Chapter 1: Ten Principle of Economics

Economy - (Greek word) "one who manages a household"
Scarcity - **limited nature of society's resources**
Economics - study of how society manages its scarce resources; they study how people make decisions

#1: People Face Trade offs

- No such thing as a free lunch; give up one thing to get another that we want; trade off one goal against another
- Guns or butter; high income or clean environment; efficiency or equity
- **Efficiency - property of society getting the most it can from its scarce resources** (size of the pie)
- **Equity - property of distributing economic prosperity fairly among the members of society** (how the pie is divided)
    - When the government tried to cut the pie into more equal slices, the pie gets smaller
- **Making decisions requires trading off one goal against at least one other*

#2: The Cost of Something is What You Give Up to Get It

- Making decisions requires comparing the cost and benefits of alternative courses of action
- **Opportunity Cost - whatever must be given up to obtain some item**

#3: Rational People Think at the Margin

- **Rational People - people who systematically and purposefully do the best they can to achieve their objectives**
- **Marginal Changes - small incremental adjustments to a plan of action**
- Rational people make decisions by comparing *Marginal Benefits* and *Marginal Costs*
    - *200 seat plane costs $100,000; Avg cost/seat is $500*
    - One may conclude that the airline will never sell a ticket > $500. However, the airline can raise its profits by thinking at the margin
    - Sell for less, marginal cost of selling ticket for cheaper is peanuts and soda
    - As long as the passenger pays more than the ***marginal cost***
- Rational people take action when ***Marginal Benefit < Marginal Cost***
- **People make decisions by comparing costs and benefits at the margin*

#4: People Respond to Incentives

- **Incentive - something that induces a person to act**
- Public policies change the costs/benefits that people face and alters behaviour (tax on gasoline)
- Consider not only the direct effects but indirect effects that work with incentives

#5: Fair Trade Can Make Everyone Better Off

- Trade between two countries can make each country better off.
- Trade allows each person to specialize in the activities he/she does best
- People can buy a greater variety of goods and services at a lower cost

#6: Markets Are Usually a Good Way to Organize Economic Activity

- **Market Economy - economy that allocates resources through the decentralized decisions of many firms and households as they interact in markets for goods and services**
- Households and firms interacting act as if they are guided by an "*Invisible Hand*" leading them to desirable outcomes
- *Price* determines how much to buy and how much to supply
- Reflects both value and cost to society
- Households decide what to buy and who to work for
- Firms decide who to hire and what to produce

#7: Governments Can Sometimes Improve Market Outcomes

- **Property Rights - ability of an individual to own and exercise control over scarce resources**
- **Market Failure - market is left o its own fails to allocate resources efficiently**
- Caused by an **Externality - impact of one person's actions on the well-being of a bystander** (pollution)
- Caused by a **Market Power - ability of a single economic actor (small group of actors) to have substantial influence on market prices**

Chapter 1 cont.

#8: A Country's Standard of Living Depends on Its Ability to Produce Goods and Services

- Variation in living standards is attributable to differences in countries' **Productivity**
  - **Quantity of goods and services produced from each hour of a worker's time**
- Measured by comparing *Personal Incomes and Total Market Value of Nation's Production (GDP)*
- To boost living standards, policy makers need to raise productivity by educating, providing tools, and access to best tech

#9: Prices Rise When the Government Prints Too Much Money

- **Inflation - increase in overall level of prices in economy**
- High inflation imposes various costs on society, keeping inflation at a low level is goal of policy makers
- Cause is growth in the quantity of money ; the value of money falls

#10: Society Faces a Short-Run Tradeoff between Inflation and Unemployment

- Increasing amount of money in economy stimulates overall level of spending and demand for goods and services
- Higher demand causes raise in prices, but also increases quantity of g/s produced and hire more workers
- More hiring leads to lower unemployment
- **Business Cycle - fluctuations in economic activity such as employment and production**
- Changes in govt spending, taxes and amount of money it prints influences the combo of inflation and unemployment
- The Phillips Curve illustrates the tradeoff between inflation and unemployment:

↓Inflation ð ↑Unemployment

It's a short-run tradeoff!

