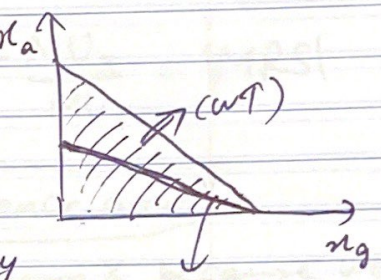
Midterm-02 Review Content

→ Consumer Theory: theory of consumer behaviour at individual level
- What can the agent purchase?
- What does the agent want to purchase?
- What do their choices reveal?

→ **Budget Sets** → NOT related to consumer's preferences
↓ → determined only by their prices/wealth
CONTAINS all those bundles that an agent can purchase

p_g = price of good
p_a = price of another
x_g = quantity of
x_a = quantity of another

$$p_g x_g + p_a x_a \leq w \quad \{x_g \geq 0 \text{ & } x_a \geq 0\}$$



⇒ If w↑, curve will move out.

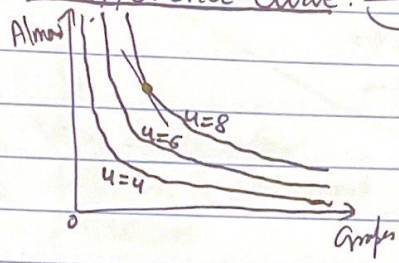
→ Agent's preferences describe how they rank different bundles of good
often satisfies: ① Monotonicity: More is better
② Transitivity: A pref over B, B pref. over C, then A pref over C.
③ Completeness: I can give an answer

⇒ Utility function indicates how the agent values a bundle of goods

A pref over B ⇒ Utility(A) > Utility(B)

→ Marginal Utility: additional benefit to agent by getting 1 add.
- by default assume that marginal utility is diminishing in a good or service.
- generally may decrease slowly, or very quickly.

→ Indifference Curve: → monotonicity: more is better
→ bowed inward (diminishing MU)



$MU_X \cdot \Delta X = MU_Y(-\Delta Y)$
value of X | value of Y

⇒ Marginal Rate of Substitution (MRS)
↳ rate at which you trade good X for good Y to have same utility

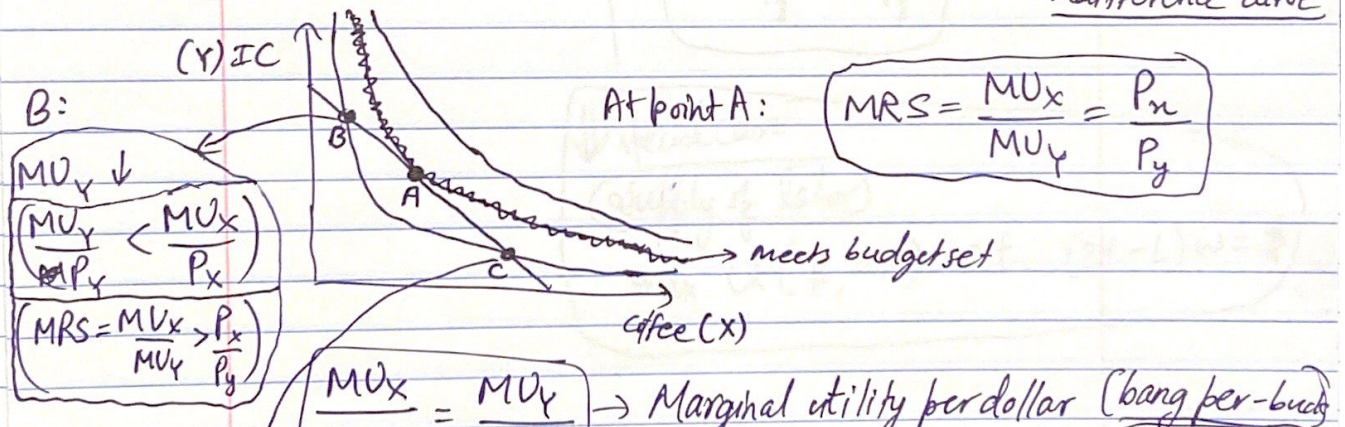
→ MU depend on bundle!!

