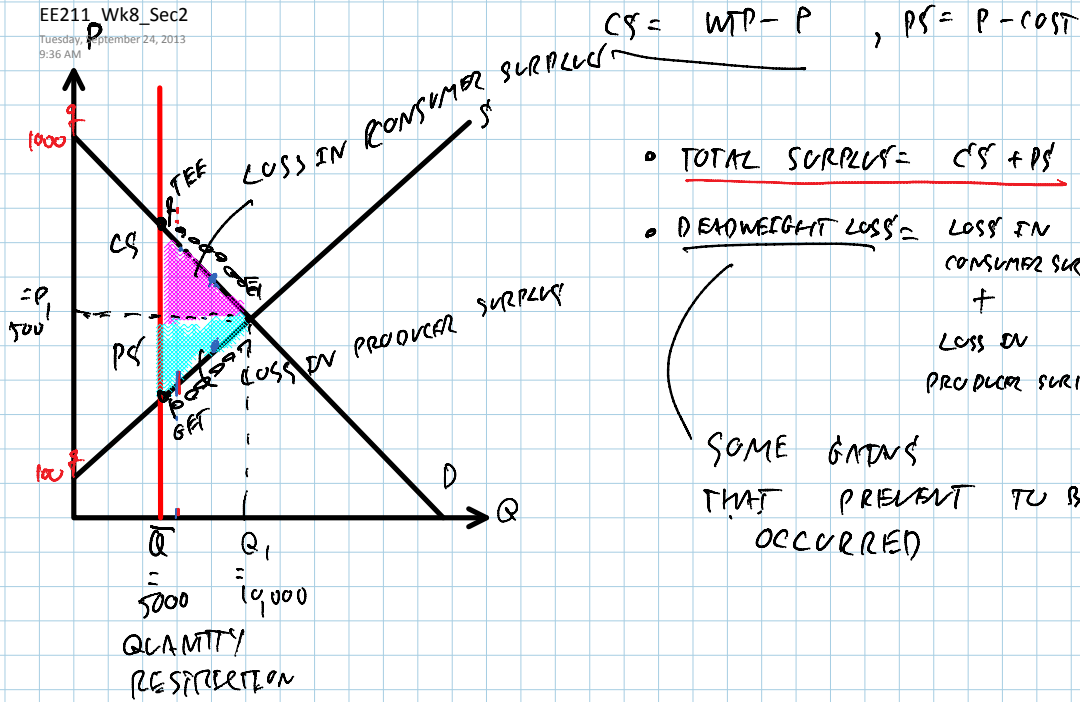
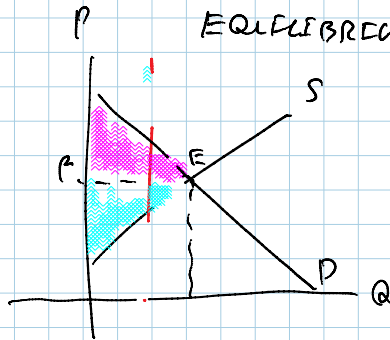




EFFICIENCY : LARGEST POSSIBLE ECONOMIC PIE
OBTAINED WHEN MARKET IS AT AN
EQUILIBRIUM



PARETO EFFICIENCY :
ITALIAN
ECONOMIST

EFFICIENCY IS ACHIEVED
WHEN YOU CANNOT DO ANY
FURTHER ARRANGEMENT OF
RESOURCE ALLOCATION TO
MAKE MR. A BETTER OFF
W/O MAKING MR. B WORSE OFF

JEFF MR. BELLMONT DON

ALLOCATION 1 (500,000 , 500,000)
ALLOCATION 2 (1M , 0)
ALLOCATION 3 (0 , 1M)

