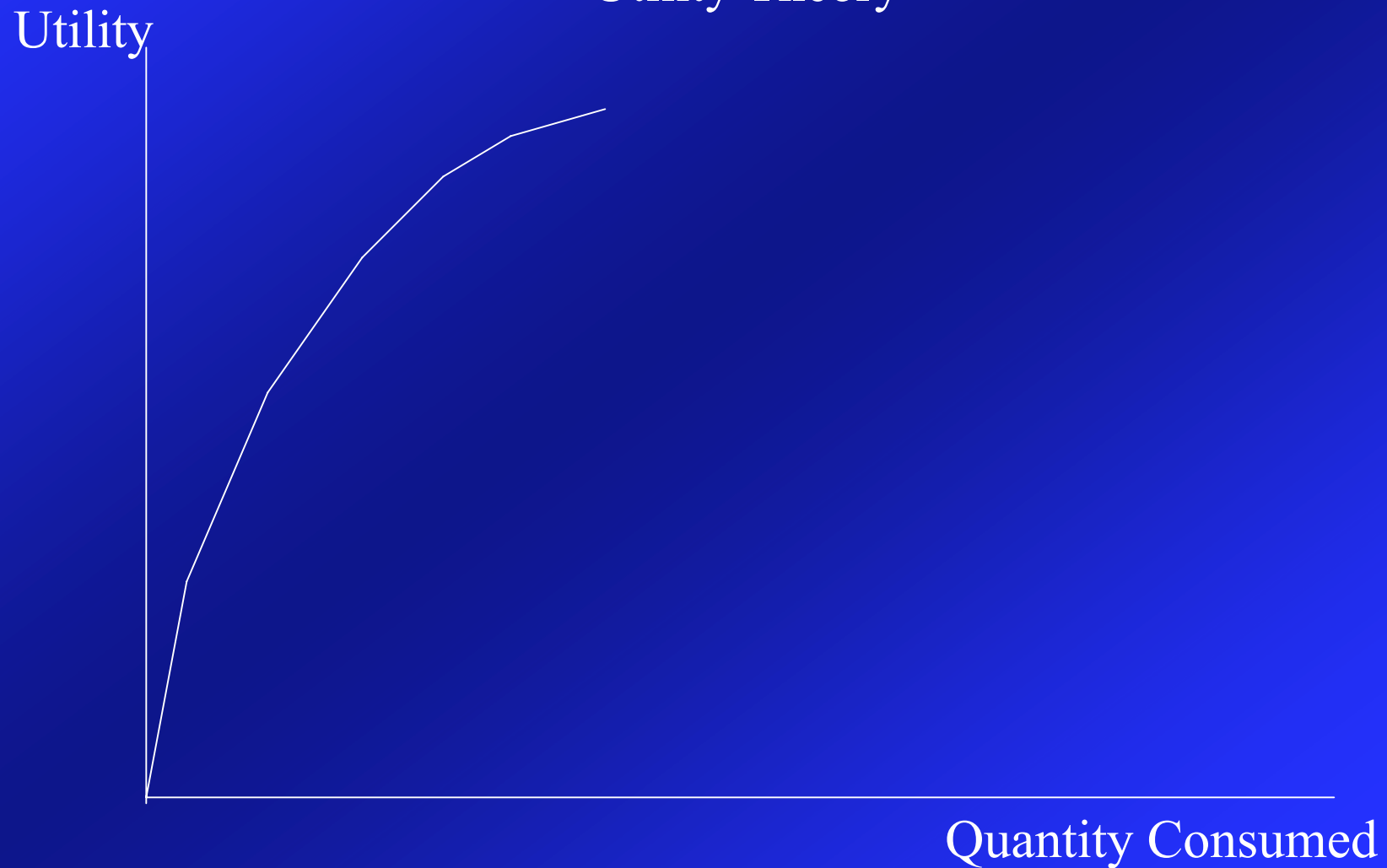


Measuring Costs and Benefits

- Measuring Benefits and Costs (*See Chap 4*):
 - Consumers' Willingness to Pay (WTP)
 - Consumer Surplus (CS)
 - Producers' Surplus (PS)
 - Social Surplus (SS)
- Measuring Benefits in Secondary Markets (*See Chap 5*)
 - Only measure if there are significant price changes in secondary markets

