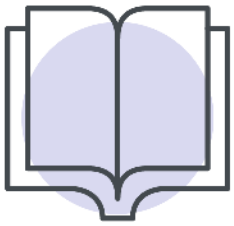
York

ECON 1010
FINAL EXAM
STUDY GUIDE



Textbook Notes

ECON 1010N – LECTURE #1 – CH.20: MEASURING GDP AND ECONOMIC GROWTH

Professor: John Paschakis

Macroeconomics:

- The study of the national economy (refers to the economy of an entire country) and the global economy (look at everybody out there)

Macroeconomic issues:

- Unemployment
- Recessions
- Budget Deficit
- Inflation

GNP (Gross National Product)

- Total value of all final goods and services produced by labour, capital and other resources of the country regardless of where the production occurred

GDP (Gross Domestic Product)

- Measure of aggregate economic activity
- Total market value of all the final goods and services produced within a country in a given time period
- Final goods and services produced in Canada by foreigners are part of Canada's GDP
- In measuring GDP, economists …
  - Use final goods and services only this avoid double counting
  - Use market prices to value production
- The value of intermediate goods is counted in GDP ; intermediate goods are produced by one firm bought by another firm & used as a component

The Circular Flow Model:

- Illustrates the flow of expenditure and income between different sectors of economy
- Economy consists of…
  1) Households
  2) Business Firms
  3) Governments
  4) Rest of the world

  Need them all
- Business firms sell goods and services
- Households sell resources (labour) to business firms
- The purchasers of goods and services are the households, firms, governments and the rest of the world

Aggregate Expenditures:

1) Consumption Expenditures **(C)** :
   - Personal expenditures on consumer's goods and services by household
   - Example: purchase of a new car by a Canadian household
   - Example: haircuts
   - Consumption expenditures do not include purchase of new homes

- They are counted as a part of investment

2) Business Investment **(I)** :
   - Firms make investment expenditure on new plant, equipment, and building
   - Purchase of new capital by firms
   - Includes expenditures on new homes by households
   - Example: purchase of new car by company is considered business investment
   - Also includes addition to business inventories

3) Government Expenditures **(G)** :
   - [federal, provincial and local] spending on goods and services
   - Expenditures on national defense and garbage collection do not include transfer payments because they are not purchases of goods and services
   - Governments use taxes to pay for their purchases

NET TAXES (NT) = Taxes paid to governments – Transfer payments received from governments

4) Net Exports of goods and services **(x-m) :**
   - The value of exports (x) minus the value of imports (m)

Aggregate Expenditures or Total Expenditures = **C+I+G+ (X-M) = 885+304+357+32 = 1,578**

Transfer Payments:

- Cash transfers from the governments to households and firms
  1) Social security benefits
  2) Unemployment benefits
  3) Subsidies to firms

Aggregate Incomes (Y) :

- Income earned producing the goods and services

4 TYPES OF INCOME:

1) Wages for labour
2) Interest for capital
3) Rent for land building
4) Profit for entrepreneurship

- Firms pay out as income everything they receive from the sale of their output

Therefore Aggregate Expenditures = Aggregate incomes **(Y)** and equal to GDP

GDP is equal to: Y= C+I+G+ (X-M) =1,578

Capital:

- The plant, equipment, buildings, inventories of raw material and semi-finished goods
- Used to produce other goods and services
- Example: a school institution is a “capital” because we use it for education and services
- Example: a factory is a “capital” because it’s a place to produce goods

- Net Investment = Gross investment – Depreciation
- The stock of capital increases by the amount of net investment from one year to the next year
- GDP grows because capital stock grows
- Investment adds to capital because GDP grows because of investment
- We need new investments for new jobs, more goods and more money

Gross Investment:

- The total amount spent both buying new capital and replacing depreciated capital
- Depreciation (or capital consumption) decrease in the stock of the capital that results from wear and tear and abolsolenscence

Measuring Canada's GDP:

To measure GDP, Statistics Canada uses 2 approaches:

1) **Expenditure approach**

- GDP: Y=C+I+G+(x-m) – the largest component of GDP from the expenditure approach is expenditures on consumer goods and services
- In 2004, GDP is measure by expenditure approach was $1,290 billion
- Cost of adding a new kitchen to your house would be included in the calculation of GDP
- The government bond you buy for investment purposes is not counted as a part of this year's GDP
- It does not represent the goods and services produced

2) **Income approach**

GDP = wages + salaries and supplementary labour income + corporate profits + interest and miscellaneous investment income + farmers' income and income of non-farm unincorporated businesses + indirect taxes – subsidies + depreciation

Indirect taxes

- Provincial sales taxes
- GST
- Taxes on gasoline

Subsidies

- Payments by the government to the producers ex. Grain growers and dairy farmers

Direct Taxes

- A tax on income

Net Domestic Product (or Net Domestic income [NDP] at market prices)

- NDP = GDP – Depreciation
  = $3,050 – $400 = $2,650 (this is the NDP of market prices)

Diagrams:

Table 20.2

Government expenditures on goods and services	$ 500
Wages, salaries, and supplementary labour income	2,000
Capital consumption	400
Gross investment	400
Personal consumption	2,200
Net exports	-50
Indirect taxes	150

1) GDP = C + I + G + (x-m)
   = 2,200 (the consumption) + 400 (the investment) + 500 (gov't expenditure) + (-50)
   = $3, 050
2) NDP = GDP – Depreciation
   = 3,050 – 400
   = $2, 650
   This is the NDP at market prices.

ECON 1010N – LECTURE #2 – CH.21: MONITORING JOBS AND INFLATION

Professor: John Paschakis

The Economic costs of Unemployment:

1) Lost production and incomes
2) Lost of human capital

[The knowledge becomes absolute with time – if it is not used]

Labour Force Survey

Statistics Canada divides the population into two groups:

1) The working-age population
- It would be the total number of people within the ages 15 and above

2) Others who are too young to work
- Or they live in institutions and are unable to work

Labour force = Employed + Unemployed

Employed:

- a person with a full-time job or a part-time job

Unemployed:

- a person must be available for work and fall in one of the three categories

The three Categories:

1) **Without work but has made specific effort to find a job within the four weeks**
- Ex. Kathy is not working, but she is looking for a full-time job
- Ex. A recent graduate looking for work

2) **Laid off from a job and wanted to be called back to work**
3) **Waiting to start a new job within four weeks**

Labour market indicators:

Example:

In a country with a working-age population of 20 million, 13 million are employed, 1.5 million are unemployed, and 1 million of the employed are working part-time, half of whom wish to have a full-time job

1) **Labour Force =**
   Employed + Unemployed = 13 + 1.5 = 14.5 million
2) **Unemployment rate =**
   $\frac{\text{Number of people unemployed}}{\text{Labour Force}} \times 100$ thus, $\frac{1.5}{14.5} \times 100 = 10.34\%$
3) **Labour Force participation rate =**
   $\frac{\text{Labour Force}}{\text{Working-Age population}} \times 100$ thus, $\frac{13+1.5}{20} \times 100 = 72.5\%$

The Labour force participation rate:

- It has increased for females and decreased for males
- Women have more time to take jobs outside the home

4) **Involuntary part-time rate =**

$$\frac{\text{Member of involuntary part-time workers}}{\text{Labour Force}} \times 100 \quad \text{thus,} \quad \frac{500{,}000}{14{,}500{,}000} \times 100 = 3.44\%$$

- The rate that works part-time but wants a full-time jobs
- Employment-to-Population ratio = $\frac{\text{Number of people employed}}{\text{Working-Age population}} \times 100$ thus, $\frac{13}{20} \times 100 = 0.65 \times 100 = 65\%$
- This indicator [above] falls during a recession and increases during an expansion

Employment and Unemployment:
There are types of unemployment =

1) **Unemployment that arises from people entering and leaving the labour force**
- [short-run job and skill matching problems] ex. Michael leaves his job as a night security guard on a search for a new job. This type of unemployment is a normal phenomenon in a dynamic, growing economy.
- The frictional unemployment is never a zero

2) **Structural unemployment**
- It can become a serious long-term problem
- It arises from the changes in technology [ex. When workers are replace by robotic machines] and from international competition [it changes the location of jobs]

3) **Seasonal unemployment**
- Many jobs are available only at certain times of the year
- Construction closes down for several months in the winter

4) **Cyclical unemployment**
- The unemployment that fluctuates over the business cycle
- This type of unemployment increases during the recession and decreases during an expansion
- A salesperson is laid off during a recession because the sales decline

Full Employment:
- It occurs when there is no cyclical unemployment
- It is also when all the unemployment is frictional, structural and seasonal
- A zero unemployment rate is not consistent with the notion of full employment

The Natural Rate of Unemployment:
- At this rate of unemployment, all is frictional, structural and seasonal
- When the economy is at full employment, the unemployment rate = the natural rate of unemployment and the real GDP = potential GDP
- It is considered to be between 6 and 8%

Example:
In a country, 16 million are employed, 2 million are unemployed. If 500,000 of those unemployed are cyclically unemployed, what is the natural rate of unemployment?

$$\text{Natural rate of unemployment} = \frac{2 \text{ million} - 0.5 \text{ million}}{16 \text{ million} + 2 \text{ million}} = \frac{1.5 \text{ million}}{18 \text{ million}} = 0.083 \text{ or } 83\%$$

Discouraged workers:

- Those who have given up looking for work because they cannot find a job
- They are counted as unemployed [they are not members of the labour force]
- Official measures of unemployment tend to understate the unemployment problem because they do not include the discouraged workers

Recession:

- It is a period during a real gross domestic product (GDP) decreases for 2 or more consecutive quarters
- During this period, real GDP growth is negative
- Unemployment generally rises during recessions and falls during expansions

Macroeconomics:

- It focuses on the aggregate economy [the economy as a whole]
- Modern macroeconomics emerged after the Great Depression [1929-1933]
- John Keynes argued that to eliminate a depression, governments should spend more to offset the insufficient private expenditures in the economy

Inflation:

- A sustained upward trend in the average price level
- We measure the inflation rate as the annual percentage change in the price levels
- Its negative effects are...

