Presentation to accompany

Principles of Microconomics, Fourth Edition

N. Gregory Mankiw

Lecture 5

Previously...

- Supply and Demand
- Elasticity of Demand
- Elasticity of Supply
- Determinants of Elasticity

Today...

- Supply and demand
- Government policies
  - price ceiling
  - price floor
  - taxes

Introduction

- In a free, unregulated market system, market forces establish equilibrium prices and exchange quantities
- While equilibrium conditions may be efficient, it may be true that not everyone is satisfied
- One of the roles of economists is to use their theories to assist in the development of policies

Introduction

- Controls on prices:
  - Are usually enacted when policy makers believe the market price is unfair to buyers or sellers
  - Result in government-created price ceilings and floors

Controls on Prices

Price Ceiling
A legal maximum on the price at which a good can be sold

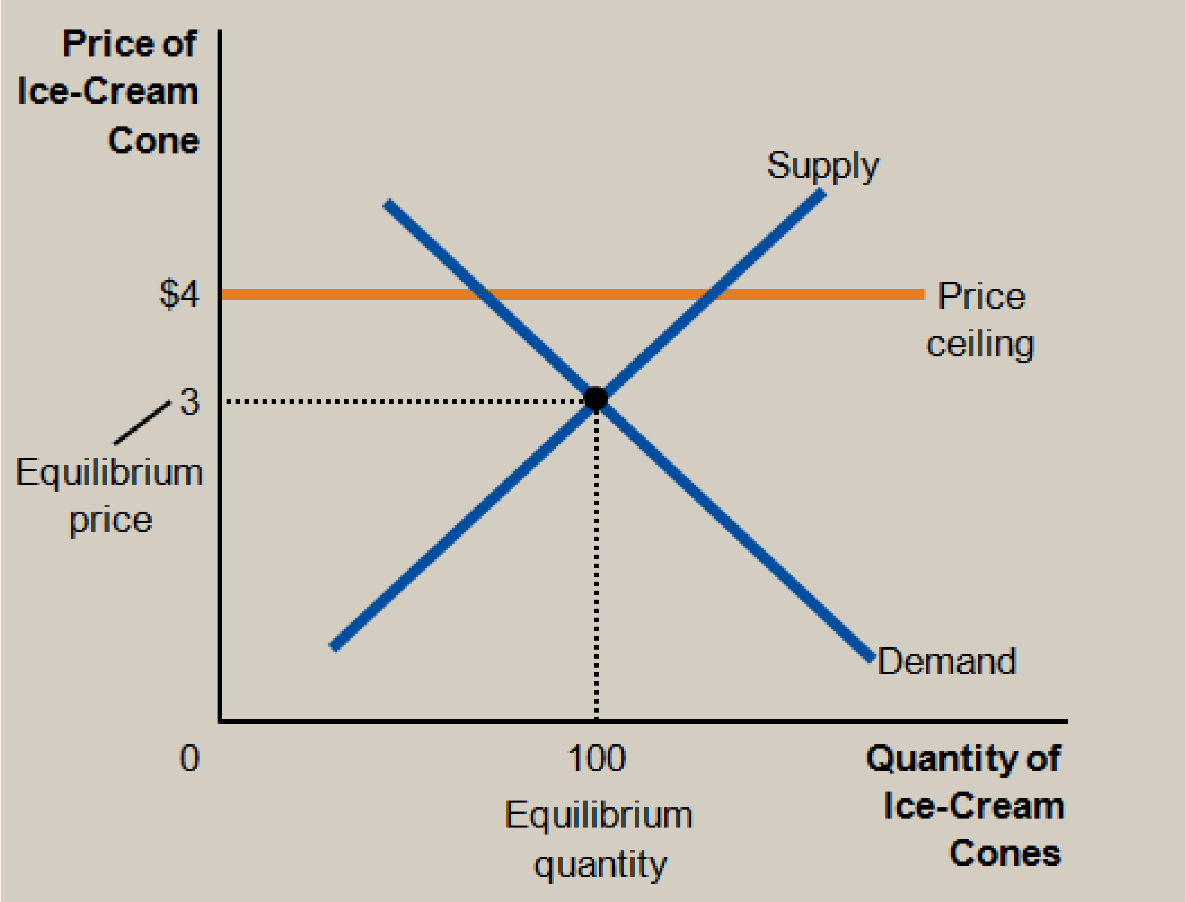
Price Floor
A legal minimum on the price at which a good can be sold

Effects of Price Ceilings

- Two outcomes are possible when the government imposes a price ceiling:
  - The price ceiling *is not* binding if set *above* the equilibrium price
  - The price ceiling *is* binding if set *below* the equilibrium price, leading to a shortage

