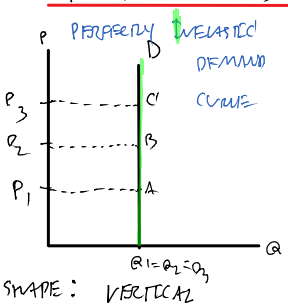
VARIETY OF DEMAND CURVES

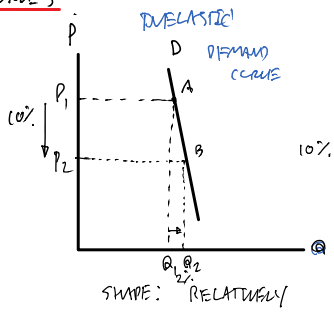


SHAPE: VERTICAL

E: $E = \frac{\%\Delta Q}{\%\Delta P} = \frac{0\%}{\text{ANY }\%} = 0$

DEMAND IS PERFECTLY INELASTIC:

BUYERS DO NOT CARE ABOUT PRICE CHANGE AT ALL.



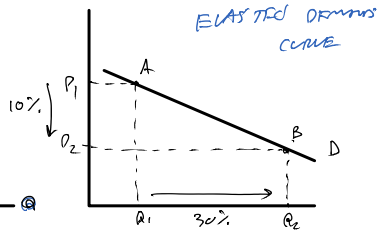
SHAPE: RELATIVELY STEEP

E: $|E| = \left|\frac{\%\Delta Q}{\%\Delta P}\right| = \left|\frac{+2}{-10}\right| = \frac{1}{5} = 0.2$

DEMAND IS PRICE-INELASTIC

(WHY?)

B/C $|\%\Delta Q| < |\%\Delta P|$.



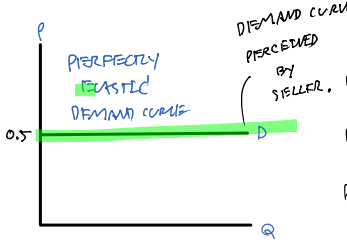
SHAPE: RELATIVELY FLAT

E: $|E| = \left|\frac{\%\Delta Q}{\%\Delta P}\right| = \left|\frac{+30}{-10}\right| = 3$

DEMAND IS PRICE-ELASTIC

(WHY?)

B/C $|\%\Delta Q| > |\%\Delta P|$

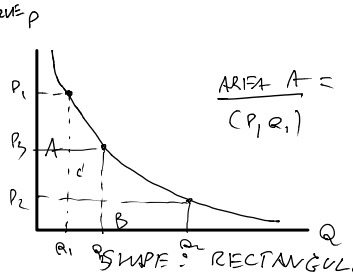


SHAPE: HORIZONTAL

$|E|$: $|E| = \left|\frac{\%\Delta Q}{\%\Delta P}\right| = \frac{\text{VERY VERY BIG}}{\text{VERY VERY SMALL}} = \infty$

DEMAND IS PERFECTLY PRICE-ELASTIC

BUYERS ARE EXTREMELY SENSITIVE TO ANY PRICE CHANGE.



$\frac{\text{AREA A}}{(P_1 Q_1)} = \frac{\text{AREA B}}{(P_2 Q_2)} = \frac{\text{AREA C}}{(P_3 Q_3)}$

SHAPE: RECTANGULAR HYPERBOLA

$|E| = \left|\frac{\%\Delta Q}{\%\Delta P}\right| = 1$

DEMAND IS UNITARY PRICE ELASTIC AS

$|\%\Delta Q| = |\%\Delta P|$

WHAT FACTORS DETERMINE PRICE ELASTICITY OF DEMAND?

EXAMPLE 1 SUNSCREEN VS. RICE CRACKERS

Q: SUPPOSE PRICE OF TWO GOODS HERE RISES BY 20%, WHICH GOOD ITS QUANTITY DEMANDED WILL DROP THE MOST?

A: RICE CRACKERS

LESSON LEARNED: PRICE ELASTICITY OF DEMAND IS HIGHER WHEN CLOSE SUBSTITUTES ARE AVAILABLE.

