CHAPTER 1

The Science of Macroeconomics

MACROECONOMICS SIXTH EDITION

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PowerPoint® Slides by Ron Cronovich

Learning Objectives

This chapter introduces you to

- the issues macroeconomists study
- 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:

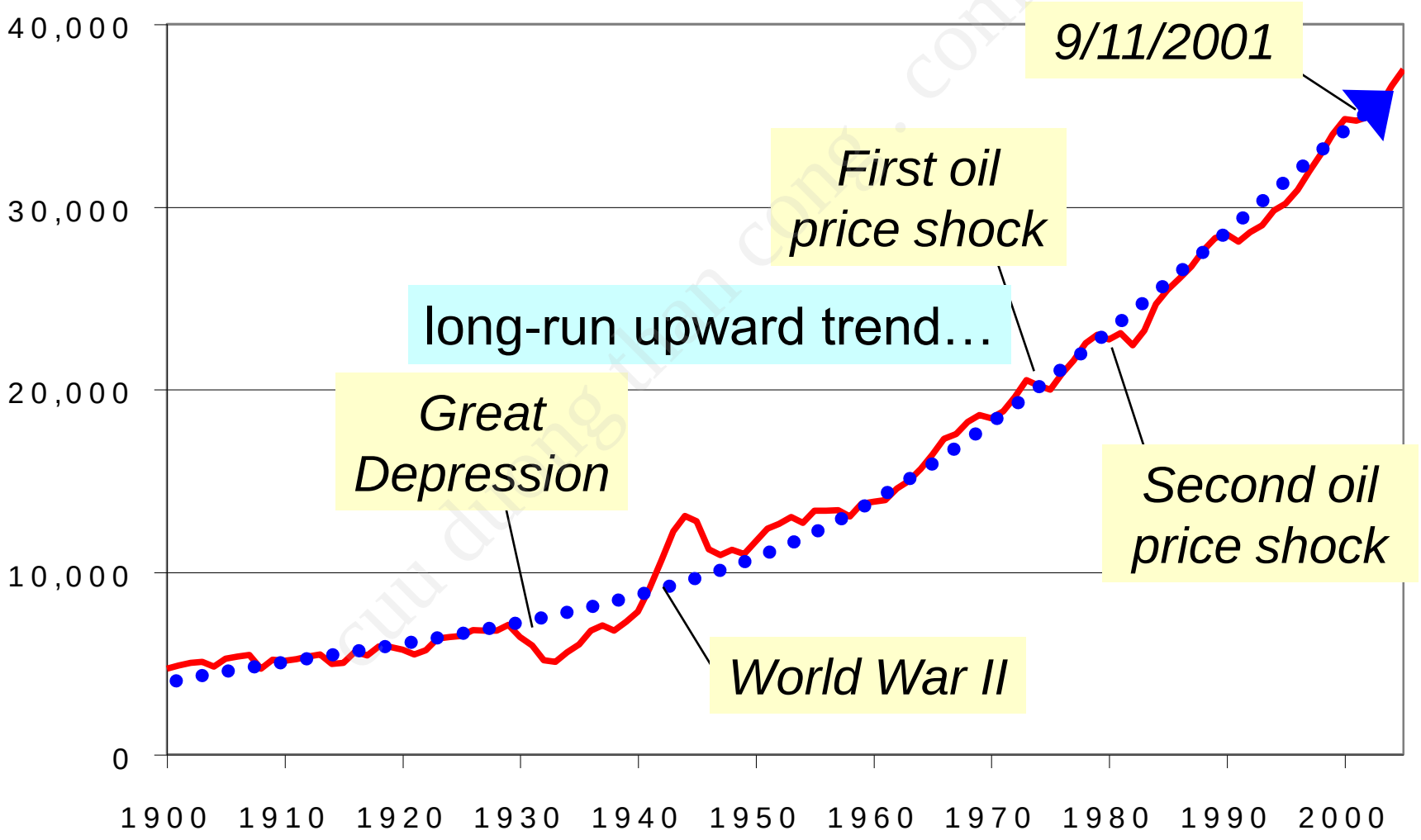
- Why does the cost of living keep rising?
- Why are millions of people unemployed, even when the economy is booming?
- What causes recessions?
  Can the government do anything to combat recessions? Should it?

