

# Market economy and public policy 5

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# Today

- How to start your own business --- example and explanation by theories
- Homework from last week
- Examples to understand the “utility”
- Normal goods and inferior goods
- Income effect and substitution effect

# Mike Itagaki's success

Harvard Entrepreneurs Club guide to starting your own business, Poonam Sharma with chapters contributed by Ngina Duckett...[et al], Harvard University, 1999.

## Organic chemistry tutorial software

- Founder, Kimberlyte, Inc. [www.kimberlyte.com](http://www.kimberlyte.com)
- Harvard College '98 (Chemistry)
- Founded company between first and second year at Harvard.
- Studied organic chemistry.
- Took a semester off at the second year.
- Design (and start a business with) a piece of software that contains all information used in the first-year.
- With it, students can avoid detailed notes.

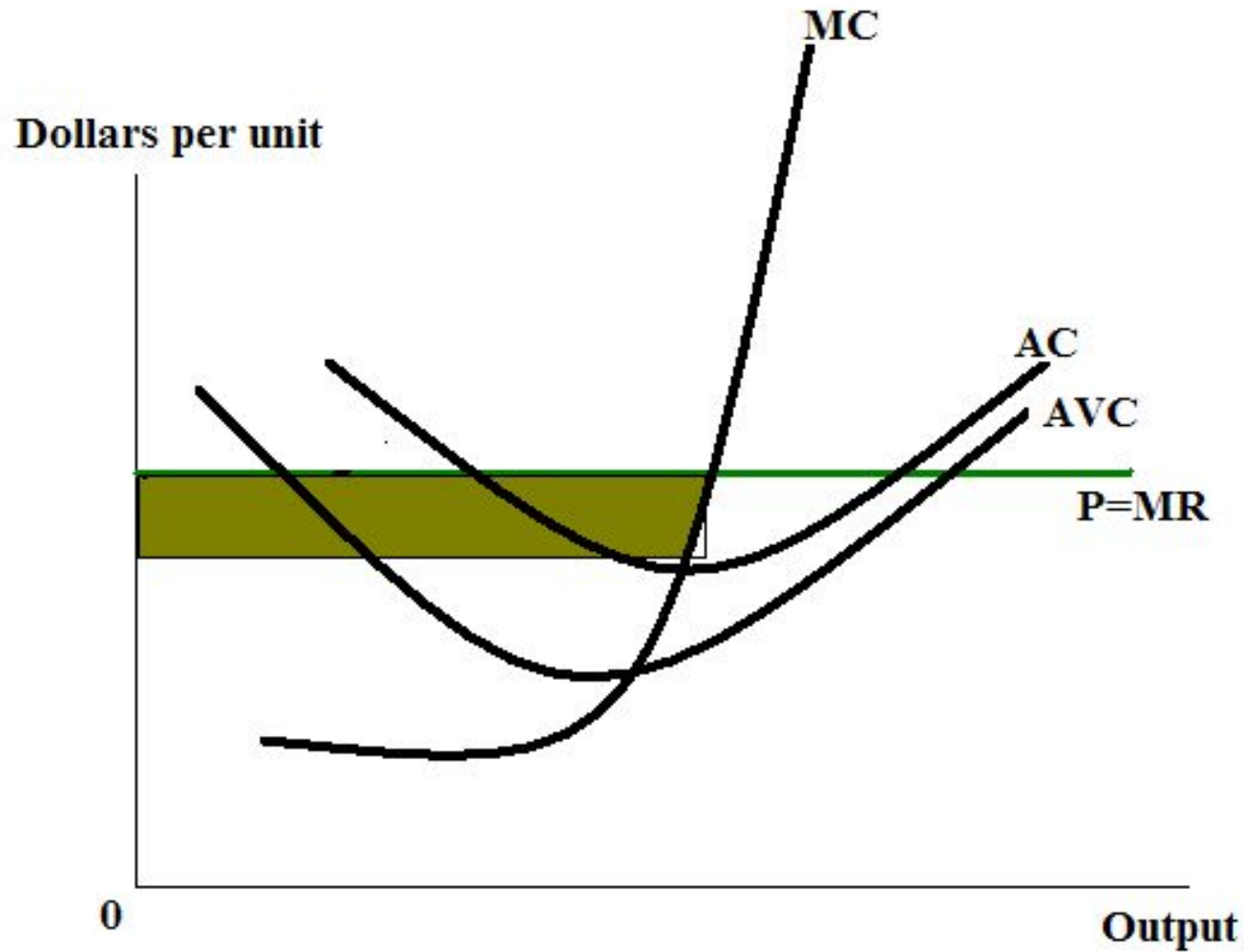
- In 1994, he programmed, and put it up on a web site. (Macintosh version) sold two copies.
- In spring 1995, incorporated Kimberlyte in Hawaii, programmed more sophisticated version, “ChemDraw”. But came back to Harvard.
- Internet oriented company = low costs = just running a web site and spending his time.
- Internet – run his company from many places.
- In summer 1995, graded up programming language to C++, and worked full time to program a Windows version. Sold hundreds copies.

- Got much larger market share, because Windows machines have a much larger market share of the computer market.
- University of Ohio recommended it to a class, ordered \$7000 worth of product.
- But, in 1996, he still wanted the whole market, so improved the Macintosh version. Much better job, because much more experienced.
- In summer 1997, a new direction of company = web browser to find targeted e-mail addresses. (Java programming language). Listed 10,000 e-mail addresses. == Marketing tool.
- In February 1998, awarded Harvard Student Agencies Entrepreneurial Contest

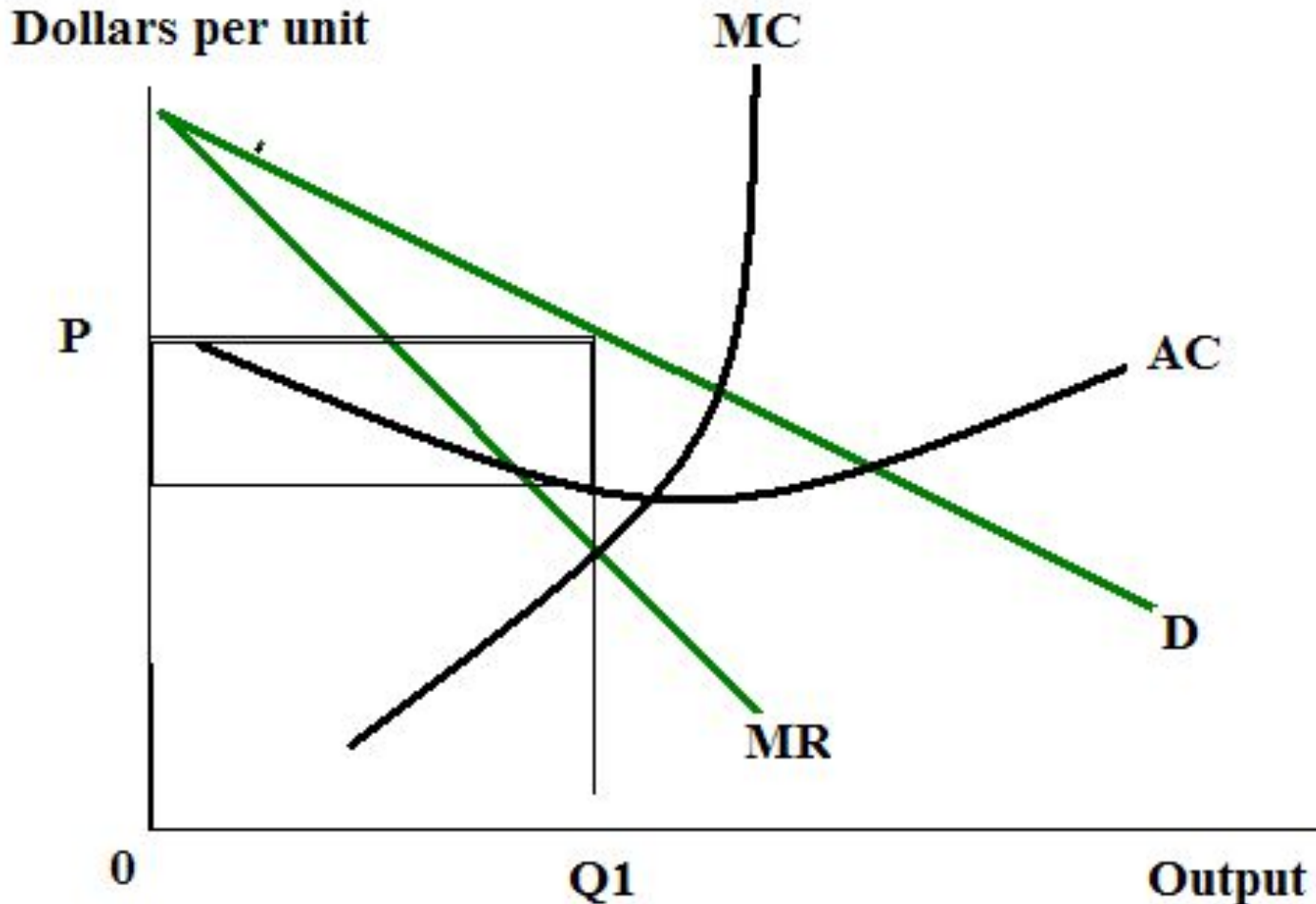
# How to start your business as a student

