Unit 1: Introduction to Macroeconomics

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Learning objectives

- Identify three economic issues.
- Describe microeconomics, macroeconomics, and the diverse fields of economics.
- Describe the primary concerns of macroeconomics.
- Identify components of the macroeocnomy.
- Understand the roles of firms, entrepreneurs, and households in the market.
- Use of models to analyze economic issues

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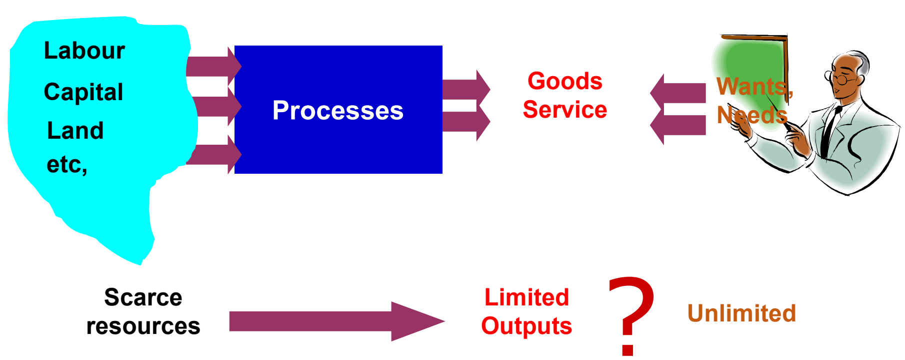
1.1 What is an economics?



What to produce?
How to produce?
For whom to produce?

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1.1 What is an Economics?

- ***Scarcity***. . . means that society has limited resources and therefore cannot produce all the goods and services people wish to have.

- The management of society's resources is important because resources are scarce.

- ***Economics*** **is the study of how society manages its scarce resources.**

Economic Study

- Economists study how people make decisions
  - How much they work
  - What they buy
  - How much they save
  - How they invest their savings

- Economists also study how people interact such as buyers and sellers
  - Price determination

- Economists also analyze forces and trends that affect the economy as a whole
  - Growth in average income
  - The rate of price increase.

1.2 Microeconomics and Macroeconomics

- *Microeconomics:* focuses on the individual parts of the economy.
  - The study of how individual households and firms make decisions, interact with one another in markets.
- *Macroeconomics:* looks at the economy as a whole.
  - Study the structure of aggregate economies and the impact of policies on their performance.
    - What determines economic fluctuations? (business cycle)
    - Why some countries grow faster than others ? (economic growth)
    - What causes unemployment ?
    - What drives prices changes? (inflation)
    - What is the role of economic policies and the government? (monetary and fiscal policies)
    - How being part of a global economic system affects the economy of a country?

1.3 Macroeconomics concerns

- Three of the major concerns of macroeconomics are
- Output growth
- Unemployment
- Inflation and deflation

Output Growth

- **business cycle** The cycle of short-term ups and downs in the economy.
- **aggregate output** The total quantity of goods and services produced in an economy in a given period.
- **recession** A period during which aggregate output declines. Conventionally, a period in which aggregate output declines for two consecutive quarters.
- **depression** A prolonged and deep recession.
- **expansion or boom** The period in the business cycle from a trough up to a peak during which output and employment grow.
- **contraction, recession, or slump** The period in the business cycle from a peak down to a trough during which output and employment fall.