Important issues in macroeconomics

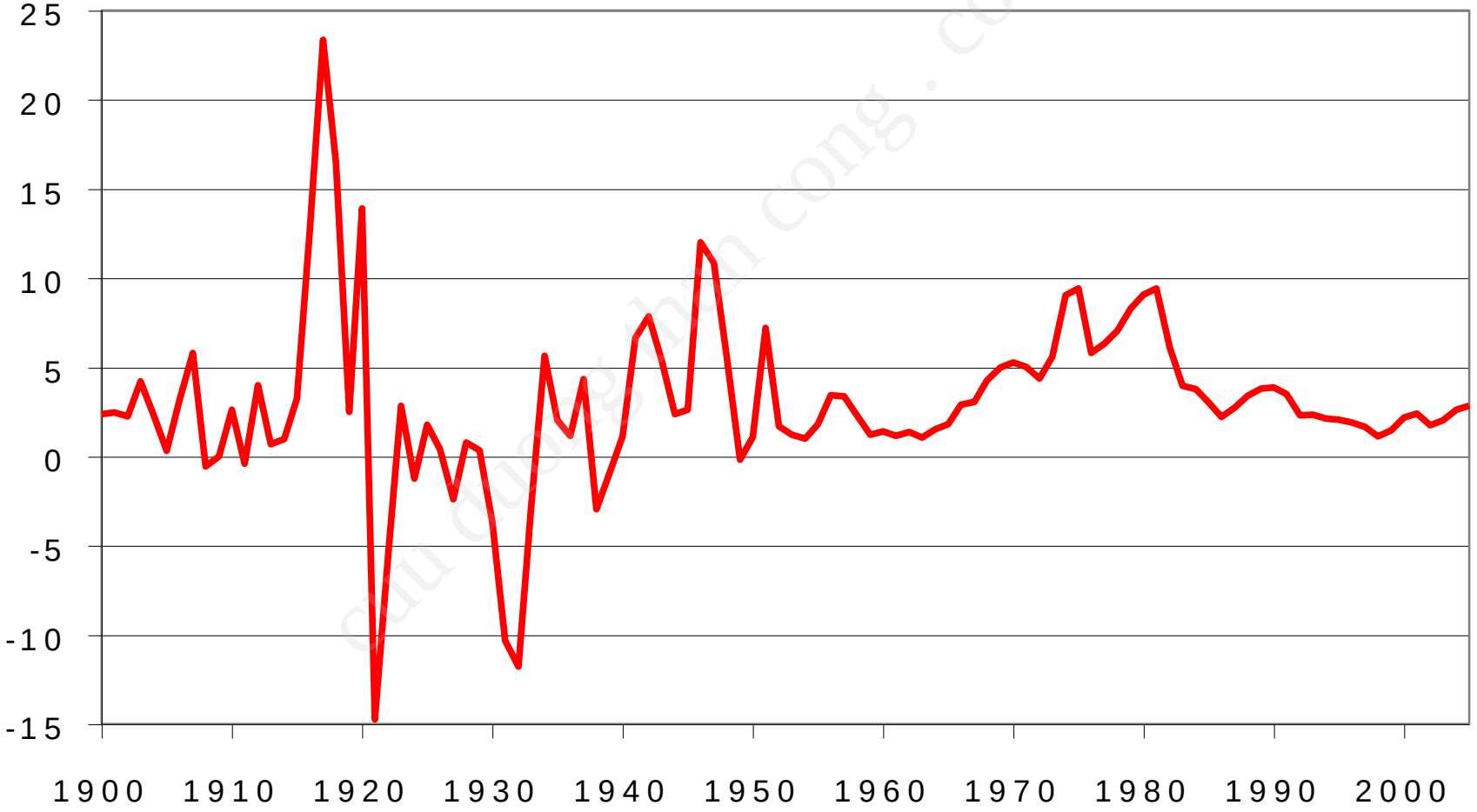
Macroeconomics, the study of the economy as a whole, addresses many topical issues:

- 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?