- Think like as an entrepreneur.
  - various types of leadership, various idea types
- Marketing your product --- methods
  - What customers really want? --- research
- Financing your plan
  - Find venture capitalists: investment and return
- Writing the business plan --- for financing
- Industry --- the competitors
- Protecting yourself
  - Options of your legal structure

# How a company set the price in competitive market?



# How a company set price in a market, with no competitor?

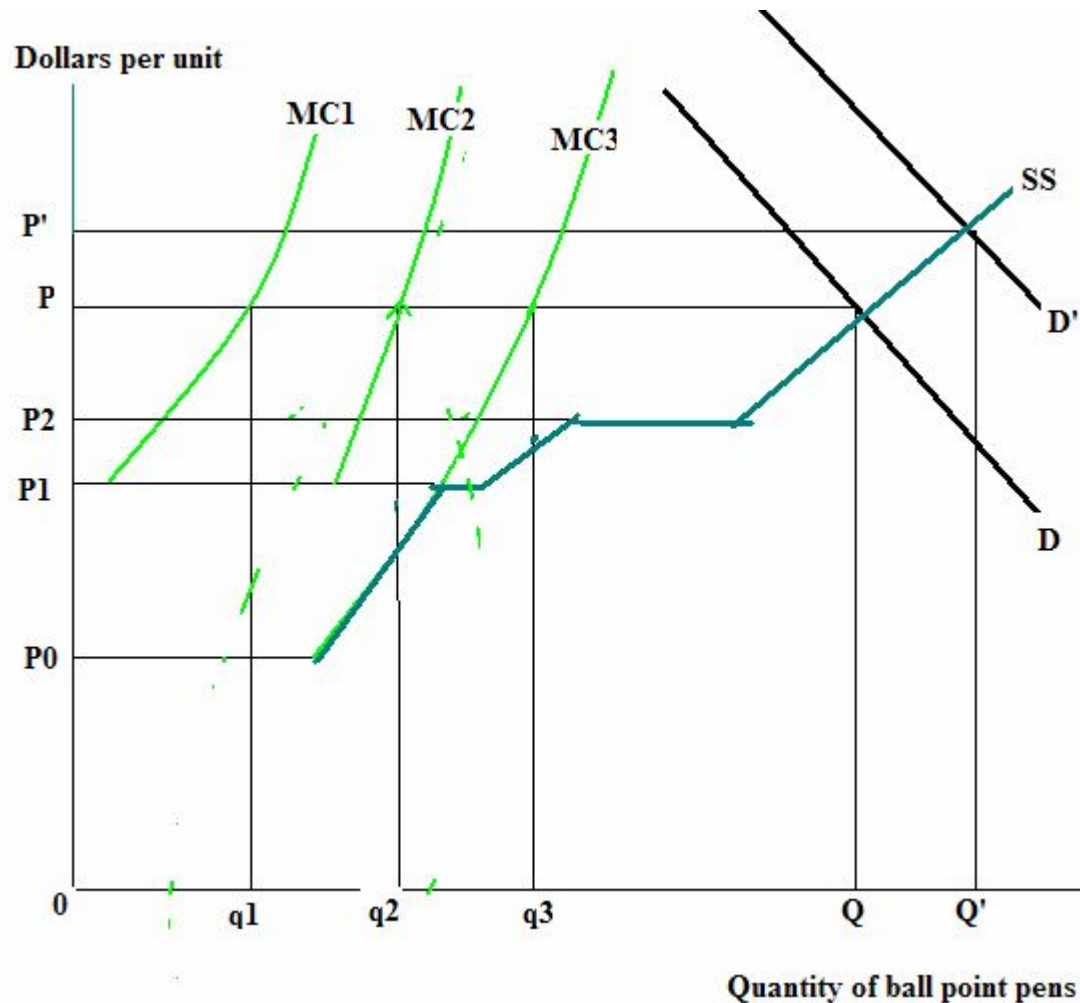




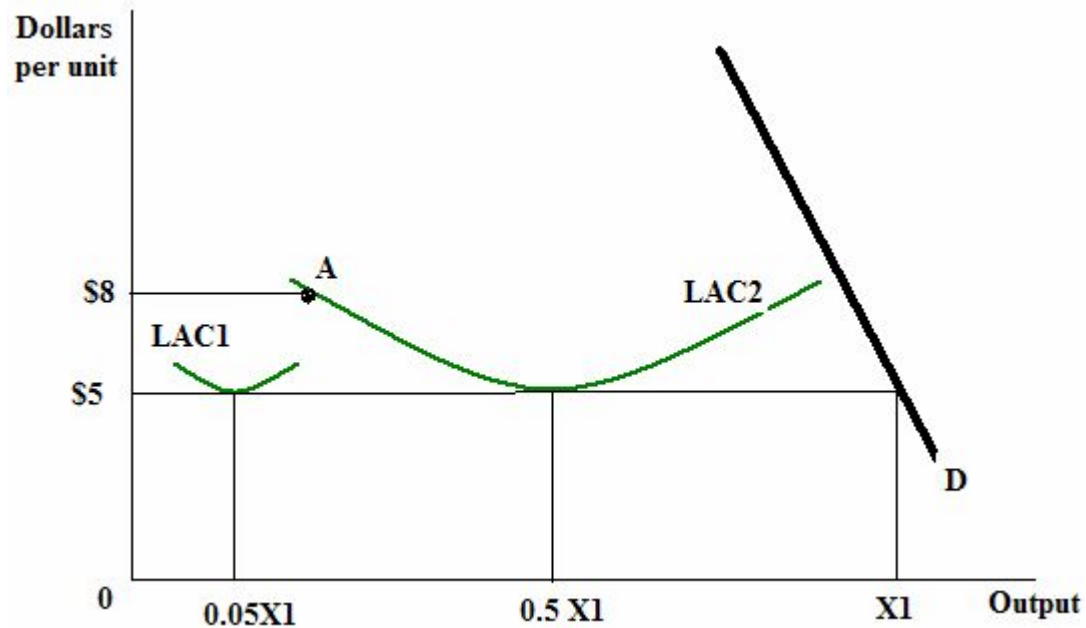
# Q, P, TR, TC, TVC, TP, MC, MR

Output	Price	Total Revenue	Total cost	Total variable cost	Total profit	Marginal cost	Marginal revenue
0	\$12	0	15	0	-15	-	-
1	12	12	25	10	-13	10	12
2	12	24	33	18	-9	8	12
3	12	36	40	25	-4	7	12
4	12	48	46	31	2	6	12
5	12	60	54	39	6	8	12
6	12	72	63	48	9	9	12
7	12	84	73	58	11	10	12
8	12	96	84.9	69.9	11.1	11.9	12
9	12	108	98	83	10	13.1	12
10	12	120	113	98	7	15	12
11	12	132	132	117	0	19	12
12	12	144	155	140	-11	23	12
13	12	156	185	170	-29	30	12
14	12	168	225	210	-57	40	12

