Macro Economics 1BB3 - Lecture notes 0-7

Introductory Macroeconomics (McMaster University)

Econ 1BB3 - Macroeconomics

Intro Lecture 0 – Jan 10

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Orientation

- Required textbook ECON macro 1st CE, McEachern et. Al → REQUIRED
- WEEKLY HOMEWORK → 15% of grade
- Test #1 not on final exam, covered in first test

Tests

- TEST 1 → Saturday, Feb 3, 9-10:15 AM
- TEST 2 → Saturday March 10, 9-10:15
- Apply for early writes 10 prior to date
- FINAL EXAM → chapter 5-16, 70 MC, 2 hours long

General

- When studying, go over all the "Key Terms" (online has definitions if you click on it)
- Homework assignments – due Monday nights

Week 1

Readings/Video – Ch 1: The Art and Science of Economic Analysis

- Although your wants, or desires, are virtually unlimited, the resources available to satisfy these wants are scarce
- **Economics** examines how people use their scarce resources to satisfy their unlimited wants.
- Alfred Marshall, 1890 defines it as "a study of mankind in individual and social action connected to attainment and use of materials for well-being"
- Mode of attack: (1) resources, (2) goods and services (3) economic choice, which arises from scarcity

RESOURCES – imputs, or factors of production to produce goods and services

- 4 Categories of resource: *Labour*, *Capital*, *Natural Resources*, *and Entrepreneurial ability*
- Inputs, or factors of production used to produce the goods and services that people want.
    - They are scarce because resources are scarce
- **Labour** is human effort, both physical and mental, and includes TIME a fundamental resource
    - time can be sold, or spent
- **Capital** includes all human creations used to produce goods and services.
    - PHYSICAL capital is objects/buildings/THINGS to produce goods and services
        - E.g. taxi cab Car, teachers laptop to record the service of modules on
    - HUMAN capital is KNOWLEDGE and SKILL to increase productivity
        - Taxi driver's knowledge of roads
- **Natural resources** include all gifts of nature, such as bodies of water, trees, oil reserves, minerals, even animals.
- Renewable vs exhaustible

    - will replenish itself if used conservatively, e.g. timber, air, rivers, biological resources
    - Vs. oil or coal which do not renew itself and is gone forever once used
- **Entrepreneurial ability** – talent to invent a new or better way to produce products.
- Entrepreneurs are profit-seeking decision makers, who start an idea, organize an enterprise to bring that idea to life and assume the risk of operation, and rewarded with profit
- Pay resource owners to use their resources.
- Resource owners are paid wagers, interest, and rent for the use of their natural resources
- Resource wages are based on time the resources are employed – e.g. 10$/hour, 6% interest/year, $40,000 per year

GOODS AND SERVICES

- **Good**s – things that are produced/made, that you can see, feel, touch, requires scarce resources to produce, and satisfies human wants.
- **Service** – is intangible, uses scarce resources to satisfy human wants, e.g. Movies, Yoga class, etc
- Goods and Services are scarce because they are produced with scarce resources.
- ***Scarce*** *– If the amount people desire exceeds the amount available at a zero price*
- Bads – things we do not want even at 0$ price, e.g. garbage, pollution
- "Free"- the amount available at a Zero price exceeds the amount people want.
    - E.g. air and sea water, but both CAN BECOME scarce
    - *Goods and services that are truly free are not the subject matter of economics. Without scarcity, there would be no economic problem and no need for prices.*
- Every "free" (in economics terms) good or service is at a cost to someone.

ECONOMIC DECISION MAKERS

- 4 types of decision makers: (1) households, (2) firms (3) governments (4) rest of the world, which interact to determine how the economy's resources are allocated
- Households(1): Consume Goods and Services, and Own/Supply the four discussed resources
- (2), (3), & (4) Consume the resources, and supply goods and services
- The "rest of the world" includes foreign households, firms and governments outside of Canada

Markets

- **Markets**: group of buyers and sellers that carry out exchange. By bringing together the two sides of exchange, markets determine **price, quantity, and quality**.
    - Physical (store) and other ways buyers and sellers communicate (radio, online, etc)
    - Info about Price Quantity and Quality

Explanation: Close

Economists typically think of a resource as a part of labour, capital (human capital, physical capital), or natural resources. Note that labour is different from human capital, as labour refers to the *time* humans spend producing goods and services, whereas human capital refers to the skills and training of the labour force. *Entrepreneurial ability* (the talent to organize the previous resources) is also frequently included as a kind of resource.

The term *human capital* refers to the productive knowledge, skill, and strength of human beings. Therefore, the skill of multitasking is included in the human capital category.

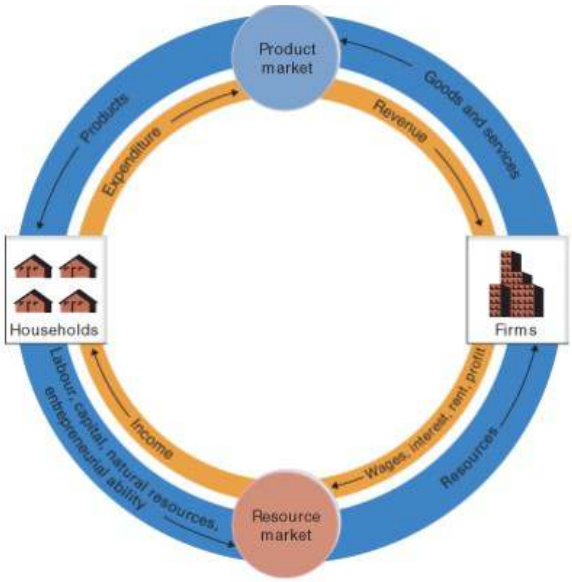
Physical capital includes items such as tools, machines, and buildings that allow us to (or improve our ability to) produce goods or services. Therefore, a pizza parlour's brick oven is included in the physical capital category.

Land, plants, mineral deposits, oceans, and rivers are all considered *natural resources* by economists. Therefore, land used for agriculture is included in the natural resources category.

- Resources bought and sold in Resource Markets
- Goods and services = product markets
- Most important resource market is Labour, just as Job seeking or hiring

SIMPLE CIRCULAR-FLOW MODEL

- how money circulates through the economy
- Assumes only two types of decision makers – households and firms



Households – common ppl, or resource holders

- Spend $$ through the product market
- Goes to the firms which in return provide goods or services
- Households demand goods and services from Firms through product markets

Firms

- spend money (via wages, interest, rent) through resource market to households,
- to get resources (human and physical capital, labour, natural resources, etc)
- Firms demand resources from households through resource markets

- The demand and supply of resources come together in resource markets to determine what firms pay for resources. These resource prices—wages, interest, rent, and profit—flow as *income* to households.

- The demand and supply of products come together in product markets to determine what households pay for goods and services.

LO 2 What forces Shape our Economic Decisions?

The Key forces that shape Economic Decisions are:

- Rational Self-Interest
- Time and Information
- Marginal Analysis

RATIONAL SELF-INTEREST

- **rational self-interest** means that each individual tries to maximize the expected benefit achieved with a given cost or to minimize the expected cost of achieving a given benefit.
  - Not selfishness because it can include the wellbeing of others
  - We may readily volunteer to drive a friend to the airport on Saturday afternoon but are less likely to offer a ride if the plane leaves at 6:00 A.M.
  - concern for others is influenced by the same economic forces that affect other economic choices. *The lower the personal cost of helping others, the more help we offer*.

CHOICE REQURIES TIME AND INFORMATION

- Because information is costly to acquire, we are often willing to pay others to gather and digest it for us, real estate agents, career counsellors, movie reviewers, show how we pay for information that improves our choices, if the benefit is better than cost to get the information

ECONOMIC ANALYSIS IS OFTEN MARGINAL ANALYSIS

- comparison of the *expected marginal benefit* and the *expected marginal cost*
- **Marginal** means incremental, additional, or extra
- Focusing on a marginal adjustment allows economists to cut the analysis of economic choice down to a manageable size
- **Economic fluctuations**: rise and fall of economic activity relative to the long-term growth trends
    - also called *business cycles*, vary in length and intensity
    - involve the entire nation and often other nations too.
    - e.g. Canada has had 4 recessions since 1960 despite its growing production trends.

To Review: The art of economic analysis focuses on how people use their scarce resources in an attempt to satisfy their unlimited wants. Rational self-interest guides individual choice. Choice requires time and information and involves a comparison of the expected marginal benefit and the expected marginal cost of alternative actions

LO 3 Economics and the Scientific Method

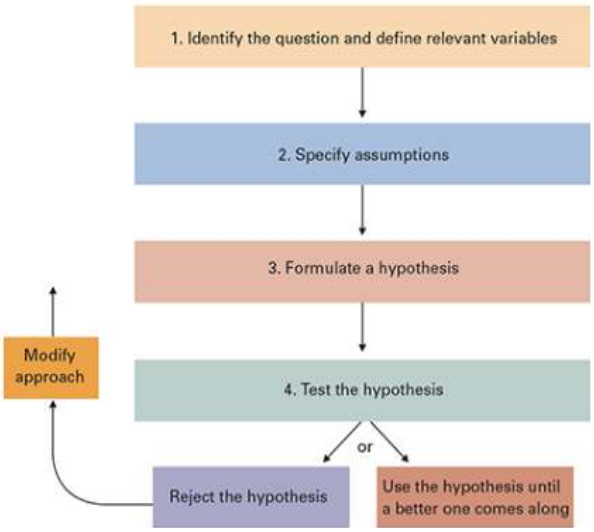
- **Economic Model** is a simplification of economic reality that *is used to make predictions about the real world*
    - Complicated and detailed models are not useful
    - Includes variables, assumptions, and diagrams

THE ROLE OF THEORY

- All of us employ theories, however poorly defined or understood.
- A good theory can act like a closet organizer for your mind, helping you understand a messy and confusing world

SCIENTIFIC METHOD

1. The variables of concern become the elements of the theory, so they must be selected with care.
    - Relating price and quantity purchased of a good (e.g. Pepsi) – relevant variables are price and quantity.



2. One notable assumption is the "other-things-constant-assumption", and "behavioural assumptions"
    - E.g.: no changes in other relevant variables such as consumer income, the average temperature, or the price of Coke
    - E.g. how people behave, what they like
3. **hypothesis**, is a theory about how key variables relate to each other, that helps us predict about cause and effect in the real world

4. Test the hypothesis leads to reject or using it

NORMATIVE VS POSITIVE

- **positive economic statement**, assertion to try to understand the world around us that can be supported or rejected by reference to the facts.
    - Are not always true, but are able to be verified or refuted when looking at facts
- **normative economic statement**, an opinion—it cannot be shown to be true or false by reference to the facts
- **Theories** are expressed as positive statements such as "If the price of Pepsi increases, then the quantity demanded decreases."
    - A ceiling on rents reduces the quantity and quality of housing available." This happens to be a **positive statemen**t because it can be tested against the evidence and shown to be consistent or inconsistent with the evidence.

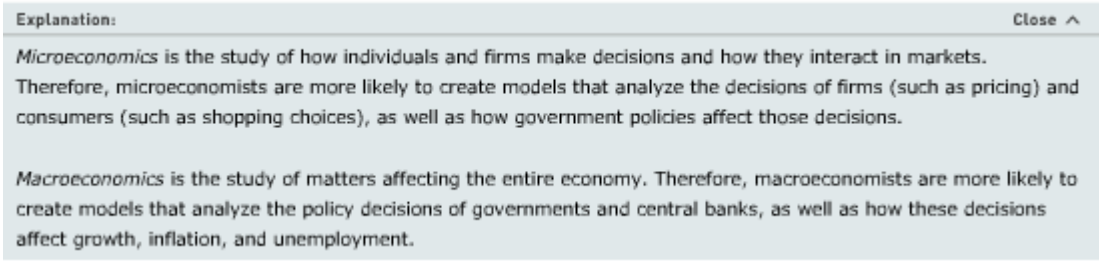
PREDICTING AVERAGE BEHAVIOUR

- How will ppl react as a whole to economic choices in certain markets?
- Economists focus on average or typical trends. The unpredictable actions of numerous individuals often cancel one another out, so the *average behaviour* of groups can be predicted more accurately than the behaviour of an individual

LO 4 Some Pitfalls of Economic Analysis

1. ASSOCIATION IS CAUSATION
    a. The fact that one event precedes another or that the two events occur simultaneously does not necessarily mean that one causes the other.
2. THE FALLACY OF COMPOSITION
    a. erroneous belief that what is true for the individual, or the part, is also true for the group, or the whole.
3. THE MISTAKE OF IGNORING THE SECONDARY EFFECTS
    a. Economic actions have unintended consequences that often turn out to be more important than the primary effects. Secondary effects may develop more slowly and may not be immediately obvious
        i. Rental units deteriorating and no new ones being built because of rent controls

MICRO vs MACRO



Readings/Video – Ch 2: Economic Tools and Economic Systems

LO 1 Choice and Opportunity Cost

- **Opportunity cost** - when you make a decision, and pass up another opportunity. The value of the chosen item or activity is *the value of the best alternative that is forgone*.