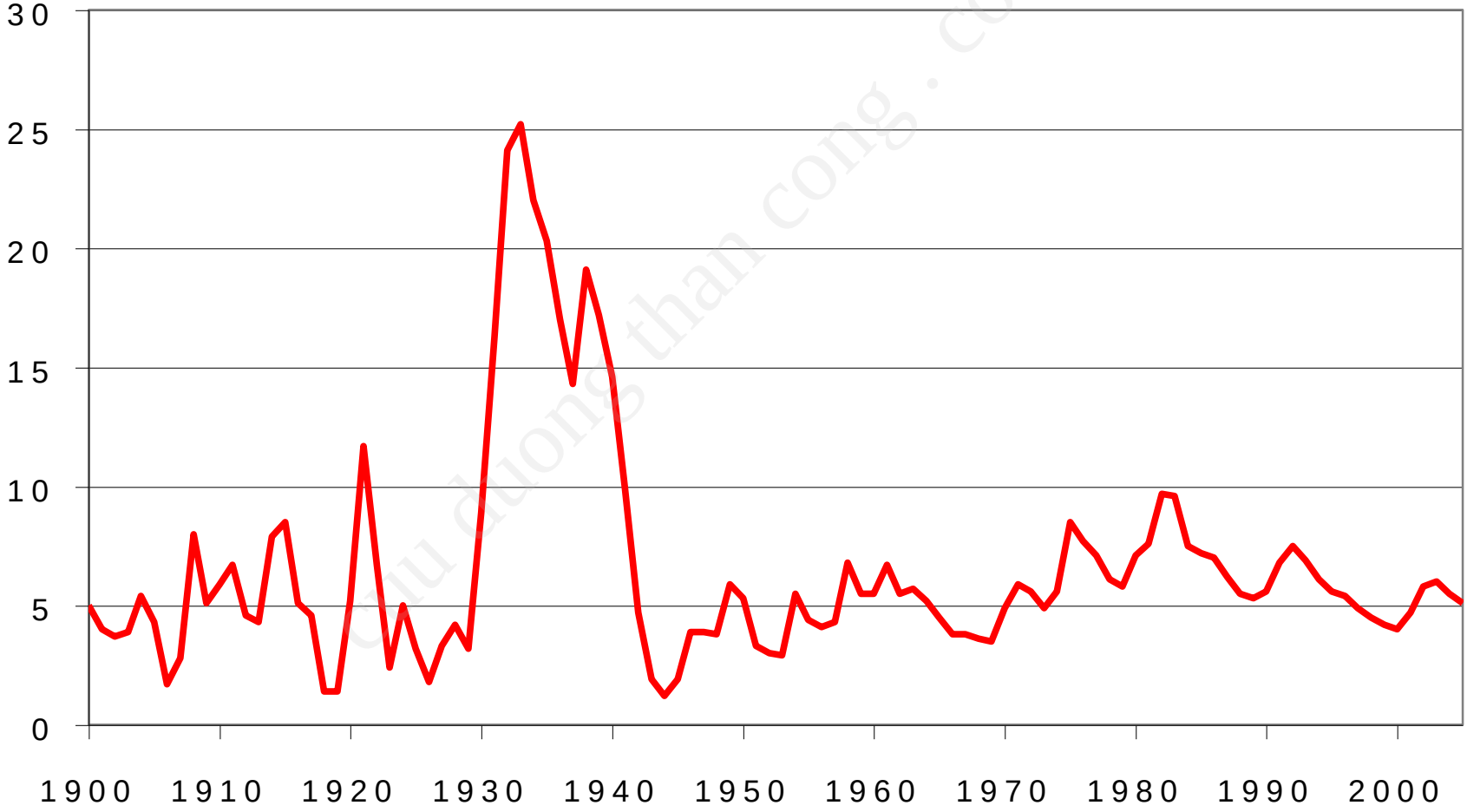
U.S. Real GDP per capita
(2000 dollars)



U.S. inflation rate
(% per year)



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



Why learn macroeconomics?

