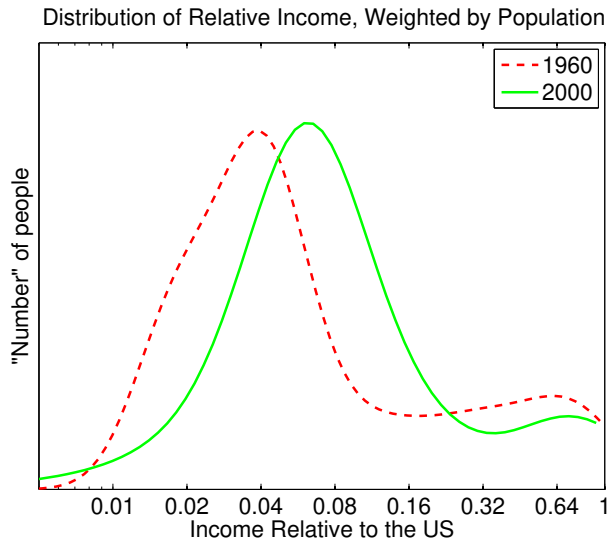| g	T (years)
0.002	347
0.01	70
0.02	35
0.05	14
0.10	7

Taking Stock: Basic Facts

1. Large disparity of per capita incomes

2. Substantial increase of per capita income since the XIXth century

3. Large disparity in the growth rate of per capita income

4. Are the poor getting poorer and the rich getting richer?

   convergence / divergence

Are The Poor Getting Poorer and The Rich Getting Richer?

Distribution of Relative Income

Are The Poor Getting Poorer and The Rich Getting Richer?

Distribution of Relative Income, Weighted by Population

Are The Poor Getting Poorer and The Rich Getting Richer?

Distribution of Relative Income, Weighted by Population

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Distribution of Relative Income, Weighted by Population
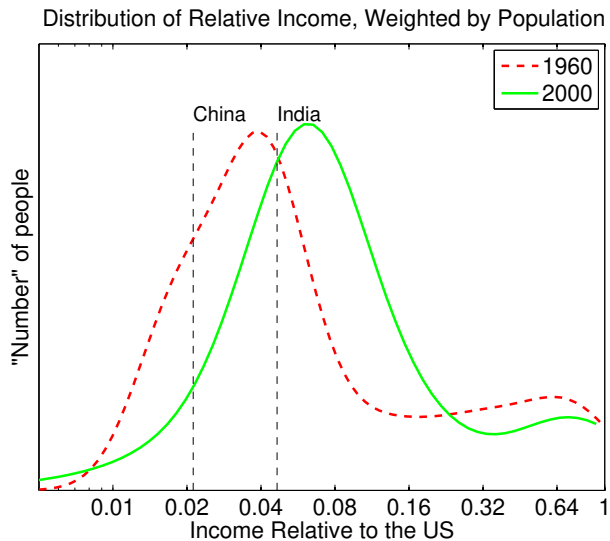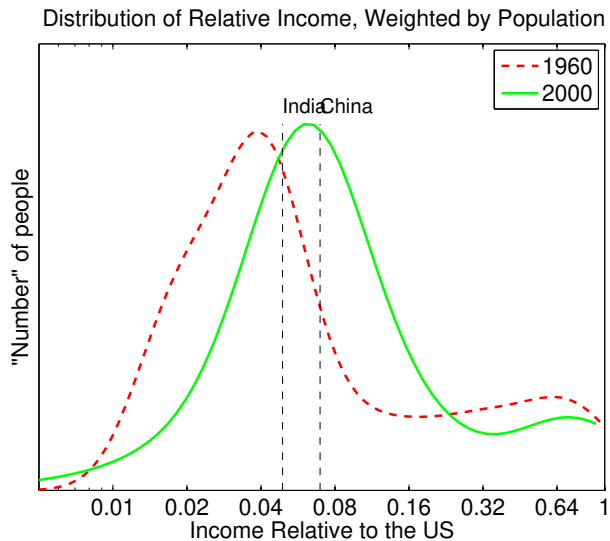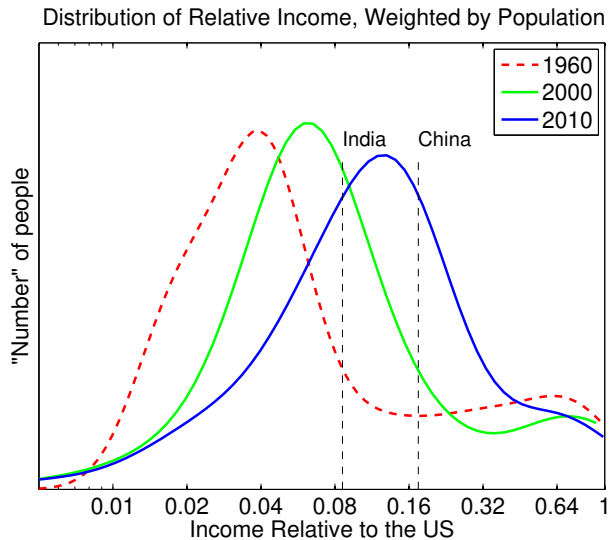
Are The Poor Getting Poorer and The Rich Getting Richer?