# Marginal cost to supply curve

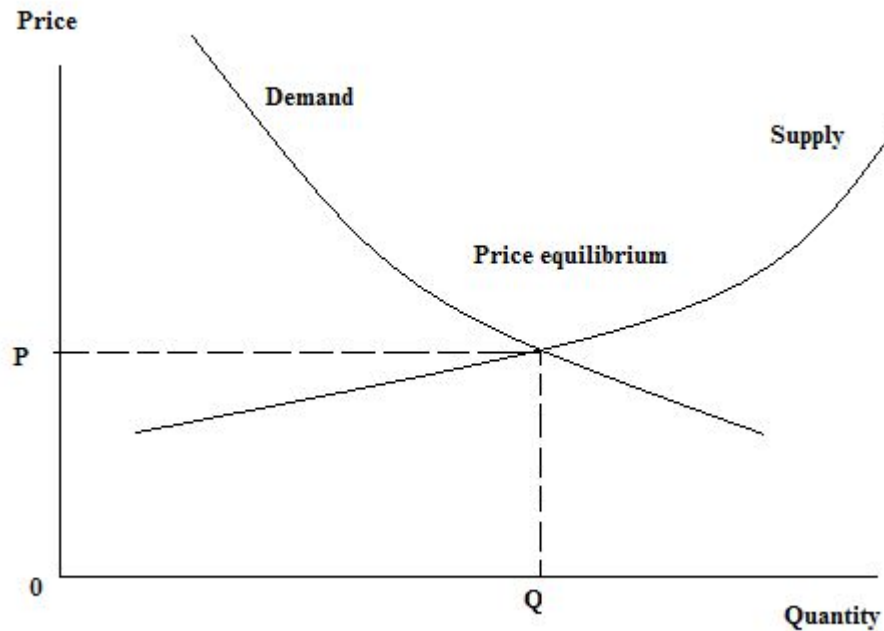


# Cost curves and structure of industry

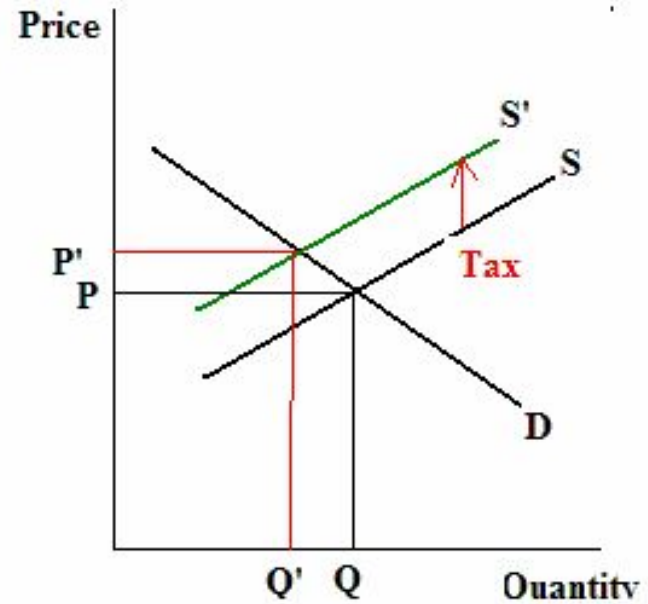
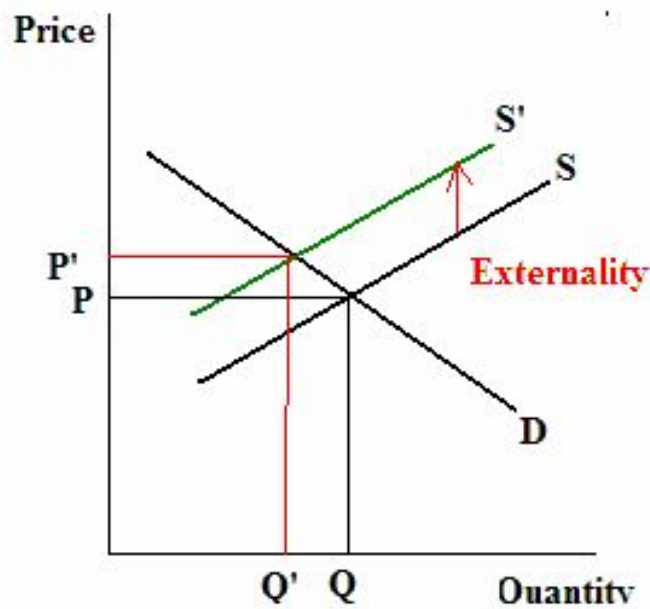


# How is price made? Why it is changed?

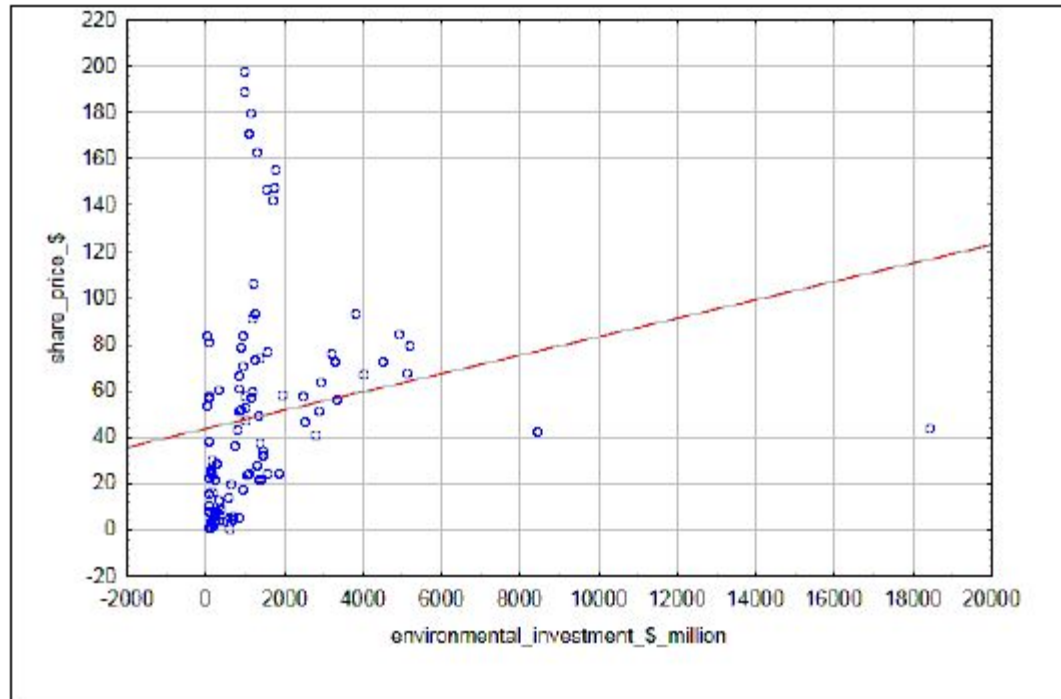
- In competitive market



# Emission trade ?

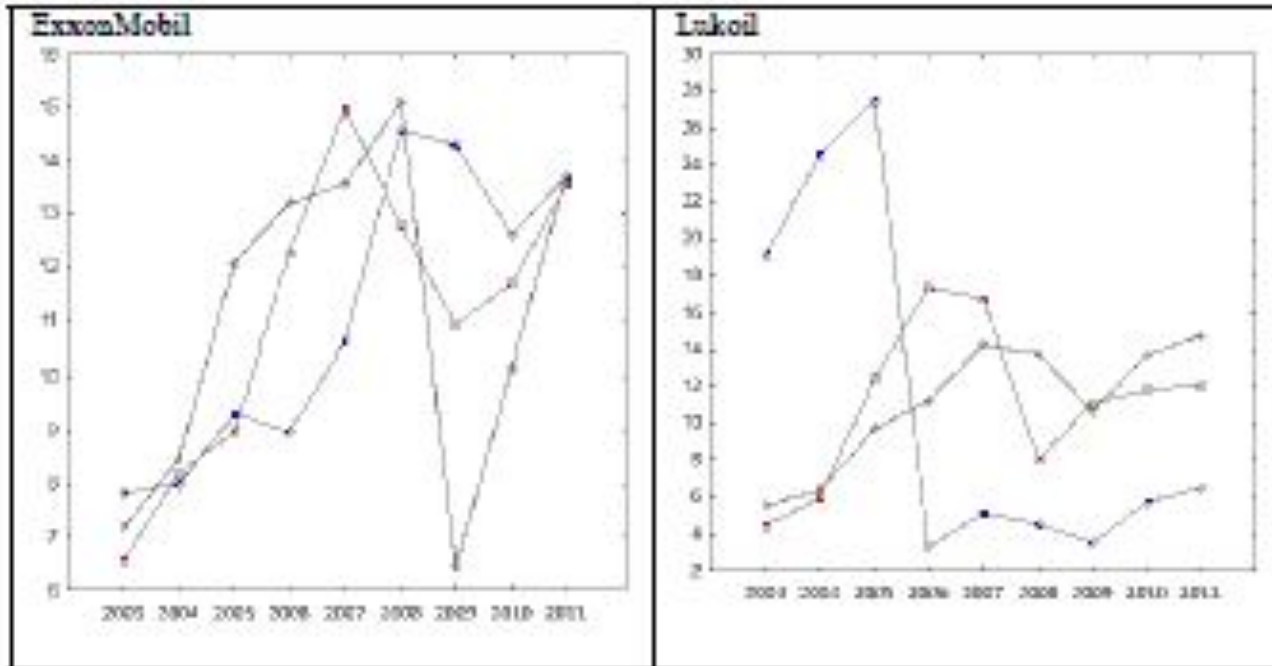


# Environmental Investment by Oil Industry

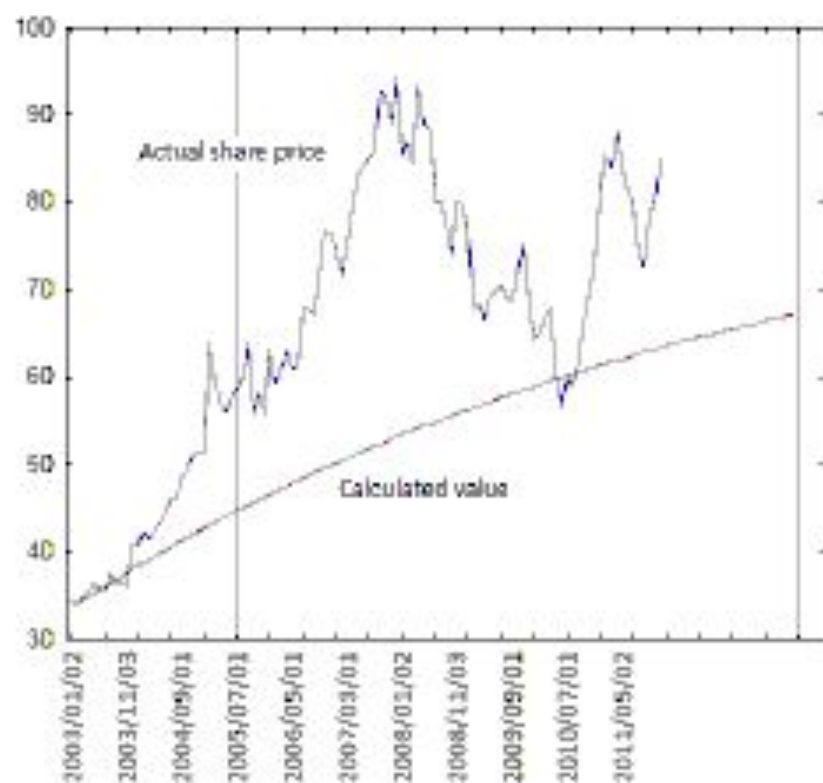


1. Include environmental performance in business plan.
2. Eliminate accidents.
3. Achieve company's goal...Higher market share.

