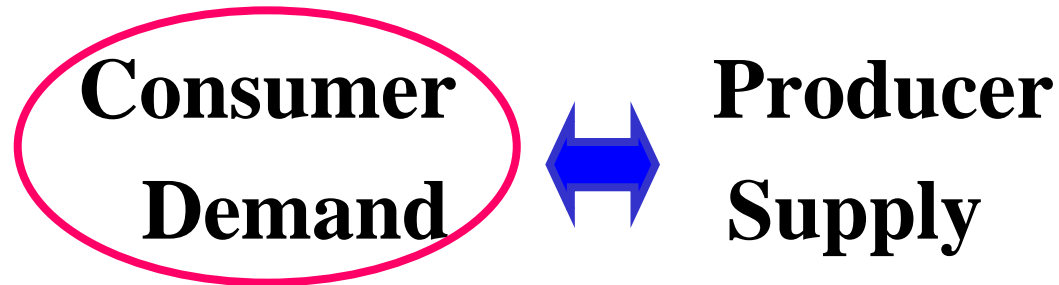


# Basics of Microeconomic Theory



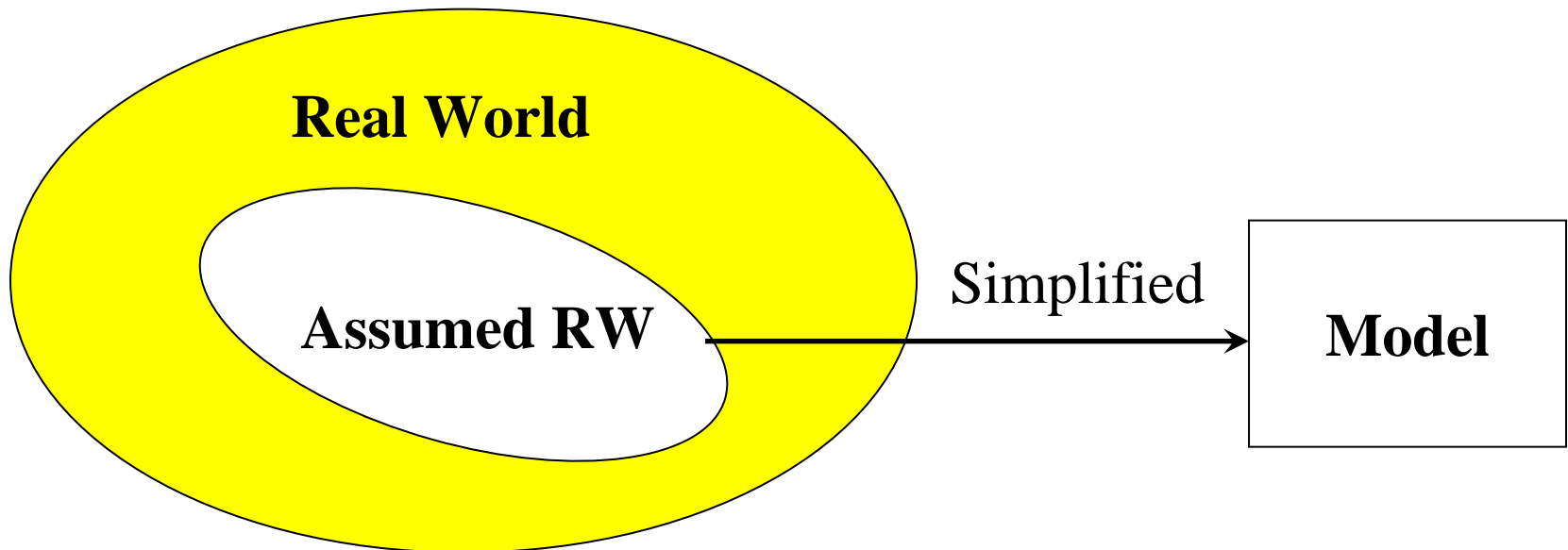
1. Market
2. Budget Constraint
3. Utility
4. Choice
5. Demand
6. Consumer' Surplus

# 1. MARKET

Typical example of economic analysis

**Model:** simplified representation of reality

> elimination of irrelevant detail



# Principle of behavior of agents (people)

## *The optimization principle*

- to choose the **best** pattern of consumption that they can afford  
: reasonable to assume that people try to choose things they want rather than things they don't want.

## *The equilibrium principle*

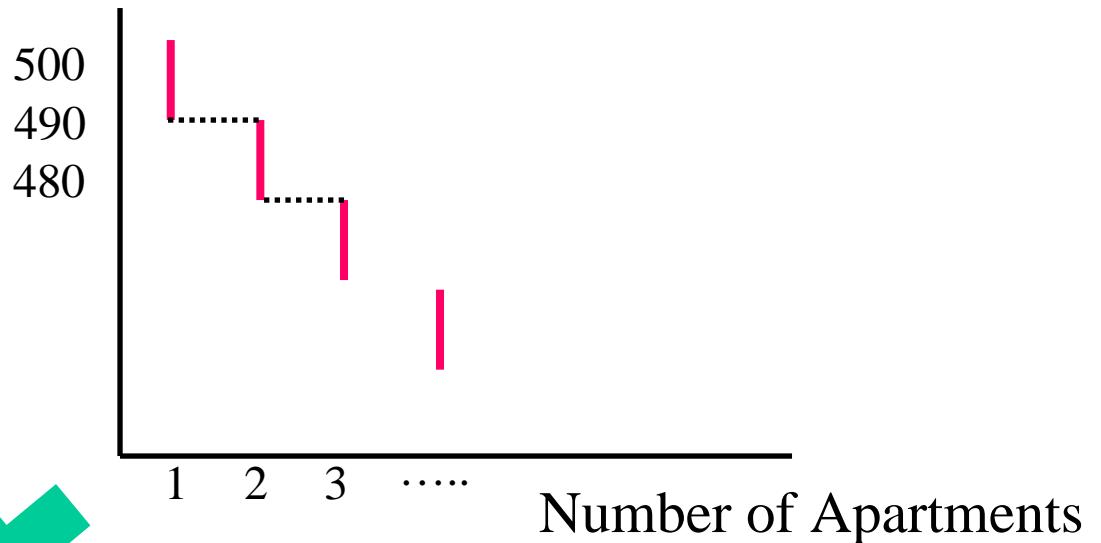
- **Prices** adjust until the amount that people demand of something is equal to the amount that is supplied