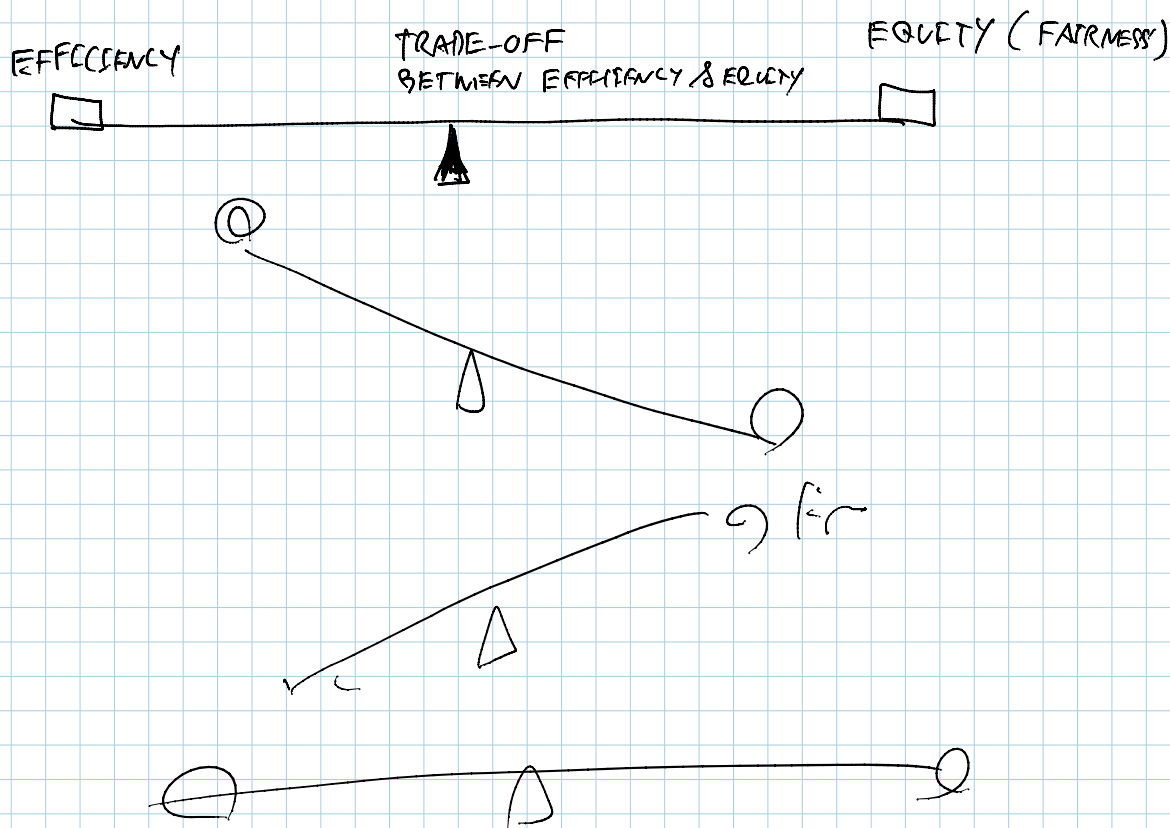
ALL ARE
PARETO EFFICIENT
ALLOCATIONS!

ALLOCATION 3

GENERAL
FORM :

$$\begin{pmatrix} 0 & 1M \\ X & 1,000,000 - X \end{pmatrix}$$

ALLOCATIONS!
(WHY?)



SO FAR, ...

- SUPPLY & DEMAND
- ELASTICITY
- CS & PS, DWL

ECONOMIC APPLICATIONS

- ① TAXATION ✓
- ② PRICE CONTROLS
 - PRICE CEILING
 - PRICE FLOOR
- ③ APPLICATIONS ON INTERNATIONAL TRADE (QUOTA, TARIFFS)

GOVERNMENT INTERVENTIONS

EFFECT OF TAXES ON MARKET OUTCOMES

- 2 TYPES OF TAXES



UNIT TAX: TAX PER UNIT OF GOOD OR SERVICE

EX: CIGARETTE TAX, ALCOHOL TAX, WINE TAX, WINDOW TAX.

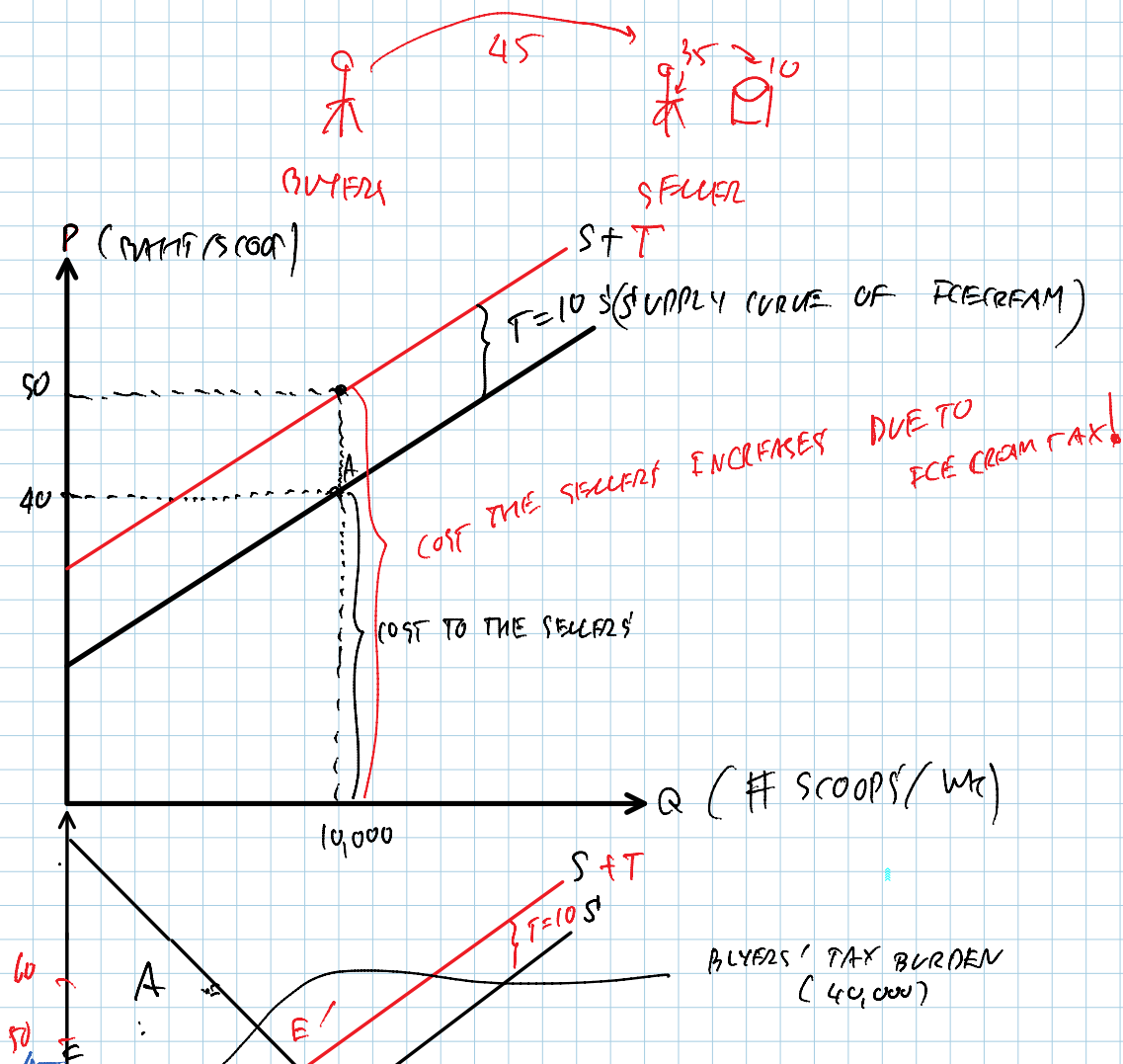
② AD VALOREM TAX OR PERCENTAGE TAX:
TAX BEING IMPOSED AS PERCENTAGE OF VALUE OF A GOOD OR SERVICE.