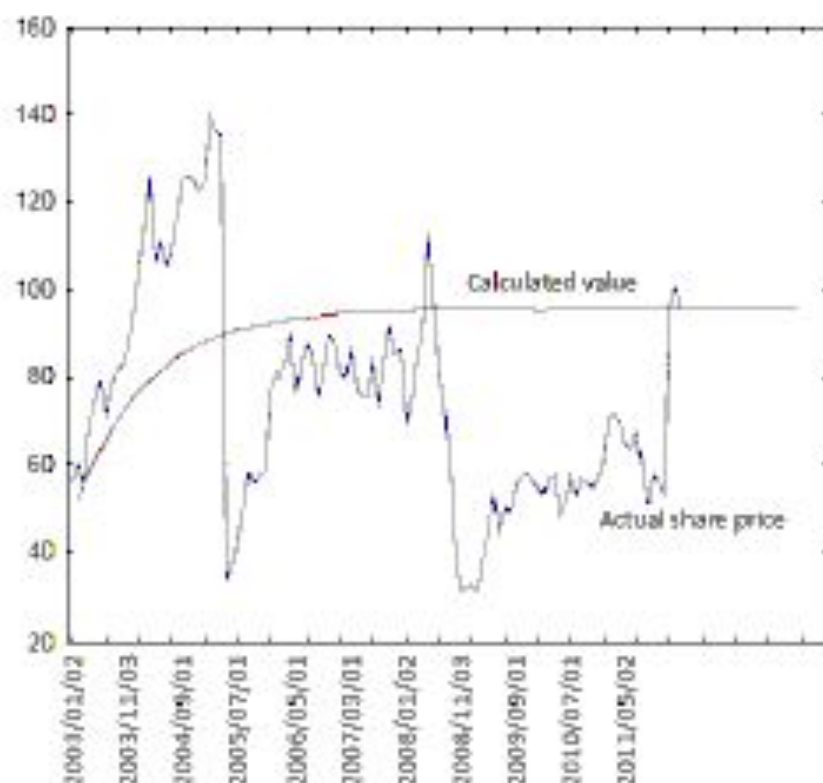
# Environmental and share price in oil industry



- o- Environmental investment
- Share price
- △- Net income



ExxonMobil

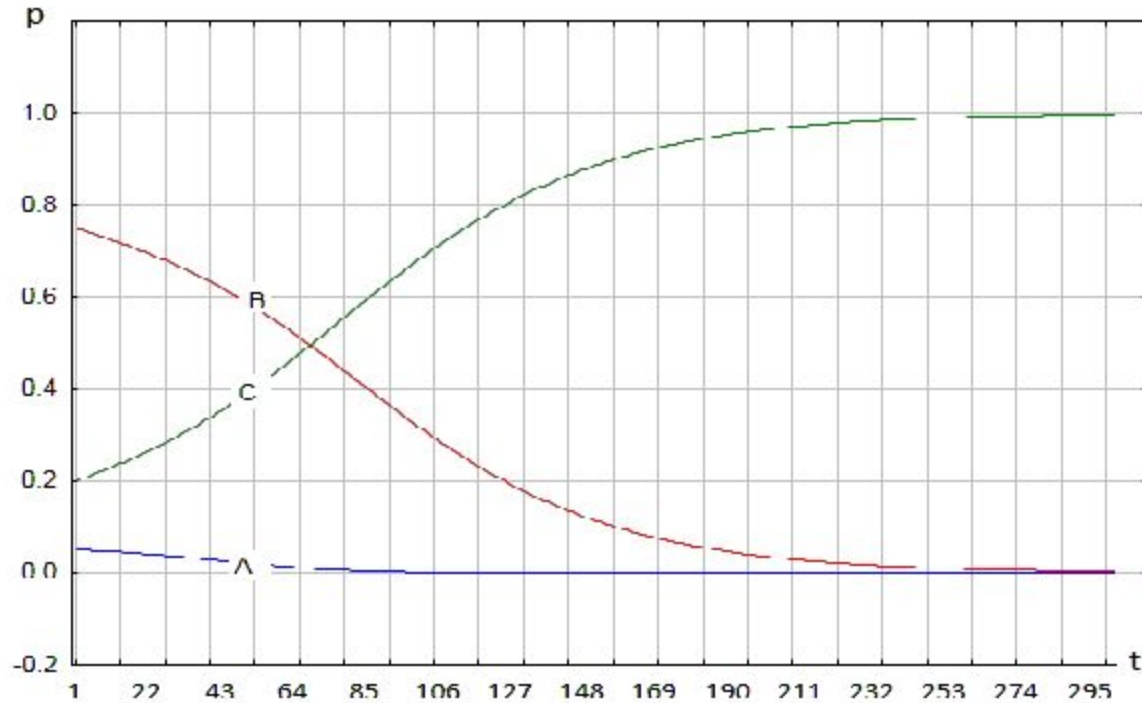


Lukoil

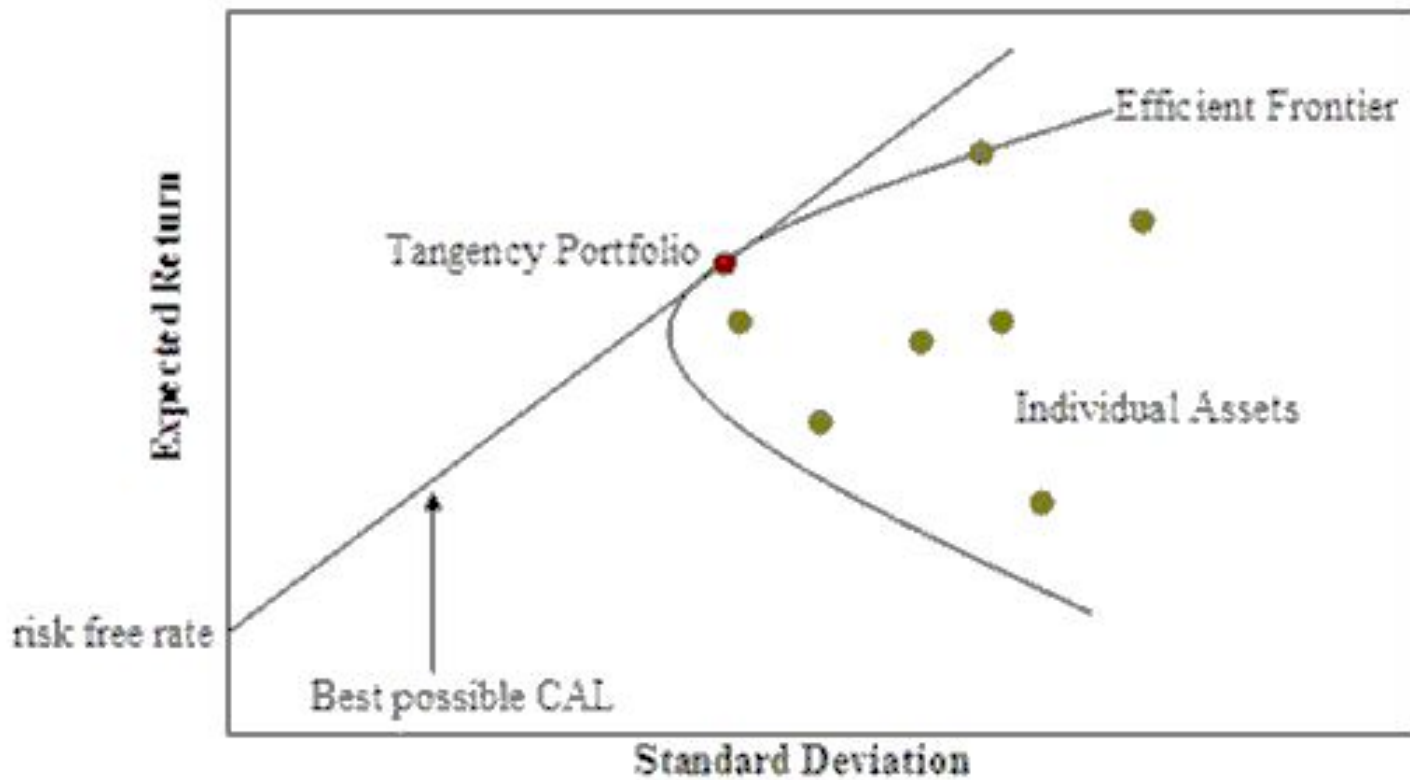
The first order forecasting of share prices for ExxonMobil and Lukoil (US dollars)



# Strategy of Environmental Investment



# Investment risk



# Homework 3

## Translate to Ukrainian language

- Governmental intervention
- Price ceiling
- Black market
- Rationing, Non price rationing
- Shortage
- Surplus

# Questions

- The government agrees to purchase as many pounds of apples as growers will sell to it at a price of \$0.80.
  - a. How much will the government purchase,
  - b. how much will consumers purchase, and
  - c. how much will be produced?

