The Science of Macroeconomics

MACROECONOMICS

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PowerPoint® Slides by Ron Cronovich

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IN THIS CHAPTER, YOU WILL LEARN:

- about the issues macroeconomists study
- about the tools macroeconomists use
- some important concepts in macroeconomic analysis

Important issues in macroeconomics

Macroeconomics, the study of the economy as a whole, addresses many topical issues, *e.g.*:

- What causes recessions? What is "government stimulus" and why might it help?
- How can problems in the housing market spread to the rest of the economy?
- What is the government budget deficit? How does it affect workers, consumers, businesses, and taxpayers?

Important issues in macroeconomics

Macroeconomics, the study of the economy as a whole, addresses many topical issues, *e.g.*:

- Why does the cost of living keep rising?
- Why are so many countries poor? What policies might help them grow out of poverty?
- What is the trade deficit? How does it affect the country's well-being?

microeconomics Examines the functioning of individual industries and the behavior of individual decision-making units—firms and households.

macroeconomics Deals with the economy as a whole. Macroeconomics focuses on the determinants of total national income, deals with aggregates such as aggregate consumption and investment, and looks at the overall level of prices instead of individual prices.

aggregate behavior The behavior of all households and firms together.

Macroeconomic Concerns

Three of the major concerns of macroeconomics are

- Output growth
- Unemployment
- Inflation and deflation

Macroeconomic Concerns

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.

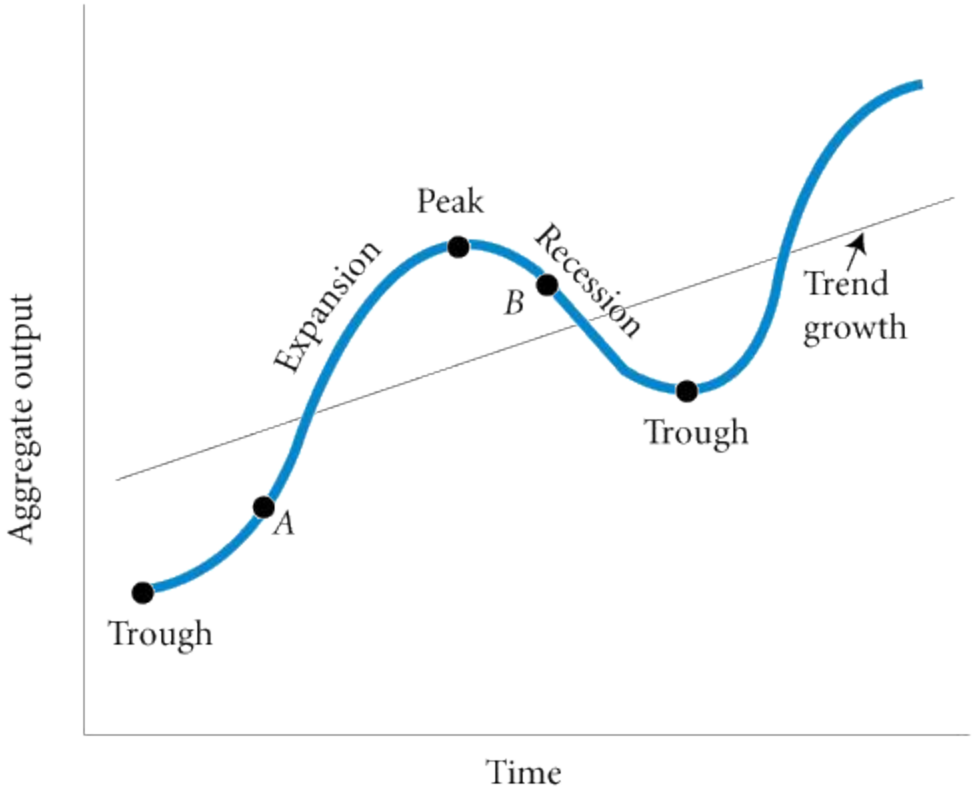
recession A period during which aggregate output declines. Conventionally, a period in which aggregate output declines for two consecutive quarters.

depression A prolonged and deep recession.

Macroeconomic Concerns

Output Growth

▸ **FIGURE 5.1 A Typical Business Cycle**
In this business cycle, the economy is expanding as it moves through point *A* from the trough to the peak. When the economy moves from a peak down to a trough, through point *B*, the economy is in recession.