1) It redistributes the purchasing power of income in an arbitrary way
   - Borrowers and lenders, workers and employers all make contracts in terms of money
   - The value of money decreases with higher inflation rates
   - The value of money varies inversely with the inflation rate
   - A higher inflation rate reduces the purchasing power of wage
2) It diverts resources from production
   - Unpredictable inflation is costly because people shift resources from production to predicting inflation

Measuring inflation

- Inflation is the percentage change in the price level from one period to the next
- $$\text{Inflation rate} = \frac{[\text{CPI this year} - \text{CPI last year}]}{\text{CPI Last year}} \times 100$$

Deflation:

- It occurs when the average price level falls
- In this cases, the inflation rate is negative
- Deflation occurred in Canada following WWII and during the Great Depression

Consumer Price Index [CPI]:

- The measure of the average of the prices paid by consumers for a fixed basket of goods and services
- It is defined to equal 100 for the base year
- It involves 3 stages:
  1) Selecting the CPI basket: which goods and services to include and their weights
  2) Conducting the monthly price survey: Stats. Canada check the prices of goods and services in the CPI basket in 30 urban centres – they record the price changes

3) Calculating the CPI: the CPI measures the changes in the cost of living and the value of money

The Biased CPI:

- The CPI is not a perfect measure of the price level
- There is a bias in the CPI

a) New good bias: because the personal computer is more expensive than a typewriter was, the inclusion of the personal computer puts an upward bias into the CPI and its inflation rate

b) Quality change bias: part of a rise in the prices of some items is a payment for improved quality and is not inflation

- The bias in the CPI: it distorts private contracts [ex. Wage contracts] and biases estimates of real earnings

GDP Deflator:

- It is another measure of the average price level
- It is an index of the prices of all the items included in the GDP
- GDP deflator: $\frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100 = \frac{189{,}900}{93{,}000} \times 100 = 204$
- Changes in prices increase our cost of living

Core inflation:

- The inflation rate, excluding volatile items
- Core CPI inflation rate is calculated as the percentage change in the CPI excluding the food and fuel
- The prices of food and fuel are the most volatile

ECON 1010 – LECTURE #3 - MONITORING JOBS AND INFLATION PT.2

Professor: John Paschakis

The Natural Rate of Unemployment:

- Over the business cycle, real GDP fluctuates around potential GDP and the unemployment rate fluctuates around the natural unemployment rate
- The divergence of the unemployment rate from the natural rate of unemployment is cyclical unemployment
- The natural rate of unemployment is considered to be between 6-8%

Recessions [cont...]:

- Unemployment generally rises during recessions and falls during expansions
- An example of a recession is The Great Depression [1929-1933]
    - It was the most severe contraction of economic activity ever experienced
    - It caused an high unemployment
    - There was a sharp decrease in real GDP – real GDP shrank by 33%

Hyperinflation:

- It is a very high inflation higher than 50% per month
- For a long now, the inflation rate has been positive

Consumer Price Index [CPI]:

- When the CPI is based on 1992 price, a consumer price index of 122 in 2004 means that the market basket of the consumer goods that cost $100 in 1992 could be purchased for $122 in 2004

Measuring Inflation:

- Inflation is the percentage change in the price level from one period to the next
- Inflation rate: $= \left[\frac{\textbf{CPI this year – CPI last year}}{\textbf{CPI last year}}\right] \textbf{ X 100}$
- Example: If the CPI was 228 at the end of 1997 and 236 at the end of the 1998, what was the rate of inflation during 1998?

Inflation rate $= \frac{\textbf{236 – 228}}{\textbf{228}} \textbf{ X 100}$

$= \frac{\textbf{8}}{\textbf{228}} \textbf{ X 100}$

= 3.5 percent

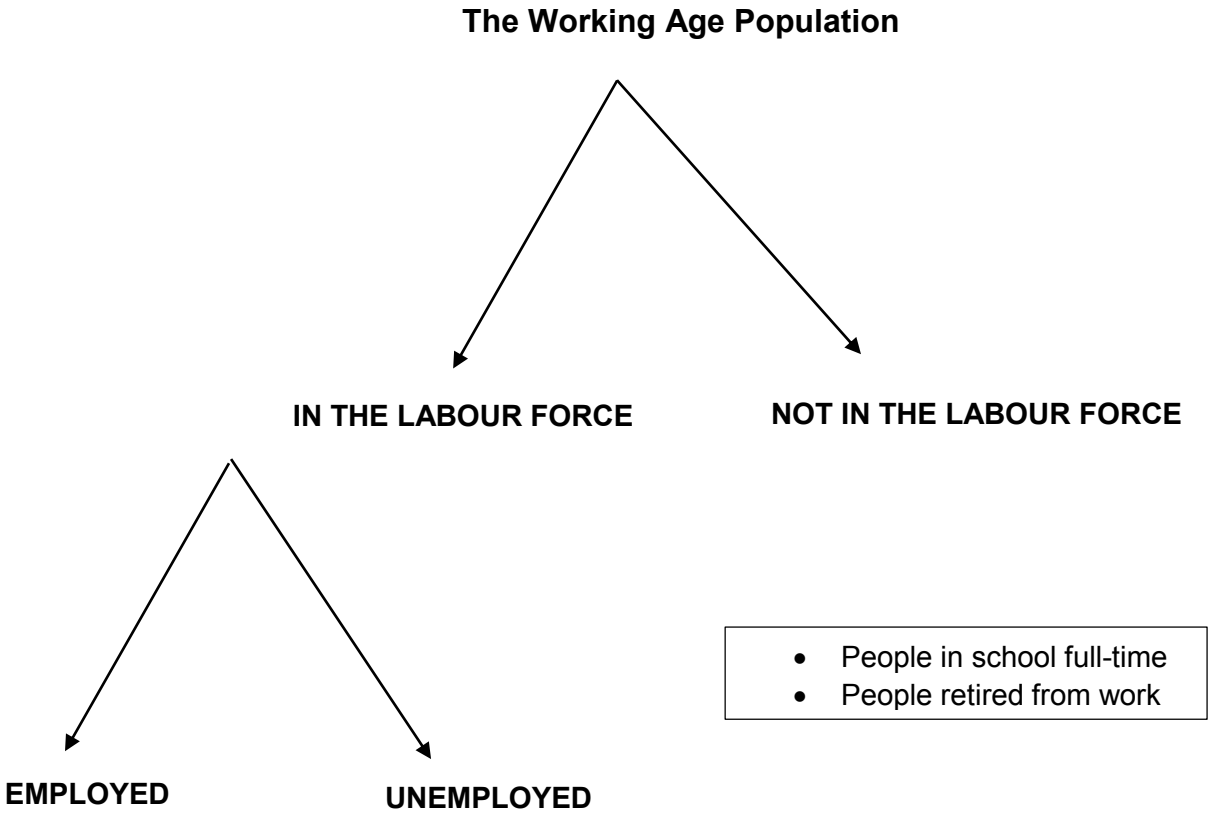
Real Variables:

- We view real GDP as nominal GDP deflated by the GDP deflator
- Real GDP = **Nominal GDP / GDP Deflator**
- Using the GDP deflator, we can deflate any nominal variable and find its corresponding real value
- Real wage rate = $\frac{\textbf{Money Wage Rate}}{\textbf{Price Level}}$
- The real wage rate is the quantity of goods and services that an hour's work can buy
- It measure the reward to labour
- Real value of $1 $= \frac{\textbf{\$1}}{\textbf{Price level}} \textbf{ X 100}$

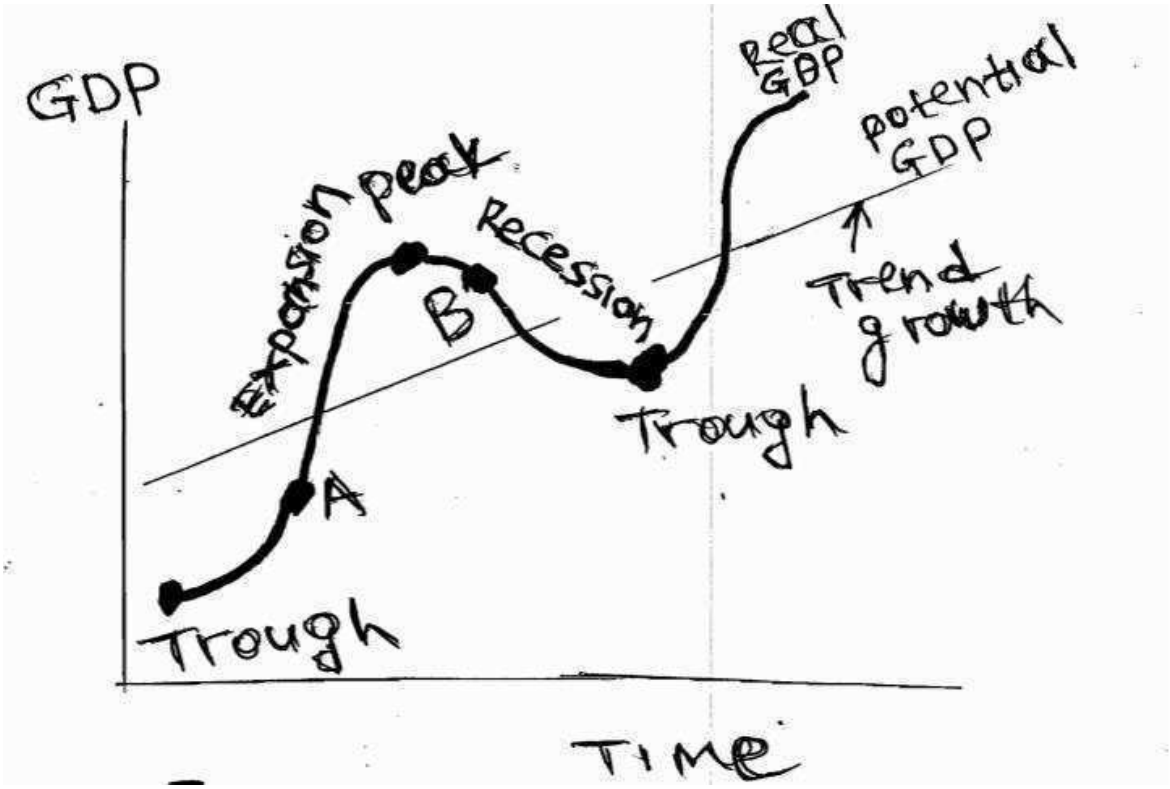
  $= \frac{\textbf{\$1}}{\textbf{150}} \textbf{ X 100}$

  = 0.67
- The dollar purchases only 2/3s of the goods and services that could purchase

Diagrams:



A Stylized Business Cycle



- The business cycle is the movement of current real GDP around the trend
- The economy is expanding as it moves through point A from the trough to the peak
- When the economy moves from a peak down to a trough, through point B, the economy is in recession

ECON 1010 – LECTURE #3 – ECONOMIC GROWTH
Professor: John Paschakis

Economic Growth:

- It is a sustained, year-after-year increase in potential GDP
- The expansion in the capacity of the economy to produce goods and services
- The growth is captured by an outward shift of the production possibilities frontier [PPF]

Calculating Economic Growth:

- Express the economic growth rate as the annual percentage change of the real GDP

$$\text{Real GDP growth rate} = \frac{\text{Real GDP in current year} - \text{Real GDP in previous year}}{\text{Real GDP in previous year}} \times 100$$

$$= \frac{\$11 \text{ trillion} - \$10 \text{ trillion}}{\$10 \text{ trillion}} \times 100$$

$$= 10\%$$

- The growth rate of real GDP per person can also be calculated
- Real GDP per person grows only if real GDP grows faster than the population
- Sustained growth of real GDP per person can transform a poor society into a wealthy one
- An example: Suppose a country's population grows by 2% a year, at the same time, its real GDP grows by 5% a year. The growth rate of real GDP per person is approximately equal to 5% - 2% = 3%

The Rule of 70:

- It is used to estimate how it will take the level of any variable to double
- An example: A country's current growth rate of real GDP per person is 2% a year. How long will it take to double real GDP per person? The real GDP per person doubles in 35 years [70 divided by 2]

Growth in the Canadian economy:

- Canada experienced the slowest economic growth in the 1980s
- Canada experienced the highest economic growth in the 1960s
- In 1980, Canada had the second-highest real GDP person
- The United States had the highest real GDP per person

The Total amount of labour:

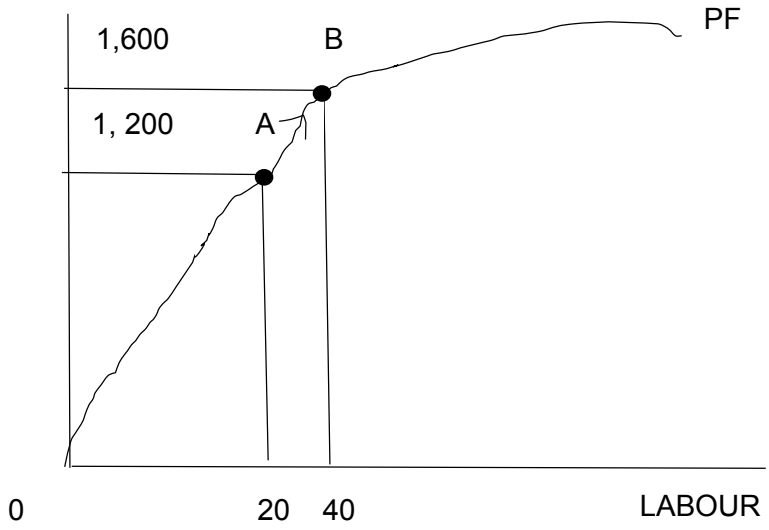
- We measure labour in hours

Aggregate Hours:

- It is the total number of hours worked by all the people employed during a year
- Aggregate hours have an upward trend and they fluctuate with the business cycle
- The economy –wide average money wage rate = $\frac{\text{Total amount of labour income}}{\text{Total aggregate hours}}$

The Aggregate production function:

- It is a relationship that shows how real GDP changes when the quantity of labour changes with no changes in the capital stock of technology
- [below] It is an increase in the quantity of labour that increase real GDP (a movement along the production function)



- The decreasing slope of the aggregate production function reflects diminishing returns to labour
- Along the aggregate production function, an additional unit of labour produces less output than the previous unit
- We use our most productive labour hours first

The Real Wage Rate:

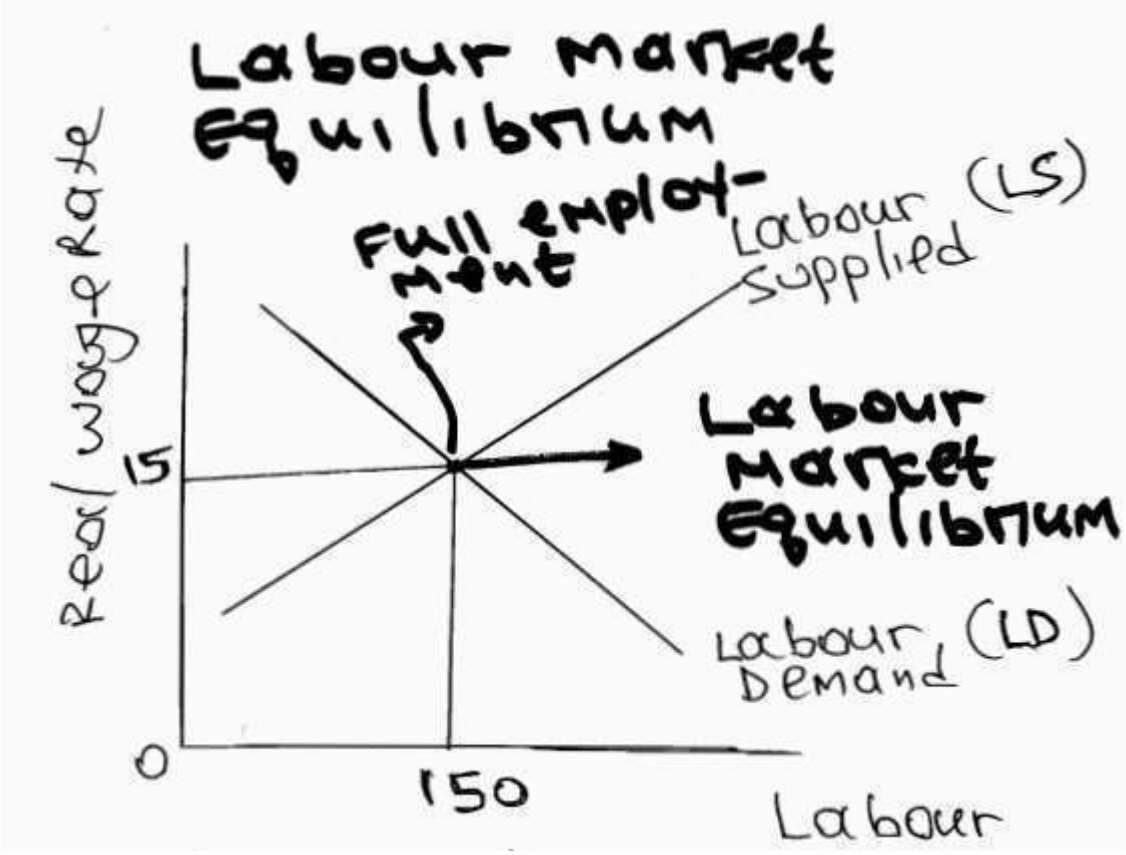
- It is the quantity of goods and services that an hour of labour can buy
- The money [nominal] wage rate is the number of dollar an hour of labour earns
- An example is if the money wage is $15.00 an hour and the price level is 120, the real wage rate is … Real wage rate = $\frac{\$15.00}{120} \times 100$

  = $12.50 an hour
- The real wage rate influences the quantity of labour demanded and the quantity of labour supplied

Real Wage Rate ↓ → Quantity Of Labour Demanded ↑

Real Wage Rate ↑ → Quantity Of Labour Supplied ↑

Labour Market Equilibrium:



- The equilibrium real wage is $15
- The equilibrium quantity of labour is 150 hours
- There is no shortage or surplus of labour

How potential GDP is determined:

- Potential GDP is the level of real GDP when the quantity of labour employed is the full-employment quantity
- The full – employment quantity of labour produces potential GDP

What makes potential GDP grow?

1) By an increase in the population
    - There is growth in the supply of labour because the working age population grows as the total population grows
    - An increase in the population increases the full-employment quantity of labour, increases potential GDP and lowers the real wage rate
    - Potential real GDP is determined by the production function at the full-employment quantity of labour
    - But potential real GDP per hour of labour decreases
    - Initially, potential GDP per hour of labour was $60 ($1,200/20 billion)
    - With the population increase, potential GDP per hour of labour is $50 ($1,500/30 billion)
    - This is caused by diminishing returns to labour

2) By the growth of labour productivity
- Labour productivity is the quantity of real GDP produced by an hour of labour
- The productivity of labour can be measured by computing the ratio of GDP to aggregate hours
- An example is : if the real GDP is $800 billion and aggregate labour hours are $20 billion, the labour productivity is … $\frac{\$800 \text{ billion}}{\$20 \text{ billion}}$ = $40 per hour
- When labour productivity grows, real GDP per person grows and brings a rising standard of living

An increase of Labour Productivity:
- An increase of labour productivity results in a higher real wage rate and higher potential GDP per hour of labour
- With the increase in productivity, it shifts the production function upward and shifts the demand for labor rightward
- The real wage rises and aggregate labour hours increase
- Potential GDP increases to $1,800 billion
- An increase in labour productivity increases potential GDP because
  1) Labour is more productive
  2) More labour is employed : firms are willing to pay and the real wage rises

Why Labour Productivity grows?
Three things influence labour productivity:
1) The physical capital growth
   - As the amount of capital per worker increases, the labour productivity also increases
2) Human capital growth
   - The accumulated skill and knowledge of human beings
3) Technological Advances
   - The discovery and the application of new technologies
   - Technology advance arises from formal research and development programs

Achieving Faster Growth:
1) Stimulate Savings
2) Stimulate research and development
3) Encourage international trade
4) Improve the quality of education

Growth Accounting:
- It measures the contribution to labour productivity of
  - New technologies
  - The accumulation of physical capital
  - The accumulation of human capital

ECON1010 – Lecture #4 – Chapter 23: Finance, Savings and Investment
Professor: Gordana Colby

Financial Institutions and Financial Markets:
To study the economics of financial institutions and markets we distinguish between:

- Finance and money
- Physical capital and financial capital

Finance:

- It looks at how households and firms obtain and use financial resources and how they cope with the risks that arise in this activity
- It is based on how we come up with the funds/raise the funds

Money:

- It looks at how households and firms use it, how much of it they hold, how banks create and manage it, and how its quantity influences the economy
- It is the medium of exchange – how we pay the goods and services

Physical Capital:

- It is the tools, instruments, machines, buildings and other items that have been produced in the past and that are used today to produce goods and services

Financial Capital:

- The funds that firms use to buy the physical capital

Gross Investment:

- It is the total amount spent on purchases of new capital and on replacing depreciated capital
- If depreciation exceeds gross investment, the economy's capital stock decreases
  Example: At the beginning of the year, a company had a capital stock of 5 machines. During the year, the company scrapped 2 old machines and purchased 3 new machines. The company's net investment totaled 1 machine