# The supply and demand for apples

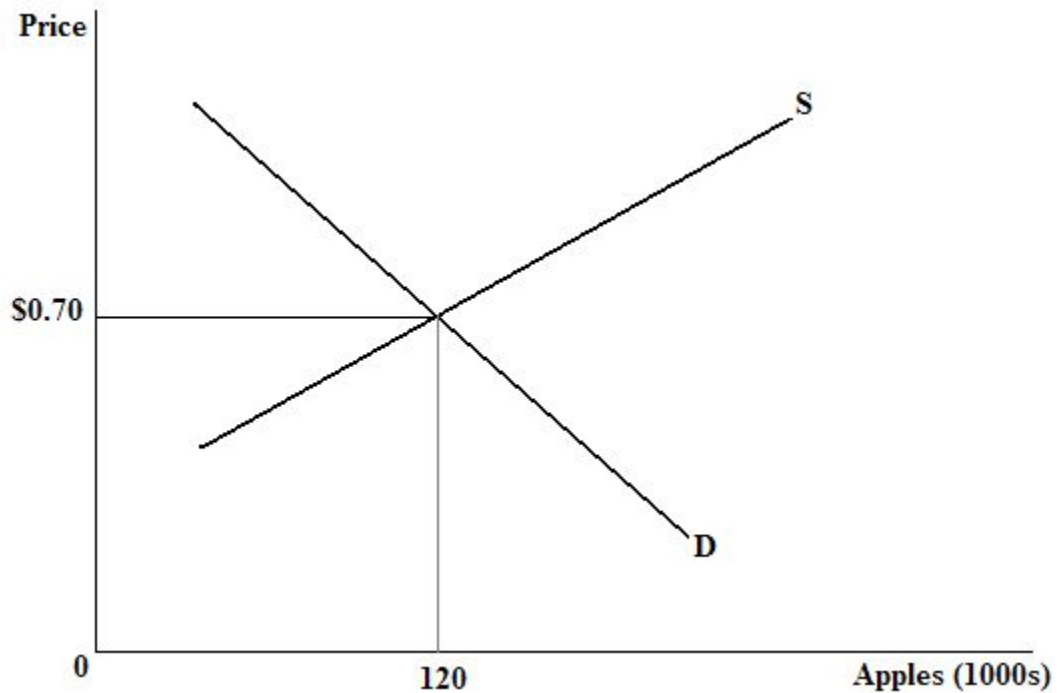
Demand

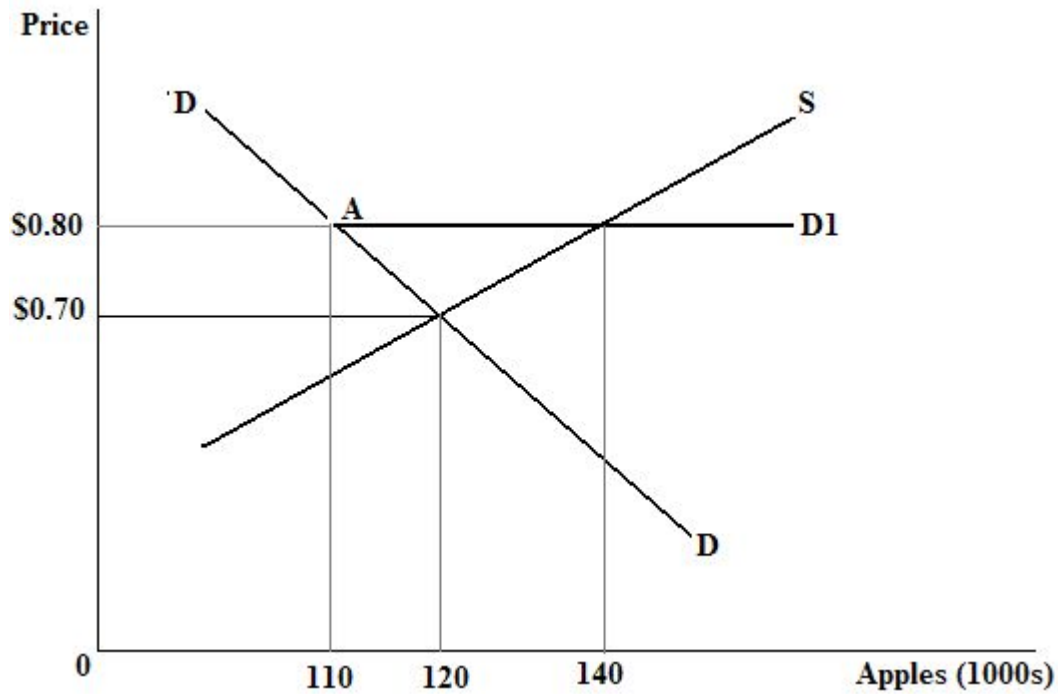
Supply

Price for pound	Quantity demanded per Year	Price per pound	Quantity supplied per year
\$0.90	100000	\$0.60	100000
0.80	110000	0.70	120000
0.70	120000	0.80	140000
0.60	135000	0.90	150000

What is the market equilibrium price and quantity?

# Governmental purchase apple case





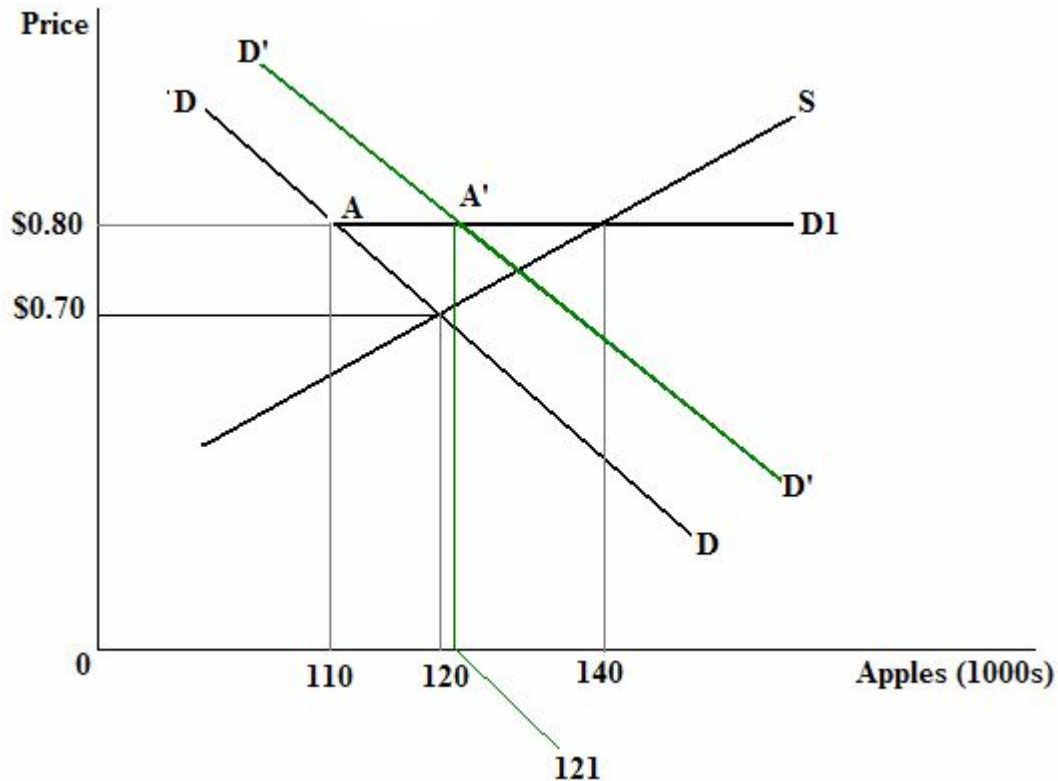
- a. Governmental purchase =  $140\ 000 - 110\ 000 = 30\ 000$
- b. Consumer purchase = 110 000
- c. Produced apples = 140 000

# Homework 1

- Suppose the government policy of purchasing apples remains in effect, but consumer demand increases by 10 percent (consumers will purchase 10 percent more at each price than they did before).
- What will be the effects on
  - a. total apple output,
  - b. purchases by consumers,
  - c. purchases by government, and
  - d. the price of apples?



# After the Demand shifts



The consumer demand becomes D-D'.

The demand curve confronting the producers becomes D'-A'-D1.

Total output and price don't change.

But, the consumers' purchases rise to 121 000.

and the government's purchases fall to 19 000 (140 000 – 121 000).