→ $\boxed{MRS = \frac{MU_X}{MU_Y}} \Rightarrow \frac{\Delta Y}{\Delta X} = -\frac{MU_X}{MU_Y} = |MRS|$

$\boxed{MRS = -(\text{slope of indifference curve})}$

⇒ MRS is decreasing as we recieve more X because we are willing to give up more and more X. for same Y.

→ Consumer Problem: What can agent choose? Depends on Prices/Wealth
+ What does agent want? Preferences/utility
What does the agent chose? Bundles on highest indifference curve



At point A: $\boxed{MRS = \frac{MU_X}{MU_Y} = \frac{P_x}{P_y}}$

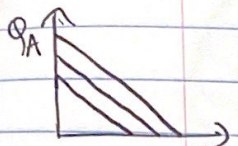
$\boxed{\frac{MU_X}{P_x} = \frac{MU_Y}{P_y}}$ → Marginal utility per dollar (bang per-buck) is equal across all goods.

C: $\boxed{MU_X \downarrow, \left(\frac{MU_Y}{P_Y} > \frac{MU_X}{P_X}\right), \text{MRS is lower than price ratio}}$

⇒ Perfect Substitutes: $u(X,Y) = aX + bY$

⇒ utility function is linear

→ Indifference curves are straight lines

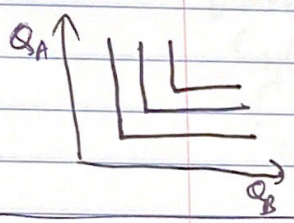


Very particular solution to consumer's problem

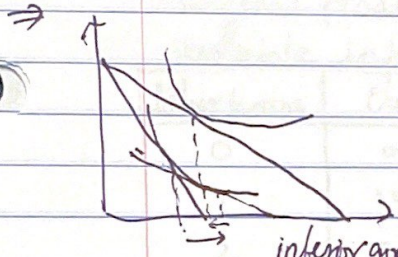
→ ~~Bang for buck~~

⇒ Perfect Complements: $u(X,Y) = \min\{aX, bY\}$

If $(aX > bY)$, getting more of X doesn't improve your utility.



⇒



inferior good (-ve income elas)

~~(Midterm #01)~~

~~END OF LECTURES~~ ~~1 to 10~~

midterm 2

material continues...

$$y = \frac{I}{p_y} - \frac{p_x}{p_y}x$$ → budget constraint

⇓ special case

Supply of labor

max $u(\$, NWH)$ s.t. $(24 - L)w = \$$

⇒ Conditions of Perfect Competition:

- many firms (each with no market power) [PRICE TAKERS]
- perfect information
- No externalities
- everyone making identical product
- No barrier to enter/exit market

→ firms we are studying: Competitive firms
↳ looking across market in terms of equilibria.
[NO ECONOMIC PROFITS], accounting profits might be present.

→ Marginal Productivity of Variable input

Labor hours	Output	MPL
0	0	
1	10	10
2	22	12
3	32	10
4	40	8

→ Marginal Cost from marginal product

Labor	Output	Marg. product	Mar. cost
0	0		
1	10	10	10/10
2	22	12	10/12
3	32	10	10/10
4	40	8	10/8

→ Produce at MC=MR

→ for price taking firm market price is MR [NOT for Monopolist]

→ perfectly competitive firm, profits max. at P=MR=MC [because price taker]

