

EE311 Microeconomics theory

Kittichai Saelee
Semester 1/2020

Agenda

- Class logistic / Evaluation
- What is this course all about?
- Review basic microeconomics:
Tools and important concept

CLALSS LOGISTIC AND EVALUATION

About the instructor

- Instructor: Kittichai Saelee
- Email: kittichai_lee@econ.tu.ac.th
- Office: room516 or B.E. office
- Office hours: by appointment only (email)
- BE Moodle: **2379**

Class logistic for making-up the holiday and cancelled class

- Class logistic
 - 2 make-up sessions required before midterm exam
 - 1 make-up sessions required after midterm exam
- To ease the management, I propose that we hold the regular session until 13.30. This would require 8 consecutive sessions before the midterm exam, and 4 consecutive sessions after the midterm exam.
 - Starting from next week onwards!

Textbook and Extra reading



Evaluation

• Group work	10%
• Quizzes	5%
• Book Summary	5%
• On-line exercises	5%
• Mid-term examination	30%
• Final examination	45%

WHAT IS THIS THIS COURSE ALL ABOUT?

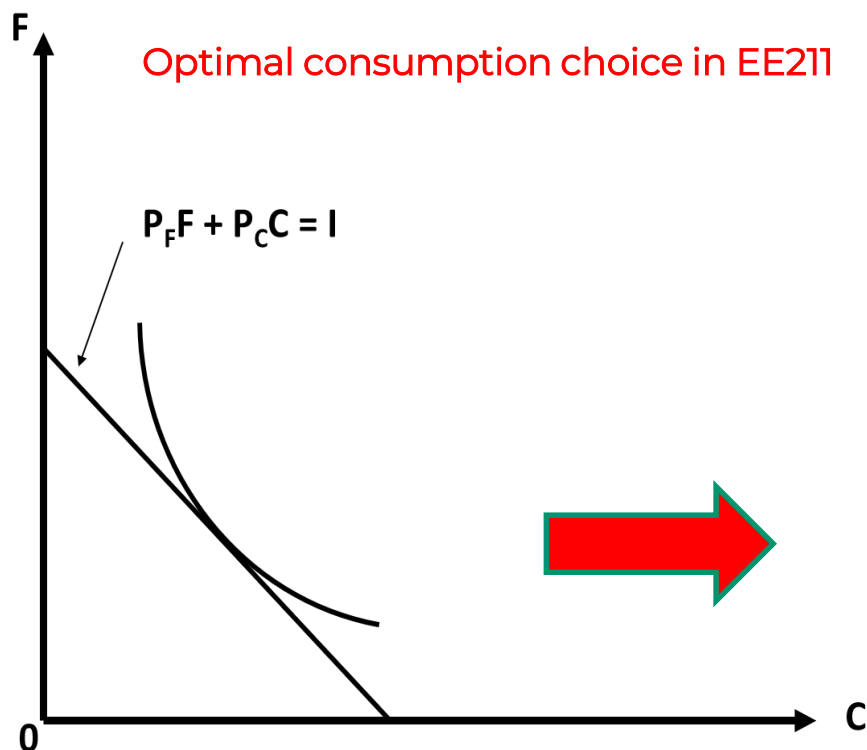
EE311 Microeconomics

- Related to the discussion of **microeconomics** at the **intermediate level**, which focus on four core purposes of economics analysis.
 - Understanding behavior of agents (through the lenses of optimizing principle with constraints)
 - Equilibrium (market is cleared)
 - Comparative static
 - Welfare evaluation and normative analysis

EE311 Microeconomics

- In terms of the topic discussed..
- This course is built upon several basic concepts in EE211, but
 - More in-depth theory of consumer / producer / perfectly competitive market / monopoly market
 - More application pertaining to each topic
 - Presenting the theory using **new tools or techniques** (Math)

EE311 Microeconomics



Optimal consumption choice in EE311

Consumer problem

Max $S(F, C) = \sqrt{FC}$ (utility function)

Subject to: $(P_F)(F) + (P_C)(C) \leq I$

New Tools: "Constraint optimization technique"

- a new tool suitable for solving the optimizing-decision problem

EE311 Microeconomics

- Some topics are the new area of discussions
 - Market with imperfect competition with few number of producers and Game theory
 - Factor input markets
 - General equilibrium (or Multi-market equilibrium)
 - Market failure (when market outcomes need to be corrected)

REVIEW BASIC MICROECONOMICS: APPLICATION OF DEMAND AND SUPPLY, TOOLS AND IMPORTANT CONCEPTS

Adapted from Chayun Tantivasadakarn

Faculty of Economics Thammasat University

Apply Demand and Supply

- Demand, Supply and Equilibrium
- Consumer, producer surplus, and Welfare measurement
- Sale Taxes and Subsidies
- Price ceilings
- Price floors
- Price supports
- Import Tariffs and Quotas
- Cobweb model

Demand (1)

- Direct Demand vs Derived Demand
 - Direct Demand: demand for a good that comes from the desire of buyers to directly consume the good itself.
 - Derived Demand: demand for a good that is derived from the production and sale of other goods.
- Law of Demand:
 - the inverse relationship between the price of a good and the quantity demanded when all other factors that influence demand are held constant (*ceteris paribus*)
- Individual v.s. Market demand

A numerical example of demand

- Let's work on a demand for new automobiles:

$$Q_d = 5.3 - 0.1P_d$$

where Q_d is the number of new automobiles demanded per year (in millions) and P_d is the average price of an automobile perceived by consumers (in '000 of dollars)

- The Q-equal form demand equation → To plot the demand curve, one must re-write the equation into the P-equal form
- Slope of demand curve and Elasticities
- How important is it for the elasticity of demand?

Supply

- **Law of Supply:**

- The positive relationship between the price of a good and the quantity supplied when all other factors that influence supply are held constant (*ceteris paribus*)
- The Supply Curve slopes upward, indicating that at higher prices, suppliers of a product are willing to offer more for sale than at lower prices.

Let's work on a supply of wheat in Canada:

$$Q_s = 0.15 + P_s$$

where Q_s is the quantity of wheat supplied per year (in billions of bushels) and P_s is the average price of wheat perceived by suppliers (in dollars per bushel)

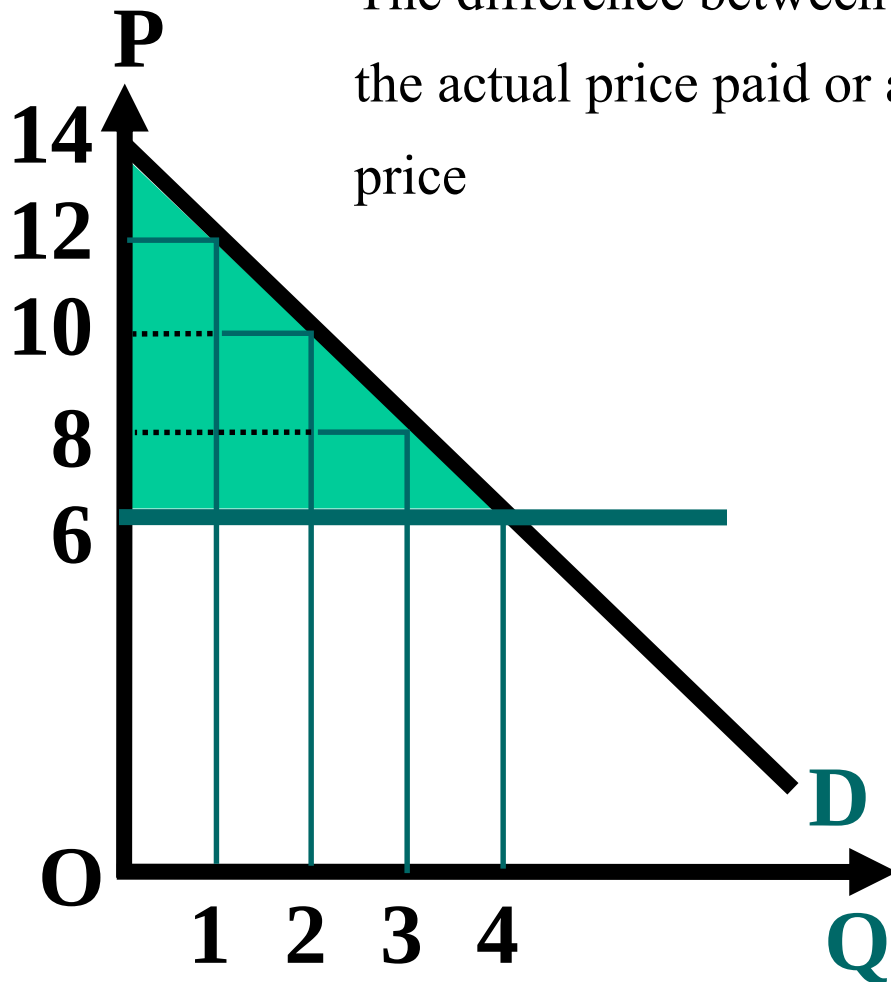
- Draw the supply curve and calculate the Elasticity