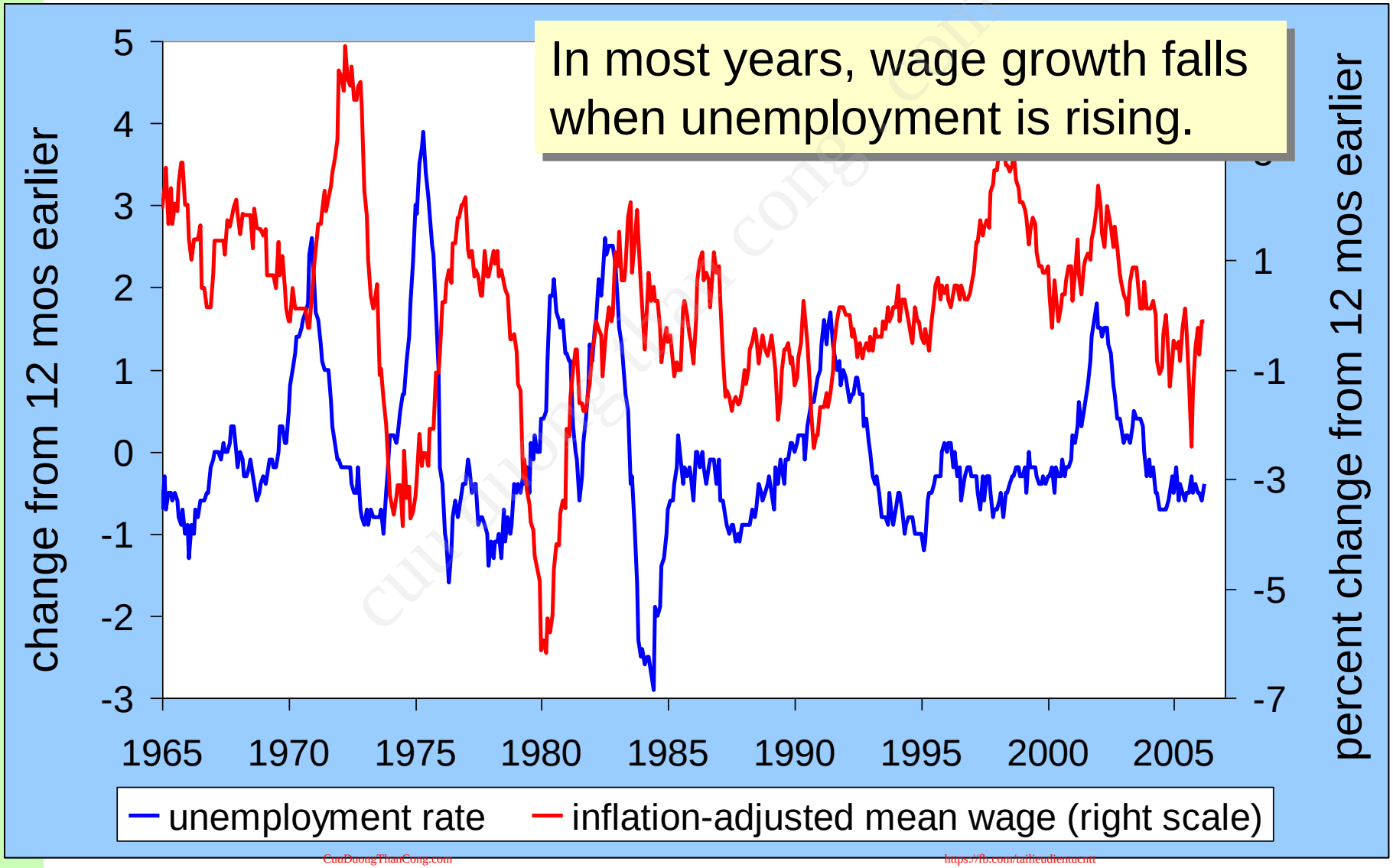
1. The macroeconomy affects society's well-being.

Each one-point increase in the unemployment rate is associated with:

- 920 more suicides
- 650 more homicides
- 4000 more people admitted to state mental institutions
- 3300 more people sent to state prisons
- 37,000 more deaths
- increases in domestic violence and homelessness

Why learn macroeconomics?

2. The macroeconomy affects <u>your</u> well-being.



Why learn macroeconomics?

3. The macroeconomy affects politics.

Unemployment & inflation in election years

year	*U rate*	*inflation rate*	*elec. outcome*
1976	7.7%	5.8%	Carter (D)
1980	7.1%	13.5%	Reagan (R)
1984	7.5%	4.3%	Reagan (R)
1988	5.5%	4.1%	Bush I (R)
1992	7.5%	3.0%	Clinton (D)
1996	5.4%	3.3%	Clinton (D)
2000	4.0%	3.4%	Bush II (R)
2004	5.5%	3.3%	Bush II (R)

Economic models

…are simplified versions of a more complex reality

- irrelevant details are stripped away

…are used to

- Make testable predictions that can, when proven, …
- … explain the economy's behavior
- devise policies to improve economic performance

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

- This says, in a concise way, that the quantity of cars consumers demand is related to the price of cars and aggregate income
  - this notation technique is called functional notation; Q^d or D is "a function of" P and Y.
- I will use *colors* to indicate the way in which variables affect each other
  - P has an inverse effect on D, whereas Y has a direct effect.

