

CH. 5 ELASTICITY

PRICE ELASTICITY OF DEMAND

- RESPONSE OF QUANTITY
DEMANDED TO A GIVEN
CHANGE IN PRICE

$$= \frac{\% \text{ CHANGE IN } Q \text{ DEMANDED}}{\% \text{ CHANGE IN PRICE}}$$

$$= \frac{\text{CHANGE IN } Q / \text{AVERAGE } Q}{\text{CHANGE IN } P / \text{AVERAGE } P}$$

$$= \frac{(Q_2 - Q_1) / \frac{1}{2}(Q_2 + Q_1)}{(P_2 - P_1) / \frac{1}{2}(P_2 + P_1)}$$

$$(P_2 - P_1) / \frac{1}{2}(P_2 + P_1)$$

CANDY

$$P_1 = .50, P_2 = \$1$$

$$Q_1 = 4, Q_2 = 1$$

$$\begin{aligned} &= \frac{\frac{Q_2 - Q_1}{\frac{1}{2}(Q_2 + Q_1)}}{\frac{P_2 - P_1}{\frac{1}{2}(P_2 + P_1)}} = \frac{\frac{1 - 4}{\frac{1}{2}(1 + 4)}}{\frac{1 - .50}{\frac{1}{2}(1 + .50)}} \\ &= \frac{\frac{-3}{2.50}}{\frac{.50}{.75}} = \frac{-1.2}{.6} = -1.8 \end{aligned}$$

