



**Bundling** : Praticre of selling two or more products as a package .

objective : To obtain higher revenue or higher profit .

Question : Under which conditions that bundling is more profitable than selling the two products separately?

3 options

① Selling the two products separately .

② Use "Pure Bundling" : offers the two products as a package ONLY!  
(CANNOT BUY EACH SEPARATELY)

③ Use "Mixed Bundling" : selling the two or more products both as "a package" and "individually".

TABLE 1.

2 products : Hunger Games Vs Life of Pi

|           | Hunger Games  | Life of Pi   |            |
|-----------|---------------|--------------|------------|
| THEATER 1 | 12,000 €<br>✓ | 3,000 €<br>^ | → 15,000 € |
| THEATER 2 | 10,000 €      | 4,000 €      | → 14,000 € |

NUMBERS IN THE CELLS REPORT WTP BY EACH THEATER FOR EACH MOVIE

OPTION 1 sell each movie separately ,

$$P_H = 14,000 \text{ €} \quad \left( \text{to make both purchase each movie} \right)$$

$$P_P = 3,000 \text{ €}$$

$$\text{Total revenue} = 14,000 \cdot 2 + 3,000 \cdot 2 = 26,000 \text{ €}$$

OPTION 2 Pure Bundling

$$P_B = \text{Bundled price} = 14,000 \text{ €} \quad (\text{To make both buy})$$

the package)

$$\text{Total revenue} = 14,000 \cdot 2 = 28,000 \text{ €}$$

conclusion Bundling gives higher total revenue than selling separately.

Q: What factor drives the result above?

A: consider another case to compare w/ the case above.

|     | Hunger Games | Life of Pi |
|-----|--------------|------------|
| T ① | 12,000 €     | 4,000 €    |
| T ② | 10,000 €     | 3,000 €    |

TABLE 2

→ OPTION 1 selling separately

$$P_H = 10,000$$

$$P_P = 3,000$$

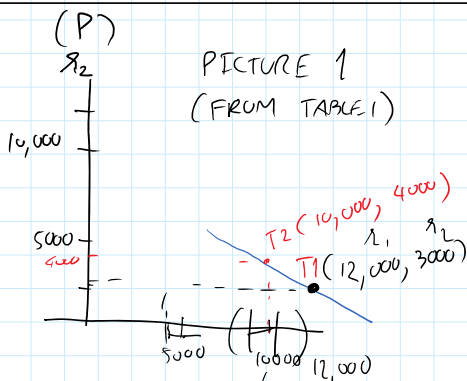
$$\text{Total Revenue} = 10,000 \cdot 2 + 3,000 \cdot 2 = 26,000 \text{ €}$$

→ OPTION 2 Pure Bundling.

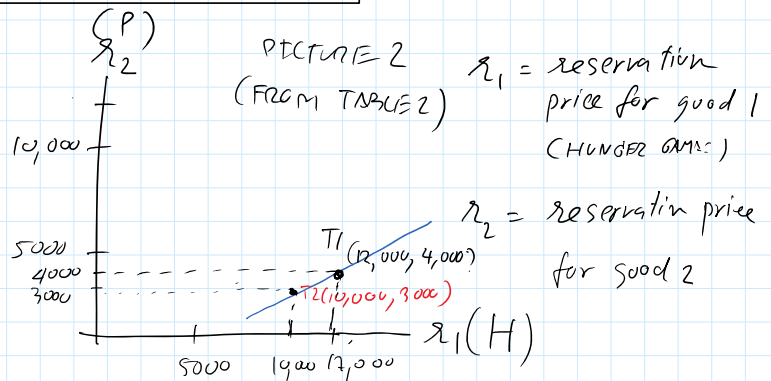
$$P_B = 13,000 \text{ €}$$

$$\text{total revenue} = 13,000 \cdot 2 = 26,000 \text{ €}$$

Conclusion: Selling separately and Bundling give the same total revenue.



Demands are negatively correlated: The theatre willing to pay the most for HGs is willing to pay the least for Life of Pi, vice versa.



Demands are positively correlated: The theatre willing to pay the most for HGs is also willing to pay the most for Life of Pi, vice versa.