Wealth:

- It is the value of all the things that people own (ex. Money, Stocks, Bonds, Houses)
- It increases when the market value of assets rises, (they are called capital gains) and it decreases when the market value of assets fall (they are called capital losses)

Saving:

- It is the amount of income that is not paid in taxes or spent on consumption, goods and services
- Savings increase wealth

Financial Capital Markets:

- Saving is the source of the funds that are used to finance investment
- These funds are supplied and demanded in three types of financial markets
  - Loan Markets
  - Bond Markets
  - Stock Markets

Financial Institutions:

- It is a firm that operates on both sides of the markets for financial capital
- It is a borrower in one market and a lender in another
- An asset for an institution are loans
- A liability for an institution are any money they borrowed
- The key institutions are...
  - Banks : bank deposits are included in the definition of money
  - Trust and Loan Companies
  - Credit Unions and Caisses populaires
  - Pension funds
  - Insurance Companies

Insolvency and Illiquidity:

- Insolvency = “network” , Illiquidity = “cash flow”
- A financial institution’s net worth is the total market value of what it has lent minus the market value of what it has borrowed
- If the net worth is positive, the institution is solvent and can remain in business
- But if the net worth is negative, the institution is insolvent and go out of business

Interest Rates and Asset Prices:

- The interest rate on a financial asset is the interest received expresses as a percentage of the price of the asset
- Example: if the price of the asset is $50 and the interest is $5, then the interest rate is 10%
- If the asset price rises, (say to $200), other things remaining the same, the interest rate falls (2.5%)
- If the asset price falls, (say to $20), other things remaining the same, the interest rate rises (to 25%)

The Loanable Funds Market:

The market for loanable funds is the aggregate of the individual financial market. The market for loanable funds determine the real interest rate, the quantity of funds loaned, saving and investment.

Funds that finance investment:

- Funds comes from three sources:
  - Household savings : S
  - Government budget surplus : (T-G)
  - Borrowing form the rest of the world : (M-X)

The Real Interest Rate:

- The nominal interest rate is the number of dollars that a borrower pays and a lender receives in interest in a year expressed as a percentage of the number of dollars borrowed and lent
- Example: if the annual interest paid on a $500 loan is $25, the nominal interest is 5% per year
- We will see a real interest rate in a loanable market
- It is the nominal interest rate adjusted to remove the effects of inflation on the buying power of money
- The real interest rate is approximately equal to the nominal interest rate minus the inflation rate
- Example: if the nominal interest rate is 5% a year and the inflation rate is 2% a year, the real interest rate is 3% a year
- The real interest rate is the opportunity cost of borrowing

The Loanable Funds Market

The market for loanable funds determine the real interest rate, the quantity of funds loaned, saving and investment. We'll start by ignoring the government and the rest of the world.

The Demand for Loanable Funds:

The quantity of loanable funds demanded depends on

1. The real interest rate
2. Expected profit

The Demand of Loanable Funds Curve:

- It is the relationship between the quantity of loanable funds demanded and the real interest rate when all other influences on borrowing plans remain the same
- Business investment is the main item that makes up the demand for loanable funds

Changes in the Demand for Loanable Funds:

- When the expected profit changes, the demand for loanable funds changes
- The supply of loanable funds: the total funds available from private savings, a government budget surplus and international borrowing during a given period
- Other things remaining the same, the greater the expected profit from new capital, the greater is the amount of investment and the greater the demand for loanable funds

Changes in the Supply of Loanable Funds:

- A change in disposable income, expected future income, wealth or default risk shift
- The supply of loanable funds curve

Equilibrium in the Market for Loanable Funds:

- The higher the real interest rate, the greater is the quantity of loanable funds supplied and the smaller is the quantity of loanable funds demanded

- At the equilibrium real interest rate, the quantities of loanable funds demanded and supplied are equal

Changes in the demand and supply:

- Fluctuations in either the demand for loanable funds or the supply of loanable funds cause fluctuations in the real interest rate and the equilibrium quantity of funds lent and borrowed
- They also cause fluctuations in asset prices

Government Budget deficit and the Loanable Funds Market:

- To finance the budget deficit the government enters the market for loanable funds
- The demand for the loanable funds increases
- The demand for the loanable funds shifts to the right

The Crowding – Out Effect:

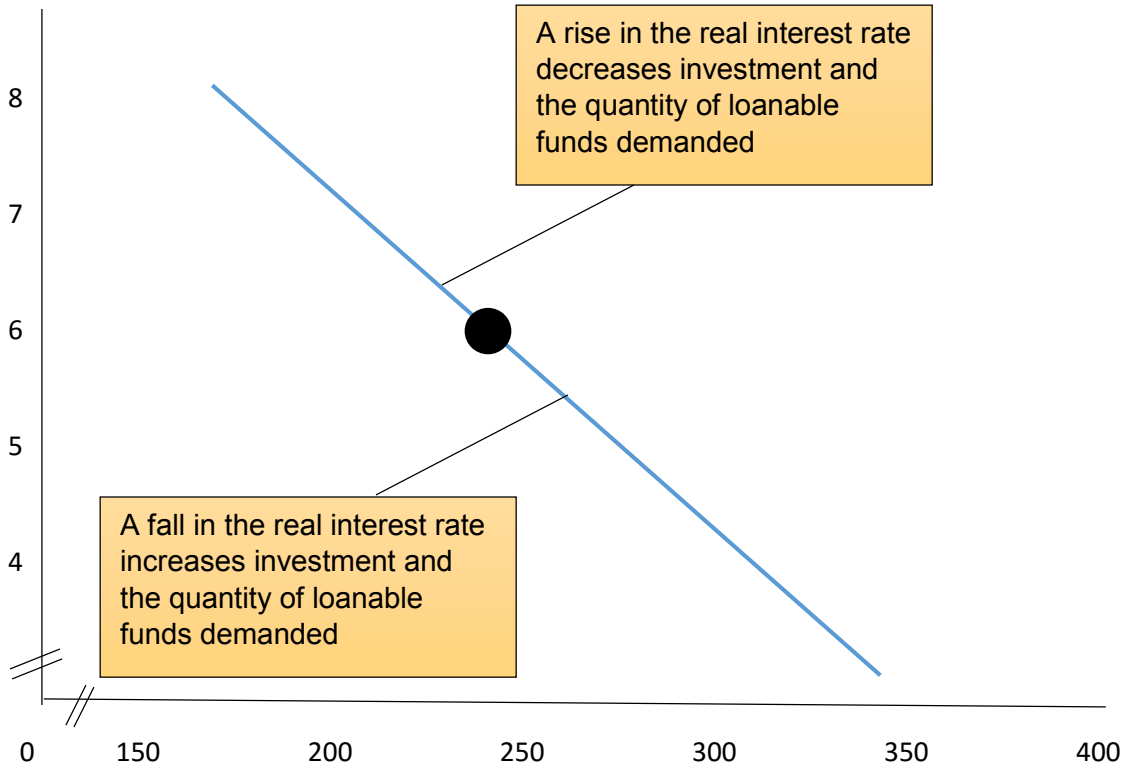
- The tendency for a government budget deficit to raise the real interest rate and decrease investment
- In this case, the government compete with private businesses for loanable funds

The Global Loanable Funds Market:

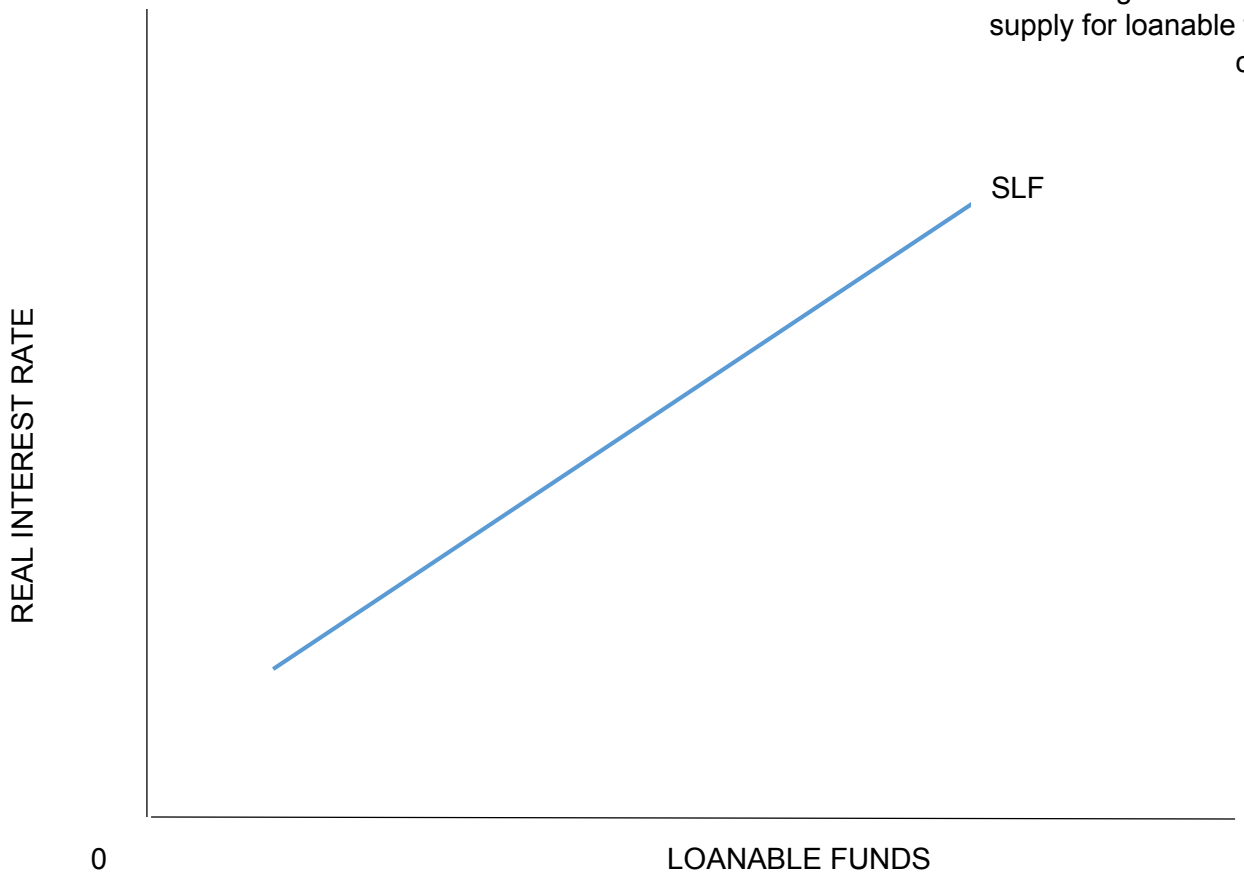
- The loanable funds market is international
- Financial capital is mobile. It moves to take advantage of the higher real interest rate
- The loanable funds market is a single, integrated, global market
- Funds flow into the country in which the real interest rate is highest

Diagrams:

This figure shows the demand for loanable funds curve.