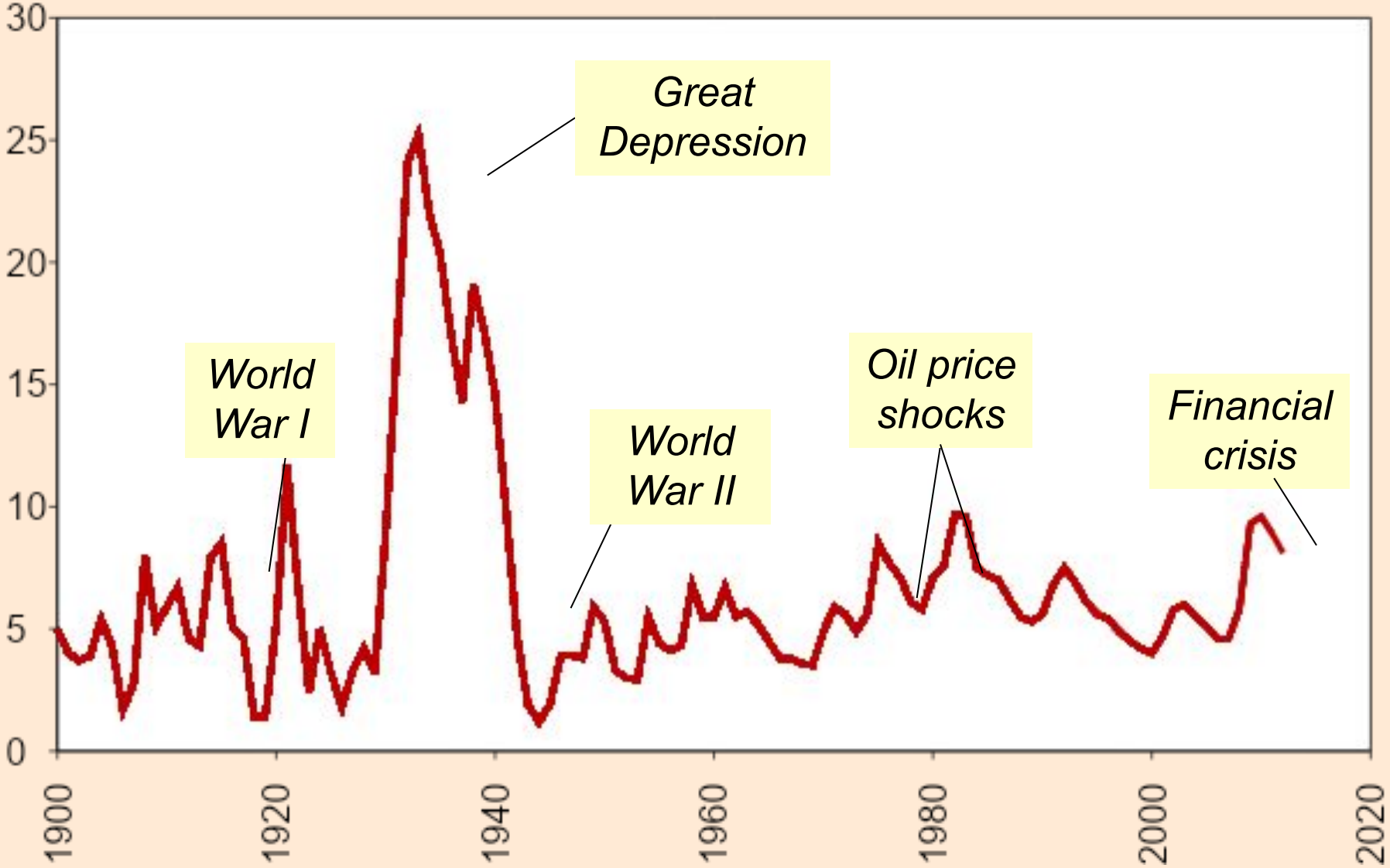
U.S. Real GDP per capita
(2005 dollars)

Macroeconomic Concerns

Unemployment

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

U.S. Unemployment Rate
(% of labor force)