Digression: functional notation

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

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

- A **specific functional form** shows the precise quantitative relationship.
  - E

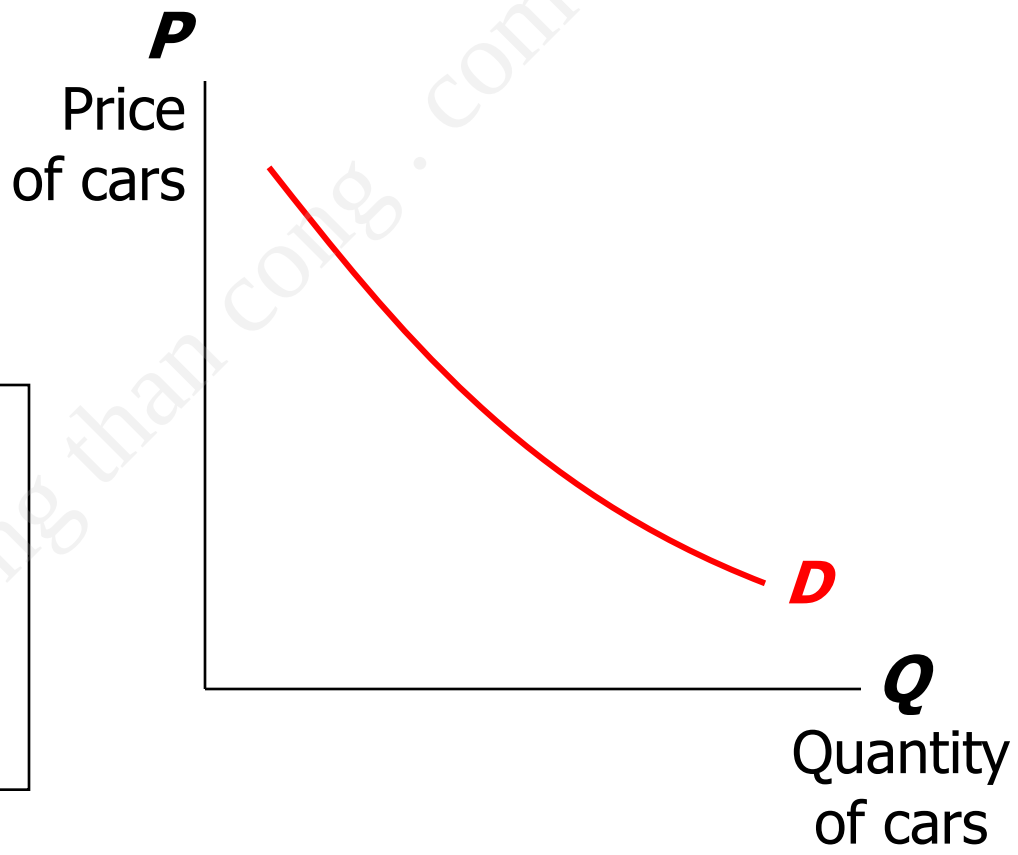
$$D \quad)P + 2Y$$

A list of the variables that affect Q^d

The market for cars: Demand

demand equation:

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

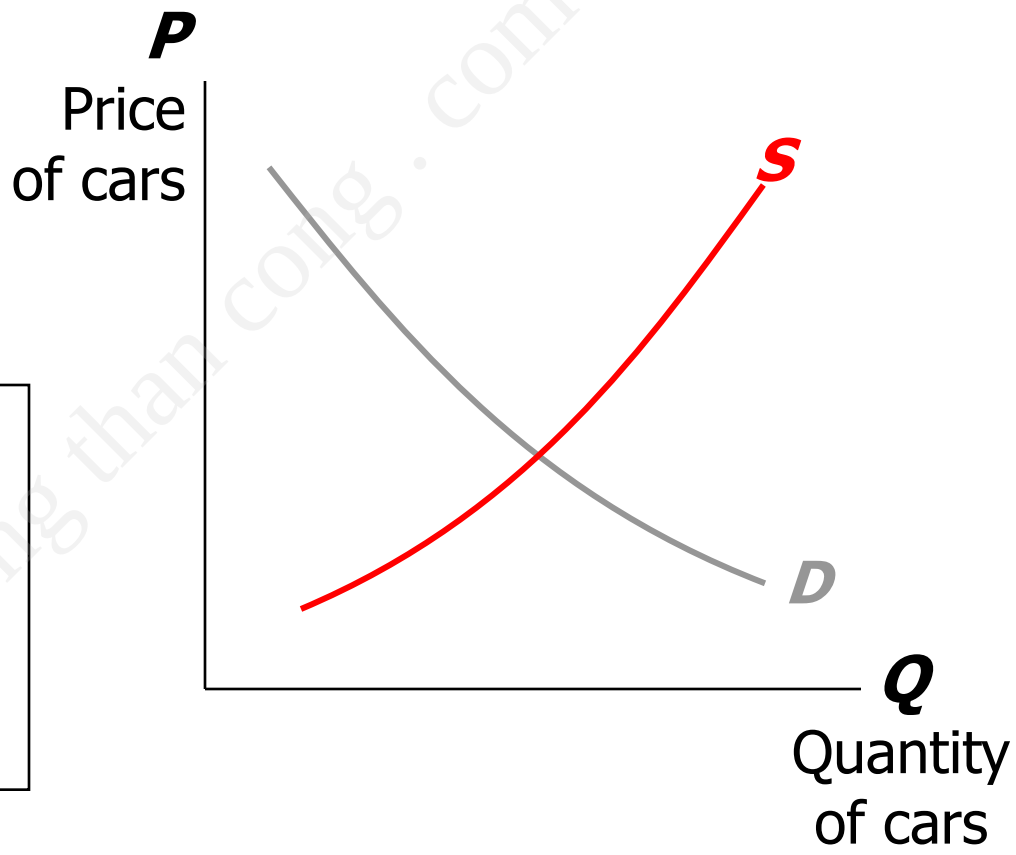


The **demand curve** shows the relationship between quantity demanded and price, other things equal.

The market for cars: Supply

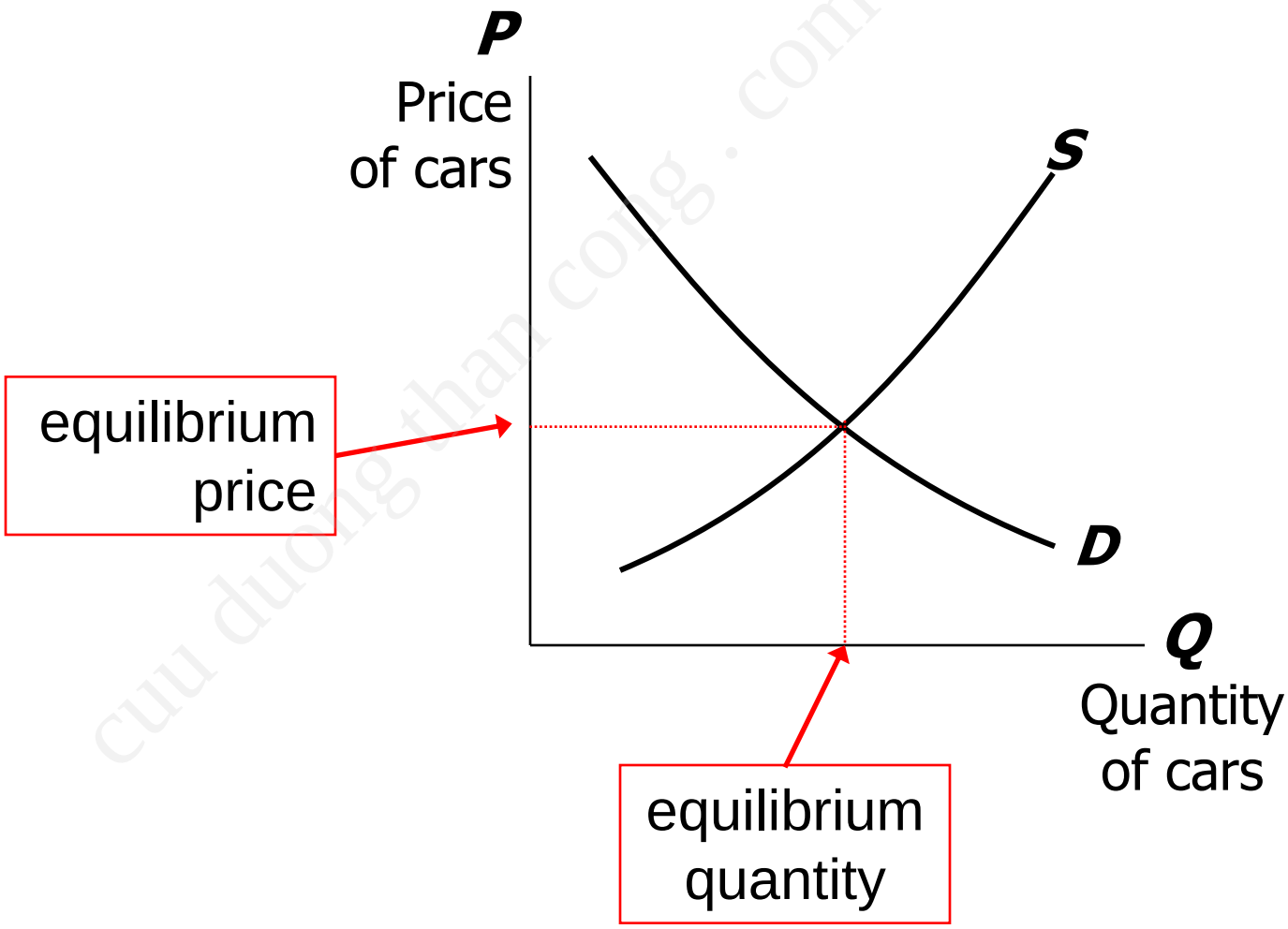
supply equation:

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



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

The market for cars: Equilibrium



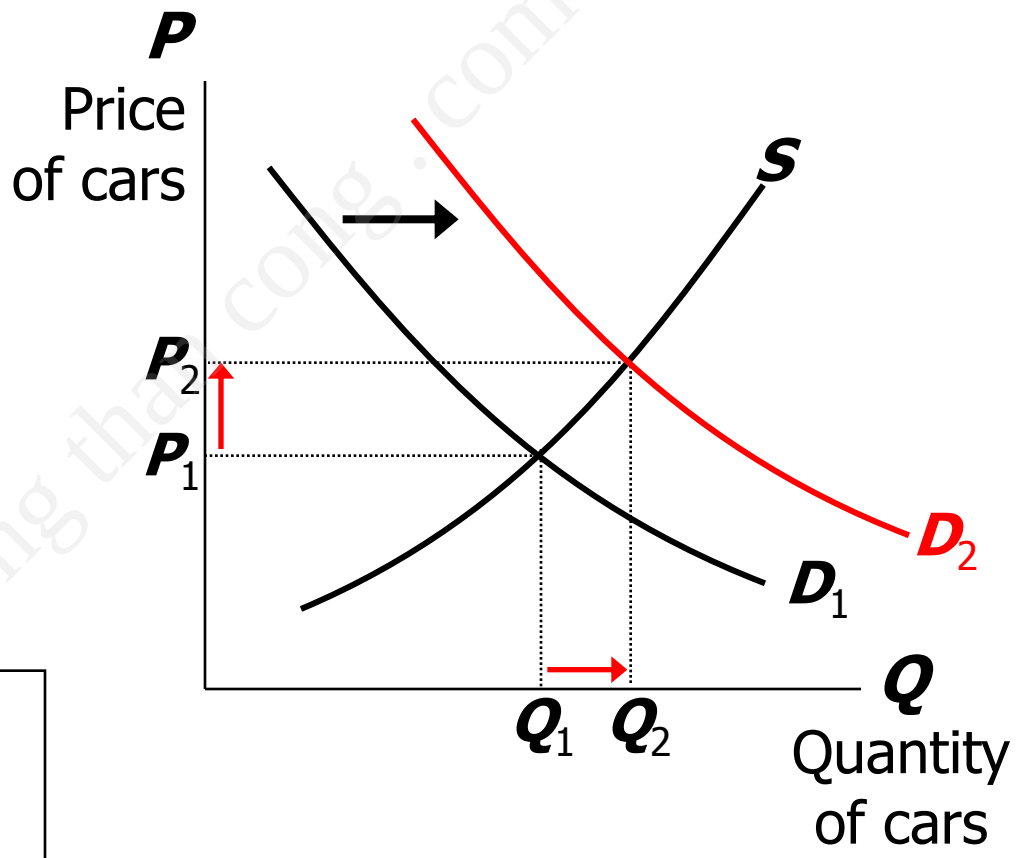
The effects of an increase in income

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.