Demand Side: Consumer

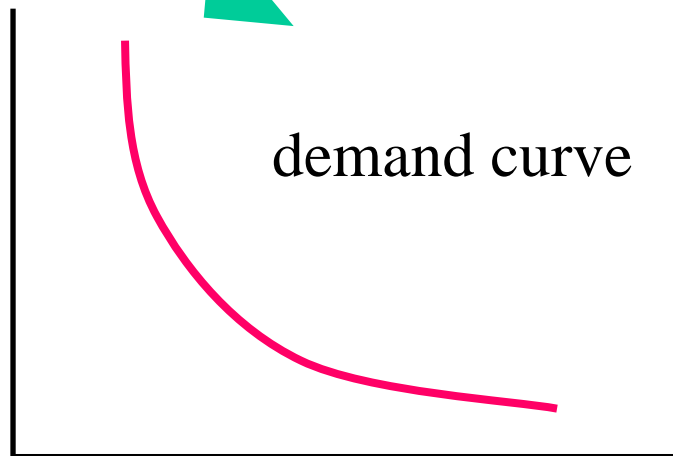
Supply Side: Producer

# Demand Curve

Reservation Price  
= Willingness to Pay  
(WTP)



Reservation  
Price

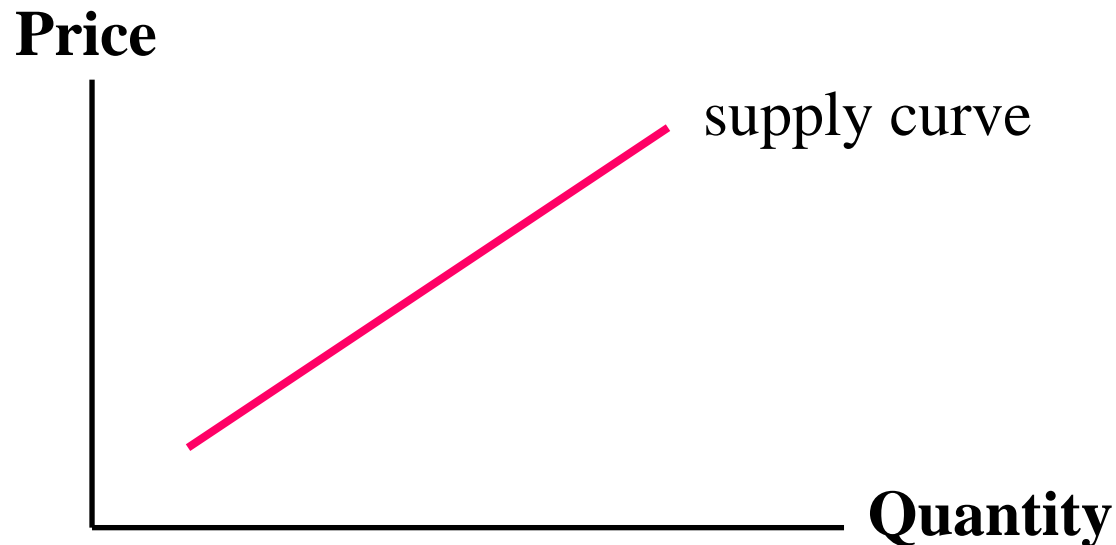


demand curve

Number of Apartments (Consumers)  
Quantity

# Supply Side

- Competitive Market - Basic market  
many independent suppliers
- Monopoly
- Oligopoly (Duopoly)
- Control or Regulation (by Government)

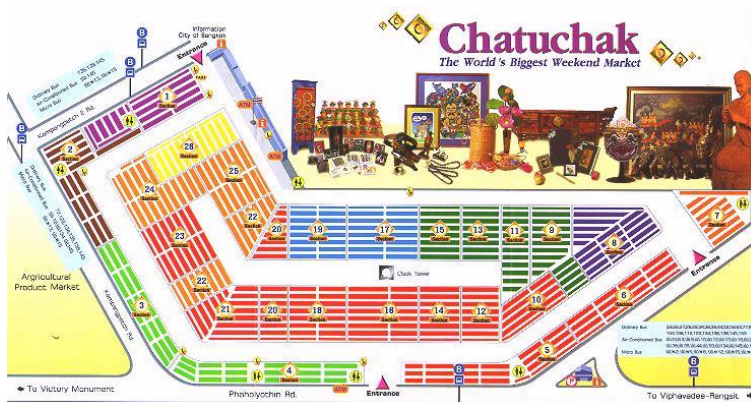
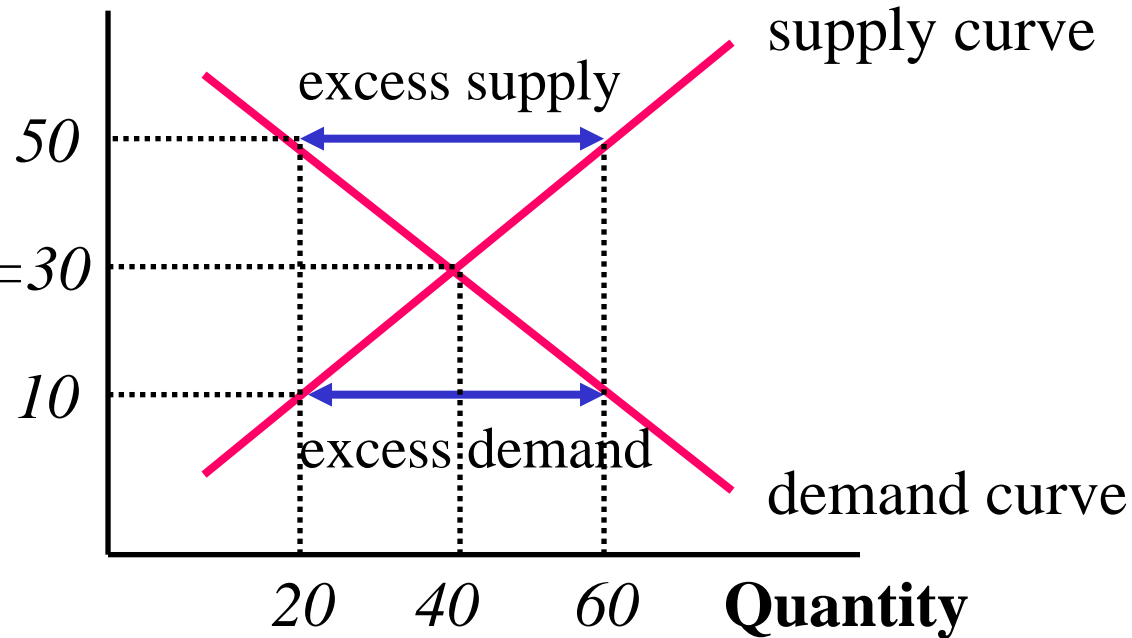