Equilibrium

- Given linear demand and supply as follows:
 - Demand: $Q_d = a - bP_d$
 - Supply: $Q_s = c + dP_s$
- Problems:
 - 1) Find equilibrium price and equilibrium quantity.
 - 2) Find price elasticity at the equilibrium position.
 - 3) What do you learn from the result (1) and (2)?

Consumer surplus: CS

- The difference between the maximum willingness to pay and the actual price paid or area between the demand curve and the price

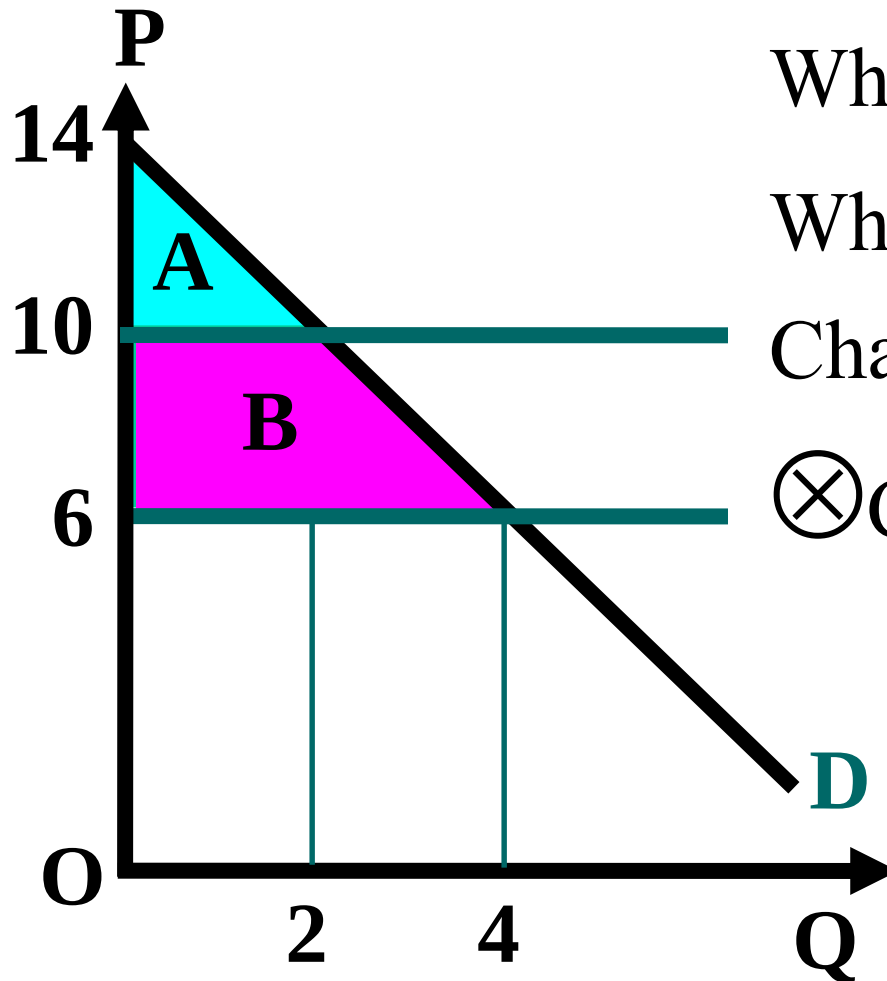


$$CS = (12-6) + (10-6)$$

$$+ (8-6) + (6-6) = 12$$

For continuous case

Change in Consumer's welfare



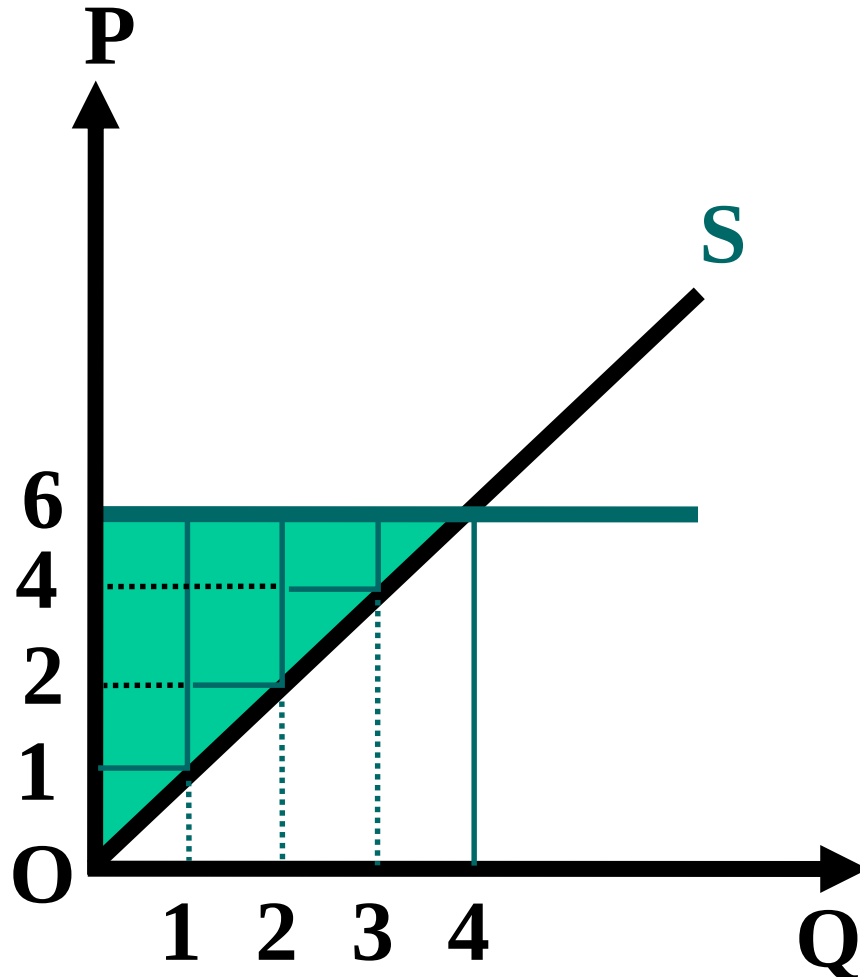
When $P = 6$, $CS = A + B$

When $P = 10$, $CS = A$

Change in welfare:

$$\begin{aligned}\otimes CS &= A - (A+B) = -B \\ &= -.5(10-6)(2+4) \\ &= -12\end{aligned}$$