→ Total Cost (TC) = Fixed Cost + Variable costs

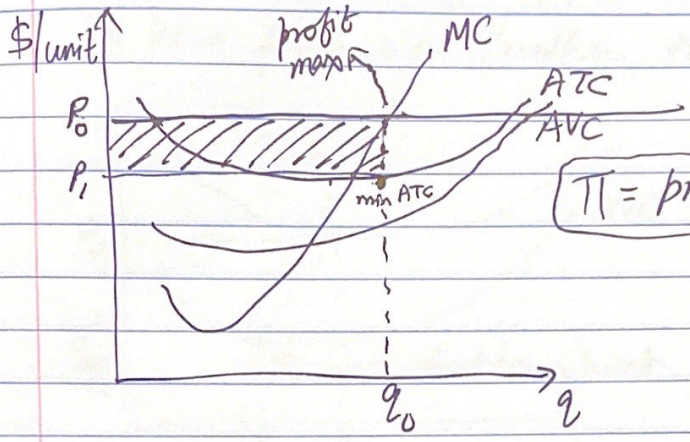
$ATC = AFC + AVC$

$MC = \frac{\Delta TC}{\Delta q}$

Implicit costs = Opportunity costs

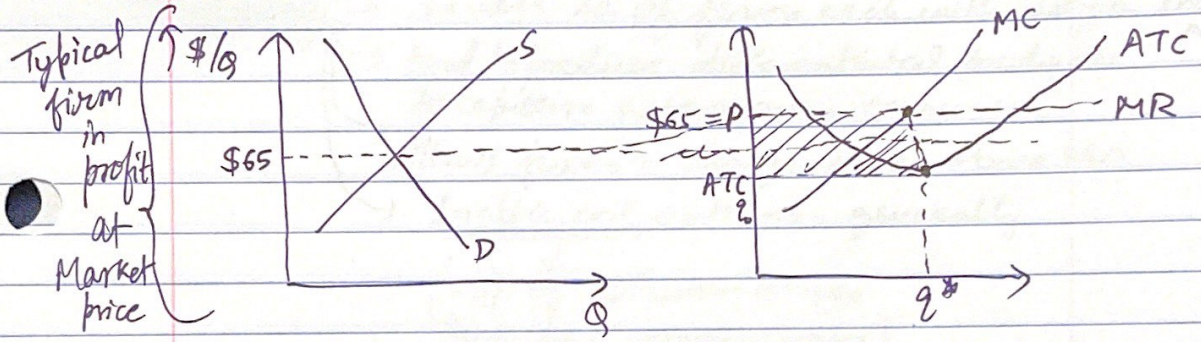
Accounting Costs ⇒ Explicit costs

Economic costs = Explicit + Implicit costs

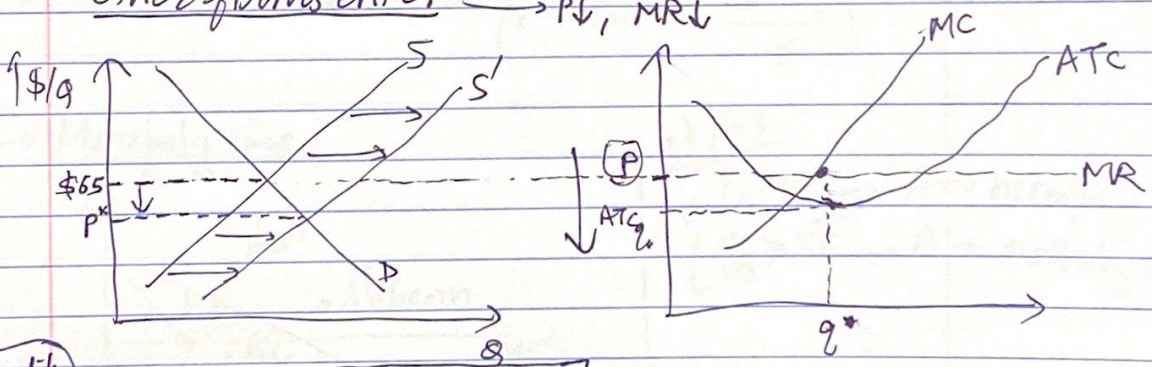


Π = profit = $q_0(P_0 - P_1)$

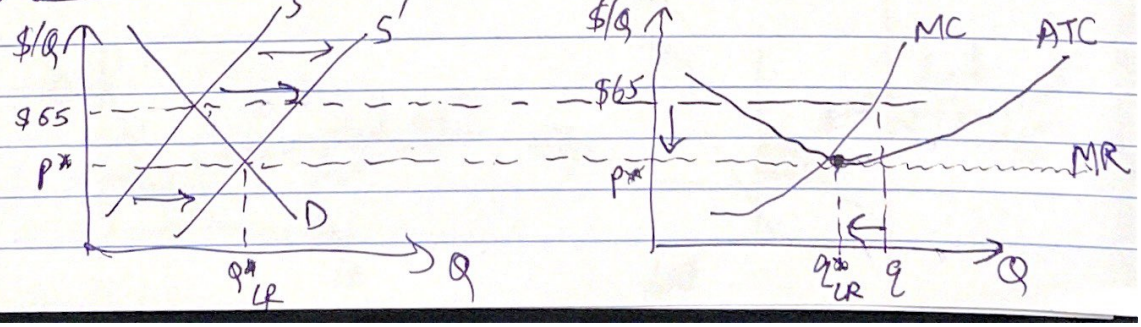
Profits in one industry ⇒ opp. costs in another



Other firms enter ⟶ supply shift right ⟶ P↓, MR↓

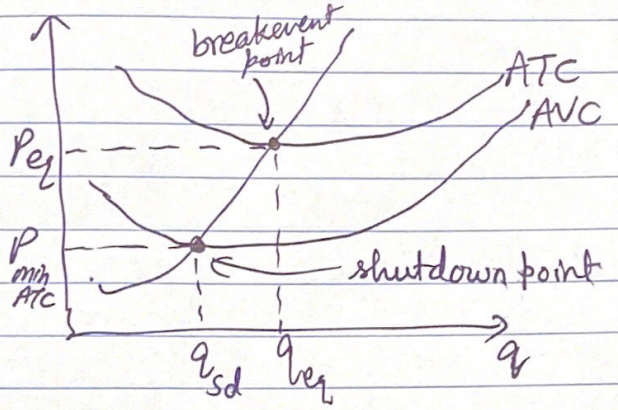


Econ profits = 0 until [minATC = MC = P = MR]



$(P < \min ATC)$