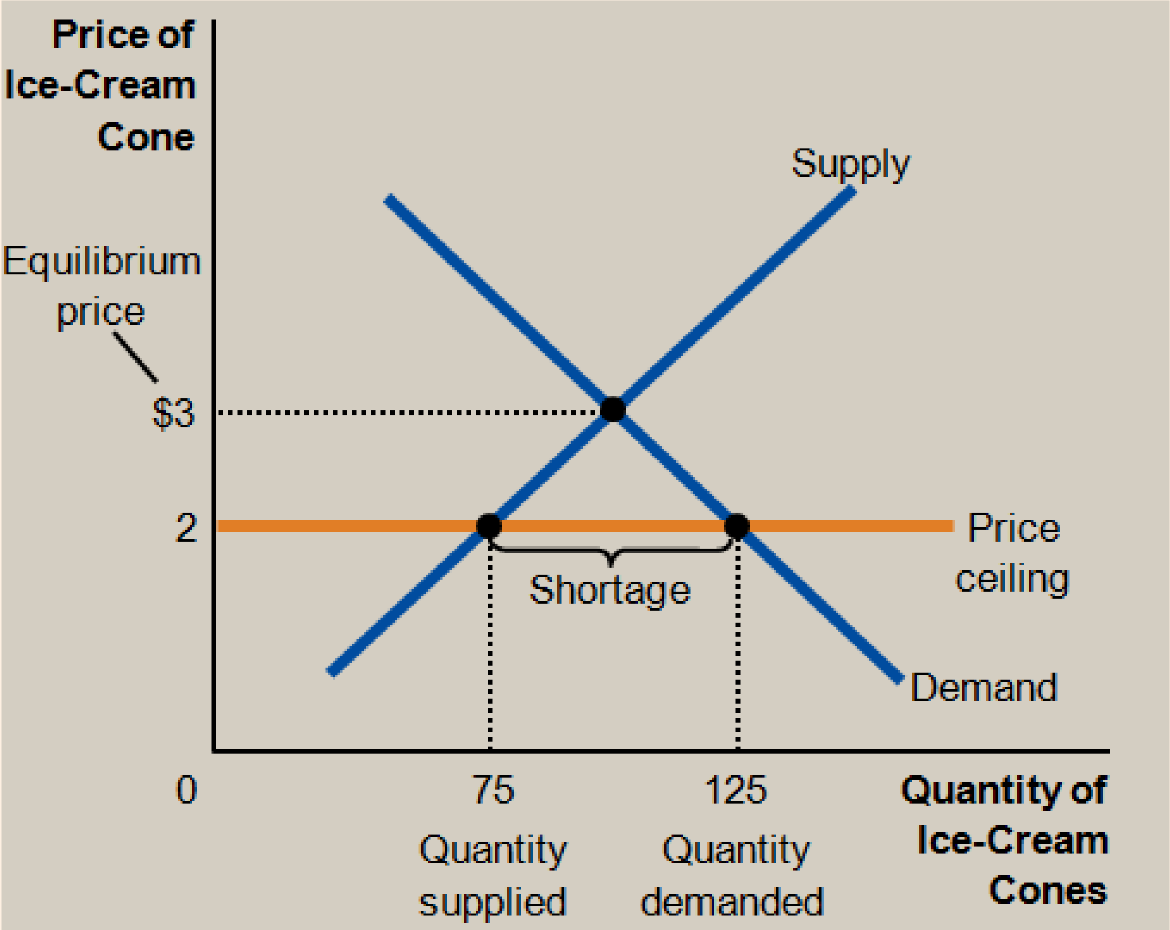
Effects of Price Ceilings

A price ceiling that is not binding: no effect



Effects of Price Ceilings

A price ceiling that is binding:



Effects of Price Ceilings

- A binding price ceiling creates
  - shortages because $Q_D > Q_S$
    Example: Gasoline shortage of the 1970s
  - nonprice rationing
    Examples: Long lines, discrimination by sellers

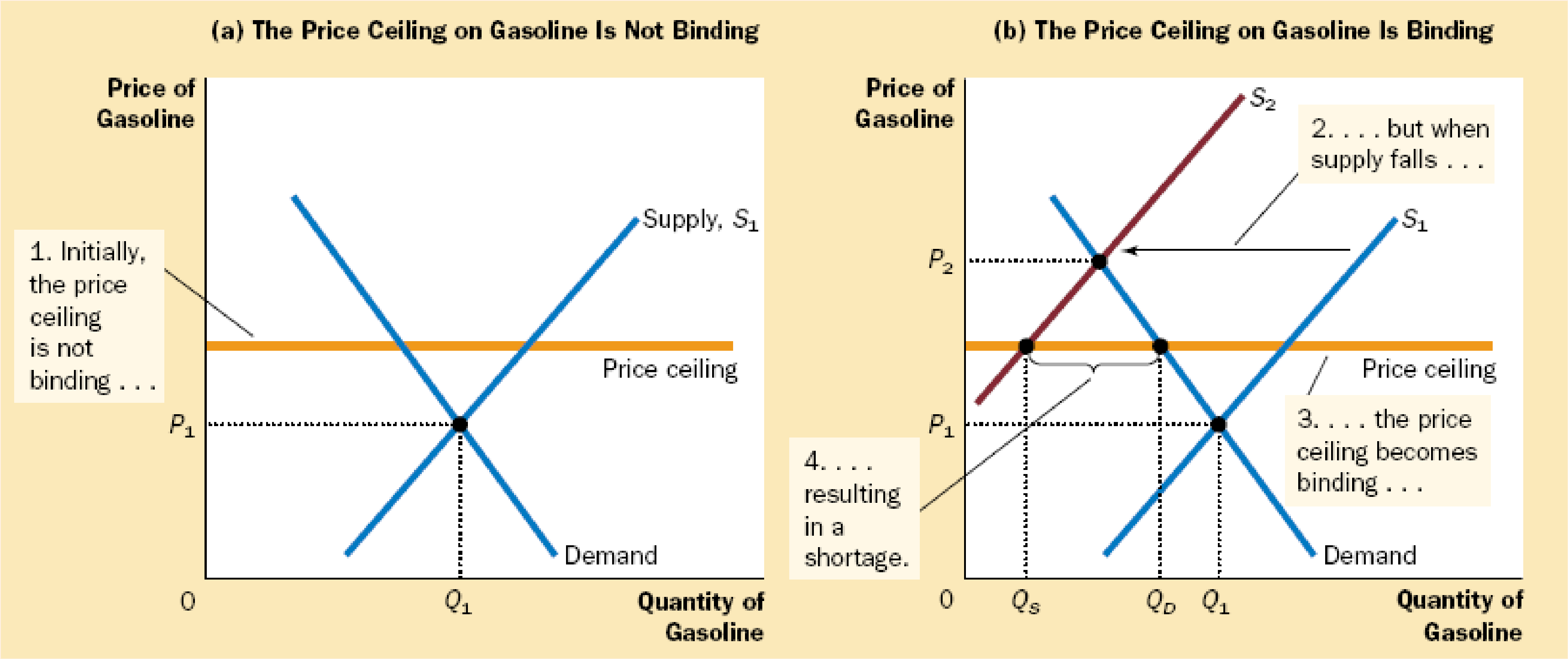
Case Study I

- In 1973, OPEC raised the price of crude oil in world markets. Crude oil is the major input in gasoline, so the higher oil prices reduced the supply of gasoline
- What was responsible for the long gas lines?

- Economists blame government regulations that limited the price oil companies could charge for gasoline

Case Study I

- Government regulation of price of oil:



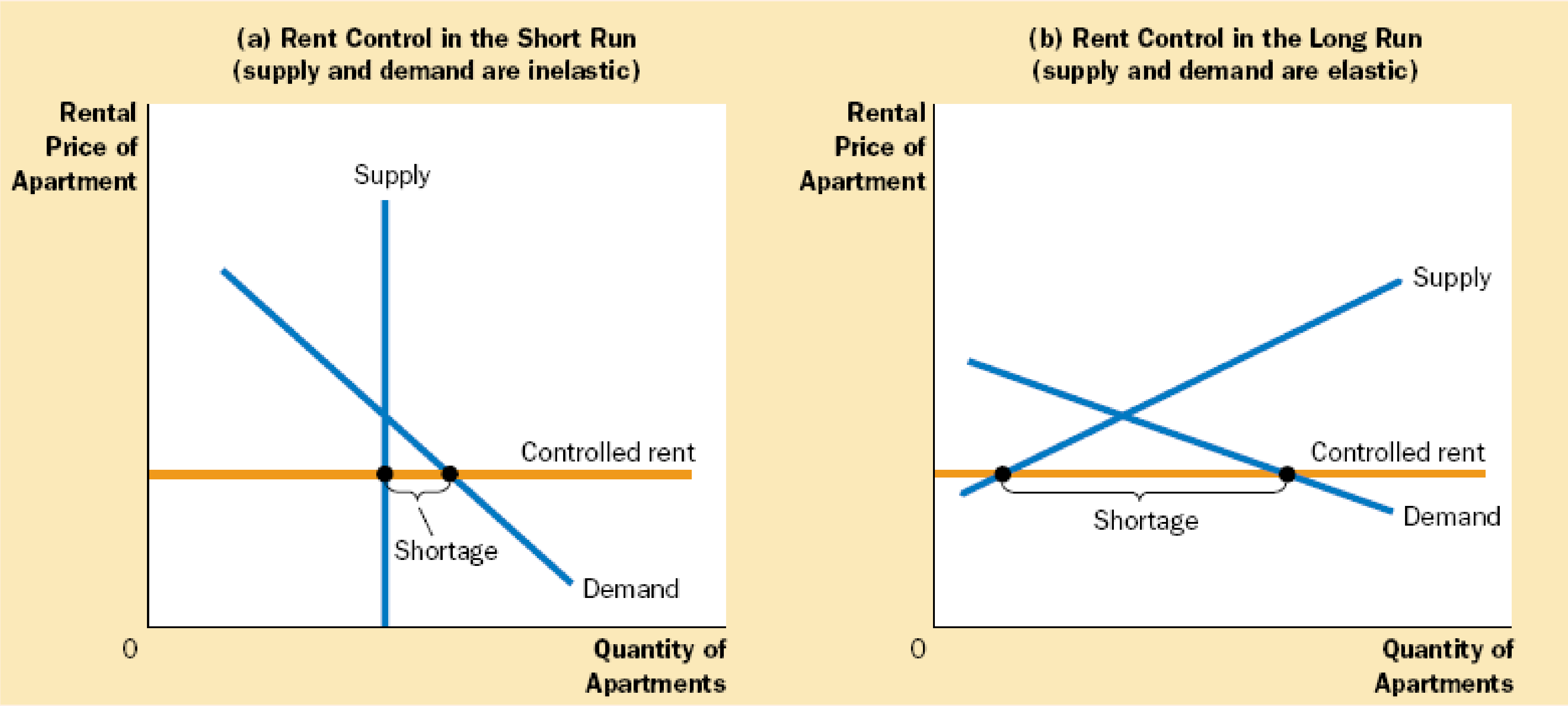
Case Study II

Rent control in the short-run and long-run:

- Rent controls are ceilings placed on the rents that landlords may charge their tenants
- The goal of rent control policy is to help the poor by making housing more affordable
- One economist called rent control “the best way to destroy a city, other than bombing”

Case Study II

- Rent control in the short-run and long-run:



Case Study II

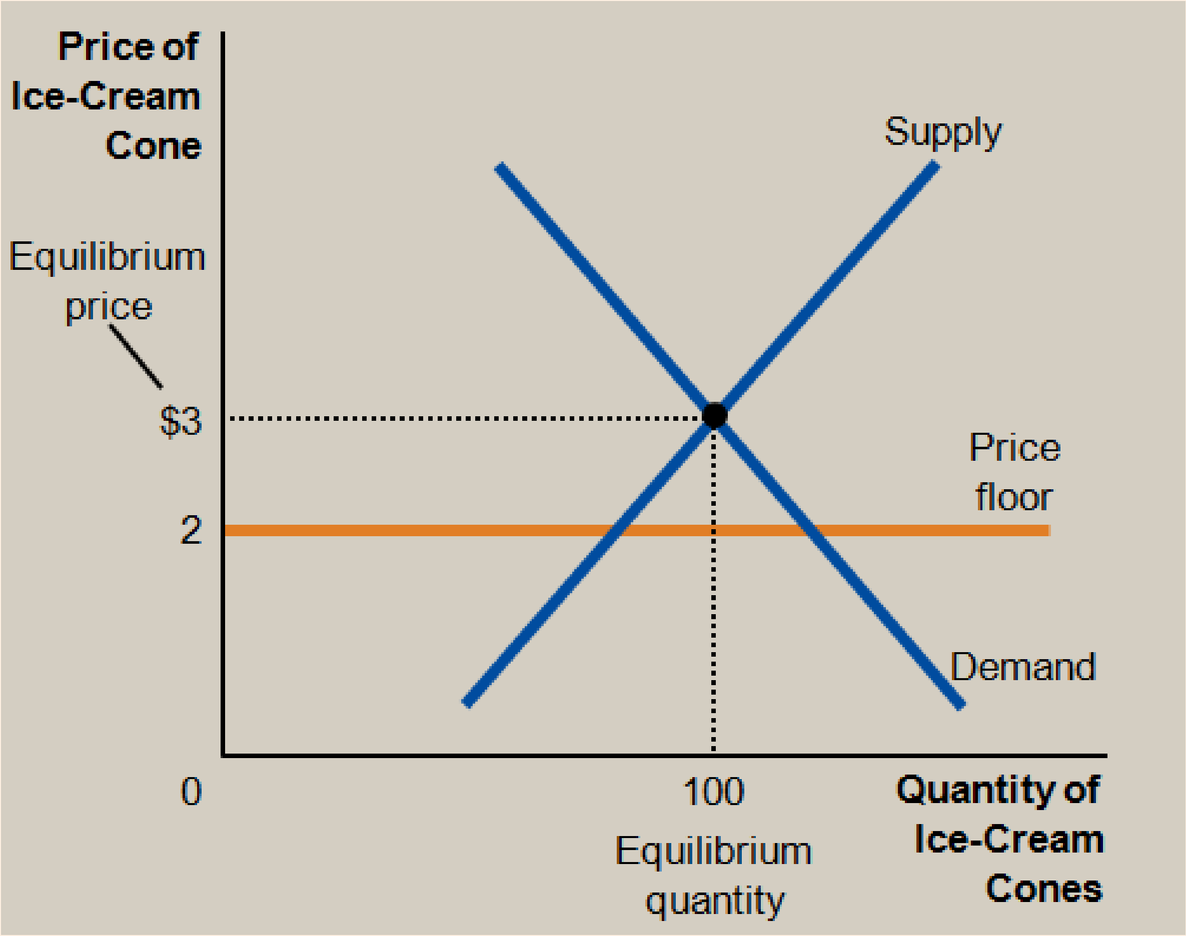
- Rent control results in severe shortage of housing
  - Decrease in supply (change in incentives, not profitable to invest in building & maintenance)
  - Increase in demand (change in incentives, behavior of consumers)
- USA during and after WWII
- Sweden
  - 31 housing units/100 people in 1940 & 9-month wait
  - 36 housing units/100 people in 1965 & 40-month wait
- NY City – 175 000 apts with 1 or 2 people in 4 or more rooms

Effects of Price Floor

- When the government imposes a price floor, two outcomes are possible:
  - The price floor *is not* binding if set *below* the equilibrium price
  - The price floor *is* binding if set *above* the equilibrium price, leading to a surplus

