WHAT IS PRICE ELASTICITY OF DEMAND, E_D ?

Chapter 5 Elasticity and Its Applications, p. 81

Outline:

IV. Elasticity and Total Revenue
V. Elasticity of Supply
VI. Elasticity of Supply Graphically
VII. Determinants of Elasticity of Supply
VIII. Income Elasticity
IX. Cross-Price Elasticity of Demand

Midpoint Formula –Price elasticity of Demand

$$E_d = \frac{\%\Delta Q}{\%\Delta P} = \frac{\dfrac{\Delta Q}{(Q_o + Q_1)}}{\dfrac{\Delta P}{(P_o + P_1)}} = \frac{\dfrac{Q_1 - Q_o}{(Q_o + Q_1)}}{\dfrac{P_1 - P_o}{(P_o + P_1)}}$$

Interpreting E_D

- **p. 82 in packet**
- **If $|Ed|$ > 1 elastic**
- **if $|Ed|$< 1 inelastic**
- **if $|Ed|$= 1 unitary elastic**

Elasticity-review

- E_D price elasticity of demand
  - jewelry 2.6
  - foreign travel 2.6
  - eggs .1
  - gas .2
  - cigarettes .6
  - Phone service .1
- Determinants of E_D

ICLICKER – REEF POLLING

When a college football team becomes more successful, the demand for tickets to games becomes..

A. more elastic
B. less elastic

Suppose that when the price of UK student football tickets is raised from $5 to $10 the number of students who attend falls from 8,000 to 7,000. Calculate the price elasticity of demand for these tickets.
(#4 on page 83 in packet)