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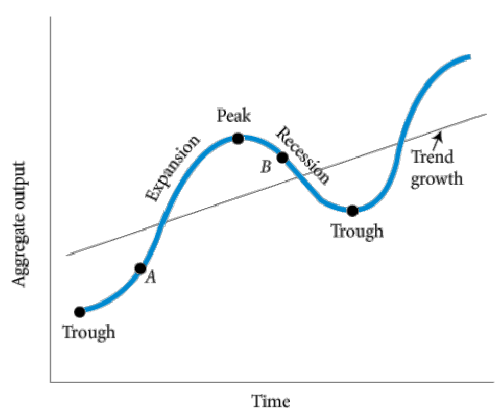
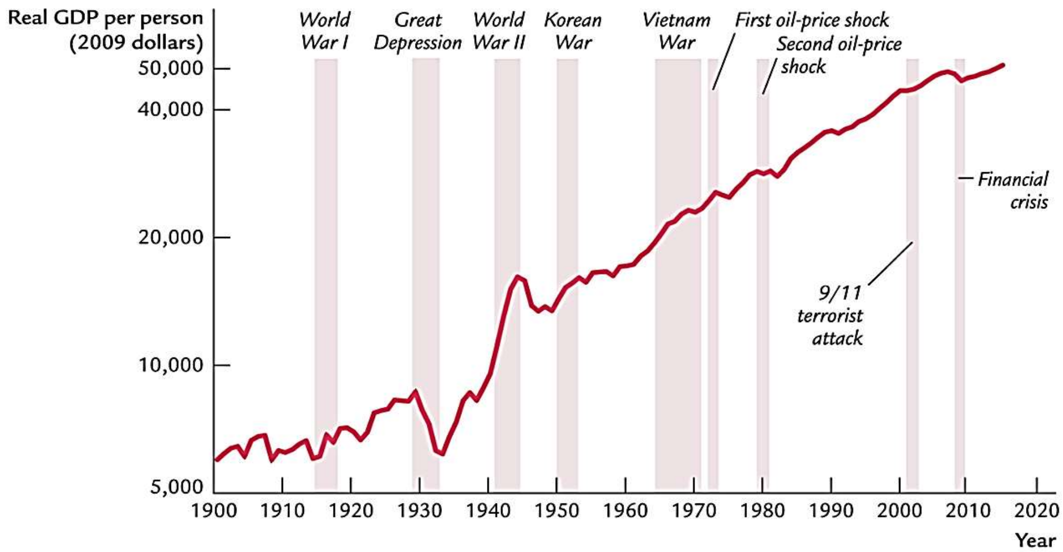
A Typical Business Cycle

In this business cycle, the *economy* is expanding as it moves through point *A* from the trough to the peak.

The economy is in recession when it moves through point *B* from a peak down to a trough.



U.S. Real GDP per capita



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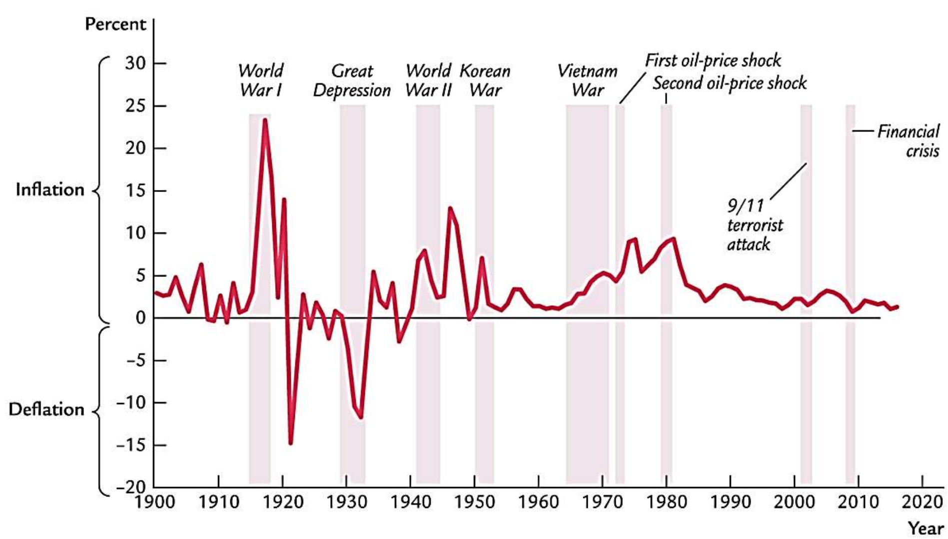
U.S. inflation rate
(% per year)