# Market Equilibrium

Price  
[Bath]

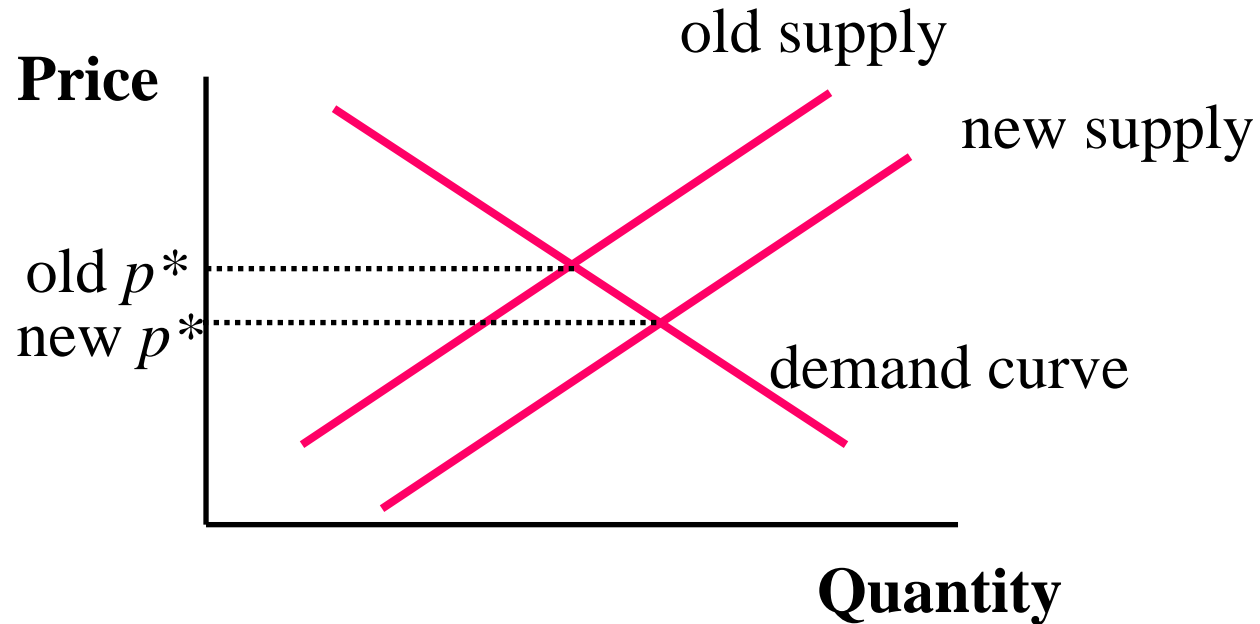
Equilibrium  
Price

$*p=30$



Chatuchak Market in Bangkok

# Comparative Statics



Evaluate “conditions change”

(ignore dynamic change)

# Pareto Efficiency

Most important criterion on microeconomics theory

Efficiency = **Pareto Efficiency**

We cannot find a way to make some people better off without making anybody else worse off

if something is *not* Pareto efficient, then there *is* some way to make some people better off without making someone else worse off.

**Pareto Improvement**            **Pareto Inefficiency**

**No Pareto Improvement**            **Pareto Efficiency**

\* The outcome of the competitive market is Pareto efficient



## 2. BUDGET CONSTRAINT

Good(s)

anything that increases utility

Bad(s)

anything that decreases utility

$x_2$  : Composite goods

(all other goods except goods 1)