A. -5
B. -1
C. -1/5
D. 200

#4 on page 83

- **P_0 = \$5 and P_1 = \$10**

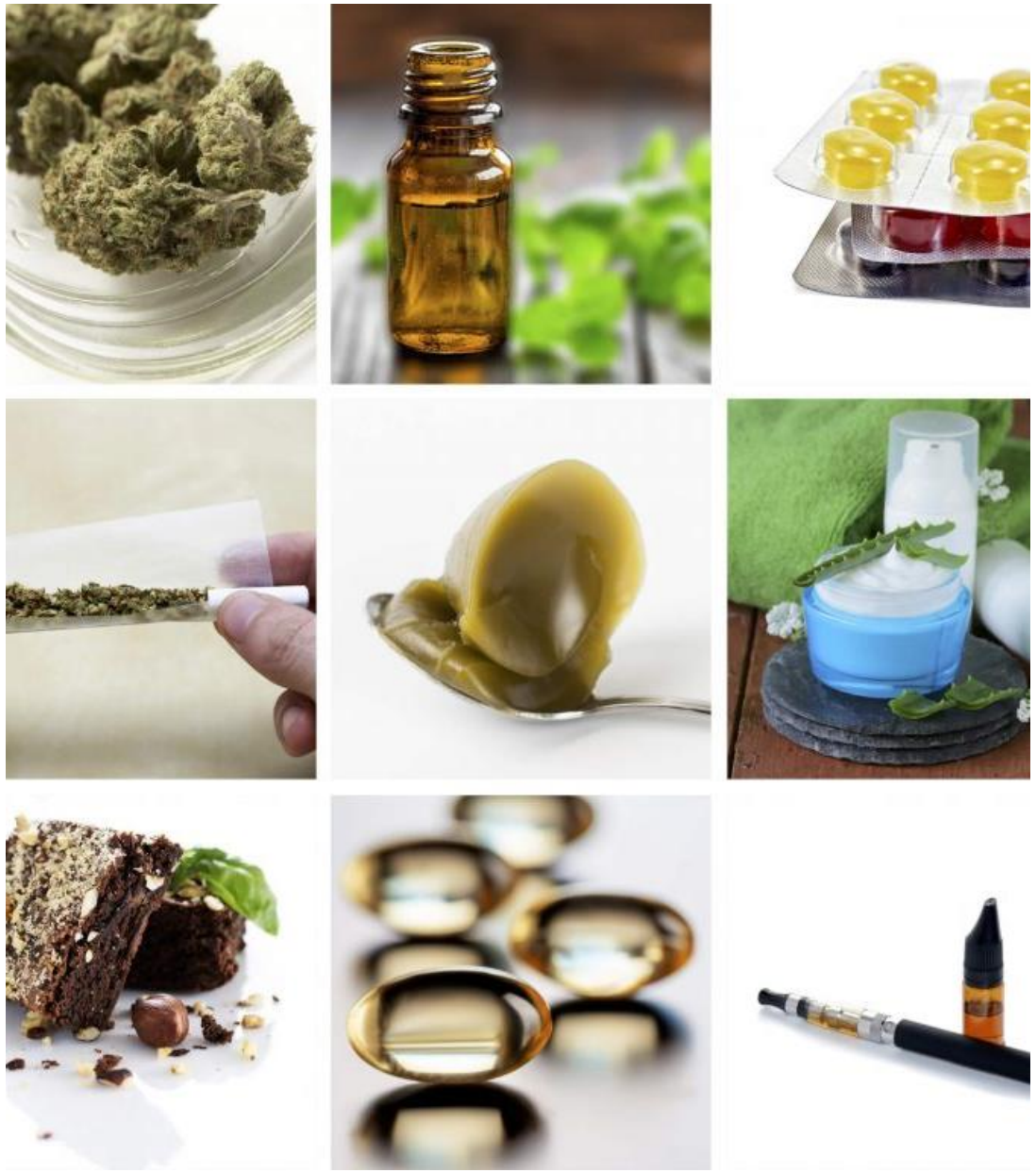
Q_0 = 8,000 and Q_1 = 7,000