- We always choose to do something b/c it is more attractive than our best alternative
- Opportunity cost is subjective because the best alternative is the "road not taken"-you will never exactly know what you gave up and it could have turned out to be more beneficial.
    - E.g. you stay in to study for a night rather than going out with friends (your best alternative), but your wi-fi doesn't work so you don't get much done, in this case, going out is actually the better alternative

sunk cost

a cost that has already been incurred, cannot be recovered, and thus should be irrelevant for present and future economic decisions

CALCULATING OPPORTUNITY COST REQUIRES TIME AND INFORMATION

- We only assess the value of possibilities as along as the expected marginal benefit of gathering more information exceeds the cost of doing so
- Assessing alternatives is time consuming so we sometimes make choices based on limited/wrong information, which we later realize was the wrong one

Time – the ultimate constraint

- The wealthy Sultan seems to have overcome the economic problem of scarcity.
- He can buy whatever he wants, but doesn't have time to enjoy everything. He must pass up certain activities due to time – this is an opportunity cost.

Opportunity cost Varies with Circumstance

- Would study on Tuesday vs Saturday bc best alternatives are less attractive during the week

SUNK COST AND CHOICE

- Economic decision makers should consider only those costs that are affected by the choice. Sunk costs have already been incurred and are not affected by the choice, so they are irrelevant.
- For e.g., if you wait in line at a store for ten minutes then the cashier beside opens up, there is no point staying in the line just because you have been waiting so long for it. That time is gone, and irrelevant to the future and to this choice.

LO 2 Comparative Advantage, Specialization, and Exchange

- If you face a lower opportunity cost of vacuuming, your roommate must face a lower opportunity cost of folding (you can't have a lower opportunity cost of both activities

law of comparative advantage

the individual, firm, region, or country with the lowest opportunity cost of producing a particular good should specialize in that good

ABSOLUTE ADVANTAGE VS COMPARATIVE ADVANTAGE

- absolute advantage means making something using fewer resources than other producers require.
    - *You take 10 minutes to vacuum a room and 5 minutes to fold a T-shirt, so your opportunity cost of vacuuming the room = 2 folded T-shirts. Your roommate takes 30 minutes to vacuum and 6 minutes to fold, so they have an opportunity cost of 5 folded T-shirts*
    - *You have absolute advantage in both tasks, but since your opportunity cost 2 T's/ room is lower than your roommate's (5 T's/room) , you should vacuum and they should fold*
    - *You are better at both, but better at vacuuming than folding and they are better at folding than vacuuming so you both specialize*
- **Absolute advantage focuses on who uses the fewest resources, but comparative advantage focuses on what else those resources could produce—that is, on the opportunity cost of those resources.**

- Saskatchewan wheat to Prince Edward Island potatoes, from software in India to hardware in Taiwan—*resources are allocated most efficiently across the country and around the world when production and trade conform to the law of comparative advantage*

SPECIALIZATION AND EXCHANGE

- Money is a *medium of exchange* because it is the one thing that everyone accepts in return for goods and services
    - Don't have to search for someone to trade products with
- **barter** – the direct exchange of one product for another without using money
    - barter works best in simple economies with little specialization and few traded goods
- Because of specialization and comparative advantage, most people consume little of what they produce and produce little of what they consume. Each individual specializes, then exchanges that product for money, which in turn is exchanged for other products
- The degree of specialization is limited by the extent of the market.
    - Online sellers draw on the broadest customer base in the world to find a market niche.
    - Mcdonalds specializes in fast food – making food with a specific taste, fast, and cheaper than we could do at home

DIVISION OF LABOUR AND GAINS FROM SPECIALIZATION

- **division of labour** creates increased efficiency by allowing laborers to specialize
- How?
    - Ppl assigned by individual preferences and abilities (law of comparative advantage)
    - Get better by repeatedly doing the same jobs
    - Allows for the introduction of more sophisticated production techniques that would not make sense on a smaller scale (5 foot burger cooker, for e.g.)

Autrarky – without trade – what the country capable of consuming if it does not trade but exists in isolation?

- Without trade, we are limited to consuming points on or inside the PPF

"Gains from Trade" - the extra quantity that can be consumed when one trades with another

- This allows a country to consume past its production point

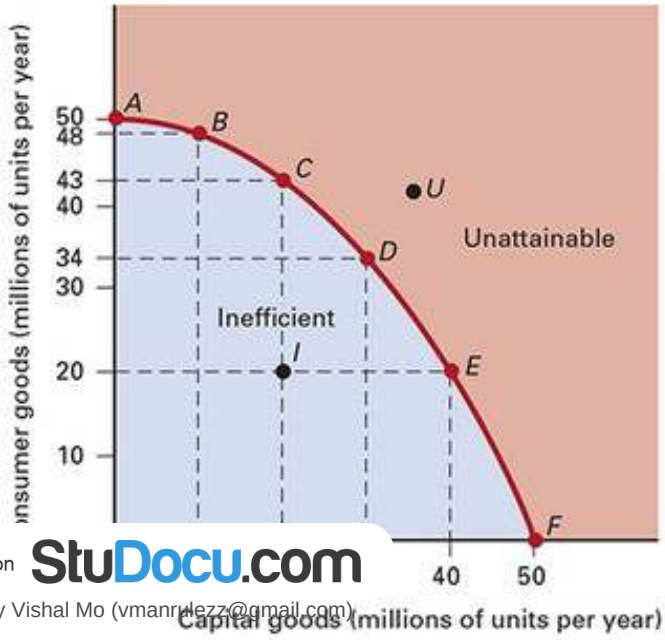
To Summarize: The specialization of labour

- takes advantage of individual preferences and natural abilities
- allows workers to develop more experience at a particular task
- reduces the need to shift between different tasks
- permits the introduction of labour-saving machinery

LO 3 The Economy's Production

a curve showing alternative combinations of goods that can be produced when available resources are used efficiently; a boundary line between inefficient and unattainable combinations

Possibilities Frontier (PPF)



An economy is on its production possibilities frontier (A→F line) if all resources are used EFFICIENTLY in producing consumer and capital goods.

- additional units of capital goods require the economy to sacrifice units of consumer goods.
- Points inside the PPF, such as *I*, represent inefficient use of resources.
- Points outside the PPF, such as *U*, represent unattainable combinations.
- By using resources more **efficiently**, the economy can produce more of at least one good *without reducing the production of the other good*.

Figure 1: Points along the curve between A and F identify possible combinations of the two goods that can be produced when all the economy's resources (capital and consumer goods) are used efficiently.

SHAPE OF PPF

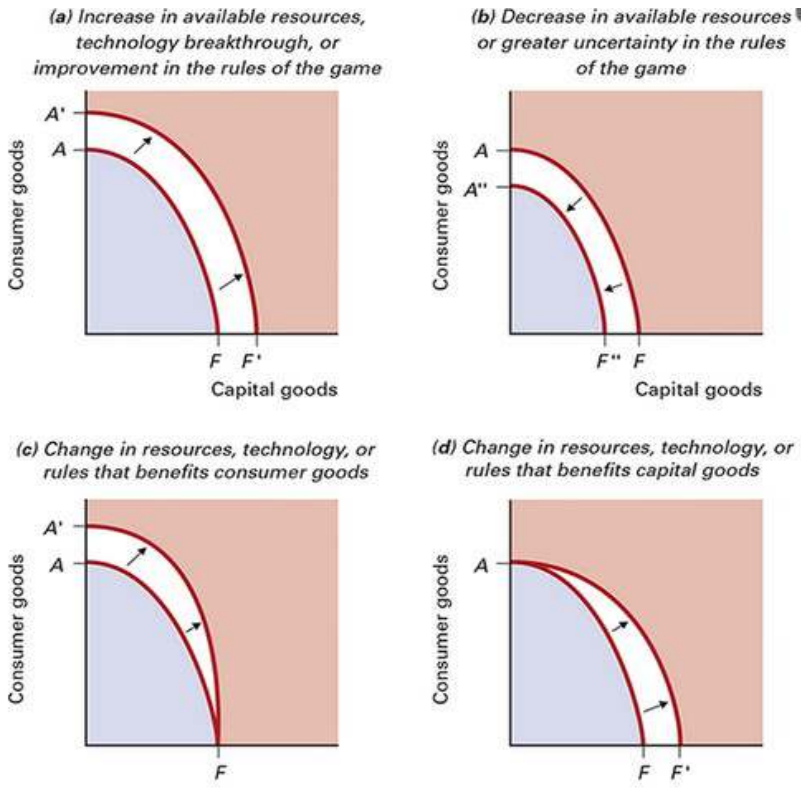
- bowed out/curved, due to **Law of Increasing Opportunity**.
- Moving from D-E then E – F, we see to produce just 10 mil more capital goods, will cost successively more loss of consumer goods, due to a higher opportunity cost.
- if resources were perfectly adaptable to the production of both consumer goods and capital goods, the PPF would be a straight line, reflecting a constant opportunity cost along the PPF.

law of increasing opportunity cost

to produce more of one good, a successively larger amount of the other good must be sacrificed

SHIFTING THE PPF

- Over time, the frontier can shift in or out as a result of changes in the availability of resources, in technology, etc.
- **Changes in Resource availabilit**y: increase in size/skills of the labor resource, increase in availability of other resources will shift the PPF outward. If many people and resources are killed/destroyed, it will decrease the PPF.
- **Increases in Capital Stock**: The more capital an economy produces one period, the more output can be produced the next period, increasing the PPF. This is b/c u use capital to produce capital
- **Technological Change**: can cause more efficient use of resources, increasing the PPF.
    - New technology in something that benefits CONSUMER goods, causes graph (c) below, where F wouldn't change b/c it doesn't affect capital – E.g. GMO crops
    - (d) shows tech advance in CAPITAL. E.g—better software for producing machinery
- **Improving Rules of the Game: L**aws, customs, manners, conventions, and other institutional underpinnings that encourage people to pursue productive activity
    - E.g. more stable political environment, lower income tax, investment safety



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WHAT WE LEARN FROM PPF

- Efficiency – efficient combinations of output, given the 4 shifting factors
- Scarcity – the economy can produce only so much output per period
- Opportunity Cost – more of one good means less of the other good
- Law of Increasing Opportunity Cost – causes PPF's bowed-out shape – resources not perfectly adaptable to production
- Economic Growth - shift outward in the PPF reflects *economic growth*.
- Need For Choice – Selecting a particular combination determines not only consumer goods available this period, but also the capital stock available next period. It doesn't tell us which is the BEST combinations, so we need to know about both costs and benefits to make a good decision

LO 4 Economic Systems

THREE QUESTIONS EVERY ECONOMIC SYSTEM MUST ANSWER

(1) What goods and services to produce?
   a. Every company must make this choice via decision making processes
(2) How are the Goods and Services Produced?
   a. How much / what kind of labour, machines, new technology, new buildings are needed
(3) For Whom are Goods and Services Produced?
   a. How to allocate production among the population – distribution question

PURE CAPITALSIM

Markets alone determine “what and How and Who” produces and consumes

- No government to protect property rights
- Poverty
- Likely Monopolies
- Externalities – impact on bystander when a good/service is produced or consumed (negative or positive)
- Some goods and Services won’t be produced (public goods)

pure capitalism

an economic system characterized by the private ownership of resources and the use of prices to coordinate economic activity in unregulated markets

PURE COMMAND

- Government decides what will be produced, how, and who gets to consume
- Ideally these decisions are to be made in best interest of all member of the society
  - E.g. north korea

Problems

1. Resources are often used inefficiently
2. Some resources are wasted (why work hard if you wont see increase I your earnings?)
3. “Plans” are biased in favour of the planners ($$ spend on military)
4. Less variety of goods/services than in capitalism

MIXED ECONOMIES

- Most countries have elements of both
- Governments produce and consume, and regulate private operations
- Contries from both extremes have become more mixed over time

CLASS LECTURE

CLASS QUESTIONS:

Suppose an economy produces two goods, food and machines. This economy always operates on its production possibilities frontier. Last year, it produced 50 units of food and 30 machines. This year, it is producing 55 units of food and 33 machines. Which of the following would *NOT* explain the increase in output?

a. a reduction in unemployment
b. an increase in the labour force
c. an improvement in technology
d. an increase in worker productivity

ANSWER: A
- all four options allow us to produce more output
- “reducing unemployment” implies that before, we were NOT operating at full efficiency, because not everyone was employed before.. they were inside their PPF which is NOT what it says in the question

Which of the following is an example of an unintended consequence?

a) Decreasing the tax rates on cigarettes leads to more smoking.
b) Introducing a ban on smoking in restaurants causes people to smoke less.
c) Adding graphic labels to cigarette packages causes people to smoke more.
d) Increasing cigarette taxes leads to an increase in smuggling, and therefore an increase in illegal weapons.