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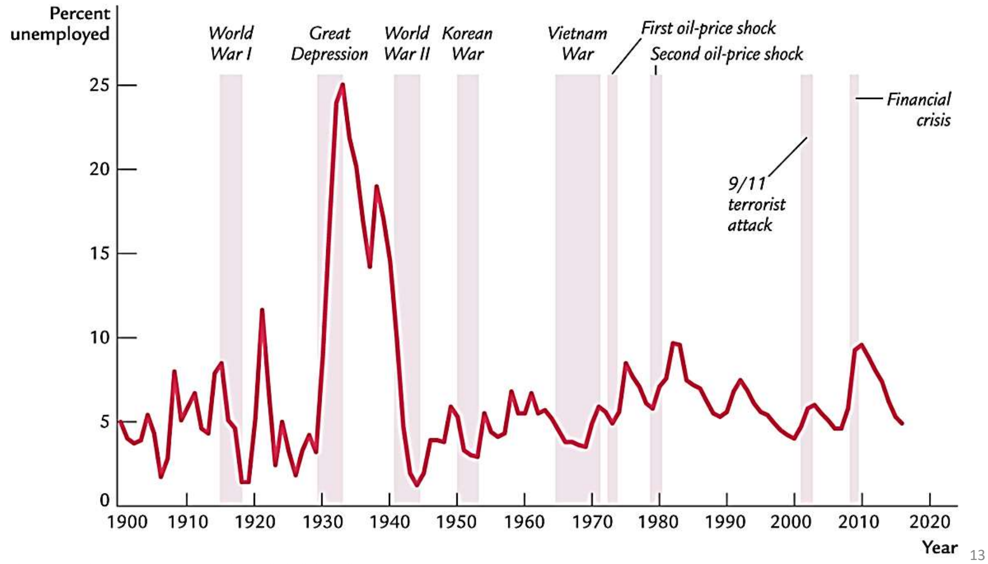
U.S. unemployment rate
(% of labor force)



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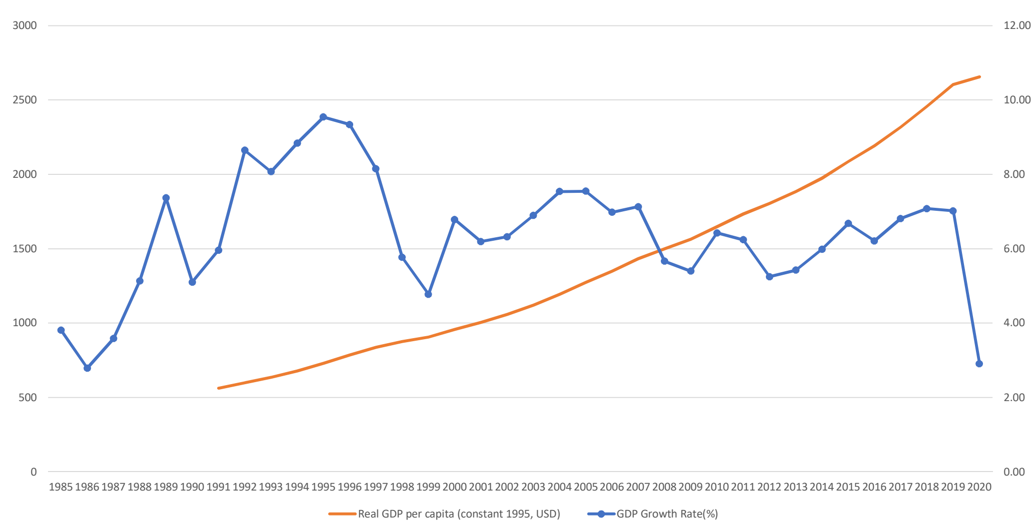
Vietnam growth rate and GDP per capita



Unemployment and Inflation

- **Unemployment**
  - **unemployment rate** The percentage of the labor force that is unemployed.

- **Inflation and deflation**
  - **inflation** An increase in the overall price level.
  - **hyperinflation** A period of very rapid increases in the overall price level.
  - **deflation** A decrease in the overall price level.

1.4 The Components of the Macroeconomy

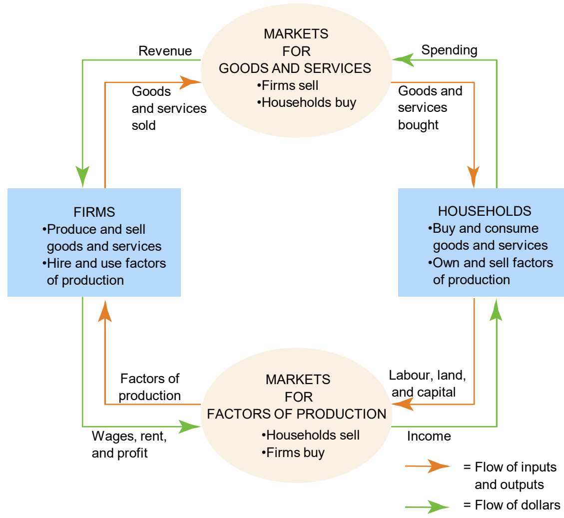
- Understanding how the macroeconomy works can be challenging because a great deal is going on at one time. Everything seems to affect everything else.

