



MANAGERIAL ECONOMICS

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Lecture No - 14 : Elasticity of Supply

Recap from Session

- Budget line and Consumer equilibrium
- Law of Equi Marginal utility
- Price, income and substitution effect
- Consumer Surplus

Session Outline

- Elasticity of Supply
- Impact of Tax on Price and Quantity
- Price fixed by Law: Ceiling Price and Floor Price

Elasticity of Supply

- A measure of the way suppliers respond to a change in price.
- A supplier's responsiveness to a price change

Elasticity of Supply

Is the percentage change in quantity supplied associated with a percentage change in price.

$$E_s = \% \Delta Q_s / \% \Delta P$$

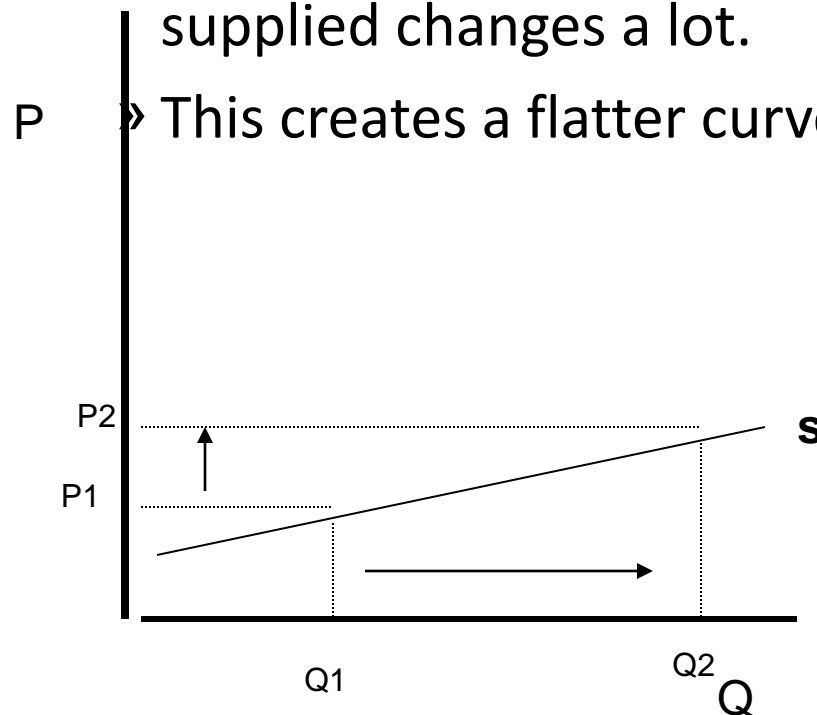
Elastic Supply

A product has elastic supply when a price change causes a significant change in the quantity supplied. (What would have to be true (of a product) to allow a **seller** to **quickly increase production** if the market price goes up?)

Slope of an Elastic supply curve

» Remember, if the price changes, the quantity supplied changes a lot.

» This creates a flatter curve.

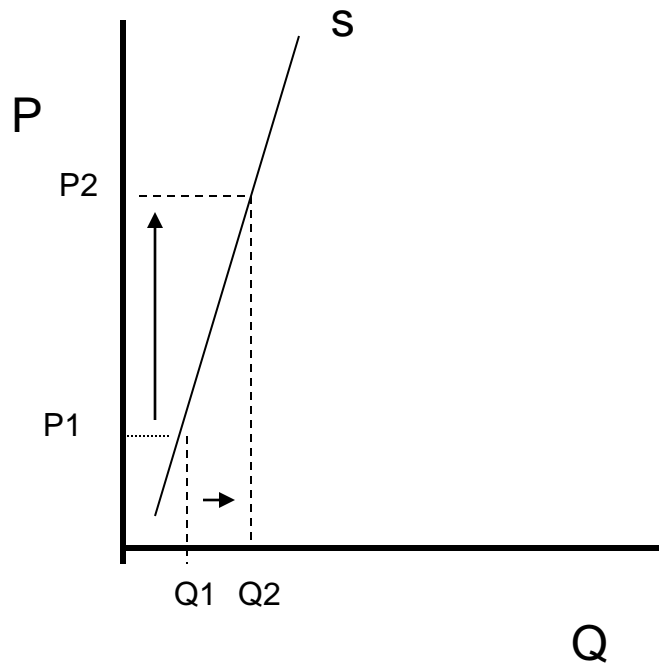


Inelastic Supply

- A price change causes very little change in the quantity supplied= Inelastic.
- Examples: Hand crafted furniture, diamonds

Slope of an inelastic supply curve

- If the market price goes up but the supplier cannot increase production very much,
- then this creates a steeper curve.