Measuring Benefits

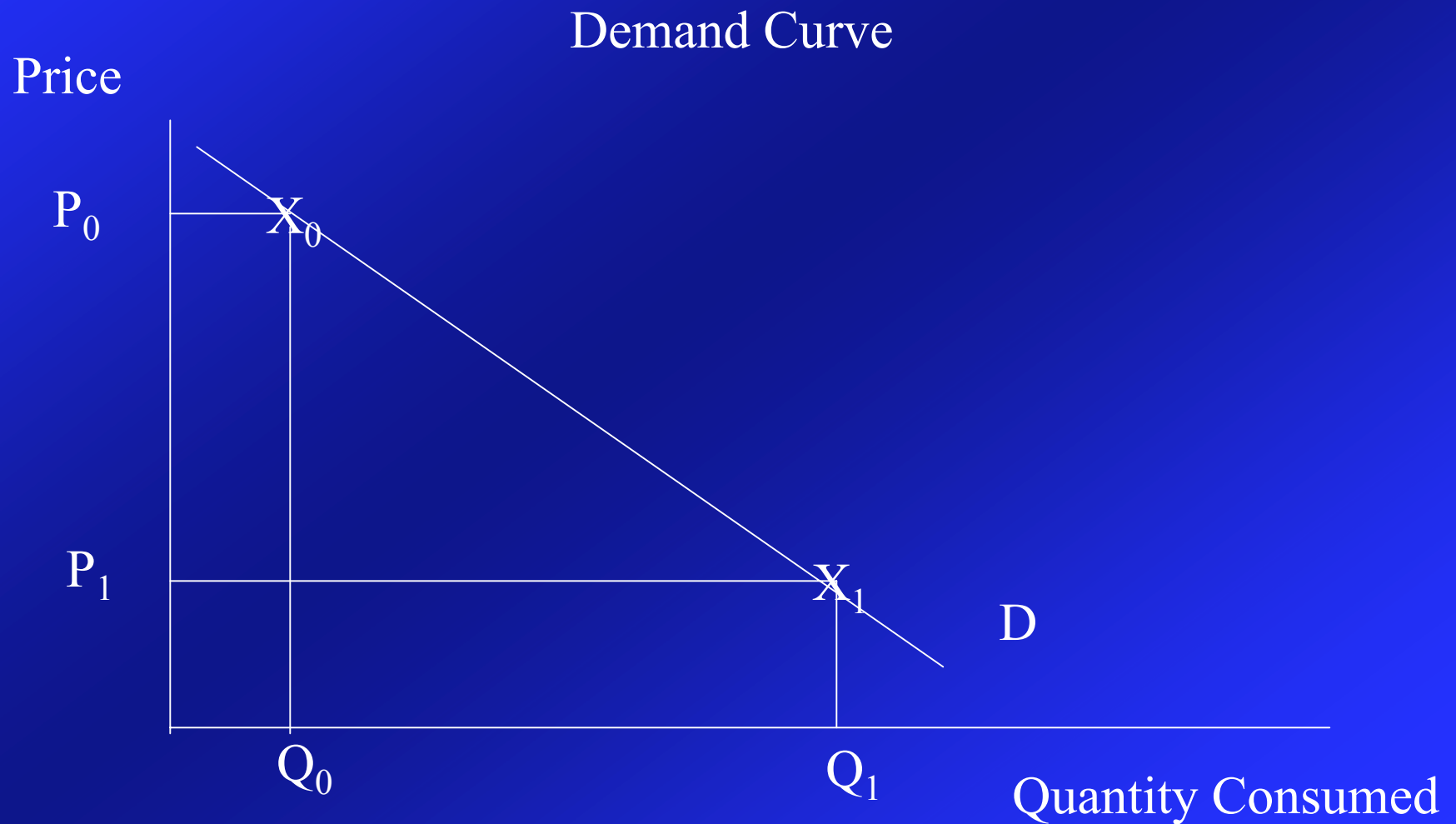
Utility Theory



Measuring Benefits

- Diminishing marginal utility
- What evidence do we have that individuals' utilities have this property?
- “Revealed preferences”
 - At lower prices, people consume more.
 - As prices increase, the amount people consume decreases

