

ECO1104- midterm #2 review  
GOVERNMENT INTERVENTION

**Why intervene?**

1. To correct a market failure, markets don't always work efficiently
2. To change the distribution of benefits
3. To encourage or discourage the consumption of certain goods

**Price ceiling above the equi price**

If producers charge at the ceiling price there'll be producer surplus  
-the price will fall

**Price ceiling below the equi price**

-it is binding (it works)  
- it causes a shortage  
-the price will always be at the ceiling price

In the long run:

- Supply and demand are more price-elastic
- The shortage is now larger

**Price ceiling consequences**

- Shortages and rationing
- With a shortage, sellers must ration the goods among buyers
- 2 mechanisms
  - o Waiting lists
  - o Preferences to certain types of buyers
- This is unfair and inefficient
- The goods don't necessary go to the buyers who value it the most

**Price ceiling: who wins and who loses?**

- Causes a deadweight loss, and transfer of welfare from producers to consumers
- Total surplus goes down

**Price floor below the equi price**

- Doesn't bind and has no effect on the market outcome
- The price will stay at equi

**Price floor above the equi price**

- Price will go up and cant be lower or it will be illegal

-price floors cause deadweight loss

**Evaluating price controls**

- Markets are usually a good way to organize eco activity
- In absence of a price failure, the allocation of resources resulting from the free market equi is optimal
- This allocation is altered when policy makers control prices, tend to make economy worse

- Often intended to help the poor but often do more harm than help
- Always make some people worse off and reduce the total surplus

### **Taxes**

- Govt uses taxes to raise revenue to have to pay for public projects
- The gov can make either buyers or sellers pay tax
- Tax reduces the equi quantity, price consumers pay and the price sellers receive
- Tax can be an ad valorem tax (%) or a specific or per-unit tax (fixed dollar amount)

### **Tax on buyers (per-unit) on demand curve**

- New demand curve reflects the buyers demand as a function of the after tax price
- Original demand curve reflects the buyers demand as a function of the total price
- The buyer demand has. Not changed
  - o D1 is still max buyers will pay
  - o D2 is max buyers will pay sellers, given they must also pay tax
- Vertical distance betw D1 and D2 equals tax

### **Tax on sellers per unit on the supply curve**

-shifts the after tax supply curve by the amount of the tax

### **Taxes key points**

- Tax on buyers means buyers pay more and demand falls
- Tax on sellers is like cost increase and sellers pass along part of that increase to buyers in form of higher prices
- Reduce equi output, raise price consumers pay, lower the price producers receive

### **Elasticity determines tax incidence**

- Buyers bear more of burden of tax if supply is more elastic than supply
- Sellers bear more of the burden if demand is more elastic than supply

### **Employment insurance**

- Federal program that provides temporary financial assistance to unemployed Canadians who lost their job thru no fault of their own while they look for work or upgrade their skills

### **Subsidy**

- The effects of a subsidy are opposite to those of a tax
- A subsidy can be thought of as a negative tax

## **CONSUMER BEHAVIOUR**

### **Utility**

A measure of the amount of satisfaction a person derives from consuming goods or services, or experiencing something (food, financial advice, playing sports)

- It allows an individual to compare choices
- It incorporates emotions and sensations
- Not typically comparable across indivs: the utility one person experiences from something is not the same as the utility someone else experiences from the same thing because ppl are diff and in diff situation
- *Economist's approach to understanding human behaviour is based on three simple ideas about indiv's preferences:*

- Indivs have consistent preferences: they can compare and rank choices and are consistent in the choices they make (ex: they're rational)
- Rational indivs seek to maximize their utility: if playing soccer for next hour yields more utility than baseball, rational indivs will pick soccer
- Indivs willing to make trade-offs

### **Revealed preference**

-the principle of revealed preference is that people's preferences can be determined by observing their choices and behaviour

-The fact that someone chooses to do something 'reveals that the person prefers it over other available options