Interpreting Elasticity of Supply

$E_s = \infty$ - Perfectly Elastic Supply

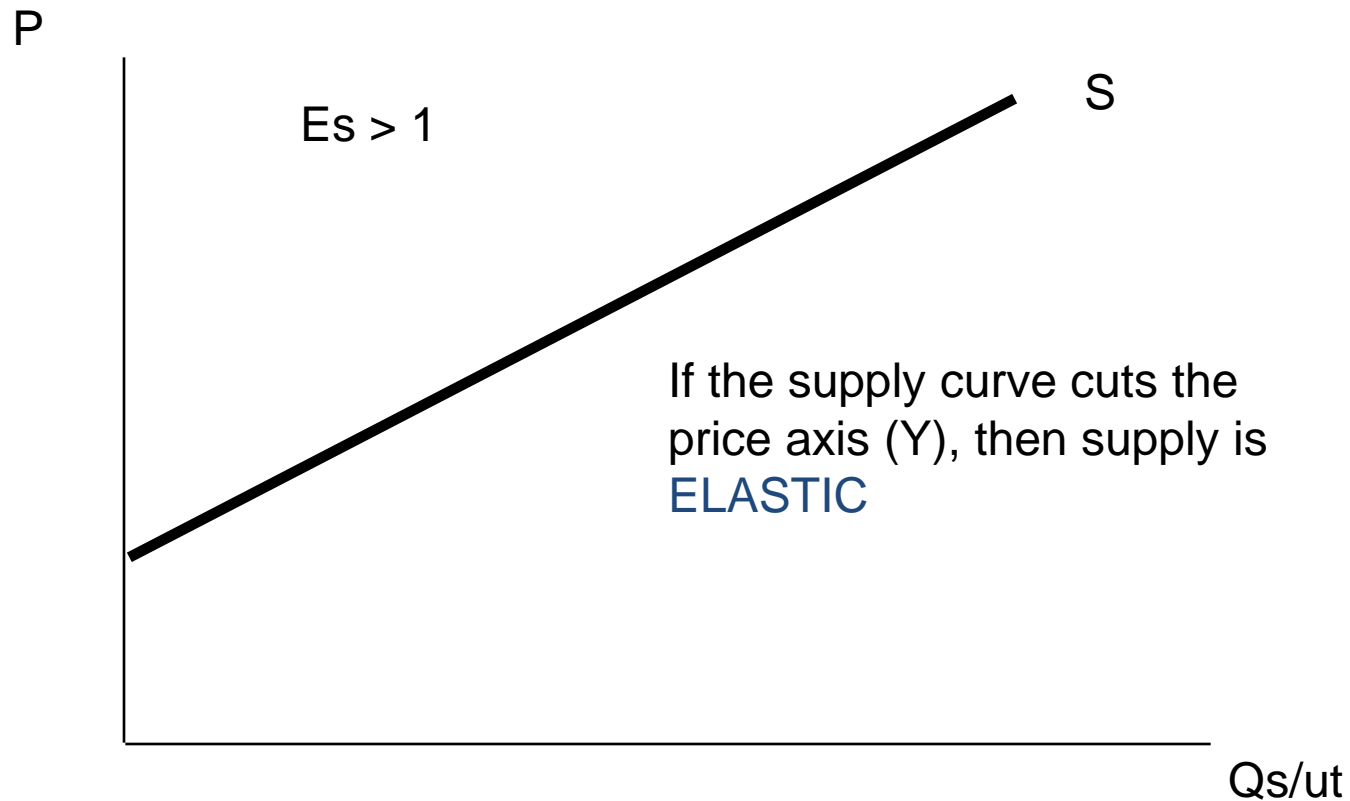
$E_s > 1$ - Elastic supply

$E_s < 1$ - Inelastic supply

