

Econ 103: Introduction

What is *economics*?

Economics = Study how to allocate resources



There are 2 main branches of economics:

1. *Macroeconomics* = the study of the aggregate, or whole economy. It looks at economic problems as they influence the whole of society.

2. *Microeconomics* = deals with the smaller parts of the economy, such as producers and consumers and markets for particular goods and services.

The Three Economic Questions Every Society Faces

1. What is to be produced?

Changes over time



2. How should these goods be produced?

Depends on what resources are available



3. How should the goods and services be distributed? Equally or to those who can pay the most?

The most common type of economy is a *market economy*.

Market Economy = People make their own decisions about their jobs, production, and consumption



What's good about a Market Economy?

People can make decisions that will maximize their benefits or well-being.

→ People pursue self-interest

Businesses try to earn profits.

→ Producers have incentive to produce what consumers want at the lowest

This means businesses have incentive to

efficiently use their cost resources

Businesses also face competition.

→ this leads to

better quality goods, more variety of

People have economic freedom.

→ People are free to choose what to buy, where to work, what to study

goods, and lower prices

Within reason!! Some behavior must be controlled.



Examples: Producing illegal substances, drinking and driving, pollution.

Command Economy = Governments make decisions about production and consumption



Examples: **North Korea, Cuba, China, former USSR**

What's good about a *Command Economy*?

1. **Equity** = The government can ensure a more equal distribution of resources amongst people
2. **Stability** = Markets and jobs are stable because government initiated changes are slow
3. Less *creative destruction* = changes caused by innovation
There is no incentive to be innovative because there is no profit motive or competition

Examples of creative destruction in market economies:

People have lost their jobs because of **ATM machines, computers, robots, changes in international trade patterns, driverless vehicles.**

Why aren't Command Economies Successful?

Government control over production means no profits for producers, so they have no incentive to be innovative or to minimize costs

Production is therefore *not efficient*

Without technological innovations economies cannot grow

Chapter 1: First Principles

To explain how an economy works we must first analyze how individuals make the decisions that shape our economy.

- What to buy?



- Go to school or get a job?



- What to produce and sell?

Principles of Individual Choice

1. Resources are scarce

Resource = anything that can be used to produce sth. else

- **Labour** = work done by humans
- **Land** = natural resources (soil, oil, water, minerals)
- **Capital** = goods that have been produced to produce other goods → physical capital
- **Human capital** = education, skills, and knowledge
- Time

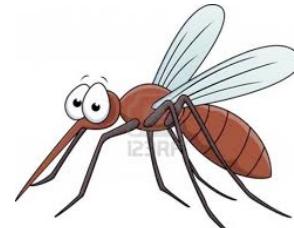


Scarcity = resources are scarce when there is not enough to satisfy everyone if it were free

Consumers are limited by income

Are the following goods scarce?

- a) sunshine? X
- b) money? ✓
- c) steel? ✓
- d) mosquitos? X



Scarcity means we face tradeoffs and what we tradeoff is a cost

Opportunity cost is the Real cost = The best forgone opportunity resulting from a decision

what you give up to get it

Example 1: A new phone is on sale for \$195



- The **nominal cost** is \$195
- The **real cost** is the other purchases that could be made with the \$195.

- Examples: food or books or if you have to earn the \$195 you must give up time in order to work



Example 2: Opportunity costs of going to university

- Money
- Income you could be earning instead
- Forgone time with family and friends at home

*People go to university if the future benefits outweigh the present opportunity costs.

*People will not attend university if they could earn a lot doing something else → Who?

Professional athletes, actors, musicians.



3. People make decisions at the margin

Marginal means incremental changes or small adjustments to a quantity.

Most of our everyday decisions are about "how much" or "how

Examples: many"

"Should I buy 5 bananas or 6 bananas?"

"How long should I brush my teeth?"

"Should I add bacon to my burger?"



Because resources are scarce we must make tradeoffs by making marginal decisions about how we allocate our resources.

Marginal analysis is the study of marginal decisions

A marginal benefit (MB) is the extra benefit from

A marginal cost (MC) is the extra cost of one more unit

As long as people will choose to do one more unit of the activity.

Exercise 1: What is the marginal benefit and marginal cost in each of the situations?