Measuring Benefits



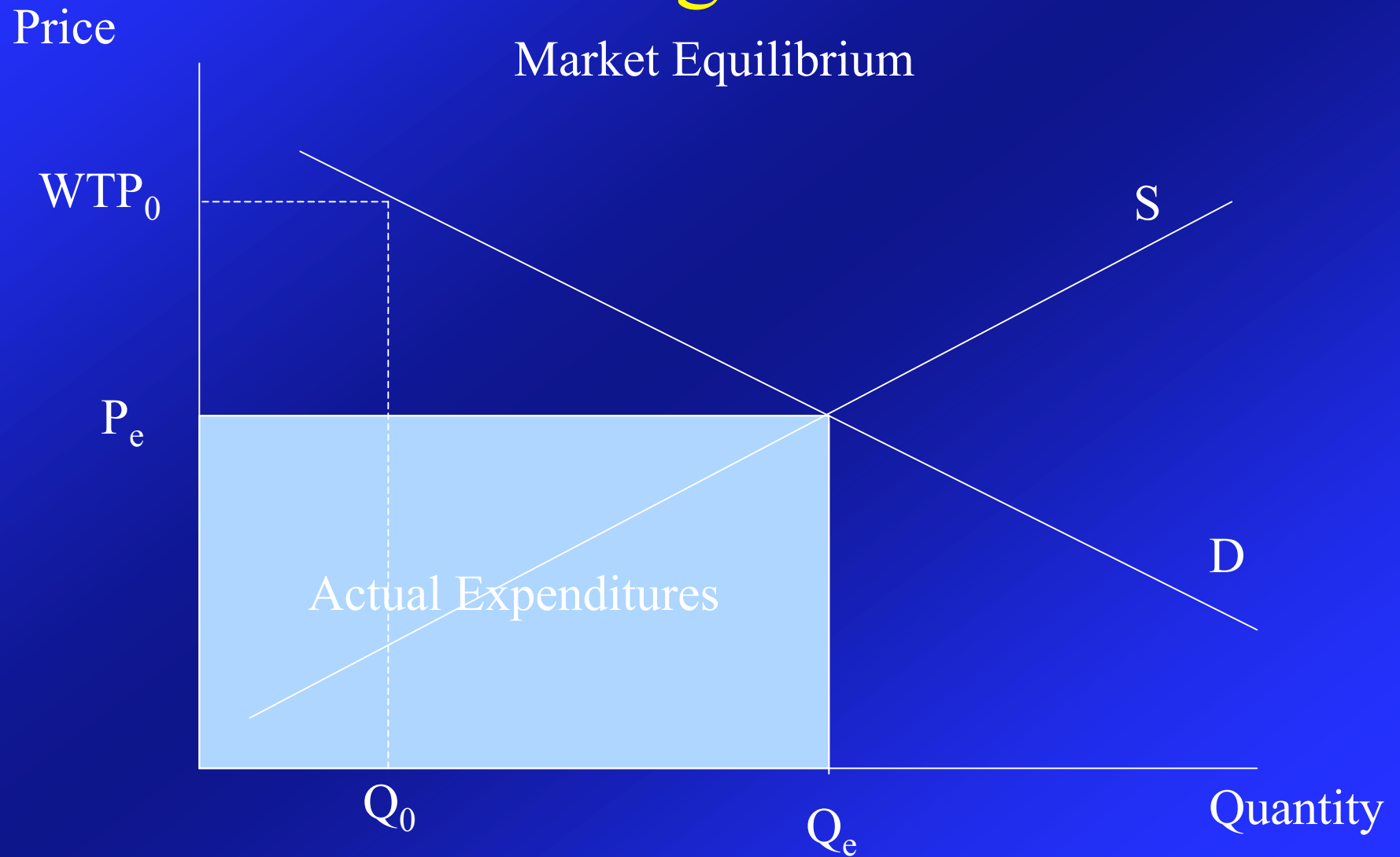
Measuring Benefits

- Demand curve shows actual expenditure behaviors of individuals
 - When goods are scarce, people willing to pay high price
 - When goods are abundant (people are already consuming a lot), people willing to pay only a lower price
- Measured in monetary terms
- **Note: Consumers expenditure behaviors are constrained by their budgets!**
- Demand response has both substitution (pure preferences) and income effects

Measuring Benefits

- Demand curve – Willingness to pay
- In market exchanges, consumers do not actually pay all that they would be willing to pay. Markets are not able to discriminate prices charged for each unit sold.