$E_s = 1$ - Unitary Elastic supply

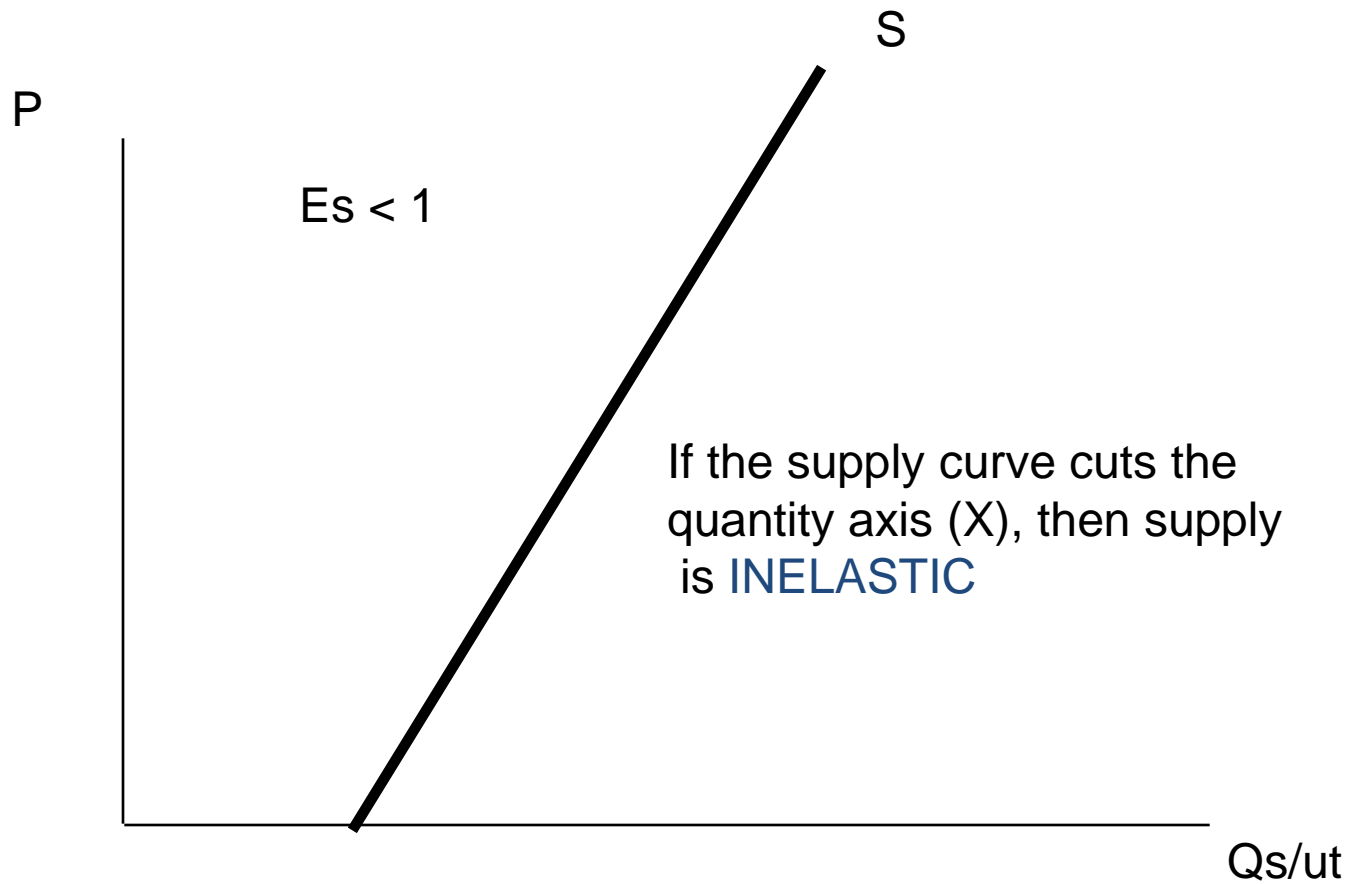
$E_s = 0$ – Perfectly Inelastic Supply

If the Supply curve is a straight line:

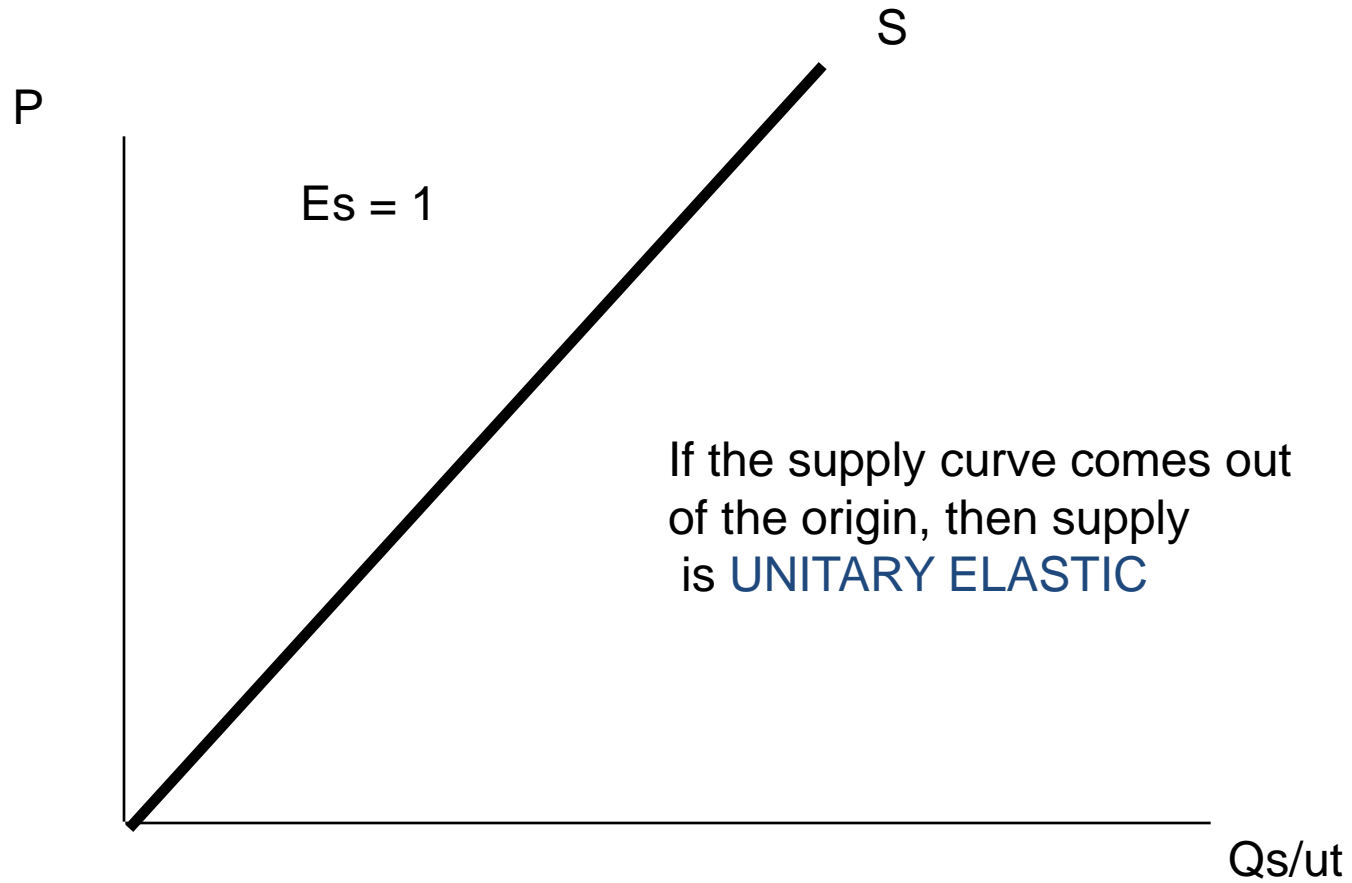


Managerial Economics

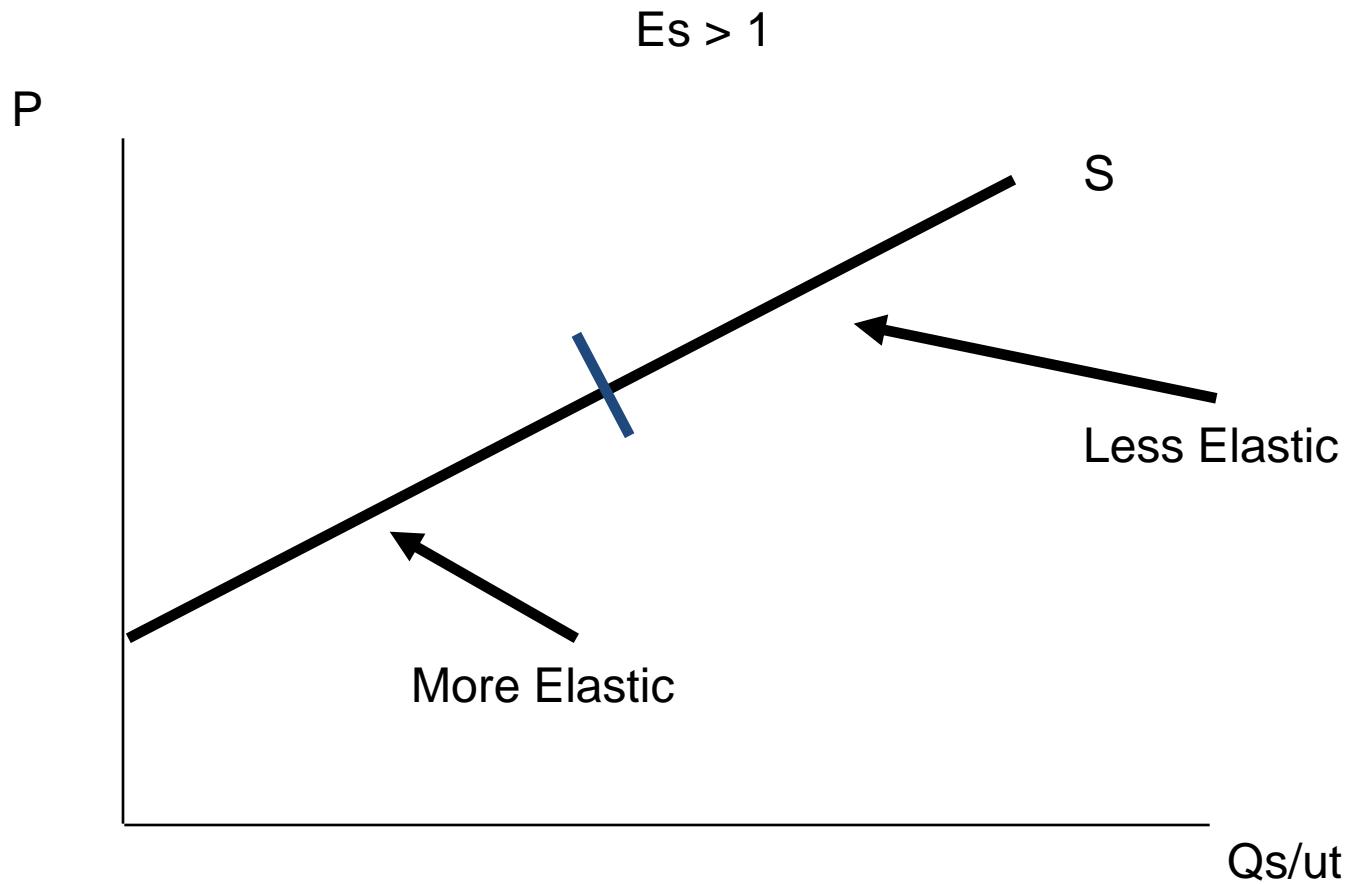