$$E_d = \frac{(7{,}000-8{,}000)/15{,}000}{(10-5)/15} = \frac{-1{,}000/15{,}000}{5/15}$$

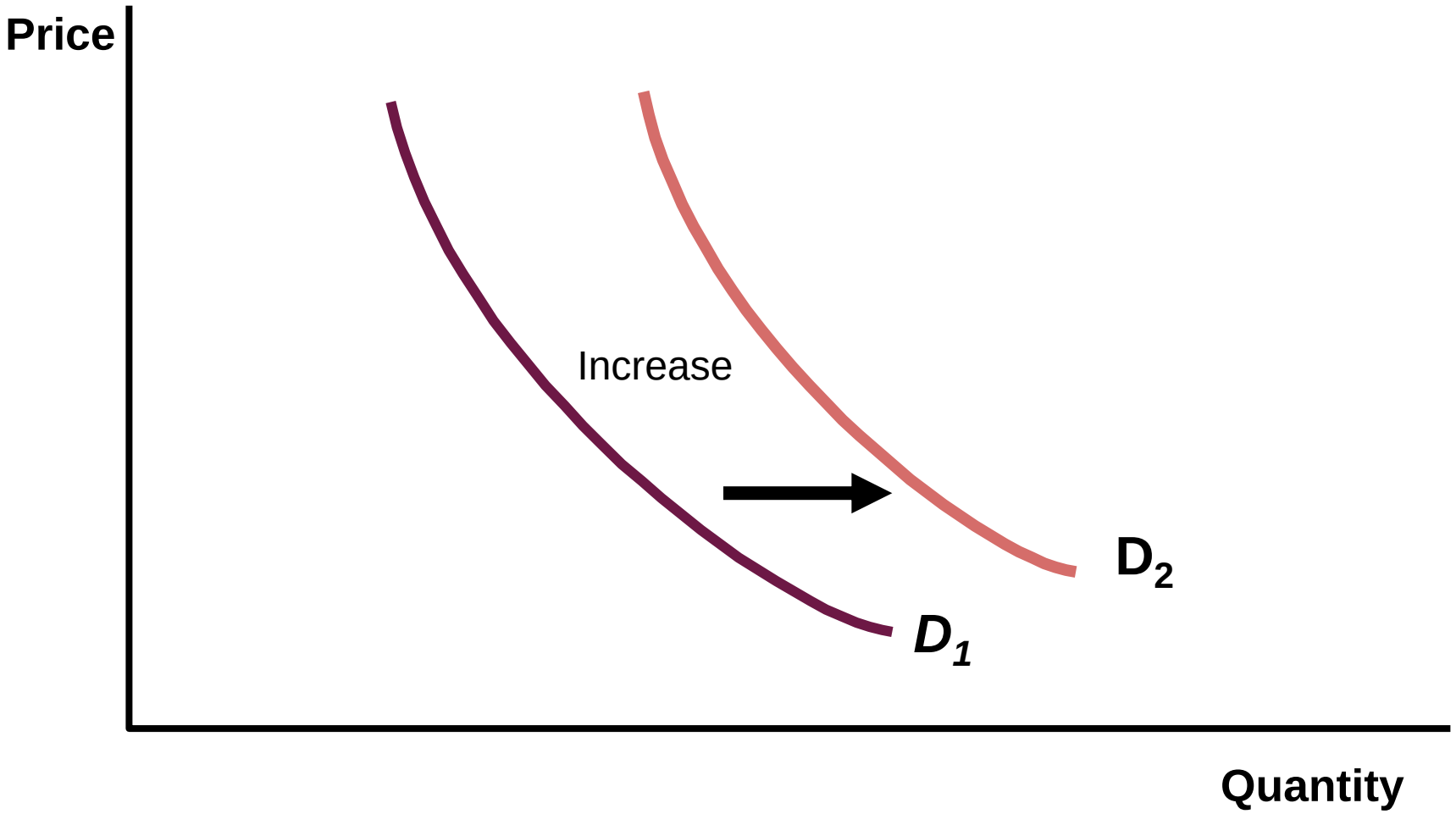
$$E_d = \frac{-1/15}{1/3} = (-1/15)(3/1) = -1/5$$