Should I bring an umbrella or not?

MB = extra comfort if it rains

MC = extra effort to carry the umbrella

Should I buy a medium coffee or a large coffee?

MB = extra satisfaction, alertness

MC = extra money

Should I spend the next hour studying or sleeping?

MB of studying =

MC of studying =



Should I buy the \$20 black pants or the \$60 black pants?

MB of \$60 pants = Extra quality

MC of \$60 pants = \$ 40

4. People usually exploit opportunities to make themselves better off.

- When shopping for a new product, people will go to the store with the  lowest price
- Students choose a study major that will bring them the highest future income, or most job satisfaction
- If gas prices increase, people will buy smaller cars or take the bus



When people exploit opportunities, they are *responding to incentives*.

Incentive = a reward to people who change their behavior

Example 1: a bonus for working hard.



Example 2: Not getting a ticket for *not* speeding.



Positive incentive = a benefit used to encourage a behavior

Negative incentive = a cost used to discourage a behavior

Principles of Interaction 相互作用

5. There are gains from trade

When people specialize, or divide up tasks, they can generally produce or accomplish more than doing everything themselves.



E.g. In a home when one person cooks and one does the dishes rather than each cooking and doing our own dishes:

- Everyone saves time and/or can put in more effort → gains from trade

In communities people specialize and use *markets* to trade goods and services.

- Electricians, chefs, police, farmers, carpenters, doctors, etc

People produce things they are good at doing, earn money, and buy the things they are not good at producing

Without specialization and trade everyone would do everything for themselves → We would not consume nearly as many goods and we'd have to work a lot harder!



Markets allow for trade, and trade allows for specialization.

6. Markets move toward equilibrium

Economic equilibrium = a situation in which no one could be better off by doing anything else, so no one has incentive to change their behavior.

- Everyone is happy with the way things are.
- From principle #4 we know that people always exploit any situation that will make them better off
- If there is an opportunity for someone to be made better off, the situation is not in equilibrium
- People will then take advantage of existing opportunities until there are no more opportunities →

Examples:

- Lanes of traffic



- Check-out lines at a store



- Free goods



Equilibrium is reached when lanes or line-ups are even or once the free goods are all gone.

Efficiency: 物尽其用

7. Resources should be used as efficiently as possible

Resources are used *efficiently* if every opportunity is taken to make people better off without making anyone worse off

E.g. Ice cream cones



- If they do not belong to anyone, it would be efficient to allow people to eat them rather than letting them melt.
- Even if just one person eats all three cones the situation is efficient.
- Efficiency is not improved by taking the ice-cream away from someone



Efficiency is not the same as equity.

Generally there is a tradeoff between efficiency and equity.

E.g. Market vs command economies

E.g. disabled parking—not efficient because spaces are often empty, but they provide more equitable access for everyone.



E.g. Taxes—take money from those who are producing consuming and fund social programs →

taxes equalize resources distribution but discourage production and consumption

8. Markets usually lead to efficiency.

- Markets give people opportunities to gain from trade
- People take advantage of all opportunities to make themselves better off
- Therefore, markets usually lead to an efficient allocation of resources



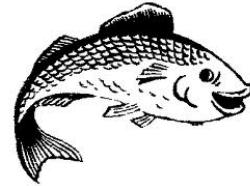
9. Market failure can be helped by government intervention

In some situations when individuals take advantage of opportunities to make themselves better off they make others worse

- This is called market failure → free markets are not efficient, or do not create the best outcome for society

Example: Natural resources such as fish

- If people could catch as many fish as they wanted to, some people would continue until there were no more fish!



Example: Pollution

- Polluters do not consider the costs of their actions.



Governments can impose regulations to improve social welfare in these situations

Exercise 2: True or False?