→ If price falls even further, then firm shuts down!

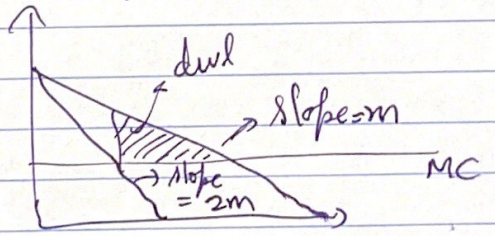


because
$TR < TVC$
⇒ losses greater than FC.

→ Oligopoly → small no. of firms each with large market power
- → tend to produce differentiated products to capitalise heterogenous consumers.
- → Allows firms to charge prices above MC.
- → Inefficient outcomes generally
  - (opp. of collusion arises
  - ↳ market concentration ↑

→ Cournot competition $\left(P = 10 - \frac{q_A + q_B}{5}\right)$

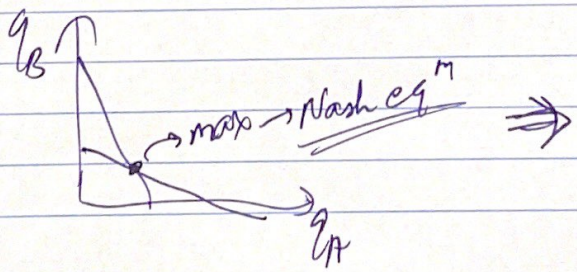
→ Monopoly case



at $P = 3$

$q_B = 0 \rightarrow A \rightarrow$ monopoly

$q_B \geq 35 \rightarrow A \rightarrow$ nothing!!



⇒