ANSWER: d
(why not c? because this is an opposite effect to the intended, not a secondary unthought-of effect)

A **positive statement** can be shown to be true (or false) by collecting data and evidence.
A **normative statement** involves a person’s own individual morals or feelings about something.

Please identify whether the following statements are normative or positive.

1. The minimum wage creates unemployment among young and unskilled workers. Normative Positive

Positive

Normative

Positive – can collect evidence

2.	The minimum wage ought to be abolished.	Normative	Positive	*Normative – not given two comparable variables*
3.	If the government wants to reduce childhood diseases, it should provide free vaccines.	Normative	Positive	*Normative – "is worse" is not measurable*
4.	The Ontario government was correct in introducing a ban on smoking in public places.	Normative	Positive	*Positive*
5.	A little bit of inflation is worse for society than a little bit of unemployment.	Normative	Positive	*Positive* *Positive – but false*
6.	The ban on smoking in public places in Ontario has reduced tobacco use.	Normative	Positive	*Normative*
7.	A rise in the price of gasoline will lead to an increase in the use of public transit.	Normative	Positive	*KEY TO ANSWERING: IS THERE VARIABLES FOR WHICH WE CAN COLLECT EVIDENCE?*
8.	The Canadian economy has grown faster than the Chinese economy over the last decade.	Normative	Positive	
9.	Canadian workers deserve more liberal unemployment benefits.	Normative	Positive	

Week 2

Readings/Video – Ch 3:

DOMESTIC DECISION MAKERS – VID 2-1

- 4 types: households, firms, governments, rest of world (the other 3 in other countries)

LO 1 Households (HH)

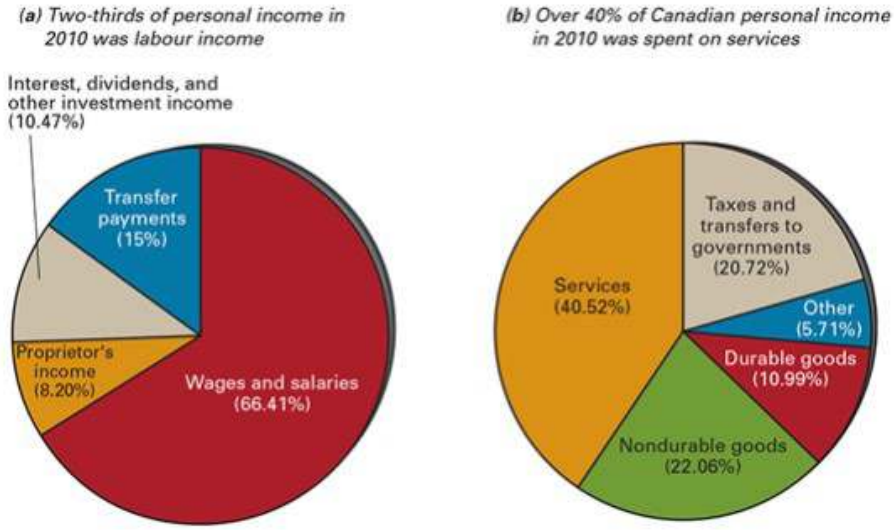
- Ancestrally self-sufficient, now, more specialized and needs rest of economy
- Simplest unit on the demand side of product markets and supply side of resource markets
- Size variance: 1 to like, 20 people or more

Households Maximize Utility

- Households, are **rational**, meaning that they try to act in their best interests and do not deliberately try to make themselves less happy.
- **Industrialization** – households sold labour services to firms and purchased goods from firms
- want to maximize **utility –** satisfaction we gain from consuming
    - we can make inferences about household utility, although utility maximization depends on each household's subjective goals, not on some objective standard.

Households as Resource Suppliers

- households can USE or SELL their resources—labour, capital, natural resources, and entrepreneurial ability—in an attempt to satisfy their unlimited wants.
    - Use - produce goods and services in their homes. E.g. cook, wash, fix a leaky faucet.
    - Sell – their labour and use the income to buy goods and services in the product market.
- HH are buyers in product markets, sellers in resource markets
- we assume HH own all resources



Income and Spending

- 2/3 income from wages/salaries
- 40% on services, 11% each on non-durable goods and food, 20% to government
- *proprietors* are people who work for themselves rather than for employers; farmers, plumbers, and doctors are often self-employed. Their income is a form of labour/wages income

Transfer Payments

transfer payments

benefits given to individuals as outright grants from the government

- such individuals are those who limit the resources a household has to offer. For e.g. limited education, poor health/old age, discrimination, disability, maternity, etc.

Households Demand goods and services

- besides taxes, there is 3 broad categories they spend on: Durable goods (lasting **more than 3 years**, e.g. a car), Nondurable goods carpet, and Services.

Why Does House Hold Production Still exist?

- If a household's opportunity cost of performing a task is below the market price, then the household usually performs that task

1- ***No Skills or Special Resources Are Required*** *– domestic chores*
2- ***Household Production Avoids Taxes –*** *for producer and consumer*
3- ***Household Production Reduces Transaction Costs –*** *time, contract negotiation, performance monitoring, and lack of personalization*
4- ***Technological Advances Increase Household Productivity***

LO 2 Firms

Firms

economic units formed by profit-seeking entrepreneurs who employ resources to produce goods and services for sale

- Began in industrial revolution 1700's. Firms maximize **profit**, while HH's maximize **utility**
- Technological developments allowed big factories to:
  (1) Efficient **Labour Specialization**
  (2) Organized Production
  (3) Close to Energy Sources
  (4) Improved Technology
  (5) Large, **Efficient Machinery**
- For e.g. a Guy wants a sweater. Instead of visiting and bargaining with each specialist, the consumer can pay someone to do the bargaining—an entrepreneur, who hires all the resources necessary to make the sweater. *An entrepreneur, by contracting for many sweaters rather than just one, is able to reduce the transaction costs per sweater*.

Three types of Firms:

(1) **Sole proprietorship** – lose personal assets (like house) if firm goes bankrupt. E.g. dentist, Temagami store
(2) **Partnership** – 2+ partners who share profits. It is also risky, either could mess up and both could lose everything. E.g. law firm.
(3) **Corporation** – easy to run/expand bc investors can pool their funds, with limited liability
   - However, owners have limited input and must vote decisions.
   - It is taxed 2x (in corporate profits and shareholder dividends), and also can be sued or charged with crime like it is a person.

sole proprietorship

a firm with a single owner who has the right to all profits but who also bears unlimited liability for the firm's losses and debts

corporation

a legal entity owned by stockholders whose liability is limited to the value of their stock

The sole proprietorship is the most important in sheer numbers, but the corporation is the most important in total sales.

According to the latest data, corporations account for more than four-fifths of total sales in Canada, followed by partnerships and sole proprietorships.

Co-operatives: Work tg to buy/sell in a market, tax-free

- Consumer: business in retail where customers are also owners. Often fee required. Covers its own costs, and Reduces costs of members, not necessarily to maximize profit. (e.g. apartment buildings, Costco,)
- Producer: grp of producers band tg to lower cost of production (UFA – united farmers America)
- Worker: business owned by the workers
- Not-For-Profit: charity

market failure

a condition that arises when the unregulated operation of markets yields socially undesirable results

LO 3 Government

PREVENTS MARKET FAILURE BY:

Enforces "rules of the Game"

- Protection of private properties and enforcing contracts
- E.g. government laws and regulation, customs and conventions of the market place

Promotes competition.

- **Collusion** is an agreement among firms to divide the market and fix the price. Or else an individual firm may try to eliminate the competition by using unfair business practices – e.g. large co. may sell very low till others go bankrupt

Regulates Natural monopolies

- when it is cheaper for one firm to serve the market than for two or more firms to do so, they will charge higher than optimal from a society's point of view

Provides public goods:

- police, fire services, become nonrival in consumption, and are not excluding those who can't pay

Deals with Externalities

externality

a cost or a benefit that affects neither the buyer nor seller, but instead affects people not involved in the market transaction

- positive externality: when you benefit because of someone else's private transactions—e.g. someone else gets vaccinated, you don't get sick.
- Neg Ext.: opposite. E.g. pollution, traffic congestion
- Governments try to eliminate externalities. For e.g. they will fine a polluting factory for over pollution, and will pay for schooling, to prevent uneducated people from going to crime and worse.

Redistribute Income

Help Country achieve Economic Goals

- e.g. low unemployment, price stability, economic growth
- gov. regulates economy through FISCAL and MONETARY POLICIES (taxes/spending and money supply)

GOVERNMENT STRUCTURE AND OBJECTIVES

- federal: national security, economic stability, and market competition
  - includes executive, legislative, and judicial
- provincial: education, health, welfare, transportation
- local/municipal: police and fire protection

Difficult to Define Gov. Objectives

- health Canada warns on cigarette packages, but agriculture Canada benefits tobacco growers.
- Does the gvmt try to maximize? *one theory is that elected officials are* ***vote maximizers****. Vote maximization guides the decisions of elected officials who get to make rules.*

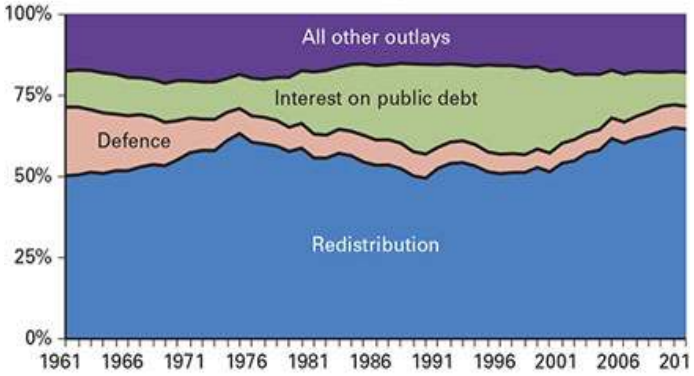
Voluntary Exchange vs. **Coercion**

- = buying what you want vs. gvmt forces you to pay for things you don't want—e.g. you pay taxes, even if they support some things you disagree with (like supported abortion)

No Market Prices

- public output is usually offered at either a zero price or at some price below the cost of providing it.
- Because the revenue side of the government budget is usually separate from the expenditure side, there is no necessary link between the cost of a program and the benefit
    - Humans only pay a fraction of their education, with the government helping a lot of the expenses.

SIZE AND GROWTH OF THE GOVERNMENT



- GDP → Gross Domestic Product = Consumption + Investment + government purchases + (exports – imports)
- = how much of the total value of all the goods and services produced in Canada, are **outlaid by the government**
- = used to track government growth
- 1st spending is on redistribution, 2nd is on public debt, and defence fluctuates
- The avg spending on GDP in wealthy countries is about 45%
- Revenue comes increasingly from taxes – since GST in 1991, less than ¼ of tax is from all sources other than taxes combined

TAX PRINCIPLES

- Income/property taxes rely on this ability-to-pay tax principle: you earn more, you pay more
- benefits-received tax principle Those who get more benefits from the government should pay more taxes.
    - E.g.—roads are paid by government, and gas is taxed. You drive more, you pay more taxes on the gas bc you use their roads.
- Tax Incidence: division of a **tax** burden between buyers and sellers. Dictates who pays the tax.
- When taxpayers all have the same % taken off income, it is Proportional Taxation
- Progressive taxation: he tax as a % of income increases as income increases
- Marginal tax rate: the % of each additional dollar of income that goes to the tax
    - The four marginal tax rates on Canadian personal income range from 15% to 29%
- Regressive Taxation: tax as a percentage of income decreases as income increase

LO 4 The Rest of the World

INTERNATIONAL TRADE

Year	Imports	Exports
1961	15% of GDP	15% of GDP
2015	45% of GDP	33% of GDP

- international trade occurs because the opportunity cost of producing specific goods differs across countries

TRADE RESTRICTIONS

- specialization according to comparative advantage is so beneficial, why do most countries restrict trade?

merchandise trade balance

…ring a given period of
…xported goods
…alue of its imported goods

- Restrictions benefit certain domestic producers that lobby their governments for these benefits.
- Especially **where inefficient firms are concerned**, T.r.'s interfere with the free flow of products across borders and tend to hurt the overall economy.