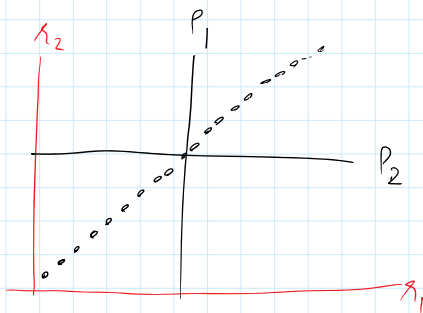
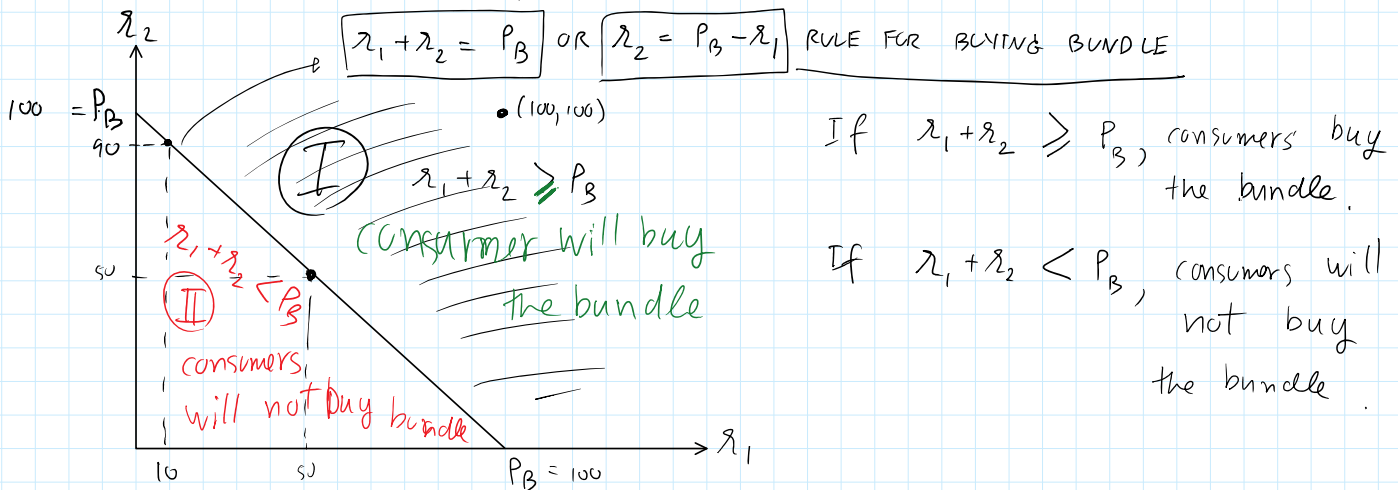
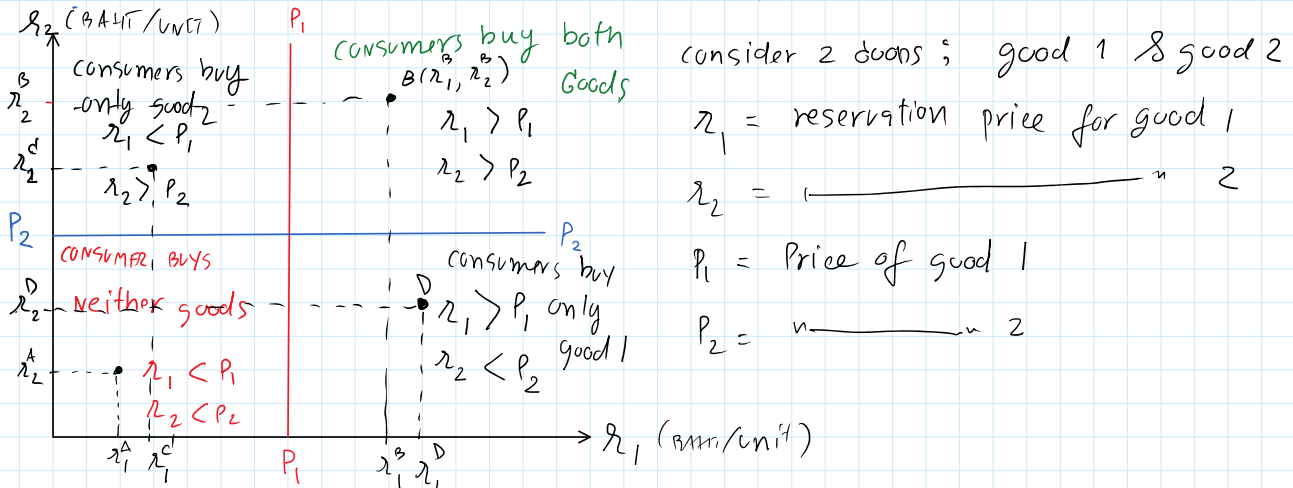
In other words, Relative valuations of the two films are REVERSED!

## SUMMARY

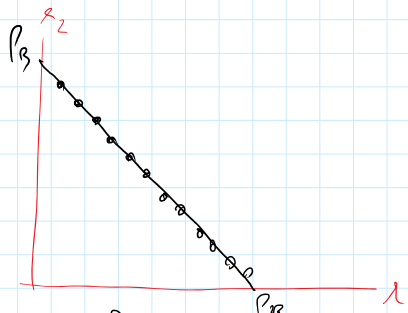
Bundling gives higher TR than Selling individually

IF Demands are NEGATIVELY correlated.

LET'S EXPLORE MORE ON RESERVATION PRICE SPACE ...



Demands are positively correlated, Bundling does not create any extra revenue



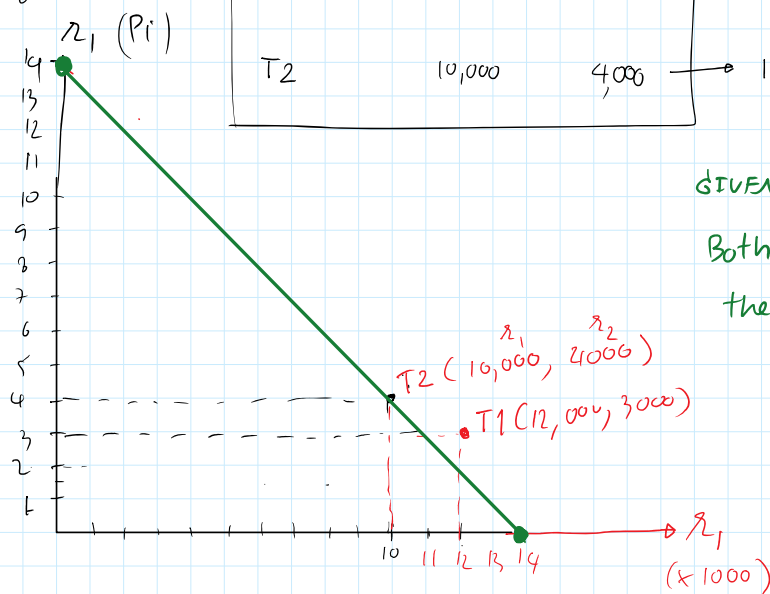
Demands are negatively correlated,  $TR_{\text{BUNDLING}} > TR_{\text{selling separately}}$

Table 1 again...

|    | HGS    | P1   | $r_1 + r_2$ |
|----|--------|------|-------------|
| T1 | 12,000 | 3000 | 15,000      |

Table 1 again...

|    | HGS    | Pi    | $\pi_1 + \pi_2$ |
|----|--------|-------|-----------------|
| T1 | 12,000 | 3,000 | 15,000          |
| T2 | 10,000 | 4,000 | 14,000          |