Macroeconomic Concerns

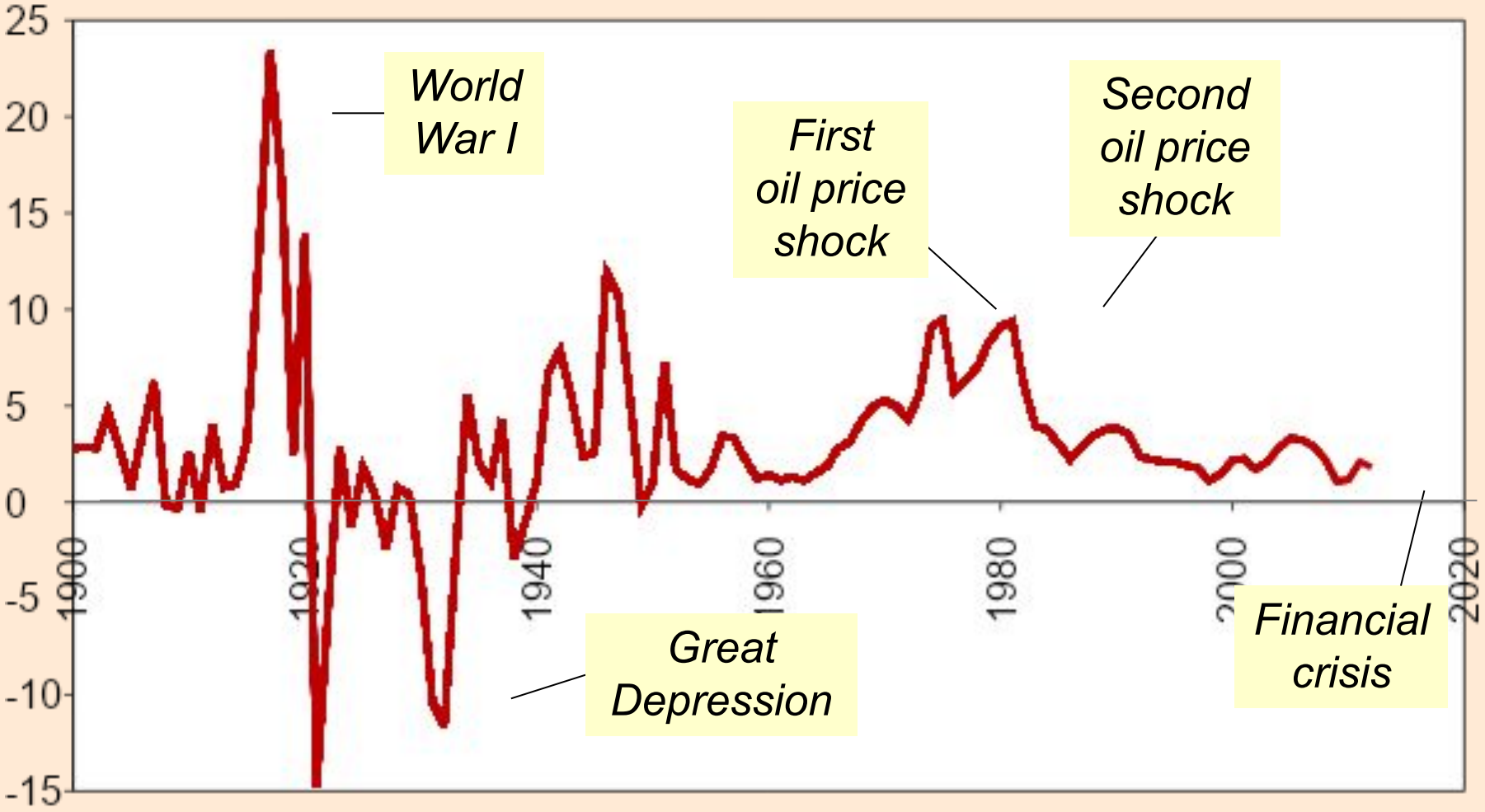
Inflation and Deflation

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.

U.S. Inflation Rate
(% per year)



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:

(1) *Households.*

(2) *Firms.*

(3) The *government.*

(4) The *rest of the world.*

Economic models

…are simplified versions of a more complex reality

- irrelevant details are stripped away

…are used to

- show relationships between variables
- explain the economy's behavior
- devise policies to improve economic performance

Endogenous vs. exogenous variables

- The values of **endogenous** variables are determined in the model.
- The values of **exogenous** variables are determined outside the model: the model takes their values and behavior as given.
- In the model of supply & demand for cars,

  endogenous: P, Q^d, Q^s

  exogenous: Y, P_s

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.