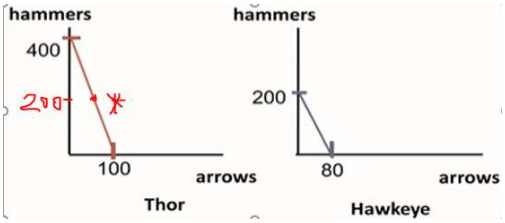
VIDEO 2-2: THE REST OF THE WORLD AND 2X2 TRADE MODEL

Quantity produced in 40 hours (1 work week)		
	Hammers	Arrows
Thor	400	100
Hawkeye	200	80

Thor has relative adv in hammers, since his opportunity cost of 1 arrow is 4 hammers while hawkeyes opportunity cost of 1 arrow is 2.5 hammers.

- In autarky they are @ midpoint in their PPF's, which is intersection of midpoint of both axis

Opportunity cost of 1		
	Hammer	Arrow
Thor	¼ arrows	4 hammers
Hawkeye	2/5 arrow	2 ½ hammers

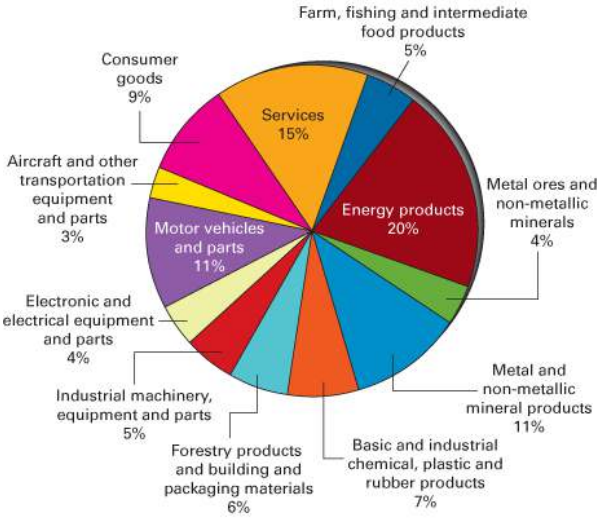


If Thor offers 200 hammers in exchange for 100 arrows, he is left with 200 hammers left to consume, plus 100 arrows. This makes a point outside his PPF, which means it's a good deal. Normally if he had 200 hammers to consume, he would have less than 100 arrows based on his autarky ppf.

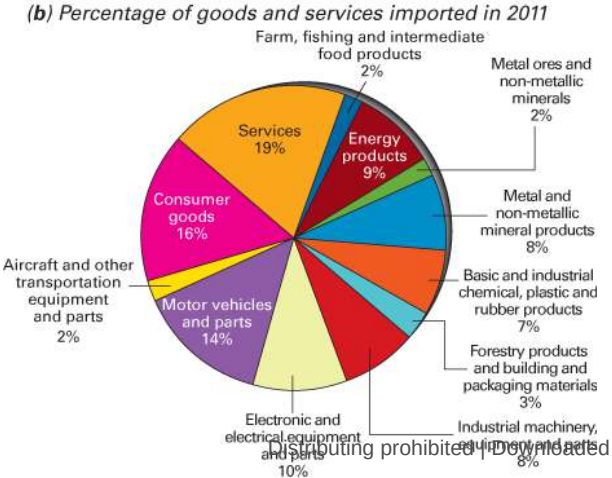
For Hawkeye, he gets 200 hammers at a cost of 100 arrows. Normally, he would make his own 200 hammers at a cost of 80 arrows, so he will not do this.

However, if Thor offers something between his max and H's max of hammer making, for something above what it would cost him to make that, it will be a good deal. For e.g., 300 hammers would cost him making 75 less arrows (300x .25), so he could only make 25 arrows for 300 hammers. Would hawkeye give him 30 arrows

(a) Percentage of goods and services exported in 2011



(b) Percentage of goods and services imported in 2011



Readings - Ch 17:

LO 1 - The Gains from Trade

- In this chapter, we examine the gains from international trade and the effects of trade restrictions on the allocation of resources
- To reap the gains that arise from specialization, countries engage in international trade. *Each country specializes in making goods with the lowest opportunity cost*.

A PROFILE OF EXPORTS AND IMPORTS

Canadian Exports

- exports make up only about one-quarter of Canadian GDP, far less than in many other economies, but more than America which is 13%
- Largest export is energy products, (20%), then services (15%)

Canadian Imports

- Imports = $457 billion = 26% GDP
- Largest = Services @ 19%,
- second = Consumer goods @ 16%

Trading Partners

- United States (75 percent), United Kingdom (4 percent), China (3.3 percent), Japan (2 percent), and Mexico (1.3 percent)
- Canadian imports = more diverse countries than exports, but in both, mostly American

AUTARKY VS CONSUMPTION POSSIBILITES BASEDC ON COMPARATIVE ADVANTAGE

Production Possibilities with 40 Million Workers (millions of units per day)

	A_1	A_2	A_3	A_4	A_5	A_6
Food	200	160	120	80	40	0
Clothing	0	80	160	240	320	400

This is Country Away vs Canada
Because an Awaysian worker can produce either 5 units of food or 10 units of clothing,

Away's *opportunity cost of 1unit of clothing is ½ units of food, and O.C of 1unit food = 2 units clothing*,

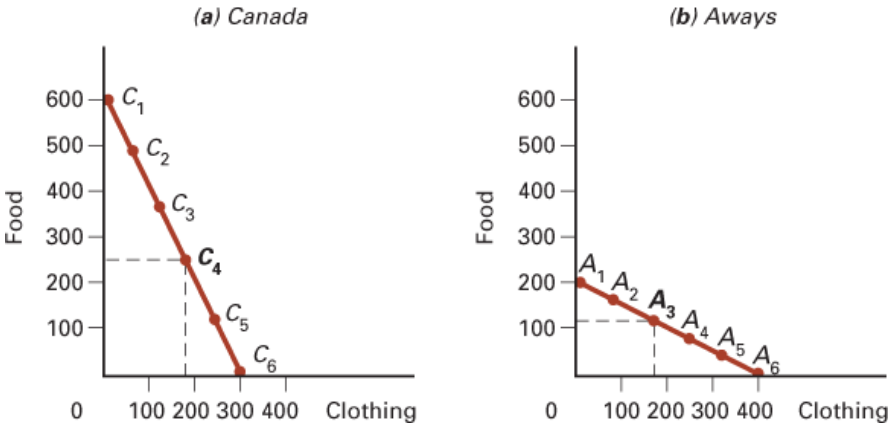
Production Possibilities with 20 Million Workers (millions of units per day)

	C_1	C_2	C_3	C_4	C_5	C_6
Food	600	480	360	240	120	0
Clothing	0	60	120	180	240	300

if we convert this data into PPF's for Aways, we see that Canada has a steeper because their opportunity cost of clothing is greater.

Canada and slope of -2 producing

Howerver if we look at the graphs from right to left, we see they can produce much more food for every unit of clothing they give up than Aways can.

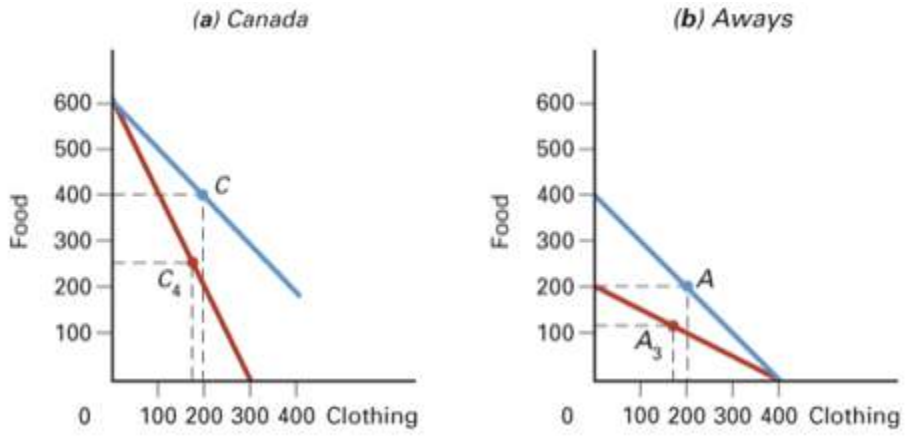


Autarky is the situation of national self-sufficiency, where there is no economic interaction with foreign producers or consumers.

Canada in Autark would try to maximize its production of both resources, leaving it at somewhere around C4. This is called **autarky equilibrium**

Suppose both Canada and Aways are in autarky, producing C4 = 240 mill food and 180 mill clothing for Canada, and 120 mill food with 160 mill clothing for awaysians.

Should they remain in autarky? We know that specialization according to comparative advantage will allow increased production and consumption (blue lines = after specialization, red = autarky) for each country. As seen in the PCPF's below.



The only constraint on trade is that, for each good, *world production must equal world consumption*.

We must remember that in real life, countries cannot just produce only one commodity

Class Lecture(for Chp 3, 17)

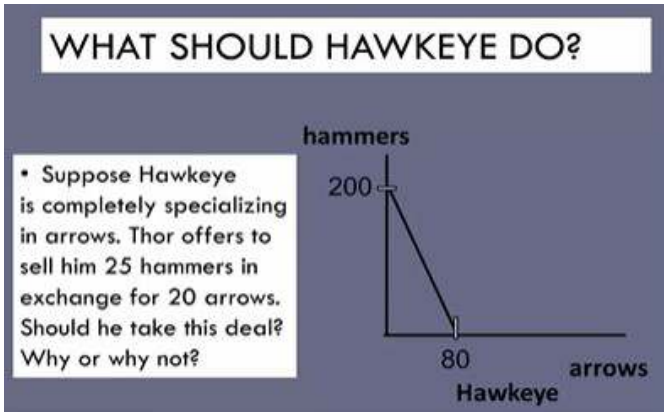


Figure : ans = NO. why? it would be inside his PPF, he needs at least 50 Arrows

Why don't we have Complete Specialization?

- Not enough goods for both markets
- Lower producer typically benefits more
- Typical economists thinks that when we trade, by definition, we produce more of everything.
- Because we have extra stuff we can compensate people who, for e.g. are put out of work
- Countries do not produce goods – firms do. And some lose. The losers are likely to try to convince the government to interfere by barring imports of certain products by putting large tarrifs on them

If England and Spain trade based on the principle of comparative advantage, which of the following is correct?

a) **England will import cheese and Spain will import bread**
b) Both import cheese
c) Both import bread
d) England will import bread and Spain will import cheese

KEY: MAKE SURE YOU ARE LOOKING AT **OUTPUT**. Labour hours needed to make something are INPUT. Production, or Exports, are OUTPUT

What will the price be?

A)
B) See recording pt. 2 / pen notes
C)
D)

Consumption possibilities Frontier

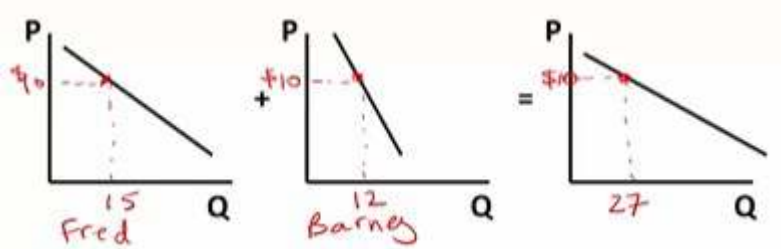
- TO DRAW: start at the one with higher production point of a good (either verticle or horizontal axis), and draw a line with the slope of the other person's PPF

Week 3

Ch 4: Market Forces of supply and demand

DEMAND

Market demand refers to the sum of all individual demands curves for a particular good or service.



Market supply refers to the sum of all individual supplies of a particular good or service.