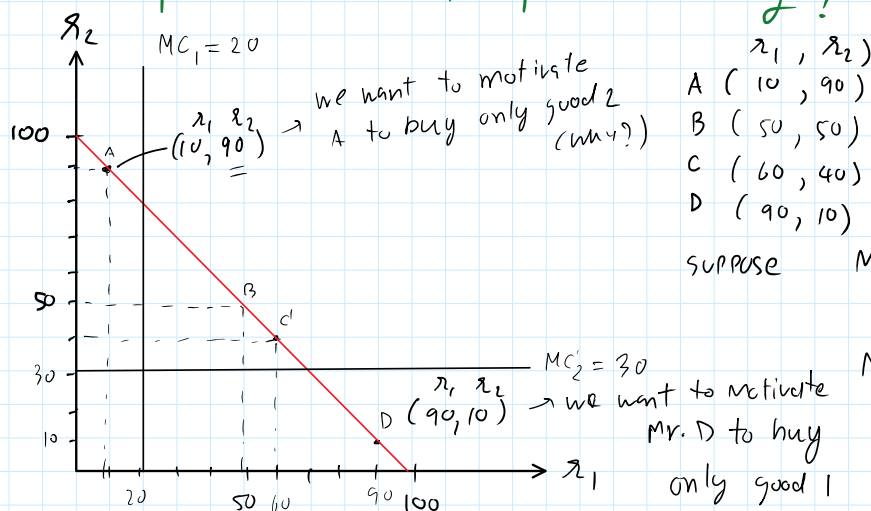


GIVEN  $P_B = 14,000$ ,

Both T1 and T2 will buy the package as  $\pi_1 + \pi_2 \geq P_B$  for them!

Next, Let's consider Mixed Bundling Vs Pure Bundling...

Q: Under which conditions mixed bundling is more profitable than pure bundling?



- $\pi_1, \pi_2$
- A (10, 90)
  - B (50, 50)
  - C (60, 40)
  - D (90, 10)

suppose  $MC_1$  = marginal cost of producing good 1 = 20 per unit  
 $MC_2$  = marginal cost of producing good 2 = 30 per unit

OPTION 1 selling separately ( $P_1 = ?$ ,  $P_2 = ?$ )

consider good 1:

If  $P_1 = 40$ , B, C, D will buy ( $Q = 3$ )

$$\pi_1 = (P_1 - MC_1) \cdot Q_1 = (40 - 20) \cdot 3 = 20 \cdot 3 = 60$$

If  $P_1^* = 50$ , B, C, D will buy ( $Q = 3$ )

$$\pi_1 = (P_1 - MC_1) \cdot Q_1 = (50 - 20) \cdot 3 = 30 \cdot 3 = 90$$

If  $P_1 = 60$ , C and D will buy ( $Q = 2$ )

$$\pi_1 = (P_1 - MC_1) \cdot Q_1 = (60 - 20) \cdot 2 = 40 \cdot 2 = 80$$

If  $P_1 = 90$ , only D will buy ( $Q = 1$ )

If  $P_4 = 90$ , only D will buy ( $Q_4 = 1$ )

$$\pi_1 = (P_1 - MC_1) Q_1 = (90 - 20) \cdot 1 = 70.$$

consider good 2

If  $P_2 = 90$ , only A will buy ( $Q_2 = 1$ )

$$\pi_2 = (P_2 - MC_2) Q_2 = (90 - 30) \cdot 2 = 60$$

verify at home for

$$P_2 = 40, P_2 = 50$$

So, w/  $P_1^* = 60, P_2^* = 90, \pi = \pi_1 + \pi_2 = 90 + 60 = \underline{\underline{150}}$

OPTION 2 PURE BUNDLING

$P_B = 100$ , A, B, C, D will buy ( $x_1 + x_2 = P_B$ )

$$Q_B = 4$$

$$\pi_B = [P_B - (MC_1 + MC_2)] \cdot Q_B = [100 - (20 + 30)] \cdot 4 = (100 - 50) \cdot 4 = 50 \cdot 4 = \underline{\underline{200}}.$$

OPTION 3 MIXED BUNDLING

$$P_B = ?, P_1 = ?, P_2 = ?$$

$$\begin{matrix} P_1 = 89.95 \\ P_2 = 89.95 \\ P_B = 100 \end{matrix} \quad * * *$$

|            |             |
|------------|-------------|
| $x_1, x_2$ |             |
| A (10, 90) | $MC_1 = 20$ |
| D (90, 10) | $MC_2 = 30$ |

(A) BUY BUNDLE?  $x_1 + x_2 = 100 = P_B = 100 \quad CS = 0$   
 BUY g1: NO  
 BUY g2:  $x_2 = 90 \quad P_2 = 89.95 \quad CS = 0.05$

(D) BUY BUNDLE:  $x_1 + x_2 = 100 = P_B = 100 \rightarrow CS = 0$   
 BUY g2: NO  
 BUY good 1:  $x_1 = 90 \quad P_1 = 89.95 \rightarrow CS = 0.05$

CHECK MR. B AND C : Why do they buy bundle?