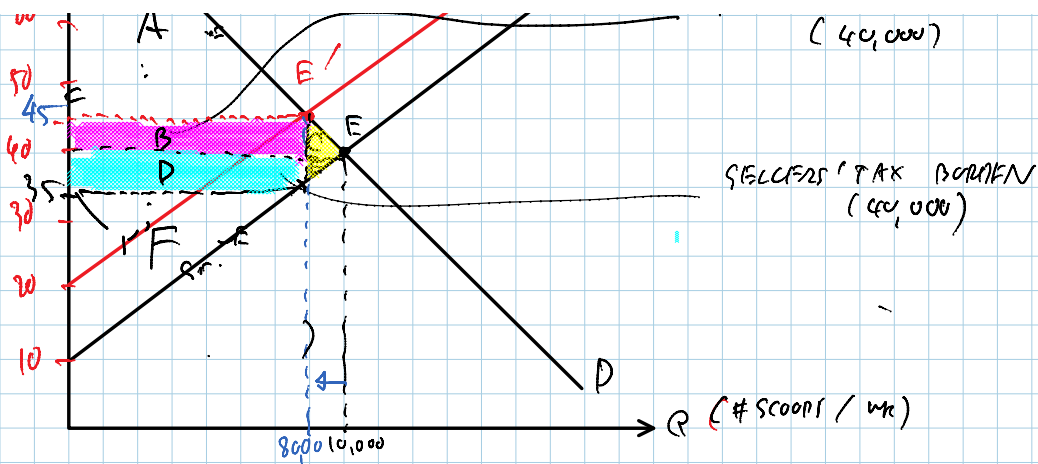
EX: VAT 7% (FOR THAILAND)
↓
VALUE ADDED TAX

EFFECT OF A UNIT TAX ON MARKET OUTCOMES

CONSIDER A MARKET FOR ICECREAM. LET'S ASSUME THAT THE MARKET IS "PERFECTLY COMPETITIVE".

SUPPOSE GOVERNMENT IMPOSES A UNIT TAX ON ICECREAM,
 $T = 10$ BATH/SCOOP ON SELLERS.





RESULT #1 ICE CREAM TAX CAUSES THE MARKET TO BECOME LESS ACTIVE : $Q \downarrow$ FROM 10,000 $\rightarrow$ 8,000 SCOOP/WK

RESULT #2 • BUYERS PAY A HIGHER PRICE ON ICE CREAM :

B/F : 40 BATH/SCOOP

A/F : 45 BATH/SCOOP

• SELLERS GET A LOWER PRICE (PAYMENT)

Q/F : 40 BATH/SCOOP

A/F : 35 BATH/SCOOP

RESULT #3 BOTH BUYERS AND SELLERS "EQUALLY" SHARE THE TAX BURDEN ! (FOR THIS CASE OF SYMMETRICAL D & S CURVE)

RESULT #4 GOVT OBTAINS TAX REVENUE OF 80,000 BATH

RESULT #5
(ON WELFARE)

WHO GAINS/
WHO LOSES?