Chapter 2: Thinking like an Economist

The Scientific Method: Observation, Theory, and More Observation

- Economists observe, make a theory, and evaluate the correlation between the theory and the result
- Experiments are often difficult in economics; Economists pay close attention to natural experiments through history

The Role of Assumptions

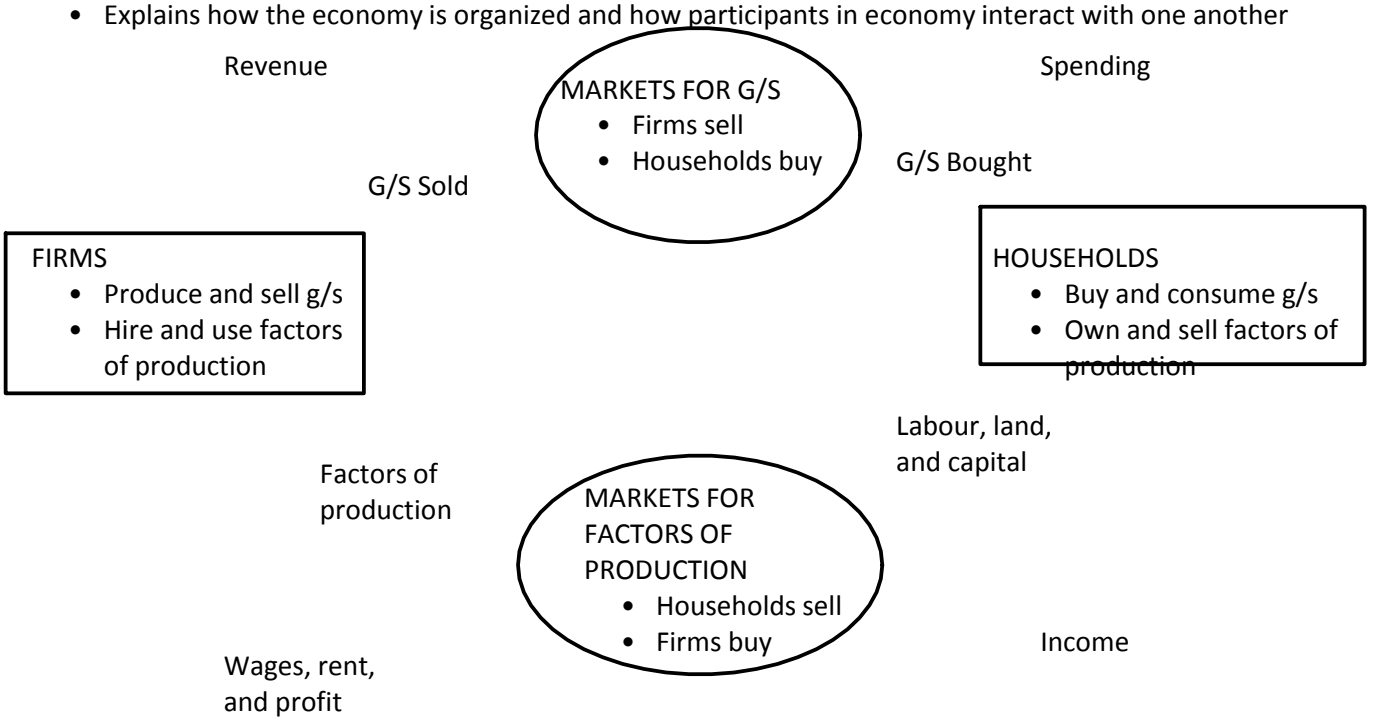
- Assumptions simplify the complex world and makes it easier to understand (ie, only 2 goods for intl trade)
- For short-run observation of policies, we assume that prices do no change much
- For long-run observation, we assume prices are completely flexible

Economic Models

- Composed of diagrams and equations; does not include every detail
- Models are built with assumptions

Our First Model: The Circular - Flow Diagram

- Explains how the economy is organized and how participants in economy interact with one another



- **Circular-flow Diagram - visual model of the economy that shows how dollars flow through markets among households and firms**
- *Factors of Production - (inputs) labour, land (natural resources), and capital (buildings and machines)*
- *Markets for G/S* households are buyers, firms are sellers; VV
- FoP flows from households to firms, G/S flows from firms to households

Our Second Model: The Production Possibilities Frontier (PPF)

- **PPF - graph showing the combinations of output that the economy can possibly produce given the available factors of production and the available production technology**
- Resources are scarce, not every conceivable outcome is feasible
- With resources it has, economy can produce at point on or inside the PPF, but not outside
- *Efficient* on the PPF, *Inefficient* inside the PPF
- PPF is bow shaped when OC rate of change increases when producing more of one good