### SUMMARY

|                    | $P_1$ | $P_2$ | $P_B$ | $\pi$   |
|--------------------|-------|-------|-------|---------|
| selling separately | 50    | 90    | —     | 150     |
| Pure Bundling      | —     | —     | 100   | 200     |
| Mixed Bundling     | 89.95 | 89.95 | 100   | 229.90* |

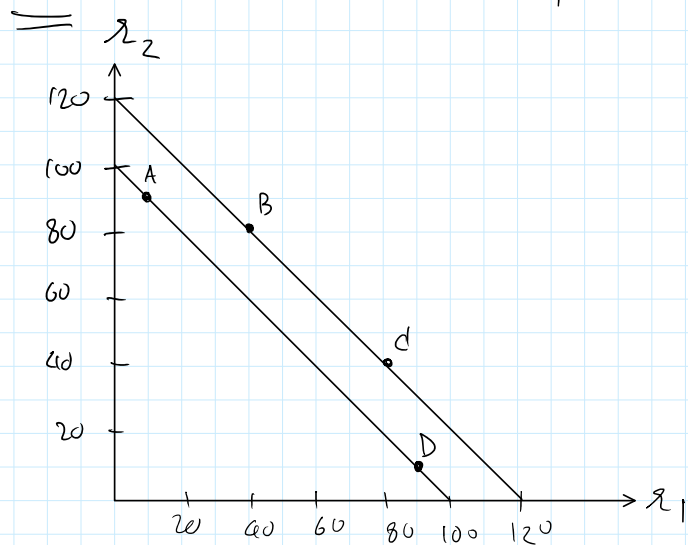
↓ verify this

A BUYS good 2  
D BUYS good 1  
B, C BUY BUNDLE

Mixed bundling is more profitable than Pure bundling  
When marginal costs of producing the two goods are **POSITIVE!**

you can check that if  $MC_1 = MC_2 = 0$ ,  $\pi_{\text{Mixed}} = \pi_{\text{Pure}}$

CASE : Demand are NOT perfectly negatively correlated.



consider  $x_1$ - $x_2$  space...

suppose  $MC_1 = MC_2 = 0$

A (10, 90)

B (40, 80)

C (80, 40)

D (90, 10)

selling separately

$P_1$   
80

$P_2$   
80

$P_B$   
—

$\pi$   
 $160 + 160 = 320$

pure bundling

—

—

100

$400 (= 100 \cdot 4)$

mixed bundling

90

90

120

$= 90 + 90 + 120 \cdot 2$   
 $= 420$ \*

(D)

(A)

(B, C)

Mixed bundling is still more profitable WHEN

- AND
- ① Demands are NOT perfectly negatively correlated
  - ②  $MC_1 = MC_2 = 0$ .



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## PRICING W/ MARKET POWER

### \* CAPTURING CONSUMER SURPLUS \*

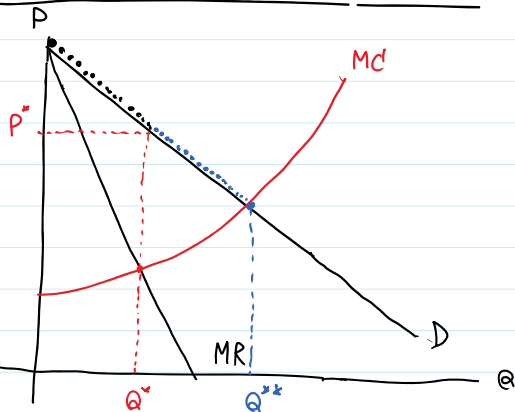
- PRICE DISCRIMINATION
  - 1<sup>ST</sup> DEGREE PD
  - 2<sup>ND</sup> DEGREE PD
  - 3<sup>RD</sup> DEGREE PD
- INTERTEMPORAL PD
- PEAK-LOAD PRICING
- TWO-PART TARIFF
- BUNDLING
  - PURE BUNDLING
  - MIXED BUNDLING
- TIE-IN-SALE

EE311 → EE4X1

EE411  
421  
431  
441  
451  
461  
471  
481  
491

V.S. SELL THE TWO GOODS SEPARATELY

### # CAPTURING CONSUMER SURPLUS



ALL PRICING STRATEGIES SHARE THE SAME GOAL:  
TO "CAPTURE" CONSUMER SURPLUS AND TRANSFER IT TO THE PRODUCERS.

W/ UNIFORM PRICING, FIRM CHARGES  $P^*$  AND PRODUCES  $Q^*$ .

HOWEVER, IF THE FIRM WERE TO KNOW EACH CONSUMER'S WELL-BEINGNESS TO PAY (WTP) OR RESERVATION PRICE, THE FIRM WILL CHARGE EACH BUYER ACCORDING TO HIS/HER WTP!

W/ THIS SCENARIO, THE FIRM CAN PRODUCE AND SELL  $Q = Q^*$

THIS CASE IS ABOUT = 1<sup>ST</sup> DEGREE PRICE DISCRIMINATION

- CHARGE DIFFERENT PRICES TO DIFFERENT CONSUMERS (FOR THE SAME GOOD) ACCORDING TO EACH CONSUMER'S RESERVATION PRICE.

1<sup>ST</sup> DEGREE PD WORKS WELL ONLY IF

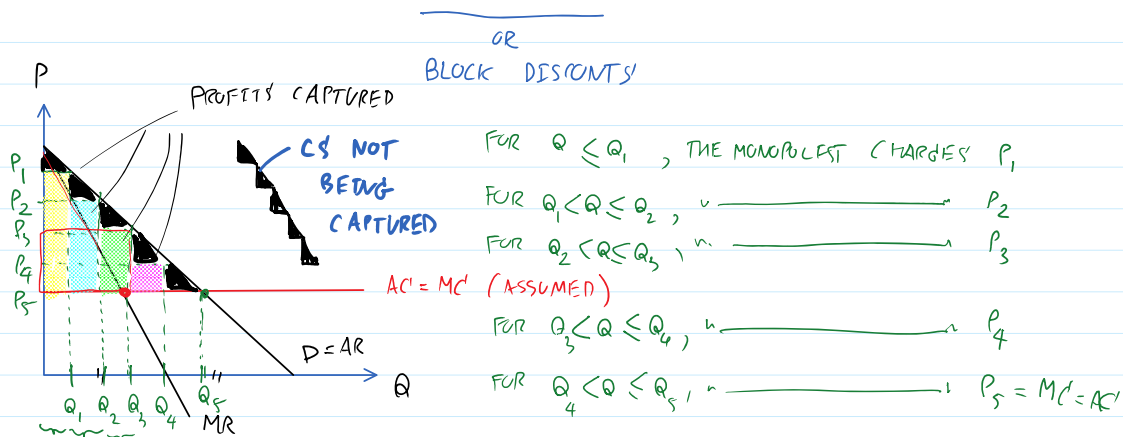
- (1) NO ARBITRAGE (= NO RE-SALE)  
SELLERS KNOW EVERY CONSUMER'S RESERVATION PRICE