- To see the big picture, it is helpful to divide the participants in the economy into four broad groups:
  - Households.
  - Firms.
  - The government.
  - The rest of the world.

- Households and firms make up the private sector, the government is the public sector, and the rest of the world is the foreign sector.

The Circular Flow Diagram

- The *circular-flow diagram* is a visual model of the economy that shows how dollars flow through markets among households and firms.



The Circular Flow of Payments

Households receive income from firms and the government, purchase goods and services from firms, and pay taxes to the government.

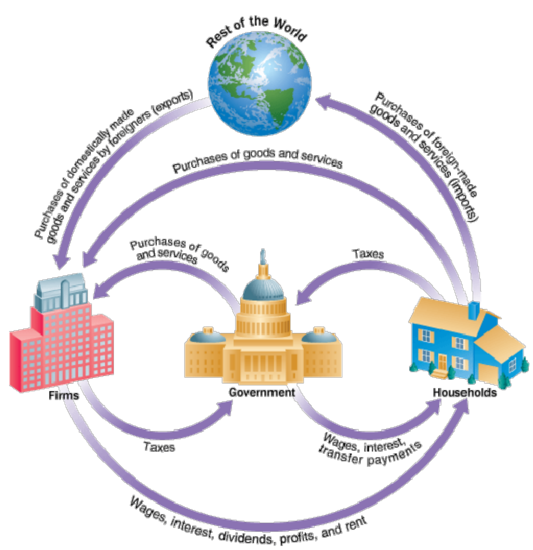
They also purchase foreign-made goods and services (imports).

Firms receive payments from households and the government for goods and services; they pay wages, dividends, interest, and rents to households and taxes to the government.

The government receives taxes from firms and households, pays firms and households for goods and services—including wages to government workers—and pays interest and transfers to households.

Finally, people in other countries purchase goods and services produced domestically (exports).

Note: Although not shown in this diagram, firms and governments also purchase imports.



The Three Market Arenas

- Another way of looking at the ways households, firms, the government, and the rest of the world relate to one another is to consider the markets in which they interact.
- We divide the markets into three broad arenas:
  - The goods-and-services market.
  - The labor market.
  - The money (financial) market.

The Three Market Arenas

- Goods-and-Services Market
  - Households and the government purchase goods and services from firms in the goods-and-services market.
  - Firms purchase goods and services from each other and also supply to the goods-and-services market.
  - Households, the government, and firms demand from this market.
  - The rest of the world buys from and sells to the goods-and-services market.
- Labor Market
  - In the labor market, households supply labor and firms and the government demand labor.
  - Labor is also supplied to and demanded from the rest of the world.

The Three Market Arenas

- Money Market
  - Households supply funds to the money market—sometimes called the financial market—in the expectation of earning income in the form of dividends on stocks and interest on bonds.
  - Households also demand (borrow) funds from this market to finance various purchases.
  - Firms borrow to build new facilities in the hope of earning more in the future.
  - The government borrows by issuing bonds.
  - The rest of the world borrows from and lends to the money market.
  - Much of this borrowing and lending is coordinated by financial institutions, which take deposits from one group and lend them to others.

Financial Instruments in the Financial Market

- **Treasury bonds, notes,** *and* **bills** Promissory notes issued by the federal government when it borrows money.
- **corporate bonds** Promissory notes issued by firms when they borrow money
- **shares of stock** Financial instruments that give to the holder a share in the firm's ownership and therefore the right to share in the firm's profits.
  - **dividends** The portion of a firm's profits that the firm pays out each period to its shareholders.

Role of the Government in Macroeconomy

- **Fiscal policy** Government policies concerning taxes and spending.
- **Monetary policy** The tools used by the government/Central Bank to control the short-term interest rate.
- **Trade policy** The set of agreements, regulations, and practices by a government that affect trade with foreign countries.
- **Incomes policy** Intervention by the government in the process of price formation for labor and products (aimed at preventing pretax money incomes from rising faster than the growth of national income in real terms).

1.5 Thinking Like an Economist

Every field of study has its own terminology

- Mathematics
  - integrals ❖ axioms ❖ vector spaces
- Psychology
  - ego ❖ id ❖ cognitive dissonance
- Law
  - promissory ❖ estoppels ❖ torts ❖ venues
- Economics
  - supply ❖ opportunity cost ❖ elasticity ❖ consumer surplus ❖ demand ❖ comparative advantage ❖ deadweight loss

The Economist as a Scientist

- Economics trains you to. . . .
  - Think in terms of alternatives.
  - Evaluate the cost of individual and social choices.
  - Examine and understand how certain events and issues are related.