Chapter 2 cont

Positive Versus Normative Analysis

- **Positive Statements - claims attempt to describe the world as it is** (descriptive)
  - Involves evidence
  - Scientist
- **Normative Statement - claims that attempt to prescribe how the world should be** (prescriptive)
  - Involves views on ethics, religion, and political philosophy
  - Policy advisor

Why Economists Disagree

- Disagree about validity of alternative positive theories about how the world works
- Have different values and therefore, different normative views about what policy should try to accomplish

  - *Difference in Scientific Judgements*
  - *Difference in Values*
  - *Perception Vs Reality*

- ***Microeconomics - study of decisions making by household and firms and the interactions in the market***
  - *Specific markets*
- ***Macroeconomics- study of the forces and trends that affect the economy as a whole***
  - *Economy-wide phenomena; Inflation & Unemployment*

Chapter 5: Measuring a Nation's Income

Macroeconomics Policy Challenges

1. Decrease unemployment
2. Stimulate economic growth (GDP per capita)
3. Stabilise the economic cycle (mitigate fluctuations)
4. Stabilise prices
5. Reduce budgetary deficits
6. Balance trade and capital flows

The Economy's Income and Expenditure

GDP measures the total income of everyone in the economy and total expenditure on the economy's output of g/s

- *For an economy as a whole, income = expenditure* (buyers and sellers)
  GDP = Total Expenditure by households or Total Incomes (wages, rent, and profit) by firms
- GNP - total market value of all final goods and services produced by Canadians throughout the world

The Measure of Gross Domestic Product (GDP)

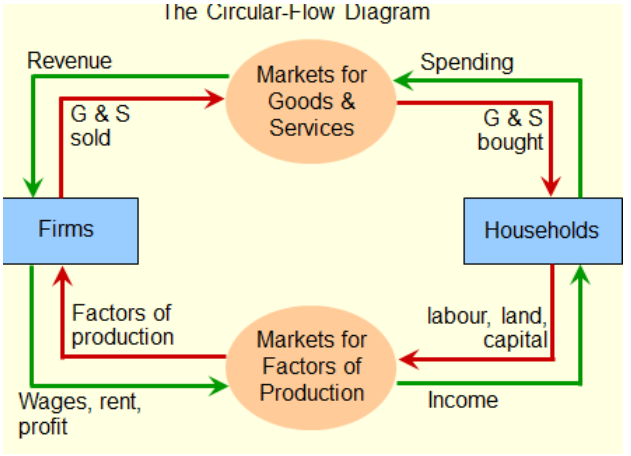
- **GDP is market value of all final goods as services produced <u>within a country</u> in a given period of time**
- Govt reports quarterly GDP, it presents data after beeing modified by a statistical procedure (seasonal adjustment)

Components of GDP

- GDP = Consumption + Investment + Govt Purchases + Net Exports (*Expenditure way)*
  - **Y = C + I + G + NX is an *identity - an eqn that must be true by the way the variables are defined***
  - **Consumption - spending by households on g/s, wit exception of purchases of new housing**
  - **Investment - spending on capital equipment, inventories, and structures, including household purchases of new housing;** purchase of goods that will be used in the future to produce more g/s
    - When a company produces and uses for itself, its said to be an investment
  - **Government Purchases - spending on g/s by local, territorial, provincial, and federal govts, & salaries of govt workers and spending on public works**
    - *Transfer payment is no made in exchange for a currently produced g/s (CPP)*
      - Alters household income, but not production; are like negative taxes (Do not count in GDP)
  - **Net Exports - value of a nation's exports minus value of its imports, also known as *trade balance (X-M)***

Sectors of an Economy

- Firms
  - Hire and use resources (e.g. labour)
  - Produce and sell goods and services
- Households
  - Own and supply resources to forms
  - Buy and consume goods and services
- Governments
- Foreigners



Real Vs Nominal GDP

If total spending rises from on year to next, two things must be true:
(1) economy is producing a larget output of g/s, or
(2) g/s being sold at higher prices

- **Nominal GDP - production of G/S valued at current prices**
- **Real GDP - productions of goods and services valued at constant prices**
  - Choose *base year*, use to compute the value of G/S
- *For Base Year, Real GDP = Nominal GDP*
- Real GDP answers: *"What would the value of G/S produced this year if we valued these G/S at some price of a past year*
  - Shows how economy's over all production of G/S changes over time
  - Real GDP reflects only changes in the amounts being produced (measure of economy's production)
  - Real GDP better to gauge economic well being than Nominal GDP