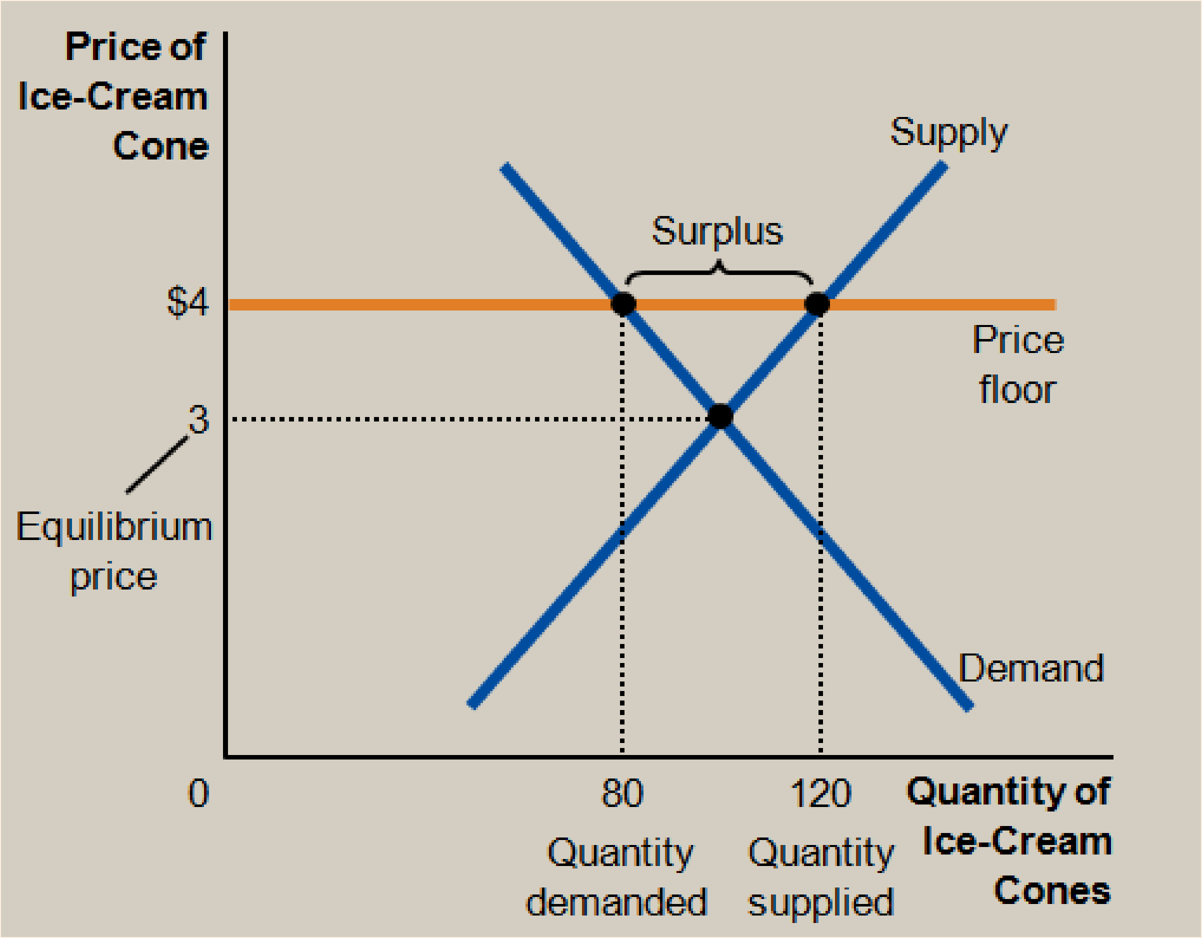
Effects of Price Floor

A price floor that is not binding: no effect



Effects of Price Floor

A price floor that is binding:



Effects of Price Floor

- A price floor prevents supply and demand from moving toward the equilibrium price and quantity

- When the market price hits the floor, it can fall no further, and the market price equals the floor price

Effects of Price Floor

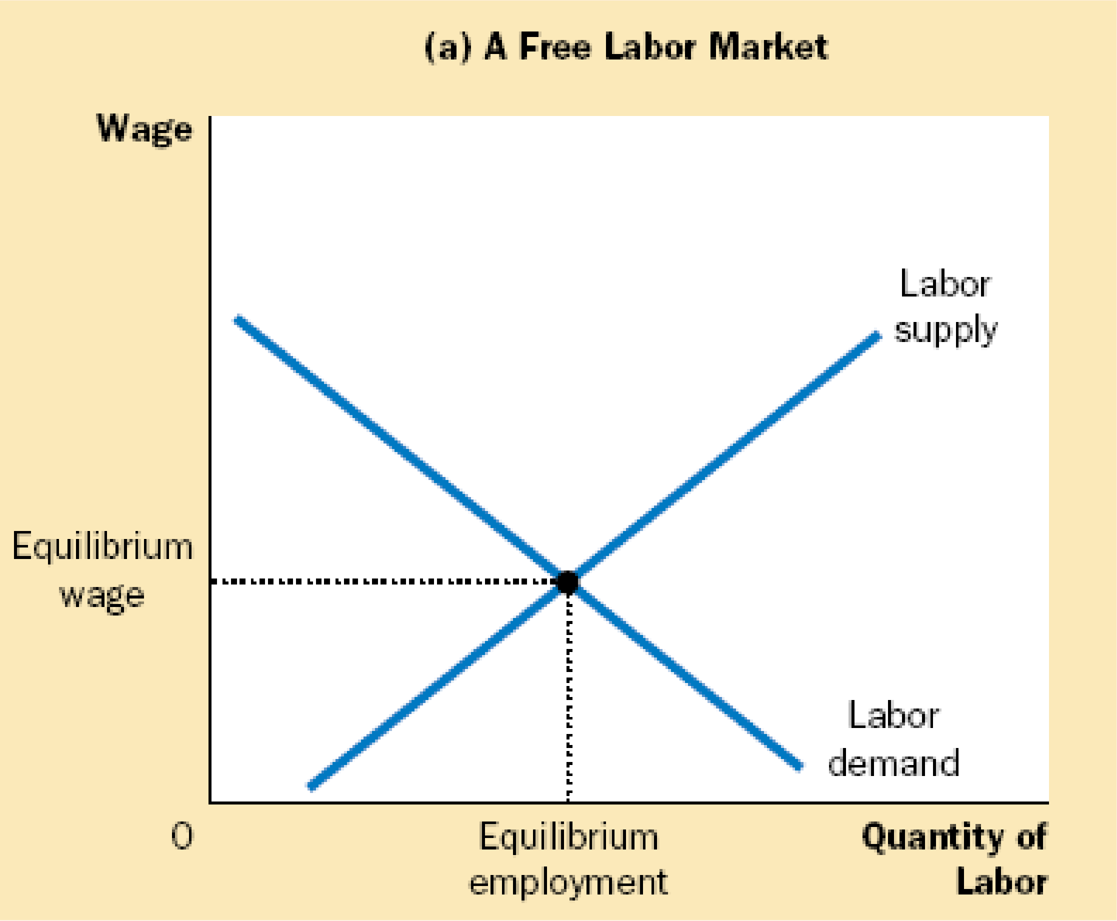
- A binding price floor creates
  - surplus because $Q_S > Q_D$
  - nonprice rationing
    - an alternative mechanism for rationing the good, using discrimination criteria.
    - Examples: The minimum wage, agricultural price supports

Effects of Price Floor

- Important example: minimum wage
- Minimum wage laws dictate the lowest price possible for labor that any employer may pay