- The economic way of thinking . . .
  - Involves thinking analytically and objectively.
  - Economists…
    - Devise theories
    - Collect data
    - Analyze the data to verify or refute their theories
  - Economics makes use of the *scientific method*.

Economic Models

- The Scientific Method: observation, theory, and more observation
  - Uses abstract models to help explain how a complex, real world operates. Develops theories, collects, and analyzes data to evaluate the theories.

- Economists use models to simplify reality in order to improve our understanding of the world

- The Role of Assumptions
  - Economists make assumptions in order to make the world easier to understand.
  - The art in scientific thinking is deciding which assumptions to make.
  - Economists use different assumptions to answer different questions.

"Certeris paribus"

Example of a model:

Supply & demand for new cars

- shows how various events affect price and quantity of cars
- assumes the market is **competitive**: each buyer and seller is too small to affect the market price
- Variables:

  Q^d = quantity of cars that buyers demand

  Q^s = quantity that producers supply

  P = price of new cars

  Y = aggregate income

  P_s = price of steel (an input)

The demand for cars

demand equation: $Q^d = D(P, Y)$

- shows that the quantity of cars consumers demand is related to the price of cars and aggregate income

Digression: functional notation

- **General functional notation**
  shows only that the variables are related.

  $$Q^d = D(\underbrace{P, Y}_{\text{A list of the variables that affect } Q^d})$$

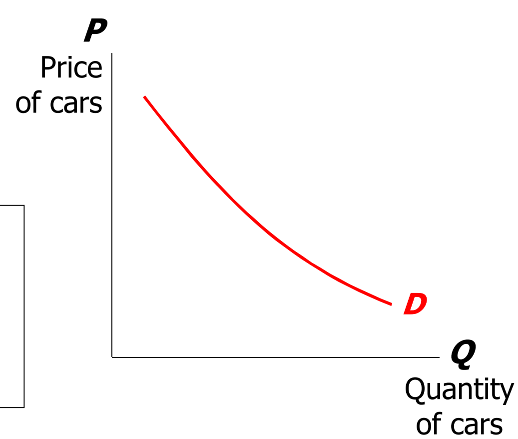
- A **specific functional form** shows
  the precise quantitative relationship.
  - Ex
    $D($ ... $+ 2Y$

The market for cars: Demand

demand equation:

$$Q^d = D(P, Y)$$

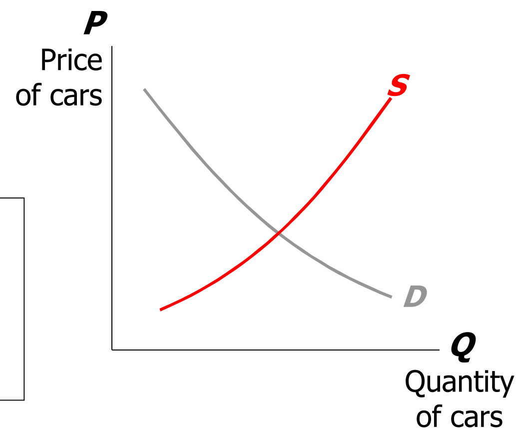
The **demand curve** shows the relationship between quantity demanded and price, other things equal.



The market for cars: Supply

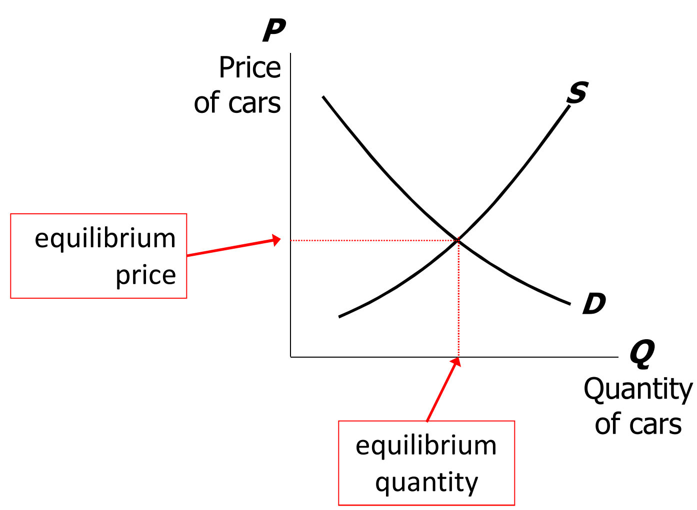
supply equation:

$$Q^s = S(P, P_s)$$



The **supply curve** shows the relationship between quantity supplied and price, other things equal.

