MBA 606

TOPICS FOR DISCUSSION

1. Determinants of demand — List determinants & How they affect
2. Determinants of supply
3. Arc price elasticity of demand and point price elasticity of demand — formulas & explain ≥1 < elastic
4. Determinants of price elasticity of demand — (5) ① varies along demand curve → know what where ② others
5. The relation between price elasticity of demand and total revenue — simple table price ↑ demand ↑, ↓ price ↑ " " ; elastic, unitary, inelastic; from book
6. Cross price elasticity of demand, income elasticity of demand, and advertising elasticity of demand — + = substitute, − = complement; + = normal, luxury, − = inferior; %ΔQ / %Δ adv exp.
7. Marginal rate of substitution → * draw diagram & explain MR = slope of ind curve & explain How much Y you're up to get additional X & still get same utility
8. Properties of indifference curves — List 4 and Prove Draw diagram →
9. Utility maximization using indifference curve analysis — Draw indifference map, budg tangent is @ many
10. Optimal pricing policy — $P^* = \frac{MC}{1+\frac{1}{E_D}}$ plug formula, pick MC & elasticity, calculate optimal price using values.
11. Direct methods to estimate demand — 3 methods → explanations of each (survey, clinics, market study - microeconom & series of ΔP)
12. Problems in regression analysis — explain issues in regression Analysis (Heteroscedasticity) No need for numerical example.
13. Production function — Define: schedule that shows max output (output) Draw diagram (Handout) plot diagram
14. The law of diminishing returns — expand 1 input w/ other fix, reach point where start to show diagram (inflexion point of prod funct) or show TP & MP diagram
15. Marginal rate of technical substitution — Same as #7 — Find formula. Slope of isoquant ΔK/ΔL. Rate can sub 1 input & keep out fix
16. The optimal combination of inputs as illustrated in an isoquant-isocost diagram — Similar to max utility. Draw series of isoquants. Isocost tangent to isoquant = max output @ TC.
17. Point output elasticity — Cob Douglas production function. Explain How to calc %Δ out/%Δ in. >1 = increasing returns. =1 constant returns <1 decreasing returns.
18. Relation between AVC and AP — $AVC = \frac{TVC}{Q} = \frac{P_L \cdot L}{Q} = \frac{P_L}{Q/L} = \frac{P_L}{AP}$ Therefore inverse relationship
19. Relation between MC and MP — $MC = \frac{\Delta TVC}{\Delta Q} = \frac{P_L \Delta L}{\Delta Q} = \frac{P_L}{\frac{\Delta Q}{\Delta L}} = \frac{P_L}{MP}$ Derive from above
20. Long-run average cost curve — draw diagram, explain 4-5 scales. lowest unit cost per variable levels of output
21. Economies of scale — List & discuss ④ Size & specialization of labor, qty discounts, etc...
22. Elasticity of cost with respect to output — EMER if $E_C$ < %Δ out, have econ of scale; if > 1, then diseconomy of scale
23. Limitations of cost-volume-profit analysis (breakeven analysis) — define & interpret ② Problems: TR assumes linear TR & TC. implies P is const & can sell as much as wanted. But eventually need P↓ for Q↑. ③ Assume cst AVC, but MC = $P_L$/AP but AP ↑ then ↓. both might work for small range in output
24. Degree of operating leverage — Define %ΔP/%ΔQ express $\frac{\Delta \pi}{\Delta Q} \cdot \frac{Q}{\pi}$
25. Short-run supply curve of a perfectly competitive firm — MC above AVC is relevant if P ≥ VC, don't produce. Draw diagram, show c s
26. Consumer surplus, producer surplus, and deadweight loss — PS. if disequ price show DWL
27. The kinked demand curve as an explanation of an oligopolist's behaviour — explain, rank P↑ no one follows P↓ everyone matches
28. Price-output determination for a cartel — only when MC3 price would change
29. Price leadership in oligopoly — No diagram required Expl price leadership is informal form of collusion. leader of P & other firms follow could be low cost leader dominant firm or barometric
30. Price discrimination — firm charging diff prices in separate markets because of costs. 2 diags. MR1, MR2 & 3D should How to allocate prod/market or: ↑ MC = EMR Allocate to 2 others where MR is the same
31. Relation between markup pricing and marginal pricing
32. Optimal pricing for joint products produced in fixed proportions — Either draw w/ or w/o excess by product. Explain diagram, make reference to it