	B/F TAX	A/F TAX	
	FREE MARKET	W/ ICE CREAM TAX	Δ
• CONSUMER SURPLUS	A+B+C	A	$-B-C$
• PRODUCER SURPLUS	D+E+F	F	$-D-E$
• GOVT	0	B+D	$+B+D$
• TOTAL SURPLUS	A+B+C+D+E+F	A+B+D+F	$-C-E$

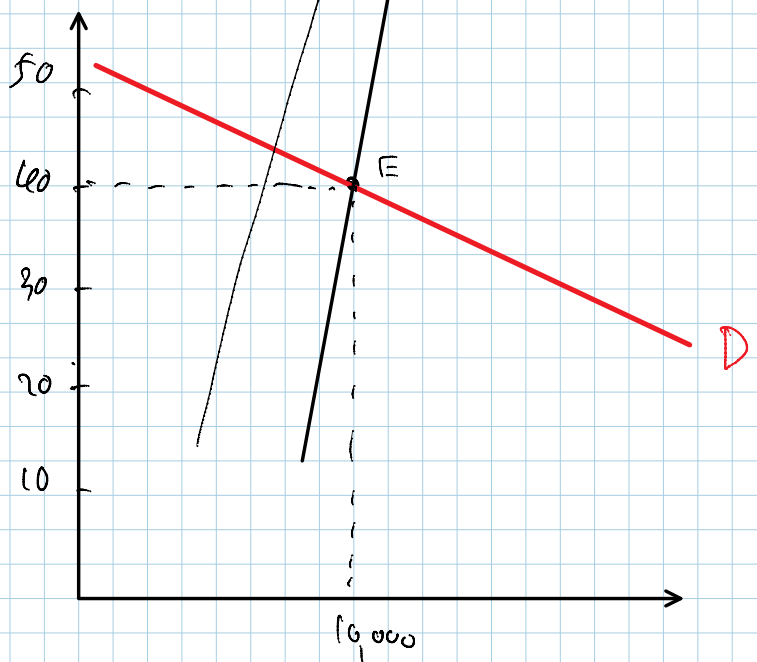
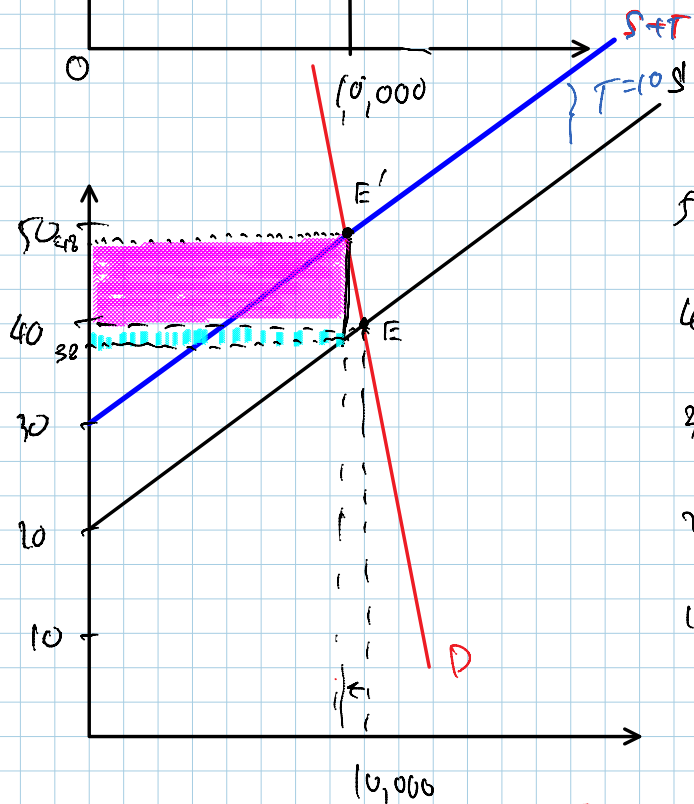
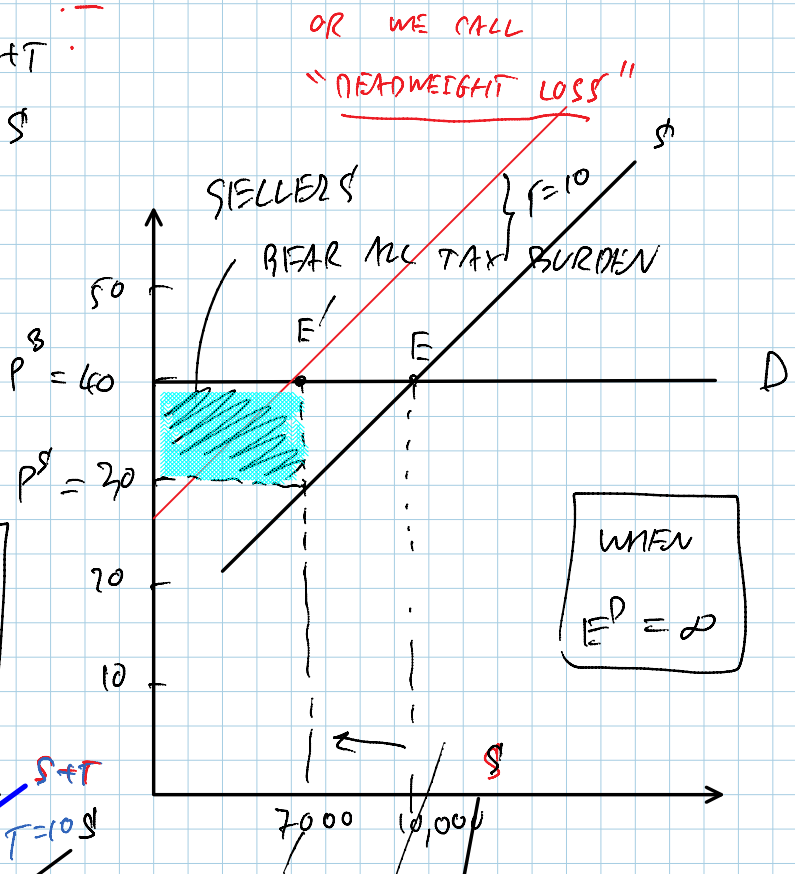
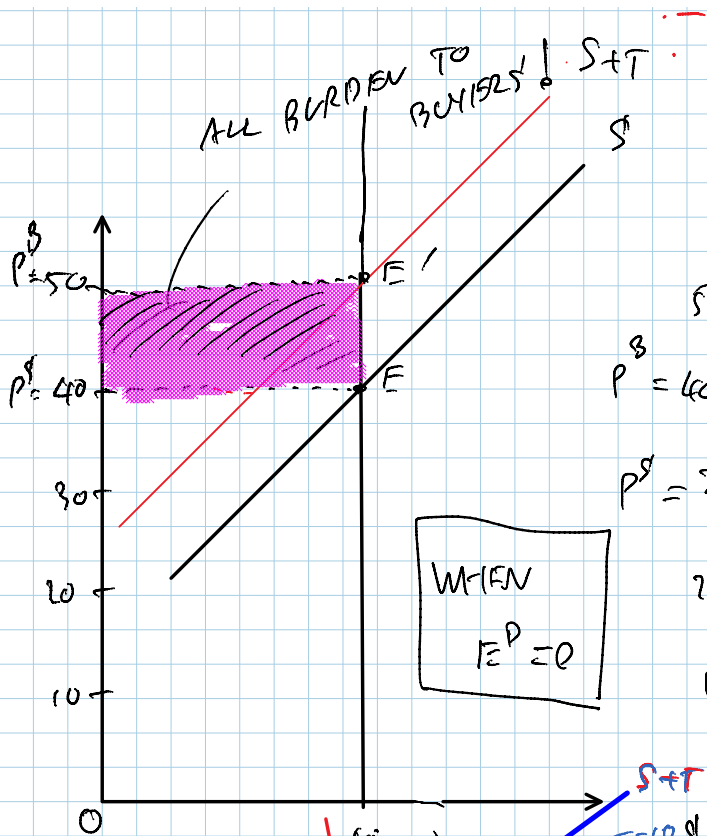
☹️ WORSE OFF