↑
FORGET

PRICE ELASTICITY

1 = UNIT(UNITARY) ELASTICITY

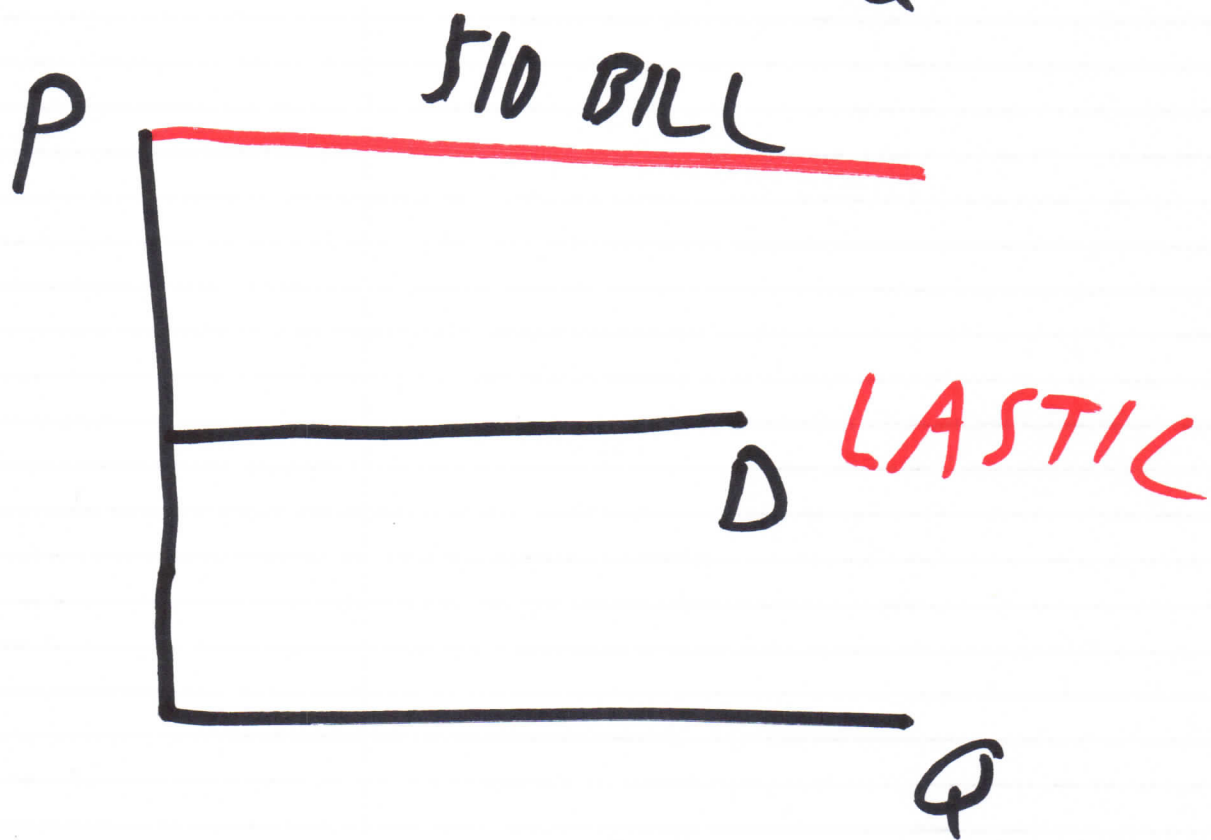
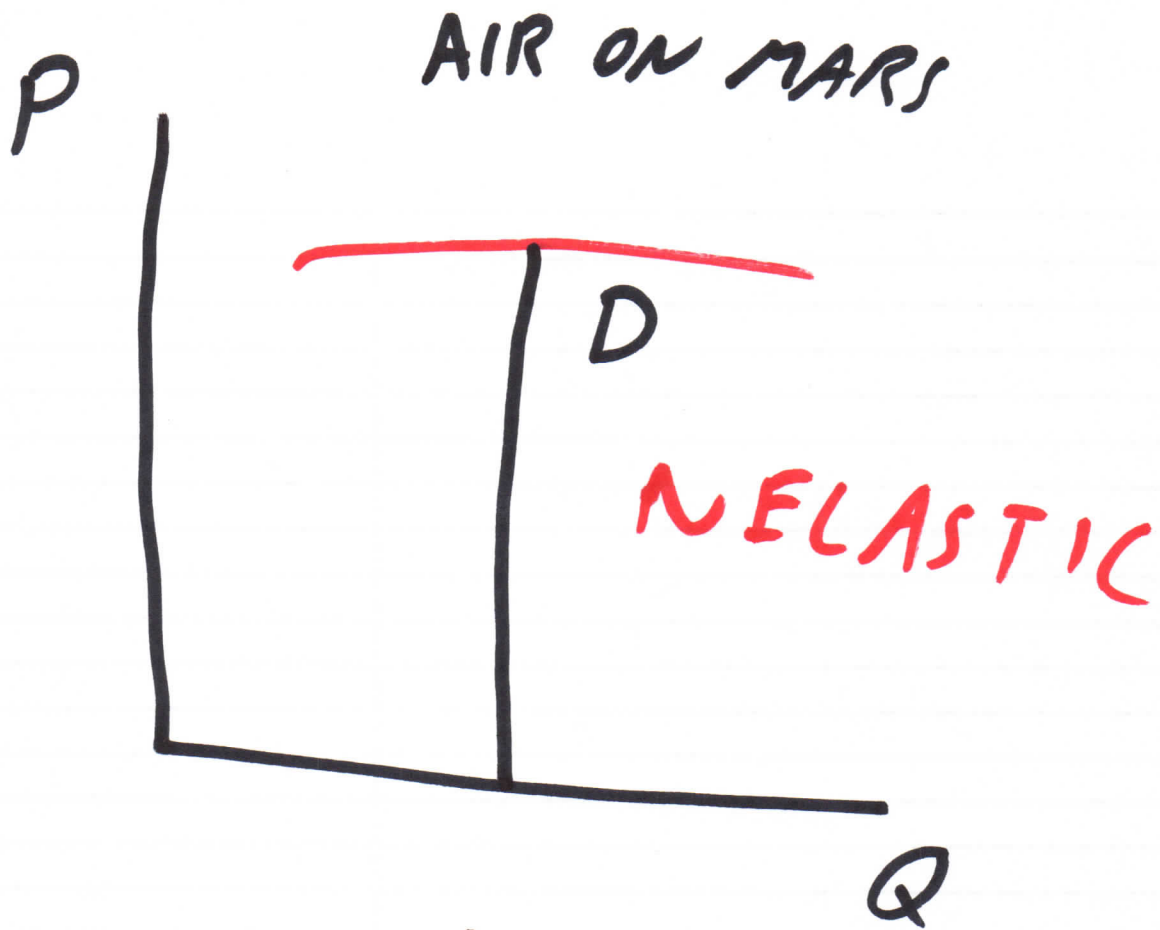
$$\% \Delta Q = \% \Delta P$$

