6. Supply, Demand, and Government Policies

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What this chapter is about

- What are price ceilings and price floors?
  What are some examples of each?

- How do price ceilings and price floors affect market outcomes?

- How do taxes affect market outcomes?
  How do the effects depend on whether the tax is imposed on buyers or sellers?

- What is the incidence of a tax?
  What determines the incidence?

Government Policies That Alter the Private Market Outcome

- **Price controls** 가격상한제와 가격하한제
  - **Price ceiling**: a legal maximum on the price of a good or service
    - eg: rent control
  - **Price floor**: a legal minimum on the price of a good or service
    - eg: minimum wage
- **Taxes** 세금
  - The govt can make buyers or sellers pay a specific amount on each unit.

- Use the supply/demand model to see the effects of each policy

How Price Ceilings Affect Market Outcomes

균형가격보다 높은 가격으로 가격상한제를 도입하면 효과가 없다.

- A price ceiling above the equilibrium price is not binding
  - Has no effect on the market outcome.
- The equilibrium price is above the ceiling and therefore illegal
  - The ceiling is a binding constraint on the price
  - Causes a shortage
  - Sellers must ration the scarce goods   파는 사람들은 물건량을 줄인다.
    - Long lines
    - Discrimination according to sellers bias

Example 1: Lines at the gas pump

- 1973, OPEC raised the price of crude oil
  - Reduced the supply of gasoline
  - Long lines at gas stations
- What was responsible for the long gas lines?
  - OPEC
    - Shortage of gasoline
  - U.S. government regulations
    - Price ceiling on gasoline

Example 1: Lines at the gas pump

Price ceiling on gasoline

- Before OPEC raised the price of crude oil
  - Equilibrium price was below the price ceiling
  - No effect on the market
- When the price of crude oil rose
  - Decrease in the supply of gasoline
  - Equilibrium price was above the price ceiling
  - Binding price ceiling
  - Severe shortage
- Laws regulating the price of gasoline were repealed

Example 2: Rent control

- Local government places a ceiling on rents
- Goal: to help the poor
  - Making housing more affordable
- Critique
  - Highly inefficient way to help the poor raise their standard of living

수요가 들어서 집세가 올라도 정부는 기존의 살고 있는 사람에 대해서 가격을 올리지 못하게 했다. 그러나 집주인은 쫓아내고 싶어서 해야할 서비스(고장 수리 등)을 제공하지 않게 된다.

요점 : 가격상한제가 사람들을 더 혼란스럽게 할 수도 있다.

Example 2: Rent control

단기효과로는 임대주택의 수가 고정되어 있기 때문에 상대적으로 탄력성이 없다.

그러나 장기효과로는 임대주택의 수가 줄어들어 집 부족 문제가 상대적으로 더 심각해진다.

- Adverse effects in the short run
  - Supply and demand for housing are relatively inelastic
  - Small shortage
  - Reduced rents
- Adverse effects in the long run
  - Supply and demand are more elastic
  - Large shortage of housing

Example 2: Rent control

- Adverse effects in the long run
  - Rationing mechanisms
    - Long waiting lists
    - Preference to tenants without children
    - Discriminate on the basis of race
    - Bribes to building superintendents

Example 2: Rent control

- People respond to incentives (more in LR)
  - Free markets
    - Landlords – clean and safe buildings
    - Higher prices
  - Rent control
    - Shortages and waiting lists
    - Landlords lose their incentive to respond to tenants' concerns
    - Tenants get lower rents and lower-quality housing
- Policymakers – additional regulations
  - Difficult and costly to enforce

How price floors affect market outcomes

- Not binding
  - Set below the equilibrium price
  - No effect on the market
- Binding constraint
  - Set above the equilibrium price
  - Surplus
  - Some sellers are unable to sell what they want
    - The rationing mechanisms: not desirable

최저임금제

Example 3: The minimum wage

- Price floor: minimum wage
  - Lowest price for labor that any employer may pay
- Fair Labor Standards Act of 1938
  - Ensure workers a minimally adequate standard of living
- 2012, federal minimum wage, $7.25/hour
  - Some states mandate minimum wages above the federal level
- France
  - Average income is 27% lower than in the U.S.
  - Minimum wage 9.40 euros per hour ($12)

Example 3: The minimum wage

- Market for labor
  - Workers supply labor
  - Firms demand labor
  - Price: wage

Example 3: The minimum wage

수요가 줄어들어서 저학력 사람들의 실업률이 오히려 증가한다!