Chapter 5 cont

The GDP Deflator **- measure of the price level calculated as the ratio of nominal GDP to real GDP x 100**

- **GDP Deflator = Nominal GDP / Real GDP x 100**
  - Measures the current level of prices relative to the level of prices in base year

Ie, **quantities produced rise but price stays the same**; nominal and real GDP are the same so **GDP deflator remains constant.**
Ie, **prices rise but quantities produced stays the same**; nominal rises and real stays the same, so **GDP deflator rises** (prices)

- *Inflation -situation which economy's over all price level rises*
- *Inflation Rate - percentage change in some measure of price level from one period to next*
  - Inflation rate Y2 = (GDP deflator Y2 - GDP deflator Y1)/GDP deflator Y1 x100
- GDP does not directly measure things that make life worthwhile, but the ability to obtain the inputs into worthwhile life

Economic Well-Being
Left out of GDP

- Leisure
- Value of G/S produced at home
- Volunteer work
- Quality of environment

Calculating GDP: Income Method

Wages and salaries
+ Corporate profits before taxes
+ Interest and dividend income
+ Net agricultural income
+ Net income of unincorporated non-farm businesses
= Net income at factor prices
+ Indirect taxes – subsidies
= Net Domestic Product (NDP)
+ Depreciation of physical capital (D)
Gross Domestic Product (GDP)

More income Measures

GDP (Gross Domestic Product)
-Depreciation of capital goods
= NDP (Net Domestic Product)
- (Indirect Taxes less Subsidies)
= Net Income at Factor Prices
- Corporate Income Taxes
- Undistributed Corporate Profits (to shareholders)
+ Government Transfer Payments To Persons
= Personal Income
- Personal Income Taxes
= Personal Disposable Income
➔ Consumption (C) + Savings (S)

Benefits and Costs of Economic Growth

Benefits	Costs
• Expaned consumption possibilies; more health care, more R&D, explorations • etc	• Forgone consumption in the present • Rapid depletion of non-renewable natural resources • More frequent job changes

Savings (S) and Investment (I)

- Savings (s) - income remaining after consumption expenditures (flow variable)
- Wealth - saving accumulated over time (stock variable)
- Investment - purchases of productive capital (flow variable)
- (Physical) Capital Stock - total physical capital at a point in time

Chapter 6: Measuring the Cost of Living

Consumer Price Index - is used to monitor changes in the cost of living over time.
Inflation - describe the situation in which the economy's overall price level is rising
Inflation Rate - % change in the price level from the previous period

Causes of Inflation:

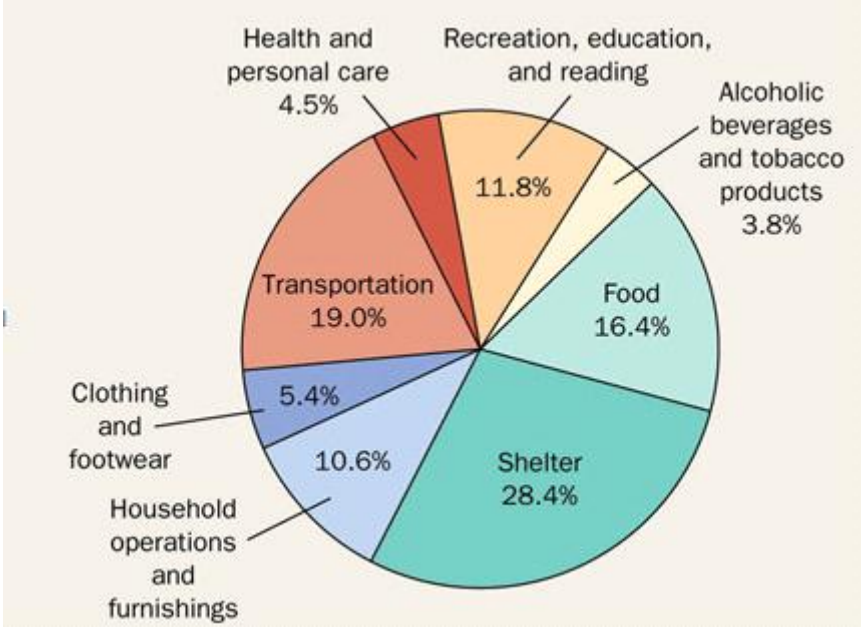
- Money supply
  - Growth in the money supply (currency and bank deposits) exceeds the growth of goods and services
- Exchange rates
  - Value of one currency in terms of another currency; changes may affect the cost of purchasing goods and services from other countries
- Cost-push inflation
  - Increases in production costs (wages) è higher prices
- Demand–pull inflation
  - the demand for goods and services grows faster than their production