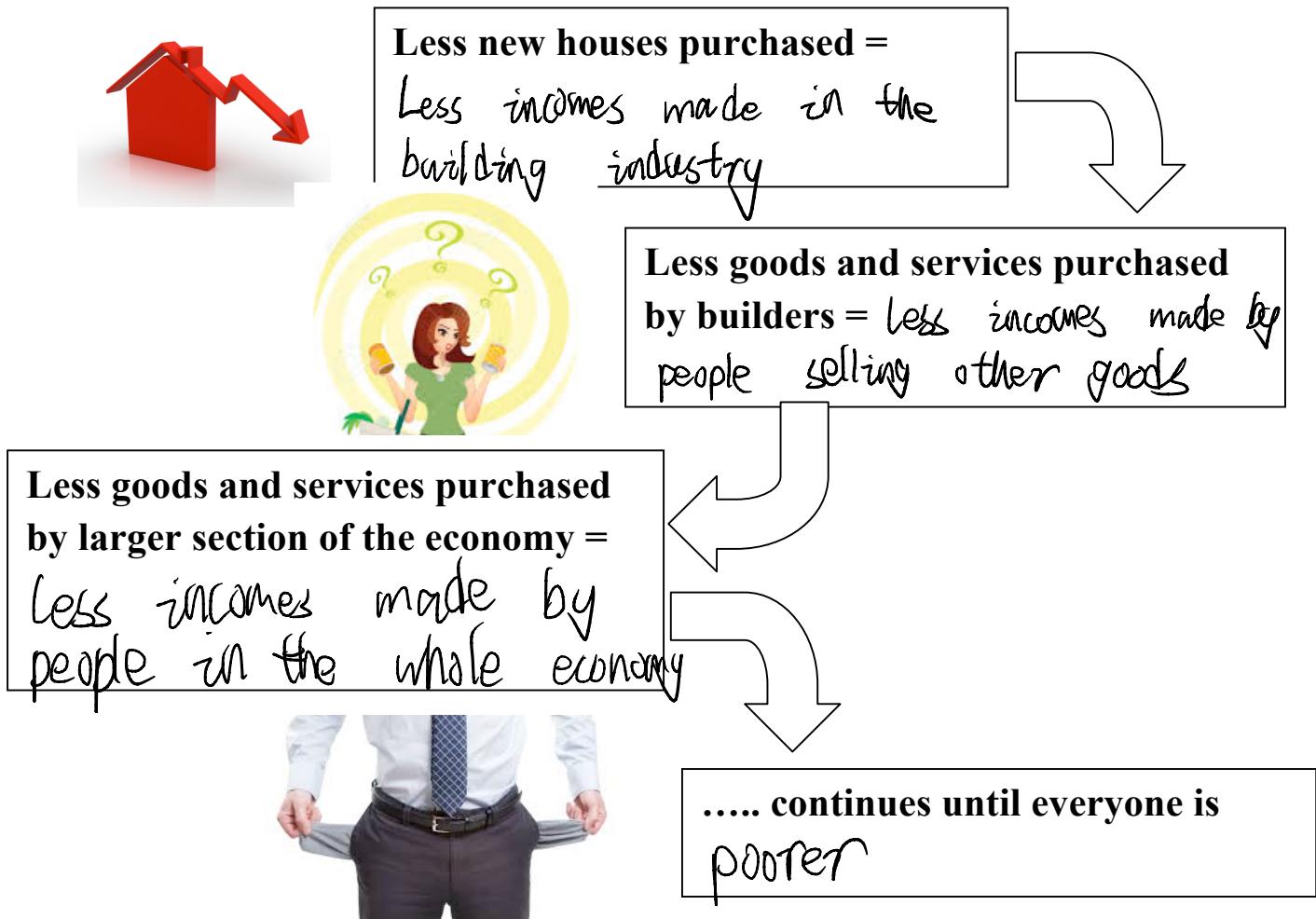
- 1)** Because Canada is a rich nation, free health care can be provided for all citizens without considering the issue of scarcity.
- 2)** The study of economics arises because of the necessity for choice, and the necessity for choice arises because of the fundamental problem of scarcity of resources.
- 3)** In one year, Parliament passes a tax cut. Since taxes are reduced, Canada did not incur any opportunity cost from this decision.
- 4)** A trade-off involves weighing the costs and the benefits.
- 5)** Economists make predictions about individual behaviour based on the assumption that people exploit opportunities to make themselves better off. People with the same opportunities should therefore always make the same decisions.
- 6)** In equilibrium there will be no further opportunities for gains from trade.
- 7)** An economic situation is in equilibrium when no individual would be better off taking a different action.
- 8)** Market equilibrium will always be efficient even if it is not equitable.
- 9)** An economy is efficient if one person could be made better off by reallocating resources without making anyone else worse off.
- 10)** Market failure occurs when the pursuit of self-interest by producers and consumers leads to bad results for others.

