

Transport Economics

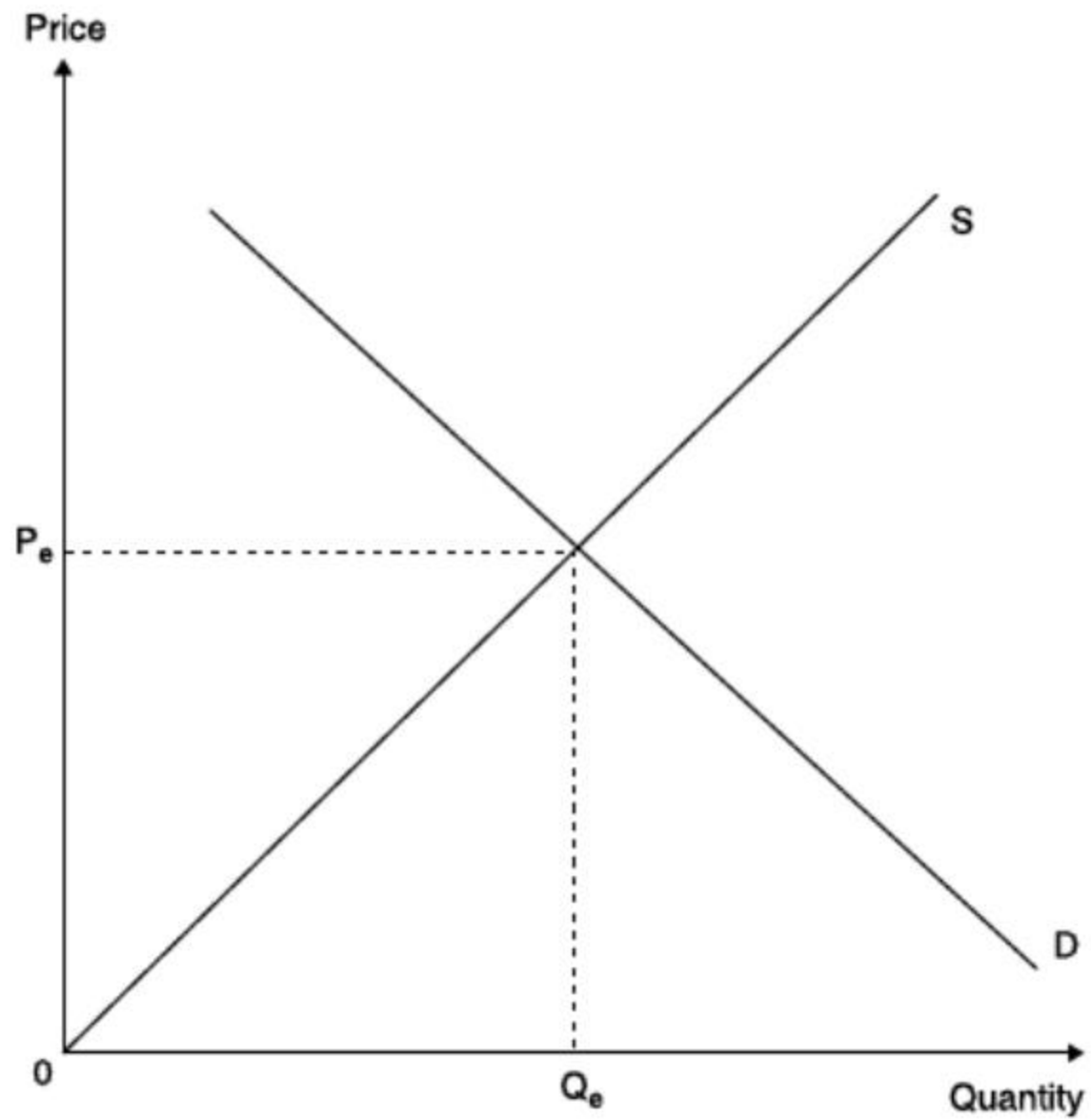
Lecture 2

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Lecture 1 Recap

- There is always limited resources (time, money, space, ...) to allocate across people
- Every choice has an “opportunity cost”, but not fully known to planners.
- We often let markets solve the allocation problem
- Markets are efficient because of competition among and conflict between demanders and suppliers.
- Prices and quantities traded in equilibrium maximize buyer surplus + seller surplus.