The Consumer Price Index (CPI) - measure of the overall cost of the g/s bought by a typical consumer

How its Calculated

1. *Determine the Basket*
   - which prices are most important to the typical consumer
2. *Find the Prices*
   - find the prices of each of the g/s in the basket for each point in time
3. *Compute the basket's Cost*
   - use the data on the prices to calculate the cost of the basket's g/s at different times
4. *Choose a Base year and Compute Index*
   - designate one year to be the base year (benchmark) against other years compared
   - Choice of base year is arbitrary, as the index is used to measure *changes* in cost of living
   - **CPI = Price of basket g/s in current year/Price of basket in base year x100**
     - **USE BASE YEAR QUANTITIES AND CURRENT YEAR PRICES**
5. *Compute the Inflation Rate*
   - Use CPI to calculate **Inflation Rate - % change in price index from preceding period**
   - **Inflation Rate in Y2= CPI Y2 - CPI Y1/ CPI Y1 x100**

- **Core Inflation - measure of underlying trend of inflation**
  - Excludes the most volatile components from CPI basket



- Currently based on 2001 consumer expenditure survey
- Broken down into 8 major categories (600 g/s)

1. Shelter
2. Transportation
3. Food
4. Recreation, Education and Reading
5. Household Operations and Furnishings
6. Clothing and Footwear
7. Health and Personal Care
8. Alcohol and Tabacco

Chapter 6 Cont

Problems in Measuring the Cost of Living

1. *Commodity Substitution Bias*
   - Prices do not change proportionately: Some prices rise more than others
   - Consumers substitute toward goods that have become relatively less expensive
   - CPI is computed assuming a fixed basket, ignored the possibility of consumer substitution; overstates the increase in cost of living (CAD~1%)
2. *Introduction of New Goods*
   - New good is introduced, consumers have more variety to choose from (increases the dollar value)
   - Not included in basket because pre-defined
   - Consumers need fewer dollars to keep up std of living
3. *Unmeasured Quality Change*
   - Quality of a good deteriorates, the value of a dollar falls, even if price stays the same (VV)
4. Outlet substitution

GDP Deflator vs CPI

- *Nominal GDP is current output valued at current prices; Real GDP is current output valued at base year prices*
  - GDP deflator reflects current level of prices relative to the level of prices in base year

- GDP deflator reflect prices of **all goods and services produced domestically**
- CPI reflects prices of **all goods and services bought by consumers**

- *How various prices are weighted to yield a single number for the over all level of prices*
  - CPI compares the price of *fixed* basket of g/s to the price in base year
  - GDP deflator compares the price of *currently produced* goods and services to the same g/s in base year

Correcting Economic Variables for the Effects of Inflation

Dollar Figures from Different Times

- *How much of the rise in price of Gas due to the fall in value of money?*
- We need to inflate the price of 9.5 cents/L to turn 1957 dollars to 2009 dollars.

1957-> CPI 14.8	2009 --> CPI 114.3 (The Base year is 2002)

- The over all price level rose by 7.72 (114.3/14.8)

1957 gas price in 2009 dollars = 1957 gas price x (CPI 2009 / CPI 1967)
= 9.5 cents (114.3/14.8)
= 73.4 Cents

- Therefore, including the price of inflation, the price of 73.4 cents in 1857 is less than the 2009 price of 95 cents
- The price of gas on average increase somewhat faster than the price of other g/s

Indexation

- Price indexes are used to correct for the effects of inflation when comparing dollar figures form different times
- When some dollar amount is automatically corrected for inflation by law or contract, the amount is *indexed* for inflation
- **Indexation - automatic correction of a dollar amount for the effects of inflation by law or contract**
- *Cost-of-Living Allowance (COLA)*
  - Long-term contracts between firms and unions include partial or complete indexation of the wage to the CPI
  - Automatically raises the wage when CPI rises
  - CPP and Old Age Security Benefits, brackets of federal income tax (income level which tax rates change)

Real and Nominal Interest Rates

- Interest represents a payment in the future for transfer of money in the past

✧ *Zero Inflation* - Increases purchasing power when earned interest
✧ *Six % Inflation* - Increased by 4% purchasing power
✧ *10% inflation* - Purchasing power stays the same
✧ *12% inflation* - purchasing power decreases by 2%

Chapter 6 Cont

Real and Nominal Interest Rates Cont.

