Economic Growth

ECO 120: Global Macroeconomics

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1.1 Goals

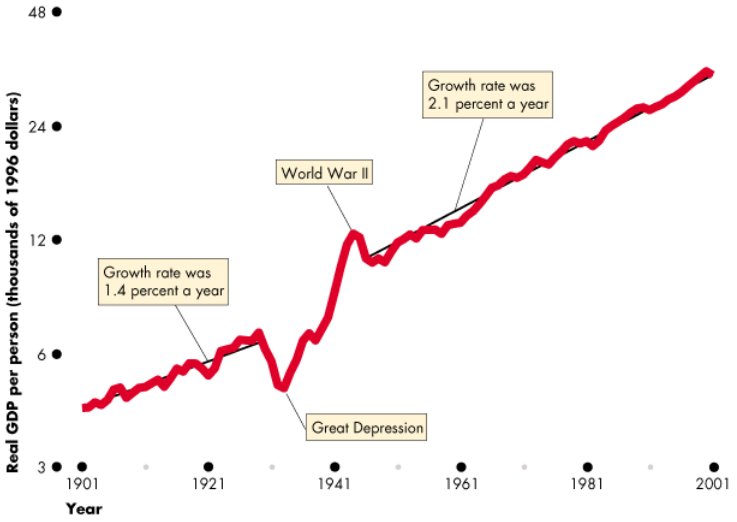
Goals

- Specific goals:
  - Appreciate the significance for economic growth.
  - Compare patterns of economic growth across countries.
  - Learn what factors affect economic growth.
- Learning objectives:
  - LO3: Evaluate the impact of macroeconomic policies on the long-run growth rate of an open economy.
  - LO5: Compare the US and other countries when discussing measures of unemployment, inflation, output, cyclical fluctuations, and economic growth.

2 International Comparisons

2.1 How important is growth?

U.S. Trend

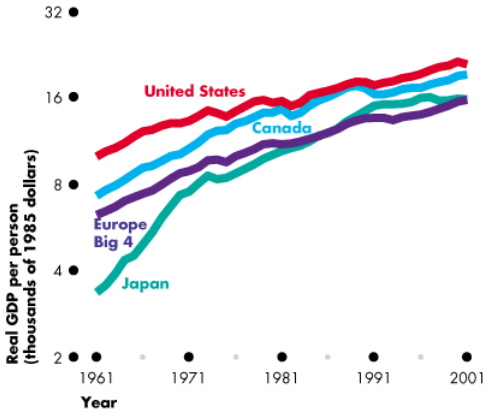


Long-Term Real GDP Growth

- Before the great depression, average growth rate was 1.4%
- After the great depression, average growth rate was 2.1%
- Real GDP per person in 1900 was approximately \$6,000 (using base year 2009)
- Real GDP per person in 2013 was approximately \$49,800 (base year 2009)
- Can you compute what GDP would be in 2013 if the average growth rate was always 1.4%?
  - Answer: $6000(1+0.014)^{113} = \$28,869.56$.
- What if the average growth rate was always 2.1%?
  - Answer: $6000(1+0.022)^{113} = \$62,814.53$.
- **Small differences in growth adds up to a lot!**

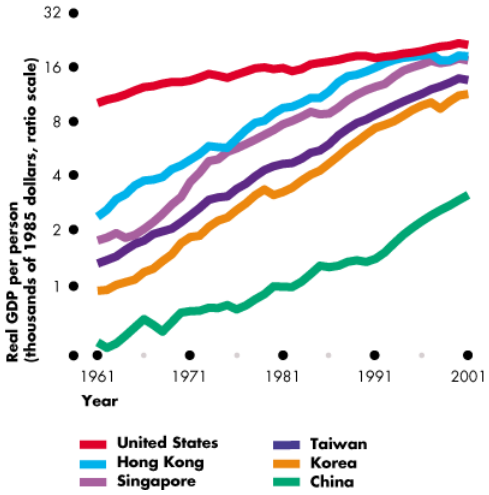
2.2 International convergence?

What happens in other developed countries?