**Budget set**

$$p_1x_1 + p_2x_2 \leq m$$

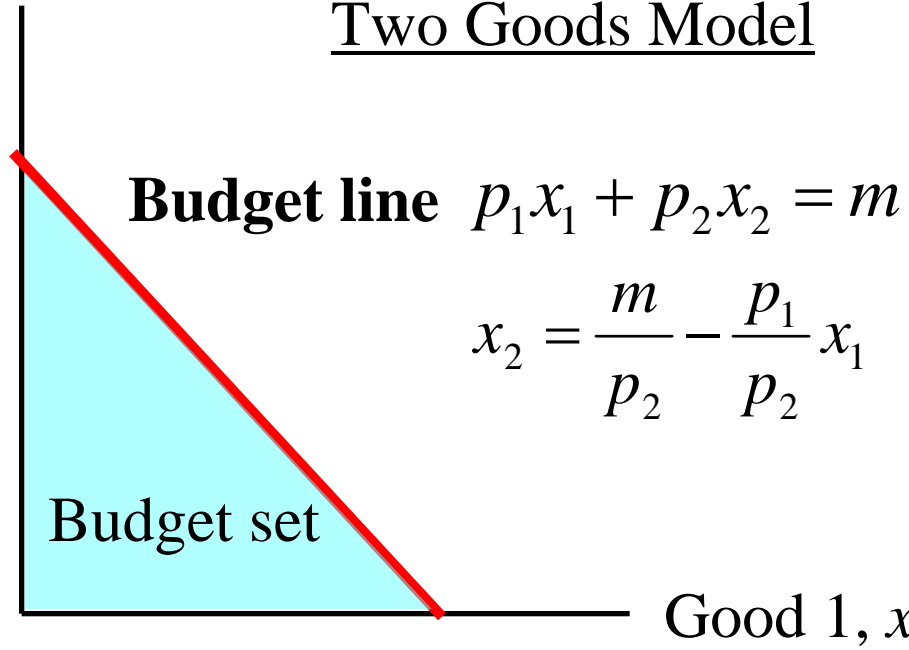
$x$  : consumption volume

$p$  : price of good

$m$  : (disposal) income

Good 2,  $x_2$

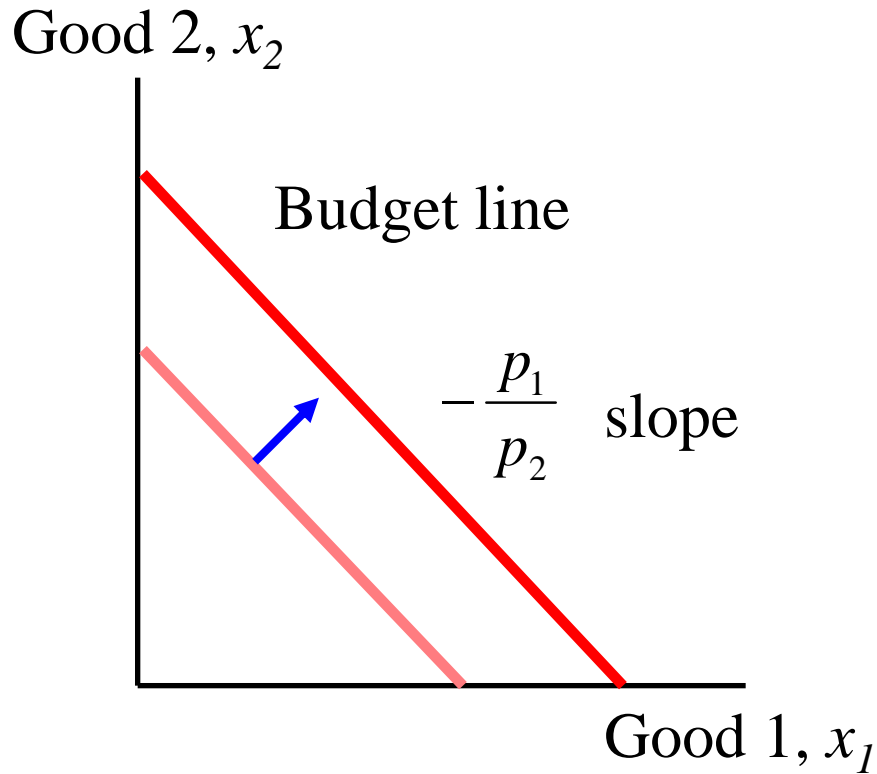
Two Goods Model



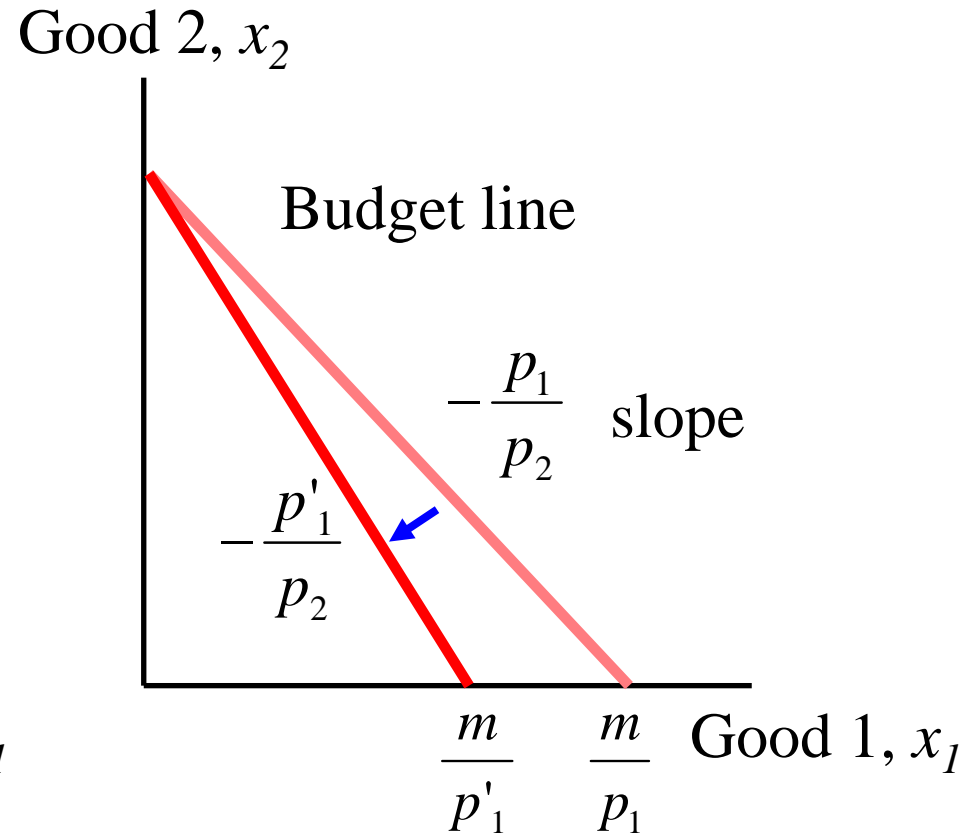
$-\frac{p_1}{p_2}$  Slope of budget line is  
**opportunity cost.**

More consumption of good 1 by giving up  
some consumption of good 2

# Budget Line Changes



Incomes change  
increase



Prices change  
increase

# 3. UTILITY

**Utility:**

A way of describing *preferences*

(A person's happiness)  $(x_1, x_2) \Leftrightarrow u(x_1, x_2)$

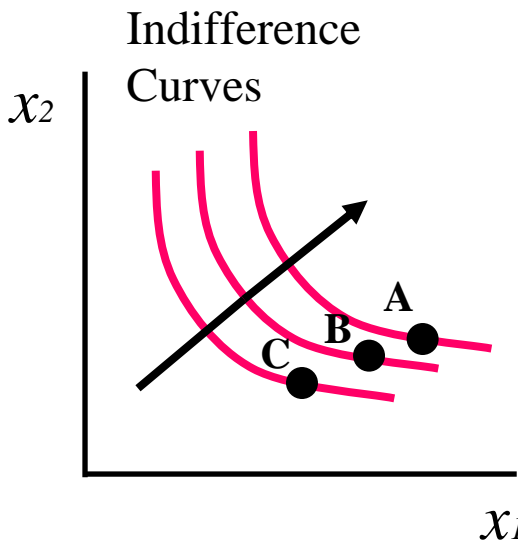
**Utility Function:** A way of *assigning a number (ordering)* to consumption bundle

→ **Ordinal utility**

no matter of the size of the utility difference between any two consumption

**\*Cardinal utility**

Utility theory that attach a significance to the *magnitude* of utility



Constructing (ordinal)  
utility function

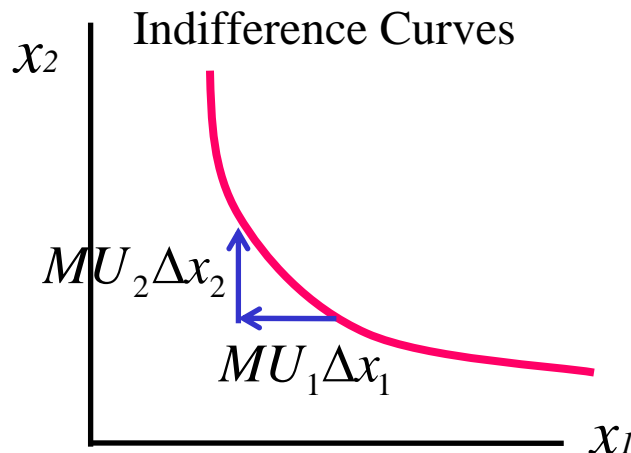
# Marginal Utility

	+		+		Utility		
					= 90		
	+		+		+		= 100

What is Marginal Utility ( $MU$ ) ?