Producer surplus: PS

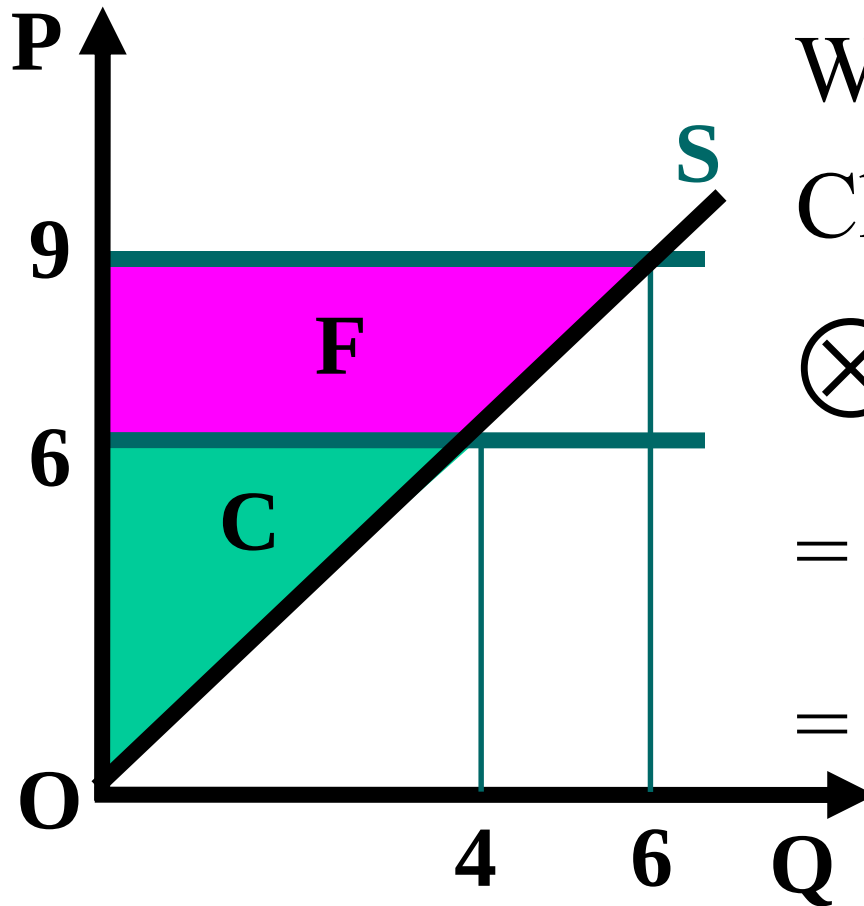


- The difference between the minimum acceptable price and the price actually received or area between the price and the supply curve.

$$PS = (6-1) + (6-2) + (6-4) + (6-6) = 11$$

For continuous case

Change in Producer's welfare



When $P = 6$, $PS = C$

When $P = 9$, $PS = C + F$

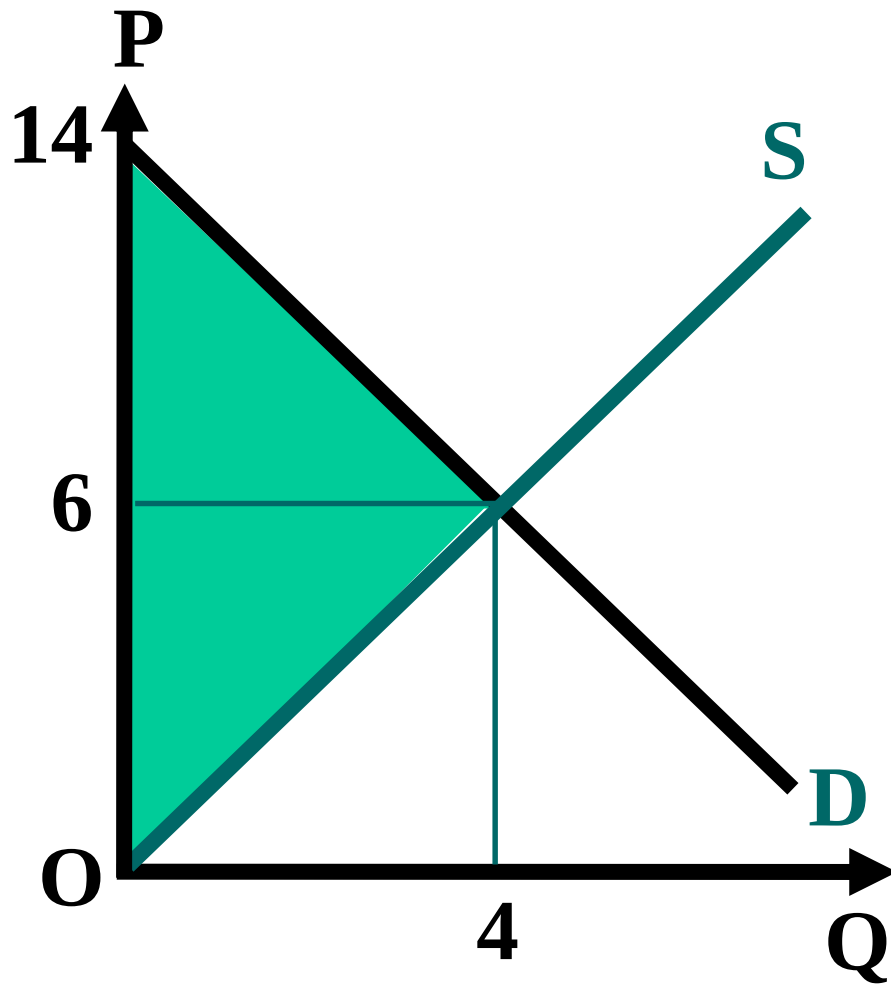
Change in welfare:

$$\otimes PS = C + F - C = F$$

$$= .5(9-6)(4+6)$$

$$= 15$$

Social welfare

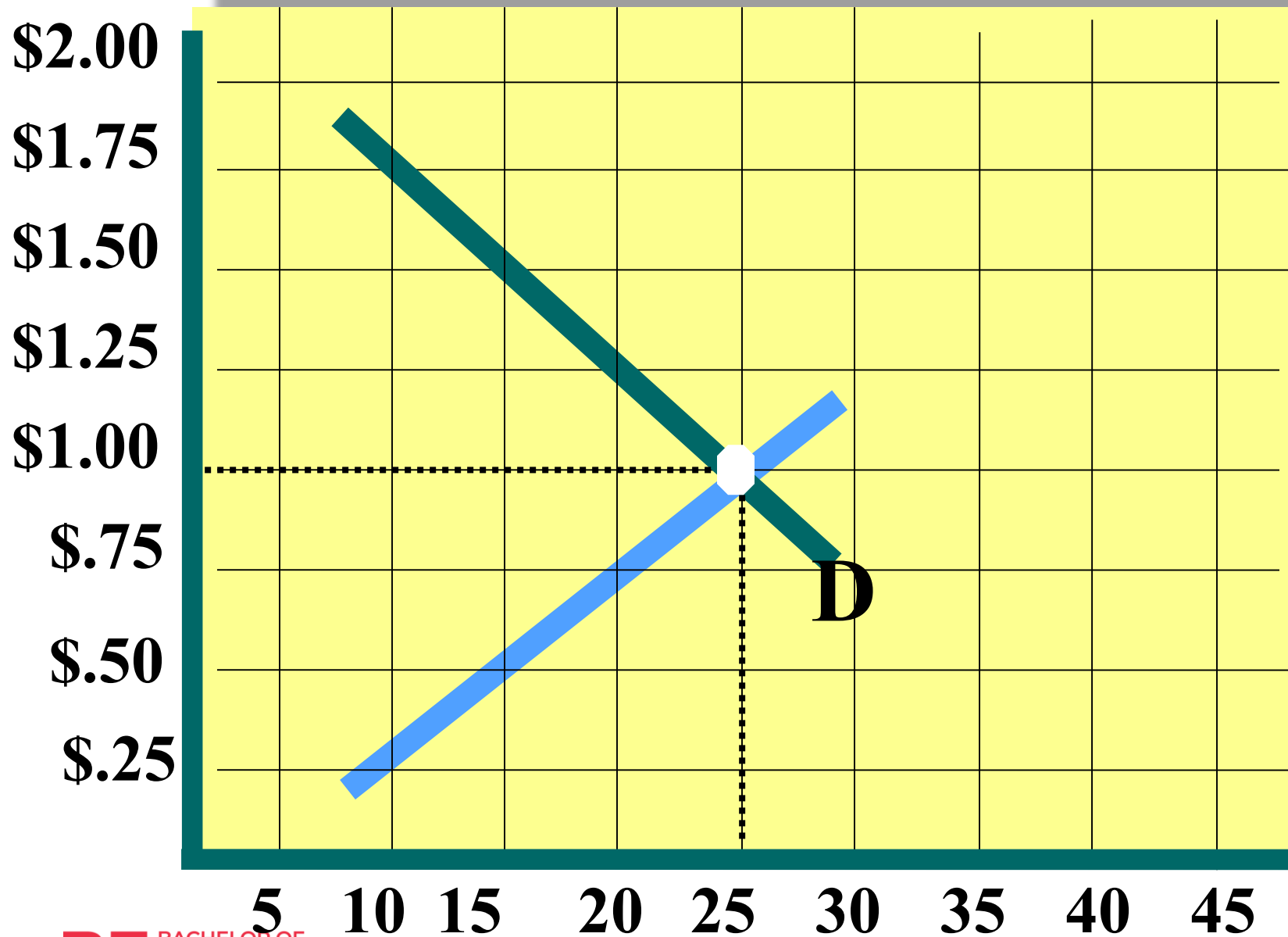


- Social welfare define by the **summation of CS and PS** is maximize under free market condition with perfect competition
- Consumers and producers are given the same weight