# Homework 2

- Find the demand curves for each of 3 variables.

$$U = F^{\alpha} C^{\beta} S^{\gamma}$$

$$\alpha + \beta + \gamma = 1$$

# Cobb-Douglas 3 dimensional case

$$I = FP_F + CP_C + SP_S$$

$$L = F^\alpha C^\beta S^\gamma + \lambda(I - FP_F - CP_C - SP_S)$$

$$\frac{\partial L}{\partial F} = \alpha F^{\alpha-1} C^\beta S^\gamma - \lambda P_F = 0$$

$$\frac{\partial L}{\partial C} = \beta F^\alpha C^{\beta-1} S^\gamma - \lambda P_C = 0$$

$$\frac{\partial L}{\partial S} = \gamma F^\alpha C^\beta S^{\gamma-1} - \lambda P_S = 0$$

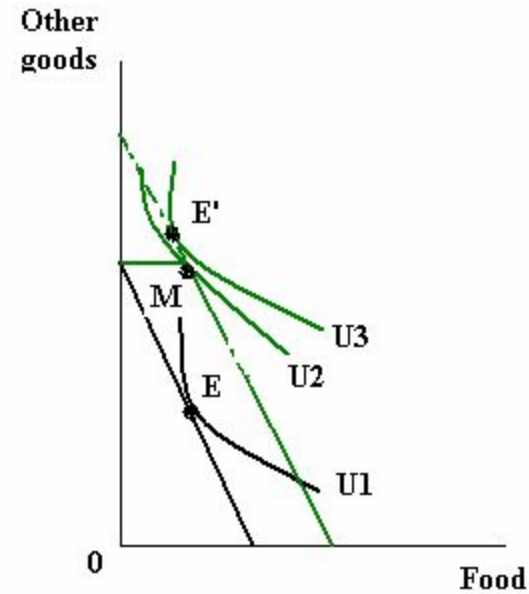
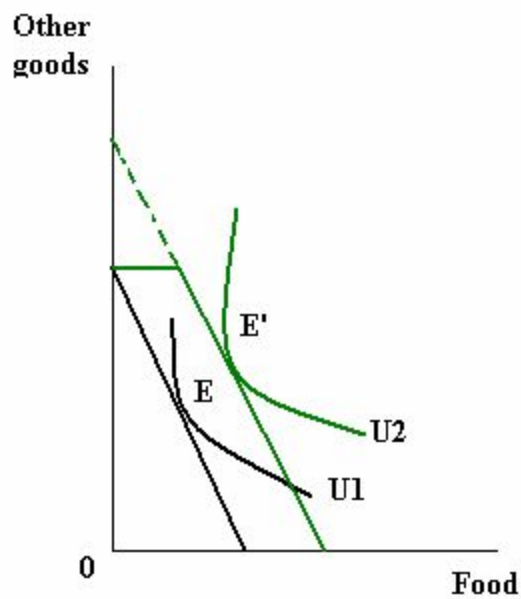
$$\frac{\partial L}{\partial \lambda} = I - FP_F - CP_C - SP_S = 0$$

$$F = \frac{I}{P_F} \left( \frac{\alpha}{\alpha + \beta + \gamma} \right)$$

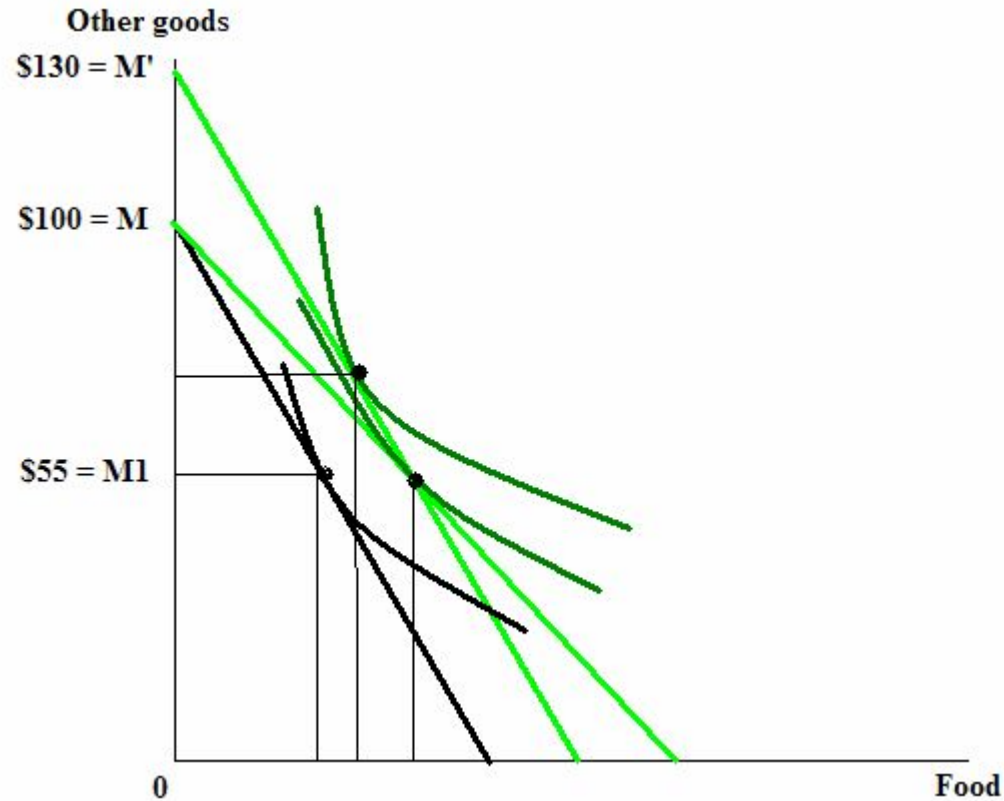
$$C = \frac{I}{P_C} \left( \frac{\beta}{\alpha + \beta + \gamma} \right)$$

$$S = \frac{I}{P_S} \left( \frac{\gamma}{\alpha + \beta + \gamma} \right)$$

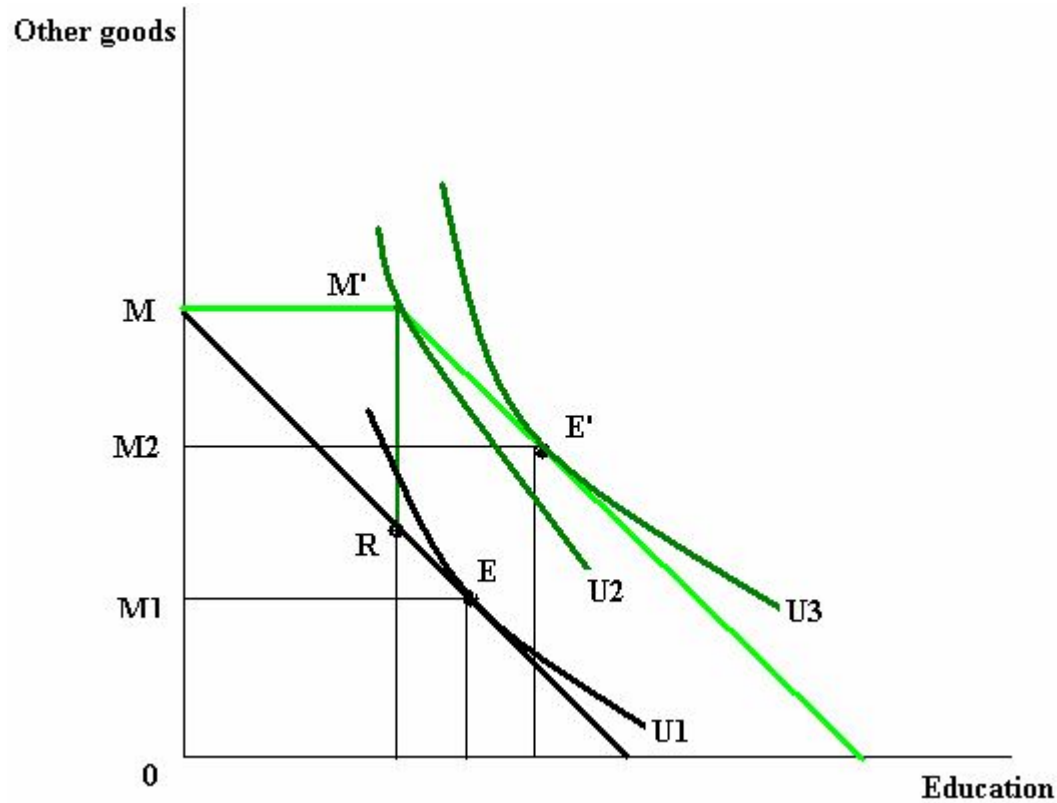
# Effect of food stamp program vs. cash grant