Changing Rate of Utility

## Law of Diminishing Marginal Utility



Marginal Rate of Substitution

$$MU_1\Delta x_1 + MU_2\Delta x_2 = 0$$

$$MRS = \frac{\Delta x_2}{\Delta x_1} = -\frac{MU_1}{MU_2}$$

(Absolute value)

# Utility for Commuting

Mode choice for commuting:

travel time, waiting time, fares, comfort....

$$U(x_1, x_2, \dots, x_n) = \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_n x_n \quad \beta_1, \beta_2 : \text{parameters}$$

## **The economic characteristics of transport**

### Derived nature of the demand

- benefit to travel as short as possible
- “joy riders”, “tourists” to be in the minority

## **Mode choice model** bus or car

$$U = -0.147TW - 0.0411TT - 2.24C$$

*TW*: access time (total walking time to and from bus or car)

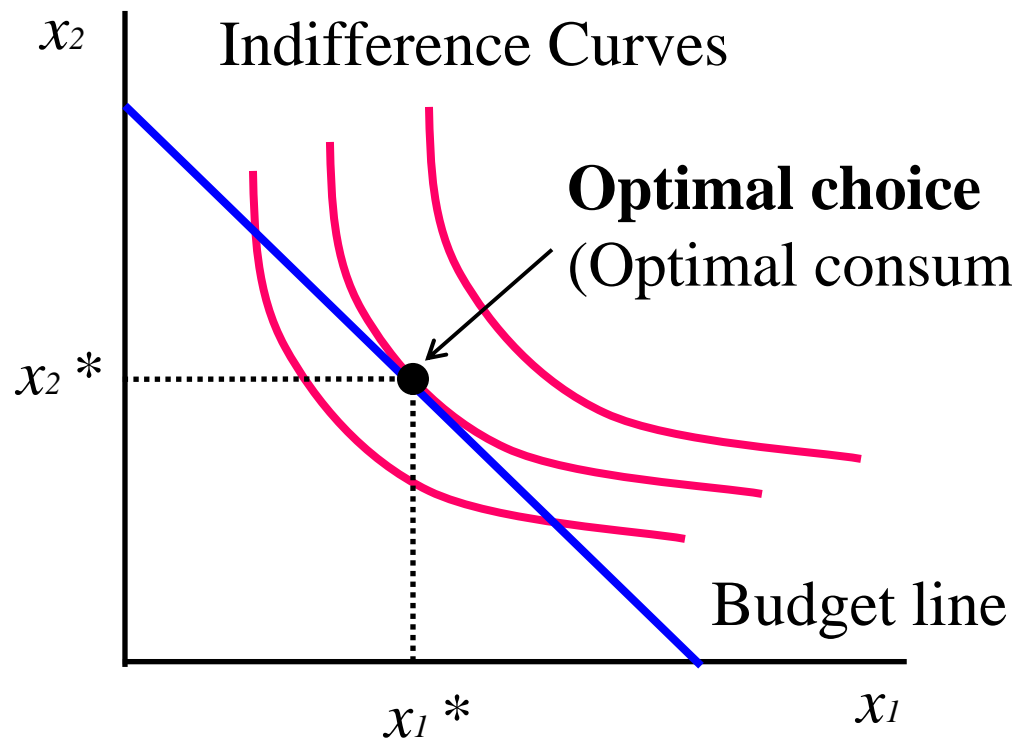
*TT*: total time of trip

*C*: total cost of trip

Money value of travel time savings?

# 4. CHOICE

Consumers choose the most preferred bundle from their budget set.



\* Interior optimum

\* Slope of the budget line

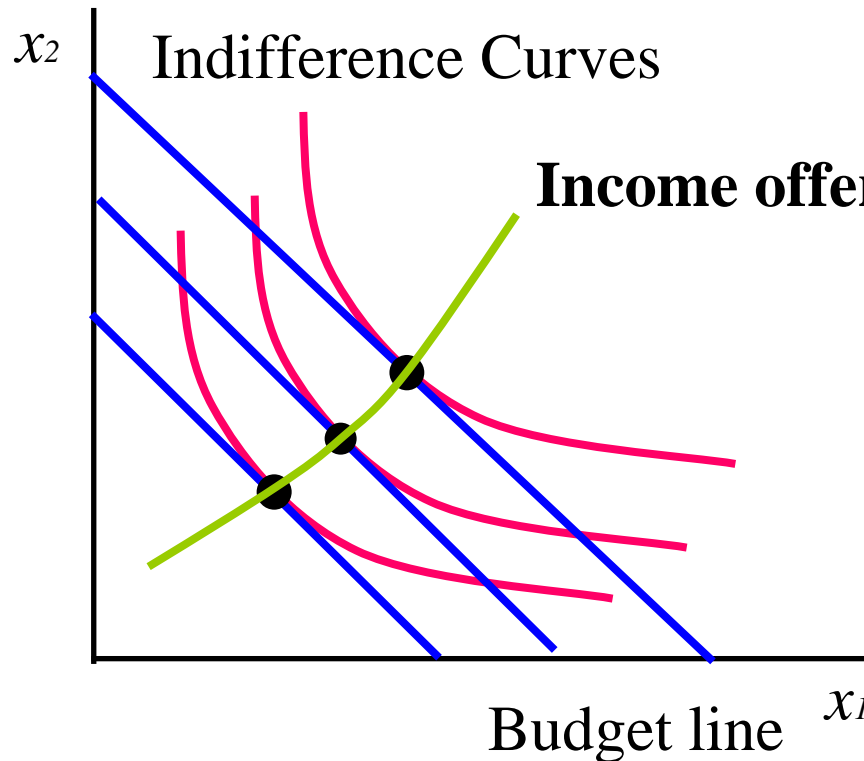
$$= \text{MRS} = \frac{\Delta x_2}{\Delta x_1} \equiv \frac{p_1}{p_2}$$