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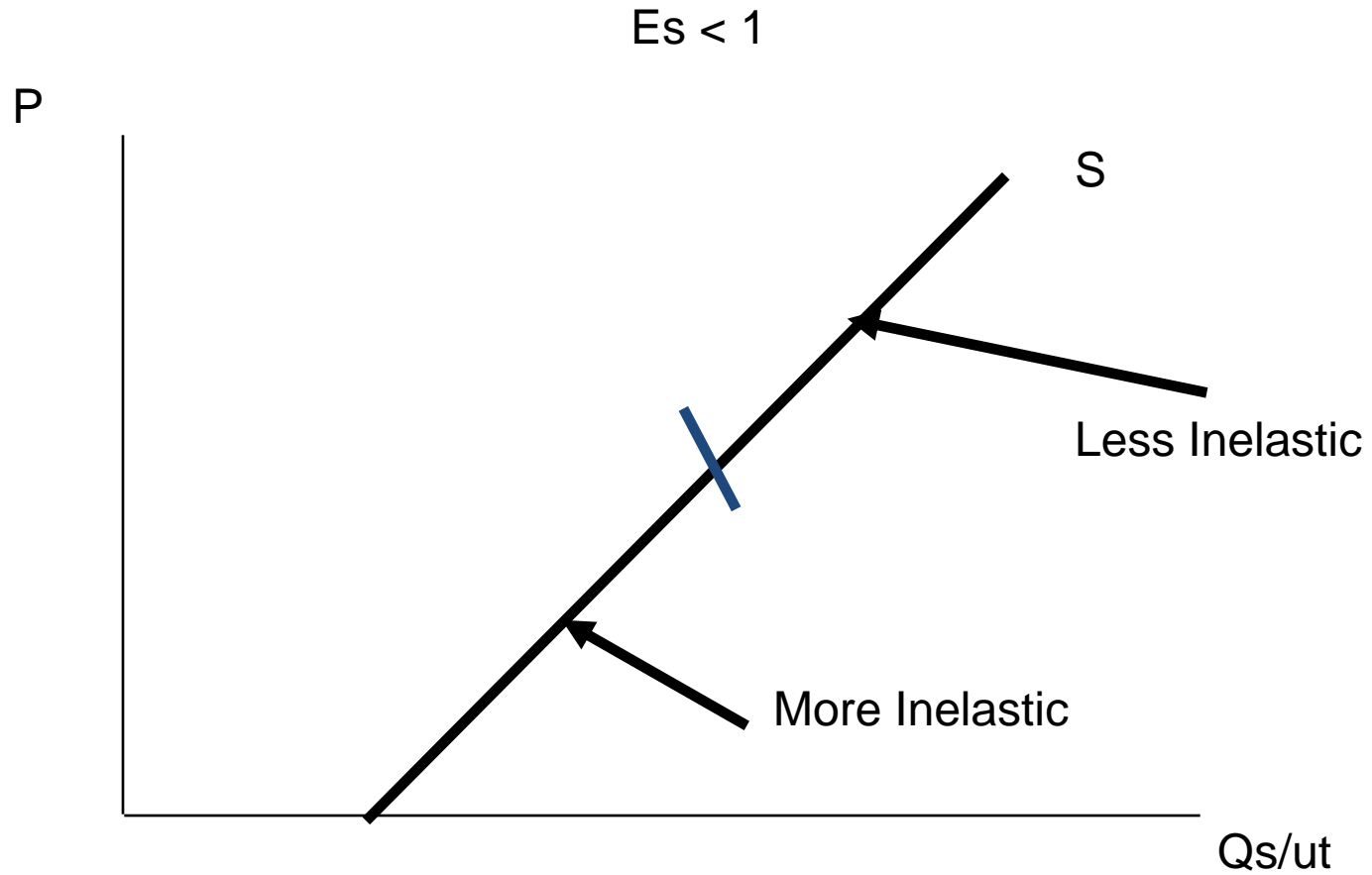
If the Supply curve is a straight line:



Sections of Elasticity



Sections of Elasticity



Factors Influencing :Elasticity of Supply

1. Availability of resources required to make the product
2. Amount of time required to make the product
3. Skill level of the worker needed to make the product
4. Time period for adjustment

Impact of Tax on Price and Quantity

Unit Tax – Tax per unit of output sold.

Impact of Tax on Price and Quantity

- If the demand curve is perfectly Inelastic, the price rises by the full amount of the Tax and the supply remain unchanged. The entire tax is borne by the Consumer.
- If the supply curve is perfectly inelastic, there will be no increase in the price or decrease in supply. The whole of the tax is borne by the supplier.

Impact of Tax on Price and Quantity

- If the demand curve is **perfectly elastic**, the price does not rise at all and the whole tax is borne by the seller
- If the supply curve is **perfectly elastic**, the price rises by the full amount of tax .Entire tax borne by the consumer.

Impact of Tax on Price and Quantity

- Given the supply schedule, greater the elasticity of demand for the good, the less will be the tax burden by the consumer.
- Given the demand schedule, the greater is the elasticity of supply, the greater will be the tax burden borne by the buyers.

Impact of Tax on Price and Quantity

- Sales Tax – A tax imposed on consumers
 - Paid directly to the government
 - Does not affect the price
 - Consumers pay “**Price plus sales tax**”
- Less desirable to buy the taxed good or service at every given price
- Demand shifts downward and to the left

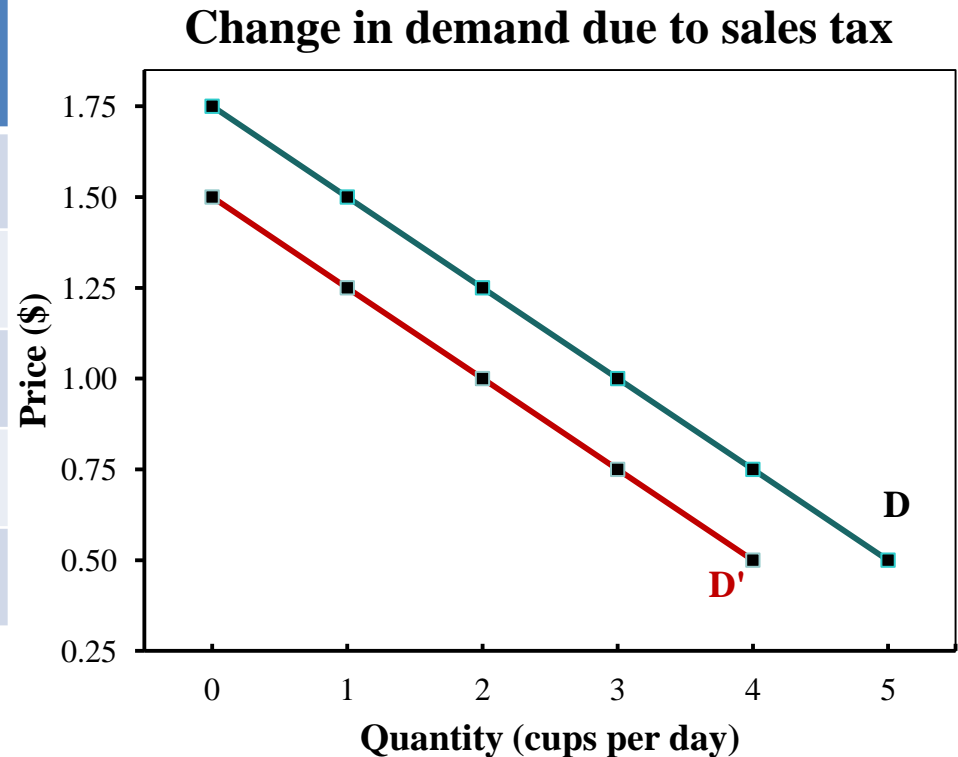
Source :Thomson South-Western

Effect of a Sales Tax on Demand

- A new law requires \$0.25 sales tax per cup of coffee

Price (\$/cup)	Quantity (cups) before Tax	Quantity (cups) after tax
0.50	5	4
0.75	4	3
1.00	3	2
1.25	2	1
1.50	1	0