(a) Catch-up? **Rich countries, but low rates of growth ≈ 2%** **After WW2, Japan was lesser-developed, but had a high growth rate** **Now Japan is rich and has a low growth rate**

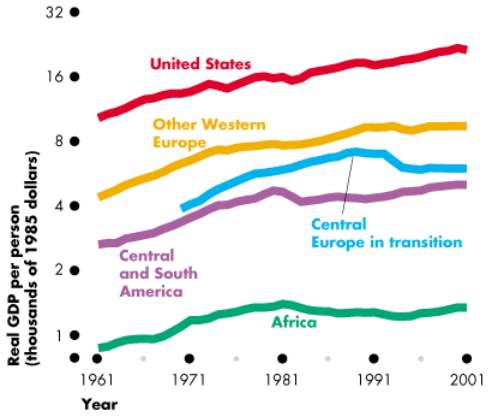
Developing Economies in Asia are catching up



Growth rates since 1990:

- Hong Kong ≈ 3%
- Singapore ≈ 5%
- Taiwan ≈ 5%
- Korea ≈ 5%
- China ≈ 10%

Some Lesser Developed Economies Not Catching Up



(b) No catch-up?

3 What Causes Growth

3.1 Need proper incentives

Need Proper Incentives

- Saving and investment in new capital
  - Savings is important for a sufficient equilibrium level of investment.
  - What happens if savings supply is low?
  - Higher levels of capital allows for higher levels of production.
  - and a higher marginal product of labor.
- Investment in human capital
  - Improved education increases the marginal product of labor.
  - Accumulation of knowledge has increasing returns.
- Discovery of new technologies
  - Technological progress drives economic growth in the long run.
  - There needs to be incentives to do research and development. What does the US do?
    - Patents on new products.
    - Fund research and development through grants and state universities.

3.2 Preconditions for incentives

Preconditions for these incentives

- Markets
  - Enable buyers and sellers to meet.
  - Convey information through price.
- Property rights
  - Creates a profit incentive.
  - Intellectual property rights gives incentive for research and development
- Monetary exchange
  - Facilitates exchange.
  - Eliminates need for a "double coincidence of wants".

4 Labor Productivity

4.1 Labor Productivity Curve

Labor productivity Curve

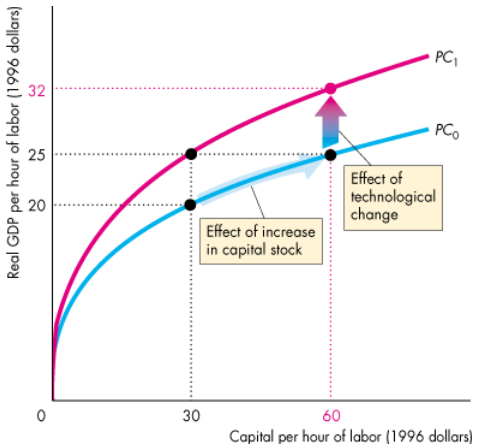
- **Labor productivity curve:** long-run economic growth model that illustrates how much output per person a country can enjoy with given levels of capital per person.
- Labor productivity is real GDP per hour of labor.

$$\text{Labor productivity} = \frac{\text{Real GDP}}{\text{Aggregate labor hours}}$$

Labor productivity curve

- Think of labor productivity curve as a production function, in per-capita terms.
- Real GDP per unit of labor increases as you increase the amount of capital.
- But at a decreasing rate. Due to *diminishing marginal product of capital*.

How labor productivity grows



Labor productivity curve

- For given levels of capital stock per worker, curve shows output per worker.
- Increases in capital correspond to *movements* along the curve.
- Increases in technology or human capital *shift* the curve.

4.2 Catch-Up Theory

Catch-Up Theory

- Diminishing returns explains catch-up theory.
  - Lesser-developed countries have low levels of capital → high return to investing in new capital.
  - Developed countries (like the U.S.) have high levels of capital → low return to investing in new capital.
- Not all countries catch up. Preconditions for growth do not exist.
  - Poorly developed goods and services markets, financial markets.
  - Corruption and war threaten property rights.
  - Inflation out of control.

5 Policies to promote growth

5.1 How to get faster growth

How to achieve faster growth

- Stimulate savings. How?
  - Tax incentives: IRA accounts. Tax on consumption.
  - Tax on capital gains reduces savings incentive.
- Stimulate research and development.
  - Patents, research grants.
- Encourage international trade.
  - Fastest growing nations today are those with the fastest growing imports and exports.
  - Achieve gains from trade.
  - Invites foreign direct investment: global businesses create operations in new countries, invest in capital.
- Improve the quality of education.

5.2 Growth is NOT the goal

Growth is not the goal

- What is one (stupid) way to achieve a really high level of economic growth?
  - Increase saving to 100%
  - This would lead to high levels of investment and high levels of growth.
  - But we wouldn't consume anything. That's no fun.
- Goal: Maximize the sustainable level of consumption.