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

- A **sp** **nal form** shows the p ative relationship.
  - E

  $D(P, Y) = 60 - 10P + 2Y$

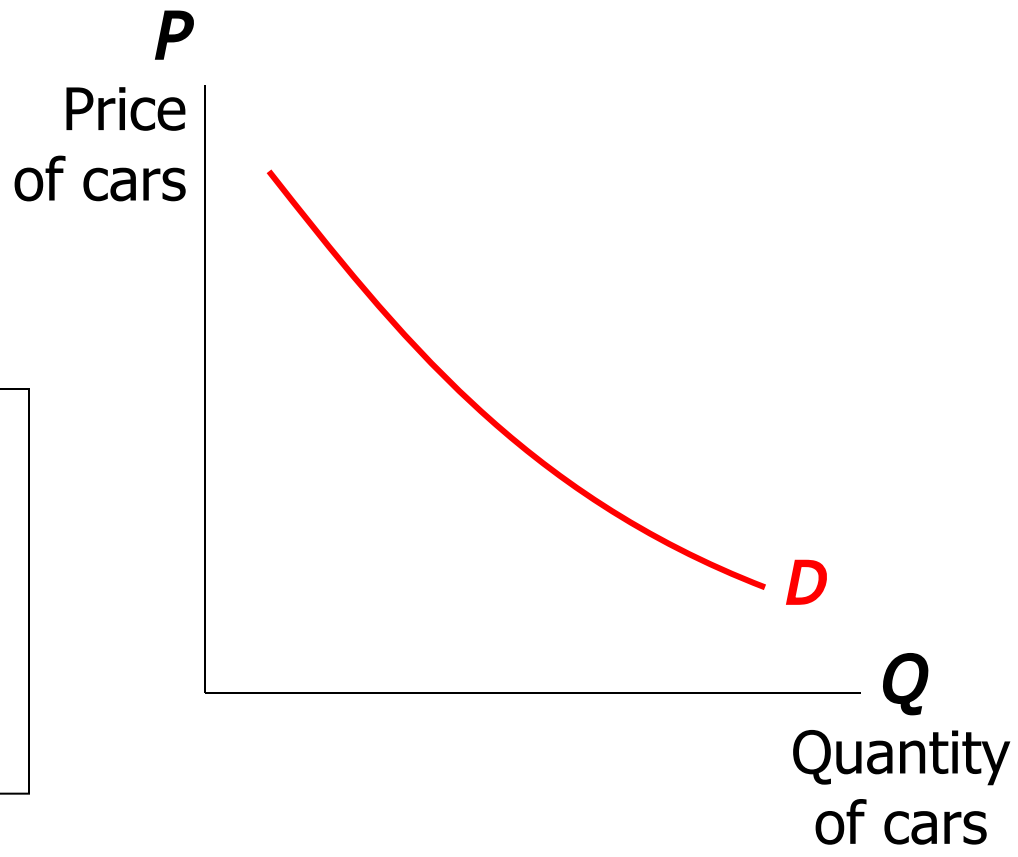
A list of the variables that affect Q^d

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.