Since $|Ed| < 1$ inelastic

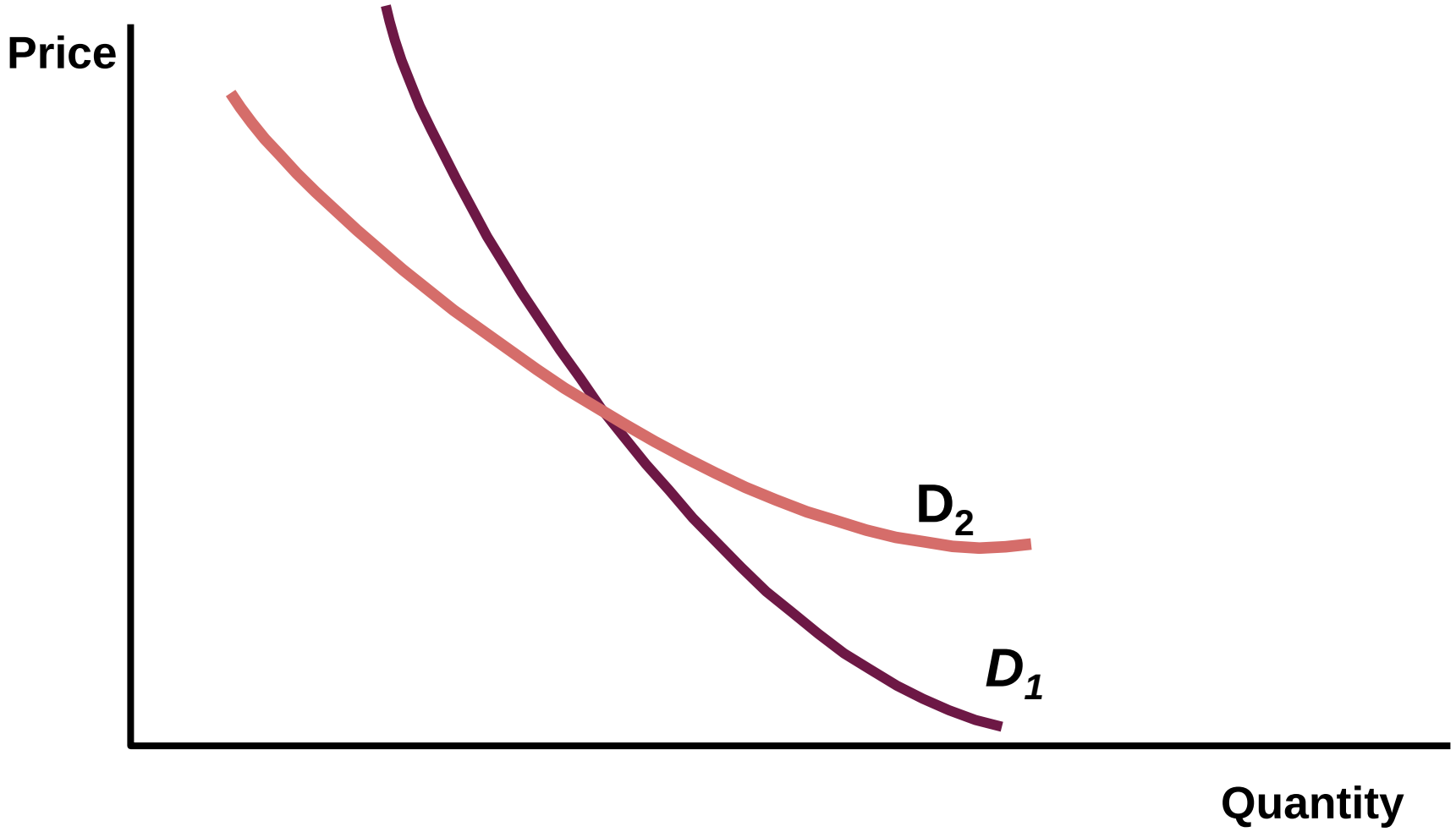
The impact of marijuana legalization on level of demand and elasticity of demand.