- **A perfectly competitive market**: all the goods sold are what we say homogenous, identical
- Firms can freely enter or exit a market
- buyers and sellers are so numerous that no individual can affect the market price of the good
- Each is a price taker

LAW OF DEMAND : All other things being equal (*ceteris paribus)*, when the price of a good rises, the quantity demanded of that good falls

- **Quantity demanded-** Qd: the amount of a good or service that consumers are willing and able to buy at a given price.
- Due to scarcity, people must balance their willingness/want of a good with their ability to buy it.
- It is the change in the relative price – the price of one good relative to the prices of other goods

real income

income measured in terms of the goods and services it can buy; real income changes when the price changes

Variables that influence how much buyers want to buy are:

1. **Price** – as it goes up, quantity demanded decreases
2. **Income** affects demand for goods
   - **Normal Goods**: when our income goes up, demand increases
   - **Inferior Goods**: ones we buy when we can't afford our preference, e,g, no name foods. Increasing income = lower demand for them
   - A decrease in a price increases our *real income*, increasing Qd b/c we can buy more of THAT product. Since real income comes from a product at a specific lower price, and not for other products, it varies on the QUANTITY DEMANDED curve.
     - E.g shampoo: one type is on sale, demand will go up, but not for the shampoo not on sale
   - If *money income* increases, consumers are willing and able to buy more pizza at EVERY price, so MARKET demand increases. The DEMAND CURVE shifts to the right
3. Price of **other Goods**:
   a. Substitutes: An increase in the *price* of one causes its demand to go d*own*, bringing up the demand of the other good
   b. Complements: one goes with the other, so when the price goes up of A, demand goes down for A and B
4. **Expectations**
   a. In terms of price of good changing: demand goes up or down in anticipation of a price
   b. Read textbook about expectations in terms of change in income

c. It is not talking about seasonality – e.g. buying snowshovels in December vs. January, this is more about tastes

5. **Number / composition of consumers**
   a. Large increase in population or a certain demographic can affect the demand for certain goods and services, either whole population, or for e.g. number of babies causing mothers to buy more diapers
6. **Tastes** – hard to measure, quantify and can change over time for no apparent reason – try to rule out other reasons before accepting this to change the demand curve

Donut Example (income vs other goods)
- Income effect → absolute price of a commodity
- Substitution → absolute price of commodity

If the price of donuts increases, holding all other prices of other treats constant, we get an increase in absolute and relative prices of donuts, causing,
- Decrease in income – less demand (D) for donuts (shifts left)
- less Demand of donuts due to price = increased demand in substitute product

Ways to express demand
1. Demand schedule: a table with a list of prices on the left, and quantities on the right. Shows the relationship between price and quantity demanded for a good.
2. Demand Curve: a negatively sloped graph of the demand schedules, and relates price and quantity consumers will and are able to buy, other things constant
   a. Price affects demand rather than vice versa
   b. On the demand curve for pizza, the price of pizza changes *relative to the prices of other goods-they stay the same*
3. Words: when the price of pencils rises, people buy fewer pencils.
4. Equation: Qd = 1200 – 40P, where Qd = quantity demanded, and P = price

Explanation: Close

The demand curve shows the relationship between the price of a good and the quantity demanded with all other determinants of demand held constant. In this case, the demand curve shows the number of sedans that people in Toronto are willing and able to purchase at a variety of prices, holding average income, the price of gasoline, and the price of subway rides constant. Because these other factors haven't changed, the demand curve does not shift.

When the price changes, but all other determinants of the quantity demanded remain constant, the result is a movement along the demand curve.

LO 2 Supply (in Video 3-2)

Quantity supplied, Qs: the amount of a good that sellers are willing and able to sell

The Law of Supply Other things being equal (*ceteris paribus*), the price of a good rises, the quantity supplied of a good also rises.

Variables that influence how much sellers want to sell are:
1. Price: P and Qs are +ve related. Higher price = supply more bc wanna sell more of it
2. Technology: improvements means firms want to & are able to produce more at any given price

3. Resource prices: Resource = input. If resource price goes up, selling the products of it is Less profitable, so the firm wants to decrease its supply.
4. Prices of other goods: if gas is high, the company wants to decrease supply of trucks and increase supply of electric cars
5. Expectations: if you expect the price of a good will go down in a month, you want to Increase the supply NOW and sell before the price goes down
6. Number of producers: more producers = more supply

MARKET SUPPLY

- Sum of individual supply curve, showing how much is supplied at each price.
- Horizontal sum of curves (adding individual quantities at each price)

A Change in Quantity Supplied

- A change in quantity supplied: amount of good sellers are willing to sell
- The supply curve: graph of relationship between price of good and quantity supplied
- A Supply schedule: shows exact details of the willingness and ability to supply at a certain price
- Sentences, and the equation Qs = 300 + 20P, where P = price.

A change in supply:

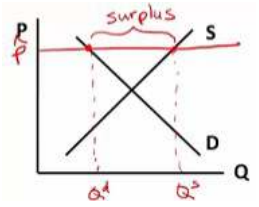
- An increase in supply means a shift to the right.
- A decrease in supply means a shift to the left

1. If input prices increase, the supply curve shifts to the left (and vice versa).
2. An increase in the price of a substitute good in will decrease the supply of the other good (shift it left).
3. An increase in the price of a complement in production will increase the supply of the other good (shift it right).
4. Advances in technology and an increase in the number of firms will shift the supply curve to the right.

Equilibrium:

- Equilibrium Price price for which Qs = Qs.
- Equilibrium quantity: the quantity that corresponds to the equilibrium price. in which the price has reached the level where quantity supplied equals quantity demanded

How do we get to an equilibrium?

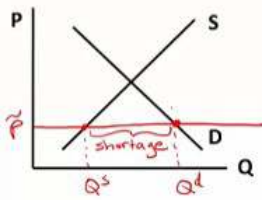


Suppose that for some reason, the market price of ice cream cones was $2.50, which is higher than equilibrium price of 2$

- Customers do not buy all the product, because the price is too high for which a quantity demanded will = the supply being produced.
- There will be a surplus, so if we lower the price, P, it will increase the demand (moves to the right) and decrease the supply (will move to the left) until they all match up nicely.

Suppose that for some reason, the market price of ice cream cones was $1.50.

- Here the price is below equilibrium. There will be a shortage, since the Qs is smaller than Qd. If we raise the price, Demand will decrease as Supply increases, and we will then reach equilibrium.

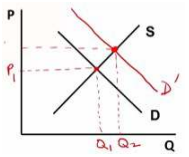


Video 3-3: Predictions of Supply demand Equilibrium

Comparative Statics: 3-step SHOCK program to analyze changes in equilibrium

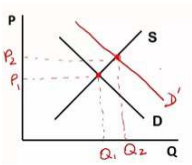
1. Decide whether the event shifts the supply or demand curve (or perhaps both)
2. Decide in which direction the curve shifts
3. Use the supply-and-demand diagram to see how the shift changes the equilibrium price and quantity

- Will compare initial with final equilibrium
- Static b/c we only are looking @ two endpoints
- It is RARE for ONE shock to shift both curves
- Each shock is assumed to act on the market independently (begin @ equilibrium)



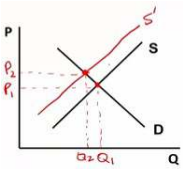
Example #1: Consumer Income Increases (pencils are normal goods)

- What List variable? DEMAND + INCOME
- Result: Demand shifts right, P and Q have both gone up



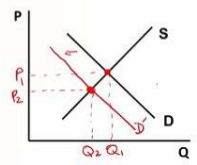
Example #2: Increase in the use of Standardized Tests

- What list variable? DEMAND + COMPOSITION OF BUYERS (they all want HB pencils to write the tests with)
- Result: demand shifts right (increases), P goes up, Q goes up



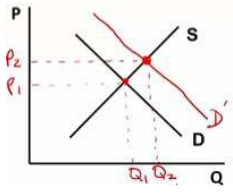
Example #3: The Price of Graphite Increases

- List variable: SUPPLY + RESOURCE PRICE
- Result: Supply shifts left, to provide less of an expensive resource
- Price increases, Q decreases



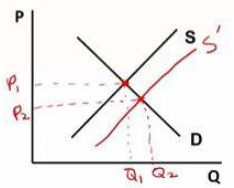
Example #4: Price of Ink Pens Increases

- List variables? DEMAND + OTHER GOODS (SUBSTITUTES)
- Result: demand shifts left, and Price and Quantity both decrease



Example #5: The School Year Starts

- List Variable: DEMAND + TASTES (school year is starting, “seasonal” items, this is not a change in expectations, because expectations involves NEW information
- More e.g. of Tastes is roses on valentines day, or Christmas trees in December
- Demand shifts right, price and quantity increase.



Example #6: New technology lowers the cost of producing pencils

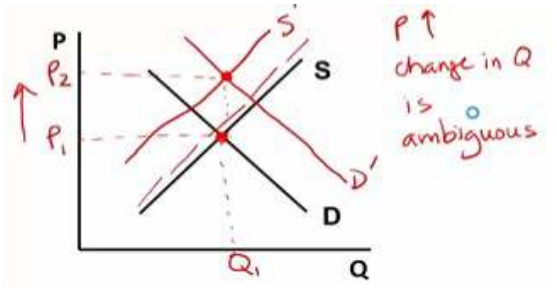
- List variables: SUPPLY + TECHNOLOGY (less cost to produce means more profitable to sell, therefore, supply increases.

- Supply shifts right, quantity increases, and price decrease
-

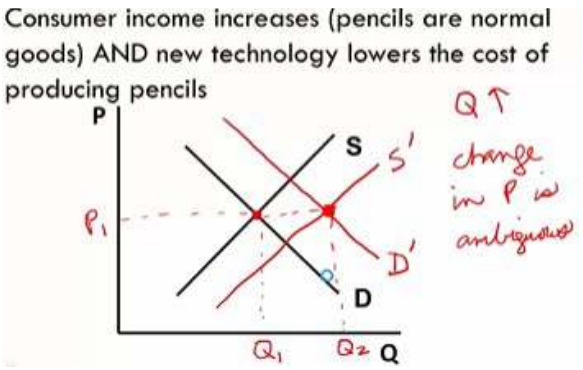
Video 3-4: More Than One Shock

Usually one shock causes only one curve to shift, however, there are 3 cases in which both curves shift.

- When both supply and demand move, you can always tell if the price rises or decreases, but unless you are told if demand or supply shifts relatively MORE, you do not know if the quantity decreases or increase. Therefore, Q = AMBIGUOUS.
-
- E.g., (**first picture)** we are not told if Demand increases more than supply decreases, or vice versa, so we draw it as seen and say Q' is ambiguous



- 2nd pic – no matter which shifts more, supply or demand, the quantity will always increase, but we need more info to know what the price does



Class Questions

- When there is a change in supply there is a corresponding change in quantity demanded, when there is a change in demand there is a corresponding change in quantity supplied
- Wealth = stock, savings = flow that adds to the stock
- Flow = measured over a given period of time
- Aggregate = relationship between overall price level and everythgin we produce and consume in Canada as a whole "particular good" relates to quantity demanded

Ch 5: Introduction to Macro Economics (w/ Videos 3-5 & 3-6)

GDP – gross domestic product.

- The market value of all goods and services produces within a country in a given period of time.
- Compares 2 countries at a single point in time, or a single country over longer periods of time

Stock Variable – measured at a point in time

Flow Variable – measured over a period of time

- Flow variables ADD TO or TAKE AWAY from flow variables
- E.g. deposit or withdrawal from your bank, are flow variables that change the stock variable of your balance
- GDP is how much is produced in a country in a given PERIOD OF TIME = flow variable

	Flow	Stock
The amount by which a Picasso painting increases in value each year	✓	
The number of bags of rice a grocery store sells in a day	✓	
The total value of all of a company's outstanding bonds		✓
The number of bags of rice on the shelf at a grocery store		✓
The value of a Picasso painting		✓
The amount a company borrows in any given year by issuing bonds	✓	

Explanation: Close

A *stock variable* measures how much of something there is at a given time. A *flow variable* measures how much something changes over time. You can look at flows and stocks of money, people, goods, or nearly anything that changes over time.

To understand flows and stocks of money, it is perhaps easiest to think about debt. For example, at the firm level, the total value of all of a company's outstanding bonds is a stock variable: It measures the total amount of debt held by the debtor. On the other hand, the amount a company borrows in any given year by issuing bonds is a flow variable: The issuance of new bonds increases the number of bonds outstanding and therefore the total amount of debt owed by the company.

You can also think of flows and stocks of people or goods. For example, the number of bags of rice on the shelf at a grocery store is a stock variable, while the number of bags of rice a grocery store sells in a day is a measurement of the change in the number of bags of rice on the shelf at a grocery store.

More subtly, you can think of something's value as a stock variable and changes in that value as a flow variable. For example, the value of a Picasso painting at any given time is a stock variable. The change in that value over a particular time period—for example, the amount by which a Picasso painting increases in value each year—is a flow variable.