This figure shows the supply for loanable funds curve.



ECON 1010 – LECTURE #5 – CHAPTER 24: Money, the Price Level and Inflation
PROFESSOR: Gordana Colby

What is Money?

- It is any commodity or token that is generally acceptable as a means of payment
- Means of payment: a method of settling a debt
- The things in our society that are considered as money are : currency (money in your chequing account is considered as "currency"), gold (was once functioned as money but we moved away from that because it was heavy), bills, MI (includes the liquid form) M2 (includes everything in M1 but also includes deposits in chequing and savings accounts)

Money has three other functions:

1) Medium of exchange
    - It is accepted by both buyers and sellers
    - It is an object that is generally accepted in exchange for goods and services
    - In absence of money, people would need to exchange goods and services directly, which is called **barter: this requires the double coincidence of wants**
2) Unit of account: it quotes prices in dollars and cents
3) Store of value: You may decide to store your wealth in the form of money

Are M1 and M2 really Money?

- All the items in M1 are means of payment. They are money
- Some savings deposits in M2 are not means of payments – they are called liquid assets
- Liquidity is the property of being instantly convertible into a means of payment with little loss of value
- Deposits are money, but cheques are not – a cheque is an instruction to a bank to transfer money
- Credit cards are not money. A credit card enables the holder to obtain a loan, but it must be repaid with money

Depository Institutions

What is it?

- It is a firm that takes deposits from households and firms and makes loans to other households and firms

Types of Depository Institutions

Deposits at three institutions make up the nation's money. They are:

- Chartered banks
- Credit Unions and caisses populaires

What Depository Institutions Do

- To goal of any bank is to maximize the wealth of its owners
- To achieve this objective, the interest rate at which it lends exceeds the interest rate it pays on deposits

But the banks must balance profit and prudence:

- Loans generate profits
- Depositors must be able to obtain their funds when they want them

A chartered banks put the depositors' funds into four types of assets:

- Reserves – notes and coins in its vault or its deposit at the Bank of Canada
- Liquid assets – Canadian government Treasury bills and commercial bills
- Securities – longer-term Canadian government bonds and other bonds such as mortgage-backed securities
- Loans – commitments of fixed amounts of money for agreed-upon periods of time

Economic Benefits provided by Depository Institutions:

- The depository institutions make a profit from the spread between the interest rate they pay on their deposits and the interest rate they charge on their loans

Depository institutions provide four benefits

1) Lower the cost of monitoring borrowers
2) Create Liquidity
3) Pool Risk
4) Lower the cost of borrowing

How Depository Institutions are regulated?

- Depository institutions engage in risky business
- To make the risk of failure small, depository institutions are required to hold levels of reserves and owners' capital equal to or that surpass the ratio laid down by regulation
- If a Canadian bank fails, deposits are guaranteed up to $100,000 per depositor per bank by the Canada Deposit Insurance Corporation
- Provincial government agencies regulate credit unions and caisses populaires

The Bank of Canada

What is it?

- It is the **central bank** of Canada
- A **central bank** is the public authority that regulates a nation's depository institutions and control the quantity of money
- Banker to the banks and government

Sole Issuer of Bank Notes

- The Bank of Canada is the only bank that is permitted to issue bank notes. The Bank of Canada has a monopoly on this activity

The Bank of Canada's Balance Sheet

- The Bank of Canada's assets are government securities and link-resort loans to banks
- Its liabilities are Bank of Canada notes and deposits of banks and the governments
- On the Bank's balance sheet, the largest and most important asset is Canadian government securities
- The most important liabilities are Bank of Canada notes in circulation and banks' deposits

Monetary Base

- The monetary base is the sum of Bank of Canada notes outside the Bank of Canada, banks' deposits at the Bank of Canada and coins held by households, firms and banks
- The liabilities of the Bank of Canada (plus coins issued by the Canadian Mint) form the monetary base
- To change the monetary base, the Bank of Canada conducts an open market operation which is the purchase or sale of government of Canada securities by the Bank of Canada in the open market

Open Market Operations

- An open market operation is the purchase or sale of government securities by the Bank of Canada from or to a chartered bank or the public
- When the Bank of Canada buys securities, it pays for them with newly created reserves held by the banks
- When the Bank of Canada sell securities, they are paid for with reserves held by banks
- So open market operations influence banks 'reserves

Bank Rate

- The Bank of Canada makes short-term loans, typically one-day loans, to major depository institutions when the banking system is short on reserves
- The interest rate on these loans is **bank rate**
- **Bank rate** acts as an anchor for other short-term interest rates and is closely related to the Bank's target for the overnight loan rates

HOW BANKS CREATE MONEY

Creating Deposits by Making Loans

- Banks create deposits when they make loans and the new deposits created are new money

The quantity of deposits that banks can create is limited by three factors:

1) The Monetary Base
2) Desired reserves
3) Desired currency holding

The Monetary Base

- The monetary base is the sum of Bank of Canada notes, coins, and banks' deposits at the Bank of Canada
- The size of the monetary base limits the total quantity of money that the banking system can create because

1) Banks have desired reserves
2) Households and firms have desired currency holdings

And both these desired holdings of monetary base depend on the quantity of money

Desired Reserves

- A bank's actual reserves consists of notes and coins in its vault and its deposit at the Bank of Canada
- The desired reserve ratio is the ratio of the bank's reserves to total deposits that a bank plans to hold
- The desired reserve ratio exceeds the required reserve ratio by the amount that the bank determines to be prudent for its daily business

Desired Currency Holding

- People hold some fraction of their money as currency
- So when the total quantity of money increases, so does the quantity of currency that people plan to hold
- Because desired currency holding increases when deposits increase, currency leaves the banks when they make loans and increase deposits
- This leakage of reserves into currency is called the **currency drain**
- The ratio of currency to deposits is the **currency drain ratio**

The Money Market

The Money Creation process

- Money creation process begins with an increase in the monetary base
- The Bank of Canada conducts an open market operation in which it buys securities from banks

The Money Multiplier

- It is the ratio of the change in the quantity of money to the change in the monetary base
- For example, if the Bank of Canada increases the monetary base by $100,00 and the quantity of money increases by $250,000, the money multiplier is 2.5
- The quantity of money created depends on the desired reserve ratio and the currency drain ratio
- The smaller these ratios, the larger is the money multiplier

The Money Market

How much money do people want to hold?

The influences on Money Holding

- The quantity of money that people plan to hold depends on four main factors
  1) **The price level**
     - A rise in the price level increases the quantity of nominal money but doesn't change the quantity of real money that people plan to hold.
     - Nominal money is the amount of money measure in dollars.
     - Real money equals Nominal money = price level
     - The quantity of nominal money demanded is proportional to the price level – a 10% rise in the price level increases the quantity of nominal money demanded by 10%
  2) **The nominal interest rate**
     - It is the opportunity cost of holding wealth in the forra of money rather than an interest-bearing asset
     - A rise in the nominal interest rate on other assets decreases the quantity of real money that people plan to hold
  3) **Real GDP**
     - An increase in real GDP increases the volume of expenditure, which increases the quantity of real money that people plan to hold
  4) **Financial Innovation**
     - Financial innovation that lowers the cost of switching between money and interest-bearing assets decreases the quantity of real money that people plan to hold

The Money Market Equilibrium

- The interest rate is determined in the money market

Quantity Theory of Money

- There is a general tendency for money growth and inflation to be correlated
- The quantity theory of money implies that inflation is caused by money growth in the long run
- It gives us a long-run theory of inflation

Velocity of Circulation (V)

- The average number of times a dollar is used annually to buy the goods and services that make up GDP

ECON 1010 – LECTURE #6 – Chapter 25: The Exchange Rate and the Balance of Payments

Professor: Gordana Colby

The Foreign Exchange Market

- It is when the things are bought from another country
- The country's currency is used to make payment

Foreign Currency

- It is the money of other countries regardless of whether that money is in the form of notes, coins or bank deposits

Trading Currencies

- Foreign exchange market is where the currency of another country is exchanged for the currency of another in this market
- It is controlled all around the world by foreign exchange brokers

Exchange Rates

- It is the price at which one currency exchange for another currency in the foreign exchange market
- If there is a rise in the exchange rate, it is equal to the appreciation of the dollar
- If there is a fall in the exchange rate, it is equal to the depreciation of the dollar

Thought Questions about the Canadian Dollar Exchange Rate

1) How is the exchange rate determined?
2) How do the Bank of Canada and other central banks operate in the exchange market?
3) How do exchange rate fluctuations influence our international trade and international payments?