# 5. DEMAND

## Demand function

$$x_1 = x_1(p_1, p_2, m) \quad x_2 = x_2(p_1, p_2, m)$$

## Income change

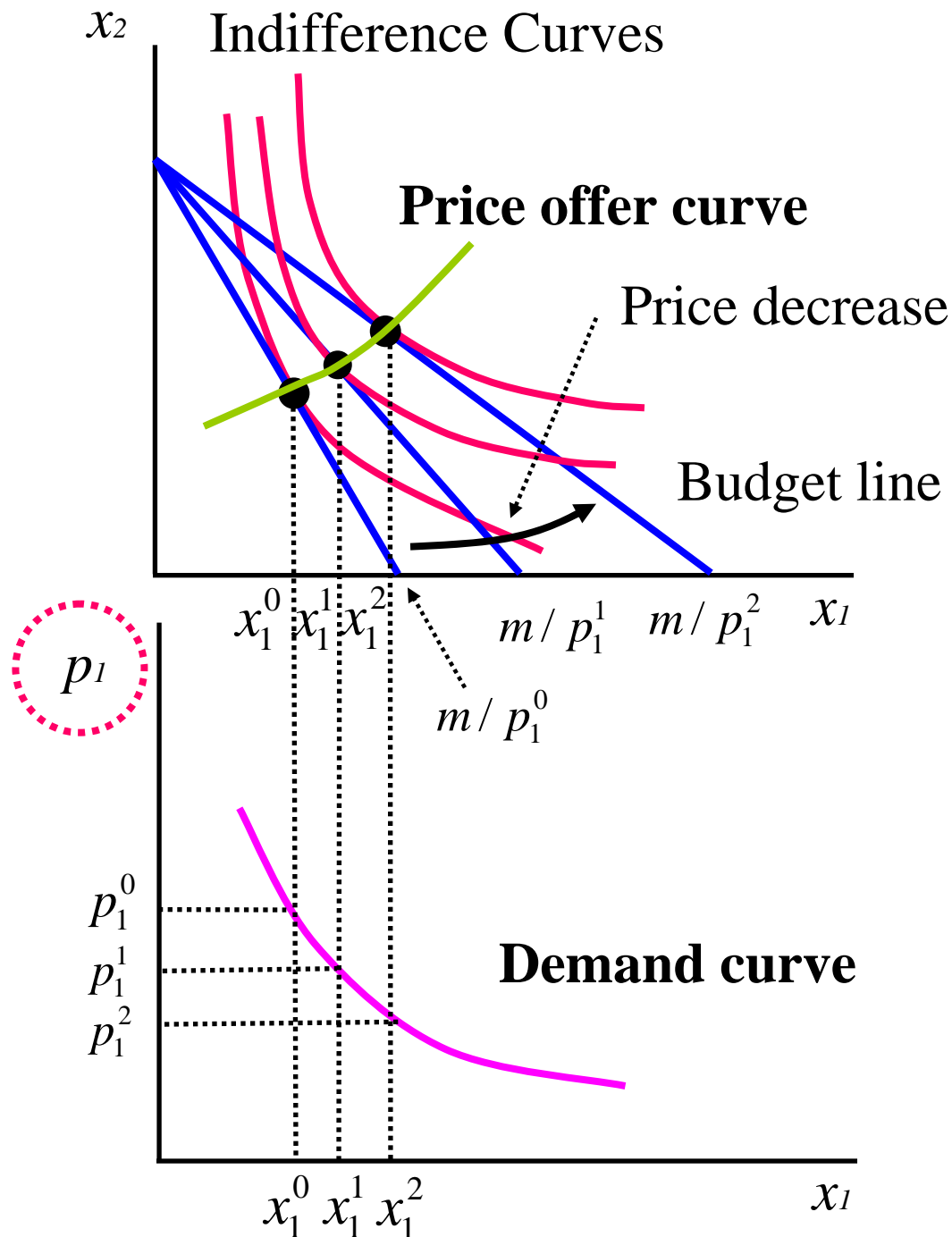


Normal Goods

Demand increase as income increase

Inferior Goods

Demand decrease as income increase



## Relationship among goods

### Substitutes

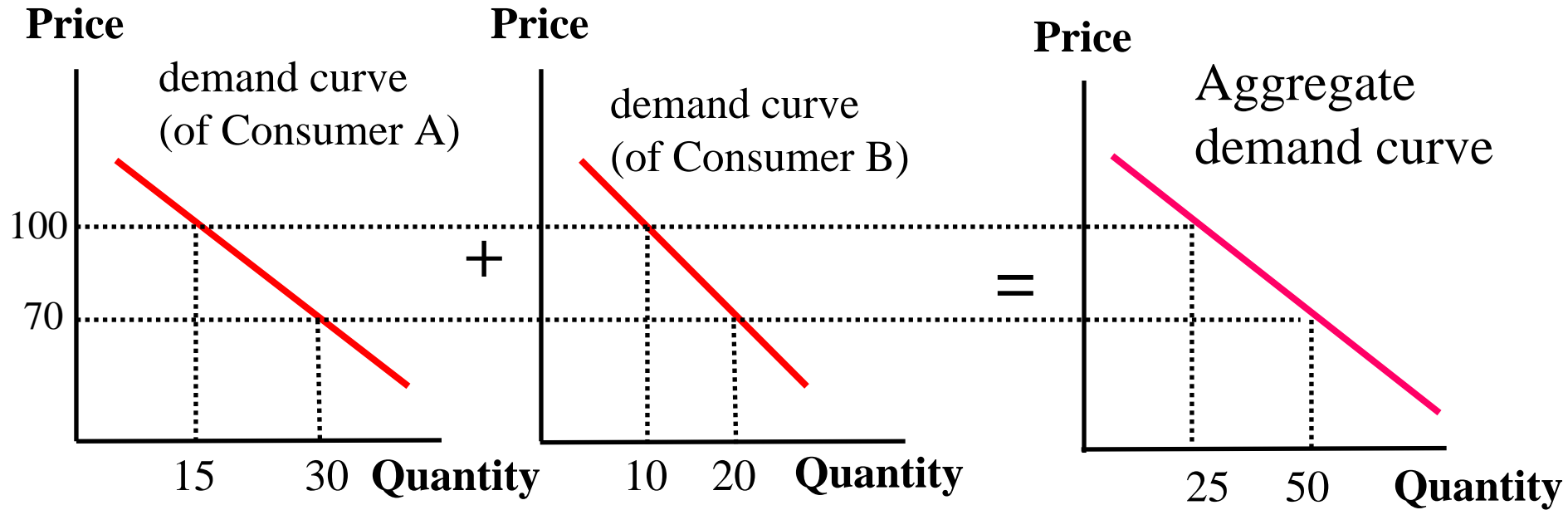
Demand for good 1 goes up when price of good 2 goes *up*.