Business Cycle – contraction + expansion (boom)

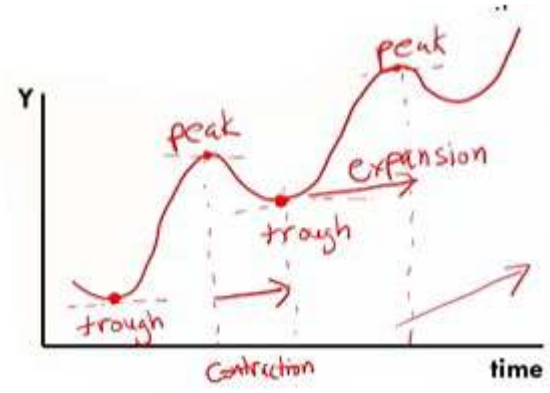
- They are irregular and unpredictable (like "shocks"

Economic variables tend to fluctuate together

Recession – 2 consecutive quarters of declining real GDP, **Depression** – a long recession

<u>Real GDP over time</u>

- Tends to gradually increase, but in a saw tooth way, as in, it is uneven.
- A **stylized business diagram** smooths out the little "saw tooths", and leaves us with major trends:
  - PEAKS – the top of a "hill"
  - TROUGH – bottom of a "hill"
  - <u>Period of Contraction</u>: moving from peak to a trough
  - <u>Period of Expansion</u>: moving from a trough to a peak
  - <u>Recession</u>: if a trough lasts for 6 months (2 consecutive quarters of year)



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<u>Economic Indicators</u>

- Indicators – variables that tell us about the health of the economy

- **Leading**, **Lagging**, or **Coincident**, based on timing
- Consumer Confidence = LEADING indicator….it causes consumption spending to go up, and GDP goes up.
- Industrial Production = COINCIDENT…it happens at the same time, and in the same direction as changes in GDP

Focus of Macro-Economics
- What can we do to cause GDP to increase faster over long time?
- Fluctuations in GDP (around this long trend) are called "business cycles'

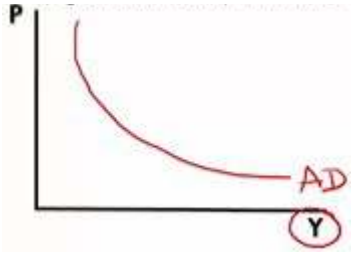
Video 3-6: AGGREGATE DEMAND, AGGREGATE SUPPLY, AND THE CANADIAN ECONOMY

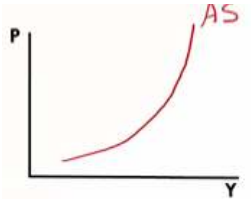
Aggregate output: total output of goods and services produced in the economy
- measured by "real GDP" (which is GDP adjusted for price changes e.g. inflation or deflation

Price Level → overall, or average of prices in the economy

Inflation Rate: % change in the price level from one time period to the next

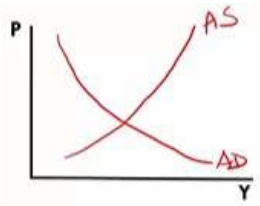
Aggregate Demand
- relationship b/w the overall *price level* in the economy vs the *GDP output* (goods/services) DEMANDED (by households, firms, governments, and the rest of the world)
- P = overall price level, Y = real GDP
- ∴ @ high price, there is low desire for Canadian GDP
- @ low Canadian prices, there is a lot of real GDP wanted



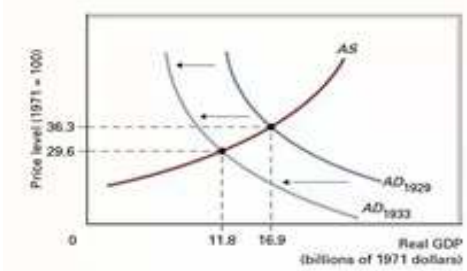


Aggregate Supply
- Relationship v/w the overall PRICE LEVEL and in the GDP SUPPLIED (by Canadian Firms)
- GDP supplied increases as prices increase, as it is more profitable for them to sell

AD-AS Equilibrium
- Occurs at the intersection of the AD and AS curves
- Firms usually hire more workers to produce more output
  - high GDP usually means low unemployment



Great Depression
- occurred during 1930's
- dramatic decrease in aggregate demand
- price level fell by 18%
- unemployment went from 3% to 24%



Oil price Shocks
- OPEC cut oil supplies in 1973, then in 1980's
- Price of oil increased, entire aggregate supply curved shifted in to the left
- So less aggregate supply (GDP output) → High unemployment + higher prices/inflation = STAGFLATION

    - Had not been seen before, usually just high inflation or high unemployment, not both
- MISERY INDEX: add together inflation plus unemployment rates.

Week 4

Ch 6: Tracking the Canadian Economy

LO 1 The Product of a Nation

- A way of measuring economic performance used to be with the "stock" of metals a country could acquire. In 18th century, it first was measured as a *flow"* of output and income through different sectors of the economy.
- Measures of income were developed in England, but refined in the states during the Great Depression where a **national income accounting system**, (collection of income data from variety of sources)
- In Canada, we have **"National Income and Expenditure Accounts"** reported each quarter by Statistics Canada

Gross Domestic Product: Market value of all final goods and services produced in a country in a given period of time

- It is a measure of how much stuff we make
- Regardless of who "owns" them, but it must be located in Canada
- *For example, GDP includes production in Canada by foreign firms, such as a Ford plant in Ontario, but excludes foreign production by Canadian firms, such as a Bombardier plant in the United States.*

Defining the terms

1. **Market Value**—We use market prices to add different goods together. Potatoes and Subways are very different but can both be in GDP by adding their prices together.
2. **Final**—
    - Final goods and services are sold to final end/user only.
        - *when we buy ground beef to cook/eat at home? YES*
        - *When McD's buys it to make into hamburgers? NO – that's "intermediate g/s"*
        - *When McD's sell it to us as hamburgers? YES*
    - avoids DOUBLE COUNTING them (don't want to count GDP for the canned beans that citizens buy if it was *already* counted in GDP when the grocer bought them)
    - Intermediate goods and services are NOT counted in GDP
3. **All Goods and Services** — except illegal ones
4. **Produced in a Country** — doesn't matter that the capital is owned by the foreign residence, it is still Canadian GDP
5. **Given Period of Time**—flow variable: how much we produce in a country in a given year

Three ways to measure GDP

GDP can be measured either by total spending on Canadian production of goods and services (**expenditure/output approach**) or by total income received from that production (**income approach)**

1. **Output Method (basic prices)**
2. **Expenditure Method (Market prices)**
3. **Income Method (market price)**

- Only difference b/w Output and Expenditure is the prices. Basic prices do not include sales tax, market prices do.
- Be able to identify which products would be included in GDP and which would not.
    - E.g. used textbook – NOT in GDP because was produced in 2016
    - E.g. Stay-at-home mom – NOT in GDP b/c the income from that is not measurable

Output/Expenditure Method

$C + I + G + (X - IM)$
= Aggregate expenditure
= GDP

- Add together all items produced in Canada, using basic (market) prices, categorised based on WHO purchases the items
- GDP (or, "Y") = C + I + G + (X-IM),

We will sort aggregate expenditure into its components: (1) C = consumption, (2) I = investment, (3) G = government purchase, and (4) (X-IM) = net exports

Consumption

- Personal expenditure of **G&S** by households
- Largest spending category in GDP (60%)
- Includes non-durable (0-1 year), semi-durable (1-3ish), and durable (3+ years) goods

E.g. soap/soup, clothing/bed sheets, furniture/ovens

Consumption

household purchases of final goods and services, except for new residences, which count as investment

Investment

- Includes *gross fixed capital formation* and *investment in inventories*
- Done by **Firms**. NEW **physical capital**, NEW house construction, investment in Inventories such as computer stocks, car parts, etc.
- Nothing rebought, such as older houses/machines. They were already counted in GDP at time of production.

Investment

the purchase of new plants, new equipment, new buildings, and new residences, plus net additions to inventories

Government Purchases

Includes: goods and services, gross fixed capital formation, and government inventories or government paid investments

- Road building/maintenance, goods/services, library staff/books
- Includes ALL levels of government (fed, prov, municipal)
- EXCLUDES transfer payments—when gov. spends money but doesn't get stuff. (e.g. social security, pension, welfare, insurance)

Government purchases

spending for goods and services by all levels of government; government outlays minus transfer payments

Net Exports

Trade in goods and services, e.g. bananas and tours or online customer service from another country

- Export adds to GDP, Import Decreases GDP
- Export > Import = +ve value (1993-2004 in Canada)
- **IM (imports)** represents gross imports. Imports are subtracted since imported goods will be included in the terms **G**, **I**, or **C**, and must be deducted to avoid counting foreign supply as domestic.

Net exports

the value of a country's exports minus the value of its imports

Example: A good / service is included in GDP based on who purchases it, not necessarily based on the characteristics of it.
Suppose a pickup truck is produced in Ontario – therefore it should be included in GDP

- What category is it in? Depends on who buys it:
- C = citizen buys it to drive to work
- I = if a landscaping company buys it to do lawn service
- G = if the city of Hamilton buys it to do government services like garbage pickup
- X-IM = if person from some other country buys it.

***NOTE: Why is inventory investment so important?**
Suppose at midnight on dec. 31st, 2016, when they stop counting GDP for the year, a car is halfway down the assembly line of being made. We want to count everything produced in 2016, but we cannot count the car because we can only count FINAL purchases.

Solution: Take the parts of the car that have been completed: e.g. frame, and tires, and add it to the "inventory investment" category.

Why do we call it gross domestic PRODUCT, if all these things are SPENDING money?

- Because *one person's spending = another person's income*.
- Anything that is bought from a Canadian Production facility, is paid for in money coming INTO the Canadian economy, whether it is bought from other countries or people within the country.

Income Approach (VIDEO 4-2 other methods and measures of output)

- Add together all income flows that result from production of new goods/services

Aggregate income = the sum of all the income earned by resource suppliers in the economy

- Add tg all income flow in the economy that result from production of new goods/services

- the price of a Coffee Crisp reflects the income earned by resource suppliers along the way
- We avoid double counting either by including only the market value of the desk when sold to the final user or by *summing the value added at each stage of production*
- *The value added at all stages sums to the market value of the final good*
- Sum of all final goods = GDP based on income approach

value added

at each stage of production, the selling price of a product minus the cost of intermediate goods purchased from other firms

- $\text{GDP} = \text{Aggregate income} = DI + NT$
- NT = Net Taxes = taxes we pay, Minus any transfer payments we receive.
- Y = GDP, or individual product before we are all added together
- DI = C + S (consumption + savings, Consumption is 60% of GDP)
- Disposable income is take home pay, that the household has leftover to purchase goods and services, after Taxes are removed and Transfers are added
- This goes into the houses, and then we begin with the Expenditure side

Let's step back now to view the big picture.

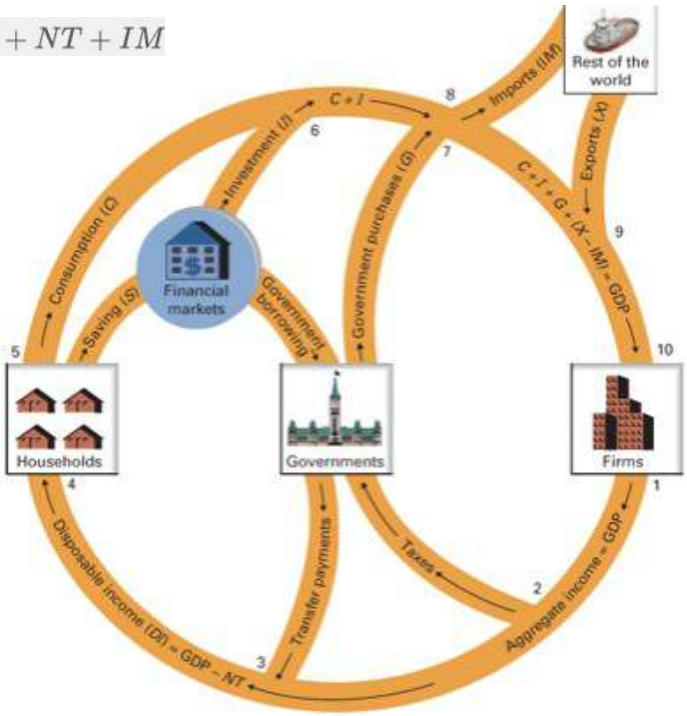
- Upper half of the circular flow → aggregate expenditure is total spending on Canadian output (aka buying goods and services) → household pays these to firms
- In the Lower Half → aggregate income is the income arising from ppl buying the output (aka wages)
- Agg. expenditure = agg income (disposable income + net taxes):
  $C + I + G + (X - IM) = DI + NT$

- DI = consumption plus saving, so we get: G$C + I + G + (X - IM) = C + S + NT$

- Subtract *C* from both sides and adding *IM* to both sides gives:

LO 2 **Circular**

$$I + G + X = S + NT + IM$$



Flow of Income and Expenditure

- Household receives INCOME for being a resource to the firm
- Household spends EXPENDITURES to get goods and services from the firm

Household Disposable income (DI)

- Aggregate income = GDP (produced by firms
- Output/expenditure methods come from one half of the circular flow diagram, income method comes from the other half.

GNP: Gross National Product

- Final goods and services produced by a country's factories per time period
- GDP = G&S produced in Canada – ownership not considered
- **GNP** = All Canadian-OWNED G&S produced – Location not considered.

GNP vs GDP

- Canadian GDP – increases by 30,000
  - Production was in Canada

- Suppose Ford (U.S. company) produces a car in Oakville, ON, that sells for $30,000
- $20,000 is the cost of labour
- $10,000 is the profit that goes to Ford

- How does this transaction contribute to Canadian GDP and GNP?
- What about U.S. GDP and GNP?