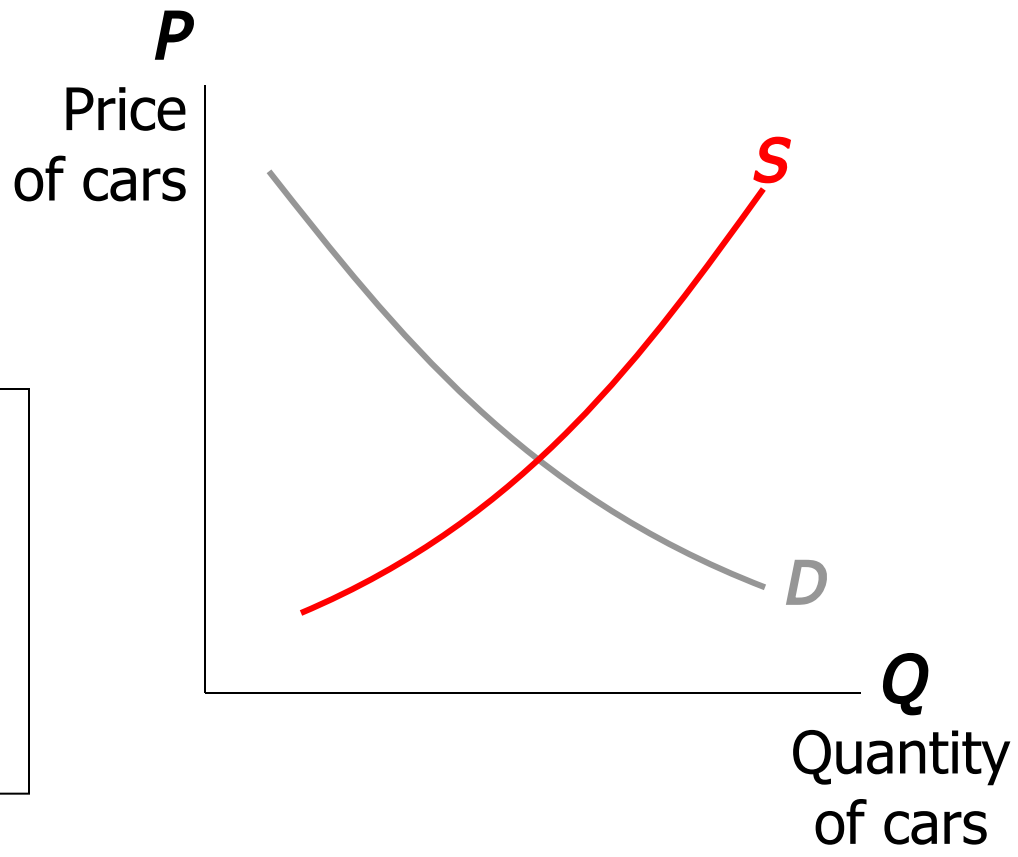


The market for cars: Supply

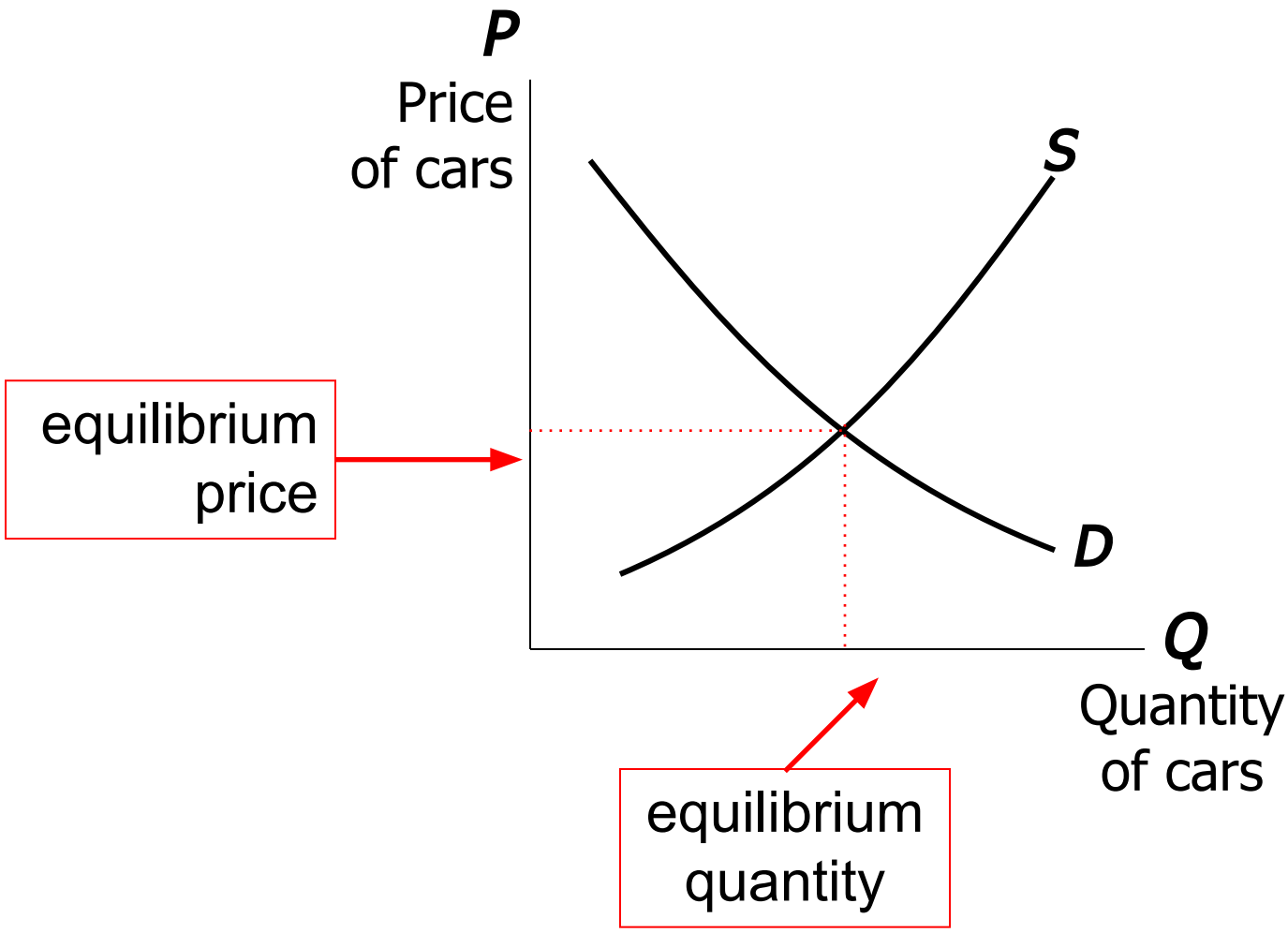
supply equation:

$$Q^S = S(P, P_S)$$

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



The market for cars: Equilibrium



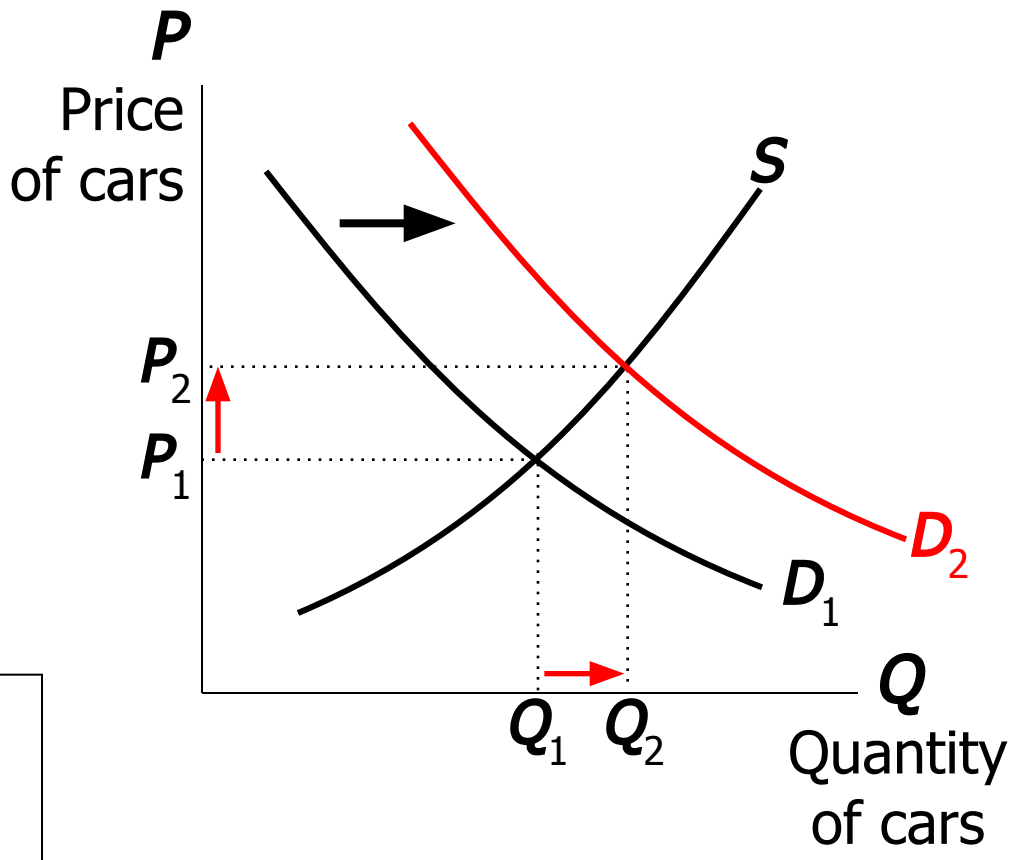
The effects of an increase in income

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.