Economy-Wide Interactions

10. One person's spending is another person's income

The only way to make money is if other people spend money.
Changes in aggregate spending affect GDP.

E.g. In 2008 the recession began with the housing crisis



This is why government intervention is sometimes necessary

Governments can increase incomes and spending e.g. Building new infrastructure or lower taxes

11. Spending can be more or less than the economy's productive capacity

Expectations can create gaps between spending and production capacity

- E.g. Inflation occurs when people want more goods than the economy can produce



Is bigger than



so prices will



If people expect a recession they will spend less than the productive capacity

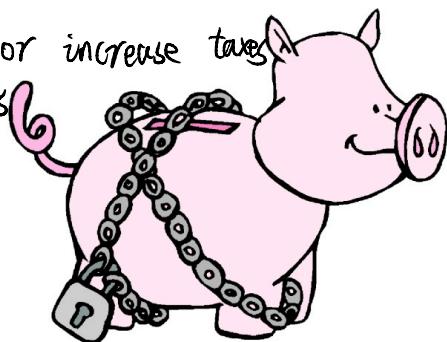
12. Government policies can change overall spending

Government does a lot of spending in the economy, so....



If the economy is in a downturn, the government can spend more on education or healthcare, which increases incomes and spending

The government can *spend less* or increase taxes if there is inflation, which decreases incomes and spending



Exercise 3: Which of the 12 Principles is at work? Hint: there may be more than one principle at work at a time.

1. By early 2008, the Canadian economy was in a significant downturn, and the government wanted to stimulate the economy in a positive way. They gave tax rebates to some Canadians who paid taxes in 2007, while increasing the Goods and Services Tax (GST) credit to lower income individuals. Which of the 12 principles is described by this stimulus package?

Answer: 10 and 12

2. Some products, like tobacco, are taxed by the government.

Answer: 9 and 4

3. An apartment complex included a fixed price of water in the monthly rent. One day the city decided to attach a water meter to each individual apartment and charge the tenant for actual water usage. As a result, water usage in the apartment complex went way down.

Answer: 4 and 3

4. A university student waits in line for hours to purchase a ticket to the Grey Cup but an attorney does not. Rather than spend hours in line, he purchases a much more expensive ticket through a ticket broker.

Answer: 2 opportunity cost for time

Exercise: Linear Algebra

If $y = 10 - 0.5x$ solve for x as a function of y:

$$x = \frac{-2y + 20}{1}$$

The y variable goes on the vertical axis and the x variable goes on the horizontal axis.

What is the y intercept (what is y if x = 0)?

$$y = \underline{10}$$

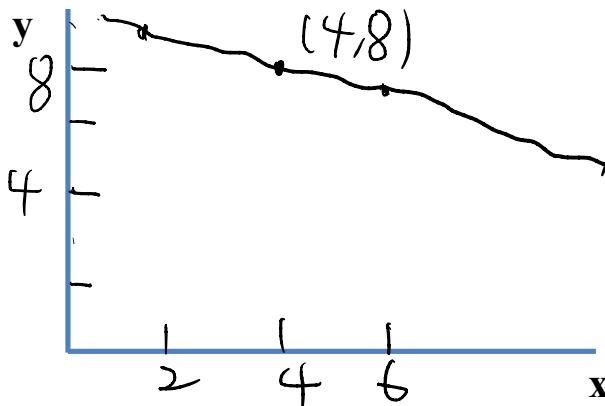
What is the x intercept (what is x if y = 0)?

$$x = \underline{20}$$

What is the slope of the function?

$$\text{Slope} = \underline{-0.5}$$

Graph the equation:



What is y if x = 4? Show the point on the graph above. 8

What is x if y = 4? Show the point on the graph above. 12

A second equation is $y = 2 + 0.3x$. Graph and calculate the equilibrium y, x.

$$10 - 0.5x = 2 + 0.3x$$

$$0.8x = 8$$

$$x = 10$$

$$(10, 5)$$