Level of demand: higher



Increase in overall elasticity of demand



Region 13 Champs

p.87

Multi-tiered pricing: Producers charge different groups of consumers different prices

•What are some examples of situations when different people pay different prices for the exact same thing?

Price Discrimination – Charging different people different prices for the same good or service based on differing elasticity of demand for different groups of consumers

ICLICKER – REEF POLLING

You work for Delta Airlines. If you could price discriminate, to whom would you charge a higher price?

A. Business travelers

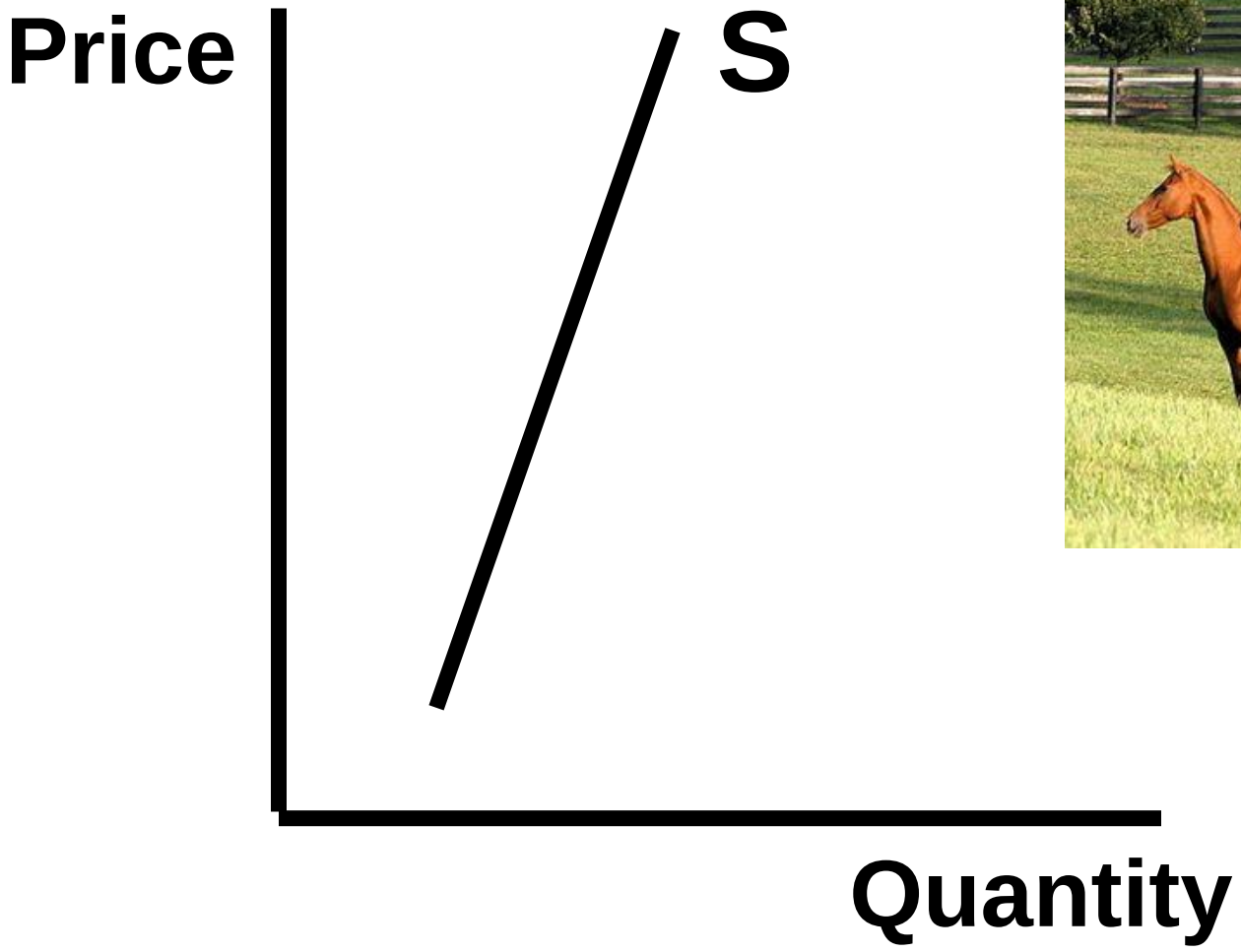
B. Vacation travelers

V. Elasticity of Supply, p. 89

- Measures producers' response to a price change
- E_S = (% change in quantity supplied)
- (% change in price)
- Use the same arc elasticity formula
- $E_S > 0$
- As P ↑, Q_S ↑
- If $E_S > 1$, supply is elastic
- If $E_S < 1$, supply is inelastic
- If $E_S = 1$, supply is unitary elastic

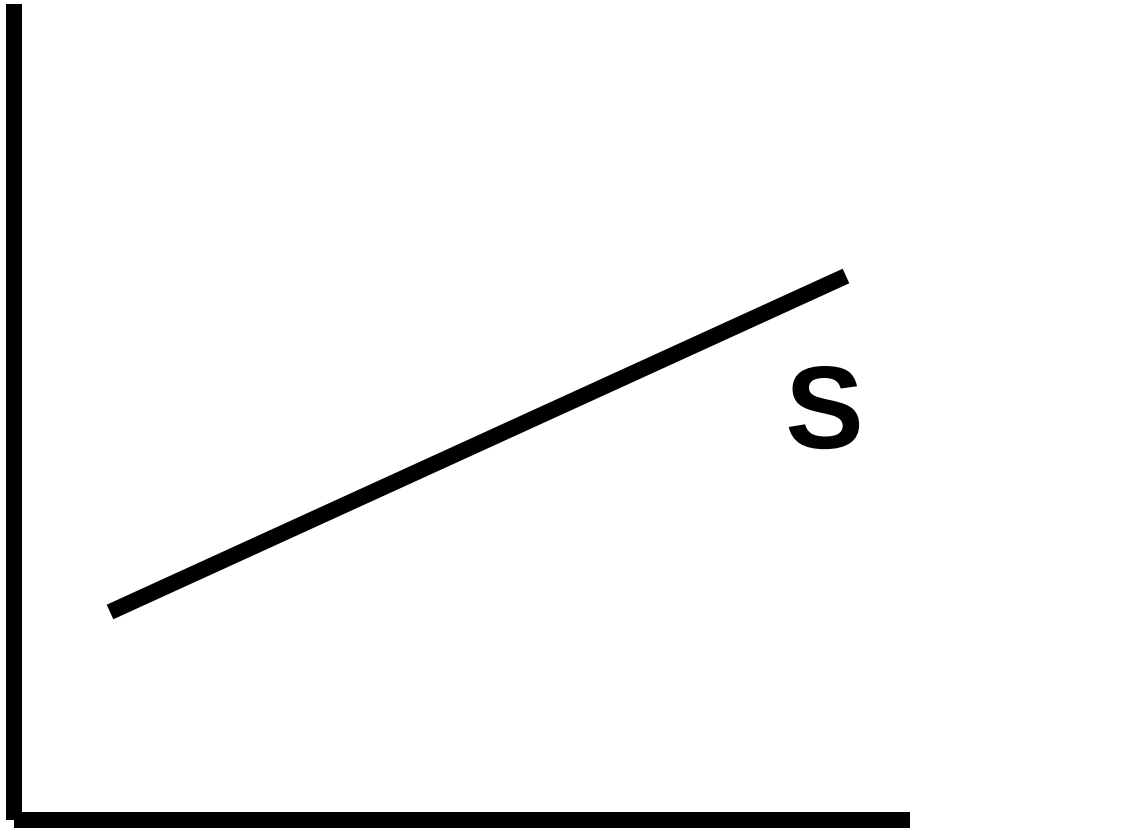
VI. Elasticity of Supply - Graphically

Elasticity of supply of land in Lexington (Very inelastic)



The amount of land in existence isn't the same thing as the amount of land supplied.