Final [1-32]

EMC determines price diagram (3) FP, FB & cartel explain what cartel is marginal pricing MR = MC markup pricing take MC & add markup No diagram

PPIPPEO
PPPTGEO
CSNIT

1) Determinants of Demand (PPIPPEO)
- Price of commodity
- Price of related commodities (+substitutes, -complements)
- Disposable income (+normal, -inferior goods)
- Population
- Tasts & preferences
- Expectations of future price & income
- Other

2) Determinants of Supply (PPPTGEO)
- Price of commodity
- Price of related commodities (-subs, + for complements)
- Cost of factors of production
- Technology
- Goals of the firm.
- Expectations of entrants in the market
- Other (weather, taxes/subsidies, etc...)

3) Point elasticity of Demand: measures responsiveness of Qty demanded to Δ Price, all other variables held constant

Point

$$\varepsilon_p = \frac{\partial Q}{\partial P} \cdot \frac{P}{Q}$$

Arc (range)

$$E_p = \frac{\Delta Q}{\Delta P}\left(\frac{P_1 + P_2}{Q_1 + Q_2}\right)$$

$|\varepsilon_p| > 1$ : elastic
$|\varepsilon_p| = 1$ : unitary elastic
$|\varepsilon_p| < 1$ : inelastic

④ Determinants of point elasticity (CSN IT).
- Varies along demand curve
- Availability of substitutes = elastic
- Narrowly defined product = elastic
- % income required to purchase
- Time to adjust

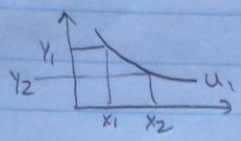
⑤ Relationship btw $E_d$ & TR.

| E | Elasticity | P | TR. |
|---|---|---|---|
| $\|E\|>1$ | Elastic | ↑ | ↓ |
| $\|E\|=1$ | unitary | P↑ | ↔ |
| $\|E\|<1$ | inelastic | P↑ | ↑ |

⑥ Cross price elasticity of demand: Responsiveness of demand for a product to changes in price of another
- $\varepsilon_{px}<\emptyset$ : complements
- $\varepsilon_{px}=\emptyset$ : demand for both are independent
- $\varepsilon_{px}>\emptyset$ : Substitutes

Income elasticity: Responsiveness of demand to Δ income all other factors held cot
- $\varepsilon_I<\emptyset$ : inferior goods
- $\varepsilon_I=\emptyset$ : non cyclical
- $\varepsilon_I>\emptyset$ : normal cyclical goods.

⑦ Marginal Rate of Substitution. changes in consumption of Y (goods) required to offset a given change in the consumption of X (service) if the consumer's overall level of utility is to remain constant




⑧ Properties of indifference curve.

Assumptions

I) Consumer is able to rank his preferences by utility

II) Consistency. if A=B & B=C then A=C.

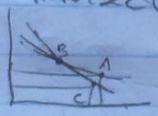
III) Non Station

IV) Diminishing absolute of marginal rate of substitution

Properties

ⓐ Higher indifference curves are preferred

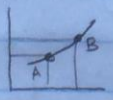
ⓑ Donot Intersect A>C




A=B, B=C

∴ A=C ① & ④

ⓒ Ind. curves slope downwards




B=A

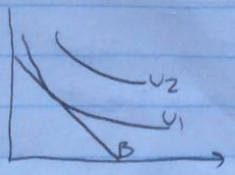
but B>A

ⓓ Bend inwards towards origin

because ③

⑨ Utility maximization using ind curve analysis.

$$\frac{MU_y}{P_y} = \frac{MU_x}{P_x}$$




Econ Dpt

(10) optimal pricing policy

$P^* = MC \cdot \frac{E_p}{E_p + 1}$ or markup $= -\left[\frac{1}{E_p + 1}\right]$

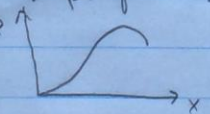
(11) Direct methods to estimate demand. (SSE)

(a) Interviews & surveys
(b) Simulated market situations
(c) Market Experiments.