Total surplus, Efficiency, and Welfare criteria

- Free-market equilibrium typically results in the **efficient** outcome.
 - Efficient is measured by **the size of total surplus**
 - The statement is true under no externality / Perfect competitive market etc.
- Welfare theorists consider the free-market outcome as the first-best equilibrium in the sense of its efficiency.
 - **Commonly known as “Pareto efficient”**
 - **Any government interventions result a welfare loss.**
- Note there are several concepts of first-best criteria
 - Sometimes, economists concerns about the distribution of surplus.

Tax incidences and inefficiency



Domestic taxes and subsidies

- If the tax is imposed on the producer, the S curve shifts upward by the size of the tax rate. ($P_s = P_d - T$)
- Depending on the relative sizes of the **price elasticities of demand and supply**, consumers and producers share the tax burden.
- **The side that has lower (absolute) price elasticity bears more tax incidence.**
- Domestic taxes generate tax revenue but create consumption distortion (B) and production distortion (C) which are deadweight losses.

Domestic taxes and subsidies

- If the tax is imposed on the consumer, the D curve shifts downward by the size of the tax rate. ($P_d = P_s + T$)
- If the tax is a unit tax, which side pay the tax first does not change neither the tax incidence borne by each side, nor the deadweight losses.
- Subsidies are negative taxes, hence the impacts are the opposite of the taxes.
- Exercise: Analyze the impacts of a tax imposed on the producer when the S curve is vertical and the D curve is downward sloping.

Exercise

1. Analyze the impact of a specific sale tax imposed on the supplier with a normal downward sloping demand curve. Which side should bear more tax burden? What kind of distortion is created? Explain.
2. Analyze the impact of a specific production subsidy on equilibrium price and production, welfare change of the consumer, producer, and the society. What kind of distortion is created? Explain.

A numerical example

Let's work with a numerical example:

A Tax on Gasoline: $T = 1$ per gallon imposed on the consumer

Demand: $Q_d = 209 - 23P_d$

Supply: $Q_s = 83 + 19P_s$

Question: Identify equilibrium with and without tax, tax burden, and assess the impact on welfare changes.

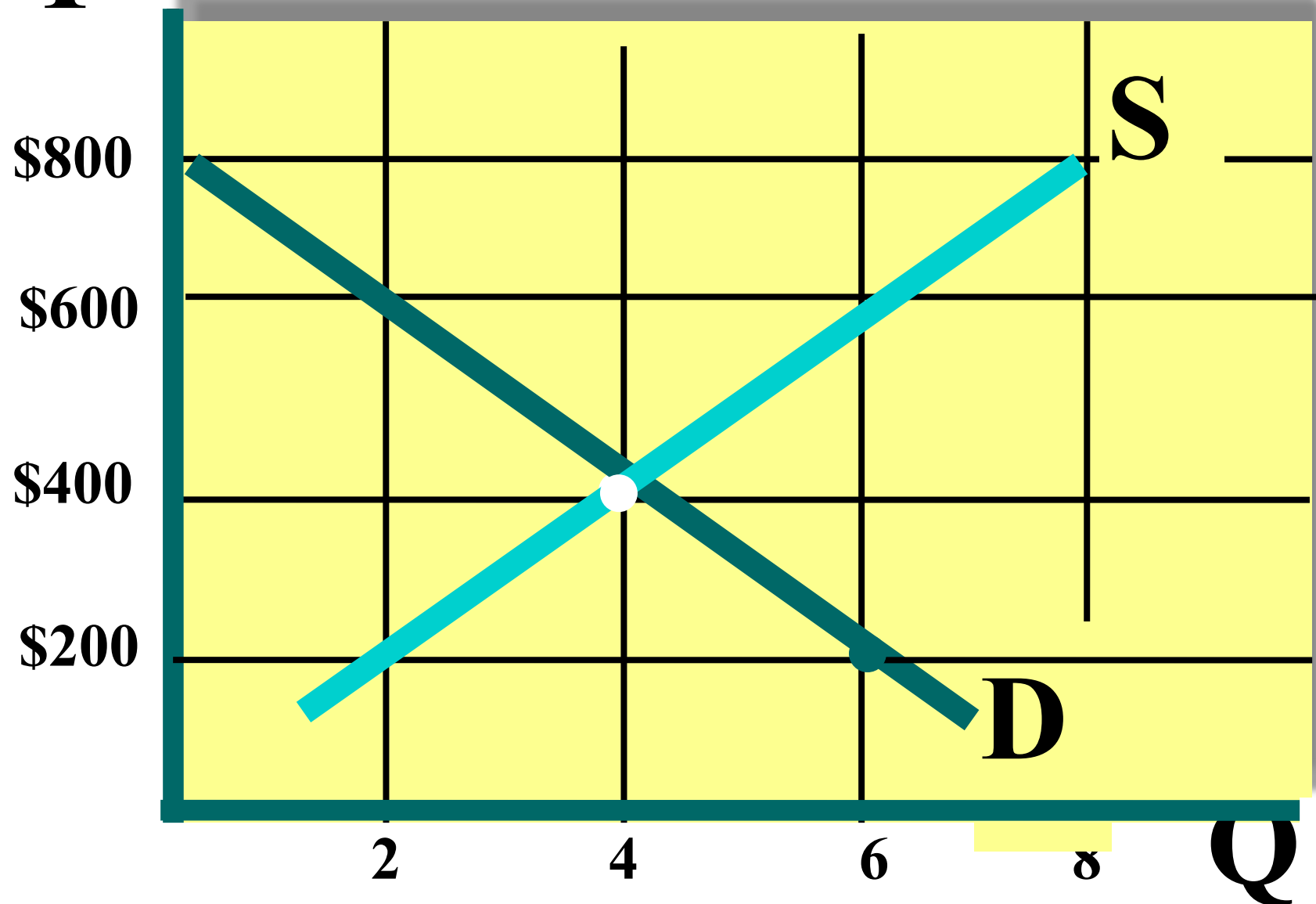
Price ceilings

- Legally established maximum prices sellers can charge.
- They are used to help consumers.
- A price ceiling will have no impact when it is set above the equilibrium price.
- Examples: Tuition fees and bus fees.



