Growth Facts

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The Facts: Economic Growth

We want to understand two sets of facts:

1. Level gaps: Countries like the U.S. are about 25 times richer than countries like Bangladesh.
2. Growth: Rich countries today about about 60 times richer than they were in 1700.

Concepts

How do we measure living standards across countries / over time?

GDP

- what does it measure?
- what does it fail to measure?

One measure that is commonly used: GDP per worker

- or GDP per capita (when data on workers is hard to get)

Where to get this data?

Countries collect data on GDP and its components

- consumption, investment, government spending, net exports

National Income and Product Accounts

United Nations collects and harmonizes that data

Level Gaps: First Look

Number of countries with population $>$ 1m: 148

Richest 5 countries:

- United Arab Emirates Switzerland United States Japan Norway
- Mean gdp per worker: $\$36,269$

Poorest 5 countries:

- Ethiopia Burundi Tajikistan Sierra Leone Malawi
- Mean gdp per worker: $\$140$

Ratio: 259 (!)

Problem: prices differ across countries.

PPP Prices

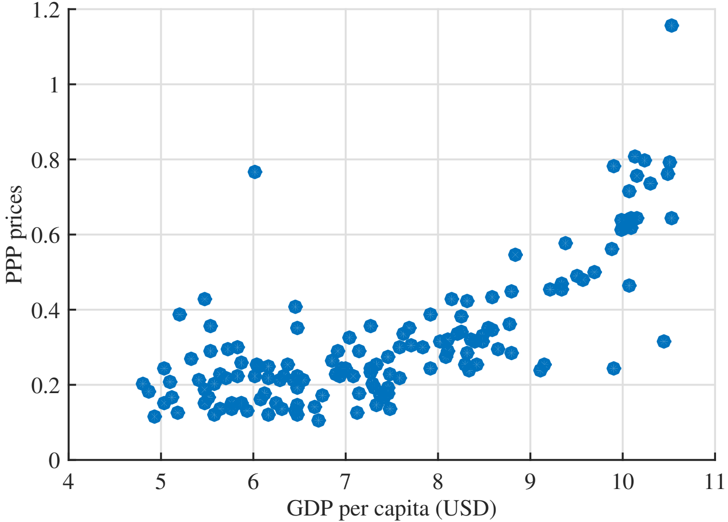
A better way: adjust for differences in local prices

ICP (International Comparison Project)

- collects prices for a common set of goods in many countries

Finding: prices are much lower in poor countries

Relative Prices and GDP



Source: I am plotting the ratio of GDP per capita in USD to GDP per capita at PPP (UN data)

Level Gaps: With Common Prices

Richest 5 countries:

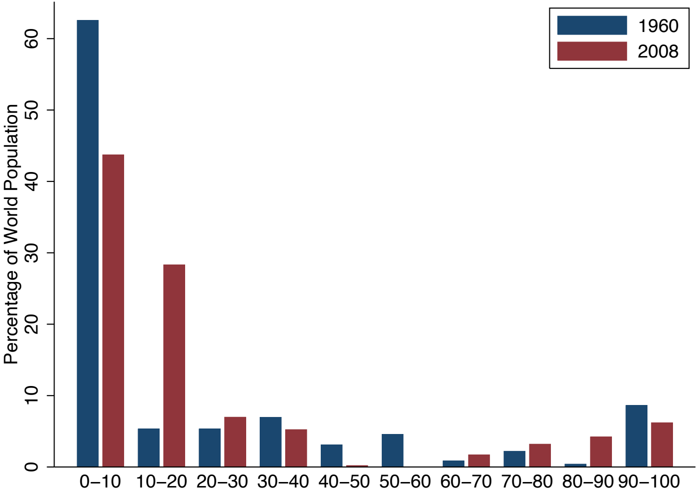
- Switzerland Singapore Norway Kuwait United Arab Emirates
- Mean gdp per worker: $\$69,253$

Poorest 5 countries:

- Liberia Congo, Dem. Rep. Mozambique Ethiopia Malawi
- Mean gdp per worker: $\$559$

Ratio: 124

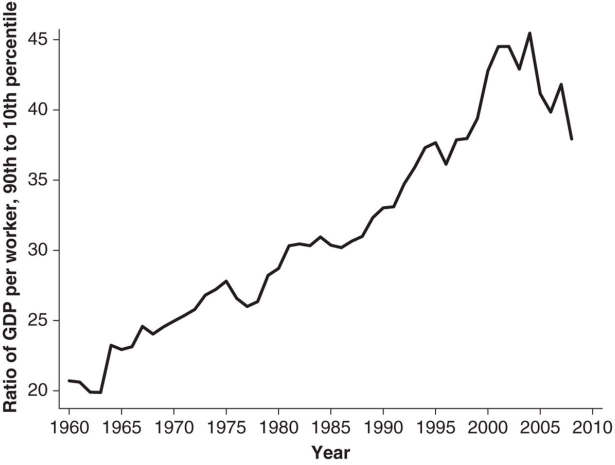
Level Gaps



Source: Jones (2013b)