☹️ WORSE OFF

😊 BETTER OFF

WELFARE LOSS TO THE SOCIETY DUE TO ICE CREAM TAX OR WE CALL "DEADWEIGHT LOSS"

... OPEN TO ... WISDOM ! S+T



BUYERS ARE LESS SENSITIVE
TO THE CHANGE IN PRICE THAN
SELLERS

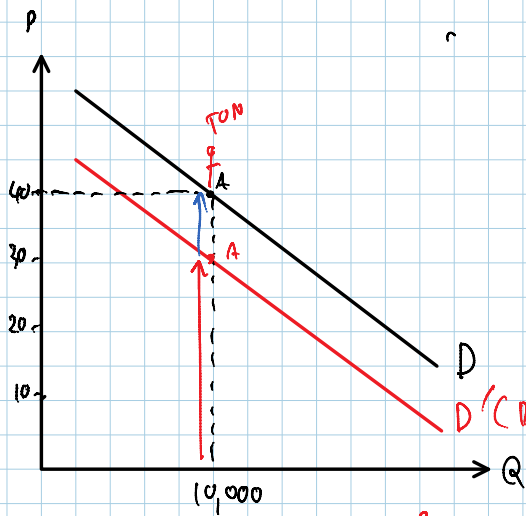
$$E^D < E^S$$

MARKET
OUTCOME

MOST OF THE BURDEN
OF THE TAX

FALLS TO BUYERS ||

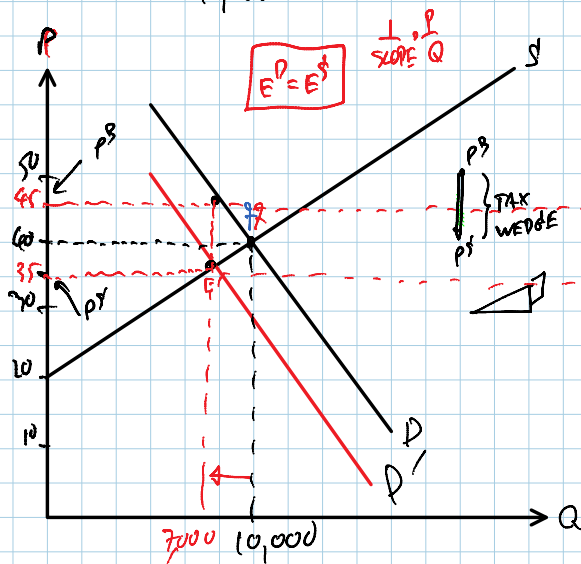
A UNIT TAX CHARGED ON BUYERS



• WHEN ICECREAM TAX IS COLLECTED FROM BUYERS, DEMAND CURVE SHIFTS DOWNWARD BY THE SIZE OF THE TAX ($T=10$)

• DOES IT CHANGE WTP?
NO!