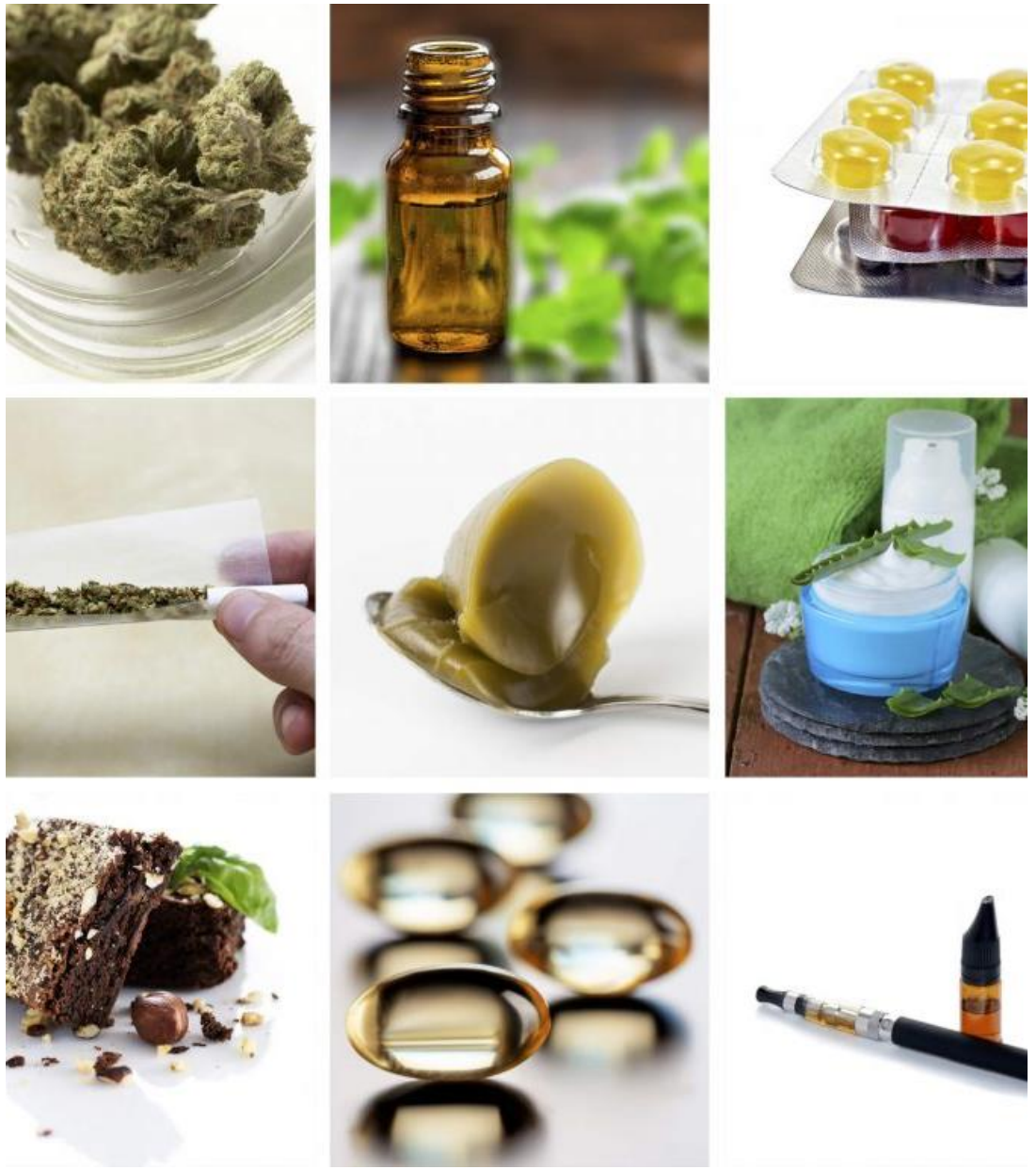
Elasticity of supply of cheeseburgers in Lexington. (Very elastic)