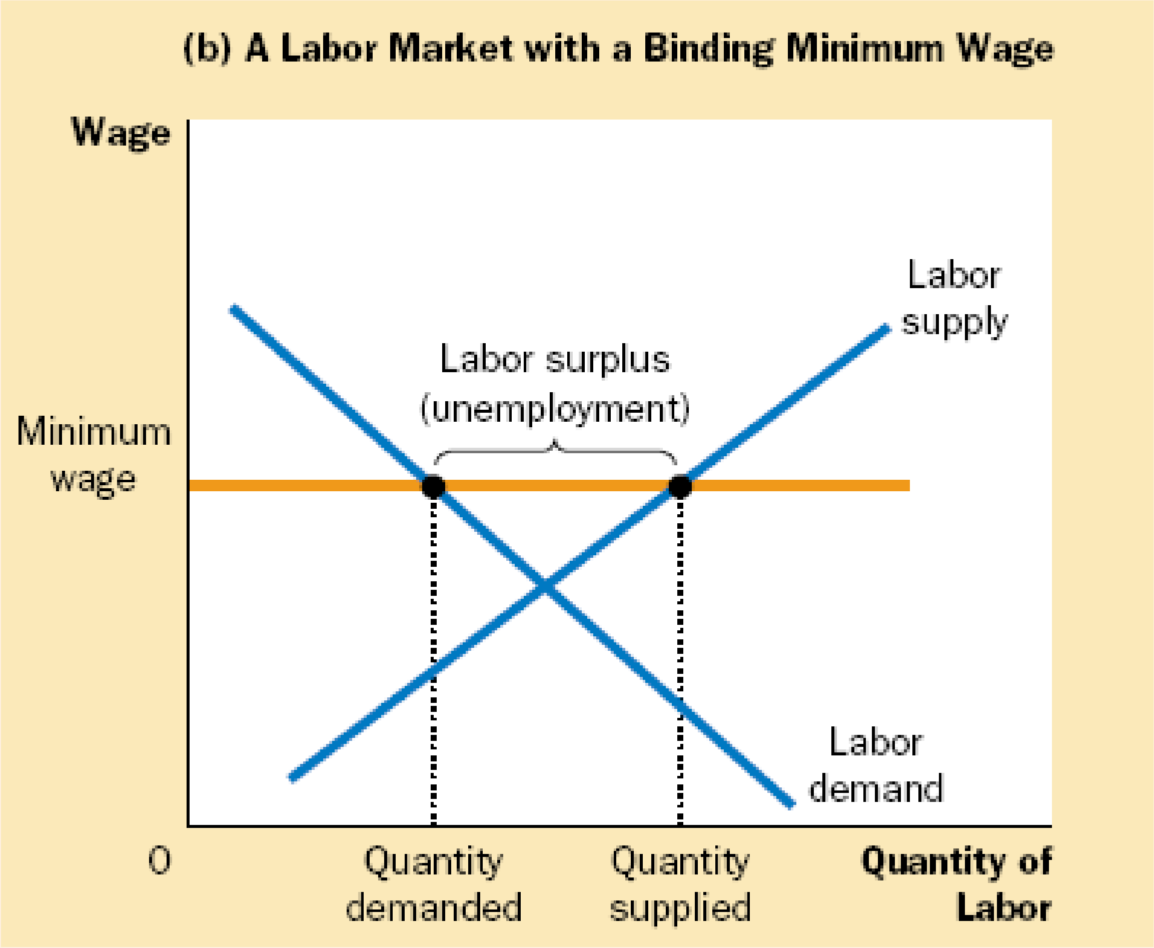
Effects of Price Floor

- Free market - no minimum wage



Effects of Price Floor

- Free market - no minimum wage



Taxes

- Governments levy taxes to raise revenue for public projects

- Taxes discourage market activity
- When a good is taxed, the quantity sold is smaller
- Buyers and sellers share the tax burden

Tax Incidence

Tax incidence is the manner in which the burden of a tax is shared among participants in a market

- Tax incidence is the study of who bears the burden of a tax
- Taxes result in a change in market equilibrium
- Buyers pay more and sellers receive less, regardless of whom the tax is levied on

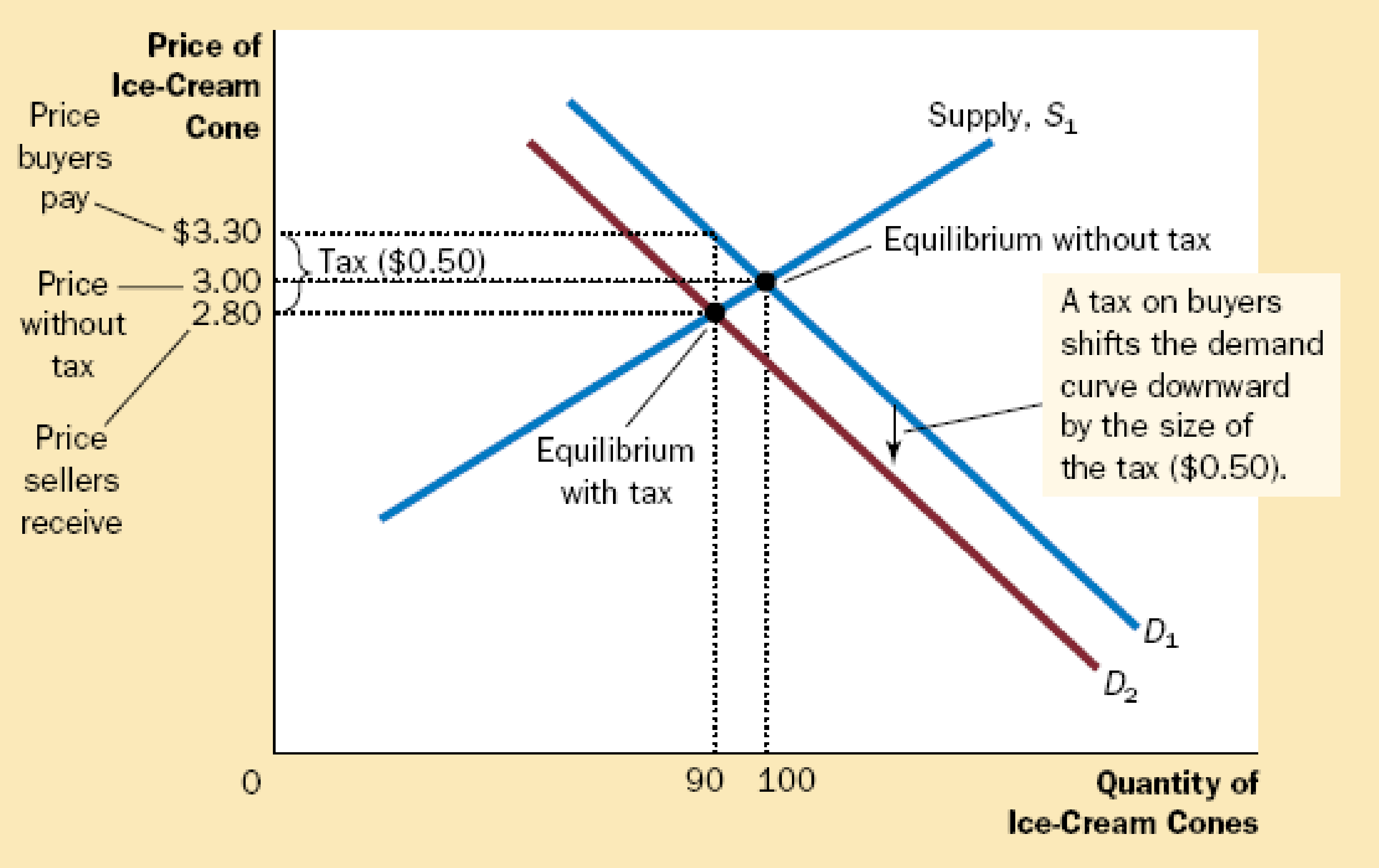
Tax Incidence

- Buyers pay more and sellers receive less, regardless of whom the tax is levied on