- Impact of the minimum wage on highly skilled and experienced workers
  - No effect: their equilibrium wages are well above the minimum
  - Minimum wage - not binding
- Consider the market for low-skilled labor
- If minimum wage is above equilibrium
  - Unemployment
  - Higher income for workers who have jobs
  - Lower income for workers who cannot find jobs

Example 3: The minimum wage

- Impact of the minimum wage on teenage labor
  - Least skilled and least experienced
  - Low equilibrium wages
  - Willing to accept a lower wage in exchange for on-the-job training
  - Minimum wage – binding
  - A 10% increase in the minimum wage depresses teenage employment between 1 and 3%

Evaluating Price Controls

- Markets are usually a good way to organize economic activity
  - Economists usually oppose price ceilings and price floors
  - Prices have the crucial job of balancing supply and demand
    - Coordinating economic activity
- Governments can sometimes improve market outcomes
  - Want to use price controls
    - Because of unfair market outcome
    - Aimed at helping the poor
  - Often hurt those they are trying to help
  - Other ways of helping those in need
    - Rent subsidies
    - Wage subsidies

?????

Taxes

- Government use taxes
  - To raise revenue for public projects
  - Roads, schools, and national defense
- Tax incidence
  - How the burden of a tax is shared among participants in a market

How taxes on sellers affect market outcomes

판매자가 세금을 내는 경우

- Immediate impact on sellers: shift in supply
- Supply curve shifts left
- Higher equilibrium price
- Lower equilibrium quantity

공급곡선이 세금만큼 가격이 증가한다.

How taxes on sellers affect market outcomes

균형거래량이 줄어들기 때문에 세금이 시장 거래를 억제한다고 볼 수 있다.

- Taxes discourage market activity
  - The size of the market gets smaller
- Buyers and sellers share the burden of tax
- Buyers pay more, are worse off
- Sellers receive less, are worse off
  - Get the higher price but pay the tax
  - Overall: effective price fall

실질적으로 구입자와 판매자가 공동으로 세금을 부담한다.

How taxes on buyers affect market outcomes

수요 곡선이 세금 만큼 가격이 감소한다.

- Demand curve shifts left
- Lower equilibrium price
- Lower equilibrium quantity

How taxes on buyers affect market outcomes

판매자가 세금을 내는 것과 같은 효과가 발생한다.

- Taxes discourage market activity
  - The size of the market gets smaller
- Buyers and sellers share the burden of tax
- Sellers get a lower price, are worse off
- Buyers pay a lower market price, are worse off
  - Effective price (with tax) rises

Equivalence result

결국 같은 결론이 나온다.

둘은 그냥 같은 효과다.

- Taxes levied on sellers and taxes levied on buyers are equivalent
- Wedge between the price that buyers pay and the price that sellers receive
  - The same, regardless of whether the tax is levied on buyers or sellers
- Shifts the relative position of the supply and demand curves
  - Buyers and sellers share the tax burden

Elasticity and tax incidence

공급이 수요보다 탄력적이면 구매자가 세금을 더 낸다.

- Very elastic supply and relatively inelastic demand
  - Sellers bear a small burden of tax
  - Buyers bear most of the burden
- Relatively inelastic supply and very elastic demand
  - Sellers bear most of the tax burden
  - Buyers bear a small burden

수요가 공급보다 탄력적이면 판매자가 세금을 더 낸다.

Elasticity and tax incidence

- Tax burden falls more heavily on the side of the market that is less elastic
- Small elasticity of demand 수요가 비탄력적이기 때문에 구매자가 다른 대안이 없다.
  - Buyers do not have good alternatives to consuming this good
- Small elasticity of supply 공급이 비탄력적이기 때문에 판매자가 다른 대안이 없다.
  - Sellers do not have good alternatives to producing this good

Example 4: Who pays the luxury tax?

돈 많은 사람 한테 세금을 걷고 싶지만 요트의 수요는 탄력적이기 때문에 오히려 오트 제작자가 더 많은 세금을 지불하게 된다.

- On yachts, private airplanes, furs, jewelry, expensive cars
- Goal: to raise revenue from those who could most easily afford to pay
- Luxury items
  - Demand is quite elastic
  - Supply is relatively inelastic

Example 4: Who pays the luxury tax?

- Outcome:
  - Burden of a tax falls largely on producers and their workers
  - Relatively inelastic supply
- 1993: most of the luxury tax was repealed

"If this boat were any more expensive, we'd be playing golf."