Source : Thomson South-Western



Impact of Tax on Price and Quantity : Excise Tax

- The government imposes a tax on producers
 - Producers pay the tax directly to the government
 - Price does not change, but the cost
- Less desirable to produce the taxed good or service at every given price
- Supply shifts to the left and upward

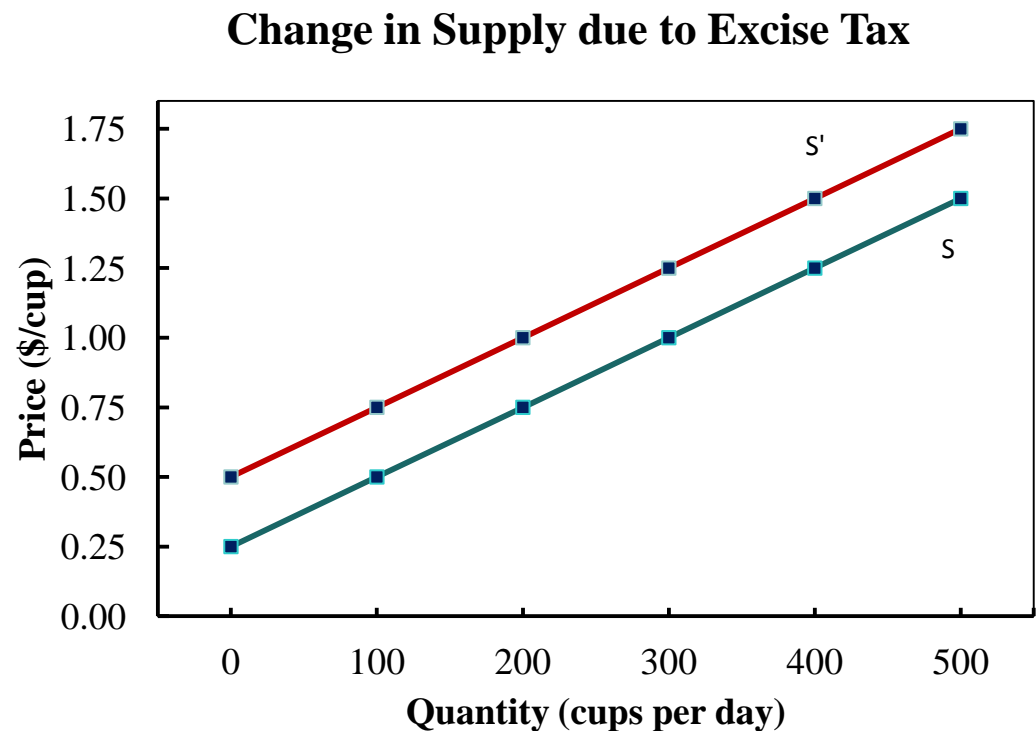
Source : Thomson South-Western

Effect of an Excise Tax on Supply

- An excise tax of \$0.25 per cup of coffee

Price (\$/cup)	Quantity Supplied before tax	Quantity Supplied after tax
0.25	0	0
0.50	100	0
0.75	200	100
1.00	300	200
1.25	400	300
1.50	500	400

Source : Thomson South-Western



Effect of Sales Tax

- Sales tax of $x\text{¢}$ per item causes equilibrium price to fall by some amount less than $x\text{¢}$ per item
- Price to suppliers not same as price to demanders (price plus sales tax)

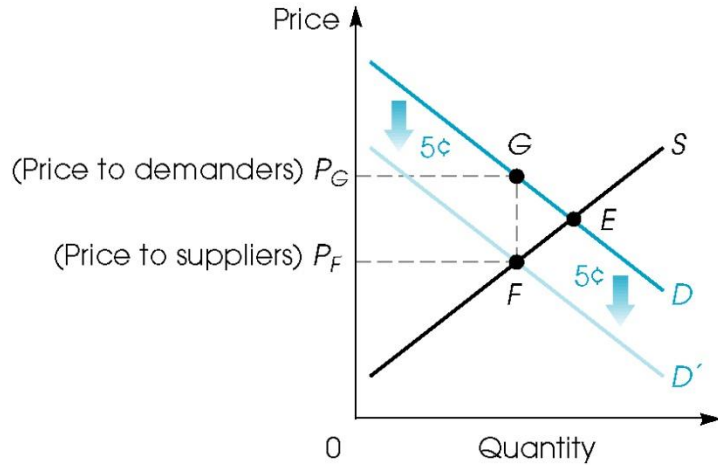
Effect of Excise Tax

- Excise tax of $x\text{₹}$ per item causes the equilibrium price to rise by some amount less than $x\text{₹}$ per item
- Price to suppliers (price minus excise tax) not same as price to demanders