Divergence

FIGURE 3.9 INCOME RATIOS, 90TH PERCENTILE COUNTRY TO 10TH PERCENTILE COUNTRY, 1960–2008



Source: Jones (2013b)

Persistence Over Time

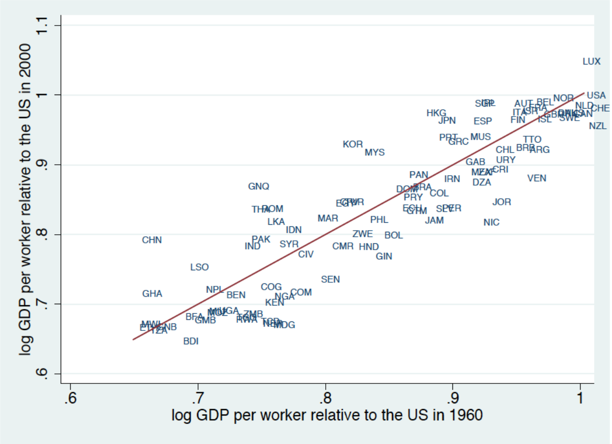


FIGURE 1.9. Log GDP per worker in 2000 versus log GDP per worker in 1960, together with the 45° line.

Source: Acemoglu (2009)

Note: These data show no divergence.

Level Gaps

Fact

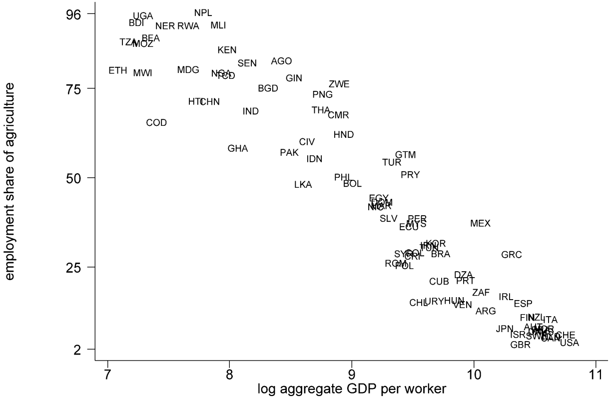
More than half of the world population earns less than 10% of U.S. income per worker.

Fact

The gap between rich and poor countries has not decreased at least since 1960.

Agriculture

Many developing countries push agriculture.



Source: Caselli (2005)

Is that a good idea?

Agriculture

Table 1: Agriculture and Labor-Productivity Accounting

Panel A: Labor Productivity Differences

Sector	Ratio of 90th-10th Percentile
Aggregate	22
Agriculture	45
Non-Agriculture	4

Panel B: Percent of Labor in Agriculture

Country Income Percentile	Percent
90th	2.8
10th	78.3

Source: Caselli (2005)

Agriculture

Fact

Low income countries have a massive ***comparative disadvantage*** *in agriculture.*

Comparative advantage means...

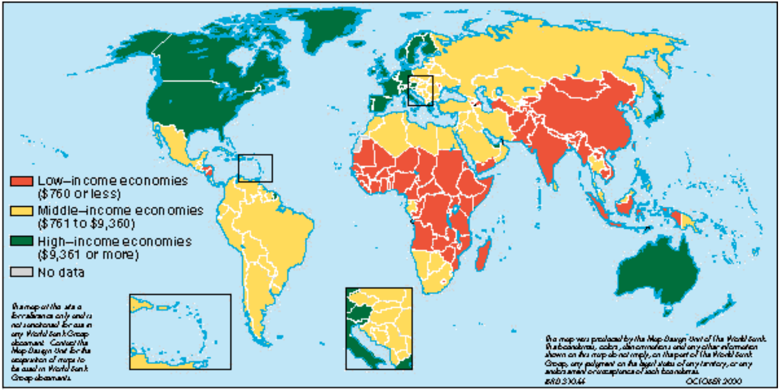
Do low income countries employ too much labor in the "wrong" sector (ag)?

Agriculture

An important insight

It is difficult to draw cause-effect conclusions from just looking at data.

Poverty is geographically concentrated



What does this suggest about the origins over income differences?

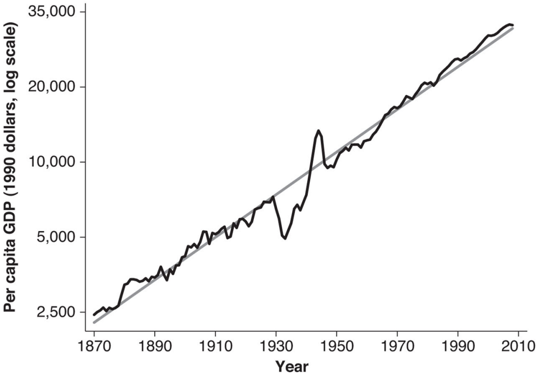
Growth Facts

Questions:

- Where do the enormous differences in income come from?
- How long have the rich been rich and the poor been poor?