It does not matter who pays the tax formally, both buyers and sellers suffer from taxation, the tax burden is shared based on elasticity of supply and demand

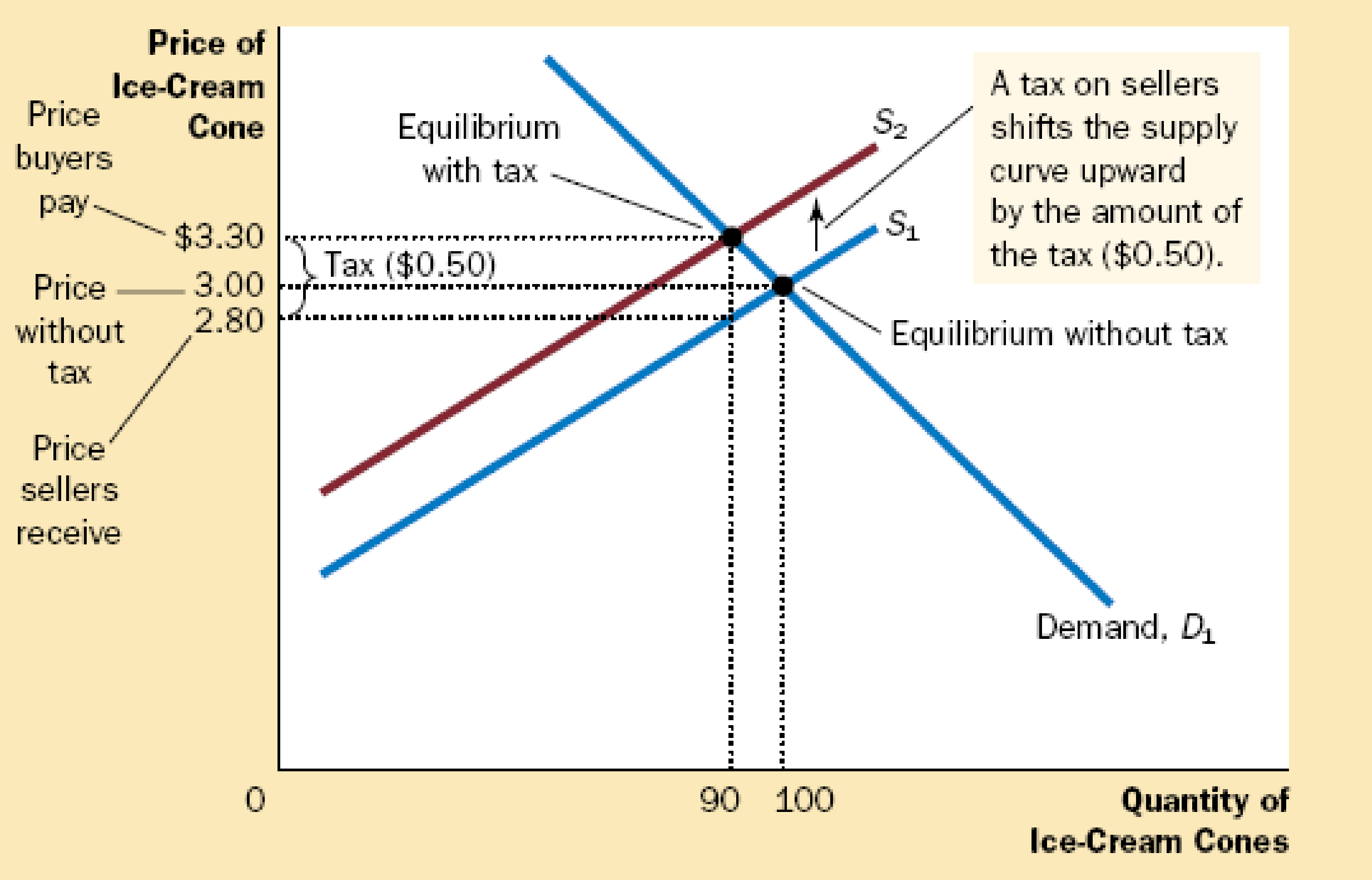
Tax Incidence

Tax on buyers:



Tax Incidence

Tax on sellers:



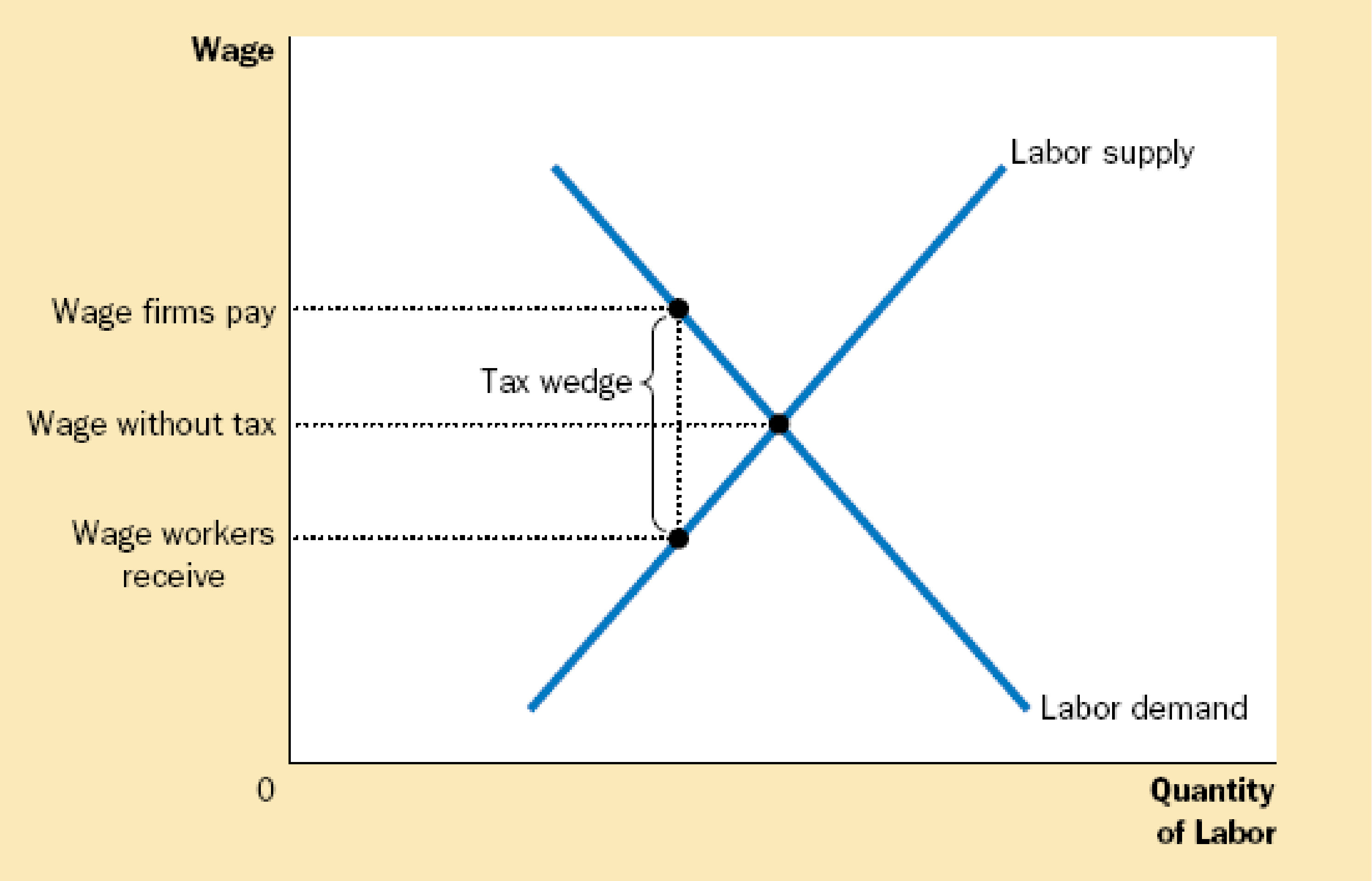
Tax Incidence

- Buyers pay more and sellers receive less, regardless of whom the tax is levied on

It does not matter who pays the tax formally, both buyers and sellers suffer from taxation, the tax burden is shared based on elasticity of supply and demand

Tax Incidence

Payroll tax:

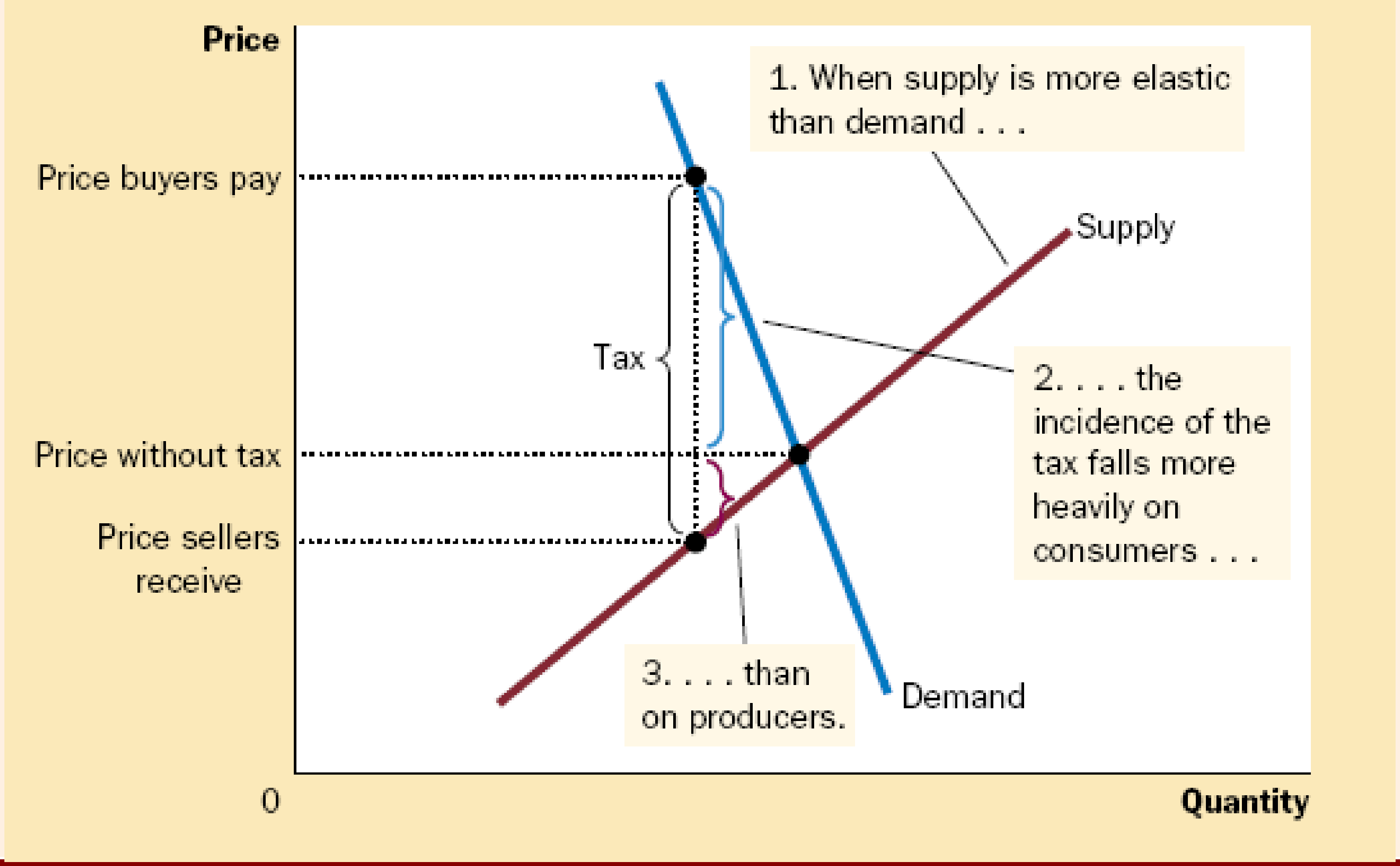


Tax Incidence and Elasticity

- In what proportions is the burden of the tax divided?
- How do the effects of taxes on sellers compare to those levied on buyers?
- The answers to these questions depend on the elasticity of demand and the elasticity of supply