### Complements

Demand for good 1 goes down when price of good 2 goes *up*.

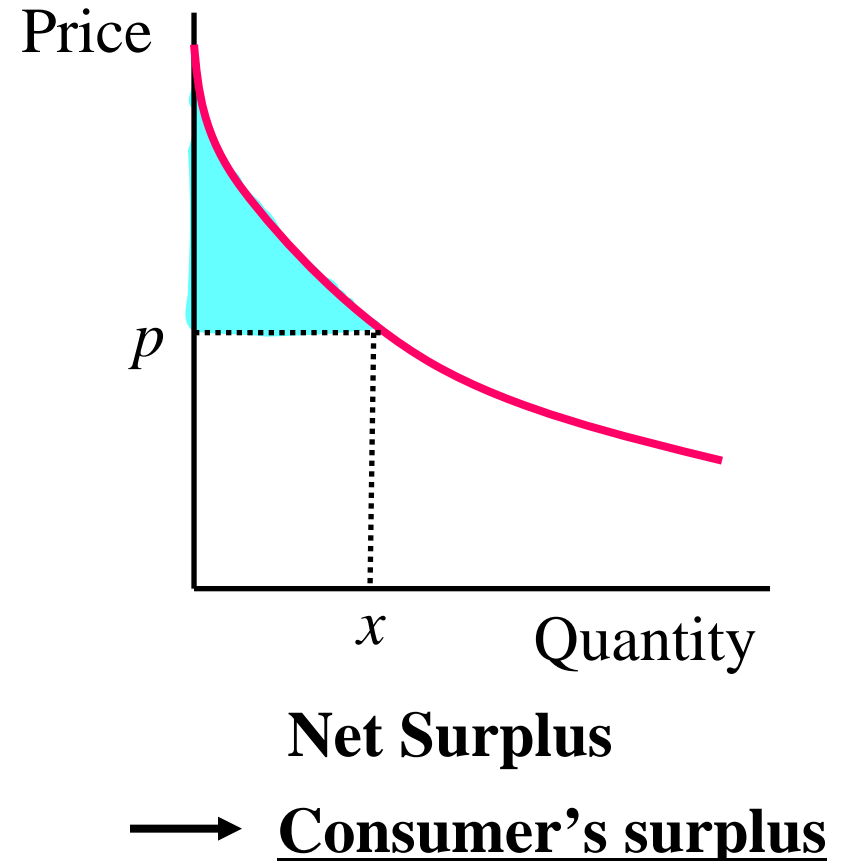
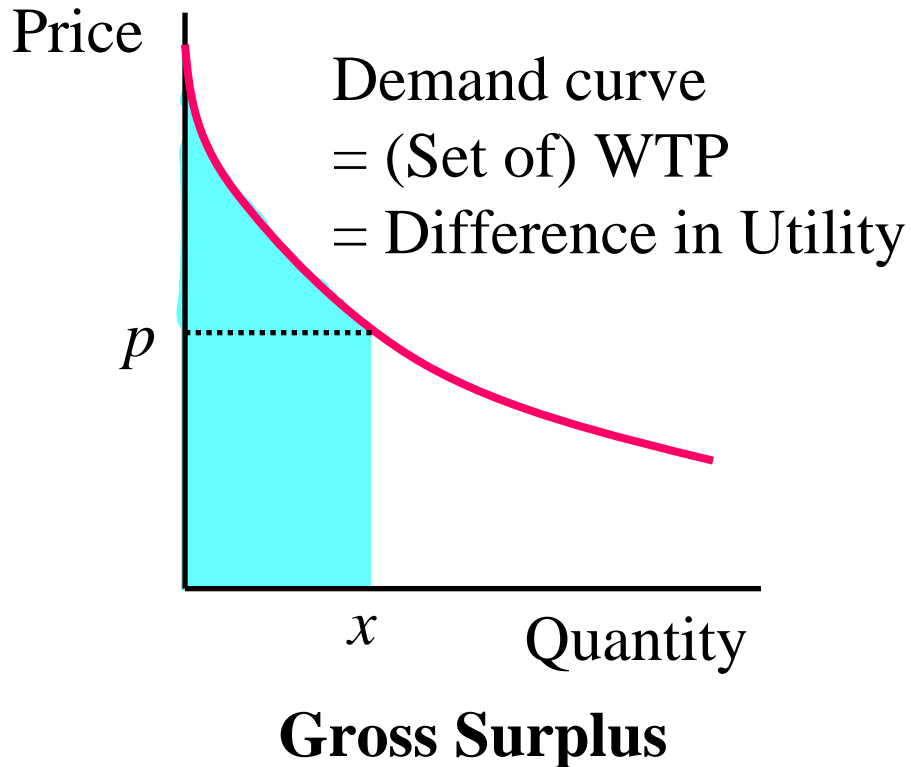


# Market Demand



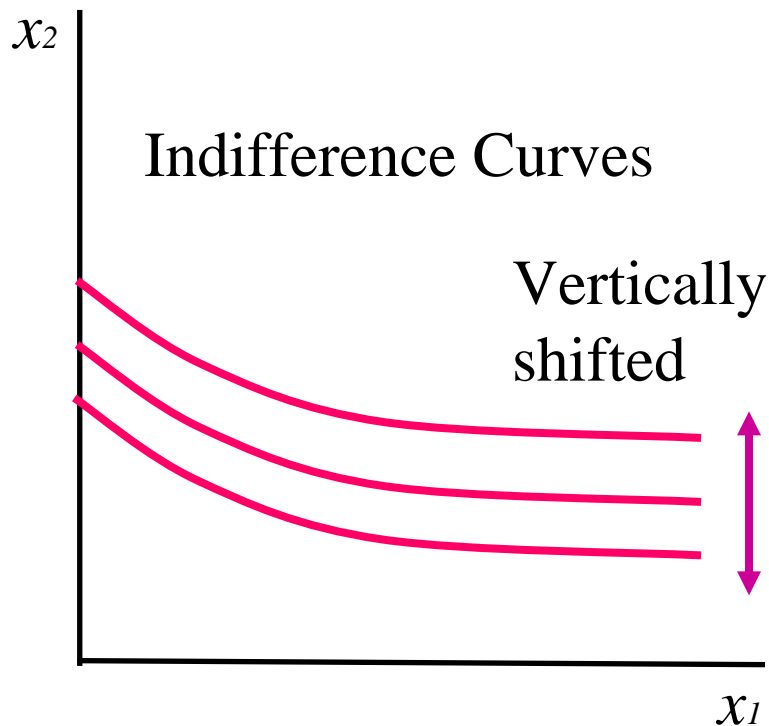
Note: All the price of other goods and incomes are fixed