EXAMPLE 2 BRAND NAME BAGS VS. MEDICINE

Q: _____

_____?

A: BRAND NAME BAGS

LESSON LEARNED: PRICE ELASTICITY OF DEMAND IS HIGHER

A) GRANDMAMIE BAGS

LESSON LEARNED: PRICE ELASTICITY OF DEMAND IS HIGHER FOR LUXURY GOODS THAN FOR NECESSITY GOODS.

EX3 BLUE JEANS Vs. CLOTHES

Q: _____ ?

A: BLUE JEANS

LESSON LEARNED: PRICE ELASTICITY OF DEMAND IS HIGHER FOR NARROWLY DEFINED GOODS THAN FOR BROADLY DEFINED GOODS.

EX: GASOLINE IN THE SHORT RUN Vs. GASOLINE IN THE LONG RUN

Q: _____ ?

A: GASOLINE IN THE LONG RUN

LESSON LEARNED: PRICE ELASTICITY OF DEMAND TENDS TO BE HIGHER IN THE LONG RUN THAN IN THE SHORT RUN.

PRICE ELASTICITY OF SUPPLY (E^S): SELLERS' PRICE SENSITIVITY

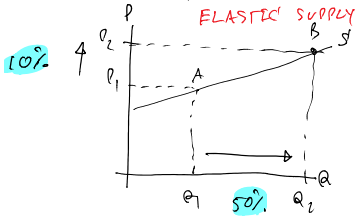
$$E^S = \frac{\%\Delta Q^S_X}{\%\Delta P_X}$$

→ PERCENTAGE CHANGE IN QUANTITY SUPPLIED OF GOOD X

→ PERCENTAGE CHANGE IN PRICE OF GOOD X

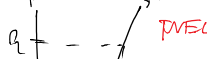
(1) IF $\%\Delta Q > \%\Delta P$, THEN $E^S > 1$ (SUPPLY IS PRICE-ELASTIC)

ELASTIC SUPPLY CURVE W/ RELATIVE FLAT SHAPE.



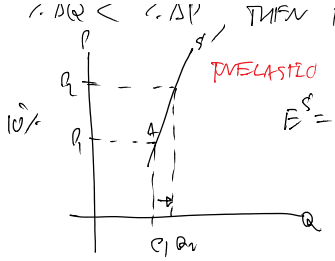
EX: $E^S = \frac{\%\Delta Q}{\%\Delta P} = \frac{50}{10} = 5$

(2) IF $\%\Delta Q < \%\Delta P$, THEN $E^S < 1$ (SUPPLY IS PRICE-INELASTIC)



INELASTIC SUPPLY CURVE W/ RELATIVE STEEP SHAPE

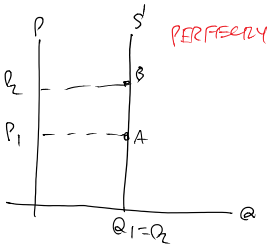
(2) IF $\%\Delta Q < \%\Delta P$, THEN $E^S < 1$ (SUPPLY IS INELASTIC)



INELASTIC SUPPLY CURVE W/ RELATIVE STEEP SLOPE

$E^S = \frac{2}{10} = 0.2 < 1$

(3) IF $\%\Delta Q = 0$ FOR ANY $\%\Delta P$, THEN $E^S = 0$. (SUPPLY IS PERFECTLY INELASTIC)

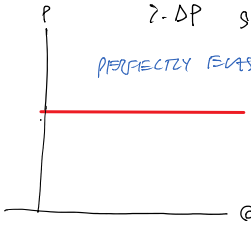


PERFECTLY INELASTIC SUPPLY CURVE

EX: SUPPLY OF NON-RENEWABLE RESOURCES (OIL, DIAMOND, ETC)

(4) IF $\%\Delta Q$ IS VERY VERY LARGE FOR A VERY VERY SMALL $\%\Delta P$,

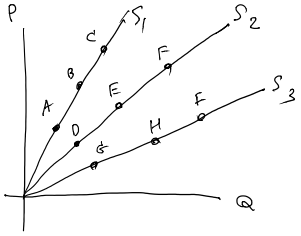
THE $E^S = \frac{\%\Delta Q \text{ BIG}}{\%\Delta P \text{ SMALL}} = \infty$ (SUPPLY IS PERFECTLY ELASTIC)



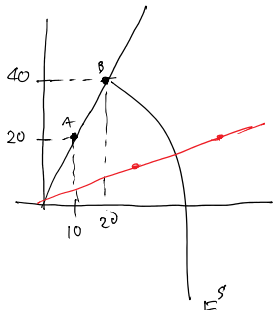
PERFECTLY ELASTIC SUPPLY CURVE

SELLERS ARE EXTREMELY SENSITIVE TO ANY CHANGE IN PRICE.