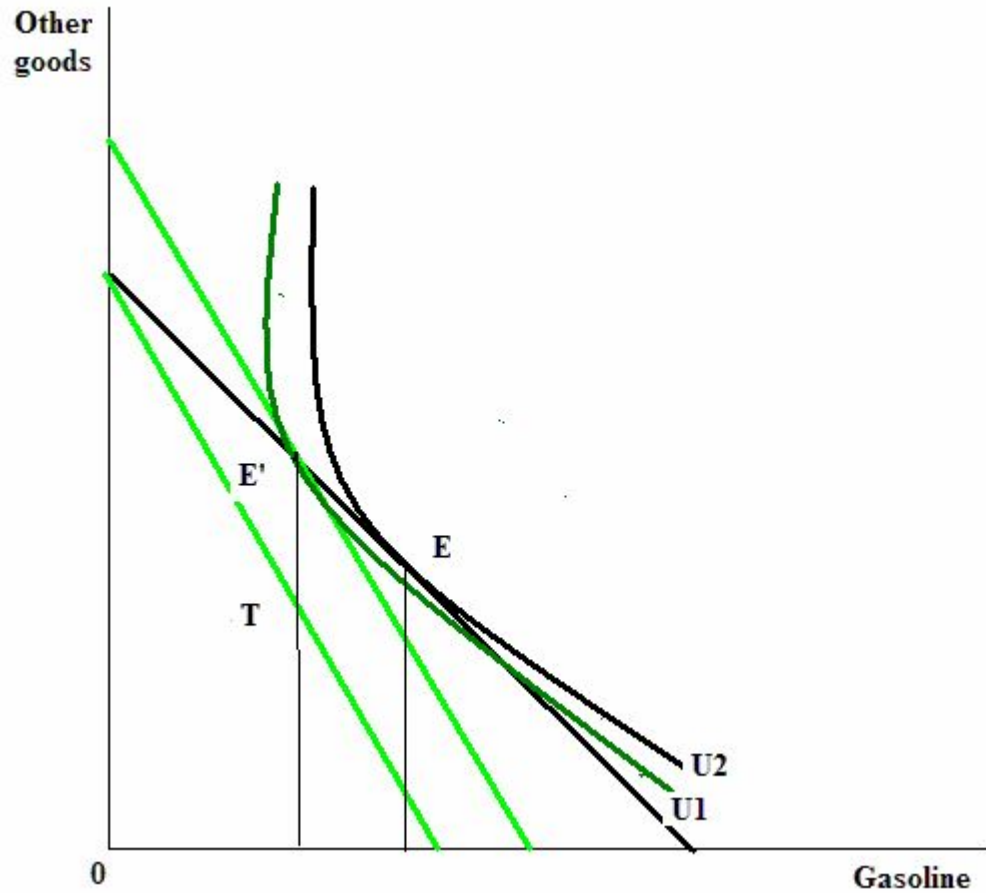
# Excise subsidy vs. Lump-sum subsidy



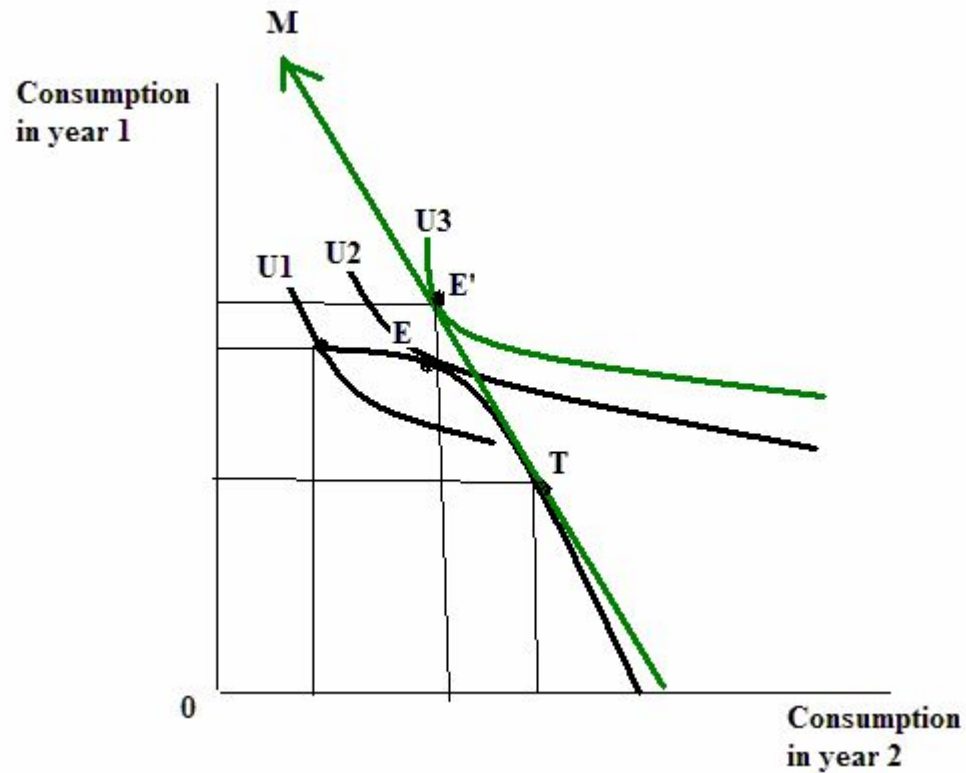
# Fixed-quantity subsidy: Education



# Tax and Rebate Program

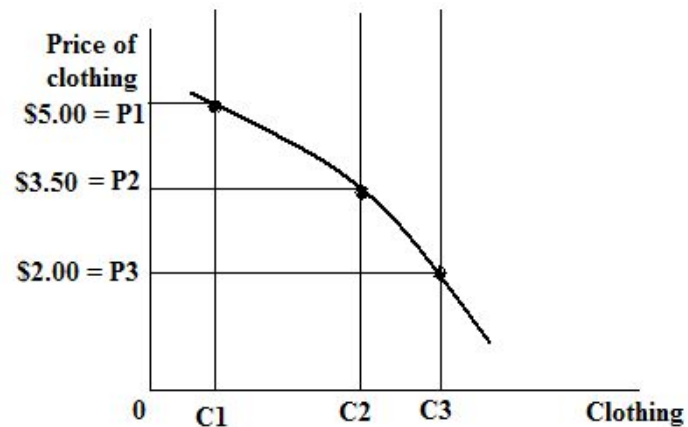
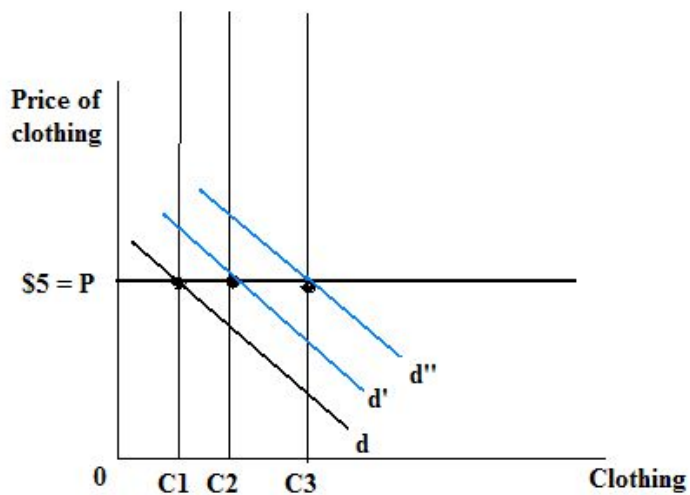
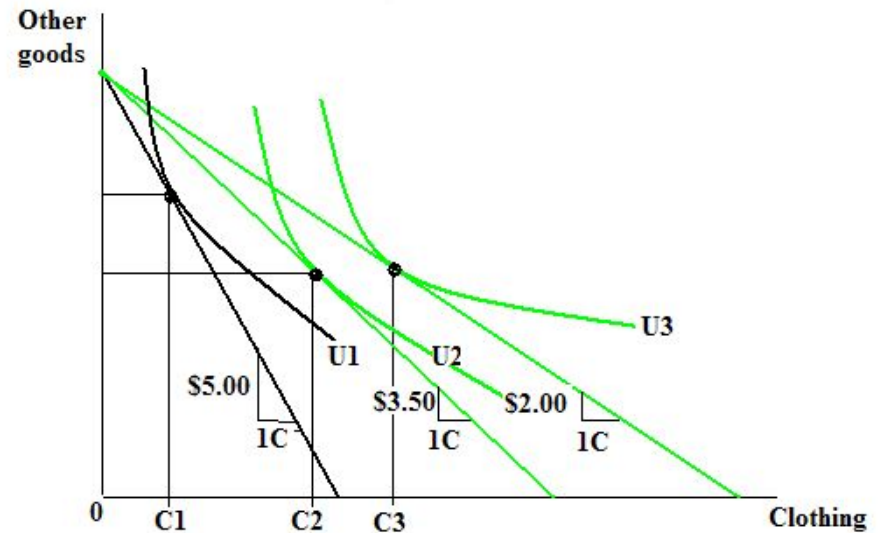
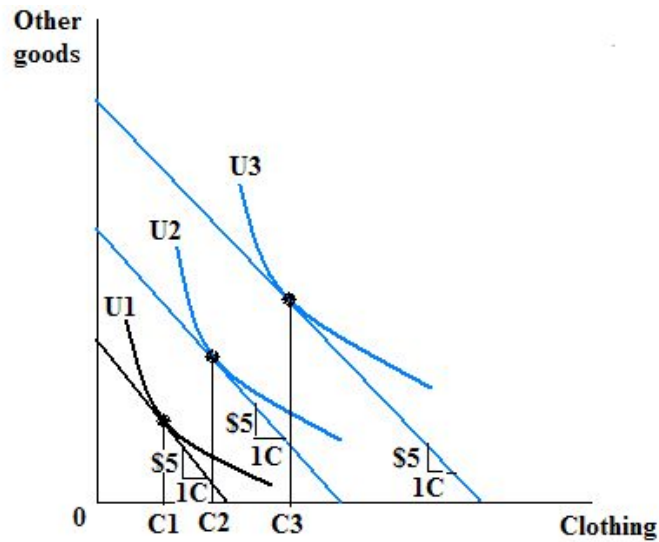