# 6. CONSUMER'S SURPLUS



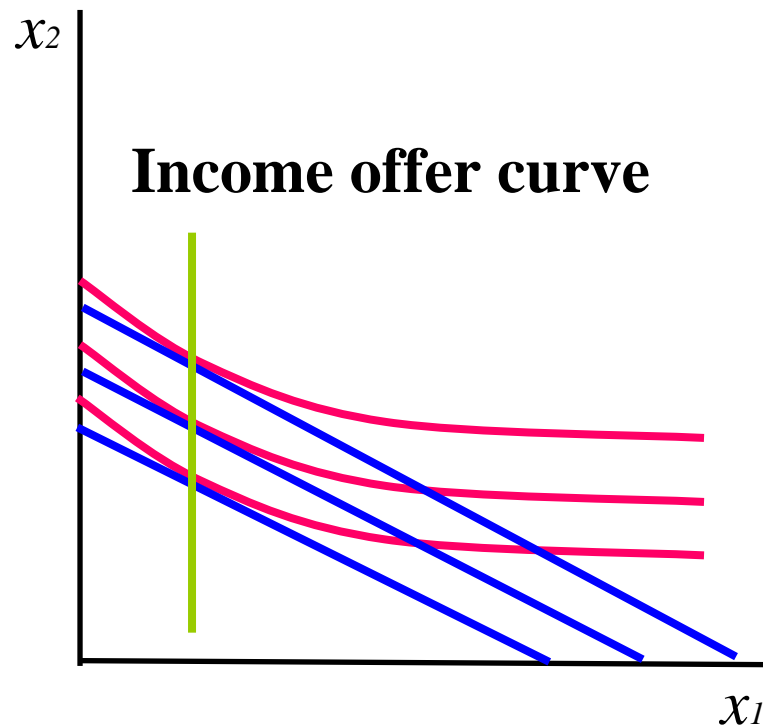
From single consumer's surplus to all the consumer's surplus  
aggregate measure

# Quasilinear Utility



Quasilinear Preference  
(partly linear)

→ Utility function is linear in good 2



Income offer curve on  
quasilinear preference

→ No income effect on good 1

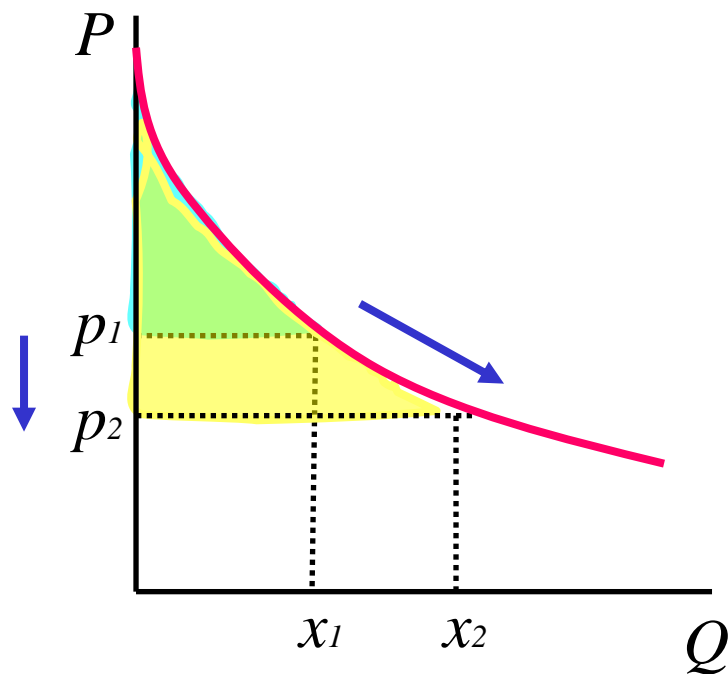
What about transport services?

Quasilinear Utility

WTPs are independent of other goods consumption

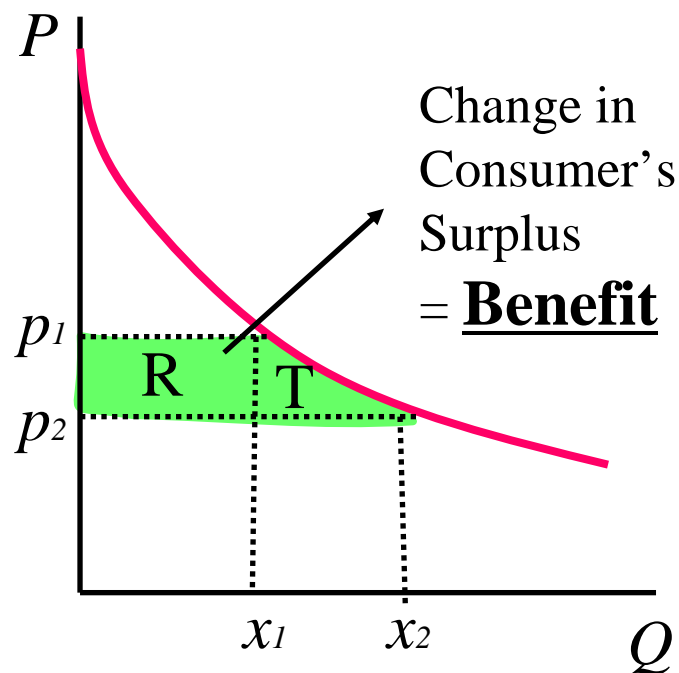
# Interpreting the Change in Consumer's Surplus

Impacts on the results from some policy change



Price change

e.g. fare of public transport



R: Benefit to pay less

T: Benefit to increase consumption

