

Chapter 1: The Science of Macroeconomics*

MACROECONOMICS

Ninth Edition

N. Gregory Mankiw

* Slides based on Ron Cronovich's slides, adjusted for course in Macroeconomics at the Wang Yanan Institute for Studies in Economics at Xiamen University.

Learning Objectives

This chapter introduces you to

- The issues macroeconomists study ←
- How economists think

1.1) What Macroeconomists Study

Macroeconomics, the study of the economy as a whole (as opposed to Microeconomics studying individual economic decision-making), addresses many topical issues:

- Why does the cost of living keep rising?
- Why are millions of people unemployed, even when the economy is booming?
- What causes recessions?
Can the government do anything to combat recessions?
Should it?

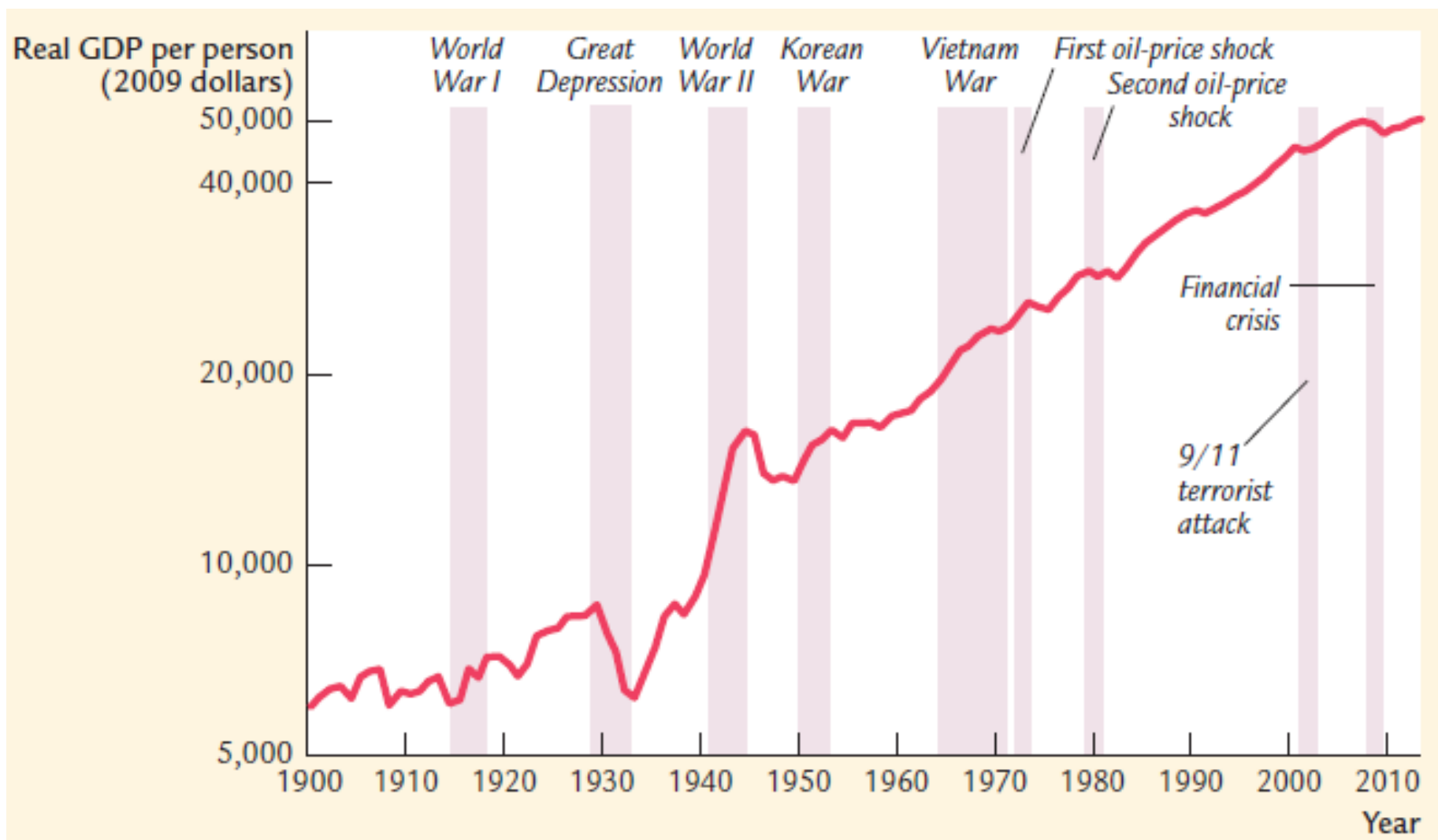
1.1) What Macroeconomists Study

Macroeconomics, the study of the economy as a whole (as opposed to Microeconomics studying individual economic decision-making), addresses many topical issues:

- What is the government budget deficit?
How does it affect the economy?
- Why does the U.S. have such a huge trade deficit?
- Why are so many countries poor?
What policies might help them grow out of poverty?

