Tuesday, May 03, 2016 12:29 PM

TAXATION AND EFFICIENCY

READ : ROSEN, CH. 15 ON THE RELEVANT ISSUES DISCUSSED IN CLASS

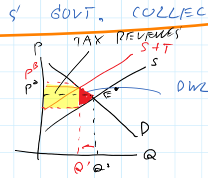
CONSIDER A GUY CONSUMES 10 SCOOPS OF ICECREAM PER WEEK
PRICE OF ICE CREAM = 1 € PER SCOOP.
NOW, GOVT. IMPOSE A UNIT TAX ON ICE CREAM, $T = 0.25$ €/SCOOP.
THIS GUY'S RESPONSE ? => HE THEN DECIDES TO CONSUME NO ICE CREAM.
SO, NO TAX REVENUES COLLECTED FROM THIS GUY.

QUESTION RAISED : DO WE WANT TO SAY THAT HE IS UNAFFECTED BY ICECREAM TAX ?

ANSWER : NO B/C ICECREAM TAX DISTORTS HIS CHOICE : HE HAS TO ESCAPE AWAY FROM HIS MOST PREFERABLE CHOICE : 10 SCOOPS/WEEK TO ANOTHER CHOICE. THE NEW CHOICE, OF COURSE, IS LESS PREFERRED.

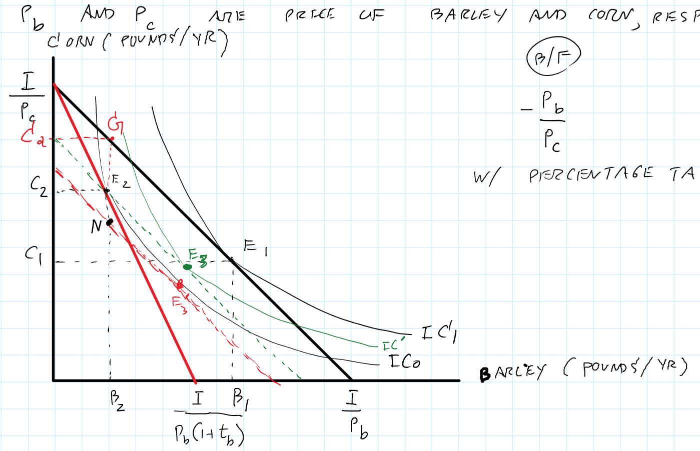
"EXCESS BURDEN" IS A LOSS OF WELFARE ABOVE AND BEYOND TAX REVENUES GOVT. COLLECTED

EXCESS BURDEN (BABY VERSION) :



EXCESS BURDEN (ADULT VERSION)

CONSIDER 2 COMMODITIES : BARLEY AND CORN
PLOY HAS FIXED INCOME : I
P_b AND P_c ARE PRICE OF BARLEY AND CORN, RESPECTIVELY



B/F: $-\frac{P_b}{P_c}$ A/F: $-\frac{P_b(1+t_b)}{P_c}$

W/ PERCENTAGE TAX = t_b

RESULT #1 AFTER TAX IMPOSED, PLOY'S UTILITY FALLS. NOW SHE CONSUMES LESS B AND MORE C

$(B_1, C_1) \longrightarrow (B_2, C_2)$
(OLD) (NEW)

RESULT #2 LAST YEAR, IF SHE CONSUMES B_2, SHE CAN CONSUME $C = C_2'$ OR GB_2

NOW, GIVEN B_2 CONSUMED, W/ TAX, SHE CAN ONLY CONSUME $C' = C_2$ OR $E_2 B_2$

SO, DISTANCE GE_2 = TAX REVENUES MEASURED IN TERM OF FORGONE UNITS OF CORN SHE COULD NOT CONSUME NOW. :(

THEN TAX REVENUES = $GE_2 \times P_c$

QUANTITY PRICE

SUPPOSE $P_c = 1$ BAHT / UNIT, THEN GE_2 COULD BE VIEWED AS TAX REVENUE IN TERM OF BAHT OR IN TERM OF UNIT OF CORN.

RESULT 3

W/ BARLEY TAX

- TAX REVENUE COLLECTED = GE_2
- CONSUMER ENDS UP ON IC_0'

W/ LUMP SUM TAX

- TAX REVENUE = GE_2
- CONSUMER ENDS UP ON IC' WHICH IS HIGHER THAN IC_0' !!!

SO, IT IMPLIES THAT " BARLEY TAXES CREATES LOSS IN WELFARE ABOVE AND BEYOND TAXES COLLECTED "
= EXCESS BURDEN.

POINT OF CONSIDERATIONS

IF YOU CAN FIND TAX THAT GENERATE THE SAME REVENUES BUT MAKE SMALLER UTILITY LOSS (COMPARE E_2 WITH E_3)

GOT GE_2 GOT GE_2

E_3 LOSSES LESS UTILITY

OR

IF YOU CAN TAX HER BY ANOTHER METHOD, LIKE LUMP SUM TAX, AND GET GREATER REVENUE W/ THE SAME UTILITY LOSS (COMPARE E_2 WITH E_3')

GOT ONLY GE_2 < GOT GN

(SAME UTILITY LOSS AS E_2 AND E_3' ARE THE SAME IC_0')

THEN, IF SO, BARLEY TAX CREATES EXCESS BURDEN!

READ EQUIVALENT VARIATION (EV)

HERE EV = GN IN PICTURE.

= AMOUNT OF MONEY THAT WE WITHDRAW FROM THE CONSUMER TO MAKE HER END UP W/ IC_0'.

HERE, TAX REVENUES FROM BARLEY TAX = GE_2

$$\boxed{\text{EXCESS BURDEN} = \text{EV} - \text{TAX REVENUE}}$$

$= GN - GE_2$

$= E_2N$!!! #