(5) IF $\%\Delta Q = \%\Delta P$, $E^S = 1$ (SUPPLY IS UNITARY PRICE-ELASTIC)



$E^S = 1$ ALONG ANY SUPPLY CURVE ORIGINATED FROM THE ORIGIN.



$E^S_{AT\,A} = 1 = E^S_{AT\,B}$

CALCULATE $E^S_{AT\,A}$:

$$E^S = \frac{\%\Delta Q}{\%\Delta P} = \frac{\frac{\Delta Q}{Q} \times 100}{\frac{\Delta P}{P} \times 100} = \frac{\Delta Q}{\Delta P} \cdot \frac{P}{Q}$$

$$= \frac{1}{\text{SLOPE}} \cdot \frac{P}{Q}$$

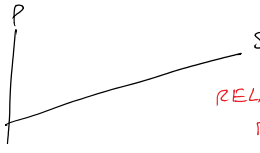
$$E^S_{AT\,B} = \frac{1}{2} \cdot \frac{40}{20} = 1$$

$$= \frac{1}{2} \cdot \frac{20}{10}$$

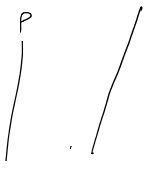
$$= 1$$

PRICE ELASTICITY OF SUPPLY WILL BE HIGH OR LOW, DEPENDING ON HOW EASY/DIFFICULT CAN PRODUCE MORE/LESS IN RESPONSE TO A PRICE CHANGE.

(EX)



RELATIVELY FLAT



RELATIVELY STEEP

(Ex)

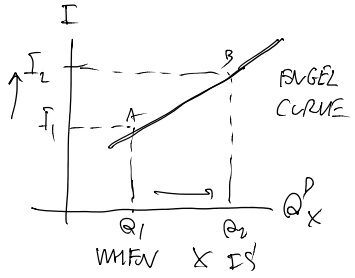
SUPPLY FOR NEW CARS

SUPPLY FOR HOTEL ROOMS

INCOME ELASTICITY OF DEMAND $(E^I) = \dfrac{\%\Delta Q^D_X}{\%\Delta I}$

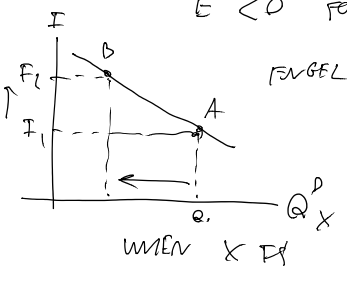
$E^I > 0$ FOR A NORMAL GOOD

$E^I < 0$ FOR INFERIOR GOOD



ENGEL CURVE

WHEN X IS A NORMAL GOOD



ENGEL CURVE FOR INFERIOR GOOD

WHEN X IS AN INFERIOR GOOD

CROSS-PRICE ELASTICITY OF DEMAND $(E^C) = \dfrac{\%\Delta Q^D_X}{\%\Delta P_Y}$

$E^C > 0$ WHEN X & Y ARE SUBSTITUTES OR RIVAL GOODS.