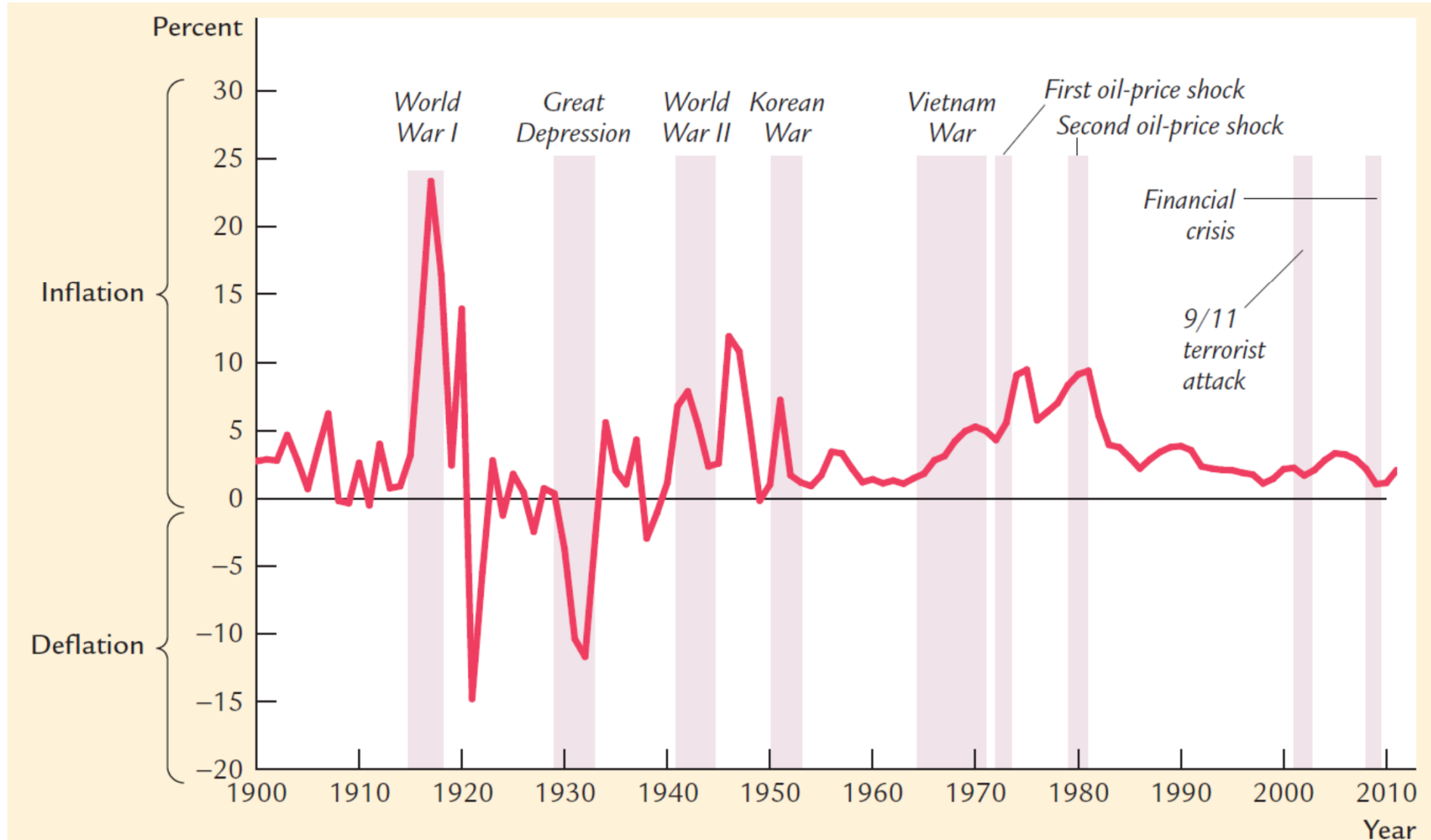
1.1) What Macroeconomists Study

→ U.S. Real GDP per Capita



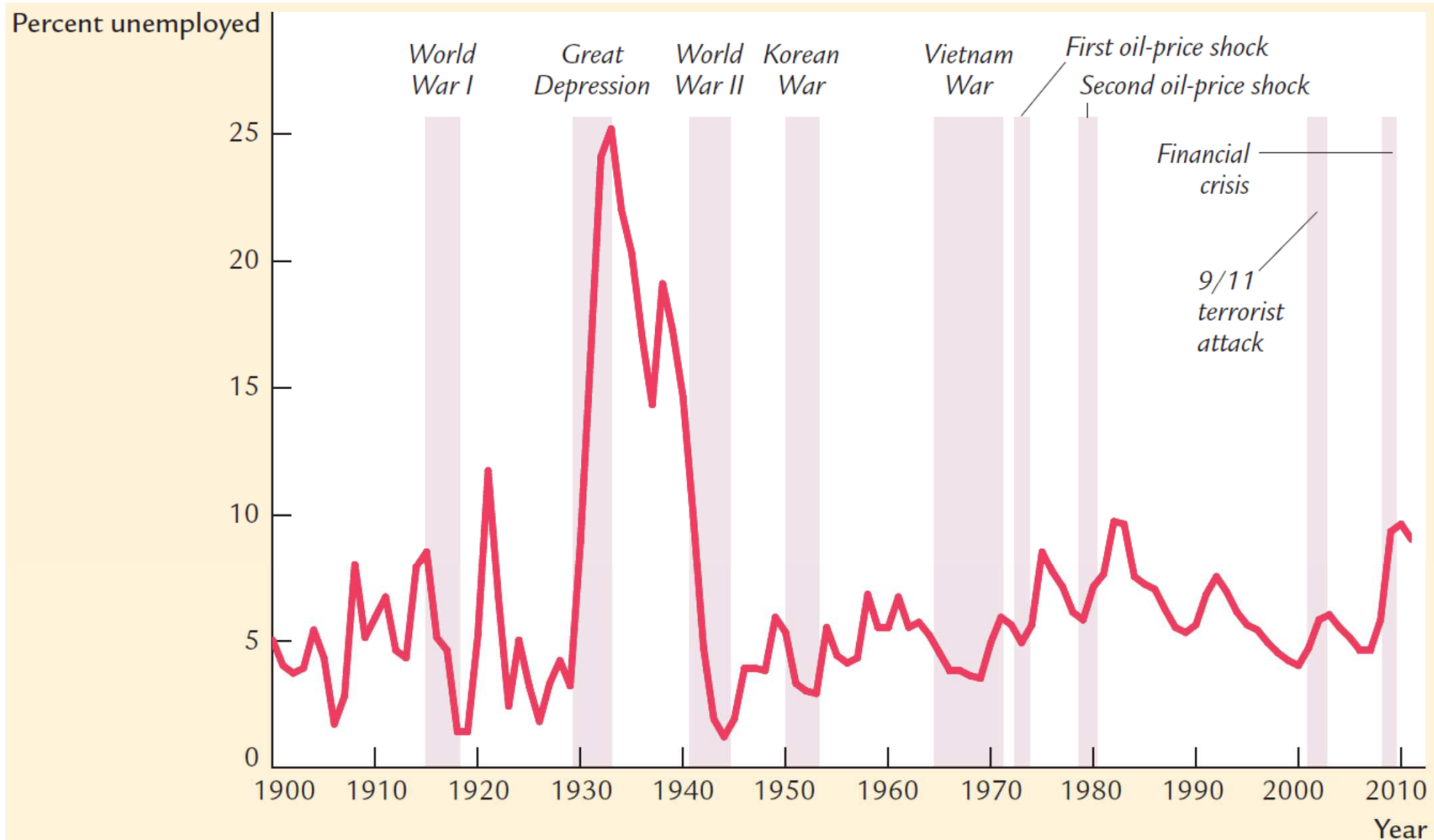
1.1) What Macroeconomists Study

→ U.S. Inflation Rate (% per Year)



1.1) What Macroeconomists Study

→ U.S. Unemployment Rate (% of Labor Force)



Learning Objectives

This chapter introduces you to

- The issues macroeconomists study ✓
- How economists think ←

1.2) How Economists Think

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

1.2) How Economists Think

→ Example Model: Supply and Demand for 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_m = price of steel (an input)

1.2) How Economists Think

→ 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 & behavior as given.