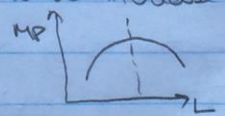
(12) Problems in Regression analysis. (MSI HMS).

(a) Measurement errors
(b) Specification errors
(c) Identification problems ex look for shift in eq. pt but curve also shifting
(d) Multicolinearity: 2 independant variables are related
(e) Heteroskedasticity: inconsistent Std. Dev across range
(f) Autocorrelation: residuals are related on a time basis.

(13) Production function: Schedule, table or equation showing max output that can be produced w/ specified set of inputs, given existing technology



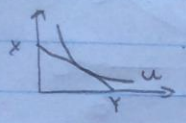

(14) Law of diminishing returns: as the amount of one input is increased, other inputs held cst, a point is reached where increase in TP get smaller (MP starts to decline).




(15) Marginal rate of technical substitution: Amount of an input factor that must be substituted for 1 unit of another input factor to maintain cst output

Econ 66

(16) Optimal combination of inputs in Isoquant-Isocost diagram




(19) Point output Elasticity

$\varepsilon_a = \frac{\%\text{ chng output}}{\%\text{ chng input}}$

$\varepsilon_Q > 1$ : increasing return to scale
$\varepsilon_Q = 1$ : constant return to scale
$\varepsilon_Q < 1$ : decreasing return to scale

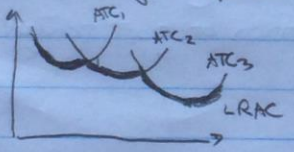
(18) Relation btw AVC & AP.

$$AVC = \frac{\Sigma VC}{Q} = \frac{P \cdot X}{Q} = \frac{P}{Q/X} = \frac{P}{AP}.$$

(17) Relation btw MC & MP

$$MC = \frac{\partial TC}{\partial Q} = P_X \frac{\partial X}{\partial Q} = \frac{P_X}{\partial Q / \partial X} = \frac{P_X}{MP}$$

(20) Long Run cost curves: Gives lowest cost per unit (ATC) associated w any given level of output when all inputs are variable




(21) Economies of scale

- Division & specialization of labor
- Qualitative & Quantitative change in capital
- Cost to aquire & operate larger equipment is usually proportionally less
- Qty discounts on input

(22) Elasticity of costs w respect to output

$$\varepsilon_C = \frac{\%\Delta TC}{\%\Delta Q} = \frac{\partial TC}{\partial Q} \frac{Q}{TC}$$

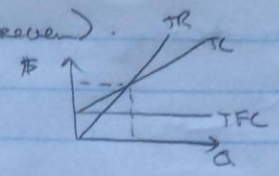
$\varepsilon_C < 1$ Economies of scale $\uparrow$
$\varepsilon_C = 1$ No economies of scale
$\varepsilon_C > 1$ Diseconomies of scale

Econ Def

(23) Limitation of cost volume analysis (breakeven).

ⓐ Assume price remains cst

ⓑ Assume AVC is cst but AVC = $\frac{P_L}{AP}$

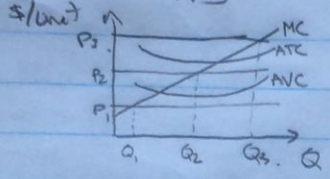



(24) Degree of operating leverage: % change in profit from 1% chng in output

$$DOL = \frac{\Delta\pi}{\Delta Q} \cdot \frac{Q}{\pi} = \frac{(P-AVC)\Delta Q}{\Delta Q} \cdot \frac{Q}{\pi} = \frac{\pi + TFC}{\pi}$$

$\pi = P \cdot Q - AVC \cdot Q - TFC \Rightarrow \pi + TFC = \overbrace{(P-AVC)Q}$

(25) Short run supply curve of perfect competitive firm

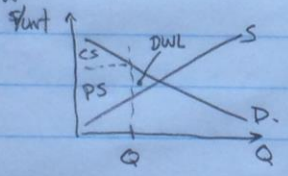



Produce unless MC ≤ AVC. (P1).