# SECOND DEGREE PRICE DISCRIMINATION : CHARGE DIFFERENT PRICES PER UNIT FOR DIFFERENT AMOUNTS OF THE SAME

SOMETIMES IT IS SO CALLED "BLOCK PRICING" GOOD OR SERVICE

P PROFITS CAPTURED  
BLOCK DISCOUNTS





•  $\pi_{2^{\text{ND}} \text{ DEGREE}} > \pi_{\text{UNIFORM PRICING}}$

"THE MORE YOU BUY,  
THE LESS YOU PAY"

MARKETING GIMMICK THAT  
REFLECTS 2<sup>ND</sup> DEGREE PD.

# THIRD DEGREE PRICE DISCRIMINATION : CHARGE "DIFFERENT PRICES"  
TO "DIFFERENT GROUPS  
OF CONSUMERS"

EXAMPLE ① MAGAZINE SUBSCRIPTION

REGULAR STUDENT

② TRAIN TICKETS

ADULT SENIOR CITIZEN & CHILDREN AGE ABOVE 10, FOR  
INSTANCE

③ GRAND PALACE VISIT

THAIS' NON-THAIS

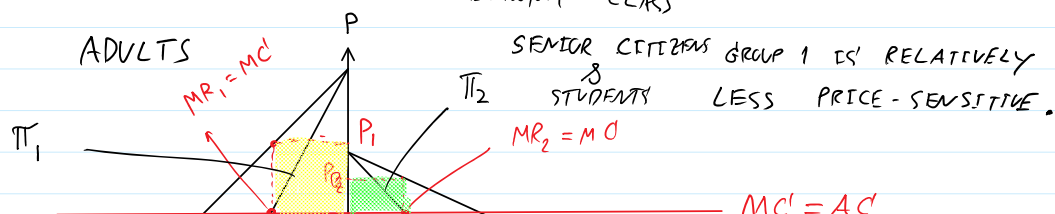
④ UTILITIES' (EX: ELECTRICITY)

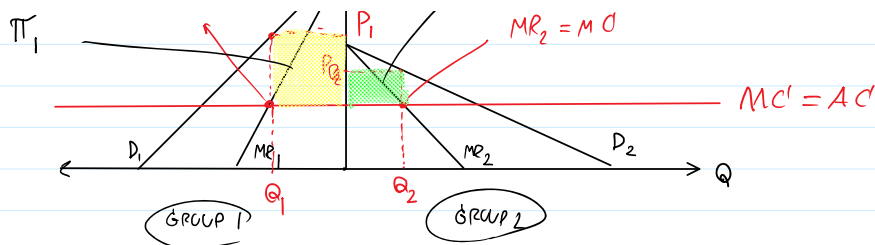
FOR HOUSEHOLDS FOR BUSINESS USE

⑤ DISCOUNT COUPONS AT SUPERMARKET

⑥ AIRLINE ADVANCED BOOKING  
INSTANT BOOKING

⑦ AIRLINE FIRST CLASS  
BUSINESS CLASS  
ECONOMY CLASS





PROOF

$$E_1 < E_2$$

(IGNORING THE SIGN)

$$\frac{1}{E_1} > \frac{1}{E_2}$$

$$\frac{P_1 - MC_1}{P_1} > \frac{P_2 - MC'_2}{P_2} \quad (\text{LERNER INDEX})$$

$$P_2 (P_1 - MC'_1) > P_1 (P_2 - MC'_2)$$

$$P_2 P_1 - P_2 MC'_1 > P_1 P_2 - P_1 MC'_2$$

$$P_2 MC'_1 < P_1 MC'_2$$

SINCE  $MC'_1 = MC'_2$ , THEN

ADULT PRICE  
( $P_1 > P_2$ )  
STUDENT PRICE

SUMMARY

WHEN  $E_1 < E_2$ ,  $P_1 > P_2$

HOW ABOUT TOTAL PROFIT?

$$\pi = P_1 Q_1 + P_2 Q_2 - C(Q_T) \quad \text{WHERE}$$

$$Q_T = Q_1 + Q_2$$

F.O.C

$$\frac{d\pi}{dQ_1} = 0 \rightarrow MR_1 = MC'$$

$$\frac{d\pi}{dQ_2} = 0 \rightarrow MR_2 = MC'$$

$$MR_1 = MR_2 = MC'$$

PROFIT MAXIMIZING

CONDITION FOR

3<sup>RD</sup> DEGREE PD

Q: HOW TO SET THE PRICE CHARGED TO EACH GROUP?

A:

$$\text{RECALL THAT } MR = P \left( 1 + \frac{1}{E} \right)$$

SO, TO MAX  $\pi$ , THE MONOPOLIST SETS:

$$MR_1 = P_1 \left( 1 + \frac{1}{E_1} \right) = MR_2 = P_2 \left( 1 + \frac{1}{E_2} \right)$$

$$\frac{P_1}{P_2} = \frac{\left( 1 + \frac{1}{E_2} \right)}{\left( 1 + \frac{1}{E_1} \right)}$$

\*\*\*

EX:

$$E_1 = -2 \quad (\text{ADULTS})$$

$$E_2 = -4 \quad (\text{STUDENTS})$$

$$\frac{P_1}{P_2} = \frac{\left( 1 + \frac{1}{-4} \right)}{\left( 1 + \frac{1}{-2} \right)} = \frac{\left( 1 - \frac{1}{4} \right)}{\left( 1 - \frac{1}{2} \right)} = \frac{\frac{3}{4}}{\frac{1}{2}} = \frac{3}{4} \cdot \frac{2}{1} = 1.5$$

THEREFORE

$$P_1 = 1.5 P_2$$

$$\epsilon_2 = -4 \text{ (STUDENTS)}$$

$$\left( -\frac{1}{2} \right) \left( 1 - \frac{1}{2} \right) = \frac{1}{2}$$

THEREFORE,  $\frac{P_1}{P_2} = 1.5$  OR  $P_1 = 1.5 P_2$

MONOPOLIST CHARGES GROUP 1 BY 1.5 TIMES OF THE STUDENT PRICE.