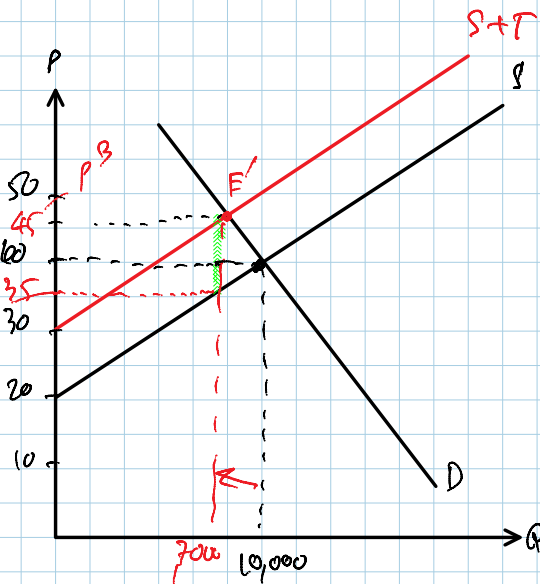
D' (DEMAND CURVE FROM PERSPECTIVE OF SELLERS)



A UNIT TAX ON BUYERS
(LEGAL INCIDENCE BELONGS TO BUYERS)

OUTCOMES

- $Q \downarrow$
- $P^B = 45$
 $P^S = 35$
- EQUALLY SHARED OF THE TAX BURDEN



A UNIT TAX ON SELLERS
(LEGAL INCIDENCE BELONGS TO SELLERS)

OUTCOMES

- $Q \downarrow$
- $P^B = 45$
 $P^S = 35$
- EQUALLY SHARED OF THE TAX BURDEN

LEGAL INCIDENCE

VS.