P

Price Ceiling Set Below Equilibrium Price



Price ceilings are counterproductive

- If $B > A$, consumers are worse off.
- Deadweight losses: B = consumption distortion, C = production distortion
- Black markets: economic rents
- Less maintenance
- Less investment



Exercises

1. What is the purpose of price ceilings on bus fees?
2. Why may bus fee controls be counterproductive?



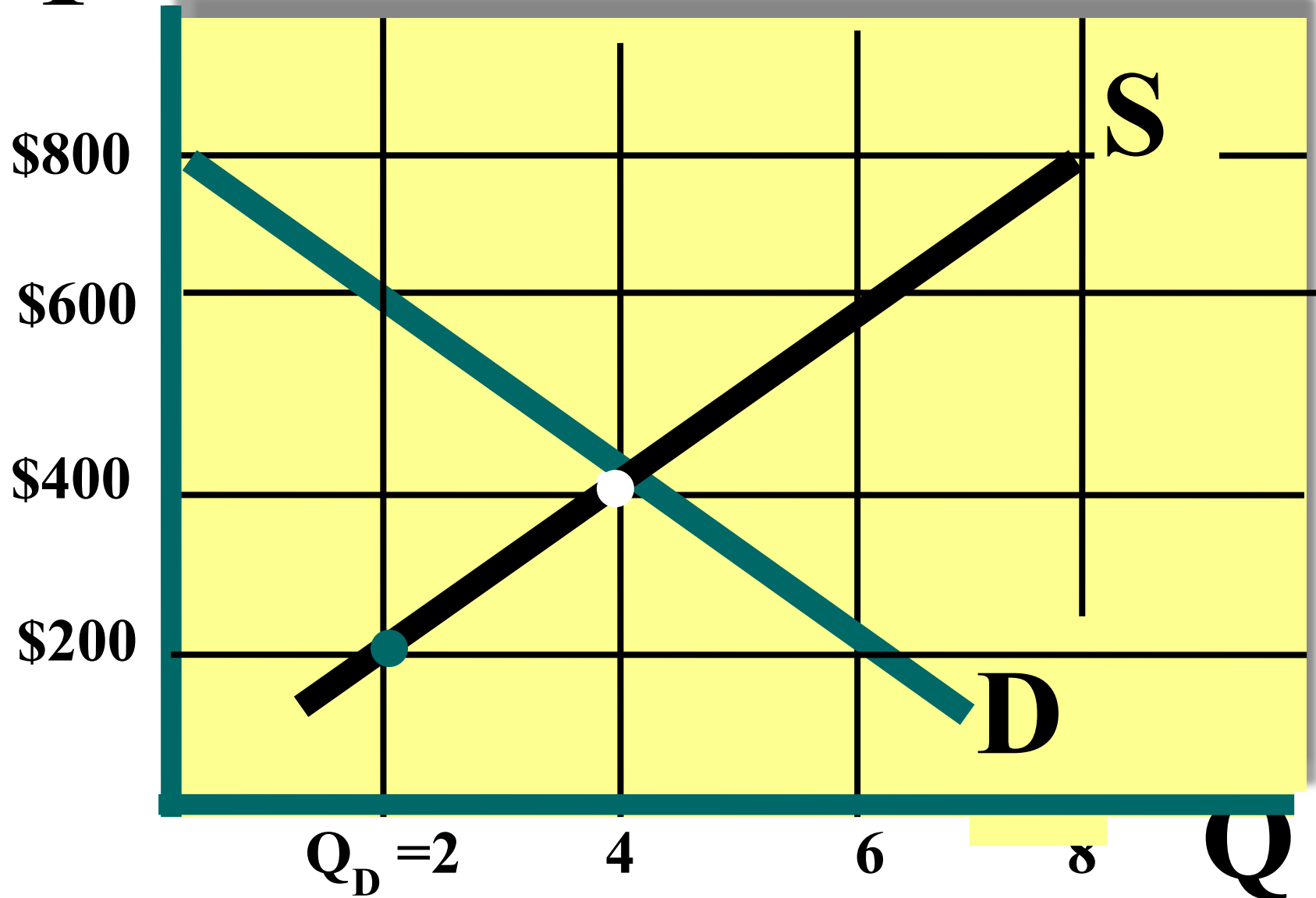
Price floors

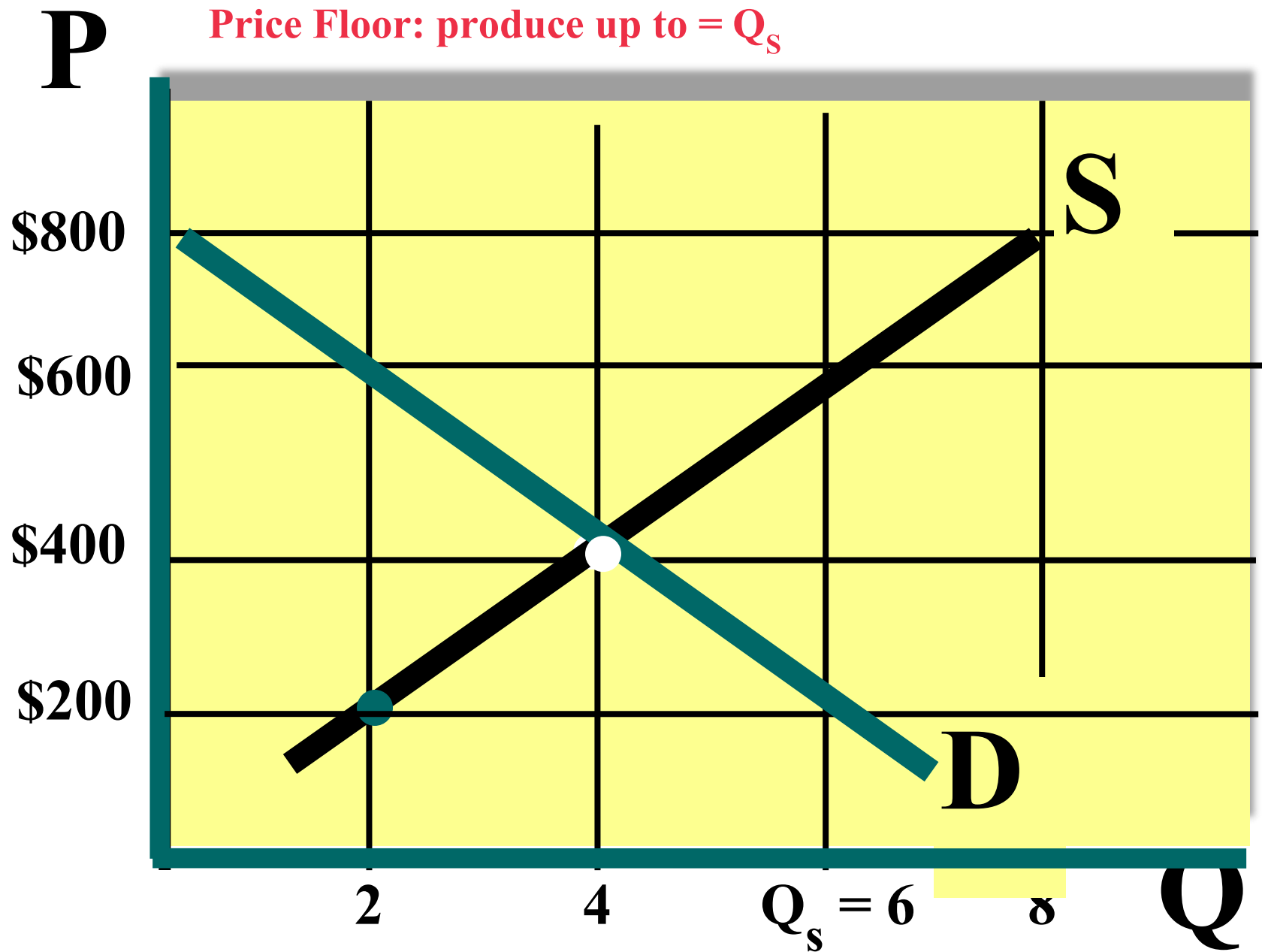
- A legally established minimum price a seller can be paid
- They are used to help producers.
- Examples: Minimum wage, Agricultural price supports, Agricultural pledging program