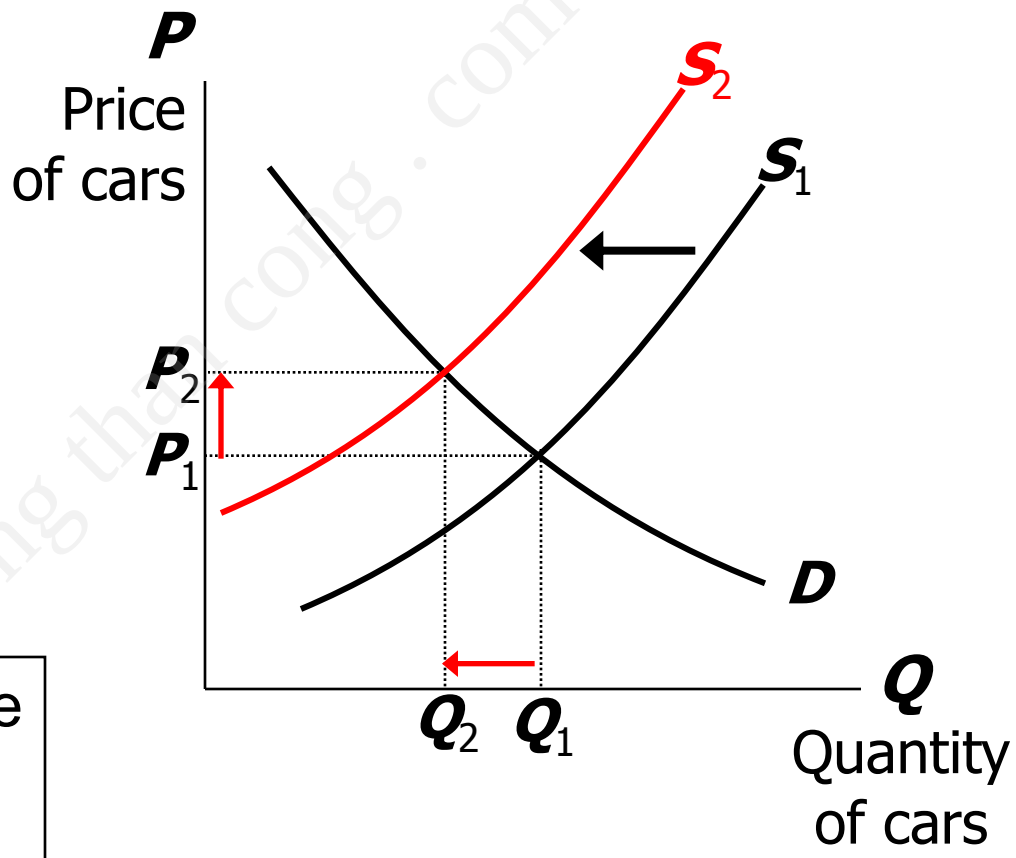
The effects of a steel price increase

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.



Endogenous vs. exogenous variables

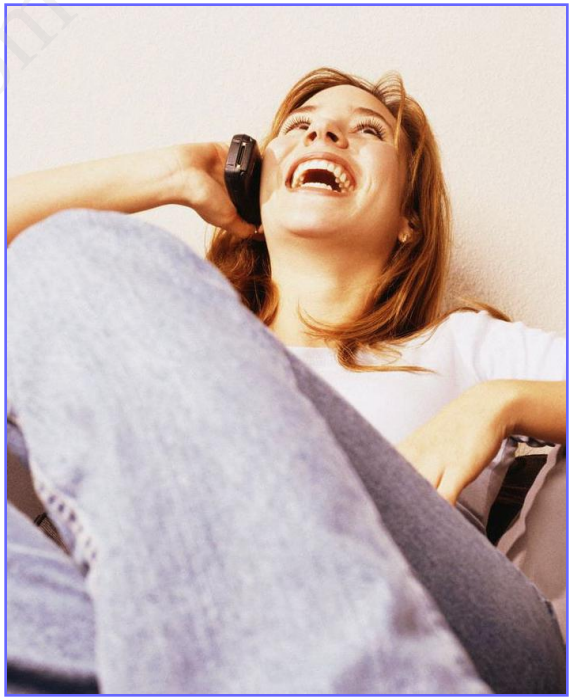
- The values of **endogenous** variables are determined in the model.
- The values of **exogenous** variables are determined outside the model: the model takes their values & behavior as given.
- In the model of supply & demand for cars,

endogenous: P, Q^d, Q^s

exogenous: Y, P_s

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.



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.

A multitude of 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, and 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 3-4 years

Prices: flexible vs. sticky

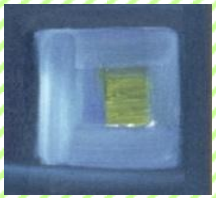
- The economy's behavior depends partly on whether prices are sticky or flexible:
- If prices are sticky, then demand won't always equal supply. This helps explain
  - unemployment (excess supply of labor)
  - why firms cannot always sell all the goods they produce
- Long run: prices flexible, markets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

Outline of this book:

- Introductory material (Chaps. 1 & 2)
- Classical Theory (Chaps. 3-6)
  How the economy works in the long run, when prices are flexible
- Growth Theory (Chaps. 7-8)
  The standard of living and its growth rate over the very long run
- Business Cycle Theory (Chaps. 9-13)
  How the economy works in the short run, when prices are sticky

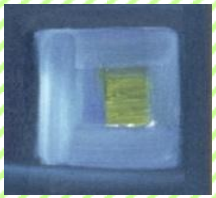
Outline of this book:

- Policy debates (Chaps. 14-15)
  Should the government try to smooth business cycle fluctuations? Is the government's debt a problem?
- Microeconomic foundations (Chaps. 16-19)
  Insights from looking at the behavior of consumers, firms, and other issues from a microeconomic perspective



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.