ESTIMATED BY

USING ECONOMETRIC MODEL PRICE ELASTICITY OF GROUP 1

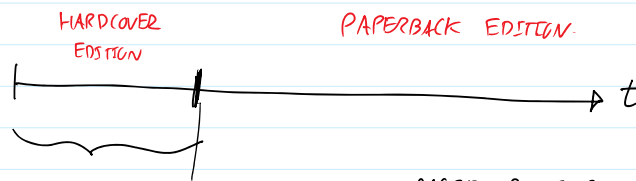
(OR 50% HIGHER)

EX:  $\ln Q_1 = \beta_1 + \beta_2 \ln P_1$  — (1)

$\ln Q_2 = \beta_3 + \beta_4 \ln P_2$  — (2)

PRICE ELASTICITY OF GROUP 2

# INTERTEMPORAL PRICE DISCRIMINATION : CHARGE DIFFERENT PRICES AT DIFFERENT POINTS IN TIME.

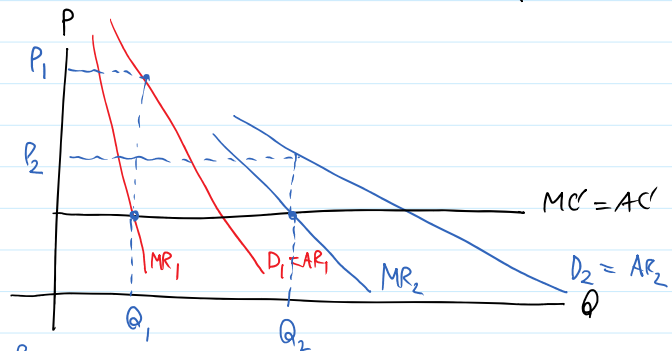


3 YEARS, FOR EXAMPLE  
THOSE W/  
LOW PRICE ELASTICITY  
WILL BUY

MORE - PRICE-SENSITIVE BUYERS  
WAIT AND BUY PAPERBACK

HARDCORE : SELLS  $Q_1$   
CHARGES  $P_1$

MASS GROUP : SELL  $Q_2$   
CHARGES LOWER PRICE,  $P_2$ .



# PEAK - LOAD PRICING : CHARGE DIFFERENT PRICES AT

DIFFERENT POINTS IN TIME.

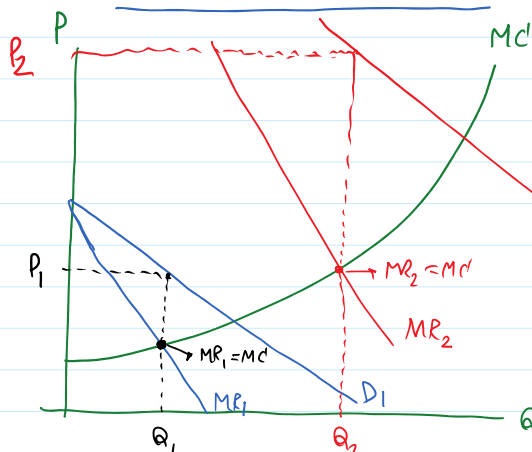
OBJECTIVE IS NOT FOR CAPTURING CONSUMER SURPLUS.

OBJECTIVE IS TO INCREASE

"ECONOMIC EFFICIENCY" BY

CHARGING BUYERS "PRICES" THAT

ARE CLOSE TO "MARGINAL COST".



$D_1$  → DEMAND CURVE DURING  
NON PEAK PERIOD.

$D_2$  → DEMAND CURVE DURING  
PEAK PERIOD.

$P_1$  = PRICE AT NONPEAK PERIOD.

$P_2$  = " " PEAK PERIOD.

(1) DEMAND FOR SOME GOODS AND SERVICES INCREASE SHARPLY DURING PARTICULAR TIMES OF THE DAY OR YEAR.

(2) CHARGING HIGHER PRICE DURING PEAK PERIODS IS MORE PROFITABLE THAN CHARGING A SINGLE PRICE AT ALL TIME.

(3) IT IS MORE EFFICIENT AND

$P_1 =$  PRICE AT NONPEAK PERIOD.  
 $P_2 =$  " " " " PEAK PERIOD.

CHARGING A SINGLE PRICE AT ALL TIME.

(3) IT IS MORE EFFICIENT B/C MC IS HIGHER DURING PEAK PERIODS.