Homework Problem 1

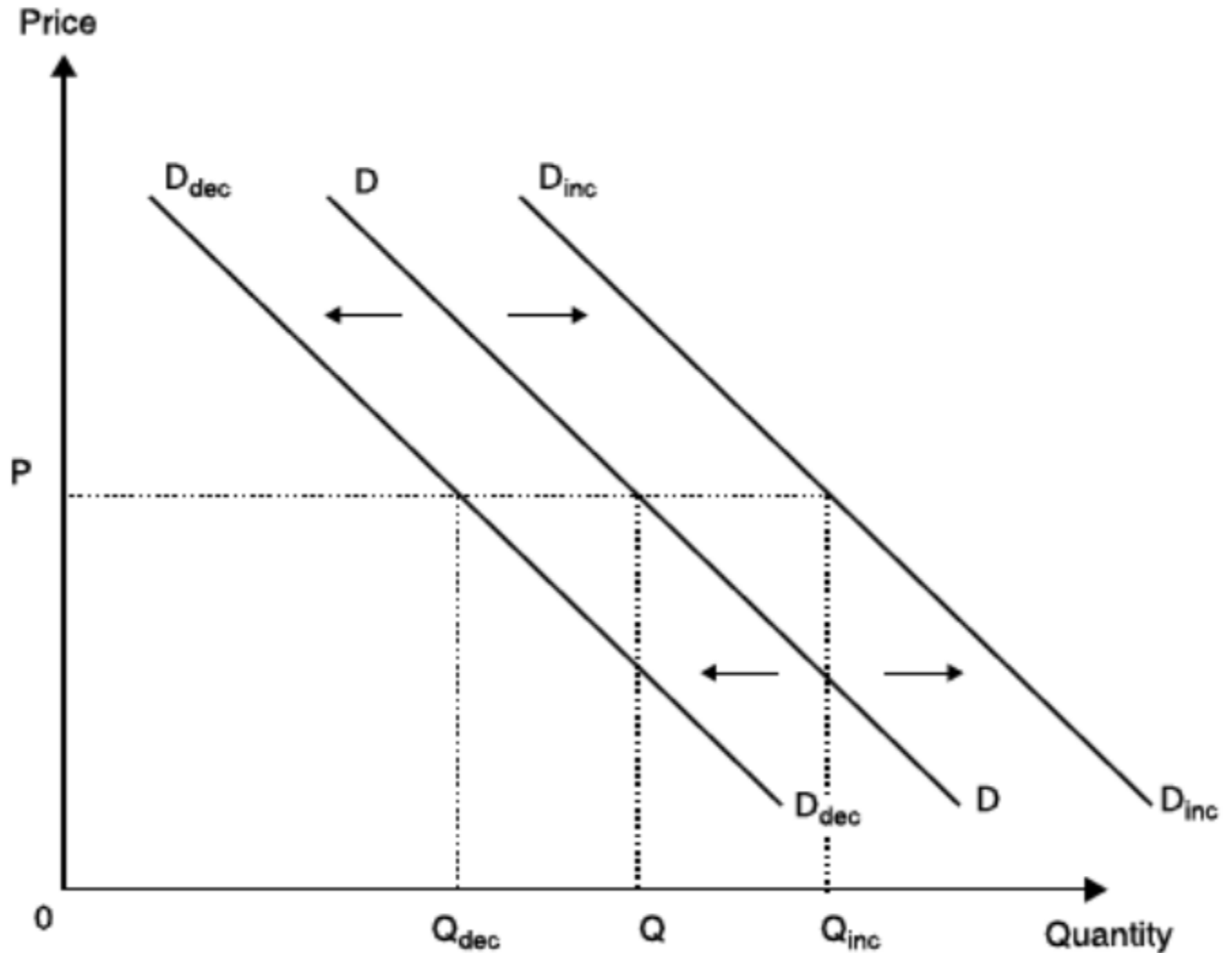
How long did it take you?