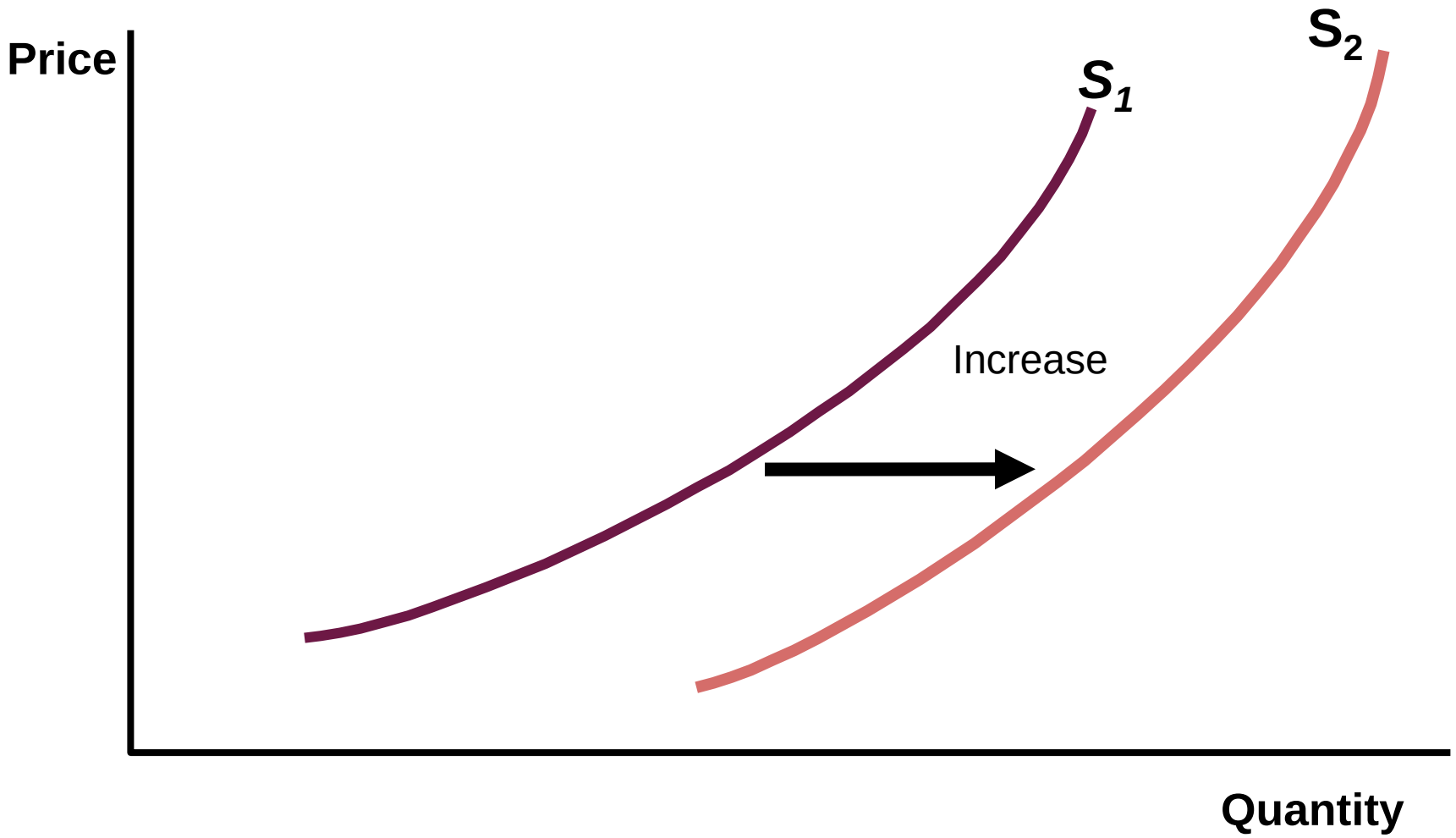
VII. Factors that determine flexibility of producers' response to a price change, p. 90

- 1) Ease of acquiring and utilizing inputs, factor mobility
- 2) Time required to produce the good or service
- 3) Ability to store output
- 4) Availability of infrastructure facilities