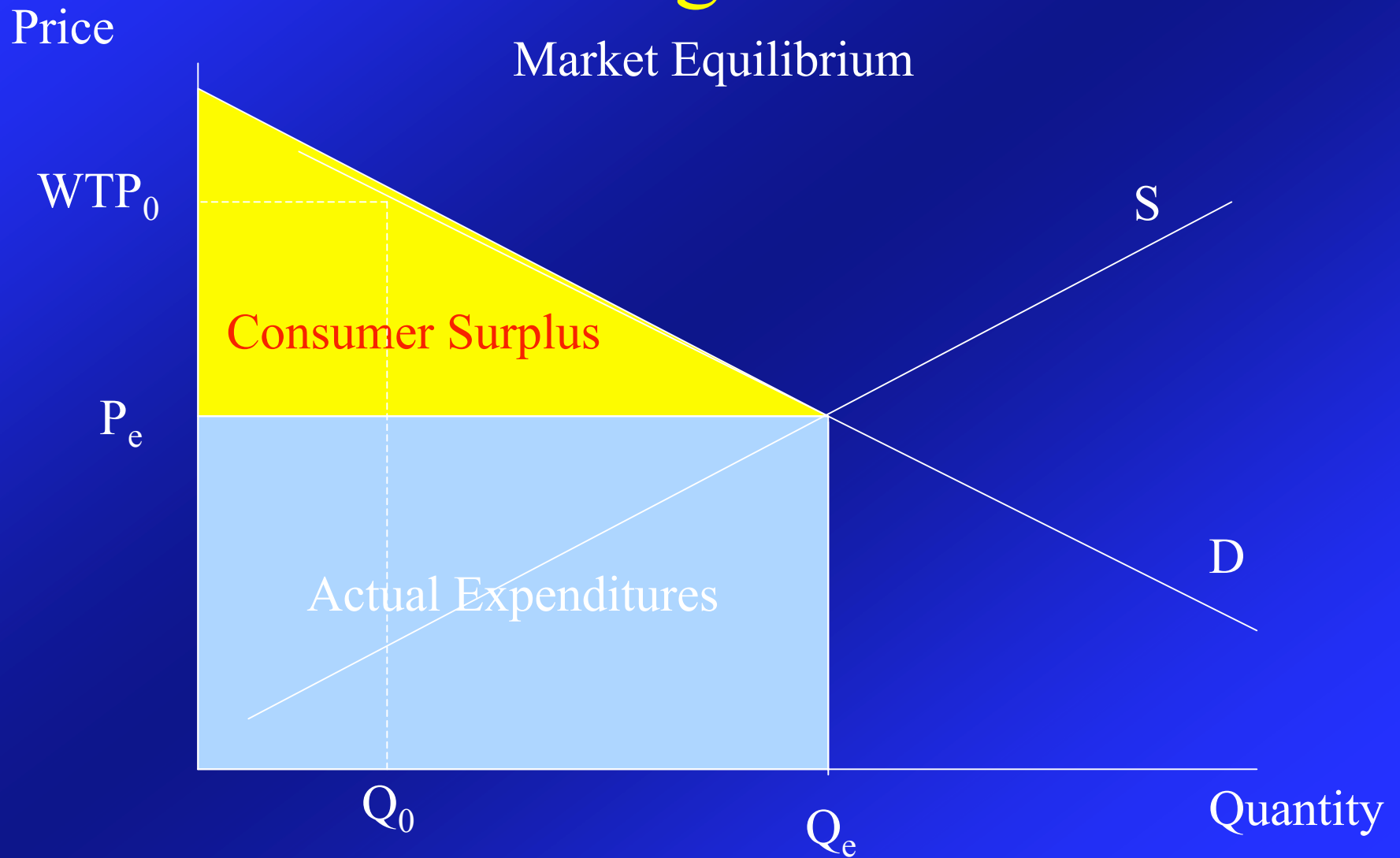
Measuring Benefits



Measuring Benefits

- Difference between WTP and actual expenditures is Consumer Surplus CS.
- WTP is the theoretically correct measure, and CS is only an approximation, but widely used in empirical studies