### **Utility functions**

-more formal way to systematically analyze how people make choices than revealed preference

-allow the total utility that a particular person derives from consuming a particular combination ---or bundle--- of goods and services to be calculated

-however *utility is ordinal*

- Only the ranking of preferences that the numbers reveal is important
- The numbers themselves aren't important and the difference betw utility numbers is irrelevant

-utility numbers tell us one of three things about an indiv's preferences:

- Either bundle A is preferred to bundle B
- Bundle B is preferred to bundle A, or
- The person is indifferent betw bundles A and B

### **Marginal utility**

-change in total utility from consuming an additional unit of a good or service

- Often, the more you have of something, the greater is your total utility as you consume more of it

-the *principle of diminishing marginal utility* is that the additional utility gained from consuming more of a good or service is smaller than the utility gained from consuming the previous unit

Ex: if you move to a cold climate, buying one sweater makes a huge difference in your comfort, but buying a tenth sweater is much less important

And marginal utility can become negative

Ex: when hungry, first bite of food tastes great but additional consumption when full is less satisfying

### **Maximizing utility with constraints**

-people have many wants, but constrained by ex:time and money available

-rational indivs max utility given. Their constraints by focusing their resources on the bundle that yields the highest possible total utility

- there are many things that might give + utility that indivs choose not to do
- these actions may be enjoyable but opp cost is higher than benefit

**Budget constraint:** provide max possible combinations of goods and services (consumption bundles) a consumer can buy when the consumer:

- spends his/her entire income on those goods and services
- at given prices

### **The budget constraint (or line) for two goods**

$$Y = p_M M + p_C C$$

$$120 = 15M + 30C$$

$$M = \frac{120}{15} - \frac{30}{15}C = 8 - 2C$$

### The Budget Constraint (or Line) for Two Goods

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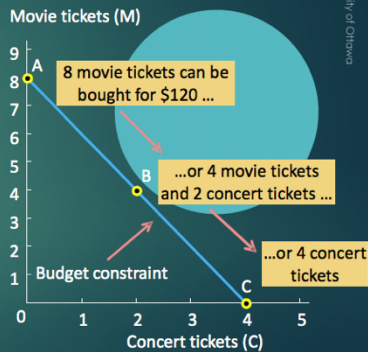
- Assume a person has an income of \$120, the price of a movie ticket is \$15, and the price of a concert ticket is \$30

$$Y = p_M M + p_C C$$

$$120 = 15M + 30C$$

$$M = \frac{120}{15} - \frac{30}{15}C = 8 - 2C$$

- Point A: All income spent on movies
  - > C = 0 concert tickets; M = 8 movie tickets
- Point B: Income spent equally on both goods
  - > C = 2 concert tickets; M = 4 movie tickets
- Point C: All income spent on concerts
  - > C = 4 concert tickets; M = 0 movie tickets
- Budget line: Represents all feasible bundles that can be bought by spending the entire income



### The opportunity set

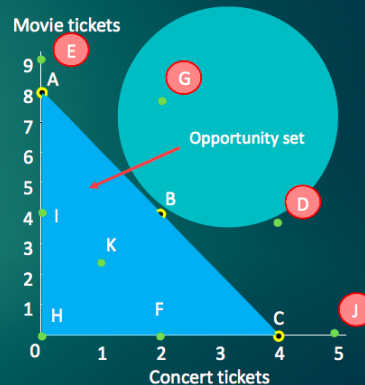
Given the consumer's income and the market prices, all the bundles consumer can buy including those on the budget constraint plus those inside the budget constraint

- Bundles that maximize utility are on the budget line
- Bundles that are inside the budget line can be purchased, but do not maximize a person's utility (b/c consumer doesn't spend his/her entire income on them)

### Active Learning: The Budget Constraint

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- Which bundle(s) are **not** on the budget line or within the opportunity set?
- The green bundles are not on the budget line
- The bundles F, H, I and K are feasible, but not optimal
  - > They require less money than the person's income permits
- The bundles D, E, G, and J are not feasible
  - > They require more money than the individual's income permits