- Canadian GNP – increases by 20,000
    - Labour is Canadian, we cant count the profit that goes to ford.
- U.S. GDP – none – it is not produced in US
- U.S. GNP – they get the profit, but not the income money from the workers

Limitations of GDP

- Some production not included
    - Sending kids to day care is included in GDP, but stay-at-home mom is not. Why?
    - Productive activity is only included in GDP if you are producing a *market*
    - **Underground Activity –** is unreported product, either illegal or trying to avoid taxes
- Leisure, Quality, Variety
    - Cannot capture quality of life
- Depreciation of capital over Time is not accounted for
    - Value goes down over time, which technically lowers our GDP.
    - We use NDP (net domestic product) to subtracts this out (NEXT PAGE)
- Negative externalities not accounted for
    - We would add to GDP for a factory's production, but what if it is spewing out pollution? This is simply just not accounted for in the calculation
- Neither GDP or GNP are perfect measures of Output.

Leakages Equal Injections

- Injections are any part of expenditure not spent by households or any income rather than from resource earnings. Includes investment, government purchases, exports, and transfer payments
- Leakages are any diversion of income other than from resource earnings, includes investment, gov purchases, exports, and transfer payments

Imputed Income

- Some income, just due to the nature of it, never has market exchange, and must be **imputed** manually into GDP
    - E.g. apartment owner's rent on his own living area
    - Wages paid in **kind** (when employers pay Benefits for employees)
    - Food produced by farmers for their own consumption

Depreciation, NDP, and Net Investment

- Capital Wears out over time and must be subtracted from GDP.
- **Depreciation** measures the value of the capital stock that is used up or becomes obsolete.
- NDP (Net Domestic Product) is GDP adjusted to account for depreciation, **NDP = GDP - depreciation**

Investment

- *Gross investment* is the value of all investment during a year and is used in computing GDP. *Net investment* equals gross investment minus depreciation.

GDP and Economic Welfare

- Positive economic analysis tries to avoid making value judgments about *how* people spend their money.
- They don't distinguish between, for e.g., $$ spend on alcohol vs baby formula

- Because GDP, as a number, provides no information about its composition, some economists question whether GDP is the best measure of the nation's economic welfare.

LO 4 Separating Changes in Price From Changes in Output (vid 4-4)

Gross Domestic Product: Market value of all final goods and services produce in a country in a given period of time. GDP rises if: prices rise, if we produce more quantity, or both

Nominal GDP—based on prices at the time of production. Includes inflation and increased production.

- [Nominal GDP = current price x quantity] over all goods and services

Real GDP – is GDP not including price rise due to inflation rate.

- [Real GDP = Base Price x Current Quantity]

To make meaningful comparisons of real changes in production across years, we must *deflate* nominal GDP by eliminating changes due solely to inflation

GDP Deflator: = Price index

$$\bullet\ GDP\ deflator = \frac{nominal\ GDP}{real\ GDP} \times 100$$

Inflation Rate = % change between this and last year's Price index.

- [current price index – last year's price index] / last year's price index x 100%

An **index number** compares the value of a variable in a particular year to its value in a reference year.

Example 1 – Making a Price Index

We construct a Price index by dividing each year's price by the price in the base year and then multiplying by 100

Suppose the base year is 2010, and bread is 1.25$. it increased to $1.30 in 2011, and $1.40 in 2012.
For 2010, 1.25/1.25x100 = 100% → this is always true for the base year
For 2011, 1.30/1.25x100 = 104%
For 2012, 1.40/1.25x100 = 112%.
Thus, the index is 4 percent higher in 2011 than in the base year and 12 percent higher in 2012 than in the base year

The price index permits comparisons across years. For example, what if you were provided the indexes for 2011 and 2012 and asked what happened to the price level between the two years? By dividing the 2012 price index by the 2011 price index, 112÷104, you find that the price level rose 7.7 percent.

Consumer Price Index

- Measures the overall cost of goods and services for a typical Canadian Household.
- It also measures inflation based on the cost of a fixed market basket of goods and services

Calculating the CPI

1. Fixing the basket
2. First cost of Basket in each year
3. Calculate CPI :

$$CPI = \frac{cost\ in\ current\ year}{cost\ in\ base\ year} \times 100$$

Example 2: Making Consumer Price Index

Suppose a family's market basket for the year includes 365 packages of Twinkies, 2,000 litres of heating oil, and 12 months of cable TV.

Product	(1) Quantity in Market Basket	(2) Prices in Base Year	(3) Cost of Basket in Base Year (3)= (1)×(2)	(4) Prices in Current Year	(5) Cost of Basket in Current Year (5) = (1) × (4)
Twinkies	365 packages	$1.47/package	$536.55	$1.15	$419.75
Fuel Oil	2,000 litres	$1.00/litre	2000.00	$1.50	3,000.00
Cable TV	12 months	$60.00/month	720.00	$60.00	720.00
			$3256.55		$4139.75

Prices in the current year are listed in column (4). Not all prices changed by the same percentage since the base year. (price of fuel oil increased by 50 percent, but the price of Twinkies declined.)

The cost of that same basket in the current year is $4,139.75, column (5). To get CPI, we simply

- divide the cost in the **current year** by the cost of that **same basket** in the **base year**, and **then multiply by 100**.
- $4,139.75 ÷ $3,256.55 = 127.1 = Price Index

Thus, between the base period and the current year, the "cost of living" increased by about 27 percent, although not all prices increased by the same percentage.

Example 3: CPI

Basket = 10 pairs of skates; 20 packs of hockey pucks

Year	Price of Skates	Price of Pucks
2014	$100	$20
2015	$150	$30
2016	$200	$40

*base year = 2014

Year	Cost of basket	CPI	Inflation rate
2014	10×100+20×20 = $1400	100	—
2015	10×150+20×30 = $2100	$\frac{2100}{1400} \times 100 = 150$	50%
2016	10×200+20×40 = $2800	$\frac{2800}{1400} \times 100 = 200$	$\frac{200-150}{150} \times 100 = 33.3\%$

Different "baskets" of goods

- GDP deflator/index – goods produced in Canada
- CPI – goods bought by typical households
- GDP deflator calculation – within numerator and denominator, Q's change, P's stay fixed
- CPI calculation – within numerator and denominator, P's change, and Q's stay fixed
- Each measure of the price level is calculated by taking a ratio

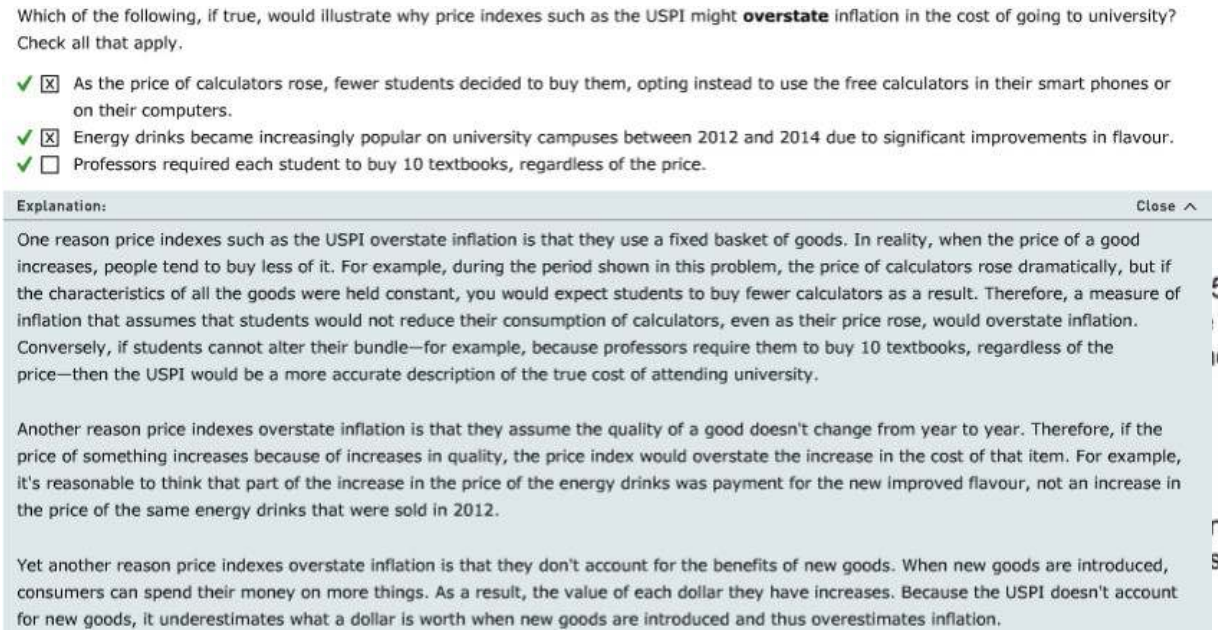
Video 4-6: How accurately are price levels measured, should we care?

-

Problems with CPI

- *Quality Bias – assumes that the quality of the market basket remains constant.* Quality improvements or decreases are not counted for, causing CPI to make it seem we have better living when it LOOKS like we are better off, and that price has dropped but quality is constant.

- *Sales* – When we buy stuff on sale, discounter's lower price LOOKS like a reduction in the cost of living. In REALITY, it is a temporary consumer purchase decision.
- *Introduction of New Goods:* More choice makes us better off, price of new goods drops dramatically soon after release, we all buy a ton of it, and it looks like our standard of living is increased.
- *Substitution Bias* – consumers substituted towards other goods when the price of a good rises – the CPI basket is fixed


Which of the following, if true, would illustrate why price indexes such as the USPI might **overstate** inflation in the cost of going to university? Check all that apply.

- ✓ [X] As the price of calculators rose, fewer students decided to buy them, opting instead to use the free calculators in their smart phones or on their computers.
- ✓ [X] Energy drinks became increasingly popular on university campuses between 2012 and 2014 due to significant improvements in flavour.
- ✓ [ ] Professors required each student to buy 10 textbooks, regardless of the price.

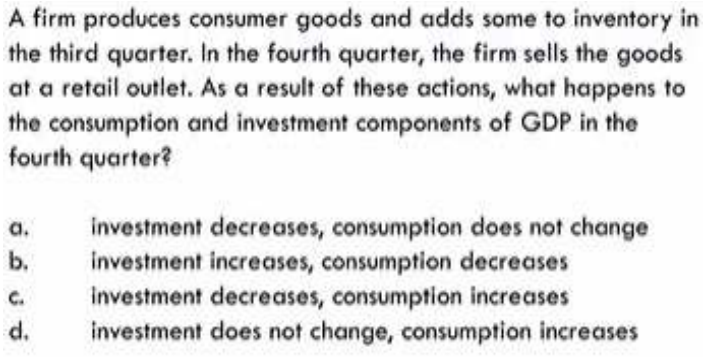
Explanation: Close

One reason price indexes such as the USPI overstate inflation is that they use a fixed basket of goods. In reality, when the price of a good increases, people tend to buy less of it. For example, during the period shown in this problem, the price of calculators rose dramatically, but if the characteristics of all the goods were held constant, you would expect students to buy fewer calculators as a result. Therefore, a measure of inflation that assumes that students would not reduce their consumption of calculators, even as their price rose, would overstate inflation. Conversely, if students cannot alter their bundle—for example, because professors require them to buy 10 textbooks, regardless of the price—then the USPI would be a more accurate description of the true cost of attending university.

Another reason price indexes overstate inflation is that they assume the quality of a good doesn't change from year to year. Therefore, if the price of something increases because of increases in quality, the price index would overstate the increase in the cost of that item. For example, it's reasonable to think that part of the increase in the price of the energy drinks was payment for the new improved flavour, not an increase in the price of the same energy drinks that were sold in 2012.

Yet another reason price indexes overstate inflation is that they don't account for the benefits of new goods. When new goods are introduced, consumers can spend their money on more things. As a result, the value of each dollar they have increases. Because the USPI doesn't account for new goods, it underestimates what a dollar is worth when new goods are introduced and thus overestimates inflation.

Class Notes and Questions – Feb 7th


A firm produces consumer goods and adds some to inventory in the third quarter. In the fourth quarter, the firm sells the goods at a retail outlet. As a result of these actions, what happens to the consumption and investment components of GDP in the fourth quarter?

a. investment decreases, consumption does not change
b. investment increases, consumption decreases
c. investment decreases, consumption increases
d. investment does not change, consumption increases

Figure 3: C is the Correct answer. Using the Definition of economics, we want to include goods in GDP during the year they are produced. D is wrong because if we don't have a change in investment, when consumption increases, GDP would have increased in the 4th Quarter as well. Which would be double counting. Therefore we have to say the investment decreases IN THE 4TH QUARTER, if we are going to say consumption increases.