0 and 1 $\rightarrow$ INELASTIC

$$\% \Delta Q < \% \Delta P$$

ABOVE 1 $\rightarrow$ ELASTIC

$$\% \Delta Q > \% \Delta P$$



SOLIDS



$\$5 - \$4$ $PE = \frac{1}{4} \approx 0.25$ ish

$\$4 - \$3$ $PE = 1 \rightarrow$ HIGHEST TOTAL REVENUE

$\$3 - \$2$ $PE = 0.55$

WHAT DETERMINES PRICE ELASTICITY OF DEMAND?

① AVAILABILITY OF SUBSTITUTES?

MORE SUBSTITUTES $\Rightarrow$ MORE ELASTIC

② NECESSITY OR LUXURY?

MORE LUXURIOUS $\Rightarrow$ MORE ELASTIC

③ DEFINITION OF THE MARKET/GOOD

BROADER $\Rightarrow$ MORE INELASTIC

④ TIME HORIZON

LONGER TIME $\Rightarrow$ MORE ELASTIC

⑤ PERCENTAGE OF INCOME

SMALL % $\Rightarrow$ MORE INELASTIC

PRICE ELASTICITY OF SUPPLY

% CHANGE IN SUPPLY (QUANTITY)

% CHANGE IN PRICE

$$= \frac{\frac{Q_2 - Q_1}{\frac{1}{2}(Q_2 + Q_1)}}{\frac{P_2 - P_1}{\frac{1}{2}(P_2 + P_1)}}$$

0 - 1 INELASTIC SUPPLY

1 UNITARY (UNIT) ELASTICITY

MORE THAN 1 ELASTIC SUPPLY

[H.5]

(CHILDREN?)

INCOME ELASTICITY

- RESPONSIVENESS OF QUANTITY DEMAND TO A CHANGE IN INCOME

$$= \frac{\% \text{ CHANGE IN QUANTITY DEMAND}}{\% \text{ CHANGE IN INCOME}}$$

$$= \frac{\frac{Q_2 - Q_1}{\frac{1}{2}(Q_2 + Q_1)}}{\frac{I_2 - I_1}{\frac{1}{2}(I_2 + I_1)}} \quad \begin{array}{l} + \text{NORMAL} \\ - \text{INFERIOR} \end{array}$$

CROSS-PRICE ELASTICITY

- RESPONSIVENESS IN QUANTITY DEMAND OF 1 GOOD GIVEN A PRICE CHANGE IN ANOTHER GOOD

$$= \frac{\% \text{ CHANGE IN QD FOR GOOD 1}}{\% \text{ CHANGE IN PRICE OF GOOD 2}}$$

+ SUBSTITUTES

- COMPLEMENTS

$$= \frac{\frac{Q_{2,G1} - Q_{1,G1}}{\frac{1}{2}(Q_{2,G1} + Q_{1,G1})}}{\frac{P_{2,G2} - P_{1,G2}}{\frac{1}{2}(P_{2,G2} + P_{1,G2})}}$$

	P_1	P_2	
(HARMIN $\rightarrow$ \$6		\$9	<u>GOOD 2</u>
QUILTED NORTHERN $\rightarrow$ 100		120	
	Q_1	Q_2	<u>GOOD 1</u>

$$= \frac{\frac{120 - 100}{\frac{1}{2}(120 + 100)}}{\frac{9 - 6}{\frac{1}{2}(9 + 6)}} = \frac{\frac{20}{110}}{\frac{3}{7.5}} = \underline{0.45}$$