P

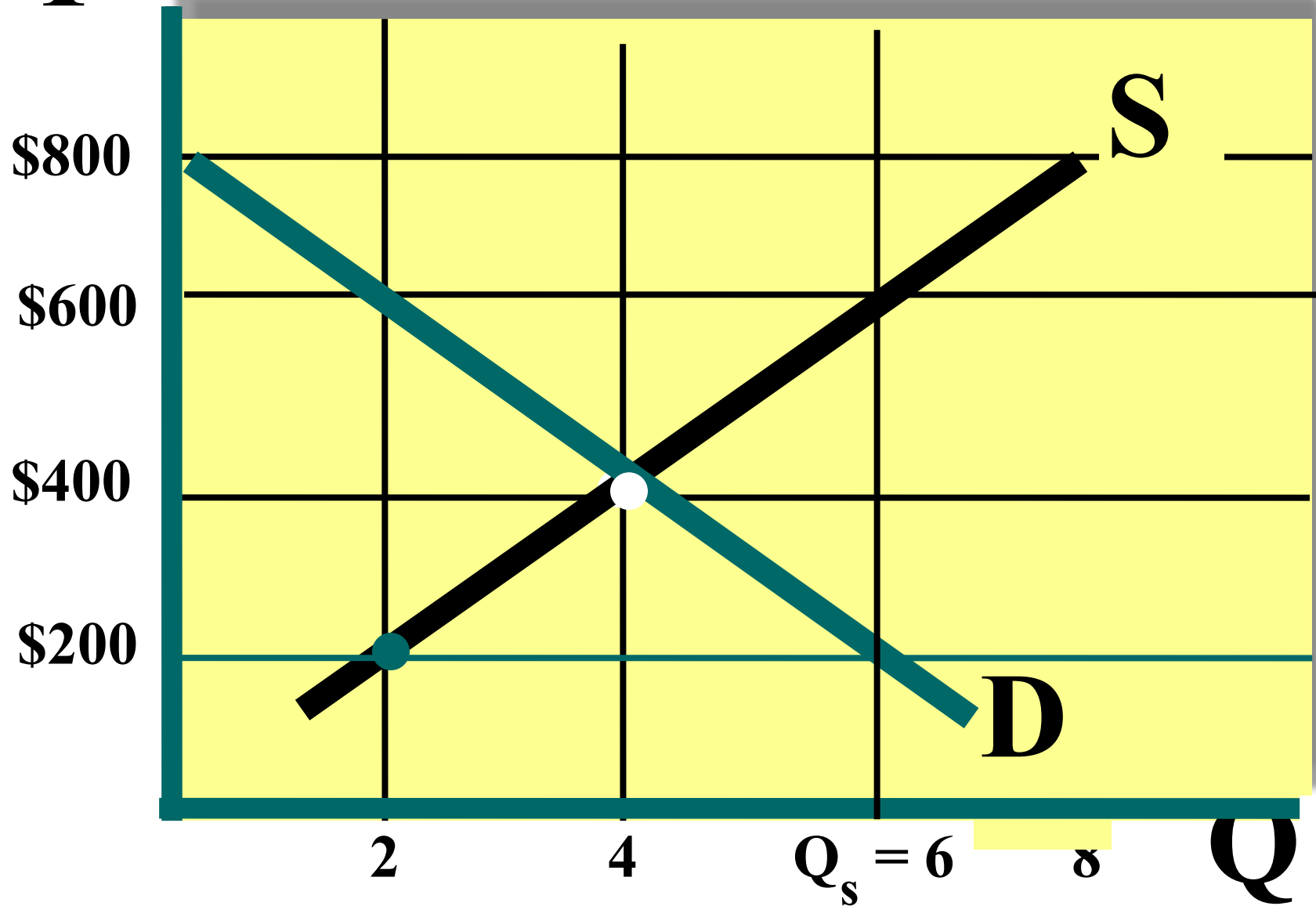
Price Floor: produce only = Q_D





P

Price Support: government buys the surplus



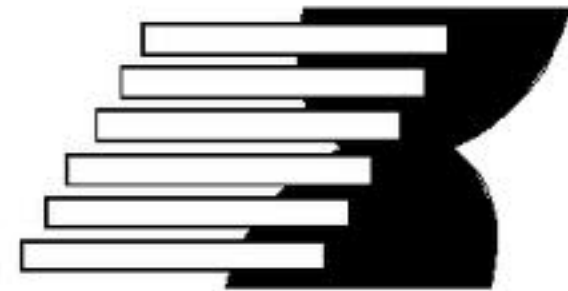
Exercises

1. Why may rice pledging program be inefficient?
2. Compare its impacts with the price guarantee program



Import tariffs

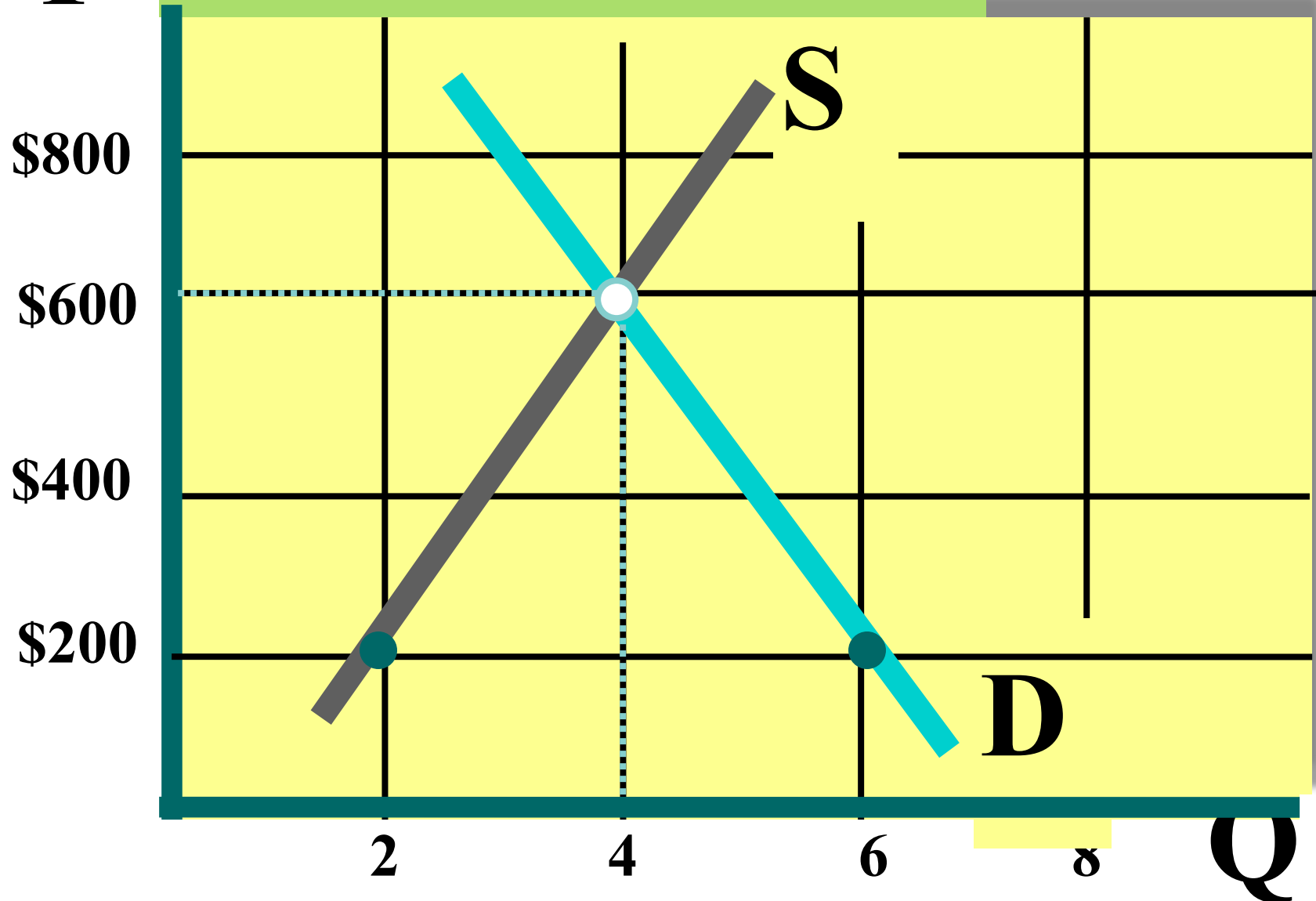
- Import tariffs are taxes imposed on imported goods to protect domestic producers
- An import tariff will increase the price of the imported good and the size of the tax.
- Domestic producers will charge their price at the same level as the imported good and can produce more.
- Consumer will consume less since the price is higher and imports are less.