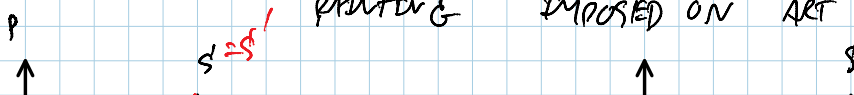
ECONOMIC INCIDENCE

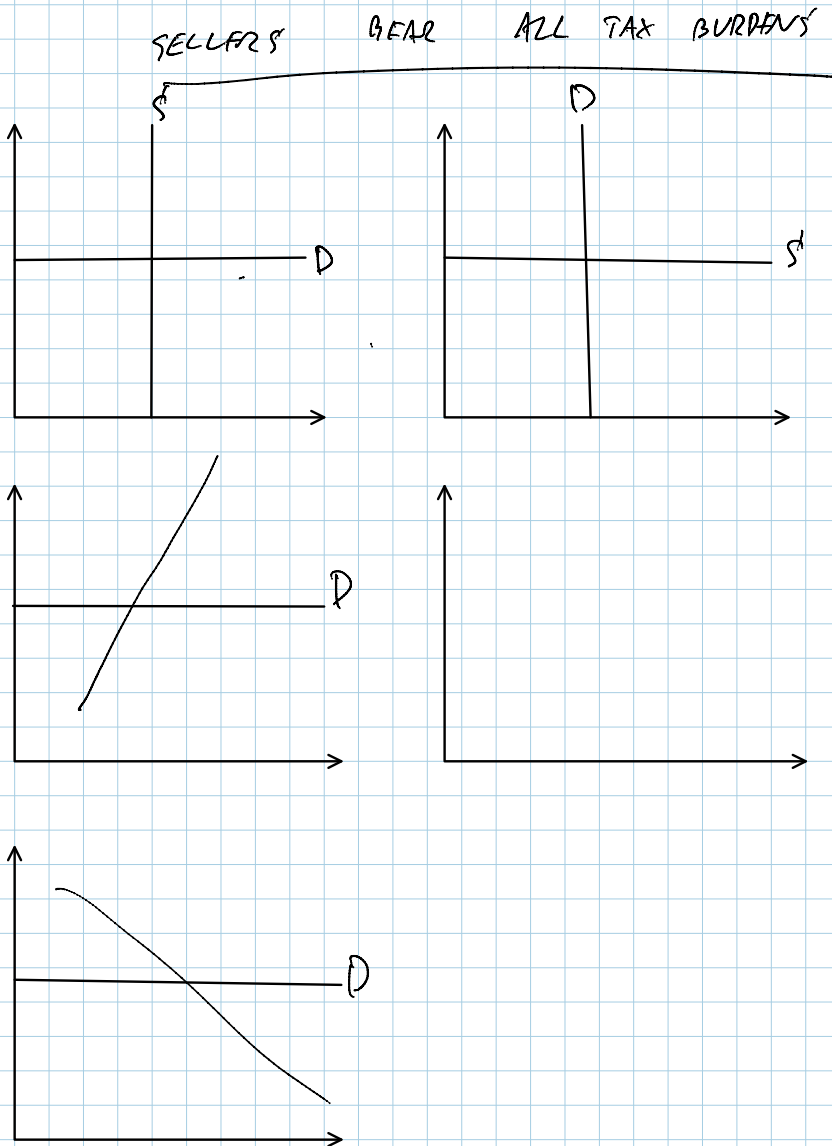
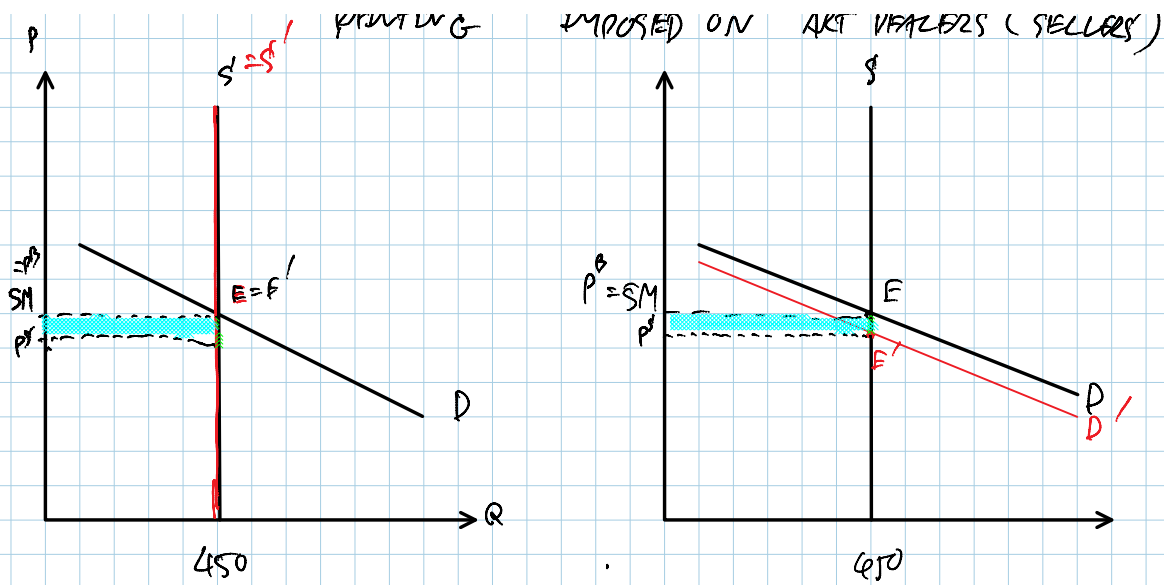
REGARDLESS OF WHO BEARS LEGAL INCIDENCE,
MARKET OUTCOMES ARE "EQUILIBRIUM" ||

APPLICATION

A UNIT TAX OF 10,000€ ON VAN DOGH

PRINTING IMPOSED ON ART DEALERS (SELLERS)



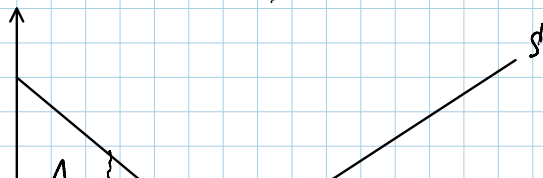


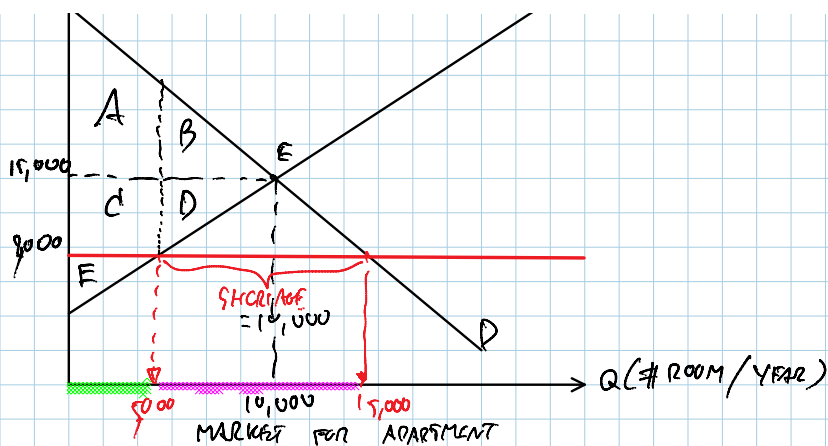
PRICE CEILING :

P (rent/room/month)

LEGALLY MAXIMUM PRICE THAT

SELLERS CAN CHARGE FROM BUYERS





RESULT #1 PRICE CEILING CAUSES "SHORTAGE" OR "EXCESS DEMAND"

= SOME LUCKY STUDENTS!

= 10,000 UNLUCKY STUDENTS!