- ▶ Over last 2 centuries, divergence Big Time!

- ▶ Over last 50 years, some convergence toward United States in Southeast Asia, China, India ... but *not* in Africa, Latin America, and the Caribbean

# Open Questions

▶ What can we expect to happen in the future?

Open Questions

▶ What can we expect to happen in the future? Will technological progress in the world's richest countries continue at the post-WW II rate or do we have reason to expect a slow-down?

▶ Which policies can (or should) poor countries embrace and implement in order to catch up with the rich?
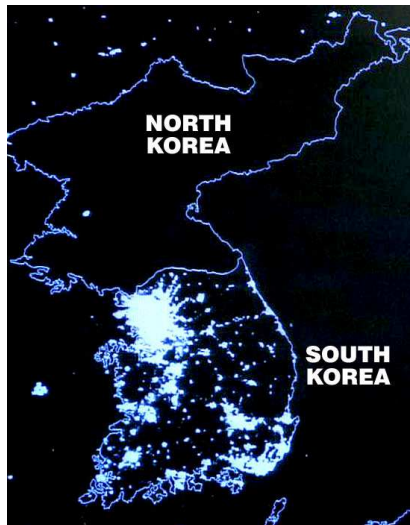
Course Outline

1. Basic Facts, Measures of Development

2. Malthusian Stagnation

3. Theories of Accumulation (Solow Growth Model) and the Transition to Growth

4. Structural Change

5. Demographic Transition

6. Endogenous Growth Theory

7. . . .

Where are the poor countries?
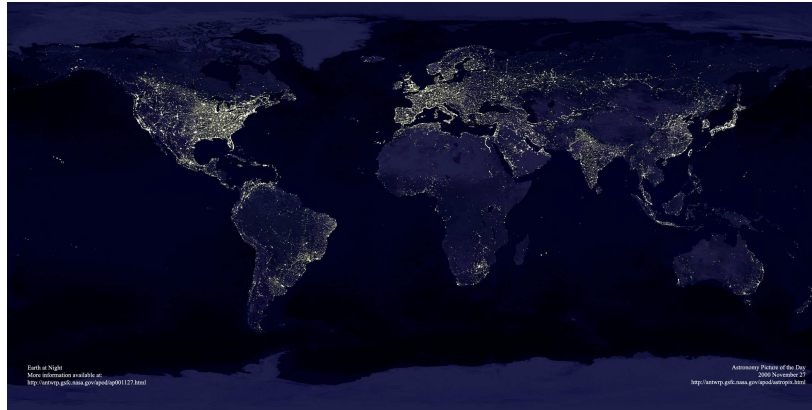
Zooming in on . . .

Objectives of the Course

1. Understand (and maybe participate in) the modern debate about the causes of economic growth and development.

2. Be familiar with the most important datasets covering economic development.

3. Apply what you have already learned in previous economic courses to think about an important economic problem (the scale of the development problem is truly staggering!).

Is GDP / capita a good measure of well-being?

Readings:

1. Jones, C.I. and P. Klenow (2011), "Beyond GDP? Welfare Across Countries and Time", Working Paper (focus on sections 1, 3, and 4)

2. Becker, G., T. Philipson and R. Soares (2005). "The Quantity and Quality of Life and the Evolution of World Inequality", American Economic Review, Vol. 95 (March): 277-291

Answer the following questions:

1. What are the shortcomings of GDP as a measure of welfare?

2. What are the alternatives? Are they satisfactory?

3. Are there other, more convincing, measures?

1. the GDP measure the average income, but it does not include nonmarket goods or house production.

2. ① longevity.
   · It improve the measurement since it consider the development of technology and costly changes to healthier habits.
   · However, some special diseases, such as AIDs, or other cause of death might influence the measurement.

   ② consider all consumption ↙GDP, leisure, inequality, mortality.
   might satisfy.

   include more elements?   how to measure.
3. ecosystem, environment damages, unpaid ↙work?