(26) CS: Diff btw what customer is willing & Actually pays

PS: Diff btw amnt pd to producer & price they are willing to sell product

DWL: Diff in surpluses as result of market distortion or govt policy

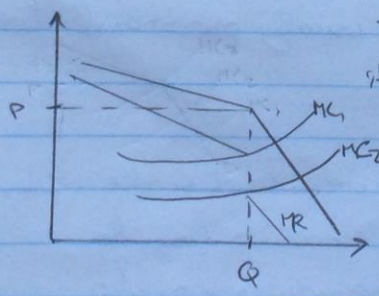



(27) Kinked demand curve in oligopoly: diff slope for P↑ than for P↓

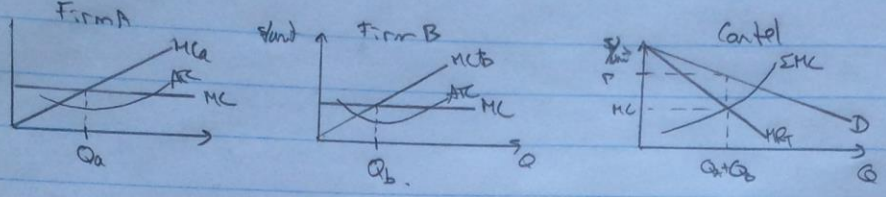
(P523)

if P↑, other firms do not follow

if P↓, other firms match decrease



(28) Price output determination for cartel



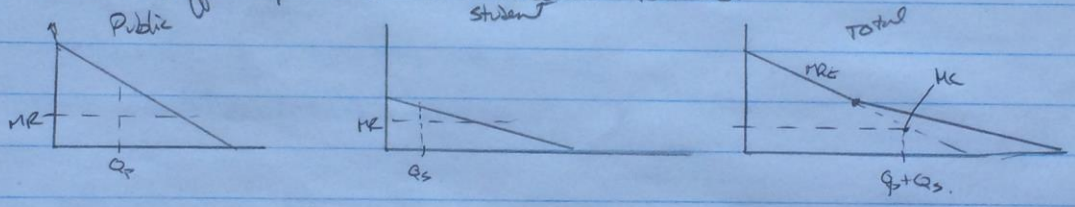

Project $MC_x = \Sigma MC_{max}$ $MC_b$. to find $Q_a$ & $Q_b$.

(29) Price leadership oligopoly: Firm establishes itself as a leader in the industry & other firms accept & follow its pricing policies. Form of collusion

3 Types of Oligopoly.

- Dominant Firm
- Cost leader
- Barometric

(30) Price Discrimination: Firm sells products in different markets @ different prices when diff in prices is not attributable to cost




Let $MR_x = MC_x$, then let $MR_a = MR_b = [MR_x = MC_x]$, derive $Q_a$ & $Q_b$ from $D_a$ & $D_b$.

(5) Relation btwn MU & Marginal pricing

$$MR = \frac{\partial TR}{\partial Q} = \frac{\partial (P \times Q)}{\partial Q} = P \cdot \frac{\partial Q}{\partial Q} + Q \frac{\partial P}{\partial Q} = P + Q \frac{\partial P}{\partial Q}\left(\frac{P}{P}\right) = P\left(1 + \frac{Q}{P}\frac{\partial P}{\partial Q}\right) = P\left(1 + \frac{1}{E}\right).$$

$\pi_{max}$ when $MR = MC$, or $MC = P\left(1 + \frac{1}{E}\right) \Rightarrow P = \frac{MC}{\left(1 + \frac{1}{E}\right)} = MC\left(\frac{E}{E+1}\right)$.

$$\text{Markup} = \frac{P - MC}{MC} = \frac{MC\left(\frac{E}{E+1}\right) - MC}{MC} = \frac{\frac{E}{E+1} - 1}{1} = \frac{E}{E+1} - \frac{(E+1)}{(E+1)} = \boxed{\frac{-1}{E+1} = MU}$$