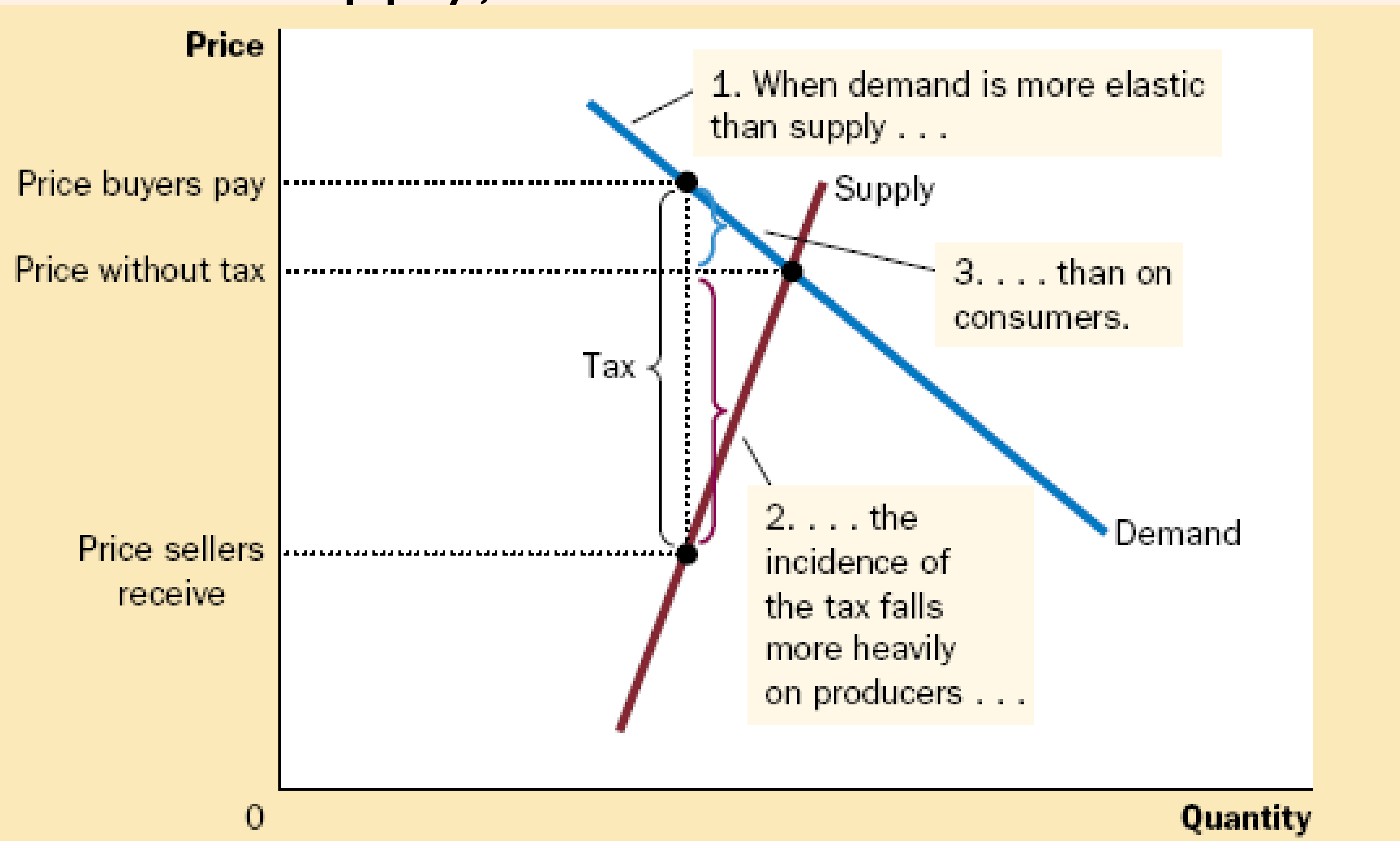
Tax Incidence and Elasticity

Elastic supply, inelastic demand:

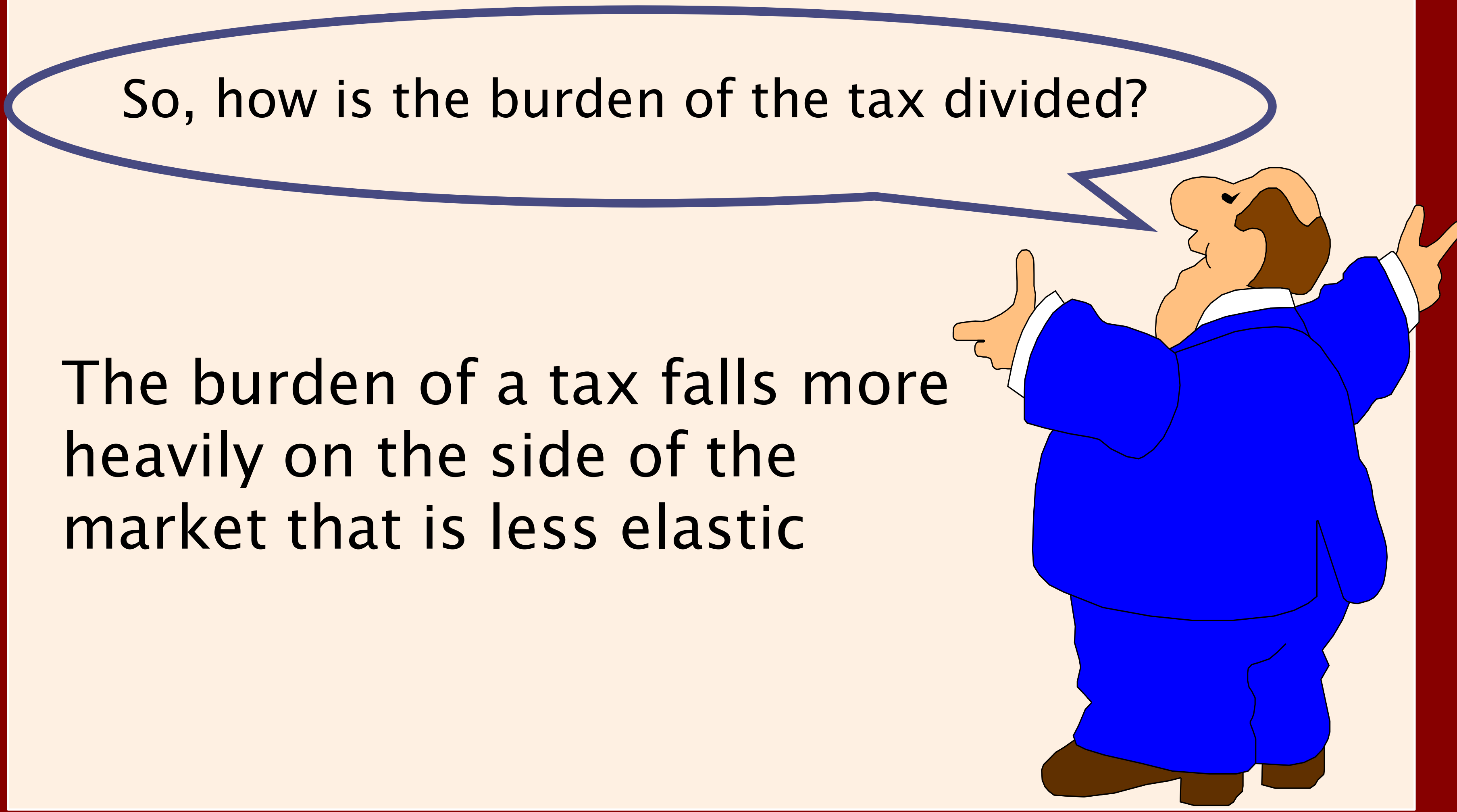


Tax Incidence and Elasticity

Inelastic supply, elastic demand:



Tax Incidence and Elasticity



The burden of a tax falls more heavily on the side of the market that is less elastic

Tax Incidence

- Buyers pay more and sellers receive less, regardless of whom the tax is levied on

It does not matter who pays the tax formally, both buyers and sellers suffer from taxation, the tax burden is shared based on elasticity of supply and demand

Summary I

- Price controls include price ceilings and price floors
- A price ceiling is a legal maximum on the price of a good or service. An example is rent control
- A price floor is a legal minimum on the price of a good or a service. An example is the minimum wage

Summary II

- Taxes are used to raise revenue for public purposes
- When the government levies a tax on a good, the equilibrium quantity of the good falls
- A tax on a good places a wedge between the price paid by buyers and the price received by sellers

Summary III

- The incidence of a tax refers to who bears the burden of a tax
- The incidence of a tax does not depend on whether the tax is levied on buyers or sellers
- The incidence of the tax depends on the price elasticities of supply and demand
- The burden tends to fall on the side of the market that is less elastic