<https://premo.aalto.fi/tecon02>

Worksheet 2.1

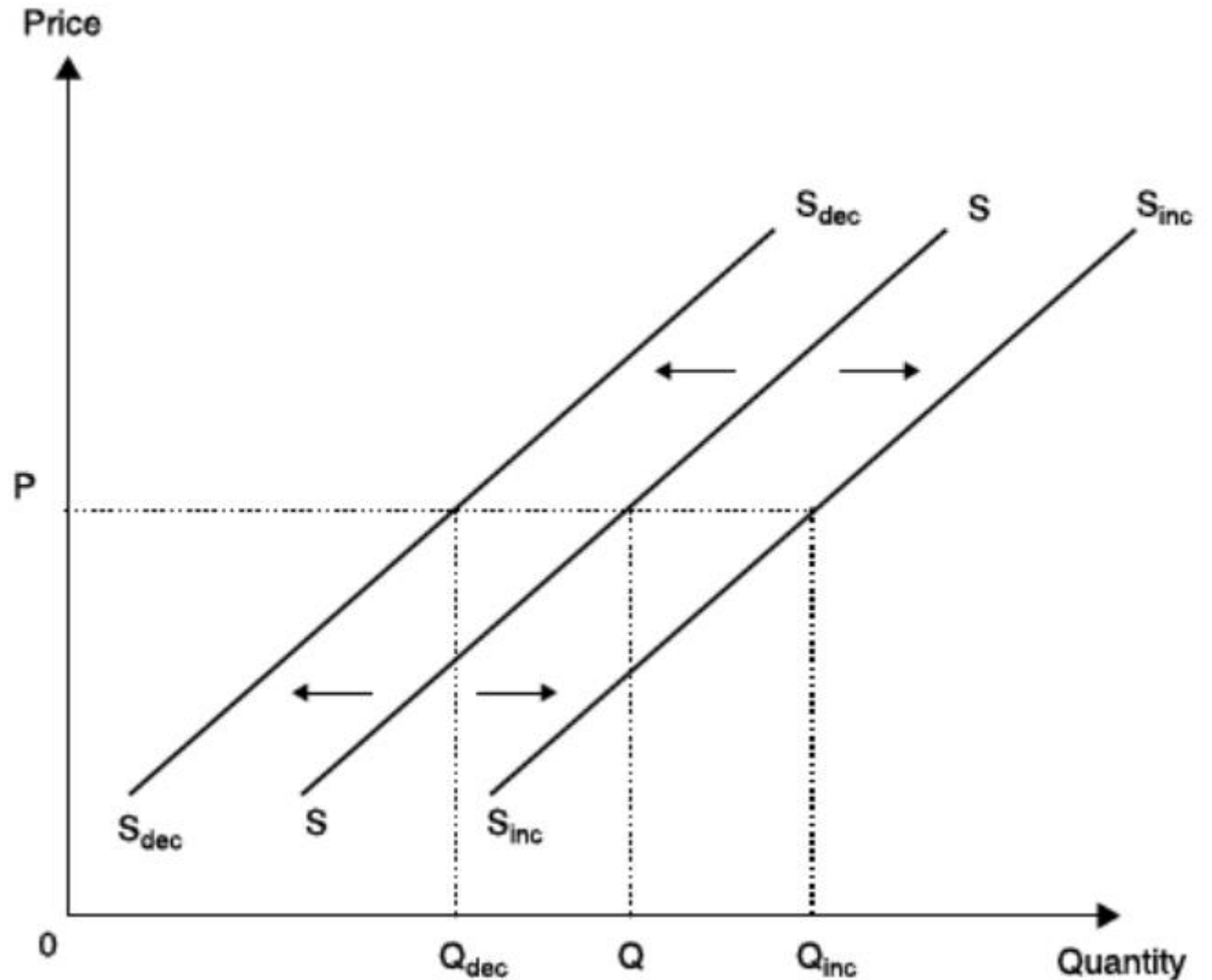
Demand determined by:

- Price
- Income
- Price of other goods and services
- Fashions or trends
- Expectations of future price rises
- ...



Supply determined by:

- Price
- Cost of production
- Govt policy
- Price of other goods and services
- Natural shocks
- Aims of the producer ...



Identify what side of the market, demand or supply, is being affected and how:

<https://premo.aalto.fi/tecon02>

How do these changes affect consumer and producer surpluses?

- When costs go up for the seller, supply curve shifts left. Both producer and consumer surpluses go down.
- Some cost is transferred to consumers through higher prices.
- Who bears the greater burden of the cost increase? Consumers or producers?
- Depends on price “elasticities” of the demand and supply curves.

Price Elasticity of Demand

$$= \frac{\% \text{ change in quantity demanded}}{\% \text{ change in price}}$$

Perfectly inelastic demand = 0

Perfectly elastic demand = $-\infty$

Worksheet 2.2

Once done:

<https://premo.aalto.fi/tecon02>

Determinants of Price Elasticity of Demand

- Substitutability of alternatives
- Cost (relative to income)
- Time horizon
- Current point of equilibrium along the demand curve

Cross-price Elasticity of Demand

$$= \frac{\% \text{ change in quantity demanded of service } A}{\% \text{ change in price of service } B}$$

Between substitutes, cross-price elasticity > 0

Between complements, cross-price elasticity < 0

Income Elasticity of Demand

$$= \frac{\% \text{ change in quantity demanded}}{\% \text{ change in income}}$$

For normal goods/services, income elasticity > 0

For inferior goods/services, income elasticity < 0

The Supply side

- Input → Output
 - Fixed inputs does not change with quantity produced
 - Variable inputs do change with quantity produced
- Fixed and variable costs
- In the very long run, nothing is fixed

Law of diminishing marginal returns

- Initially, additional input → additional production at increasing rate
 - E.g., more specialization of tasks, more flexibility in combining inputs, ...
- Beyond a point, additional input → additional production, but at decreasing rate
 - E.g., more management and bureaucracy, loss of control, ...
- Eventually, additional input → lower production!

Profit Maximization

- Marginal Cost (MC)
- Marginal Revenue (MR)
- At $MC < MR$, can increase profits by selling more.
- At $MC > MR$, losing revenue on the last sales.
- At $MR = MC$, profits maximized.