- In a country with *Deflation*
  - ✧ *2% Deflation* - Purchasing power increases by 12

- The higher the rate of inflation, the smaller increase of purchasing power; rate of inflation > interest rate> purchasing power decreases
- **Nominal Interest Rate - interest rate as usually reported without a correction for the effects of inflation**
  - Interest rate that the bank pays
  - How fast the number of dollars rise over time
  - Nominal > Real
- **Real Interest Rate - interest rate corrected for the effects of inflation**
  - Increase in lender's purchasing power
  - How fast the purchasing power rises over time
  - ✧ Relation: **Real Interest Rate = Nominal Interest Rate - Inflation Rate**

Chapter 7: Production and Growth

- Level of REAL GDP is a good gauge of economy prosperity, and the growth of real GDP is a good gauge of economic progress
  1. *Examine international data on real GDP per person*
  2. *Examine the role of* productivity
  3. *Consider the link between productivity and economic policies that a nation pursues*

Productivity: Its Role and Determinants

Why is Productivity so Important?

- Living standard is tied **to Productivity - quantity of g/s produced from each hour of a worker's** time (key)
  - Growth in productivity is key in growth of living standards

How Productivity is Determined

- *Physical Capital - stock of equipment and structures that are used to produce goods and services*
  - Capital is a *produced* factor of production; input in the production process that was an output
- *Human Capital - knowledge and skills that workers acquire through education, training, and experience*
  - Raises a nation's ability to produce goods and services
- *Natural Resources - inputs into production of g/s that are provided by nature (land, river, mineral deposits)*
  - Renewable & non renewable
  - International trade helps nationals with less natural resources
- *Technological Knowledge - society's understanding of the best ways to produce g/s*
  - Makes labour available to produce other g/s

Economic Growth and Public Policy

Importance of Saving and Investment

- Raising future productivity is to invest more in current resources in the production of capital
- To invest more in capital, society must consume less currently; save more current income

Diminishing Returns and the Catch-Up Effect

- Saving more, fewer resources are needed to make consumption goods, and more resources avail to make capital goods
  - Capital stock increases, leading to rising productivity and more rapid growth in GDP
- **Diminishing Returns - where the benefit from an extra unit of input decline as the quantity of the input increases**
- *In the long run, higher saving rates lead to higher level of productivity and income, but not to higher growth in these varib .*
- **Catch-Up Effect - countries that start off poor tend to grow more rapidly than countries starting off rich**
  - **(Convergence)**

Investment from Abroad

- Investment by foreigners
- *Foreign Direct Investment- capital investment owned and operated by foreign entity*
- *Foreign Portfolio Investment - investment financed with foreign money but operated by domestic residents*
- The World Bank encourages flow of capital to poor countries
  - TWB and International Monetary Fund aim to promote economic prosperity around the world

Education

- Investment in human capital
- In Canada raises a person wage by 10%
- Human capital convey positive externalities
- *Brain Drain - emigration of many of the most highly educated workers to rich countries*

Health and Nutrition

- Human capital can be referred to investment in the expenditures that lead to a healthier population

Property Rights and Political Stability

- Protecting PR and promoting political stability
- **Property Rights- ability of people to exercise authority over the resources they own**

Free Trade

- *Inward- Oriented Policies - avoiding interaction with rest of the world*

Chapter 7 cont

Research and Development

- Technological advances
- Knowledge is *public good - once a person discovers an idea, the idea enters society`s pool of knowledge*

Population Growth

- Size of labour force - a larger population means more workers to produce goods and services

Stretching Natural Resources

- Ever increasing population would continually strain society`s ability to provide for itself