The market for cars: Equilibrium



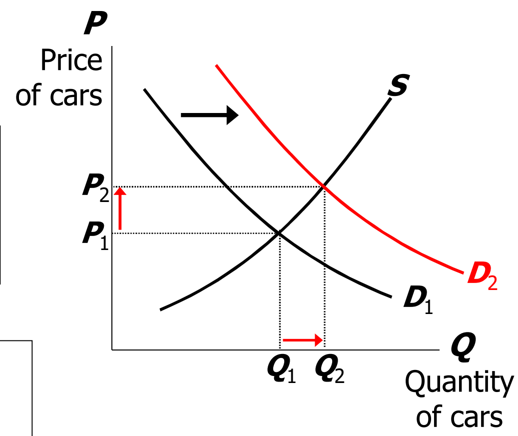
The effects of an increase in income

demand equation:

$$Q^d = D(P, Y)$$

An increase in income increases the quantity of cars consumers demand at each price…

…which increases the equilibrium price and quantity.



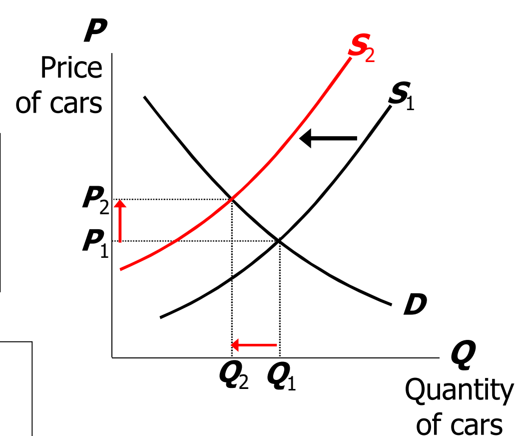
The effects of a steel price increase

supply equation:

$$Q^s = S(P, P_s)$$

An increase in P_s reduces the quantity of cars producers supply at each price…

…which increases the market price and reduces the quantity.



Endogenous vs. exogenous variables

- **Endogenous variables** are those variables that a model explains.
  - The values of **endogenous** variables are determined in the model.
- **Exogenous variables** are those variables that a model takes as given.
  - The values of **exogenous** variables are determined outside the model.
- In the model of supply & demand for cars,

endogenous: P, Q^d, Q^s

exogenous: Y, P_s

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Now you try:

1. Write down demand and supply equations for wireless phones; include two exogenous variables in each equation.
2. Draw a supply-demand graph for wireless phones.
3. Use your graph to show how a change in one of your exogenous variables affects the model's endogenous variables.

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A multitude of models

- No one model can address all the issues we care about.
- *e.g.*, our supply-demand model of the car market…
  - can tell us how a fall in aggregate income affects price & quantity of cars.
  - cannot tell us *why* aggregate income falls.

- So we will learn different models for studying different issues (e.g., unemployment, inflation, long-run growth).
- For each new model, you should keep track of
- its assumptions
- which variables are endogenous, which are exogenous
- the questions it can help us understand, and those it cannot

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Prices: flexible vs. sticky

- **Market clearing**: An assumption that prices are flexible, adjust to equate supply and demand.
- In the short run, many prices are **sticky** – adjust sluggishly in response to changes in supply or demand.
- For example,
  - many labor contracts fix the nominal wage for a year or longer
  - many magazine publishers change prices only once every 3-4 years

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Prices: flexible vs. sticky

- The economy's behavior depends partly on whether prices are sticky or flexible:
  - If prices are sticky, then demand won't always equal supply. This helps explain
    - unemployment (excess supply of labor)
    - why firms cannot always sell all the goods they produce
- Long run: prices flexible, markets clear, economy behaves very differently

1.6 Why Economists Disagree?

- They may disagree about the validity of alternative positive theories about how the world works.

- They may have different values and, therefore, different normative views about what policy should try to accomplish.