An Exchange Rate is considered as a Price

- Price of one currency is determined by the foreign exchange market
- The foreign exchange market is a competitive market, since many traders and no single trader can influence price

The Demand for One Money is the Supply of another Money

- There are similar factors which influence demand for each currency
- By demanding for one currency, the trader will supply another in its place

The Demand in the Foreign Exchange Market

- The traders demand for other currencies to buy assets, buy the country's produced goods and services and secure holdings in the country's bank account
- The quantity of the Canadian dollars demanded in the F.E market is the amount that traders plan to buy during a given time period at a given exchange rate

It depends on…

- The World Demand for Canadian Exports
- The Exchange Rate

- The interest rates in Canada and other countries
- The expected future exchange rate

The Law of Demand for Foreign Exchange Rate

- There are other things that remain the same ex. the higher the exchange rate in the F.E market, the lower the demand for Canadian dollars
- The exchange rate influence the demand for Canadian dollars due to the exports effect and the expected profit effect [explained further BELOW]

The Exports Effect

- The quantity of the Canadian dollars demanded depends on Canadian exports
- These exports are expressed in the currency of the foreign country
- So, the higher the export, the greater and larger the quantity of Canadian dollars demanded in the F.E market
- The exports are depended on the exchange rate, thus the higher the exchange rate is, the lower the export is [vice versa]

The Expected Profit Effect

- The quantity of the Canadian dollars demanded depends on the expected future profit on the amount
- The higher the expected future profit is, the larger the quantity of Canadian dollars demanded in the F.E market
- The lower the exchange rate [is today], the greater the expected future profit from holding Canadian dollars and the greater is the quantity of Canadian dollars demanded in the F.E market today

The Demand Curve for Canadian Dollars

- The rise in the exchange rate decreases quantity of the dollars demanded
- The fall in the exchange rate increases quantity of dollars demanded

The Supply in the Foreign Exchange Market

- The quantity of the Canadian dollars supplied in the F.E market is the amount that traders plan to sell during a given time period at a given exchange rate

The quality depends on…

- Canada's demand for imports
- The interest rates in Canada and other countries
- The exchange rate
- The expected future exchange rates

The Law of Supply of Foreign Exchange

- The exchange rate influences the quantity of the dollars supplied due to the imports effects and expected profit effect
- The higher the exchange rate is, the higher the quantity of Canadian dollars supplied in the F.E market

The Imports Effect

- It is the quantity of the Canadian dollars supplied, depending on the Canadian imports
- These imports are expressed in Canadian dollars [$$]
- The higher the exchange rate is, the greater the amount of Canadian imports
- The higher the exchange rate is, the greater the quantity of Canadian dollars supplied

The Expected Profit Effect

- The higher the exchange rate is, the larger the expected profit is from selling the Canadian dollars today and holding foreign currencies
- So, the greater is the quantity of Canadian dollars supplied

The Market Equilibrium

- It is the quantity demanded = the quantity supplied
- The sellers want the highest price but the buyers want the lowest price
- QS>QD = the surplus, so the exchange rate falls
- OS<QD = the shortage, so the exchange rate rises

Remember: **QS = Quantity supplied**; **QD = Quantity demanded**

THE EXCHANGE RATE FLUCTUATIONS

The Change in Demand for Canadian Dollars

- There is an increase in the world demand for the Canadian exports increases demand for Canadian dollars

The Canadian Interest Rate relative to the Foreign Interest Rate

- Canadian interest rates are differential
- A gap calculated by the Canadian interest rate – the foreign interest rate
- The greater the Canadian interest rate differentiate, the greater the demand for the Canadian assets and the greater the demand for the Canadian dollars in the F.E market

The Expected Future Exchange Rate

- It is a rise in the expected future exchange rate which increases the profit that people are expected to make by holding Canadian dollars and so increases the demand for Canadian dollars

A Change in the Supply of Canadian Dollars

Canadian Demand for Imports

- An increase in the Canadian imports increases the supply of the Canadian dollars

Canadian Interest Rate relative to the Foreign Interest Rate

- The larger the Canadian interest rate differentiate, the smaller is the supply of the Canadian dollars in the F.E market

The Expected Future Exchange Rate

- A fall in the expected future exchange rate decreases the profit that can be made by holding Canadian dollars thus, causes people to sell their Canadian dollars, increasing the quantity of the Canadian dollars supplied

Fundamentals, Expectations and Arbitrage

- The expected Exchange Rate changes from the **fundamental** influences: the world demand for the Canadian exports, the Canadian demand for imports and the Canadian interest rate relative to foreign interest rate
- Profiting from trading in the F.E market often involves **arbitrage**: which is the practice of buying in one market and selling it for a higher price in another related market
- This ensures that the Exchange rate is the same in each country, and it removes profit from borrowing in one currency and lending in another "buying" in one currency and selling in another

The Interest Rate Parity

- It means equal rates of return, adjusted for risk
- Each country has equal rates of return

The Purchasing Power Parity

- It means the equal value of money
- If the prices rise in one country, the exchange rate for another currency is expressed as the country's falls making prices in both countries equal

The Real Exchange Rate

- It is the relative price of the Canadian-produced goods and services
- It measures the quantity of real GDP of the other countries that a unit of Canadian real GDP buys
- RER = **E**xchange rate x **P**rice Level / P* other countries price level

Short-Run

- In this, the nominal exchange rate changes
- The changes in the real exchange rate brings short-run changes in the quantity of imports demanded and the quantity of exports supplied

Long-Run

- Nominal exchange rate does not influence the real exchange rate
- The nominal exchange rate and the price level are determined together
- The demand and the supply determines the relative prices
- The quantity of money determines the price level in the country by quantity theory of money
- For a given real exchange rate, a change in the quantity of money brings a change in the price level and a change in the exchange rate

Exchange Rate Policy

- It is the price of a country's money in terms of another country, government and the central bank
- There are 3 exchange rate policies: 1) Flexible ; 2) Fixed ; 3) Crawling peg

The Flexible Exchange Rate

- It is an exchange rate that is determined by the demand and supply in the F.E market with no direct intervention by the central bank
- This one is somewhat influence by central banks

The Fixed Exchange Rate

- It is an exchange rate that is determined by a decision of the government of the central bank and is achieved by the central bank intervention in the F.E market to block the unregulated forces of demand and supply
- There is no limit on sell, there is a limit on buy set by foreign currency reserve
- Exchange rate rises, the BANKS SELLS
- Exchange rate falls, the BANKS BUYS

The Crawling Peg

- It is an exchange rate that follows a path that is determined by a decision of the government or the central bank and is achieved in a similar way to a fixed exchange rate by the central bank intervention in the F.E market
- The developing countries use this way to control inflation
- It sets a target for the exchange rate to equal the equilibrium exchange rate
- It prevents the large swing in exchange rate
- It is similar to the fixed exchange rate except it targets value changes or at random intervals

ECON 1010 – LECTURE #7 – CHAPTER 25 cont...
Professor: Gordana Colby

Financing International Trade

- We've seen how the exchange rate is determined, but what is the effect of the exchange rate?
- How does currency appreciation or depreciation influence Canadian international trade?

Response: we record international transactions in the balance of payments accounts

Balance of Payments Accounts

- A country's balance of payments accounts records its international trading, borrowing and lending

There are three balance of payments accounts:

1) **Current account**

- This records receipts from exports of goods and services sold abroad
- The payments for imports of goods and services from abroad
- The net interest is paid abroad
- The net transfers (such as foreign aid payments)
- The current account balance = exports – imports + net interest income + net transfers
- The current account balance [CAB] = NX + Net interest income + Net transfers [the main term is NX which stands for net exports and the other two are much smaller and don't fluctuate much]

2) **Capital and financial account**

- This records foreign investment in Canada minus the Canadian investment abroad

3) **Official settlements account**

- This records the change in the **Canadian official reserves**
- If **Canadian official reserves** increase, the official settlements account is negative
- The sum of the balances of the 3 accounts always be zero

Borrowers and Lenders

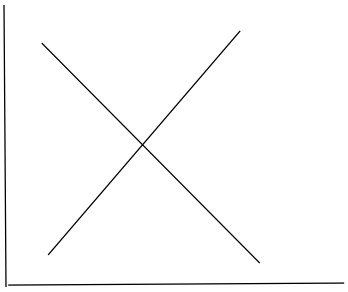
- It is a country that is borrowing more from the rest of the world than it is lending to it is called a **net borrower**
- A country that is lending more to the rest of the world than it is borrowing from it is called **net lender**
- In 2009 and 2010, Canada was a **net borrower** but between 1999 and 2009, Canada was a **net lender**
- Through most of the 1980s and 1990s, Canada was a **net borrower** from the rest of the world

The Global Loanable Funds Market

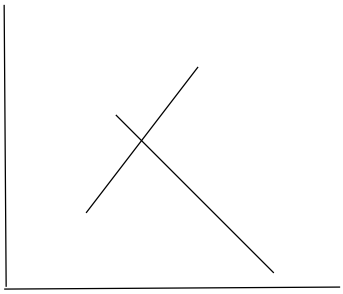
- Another way to connect with the global market is by exports and imports- we are importing more than exporting
- The loanable funds market is global, not national
- The lenders want to earn the highest possible real interest rate and they will seek it by looking around the world

- Borrowers want to pay the lowest possible real interest rate and they will seek it by looking around the world
- Financial capital is mobile: it moves to the best advantage of lenders and borrowers
- Because lenders are free to seek the highest real interest rate and borrowers are free to seek the lowest real interest rate, the loanable funds market is a single, integrated global market
- Funds flow into the country in which the real interest rate is highest and out of the country in which the real interest rate is lowest
- A country's loanable funds market connects with the global market through net exports
- If a country's net exports are negative, the rest of the world supplies funds to that country and the quantity of loanable funds in that country is greater than then national saving
- If a country's net exports are positive, the country is a net supplier of funds to the rest of the world and the quantity of loanable funds in that country is less than national saving

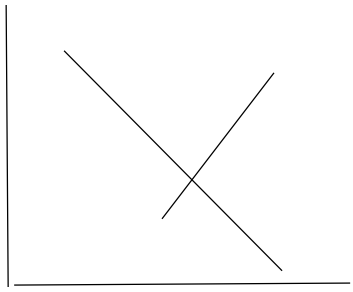
Graphs that illustrates the global market



The Global Market



An international borrower



An international lender
The supply is greater than the demand

Debtors and Creditors

- A debtor nation is a country that during its entire history has borrowed more from the rest of the world than it has lent to it
- Canada is a debtor nation, but the United States is the world's largest debtor nation
- A creditor nation is a country that has invested more in the rest of the world than other countries have invested in it
- The difference between being a borrower/lender nation and being a creditor/debtor nation is the difference between stocks and flows of financial capital
- When we think if a country is a net borrower, it sounds like a bad thing, but it is not. If we are borrowing in productive investment, then borrowing is not a bad thing

For Canada in 2013,

- Net exports were - $32 billion
- Government sector was $57 billion
- Private sector balance was $25 billion

Net exports equals the sum of the government sector balance and the private sector balance

ECON 1010 – LECTURE #7 – CHAPTER 26 – AGGREGATE SUPPLY AND AGGREGATE DEMAND

Professor: Gordana Colby

Quantity Supplied and Supply

- The quantity of real GDP supplied is the total quantity that firms plans to produce during a given period
- Aggregate supply in the relationship between the quantity of real GDP supplied and the price level
- We distinguish two time frames associated with different states of the labour market

Long-Run Aggregate Supply

- It is the relationship between the quantity of real GDP supplied and the price level when real GDP equals potential GDP
- Potential GDP is independent of the price level
- The long-run aggregate supply curve [LAS] is vertical at potential GDP

Short-Run Aggregate Supply

- It is the relationship between the quantity of real GDP supplied and the price level when the money wage rate, the prices of other resources and potential GDP remain constant
- A rise in the price level with no change in the money, wage rate and other factor prices increases the quantity of real GDP supplied
- Its curve [SAS] is upward sloping

Changes in Aggregate Supply

- Aggregate supply changes if an influence on production plans other than the price level changes

These influences include:

- Changes in the potential GDP
- Changes in the money wage rate [and other factor prices]

Changes in Potential GDP

- When the potential GDP increases, both the LAS and SAS curves shift rightward

Potential GDP increases if:

- The full employment quantity of labour increases
- The quantity of capital [physical or human] increases
- An advance in technology occurs

Aggregate Demand

- The quantity of real GDP demanded, Y, is the total amount of final goods and services produced in Canada that people, businesses, governments and foreigners plan to buy
- The quantity is the sum of consumption expenditures, C, investment, I, government expenditure, G and net exports, X - M
- That is, Y = C + I + G + X – M
- Buying plans depend on many factors and some of the main ones are…

1) The price level

2) Expectations
3) Fiscal policy and monetary policy

Substitution Effects

Intertemporal substitution effect:

- It is a rise in the price level, other things remaining the same, decreases the real value of money and raises the interest rate
- When the interest rate rises, people borrow and spend less, so the quantity of real GDP demanded decreases
- Similarly, a fall in the price level increases the real value of money and lowers the interest rate

ECON 1010 – LECTURE # 8 - CHAPTER 26 continued
Professor: Gordana Colby

Changes in the Aggregate Demand

- A change in any influence on buying plans other than the price level changes aggregate demand
- The main influences on aggregate demand are...