Diluting the Capital Stock

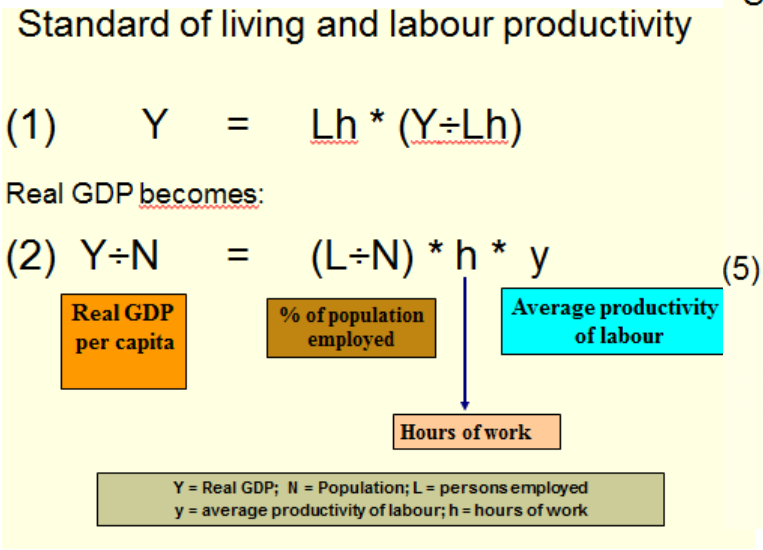
- High population growth reduces GDP per work leads to lower productivity and lower GDP per worker

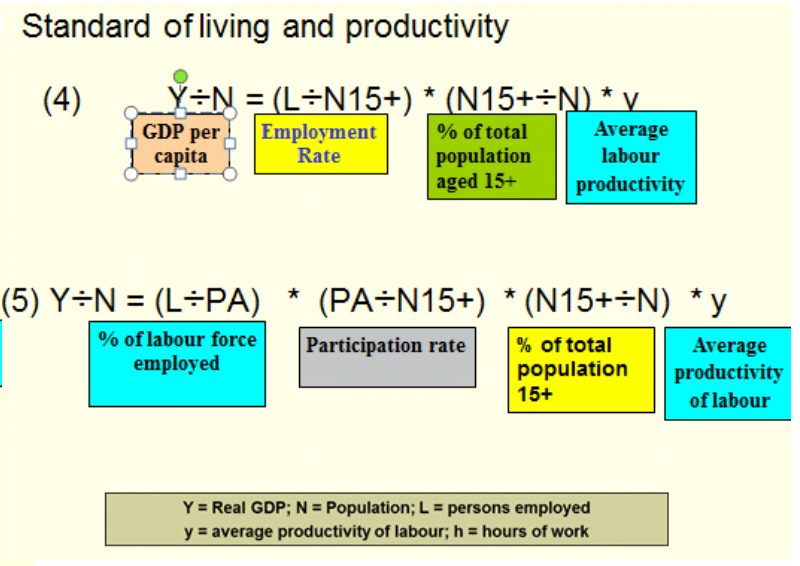
Promoting Technological Progress

- More people, there are more scientists, inventors and engineers to contribute to technological advance

Growth Rate Calculation

- Utopia's GDP per person was
  - $25,000 in 1970.
  - $40,000 in 1995 (25 years later).
- What was the rate of growth of GDP per capita in Utopia between 1970 and 1995?
  - **F=P(1+g)^N**; 40,000 = 25,000(1+g)25
  - Therefore, 40,000/25,000 = (1+g)25 = 1.6
  - 1.6(1/25) = 1.600.04 = 1.019
  - g = 0.019 or 1.9%





Chapter 8: Saving, Investment and the Financial System

Financial System - group of institutions that help to match one person's saving with another person's investment

Saving and investing are key ingredients to long-run economic growth

- When a country saves a large portion of its GDP, more resources are available for investment in capital
  - higher capital raises a country's productivity and living standard

Financial Institutions in the Canadian Economy

- Financial systems move economy's scarce resources from savers to borowers

Financial Markets - financial institutions through which savers can directly provide funds to borrowers

Bond Market

- **Bond - certificate of indebtedness** (IOU)
  - *Date of Maturity - when the bond is due; repaid*
  - *Rate of interes that will be paid periodically until the loan matures*
  - *Principal is given*
  - Term - length of time until the bond matures
    - Interest rate depends on term, long-term higher; short-term lower
  - Credit-risk - probability that borrower will fail to pay some of the interest or principal
    - Failure is called a default (declare bankruptcy)
    - Affected by level of debt, recent changes in amount of debt carried and stability of revenues

Stock Market

- **Stock - claim to partial ownership in a firm**
  - Sale of stock to raise money called *equity finance*
  - Sale of Bonds is called *debt finance*
- Higher risk, higher return
- Prices are determined by supply and demand for the stock in these companies
  - Reflects peoples perception of corporation's future profitability
- *Stock index monitors the overall level of stock prices*

