

Economic Growth

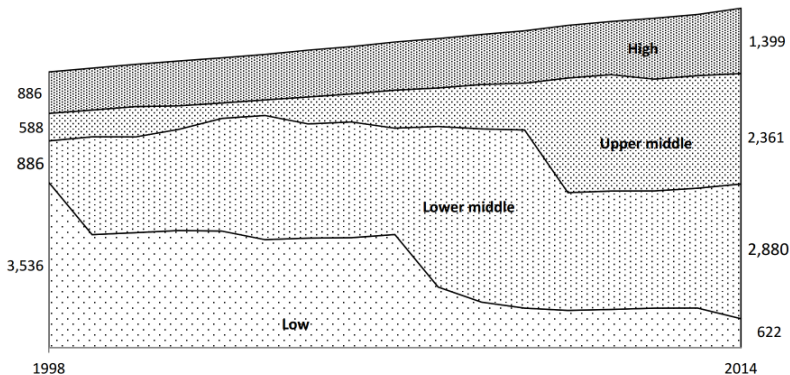
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Economic Growth

- **Principle 8: A Country's Standard of Living Depends on Its Ability to Produce Goods and Services**
- There is obviously much variation in the standard of living across the world, and even within countries. This section explores the long-run determinants of real GDP and its growth over time.

Motivation



Source: World Development Indicators database (accessed November 30, 2015), and print editions 2000 to 2015.

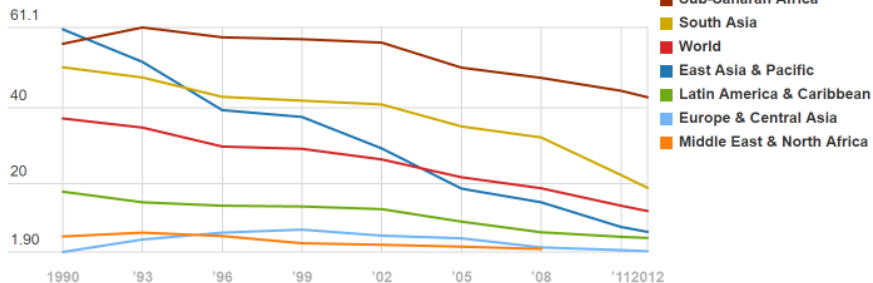
Motivation

	Extreme poverty headcount (% living below US\$ 1.90 a day at 2011 PPP)	Share of population (%)	Share of extremely poor population (%)
Low	47.2	8.3	30.1
Lower middle	18.7	39.4	56.3
Upper middle	5.4	32.8	13.6
High	0.0	19.5	0.0
World	12.7	100.0	100.0

Source: World Development Indicators and PovcalNet, accessed on December 8, 2015.

Motivation

Share of population living on less than 2011 PPP \$1.90 a day (%)



Note: Regional estimates exclude high-income countries. Estimates for Middle East & North Africa for 2009 onward are not shown because survey coverage is too low.

Source: [World Development Indicators](#)

Economic Growth

Example

Suppose the United States currently has a real GDP per capita of \$30,000 and it grows 3% every year. Additionally, China has a real GDP per capita of \$15,000, but its growth rate is 7%. What will be real GDP per capita in each country in 10 years? In 20 years?

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Economic Growth

- **The Rule of 70:** An approximation for how long it takes a variable growing at a constant rate to double.

$$T_2 \approx 70/g$$

where g is in % terms.

Economic Growth

Example

How many years will it take the US to double their per capita GDP if their real GDP per capita continues to grow at 3% each year?

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China?

US: $70/3 \approx 23.33$ years

China: $70/7 \approx 10$ years

Economic Growth

- **Productivity:** The quantity of goods and services produced from each unit of labor input.
- The determinants of productivity:
 - ① **Physical capital:** The stock of equipment and structures that are used to produce goods and services.
 - ② **Human capital:** The knowledge and skills that workers acquire through education, training, and experience.
 - ③ **Natural resources:** The inputs into the production of goods and services that are provided by nature.
 - ④ **Technological knowledge:** Society's understanding of the best ways to produce goods and services. Includes common knowledge, trade secrets, and patents.

The Role of Government

- **Institutions:** The “Rules of the game” that shape interactions and structure economic incentives.
- Includes formal laws/regulations and social norms.
- They are the ultimate causes of growth.
- Institutions can encourage economic prosperity through (i) establishing property rights, (ii) an honest government, (iii) political stability, (iv) a dependable legal system, and (v) competitive and open markets.

The Role of Government

- **Saving and Investment:** Investing more in capital goods today will lead to more capital goods tomorrow and increase in goods and services in the future. Trade-off is that consumption today must decrease.
- **Investment from abroad:** Investments increase the stock of capital and lead to increases in productivity and wages.

The Role of Government

- **Education:** Investment in human capital leads to increases in productivity. Additionally, there are spillovers or positive externalities from education and training
- **Health and nutrition:** Investment in human capital. Healthier individuals are more productive.

- **Property rights and political stability:** Property rights - The ability of people to exercise authority over the resources they own. Threats to property rights: lack of enforcement, corruption, fraud, and political instability. Lack of property rights discourages investment and prevents markets from operating efficiently.

The Role of Government

- **Free trade:** Gains from trade increase economic prosperity. Trade restrictions (e.g., tariffs, quotas) decrease prosperity. Geography plays a role here (e.g., access to trade)
- **Research and Development:** Technological advances by private research and the government increase productivity. Incentives such as grants, patents can motivate individuals/companies to innovate.

Readings and Assignments

- Today: Mankiw Ch. 25
- Next time: Solow Model videos
- Problem Set 5, section 1