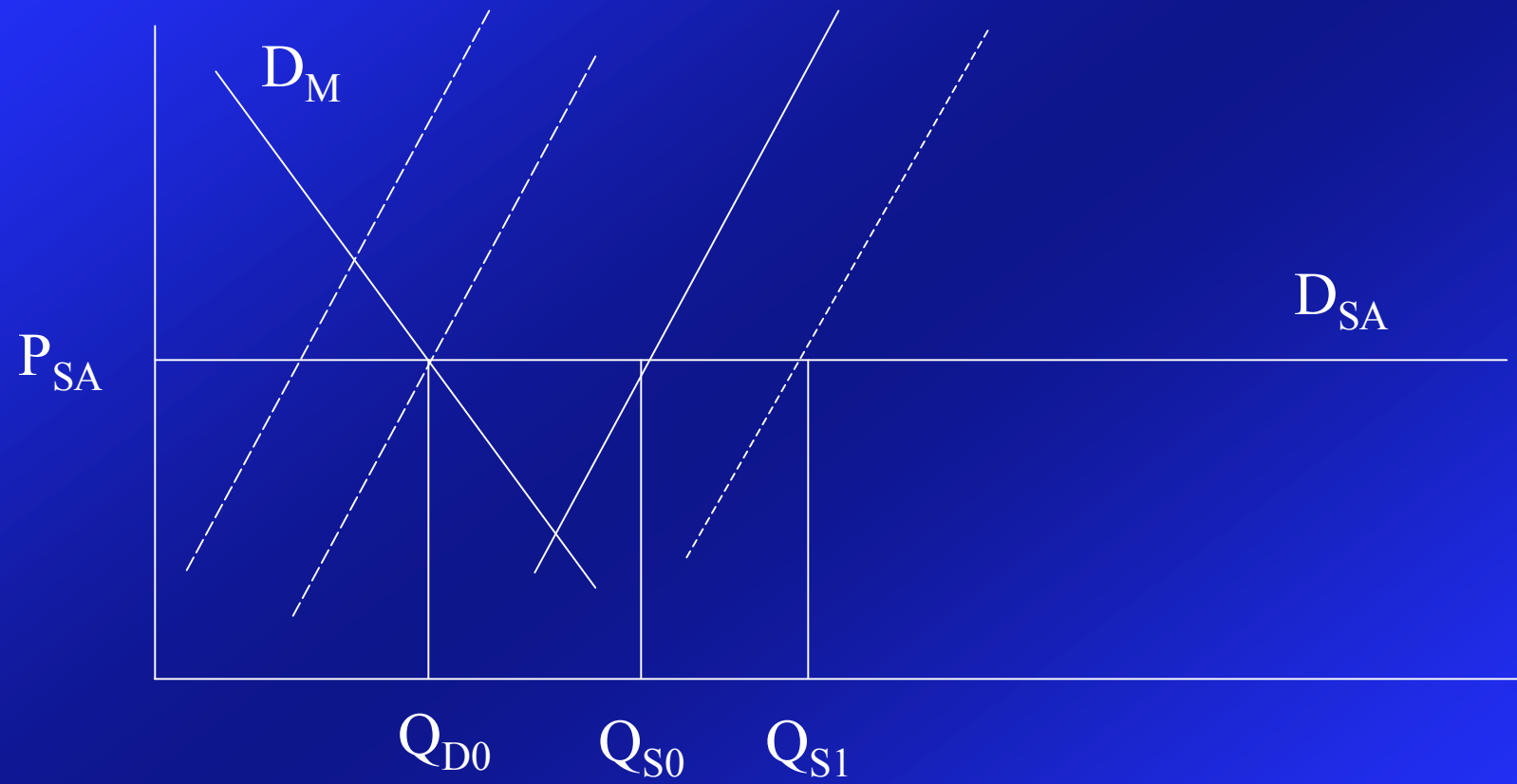
Measuring Benefits



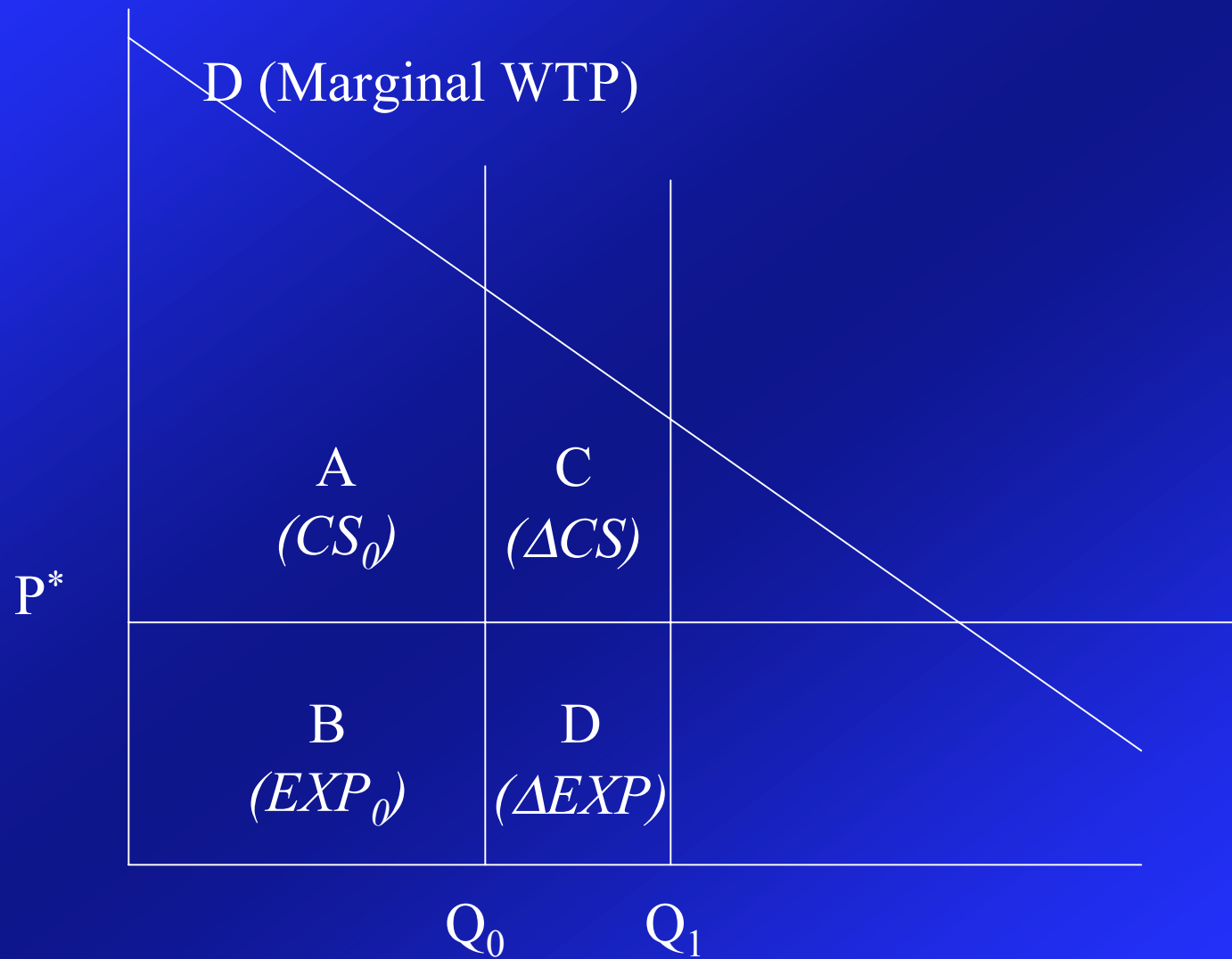
Measuring Benefits

- WTP and CS do not change if market price does not change
 - Perfectly elastic demand curve