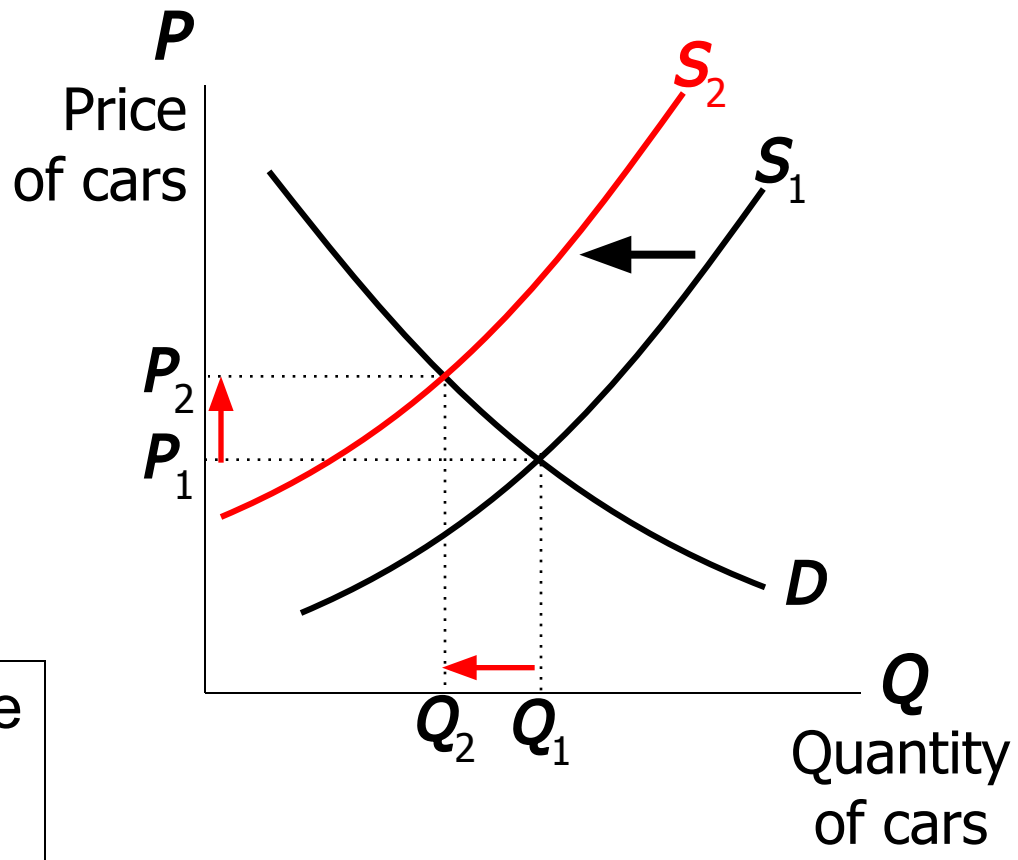
The effects of a steel price increase

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.



NOW YOU TRY

Supply and Demand

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

The use of multiple 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.

The use of multiple models

- 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, those it cannot

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 to 4 years

Prices: flexible vs. sticky

- The economy's behavior depends partly on whether prices are sticky or flexible:
  - If prices sticky (short run), demand may not equal supply, which explains:
    - unemployment (excess supply of labor)
    - why firms cannot always sell all the goods they produce
  - If prices flexible (long run), markets clear and economy behaves very differently

Outline of this book:

- Introductory material (Chaps. 1, 2)
- Classical Theory (Chaps. 3–7)
  How the economy works in the long run, when prices are flexible
- Growth Theory (Chaps. 8, 9)
  The standard of living and its growth rate over the very long run
- Business Cycle Theory (Chaps. 10–14)
  How the economy works in the short run, when prices are sticky

Outline of this book:

- Macroeconomic theory (Chaps. 15–17)
  Macroeconomic dynamics, models of consumer behavior, theories of firms' investment decisions
- Macroeconomic policy (Chaps. 18–20)
  Stabilization policy, government debt and deficits, financial crises

CHAPTER SUMMARY

- Macroeconomics is the study of the economy as a whole, including
  - growth in incomes
  - changes in the overall level of prices
  - the unemployment rate
- Macroeconomists attempt to explain the economy and to devise policies to improve its performance.

CHAPTER SUMMARY

- Economists use different models to examine different issues.
- Models with flexible prices describe the economy in the long run; models with sticky prices describe the economy in the short run.
- Macroeconomic events and performance arise from many microeconomic transactions, so macroeconomics uses many of the tools of microeconomics.