1) Expectations
2) Fiscal policy and monetary policy
3) The world economy

Thought Question:
When the quantity of real money increase, what happens to the interest rate?
ANSWER: It increases

Expectations

- Expectations about future income, future inflation and future profits change aggregate demand
- Increases in expected future income increase people's consumption today and increases aggregate demand
- You are going to buy more now, so aggregate demand will increase
- Our expectations influence aggregate demand

Fiscal Policy

- It is the government's attempt to influence the economy by setting and changing taxes, making transfer payments, and purchasing goods and services
- A tax cut or an increase in transfer payments increases households' disposable income – aggregate income minus taxes plus transfer payments
- This policy is focusing on taxation

Monetary Policy

- It is the changes in the interest rates and the quantity of money in the economy
- An increase in the quantity of money increases buying power and increases aggregate demand
- A cut in interest rates increases expenditure and increases aggregate demand
- This policy is focusing on the quantity of money

The World Economy:
Exchange rate

- If the exchange rate increase, the Canadian dollar is appreciating – we are getting more foreign currency for each Canadian dollar
- If the Canadian dollar is depreciating, we get less foreign currency and less expensive exports
- The world economy influences aggregate demand in two ways

A fall in the foreign exchange rate lowers the price of domestic goods and services relative to foreign goods and services which increases exports, decreases imports, and increases aggregate demand
AND
An increase in foreign income increases the demand for the Canadian exports and increases aggregate demand

Short - Run Equilibrium

- It occurs when the quantity of real GDP demanded = the quantity of real GDP supplied at the point of intersection of the AD [aggregate demand] curve and SAS curve [short-run aggregate supply]

Long - Run Equilibrium

- It occurs when the real GDP = potential GDP – when the economy is on its LAS curve [long-run aggregate supply]
- It occurs at the intersection of the AD and LAS curve

The Business Cycle in the AS-AD Model

- The business cycle occurs because the aggregate demand and the short-run aggregate supply fluctuate, but the money wage does not change rapidly enough to keep real GDP at potential GDP
- An **above full-employment equilibrium** is an equilibrium in which real GDP exceeds potential GDP
- A **full-employment equilibrium** is an equilibrium in which real GDP equals potential GDP
- A **below full-employment equilibrium** is an equilibrium in which potential GDP exceeds real GDP

Macroeconomic Schools of Thought

- It can be divided into three broad schools of thoughts

Classical:

- The macroeconomist believes that the economy is self-regulating and always at full employment
- This term **"classical"** derives from the name of the founding school of economics that includes Adam Smith, David Ricardo and John Stuart Mill
- A new classical view is that business cycle fluctuations are the efficient responses of a well-functioning market economy that is bombarded by shocks that arise from the uneven pace of technological change
- The economy itself is regulating and if we leave it alone it will self-regulated and we will always be at full employment

Keynesian:

- The macroeconomist believes that left alone, the economy would rarely operate at full employment and that to achieve and maintain full employment, active help from fiscal policy and monetary policy is required
- The term **"Keynesian"** derives from the name of one of the twentieth century's most famous economists, John Maynard Keynes

- A new Keynesian view holds that not only is the money wage rate sticky but also are the prices of goods sticky

Monetarist:

- The macroeconomist believes that the economy is self-regulating and that it will normally operate at full employment, provided that the monetary policy is not erratic and that the pace of money growth is kept steady
- This term **"monetarist"** was coined by an outstanding twentieth-century economist, Karl Brunner to describe his own views and those of Milton Friedman

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ECON 1010 – LECTURE #8 – CHAPTER 27 – EXPENDITURE MULTIPLIERS

Professor: Gordana Colby

Fixed Prices and Expenditure Plans

- The Keynesian model describes the economy in the very short run when prices are fixed

Because each firm's price is fixed, for the economy as a whole

1) The price level is fixed
2) Aggregate demand determines real GDP

Expenditure Plans

- The components of aggregate expenditure sum to real GDP
- That is, Y = C+I+G+X-M
- Two of the components of aggregate expenditure, consumption and imports are influenced by real GDP

Two – Way link between Aggregate Expenditure and Real GDP

Other things remaining the same,

- An increase in the real GDP increases aggregate expenditure
- An increase in aggregate expenditure increases real GDP

Consumption and Savings Plans

- Consumption expenditure is influenced by many factors but the most direct one is disposable income
- Disposable income is an aggregate income or real GDP, Y, minus net taxes, T
- Call disposable income YD
- The equation for disposable income : YD = Y – T
- Disposable income, YD is either spent on consumption goods and services, C, or saved, S
- [above] : that is, YD = C + S
- The relationship between consumption expenditure and disposable income, other things remaining the same is **the consumption function**
- The relationship between saving and disposable income, other things remaining the same is **the saving function**
- When consumption expenditure exceeds disposable income, saving is negative [dissaving]
- When consumption expenditure is less than disposable income, there is saving

Marginal Propensities to Consume [MPC]

- It is the fraction of a change in disposable income spent on consumption
- It is calculated as the change in consumption expenditure, [C] divided by the change in disposable income [YD] that brought it about

Marginal Propensities to Save [MPS]

- It is the fraction of a change in disposable income that is saved
- It is calculated as the changed in saving, [S] divided by the change in disposable income, [YD] that brought it about

Marginal Propensities to Consume & Save

- The MPC + The MPS equals 1
- To see why, [C] + [S] =YD
- C / YD + S / YD = YD / YD

OR

- MPC + MPS = 1

Foreign Income

On the phone

ECON 1010 – Lecture #9 - Chapter 28: The Business Cycle, Inflation and Deflation
Professor: Gordana Colby

Inflation Cycles

- In the long run, inflation occurs if the quantity of money grows faster than potential GDP
- In the short run, many factors can start an inflation and real GDP and the price level interact

Demand – Pull Inflation

- An inflation that starts because aggregate demand increases
- Demand-pull inflation can begin with any factor that increases aggregate demand
- Examples are a cut in the interest rate, an increase in the quantity of money, an increase in government expenditure, a tax cut, an increase in exports or an increase in investment stimulated by an increase in expected future profits

Cost - Push Inflation

- It is an inflation that starts with an increase in costs

There are two main sources of increased costs:

1) An increase in the money wage rate
2) An increase in the money price of raw materials, such as oil

Aggregate Demand Response

- The initial increase in costs creates a one-time rise in the price level, not inflation
- To create inflation, aggregate demand must increase
- That is, the Bank of Canada must increase the quantity of money persistently

Expected Inflation

- Aggregate demand increases, but the increase is expected so its effect on the price level is expected
- The money wage rate rises in line with the expected rise in the price level

Forecasting Inflation

- To expect inflation, people must forecast it
- The best forecast available is one that is based on all the relevant information and is called a **rational expectation**

Inflation and the Business Cycle

- When the inflation forecast is correct, this economy operates at full employment
- If aggregate demand grows faster than expected, real GDP moves above potential GDP…the inflation rate exceeds its expected rate and the economy behaves like it does in a demand – pull inflation
- If aggregate demand grows more slowly than expected…. The real GDP falls below potential GDP, inflation slows and the economy behaves like it does in a cost-push inflation

Deflation

- It is when the price level goes down
- An economy experiences deflation when it has a persistently falling price level

Three things we should take to consider:

1) What causes deflation
2) What are the consequences of deflation?
3) How can deflation be ended?

1) What causes Deflation?

- The price level falls persistently if aggregate demand increases at a persistently slower rate than aggregate supply

The Quantity Theory and Deflation

Inflation rate = Money growth rate + Rate of velocity
Change - Real GDP growth rate

Deflation occurs if…
Money growth rate < Real GDP growth rate – Rate of velocity change

Ex. In Japan, real GDP growth rate was 0.8 percent a year, the money growth rate was 2.5 percent a year and the rate of velocity change was -3 percent a year.
Inflation rate = Money growth rate + Rate of velocity change – Real GDP growth rate
Inflation rate = [2.5 + (-3) – 0.8] percent a year
Deflation rate = 1.3 percent a year

2) What are the consequence of Deflation

- Unanticipated deflation redistributes income and wealth, lowers real GDP and employment, and diverts resources from production

3) How can deflation be ended?