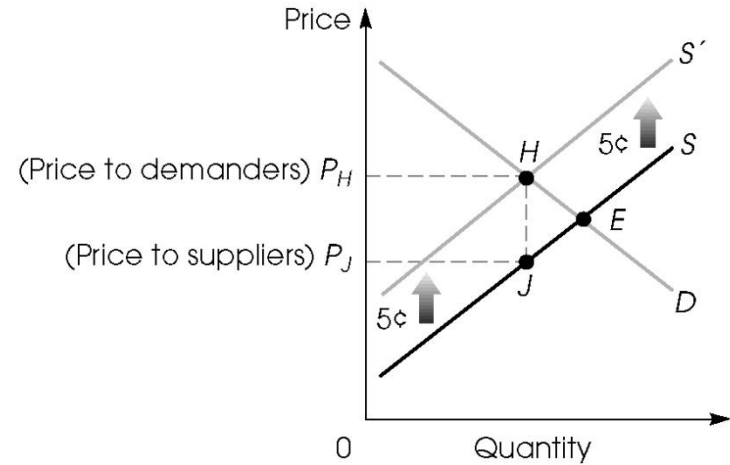
Comparing Two Taxes

- Economic Incidence – the division of a tax burden according to who actually pays the tax
- Legal Incidence – the division of a tax burden according to who is required under the law to pay the tax
- The economic incidence of a tax independent of its legal incidence

A Sales Tax versus an Excise Tax



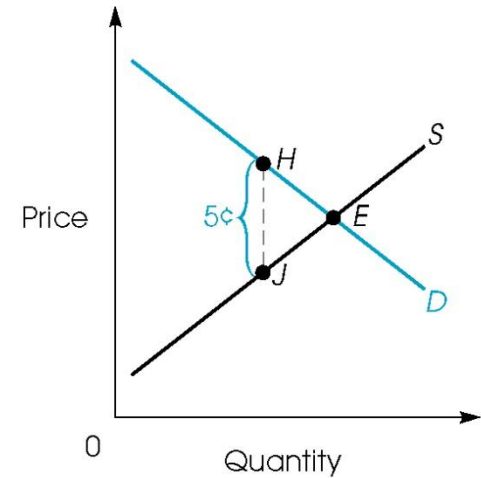
A. Effect of a Sales Tax



B. Effect of an Excise Tax



A' . A less cluttered version of Panel A.



B' . A less cluttered version of Panel B.

Price ceiling and Price Floor

- Consumer always like prices to be lower than the actual equilibrium prices.
- When the outcomes of the unregulated markets act against the interest of the public, people seek legislation that allows the government authorities to control the existing price structure of the Market.

Price ceiling and Price Floor

- This type of interference on the part of the government with the help of the laws of supply and demand is totally different from the case of imposition of taxes.
- Government control of prices inevitably prevents the market system from performing its function of rationing goods and services.

Price ceiling – Rent Control

- Type of price ceiling that the government authorities sometimes use for rental housing.
- Prevent housing markets from reaching equilibrium only when rents are set below the market equilibrium rent.
- After the end of World War II, when there was a sharp increase in the demand for housing, many cities instituted rent controls to prevent the spectacular increase in rents that were anticipated.

Price ceiling – Rent Control

- Typically rent controls limit increases in monthly rental rates or establish rules used to determine ‘fair’ monthly rents for housing of varying kinds and quality - rents lower than those that would prevail in equilibrium in a competitive market.
- Many supporters of rent controls believe that these controls benefit lower-income people who would otherwise have to pay higher percentages of their income as rent.

Price ceiling – Rent Control

The effects of rent controls:- If a ceiling on rents is below the market equilibrium rent, the inevitable result is a shortage of rental housing.

Price ceiling – Rent Control

The effects of rent controls:- If a ceiling on rents is below the market equilibrium rent, the inevitable result is a shortage of rental housing.

Rent controls do make rental houses less expensive to tenants - Landlords respond to the reduction in possible gain by decreasing the quantity and often the quality of rental houses supplied.

This results in a shortage of housing.

Price Floor

- A minimum price established by law.
- Two commonly used price floors are minimum wages and agricultural price supports
- Minimum wages prohibits employers from paying less than a stipulated wage
- Agricultural price supports guarantee farmers a minimum price for their crops- when price floors are set above the market equilibrium prices,
- the result is surplus on the market.

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- the result is surplus on the market.

Session Summary

- Price elasticity of supply measures the percentage change of output supplied for a percentage change in the price of goods.
- If a specific tax is imposed or subsidy is given, the burden or benefit is shared by buyers and suppliers in the ratio of elasticity of supply and elasticity of demand respectively.
- Government imposes price ceiling and price floor for the benefit of buyers and seller respectively.

Session References

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