In the example model of supply & demand for cars,

exogenous: Y, P_m
endogenous: P, Q^d, Q^s

1.2) How Economists Think

→ Example Model: 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.


1.2) How Economists Think

→ Digression: Functional Notation

General functional notation shows only that variables are related.

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

A list of
variables
that affect Q^d



A **specific functional form** shows the precise quantitative relationship. Example:

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

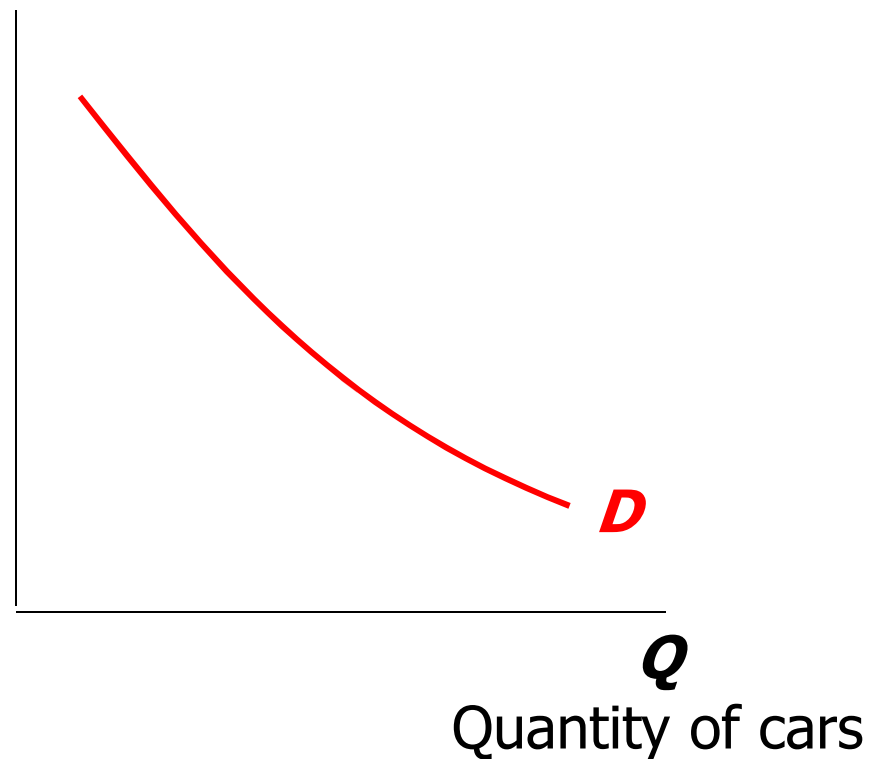
1.2) How Economists Think

→ Example Model: Demand on the Car Market

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

P
Price
of cars

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



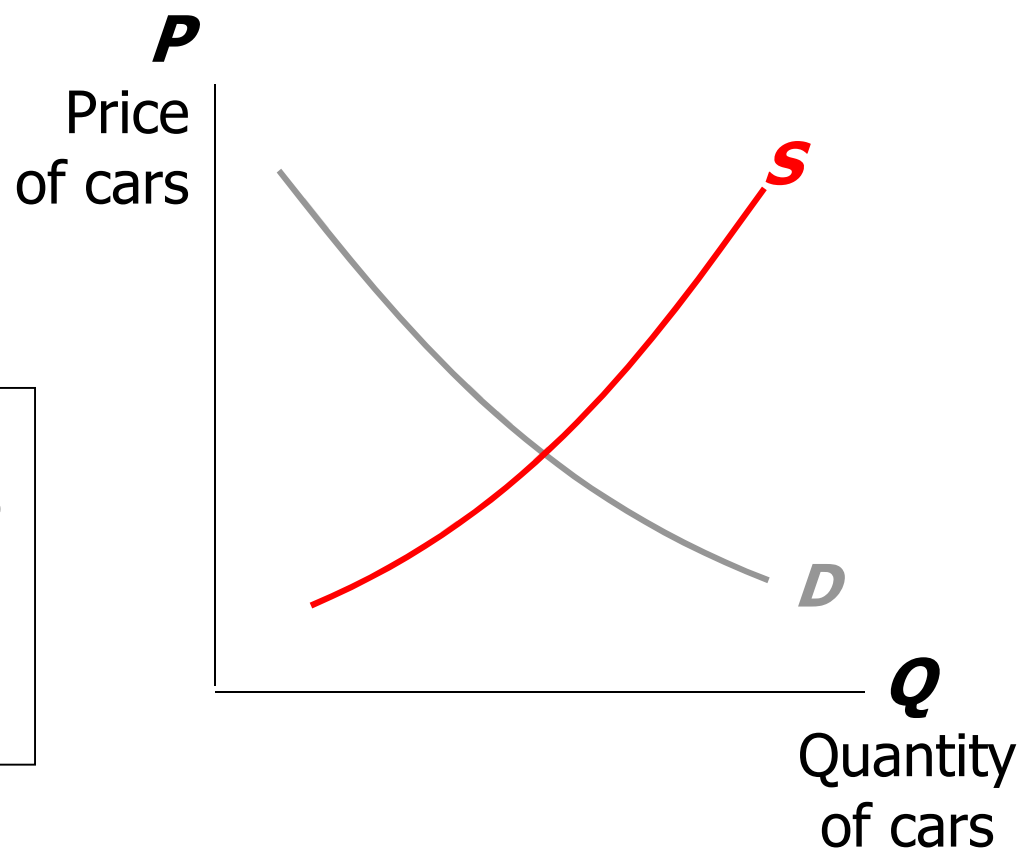
1.2) How Economists Think

→ Example Model: Supply on the Car Market

Supply equation:

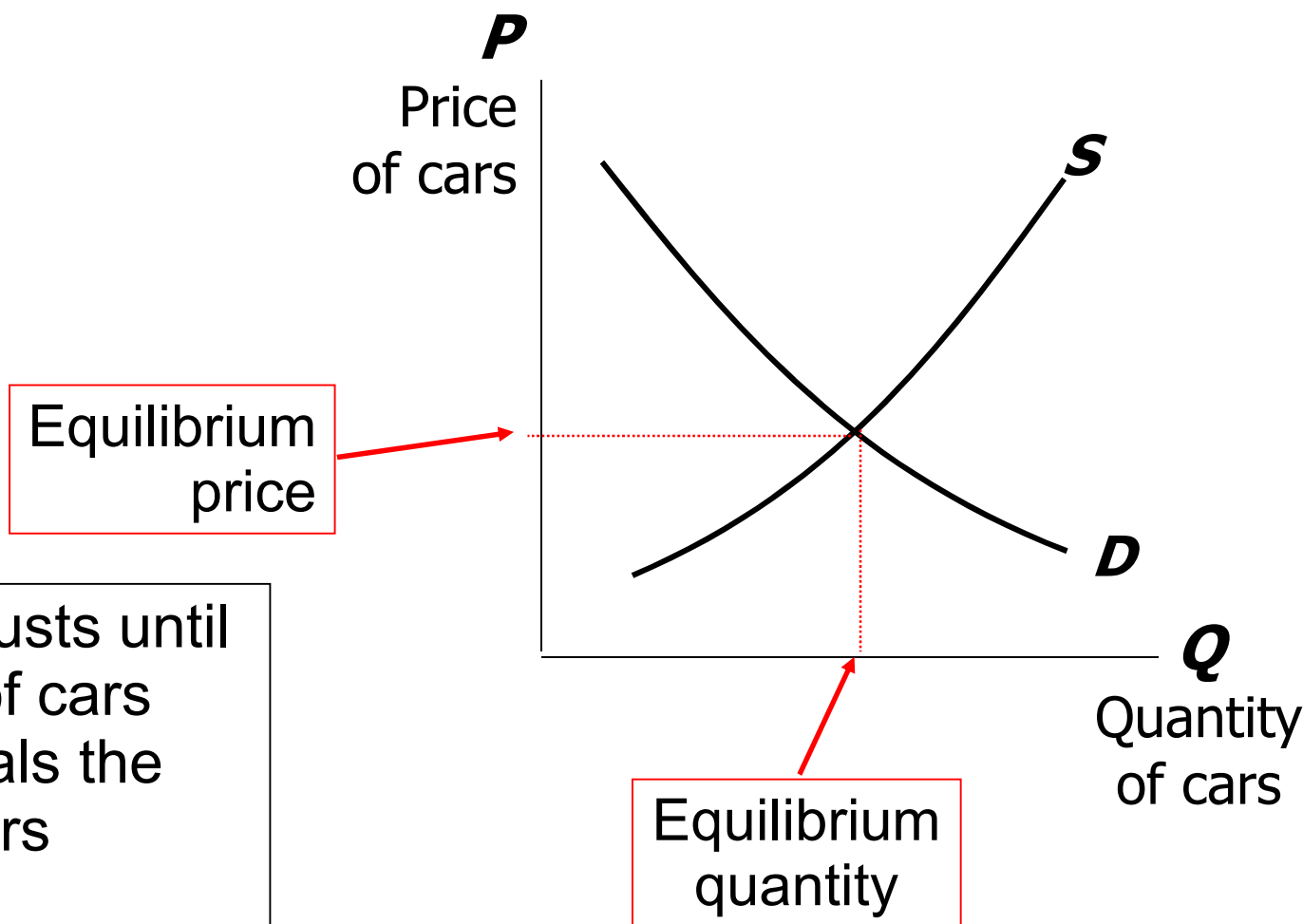
$$Q^S = S(P, P_m)$$

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



1.2) How Economists Think

→ Example Model: Equilibrium on the Car Market