# Investment in education and borrowing

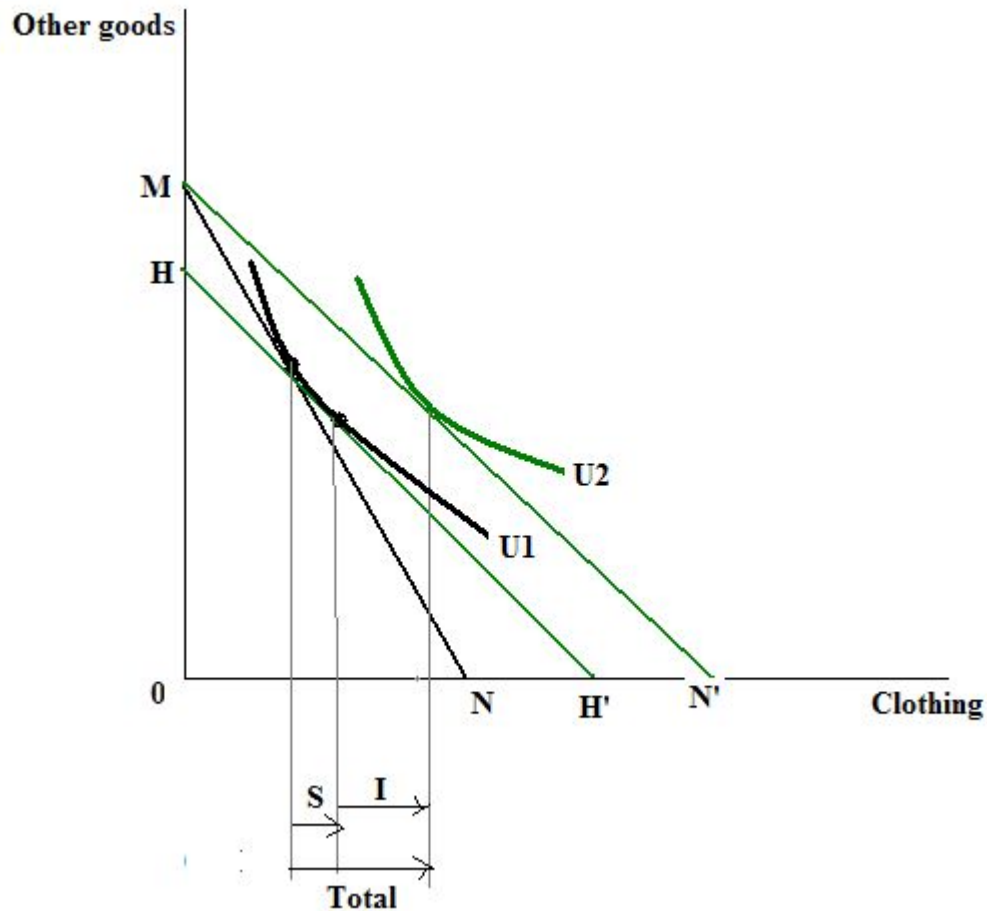




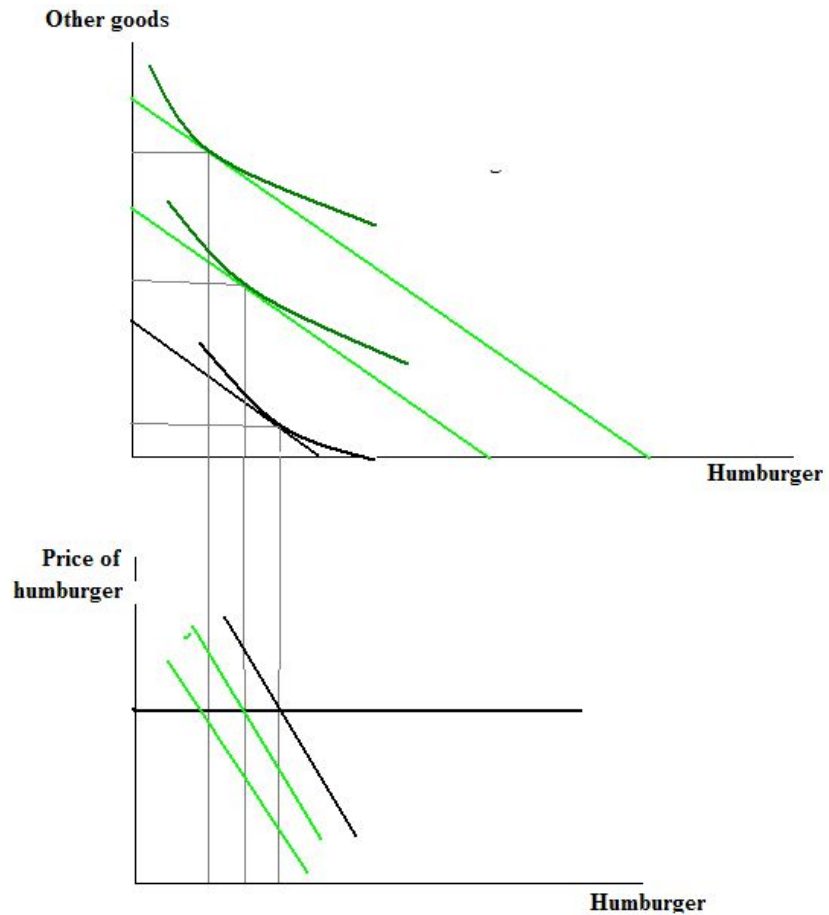
# Income effect, Substitution effect on price reduction



# Income effect and substitution effect in a price reduction



# Inferior goods



# Examples

Consumer goods	All classes	Less than \$3000	\$7 - \$7999	\$12 - \$14999	\$25000 or more
Alcohol	1.0	0.7	1.1	0.9	1.1
Tobacco	1.6	2.1	1.9	1.8	0.9
Gasoline	4.6	3.6	4.8	5.3	3.7
Food	19.5	21.9	20.8	20.0	16.4
Housing	30.5	38,9	31.7	29.5	28.9
Health care	6.1	6.7	6.8	5.8	5.5
Clothing	8.2	6.5	8.0	7.9	9.7
Recreation	8.2	5.2	6.0	7.8	11.3

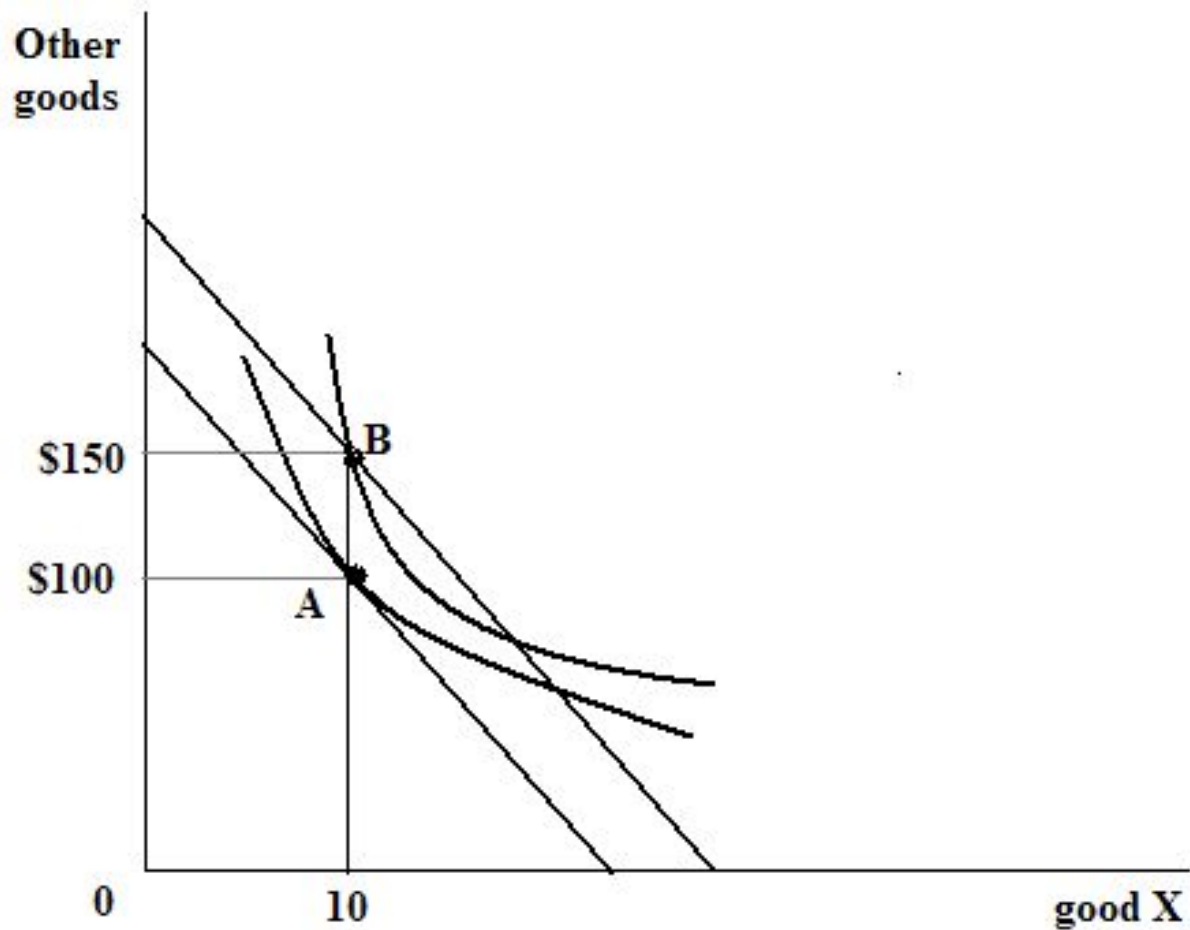
US Department of Labor, Bureau of Labor Statistics, Average annual expenditures for Commodity and Service Groups Classified by Nine Family Characteristics...

# Homework 1

- Consider two market baskets. A (\$100 worth of other goods and 10 units of X), and B (\$150 worth of other goods and 10 unit of X).
- If good X is a normal good, will the consumer's MRS be greater when basket A or basket B is consumed?
- What if good X is an inferior good?
- Show in a diagram

# Hint

if good X is a normal good



# Homework 2

## Translation

- Inferior goods
- normal goods
- Income effect
- substitution effect on price reduction