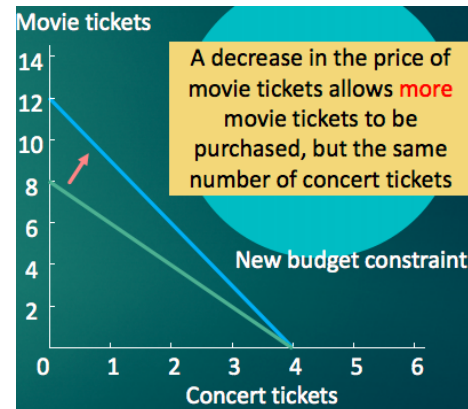


### Responding to a change in income

- When persons income increases, more bundles of goods and services become affordable and amount consumed and utility increases
- When income decreases, fewer bundles are affordable and amount consumer and utility decreases
- Change in income is represented by a parallel shift of the budget line (outward when income  $\wedge$ , inward when income  $\vee$ )
- The shift is parallel because prices don't change
  - o The ratio of prices determines slope of budget line

### The effect of a price change

- price change causes budget line to rotate
- when price of movie tickets falls from 15 to 10, budget constraint rotates outward
- THE CHANGE IN THE SLOPE OF THE BUDGET LINE REFLECTS the change in the relative prices of the two goods
- The new budget line illustrates that new feasible bundles are now available



### Utility and society

- People gain utility from variety of sources:
  - o Inward preferences: how you prefer to spend your money
  - o Outside perception: what others think of your purchases

### Utility, altruism and reciprocity

- Utility maximization includes indivs giving to others
  - o *Altruism*: selfless concern for well-being of others – a motive for action in which a person's utility increases simply bc someone else's utility increases
  - o *Altruistic and selfish*: concern for oneself- motivation coexist
- Utility max suggests people gain utility by punishing bad behaviour and rewarding good behaviours

### COSTS OF PRODUCTION

- economists assume firm's goal is to maximize profit

Profit = total rev – total cost

- total rev is amount a firm receives from sale of its output
- total cost is market value of the inputs a firm uses in production
  - o more complex

### fixed costs

don't depend on the quantity of output produced: they're constant as quantity increases

- one-time, upfront payments before production begins like buying equipment
- ongoing payments, like monthly rents

even if firm produces nothing, still gets fixed costs

### variable costs

costs that depend on quantity of output produced

- includes cost of raw materials, machinery and equipment, and labour

### **explicit vs implicit costs**

opp cost of something is what you give to obtain

- opp cost has 2 components: explicit and implicit costs
- both matter

explicit costs require outlay of money (paying wages to workers)

implicit costs don't require cash outlay: rather they represent opp that could have generated revenue if the firm had invested its resources in another way (opp cost of the owner's time)

### **accounting profit vs economic profit**

when companies report their profits, they provide accounting profit

$$\text{accounting profit} = \text{total revenue} - \text{explicit costs}$$

- accountant keeps track of how much money flow in and out of the firm so they ignore implicit costs
- so accounting profit may be misleading of how well bus is really doing

economic profit on other hand account for both expl and impl costs

$$\text{economic profit} = \text{accounting profit} - \text{implicit costs}$$

$$\text{economic profit} = (\text{total revenue} - \text{explicit costs}) - \text{implicit costs}$$

therefore accounting profit. Is always higher since it ignores imp costs

### **production function**

-the relationship between the quantity of inputs used to produce a good and the quantity of output that is produced given tech