The price adjusts until the quantity of cars supplied equals the quantity of cars demanded.

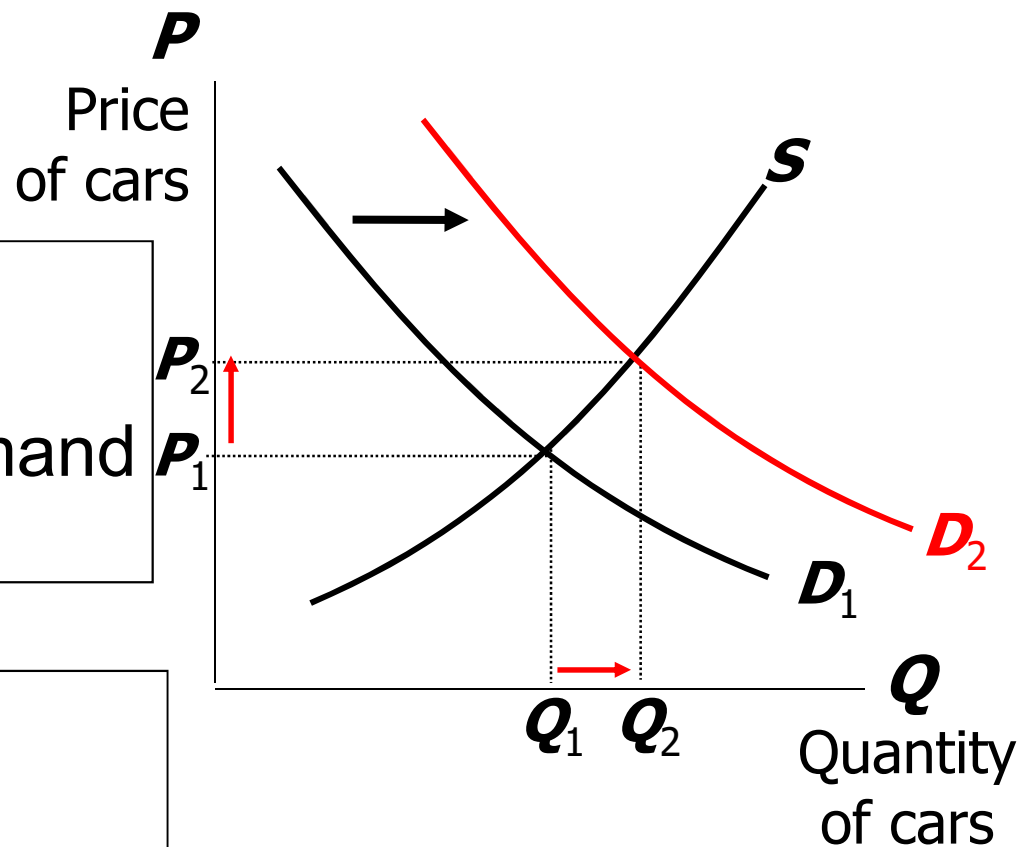
1.2) How Economists Think

→ Example Model: Effect of 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.