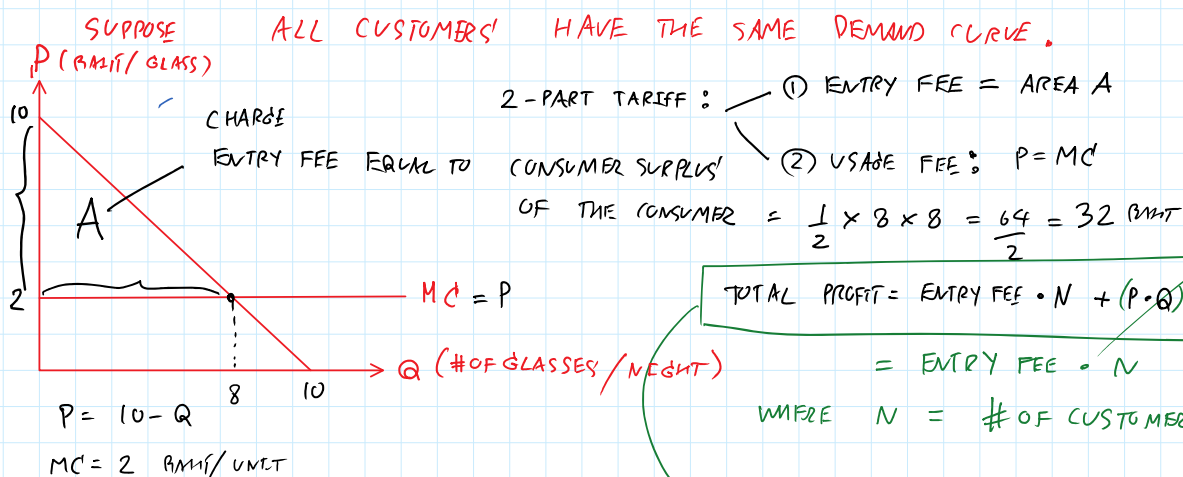
# THE TWO-PART TARIFF : FORM OF PRICING SCHEME IN WHICH CONSUMERS ARE CHARGED BOTH

"ENTRY FEE" AND "USAGE FEE"

2 CASES TO BE CONSIDERED : ① TWO-PART TARIFF W/ A SINGLE KIND OF CONSUMER.

② TWO-PART TARIFF W/ 2 KINDS OF CONSUMER   
 LOW TYPE   
 HIGH TYPE

## CASE 1 A SINGLE KIND OF CONSUMER



## CASE 2 2 TYPES OF CUSTOMERS LOW-YIELD CUSTOMERS HIGH-YIELD CUSTOMERS

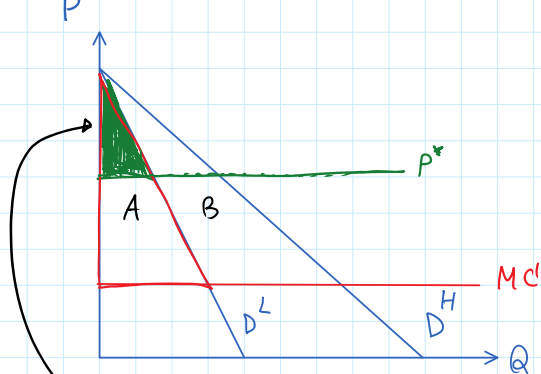
$M = \#$  LOW-YIELD CUSTOMERS (DANKERS)

$N = \#$  HIGH-YIELD CUSTOMERS (DRINKERS)

$Q_1(P) =$  DEMAND FUNCTION OF HIGH-YIELD CUSTOMERS

$Q_2(P) =$  LOW-YIELD CUSTOMERS

$T(P) =$  CONSUMER SURPLUS OF LOW-YIELD CUSTOMERS



① SET ENTRY FEE = A + B &  $P = MC$    
 RESULT : ONLY DRINKERS WILL COME

② SET ENTRY FEE = A &  $P = MC$    
 RESULT : BOTH TYPES WILL PARTICIPATE

③ SET PRICE ABOVE  $MC \dots$    
 (HOW ABOUT THAT?)

LET'S SAY SET  $P = P^*$  AND   
 SET THE ENTRY FEE EQUAL TO   
  $T(P^*)$

QUESTION ① OR ② OR ③ MAXIMIZES  $\pi$  ?

QUESTION

① OR ② OR ③ MAXIMIZES  $\pi$ ?

ANSWER

DEMAND CURVES MATTER!

(EX)

CONSIDER ①  $TC = 1000 + 0.5Q$

(UNIT OF CURRENCY: €)

$Q$  = QUANTITY OF DRINKS

②  $Q_{\text{DRINKER}} = 10 - 2P$

③  $N = 500$

Q: WHICH PRICING TECHNIQUE MAXIMIZE PROFIT?

W/O 2-PART TARIFF

$$Q = 10 - 2P \rightarrow P = 5 - \frac{Q}{2}$$

$$TR = P(Q) \cdot Q = \left(5 - \frac{Q}{2}\right) Q = 5Q - \frac{1}{2}Q^2$$

$$MR = \frac{dTR}{dQ} = \frac{d\left[5Q - \frac{1}{2}Q^2\right]}{dQ} = 5 - Q$$

SET  $MR = MC$  TO FIND  $Q^*$ :

$$5 - Q = 0.5$$

$$Q^* = 4.5 \text{ UNIT / PERSON / NIGHT}$$

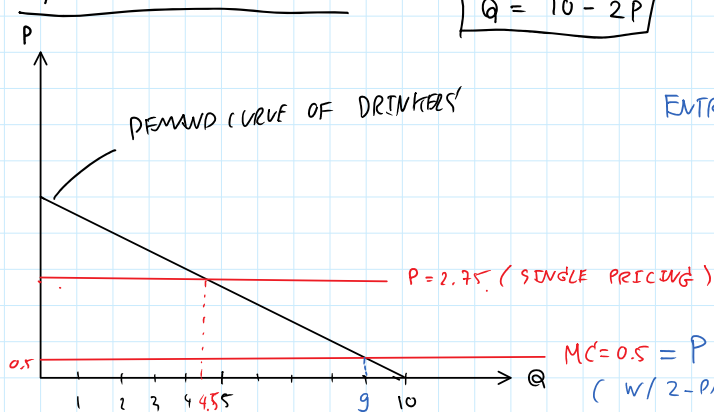
$$P^* = 5 - \frac{4.5}{2} = 2.75 \text{ € / GLASS}$$

$$Q_{\text{TOTAL}} = Q^* \cdot N = 4.5 \cdot 500 = 2250 \text{ GLASS / NIGHT}$$

$$\begin{aligned}\pi_{\text{TOTAL}} &= TR - TC \\ &= P \cdot Q_{\text{TOTAL}} - (1000 + 0.5 \cdot Q_{\text{TOTAL}}) \\ &= 2.75 \cdot 2250 - (1000 + 0.5 \cdot 2250)\end{aligned}$$

$$\pi = 4,062.50 \text{ € / NIGHT}$$

W/ 2-PART TARIFF



NOW, LET'S USE 2-PART TARIFFS.