(EX: X = COKE, Y = PEPSI)

$E^C < 0$ WHEN X & Y ARE COMPLEMENTARIES

(EX: X = NEW CARS, Y = GASOLINE)

SUMMARY

$E^D = \dfrac{\%\Delta Q^D_X}{\%\Delta P_X}$, $E^I = \dfrac{\%\Delta Q^D_X}{\%\Delta I}$, $E^C = \dfrac{\%\Delta Q^D_X}{\%\Delta P_Y}$

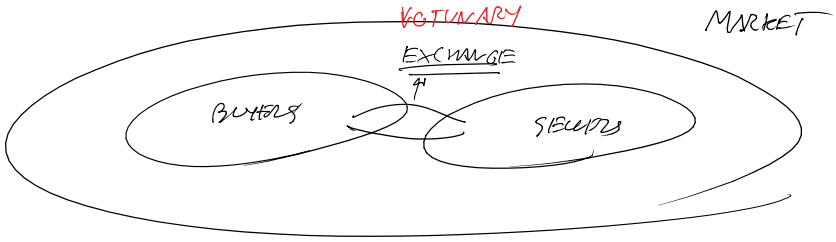
$E^S = \dfrac{\%\Delta Q^S_X}{\%\Delta P_X}$

CONSUMER SURPLUS, PRODUCER SURPLUS, AND MARKET EFFICIENCY

ECONOMISTS WANT TO "QUANTIFY" OR "MEASURE" HAPPINESS BUYERS AND SELLERS RECEIVE WHEN THEY ARE ABLE TO BUY AND SELL A GOOD.

SO, WE USE THE CONCEPT OF CS AND PS TO REACH THIS GOAL.

ALSO, WE WANT TO SEE HOW PRICE CHANGE AFFECT HAPPINESS OF THE TWO.



CONSIDER 2ND HAND TEXTBOOK MARKET. ASSUME THAT THE MKT IS PERFECTLY COMPETITIVE.

CONSUMER SURPLUS: NET BENEFITS BUYERS GAIN FROM BUYING A GOOD.

CONSUMER SURPLUS (CS) = WILLINGNESS TO PAY (WTP) OR RESERVATION PRICE − PRICE YOU ACTUALLY PAID.

IN SHORT, CS = WTP − P.

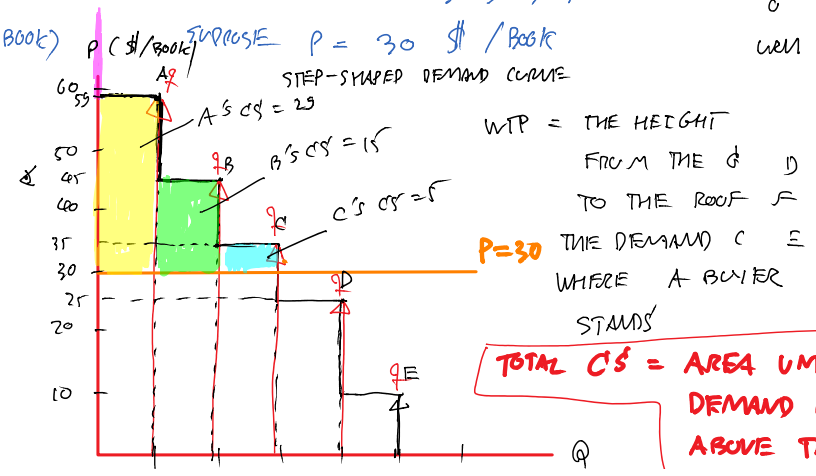
= HIGHEST PRICE A BUYER IS WILLING TO PAY FOR A GOOD

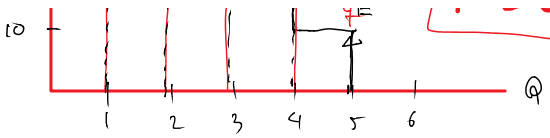
EX: WTP = 300, P = 200, CS = 300 − 200 = 100 ☺

NOW, SUPPOSE WE HAVE 5 POTENTIAL BUYERS: A, B, C, D, E

BUYERS	WTP ($/BOOK)
A	59
B	45
C	35
D	25
E	10

SUPPOSE P = 30 $/BOOK





DEMAND CURVE BUT ABOVE THE PRICE

AT P = 30, A, B, C WILL BUY AND D, E WILL NOT.

A's CS = 59 − 30 = 29

B's CS = 45 − 30 = 15

C's CS = 35 − 30 = 5

D's CS = 0

E's CS = 0

TOTAL CS = 29 + 15 + 5 = 49

W/ LOTS OF BUYERS, DEMAND CURVE BECOMES SMOOTH...