1.2) How Economists Think

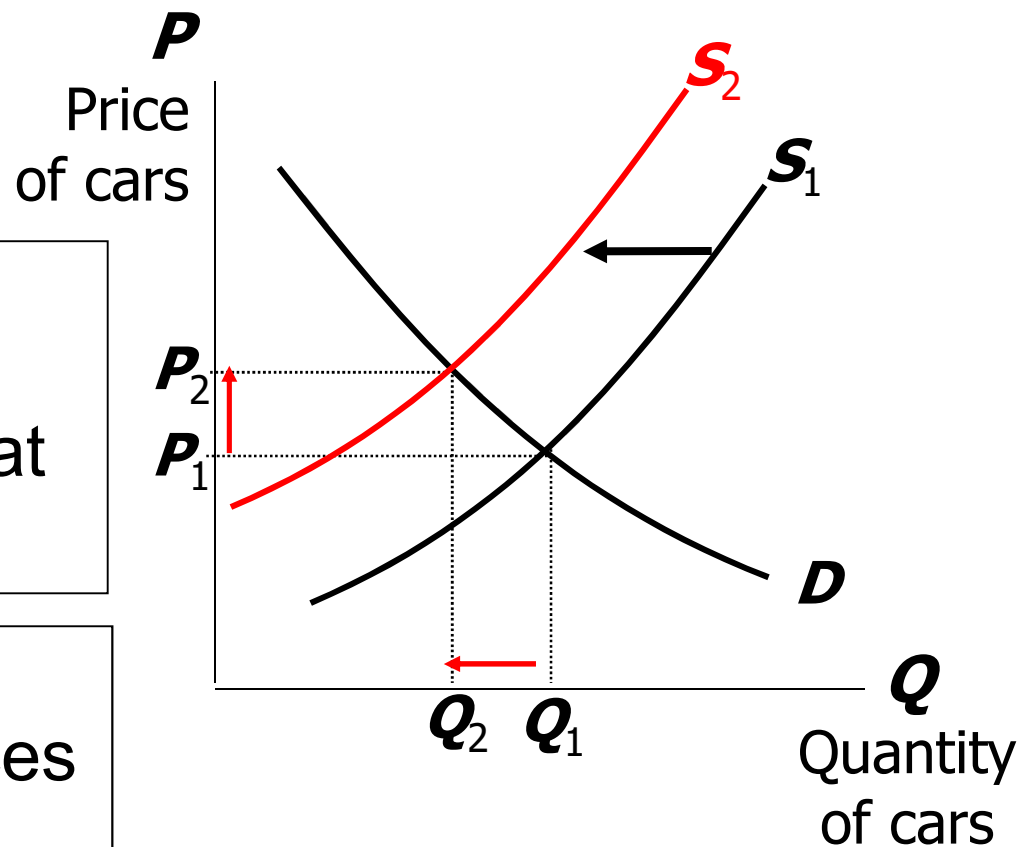
→ Example Model: Effect of Steel Price Increase

Supply equation:

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

An increase in P_m reduces the quantity of cars producers supply at each price...

...which increases the market price and reduces the quantity.



1.2) How Economists Think

→ A Multitude of Models

No one model can address all the issues we care about.

For example, 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.

1.2) How Economists Think

→ A Multitude of Models

We will learn different models for studying different issues (for example, 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

1.2) How Economists Think

→ 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

1.2) How Economists Think

→ Prices: Flexible vs. Sticky

The economy's (and model's) behavior depends partly on whether prices are sticky or flexible:

Short run: Prices are sticky, 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 are flexible, markets clear, economy behaves very differently from the short run

Outline of This Course

Introductory Material (Ch. 1-2)

Classical Theory (Ch. 3-6)

How the economy works in the long run, prices are flexible

Growth Theory (Ch. 7-9)

The standard of living and its growth over the very long run

Business Cycle Theory (Ch. 10-14)

How the economy works in the short run, prices are sticky

Policy debates (Ch. 15-16)

Should the government try to smooth business cycle fluctuations? Is the government's debt a problem?

Summary of Chapter 1

Macroeconomics is the study of the economy as a whole, including

- growth in output
- changes in the overall level of prices
- the unemployment rate

Macroeconomists attempt to explain the economy and to devise policies to improve its performance.

Summary of Chapter 1 (ctd.)

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.