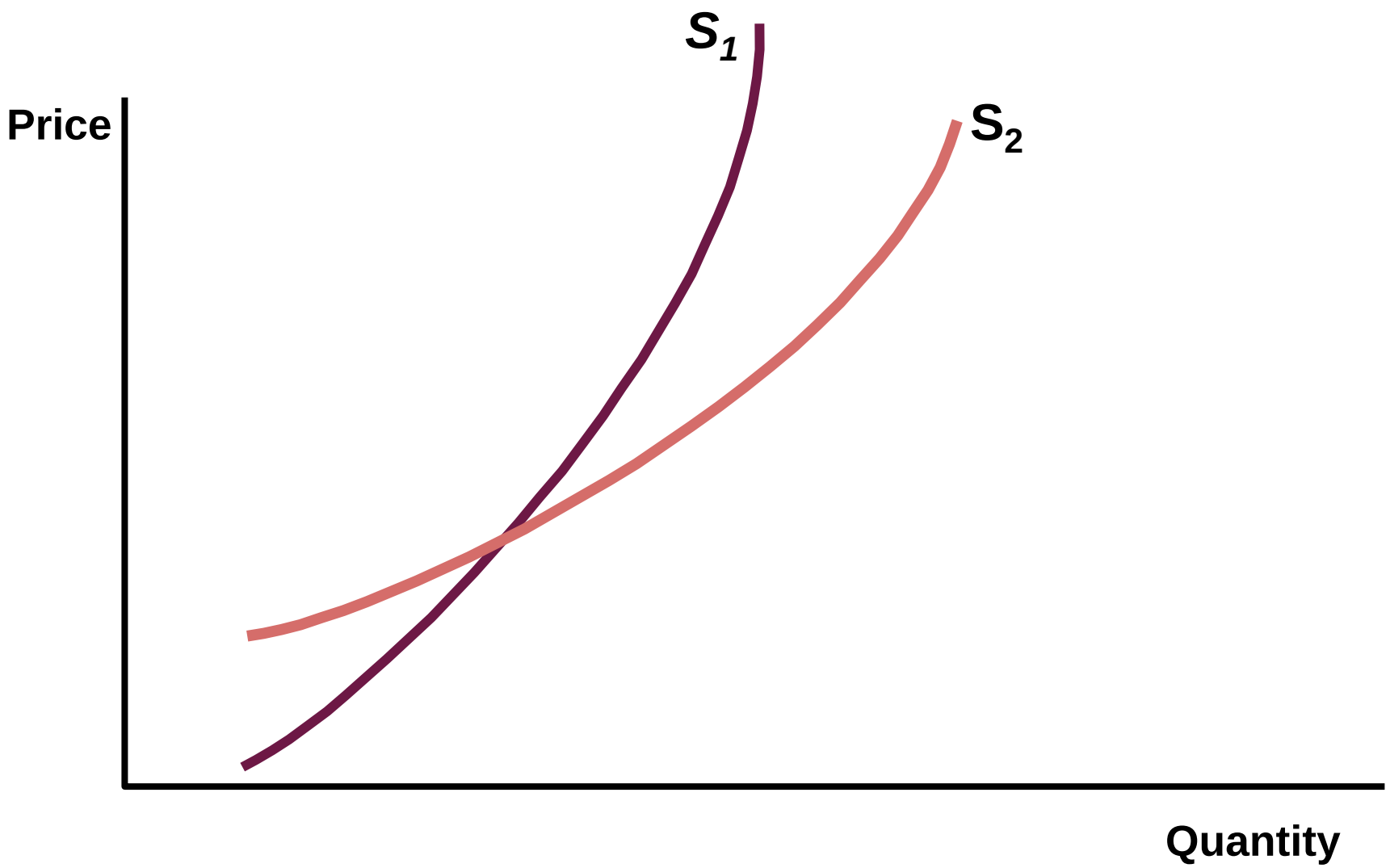
The impact of marijuana legalization on level of supply and elasticity of supply.



Higher level of supply



Increase in overall elasticity of supply



VIII. INCOME ELASTICITY: p. 91

How demand changes in response to a change in income

- $Y_D = \frac{\%\Delta Q}{\%\Delta Y}$ where Y = income

- $Y_D > 0$ As Y increases, Q increases
- (NORMAL GOOD)

- $Y_D < 0$ As Y increases, Q decreases
- (INFERIOR GOOD)

- If income increases by 10% and as a result, demand falls by 20% what does this tell us?
- Inferior good

Normal Goods, ($Y_D > 0$), are either Luxuries or Necessities

- If $Y_D > 1$, is response of demand to income change elastic or inelastic?
- Elastic
- Luxury

- If $Y_D < 1$, response is inelastic
- Necessity

MATCHING:

Products	Y_D
Tobacco Products	2.6
New Furniture	-.6
Macaroni Noodles	3.4
Mink Coats	.21

Drug and Alcohol Elasticities

- **Not in packet**
- **Y_D Heroin > 1**
- **(luxury)**
- **Cocaine?**
- **Y_D Cocaine > 1**
- **(luxury)**
- **Marijuana?**
- **Y_D Marijuana < 1**
- **(Necessity)**
- **Alcohol?**
- **Y_D Alcohol < 1**
- **(Necessity)**

ICLICKER – REEF POLLING

You have been hired by the Kroger Company to make beer purchases for Kroger stores in Kentucky and Ohio. Suppose you find that the income elasticity of demand (Y_D) for Big Joe's brand beer is -.23 and the income elasticity of demand for Mountain Top Brew brand beer is 1.4. If the economy is improving and average incomes levels are on the rise in Kentucky and Ohio, based on these values for income elasticity, you should

A. Stock more of Big Joe's brand beer and less of Mountain top brew brand beer.

B. Stock less of Big Joe's brand beer and more of Mountain top brew brand beer.