RESULT #2 ROOMS WILL BE ALLOCATED BY "NON-PRICE MECHANISMS":

- LUCKY DRAW
- FIRST-COME / FIRST SERVED → WASTFUL RESOURCES
- DISCRIMINATION BASED

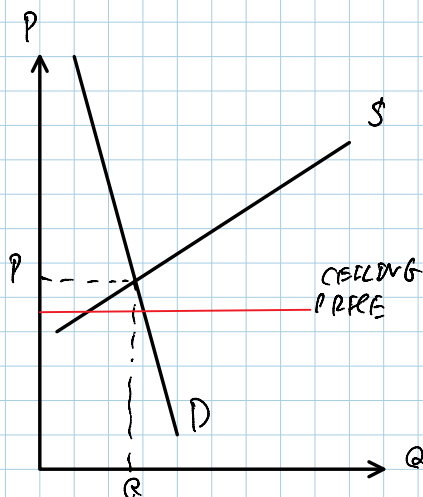
RESULT #3 NO INCENTIVE TO PROVIDE A PROPER MAINTENANCE.

RESULT #4
(WELFARE ANALYSIS)

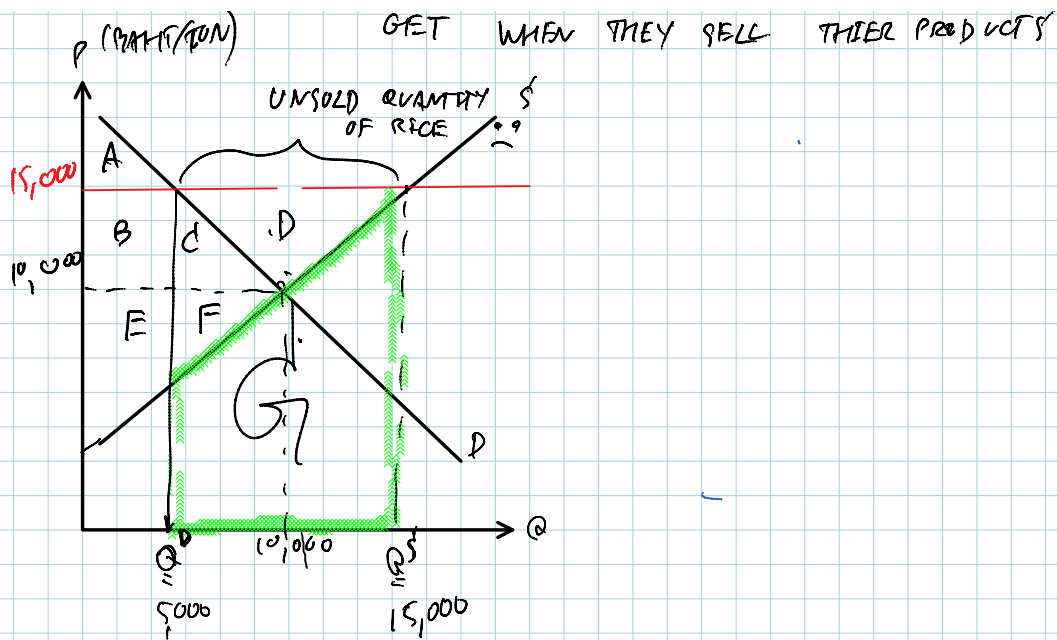
	FREE MKT	RENT CONTROL	Δ
CS	A+B	A+C'	+C-B
PS	C'+D+E	E	-C-D
TS	A+B+C' D+E	A+C'+E	-B-D

IF C > B → 😊 BETTER OFF
IF B > C → ☹️ WORSE OFF
☹️ WORSE OFF

DEADWEIGHT LOSS OR WELFARE LOSS TO THE SOCIETY



PRICE FLOOR : LEGALLY MINIMUM PRICE SELLERS MUST



CASE 1 IF PRODUCERS PRODUCE AT $Q = 15,000$

$$\Delta CS = A - (A + B + C) = -B - C$$

$$\Delta PS = (B + E - G) - (E + F) = B - F - G$$

POLICY KNO'S UP
W/ HURTING PRODUCERS
RATHER THAN HELPING
THEM.

$$\Delta TS = \Delta CS + \Delta PS = (-B - C) + (B - F - G)$$

$$= -B - C + B - F - G$$

$$= -C - F - G$$

→ POLICY CREATES
LOSSES TO THE
SOCIETY AS A WHOLE,
UNLESS THE
COSTS OF
PRODUCING THIS
UNSOLD QUANTITY OF 10,000 TONS.

CASE 2: PRODUCERS KNOW THAT THEY CAN SELL AT ONLY 5,000 AND
* SO THEY PRODUCE ONLY 5,000.

— OF COURSE, IN REALITY, IT IS DIFFICULT TO KNOW THIS. NONETHELESS
NOT THIS IS JUST A CASE TO BE CONSIDERED.

$$\Delta CS = A - (A + B + C) = -B - C$$

$$\Delta PS = (B + E) - (E + F) = B - F > 0$$

(THIS CASE, PRODUCERS ARE BETTER OFF)

$$\Delta TS = \Delta CS + \Delta PS = (-B - C) + (B - F)$$

$$\begin{aligned}
 &= \cancel{B} - C^f + \cancel{B} - F \\
 &= -C^f - F
 \end{aligned}$$