-indicates what's physically possible to produce

-short run production function is also called total product function

-It can be represented by a table, graph or an equation

### **Marginal product**

- marginal product of any input is increase in output arising from using an additional unit of that input, holding all other inputs constant
- if farmer hire on more worker, output rises by the marginal product of labour

notation:

change in Q= 'change in' output

change in L= 'change in labour'

therefore marginal product of labour is

$$MP_L = \frac{\Delta Q}{\Delta L}$$

### **Why the mpL falls**

- when output is low, the MPL *may increase* bc workers can work together and specialize in the tasks in which they have a comparative advantage
- however as farmer adds more workers, the additional worker will have less land to work w or poor quality land, may get in the way of other workers and will eventually be less productive

- the mpL will always eventually fall as L rises whether the fixed input is land or capital  
this relationship betw output and variable inputs is called the law of diminishing marginal product (or returns)

### **Costs in the short run vs long run**

*Short run:*

- Some input are fixed
- Costs of these are FC

*Long run:*

- All inputs are variable (eX: firms can build more factories or sell existing ones)

In long run, ATC at an Q is cost per unit using the most efficient mix of inputs for that Q

Ex: factory size – or scale of production – with the lowest ATC

### **ATC changes as scale of production changes**

***Economies of scale:*** ATC falls as Q increases

***Constant returns to scale:*** ATC stays the same as Q increases

***Diseconomies of scale:*** ATC rises as Q increases

PERFECT COMPETITION

### **What is a perfectly competitive market**

1. A market in which there are large numbers of both buyers and sellers, each of which is small compared to the size of the market
2. Each firm in market sells an identical product
3. There is full info on (or perfect knowledge) of prices and tech
4. There are negligible (low) transaction costs
  - a. Buyers and sellers can find each other and undertake transactions easily
  - b. If one firm were to raise its prics, consumers would switch to and buy from its rival
5. There is perfect mobility of resources
  - a. Sellers can freely alter their scale of production in short run
  - b. There are no barriers or impediments to entry and exit

-these five conditions mean that indiv buyers and sellers have no market power- no ability to influence market price (*price takers*)

### **Revenue of a competitive firm**

- Total revenue (TR)
$$TR = p \times q$$
- Average revenue (AR)
$$AR = \frac{TR}{q} = p$$
- Marginal revenue (MR): The change in TR from selling one more unit
$$MR = \frac{\Delta TR}{\Delta q}$$

### **MR= price for competitive firm**

-comp firm can keep increasing its output w out affecting market price

-comp firm faces horizontal demand curve

MR=P

### **Profit maximization**

If firm increase  $q$  by one unit, revenue rise by  $MR$  and cost rises by  $<C$

- If  $MR > MC$

### **Profit of firm in short run**

$$\text{Profit} = p \times q - TC$$

$$= q(p - TC/q)$$

$$= q(p - ATC)$$

### **Shutdown vs. exit**

**Shutdown:** short-run decision not to produce anything bc of market conditions

Sunk costs have already been committed and cant be recovered- they are irrelevant to decision to shut down (or how much to produce)

If the firm must pay its fixed costs whether it produces or shuts down,  $FC$  can be thought of as a sunk cost

So,  $FC$  should/does not matter in the decision to shut down

**Exit:** long-run decision to leave the market in the long run

- *The key difference between shutdown and exit:*
  - o *If firm shuts down in short run, must still pay  $FC$*
  - o *If for mecits in the long run, it incurs zero*

### **market supply: assumptions**

1. Number of firms in the market is :
  - a. Fixed in short run (due to  $FC$ )
  - b. Variable in long run (due to free entry and exit)
2. All existing firms and potential entrants have identical costs
3. Each firms costs don't change as other firms enter or exit the market

Assumption 1 is reasonable: in real world, it's much easier for firms to enter or exit in the long run than in the short run

However there are many markets in which assumption 2 and 3 don't hold.

### **Entry and exit in the long run**

- In long run, number of firms can change due to entry and exit
- If existing firms earn positive econ profits then
  - o New firms enter, and short run market supply curve shifts right
  - o Price falls, reducing profits and slowing entry
- If existing firms incur losses:
  - o Some firms exit, and short run market supply curve shifts left