Mozambique market for electricity



Local Market for Cable Connections

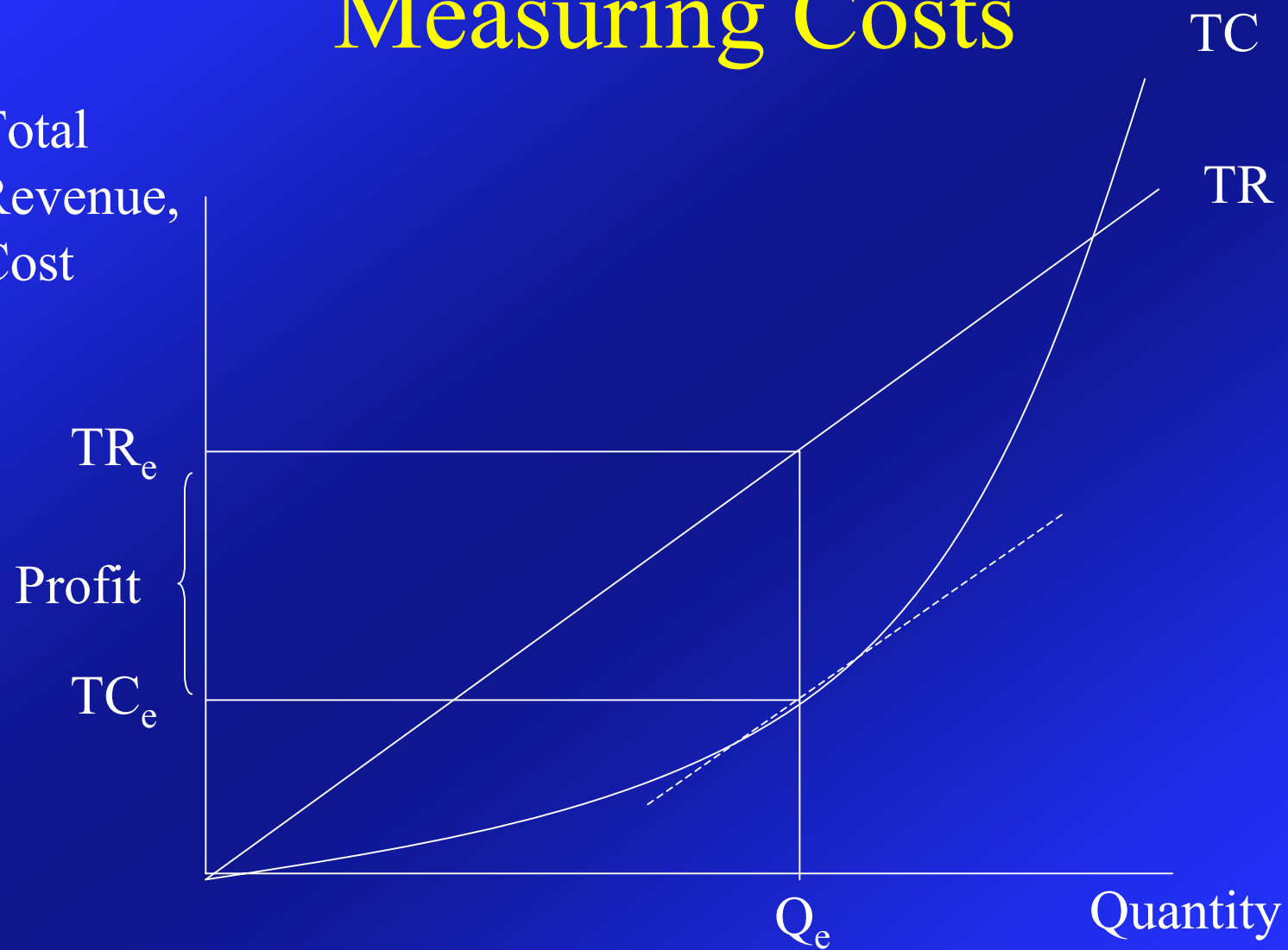


Measuring Costs

- Area under supply curve (MC curve)
- Analogous to consumer, in market exchanges, producers' revenues are greater than minimum necessary to meet their production costs
- Assumptions:
 - Perfect competition
 - Profit-maximization ($MR = MC$)

Measuring Costs

Total
Revenue,
Cost



Measuring Costs



Measuring Benefits in Secondary markets

- Only measure benefits in secondary markets if the project causes prices in secondary markets to change (by a significant amount)

Social Surplus

- Social Surplus = Consumer surplus + Producer Surplus
- Social surplus is maximized in competitive markets
 - *Assuming no market imperfections!*