ENTRY FEE = CONSUMER SURPLUS  
= AREA UNDER THE DEMAND CURVE AND ABOVE PRICE THAT MONOPOLIST WILL CHARGE, WHICH IS EQUAL TO  $MC$ ,  
 $P = MC = 0.5$ .

$$= \frac{1}{2} \times 9 \times (5 - 0.5)$$

$$= \frac{1}{2} \times 9 \times 4.5$$

$$= 4.5 \times 4.5 = \underline{\underline{20.25 \text{ €}}}$$

$$P = 0.5 (= MC)$$

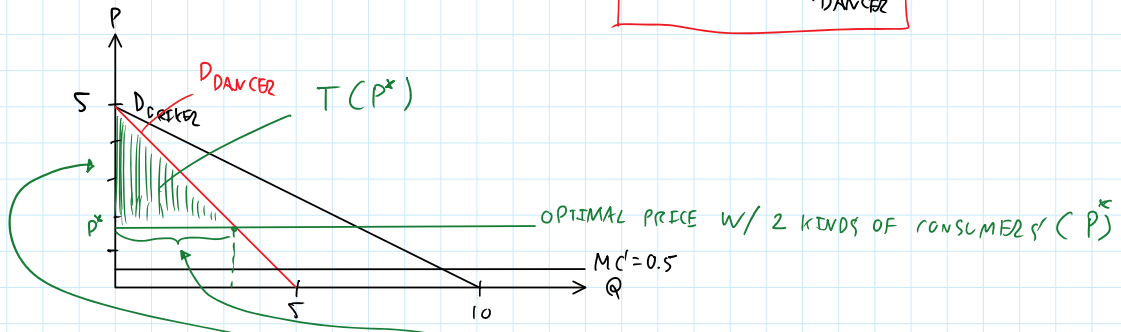
$$Q_{\text{TOTAL}} = 9 \cdot 500 = 4,500 \text{ GLASSES SOLD}$$

$$\begin{aligned}
 \pi &= TR - TC = N \cdot T + P \cdot Q_{TOTAL} - (1000 + 0.5 \cdot Q_{TOTAL}) \\
 &= 500 \cdot 20.25 + Q_{TOTAL} (P - 0.5) - 1000 \\
 &= 500 \cdot 20.25 + 4500 (0.5 - 0.5) - 1000 \\
 &= 9,125 \text{ € / NIGHT}
 \end{aligned}$$

NOW, LET'S INTRODUCE DANCERS TO OUR STORY ...

$$Q_{DRINKER} = 10 - 2P \rightarrow \boxed{P = 5 - \frac{Q_{DRINKER}}{2}} \quad N = 500$$

$$Q_{DANCER} = 5 - P \rightarrow \boxed{P = 5 - Q_{DANCER}} \quad N = 500$$



$$T(P^*) = \frac{1}{2} \cdot (5 - P^*) \cdot (5 - P^*)$$

NOW, LET US FIND PROFIT FUNCTION ...

$$\begin{aligned}
 \pi &= TR - TC = 1000 \cdot T(P) + 500 \cdot P \cdot (10 - 2P) + 500 \cdot P (5 - P) \\
 &\quad - \left\{ 1000 + 0.5 \left[ \underbrace{500 \cdot (10 - 2P)}_{Q_{DRINKER}} + \underbrace{500 (5 - P)}_{Q_{DANCER}} \right] \right\}
 \end{aligned}$$

TO MAX  $\pi$ , WE DO  $\frac{d\pi(P)}{dP} = 0 !!!$  TOTAL SALES

$$\pi = -1000 \cdot P^2 + 3250P + 7750$$

$$\frac{d\pi}{dP} = 0 \rightarrow \boxed{P^* = 1.625 \text{ € PER DRINK}}$$

$$\begin{aligned}
 T(P^*) &= \frac{1}{2} \cdot (5 - P^*) (5 - P^*) = 12.5 - 5P^* + \frac{P^{*2}}{2} \\
 &= 12.5 - 5(1.625) + \frac{(1.625)^2}{2}
 \end{aligned}$$

$$\boxed{T(P^*) = 5.70 \text{ € PER PERSON}}$$

$$Q_{DRINKER} = 10 - 2P = 10 - 2(1.625) = 6.75 \text{ DRINKS / PERSON / NIGHT}$$

$$Q_{DANCER} = 5 - P = 5 - 1.625 = 3.375 \text{ DRINKS / PERSON / NIGHT}$$

$$\begin{aligned}
 \pi^* &= -1000 \cdot (1.625)^2 + 3250(1.625) + 7750 \\
 &= 10,391 \text{ € PER NIGHT}
 \end{aligned}$$

**SUMMARY**

|                                               | ENTRY FEE | PRICE / DRINK  | DRINKS / PERSON                    | IT       |
|-----------------------------------------------|-----------|----------------|------------------------------------|----------|
| • SINGLE PRICE                                | 0         | 2.75           | 4.5                                | 4063 €   |
| • TWO-PART TARIFF<br>W/ ONE KIND OF CUSTOMERS | 20.25     | 0.5 ( $P=MC$ ) | 9                                  | 9125 €   |
| • TWO-PART TARIFF<br>W/ 2 KINDS OF CUSTOMERS  | 5.70      | 1.625          | 6.75 (DRINKERS)<br>3.375 (DANCERS) | 10,391 € |

### REMARK.

SOMETIMES, IT MIGHT BE BETTER TO CAPTURE  
ONLY HIGH-YIELD CUSTOMERS  
( YOU WILL SEE IN THE HOMEWORK )