So what happened is: 3rdQ: I increases, 4thQ, I decreases and C increases. The question is only asking what happened in the 4th quarter.

- Canada's GDP in 2016 was 2 trillion
- USA's was 19 trillion
- Government: Consumption ratio is higher in Canada compared to USA
- If consumption is down, that is a leading factor to bad economy.
- Canada's consumption is 60% of its GDP

Figure 2: ANS = A. both CPI and GDP deflator are measures of overall price level. we must ask ourselves 2 questions.

1) Do typical households buy this? If yes, it will affect CPI, if NO, CPI is not affected.
2) Is it produced in Canada, if yes, it does affect the deflator, if no, it does not.
3) How do we know if it isn't GDP? In order for it to affect GDP, the good has to be included in the BASKET.

In the GDP equation Y = C+I+G+(X-IM), bananas are counted in Consumption and Exports, so therefore GDP is not affected.


A wind farm in Manitoba sells electricity to a generator from a Swedish-owned factory located in Ontario that uses local workers.

a. Canadian investment, GDP, and GNP all increase by the same amount.
b. Canadian investment increases, but GDP and GNP are unaffected by the purchase.
c. Canadian investment and GDP increase by the same amount, but Canadian GNP increases by a smaller amount.
d. Canadian investment and GNP increase by the same amount, but Canadian GDP increases by a smaller amount.

Figure : ANS = C. GDP is only stuff LOCATED in Canada, GNP (gross National Product, is only stuff that is CANADA OWNED, no matter what country it is in. Therefore since the factory is Swedish owned, but located in Ontario, its sales only contribute to GDP. however, it is the income of the Canadian workers that raises our GNP by a little bit.

A German automobile company produces cars in Canada, some of which are exported to other nations. If the price of these cars increases, the GDP deflator, (a) and the CPI will both increase, (b) will increase and the CPI will increase.
- ANS = (a), because CPI is increased since some Canadians will buy the cars.

- Suppose Canada produces only two goods, skates and hockey pucks. Calculate Canada's nominal GDP, real GDP, the GDP deflator, and the inflation rate using the information provided below. The base year is 2014.

	Skates (pair)		Hockey Pucks (pack of 10)	
	Price	Quantity	Price	Quantity
2014	$100	200	$20	250
2015	$150	200	$30	300
2016	$200	250	$40	400

*base year = 2014

Year	Nominal GDP	Real GDP	GDP deflator	Inflation rate
2014	100x200 + 20x250 = $25,000	$25,000	100	—
2015	150x200 + 30x300 = $39,000	100x200 + 20x300 = $26,000	$\frac{39000}{26000} \times 100 = 150$	50%
2016	200x250 + 40x400 = $66,000	100x250 + 20x400 = $33,000	$\frac{66000}{33000} \times 100 = 200$	$\frac{200-150}{150} \times 100 = 33.3\%$
	↑	↑	no units index	

Practice GDP, CPI GNP NDP, etc here

Week 5

Chapter 7 – Unemployment and Inflation

5-1 - unemployment rates, what do the numbers mean?

Basic Definitions

Non-institutional Civilian Adults: *15+ years old* Canadians, *non-institutional*, (not in nursing home, military, or somewhere else that prevents you from getting a job).

- **Employed** = working
- **Unemployed** = not working, but looking for work in the past 4 weeks
- **Not in Labour Force** = not working or looking for work
- Therefore, labour force equals employed and unemployed.

Unemployment rate vs Employment Rate, & Labour force participation rate

Unemployment rate is not [1- employment rate] because they are divided by different things.
We could possibly have unemployment rate and employment rate both going up at the same time

$$\text{Unemployment rate} = \frac{\text{number of unemployed}}{\text{labour force}} \times 100$$

$$\text{Labour force participation rate (LFPR)} = \frac{\text{labour force}}{\text{adult population}} \times 100$$

$$\text{Employment rate} = \frac{\text{number of employed}}{\text{adult population}} \times 100$$

Example: In 2000 in the United Kingdom, the adult population was about 46.5 million, the labour force participation rate was 63.5 percent, and the unemployment rate was 5.8 percent, what was the number of people unemployed?

LFPR x Adult = Labour Force → .635 x 46.5 = 29.53 million Labour force

Unemployment Rate x Labour force = # unemployed → .058 x 29.53 = 1.71 million

Do the numbers affect reality?

1. Discouraged workers/searchers – gave up looking for a job, and say they are not looking for one. (but would gladly accept if offered one.)
    a. Our calculation would UNDER- estimate the employment rate, b/c they would classify these people in "not in labour force" when, they are technically unemployed.
2. Underemployment
    a. Part time vs full time -> they wish they were working 35 hours, not 10. We count all such people as employed, but its more like 1/3 are employed
    b. Working below skill level -> e.g. immigrants who may not get a job in their expertise
    c. These are examples of underestimating unemployment
3. People may be Lying
    a. They say are looking for work to get employment benefits
    b. Over-estimates unemployment

Unemployment in different groups

- **Gender**: since 1990, unemployment in women is LOWER than men, but in the states, it was higher until the last great recession
- **Age**: younger = higher unemployment
- **Education**: more formal education = lower unemployment
- **Immigrant status** = recent immigrants have a higher unemployment rate
- **Geographical location**: when oil prices fell that had a larger impact in Alberta then on the east coast.
- **No Canadian info for race**

Video 5-2 **Types of unemployment**

Four types of unemployment

1. Frictional
   - Workers searching for a job – spend time to find a good job for them
   - Firms trying to find an employee – take time to hire right employee
   - Job search = "good" unemployment b/c both have efficiency gains when they find the right job/worker
2. Seasonal

- Usually associated with weather
- Holidays that occur at certain times of the year

3.

TYPE A: MISMATCH. Different types of labour demanded and supplied. Either based on geography or changes in the market features, and workers no longer can provide the labour the firm wants.

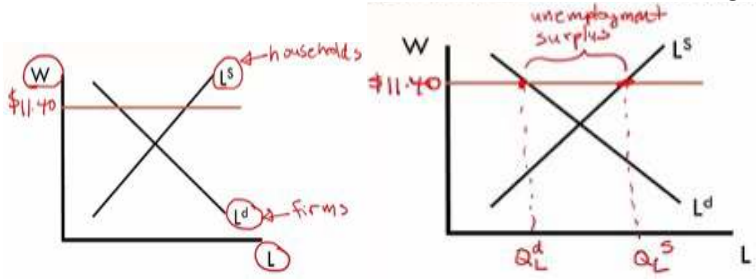
Example: Increase in demand for cars in 19th centuries unemployed blacksmiths b/c ppl don't use horses as much. This is where the government provides EI benefits or retraining opportunities till they find a new good job

TYPE B: NOT EQUILIBRIUM WAGE

Will also be unemployment if the wage is above equilibrium.

Explanation: if (legally mandatory) minimum wage is ABOVE equilibrium wage, it is called *binding*, and it *will change the outcome of the market*.

If minimum wage is BELOW the equilibrium wage, then the wage in the market would be determined by the *intersection of labour supply and labour demand, and the number of people working*.



Example: Say the wage is $11.40 and the quantity of labour supplied is greater than the labour demanded at that wage.

We have more people wanting to work at that wage, than firms want to hire.

This can cause an "unemployment surplus" due to the existence of a minimum wage, so some will not have jobs.

Structural

4. Cyclical Unemployment

- Due to the economy's business cycles
- During recessions, firms need less output, and less workers
- During booms, firms hire more.

Natural rate of unemployment

- Average unemployment rate, that recurs
- Includes frictional, seasonal, and structural
- Actual unemployment rate fluctuates around this.

Since seasonal, frictional, and structural employment are included in Cyclical, when cyclical is at 0%, the economy is at Full Employment

Total unemployment is the sum of seasonal, frictional, structural, and cyclical unemployment. An economy is at full employment if there is no cyclical unemployment. In this case, since cyclical unemployment is 0.0%, the economy is at full employment.

Unemployment compensation

- EI , unemployment insurance, benefits workers who get unemployed. Because these benefits reduce the opportunity cost of remaining unemployed, they may reduce the incentives to find work. For example, if faced with a choice of washing dishes for $350 per week or collecting $250 per week in unemployment benefits, which would you choose? So although EI provides a safety net, it may reduce the urgency of finding work, thereby increasing unemployment. On the plus side, because beneficiaries need not take the first job that comes along, EI allows for a higher quality job search. Then there is a better match b/c job skills requirements, promoting economic efficiency.

Video 5-3 Inflation

Inflation: % change in overall price level form one year to the next
Deflation: negative inflation rate (price level is falling)
Disinflation: declining inflation rate (overall price level is rising at a decreasing rate)
Hyper inflation: inflation rate of over 50% per month

Is hyper inflation likely in Canada?

- January 1st, coffee = $2.00
- Next January, coffee would = $260.
- Not likely in Canada, but has been seen in Zimbabwe

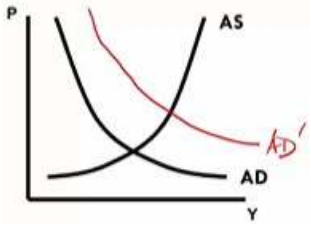
Higher price lelvel can be seen in the Aggregate demand-aggregate supply diagram if either AD shifts out of AS shifts in.

Zimbabwe Inflation

- the Zimbabwe dollar used to be worth $2 Canadian. Government began printing more money to pay its bills, causing a huge inflation. The price level rose 150x in a year. Jeans that sold for $25 would cost $3.8 billion at year-end. Employees wanted to get paid daily and spend it all b4 the prices rose again.
GDP plunged 75% between 2006 and 2009, and the unemployment rate reached 90%.

The new Zimbabwean dollar was exchanged for 1 trillion old dollars, but only fed inflation rates
As a way out, Zimbabwe is a multi-currency country, legally circulating 8 diff currencies.

- Outward AD shifts: demand-pull inflation(aggregate demand pulls up the overall price level.
- Inward AS shifts: cost-push inflation. Production costs push up the overall price level
- Diagram shows only change in the price level not the inflation rate – to have positive inflation rates every year, either one of both AD or AS have to be shifting continuously.



Why is Inflation a problem?

1) It ***increases transaction costs***.
    a. Firms have to spend time and resources monitoring and reacting to the effects of inflation on the prices of the resources they use, and of products they can sell. *If inflation were more predicable, the union would be able to use those resources for more productive purposes*
2) ***Relative price changes become less evident***
    a. Firms don't know if prices convey info. We want it to reflect changing market conditions. If the price of a resource rises, we would expect the market price of the product to change as wel.. when all the prices in the economy are changing, we don't know if the price changes are because of different market conditions, or because all prices are also changing.
3) Unexpected inflation
    a. A "Transfer of Wealth" can occur b/w employer and employee if *unexpected* high inflation happens. They made a contract for the employees salary based on *expected inflation*.

Suppose Flora received a 4 percent increase in her nominal wage. Over the year, inflation runs about 7 percent. Which of the following describes how Flora's nominal and real wages were affected?

a) Flora's nominal wage decreased and her real wage decreased.
b) Flora's nominal wage increased and her real wage increased.
c) Flora's nominal wage decreased and her real wage increased.
d) Flora's nominal wage increased and her real wage decreased.

Video 5-4 Inflation and Interest Rates

Interest Rates

- Market for loanable funds
    - Savers supply LF by opening savings accounts and buying bonds
    - Borrowers demand LF by borrowing from banks, issuing bonds
    - Bond is a piece of paper issued by a large corporation/government, that represents a loan, and pays interest.
    - Loan contracts are set in terms of Nominal Interest Rates.

Example: You have decided not to buy a pair of shoes that cost $200 and put the money into a savings account @ 4% interest per year. How many $ do you have after one year?
ANS → 208$. If all prices in the economy increased by 3% during the year, how much does a

pair of shoes now cost? → 206$ therefore, we “made” $2, which is still more worthwhile then spending the money.
But if all prices increased by 10%, the shoes would cost $220. Now we actually lost the worth of the money cuz we can’t buy the shoes anymore.

Nominal interest rate: interest rate without correctio for inflation – measures that increase in the number of dollars in you bank account.
Real interest rate: interest rate WITH correction for inflation – measures the increase in the purchasing power of the dollars in your savings account
Real interest rate = nom. Rate – inflation rate.

Unexpected Inflation = Transfer of Wealth.

Case 1: inflation is higher than expected → real interest rate is lower than expected → borrowers are better off, lenders are worse off

Case 2: inflation is lower than expected → real interest rate is higher than expected → borrowers are worse off, lenders are better off

Tony loaned $1,000 to Dave for one year, with the understanding that Dave would repay $1,070 to Tony. If the actual inflation rate was 7 percent, what was the real rate of interest Tony received?
a) 14 percent
b) 7 percent
c) 4 percent
d) 0 percent