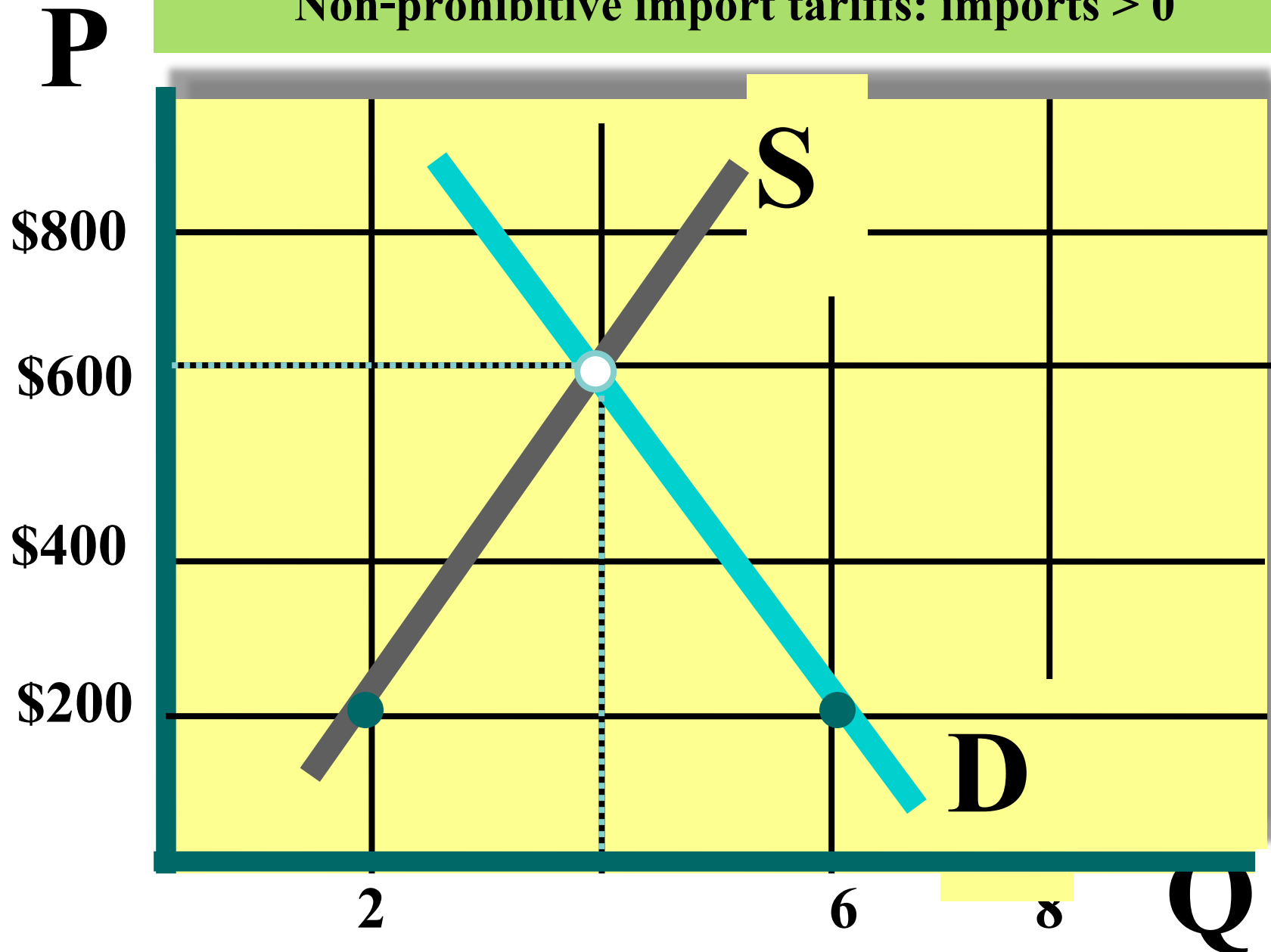
a f t a

P

Prohibitive import tariffs: imports = 0

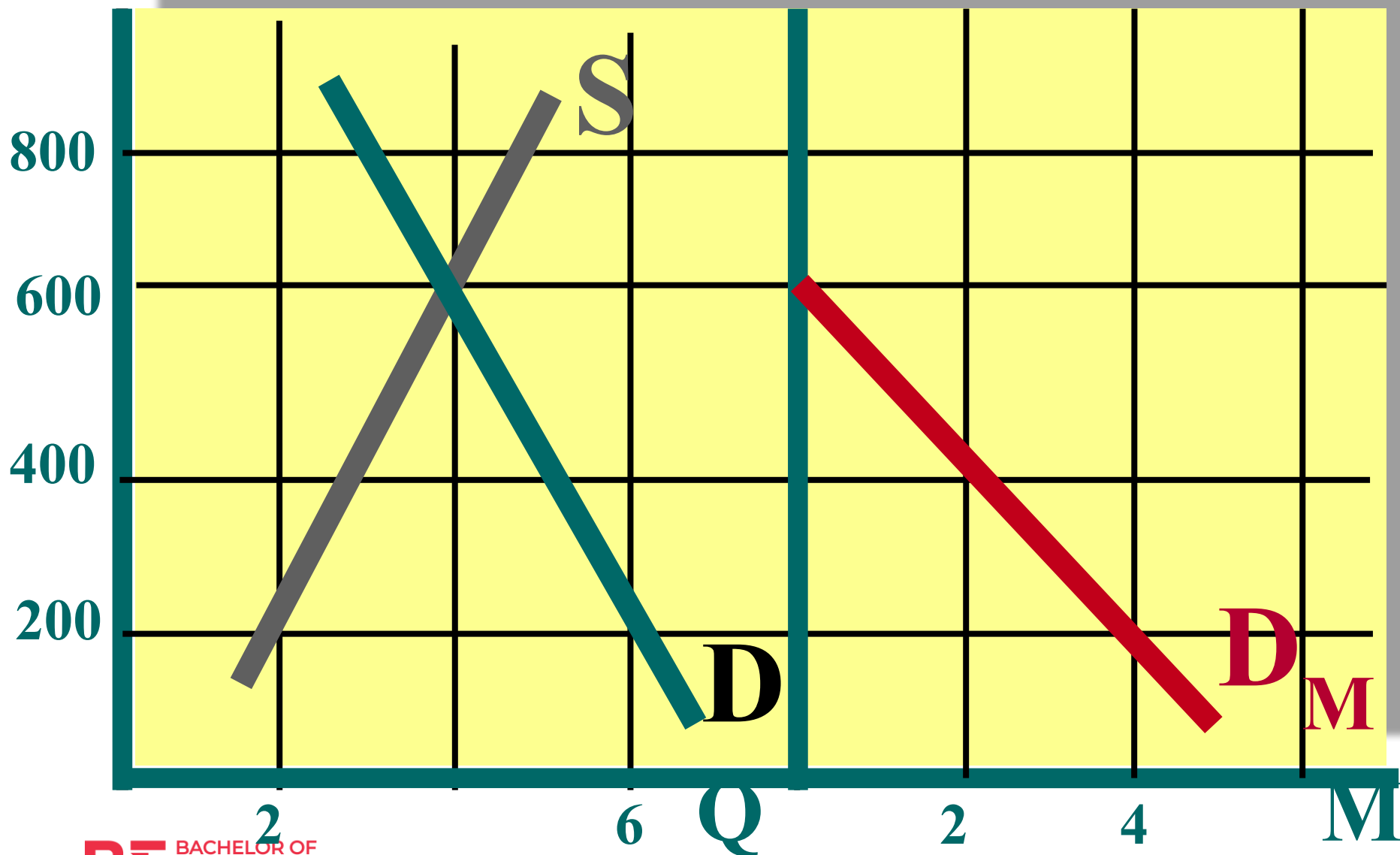


Non-prohibitive import tariffs: imports > 0



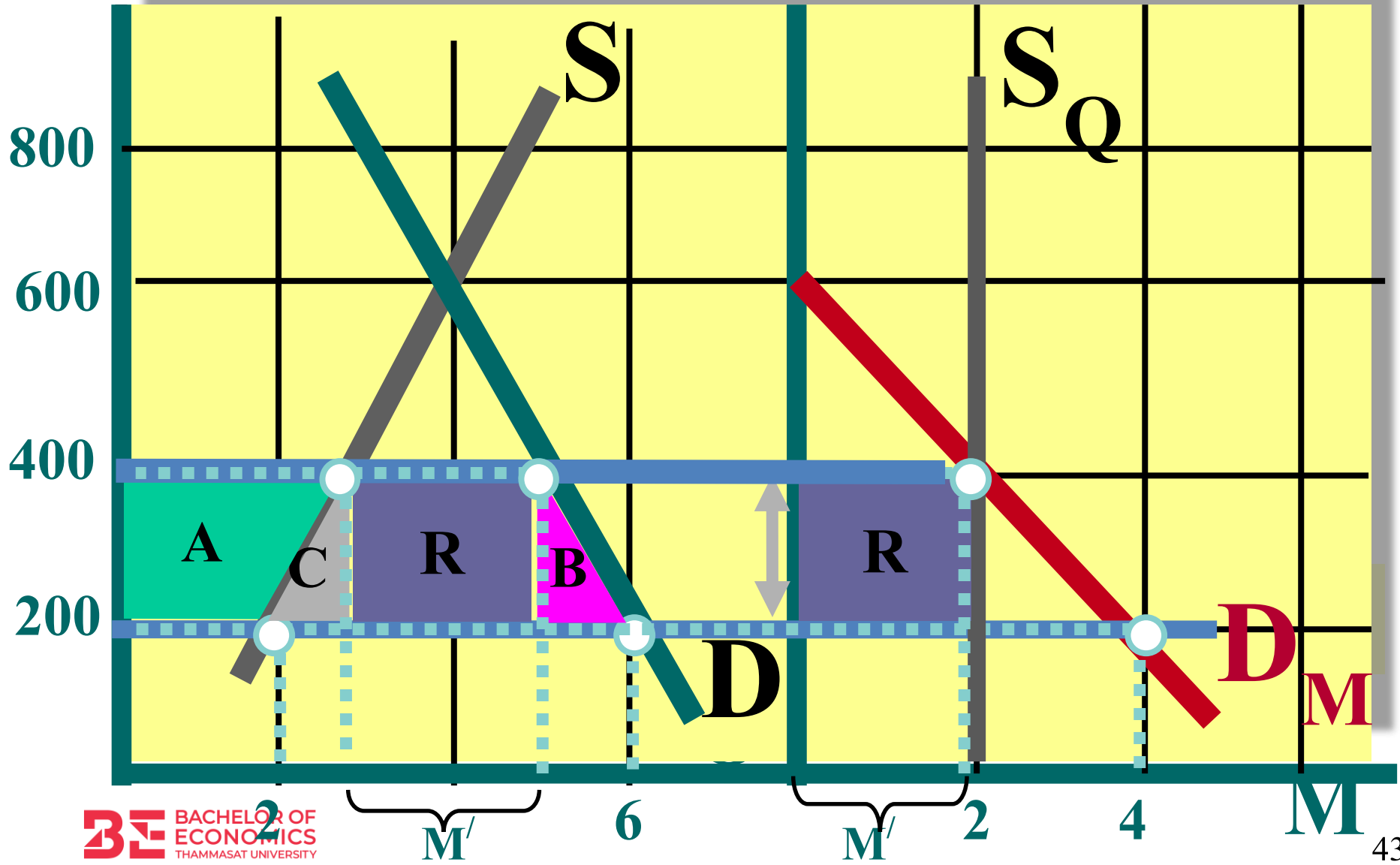
Derivation of import demand curve

P



P

Impacts of an import quota



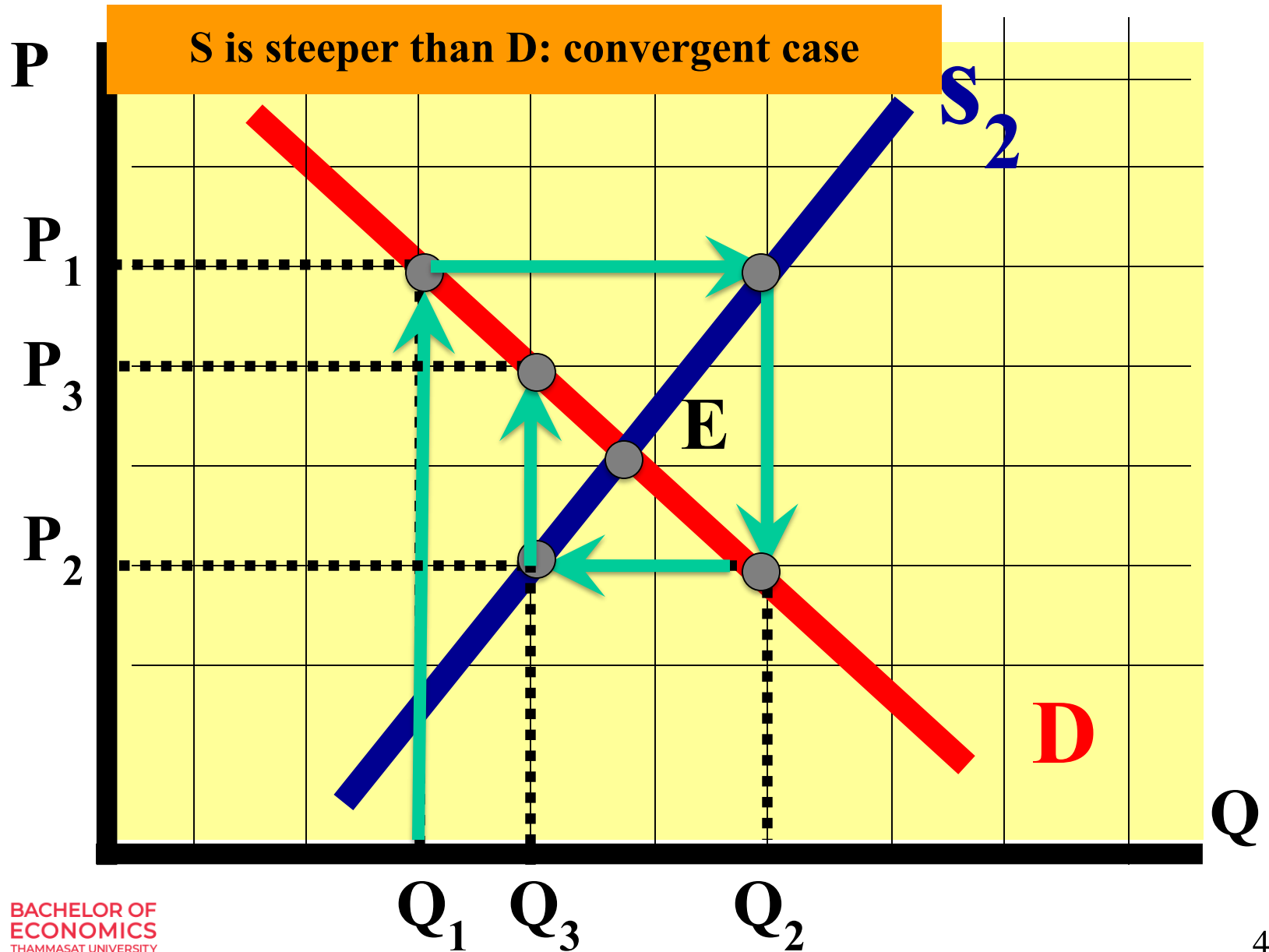
Impacts of import quotas

- $\Delta PS = A$
- $\Delta CS = -[A + C + R + B]$
- $\Delta GR = 0$ if the quota is given freely = R if the government uses open bid
- Lucky importers welfare = R or 0
- Net welfare = $-[C + B]$
- Rent seeking activities and corruption
- Worsening distribution of income

Cobweb model

- Agricultural products, especially livestock, often suffer from cyclical price and output fluctuation
- Cobweb model explain this phenomenon by assuming that farmers need to choose the output level before the actual price is realize
- Farmers use the price in the past to form the expected price in the future. But consumer buy according to the current price
- The time lag between consumers and farmers causes the fluctuation

Cobweb model



Cobweb model