Financial Intermediaries - financial institutions through which savers can indirectly provide funds to borrowers

- *Intermediary - role of these institutions standing between savers and borrowers*

Banks

- Smaller companies
- Facilitate purchases of goods and services by allowing people to write cheques against deposits
- Create *Medium of Exchange - item that people can easily use to engage in transactions*
- Stocks are more *Store of Value*

Mutual Funds - institution that sells shares to the public and uses proceed to buy a portfolio of stocks and bonds

- Allows people with small amounts of money to diversify
- Diversity = less risk
- Holder of mutual funds charges a fee (0.5-3.0 %)
- Gives access ordinary people to skills of professional money managers
- *Index funds - buy all stocks in a given stock Index; perform somewhat better on avg*

Saving and Investment in the National Income Accounts

- *Accounting - various numbers are defined and added up*
- *Identity - equation that must be true because of the way the variables in the eqn are defined*

Some Important Identities

GDP -> Y = C + I + G + NX

- *Closed economy - one that does not interact with other*
  - **Y= C + I + G**
- *Open Economy - interact with other economies*

Chapter 8 Cont

What can this identity tell us about Financial Markets?

- **Y - C - G = I**
- **National Saving - Total income in the economy after pay for consumption and govt purchases** (Y - C - G)
  - Denoted as ***S = I***
  - *Let **T** denote the amount that govt collects in taxes minus amount it pays back in transfer payments*
    - ***S = Y - C - G** or,*
    - ***S = (Y - T - C) + (T - G)** (the two T's cancel each other out) … Private saving - Public saving*
- **Private Saving - income that households have left after paying for taxes and consumption**
- **Public Saving - tax revenue that govt has left after paying for its spending**
- **Budget Surplus - T > G**
- **Budget Deficit - T < G**
- *Saving = Investments*

S = I (Private and Closed)
Leakages = Injection S + T = I + G (mixed and closed)
S + T+ M = I + G+ X (mixed and open)

Market for Loanable Funds -
mkt in which those who want to save supply funds and those who want to borrow to invest demand funds

Supply and Demand for Loanable Funds

- *Saving is the source of loanable funds*
- *Investment is the source of demand*
- *Interest rate is the price of a loan*
- Depends on real interest rate, to reflect on real return to saving and cost of borrowing

1. Decide whether the policy shifts the supply or demand curve
2. Determine direction of shift
3. Use supply and demand diagram to see how the equilibrium changes

Policy 1: Saving Incentives

- Saving is long-run determinant of nation's productivity
- Raise saving rate, growth rate of GDP would increase and over time Cdns enjoy a higher standard of living
- People respond to incentives
- Consumption tax - GST
- RRSP reduces amount of income that is taxed
- *If a reform of the tax laws encourage greater saving, the result would be lower interest rates and a greater investment*
- Alters supply

Policy 2: Investment Incentives

- Investment tax credit - gives tax adv to any firm building a new factory or buying new equip
- *If a reform of tax laws encourage greater investment, the result would be higher interest rates and greater savings*
- Alters demand

Policy 3: Government Budget Deficits and Surpluses

- **Government debt - sum of all past budget deficits and surpluses**
- Alters supply
- **Crowding out - decrease in investment that results from government borrowing**
- *When govt reduces national saving (S) by running a budget deficit, interest rate rights, and investments fall*
- Government deficit reduced economic growth (less investment = less growth)

Loanable Funds - flow of resources available to fund private investment; reduces supply of loanable funds
// flow of resources to fund private saving then govt budget would increase demand rather than reduce supply

Vicious Circle - cycle that result when deficits reduce the supply of loanable funds, increase interest rates, discourage investment, and result in slower economic growth; slower growth leads to lower tax revenue and higher spending on income support programs, and the result can be even higher deficits

- Only way to break out is to raise tax rates and cut spending on government programs to eliminate the deficit
  Leads to slower economic growth and even higher deficits

Government Budget Surpluses

- *Budget surplus increases the supply of loanable funds, reduces the interest rate, and stimulate investment*
- More rapid economic growth

- **Virtuous Circle - results when surpluses increase supply of loanable funds, reduce interest rates, stimulates investment, and result in faster economic growth; faster growth leads to higher tax revenue and lower spending on income-support programs, and the result can be even higher budget surpluses**