The U.S. Experience

FIGURE 1.4 REAL PER CAPITA GDP IN THE UNITED STATES, 1870–2008



US growth has been essentially constant for 140 years.

Kaldor Facts

The U.S. growth experience looks a lot like a "**balanced growth path**"

- GDP growth has been essentially constant at 2% per year
- Wages, capital stocks and GDP grow at about the same rate
- Interest rates have no trend
- The share of labor income in GDP has been constant (2/3)

This is why economists like to write down models with balanced growth.

But: the US is the exception

The Great Divergence

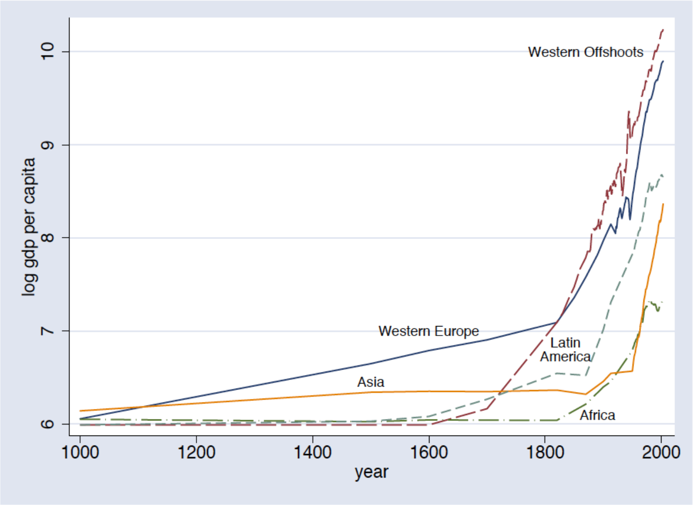


FIGURE 1.11. The evolution of average GDP per capita in Western Offshoots, Western Europe, Latin America, Asia and Africa, 1000-2000.

Source: Acemoglu (2009)

Growth Facts

Fact

Over the post-war period, poor countries did not grow faster than rich countries.

Fact

Economic growth and large cross-country income differences are modern phenomenona.
For most of history, incomes were stagnant and quite similar across countries.

Growth Miracles and Disasters

- Most rich countries grow at 1.5 to 2% per year.
  - It takes 40-50 years to double income per person.
  - Over 40 years, Y/L rises by factor $1.018^{40} = 2$.
- There are **growth miracles** with growth rates above 5%.
  - It takes 12 years to double income per person.
  - Over 40 years, Y/L rises by factor $1.05^{40} = 7$.
  - All of the growth miracles were middle income countries in 1960.
- There are **growth disasters** with negative growth rates.
  - Over 40 years, Y/L rises by factor $0.99^{40} = 0.67$.
  - All of these are in Africa and South America.

Growth Miracles and Disasters

TABLE 2
GROWTH MIRACLES AND DISASTERS, 1960–90
ANNUAL GROWTH RATES OF OUTPUT PER WORKER

Miracles	Growth	Disasters	Growth
Korea	6.1	Ghana	–0.3
Botswana	5.9	Venezuela	–0.5
Hong Kong	5.8	Mozambique	–0.7
Taiwan	5.8	Nicaragua	–0.7
Singapore	5.4	Mauritania	–0.8
Japan	5.2	Zambia	–0.8
Malta	4.8	Mali	–1.0
Cyprus	4.4	Madagascar	–1.3
Seychelles	4.4	Chad	–1.7
Lesotho	4.4	Guyana	–2.1

Source: Temple (1999)

Summary

- **Enormous level gaps**: rich countries are 25 times richer than poor countries.
- **Great Divergence**: modern growth and large inequality started in the Industrial Revolution.
- **Steady growth**: Since 1870, the U.S. has grown at a constant 2% rate.
- **Large growth rate gaps**: there are growth miracles and disasters.
- **No convergence**: poorer countries do not generally grow faster.

Questions to think about

1. Why are the rich countries so much richer than the poor ones?
2. How could one answer such a question?
   E.g.: "How much does lack of capital contribute to low incomes?"

Reading

- Jones (2013b), ch. 1
- Blanchard (2018), ch. 10
- Blanchard and Johnson (2013), ch. 10

A good place to access data on long-run growth: The Penn World Tables

At knoema, users can generate graphs using data from a wide range of sources.

For further reading:

- Jones (2013a), ch. 3 (explains logs and ratio scales)
- Acemoglu (2009), ch. 1 (summarizes the facts)
- Jones (2016) contains an exhaustive list of growth facts

References I

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