- It can by increasing the growth rate of money
- Also, to make the money growth rate exceed the growth rate of real GDP minus the rate of velocity change

The Phillips Curve

- It is a curve that shows the relationship between the inflation rate and the unemployment rate

There are two time frames for Phillips curves:

1) The short-run Phillips curve
2) The long-run Phillips curve

The Short – Run Phillips Curve

- It shows the tradeoff between the inflation rate and unemployment rate, holding constant

1. The expected inflation rate
2. The natural unemployment rate

Change in Expected Inflation [for the short – run curve]

- If expected inflation fails to 6 percent a year, the Short – Run Phillips Curve shifts downward by an amount equal to the fall in the expected inflation rate

The Long - Run Phillips Curve

- It shows the relationship between inflation and unemployment when the actual inflation rate equals the expected inflation rate

Change in the Natural Unemployment Rate

- A change in the natural unemployment rate shifts both Long – Run and Short – Run Phillips Curves

ECON 1010 – Lecture #9 - Chapter 29: The Fiscal Policy

Professor: Gordana Colby

The Federal Budget

- It is the annual statement of the federal government's outlays and revenues

It has two purposes:

1) To finance the activities of the federal government
2) To achieve macroeconomic objectives

Fiscal Policy

- It is the use of the federal budget to achieve macroeconomic objectives such as full employment, sustained economic growth and price level stability

Budget Making

- The federal government and Parliament make fiscal policy
- After a long, draw – out process of consultations, the Minister of Finance presents a budget plan to Parliament
- The Parliament debates the plan and enacts the laws necessary to implement it

Highlights of the 2013 Budget

- The projected fiscal 2013 federal budget has revenues of $262 billion, outlays of $276 billion, and a projected deficit of $14 billion
- Revenues come from personal income taxes, corporate income taxes, indirect taxes and investment income
- Personal income taxes are the largest revenue source
- Outlays are transfer payments, expenditure on goods and services and debt interest
- Transfer payments are the largest item of outlays

Budget Balance

- The federal government's budget balance equals revenues minus outlays

The Budget in Historical Perspective

- During the 1960s, outlays and revenues increased
- During the late 1970s and through the 1980s, outlays continued to rise but revenues fell and then remained steady. A large budget deficit arose.
- During the 1990s, expenditure cuts eliminated the budget deficit and after 1997, the budget returned to surplus
- A deficit re-emerged during the 2008 – 2009 recession

Deficit and Debt

- Government Debt is the total amount that the government is borrowing
- It is the sum of past deficits **minus** the past surpluses

The Supply – Side Effects of Fiscal Policy

- Fiscal policy has important effects employment, potential GDP and aggregate supply called **supply – side effects**
- An income tax changes full employment and potential GDP
- The before – tax real wage rate rises but the after – tax real wage rate fails
- The gap created between the before – tax and after – tax wage rates is called **the tax wedge**

Taxes on Expenditure and the Tax Wedge

- Taxes on consumption expenditure add to the tax wedge
- The reason is that a tax on consumption raises the prices paid for consumption goods and services and is equivalent to a cut in the real wage rate
- If the income tax rate is 25 percent and the tax rate on consumption expenditure is 10 percent, a dollar earned buys only 65 cents worth of goods and services
- The tax wedge is 35 percent

Taxes and the Incentive to Save and Invest

- A tax on capital income lowers the quantity of saving and investment and slows the growth rate on real GDP
- The interest rate that influence saving and investment is the real after - tax interest rate
- The real after – tax interest rate subtracts the income tax paid on interest income from the real interest
- Taxes depend on the nominal interest rate. So the true tax on interest income depends on the inflation rate

Tax Revenues and the Laffer Curve

- The relationship between the tax rate and the amount of tax revenue collected is called the **Laffer curve**
- At the tax rate T*, tax revenue is maximized
- For the tax rate below T*, a rise in the tax rate increases tax revenue
- For the tax rate above T* , a rise in the tax rate decreases tax revenue

Fiscal Stimulus

- It is the use of fiscal policy to increase production and employment

Fiscal stimulus can be either…

- Automatic
- Discretionary

Automatic Fiscal Policy

- It is a fiscal policy action triggered by the state of the economy with no government action

Discretionary Fiscal Policy

- It is a fiscal policy action that is initiated by an act of Parliament

Automatic Fiscal Policy and Cyclical and Structural Budget Balances

Two items in the government budget change automatically in response to the state of the economy

- Tax revenues
- Transfer payments

Automatic Changes in Tax Revenues

- Parliament sets the tax rates that people must pay
- The tax dollars people pay depend on tax rates and incomes
- But incomes vary with real GDP so tax revenues depend on real GDP
- When the real GDP increases in an expansion, tax revenues increases
- When real GDP decreases in a recession, tax revenues decreases

Transfer Payments

- The government creates programs that pay benefits to qualified people and businesses
- These transfer payments depend on the economic state of the economy
- When the economy is in an expansion, unemployment falls, so unemployment benefits decrease
- When the economy is in a recession, unemployment rises, so the unemployment benefits increase

Automatic Stimulus

- In a recession, tax revenues decrease and outlays increase
- So the budget provides an automatic stimulus that helps shrink the recessionary gap
- In a boom, tax revenues increase and outlays decrease

Cyclical and Structural Balances

- The **structural surplus or deficit** is the budget balance that would occur if the economy were at full employment and real GDP were equal to potential GDP
- The **cyclical surplus or deficit** is the actual surplus or deficit **minus** the structural surplus or deficit

Discretionary Fiscal Stimulus

- Most discretionary fiscal stimulus focuses on its effects on aggregate demand

Fiscal Stimulus and Aggregate Demand

- Changes in government expenditure and taxes change aggregate demand and have multiplier effects

The Main fiscal multiplier:

1) Government expenditure multiplier

1) The Government Expenditure Multiplier

- It is the quantity effect of a change in government expenditure on real GDP
- Because government expenditure is a component of aggregate expenditure, an increase in government expenditure increases real GDP
- When real GDP increases, income rise and consumption expenditure increases. Aggregate demand increases.

- If this were the only consequence of the increase in government expenditure the multiplier would be >1
- But an increase in government expenditure increases government borrowing and raises the real interest rate
- With the higher cost of borrowing, investment decreases, which partly offsets the increase in government expenditure
- If this were the only consequence of the increase in government expenditure, the multiplier would be <1

Which effect is stronger? The crowding – out effect dominates and the multiplier is <1.

ECON 1010 – Lecture #10 - Chapter 30: The Monetary Policy
Professor: Gordana Colby

What is the Monetary Policy?

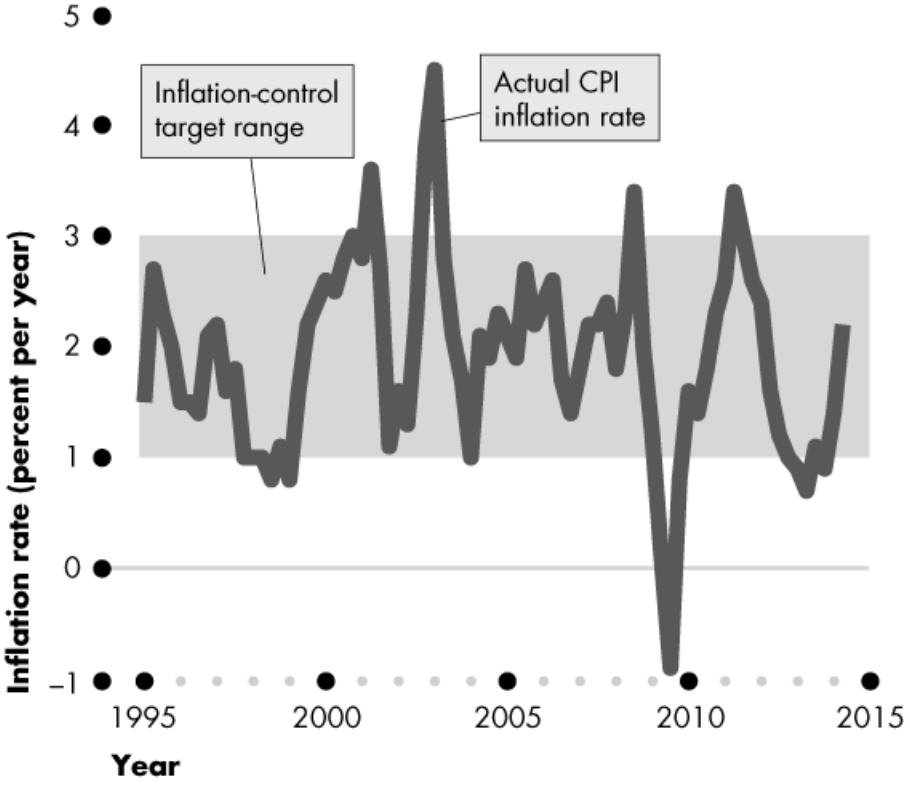
- It supervises the financial institutions it is the sole issuer of Canadian money
- The Bank of Canada [The central bank] conducts monetary policy for the government of Canada was founded in 1935

The Monetary Policy "objectives"

- Its job is to control the quantity of money and interest rates in order to avoid inflation and prevent excessive swings in real GDP growth and unemployment.

Actual Inflation

- **[Below]** : It shows the Bank's inflation target
- The actual CPI inflation rate has only rarely gone outside the target range
- It displays no bias



(a) Inflation target and outcome

Rationale for an Inflation – Control Target

2 main benefits flow from adopting an inflation – control:

1) There are fewer surprises and mistakes on the part of savers and investors
2) It anchors expectations about future inflation

The Controversy about the Inflation – Control Target
The critics of inflation targeting fear that...

- By focusing on inflation, the Bank might permit the unemployment rate to rise or real GDP growth to slow
- The Bank might permit the value of the dollar rise on the foreign exchange market and make exports suffer

The supporters of inflation targeting respond:

1) They believe that keeping inflation low and stable is the best way to achieve full employment and sustained economic growth
2) The Bank's record is good. The last time the Bank created a recession was at the beginning of the 1990s when it was faced with double –digit inflation

Responsibility for the Monetary Policy

- The Bank of Canada's Governing Council is responsible for the conduct of monetary policy
- The Governor and the Minister of Finance must consult regularly
- If for any reason, the Governor and the Minister disagree in a profound way, the Minister may direct the Bank in writing to follow a specified course and the Bank would be obliged to accept the directive

What is the Monetary Policy Instrument?

- It is a variable that the Bank of Canada can directly control or closely target

The Bank of Canada's 3 possible instruments
1. The quantity of money (the monetary base)
2. The price of Canadian money on the foreign exchange market (the exchange rate)
3. The opportunity cost of holding money (the short-term interest rate)

- The Bank of Canada can set any one of these three variables, but it cannot set all three
- The values of two of them are the consequence of the value at which the third one is set
- If the Bank decreased the quantity of money, both the interest rate and the exchange rate would rise
- If the Bank raised the interest rate, the quantity of money would decrease and the exchange rate would rise
- If the Bank lowered the exchange rate, the quantity of money would increase and the interest rate would fall

The Overnight Loans Rate

- It is the specific interest rate that the Bank of Canada targets, which is the interest rate on overnight loans that chartered banks make to each other
- The Bank of Canada's choice of policy instrument [which is the same choice as that made by most other major central banks] is a short-term interest rate
- The exchange rate and the quantity of money are to find their own equilibrium values
- When the Bank wants to slow inflation, it raises the overnight loans rate
- When inflation is low and the Bank wants to avoid recession, it lowers the overnight loans rate

The Bank's Interest Rate Decision

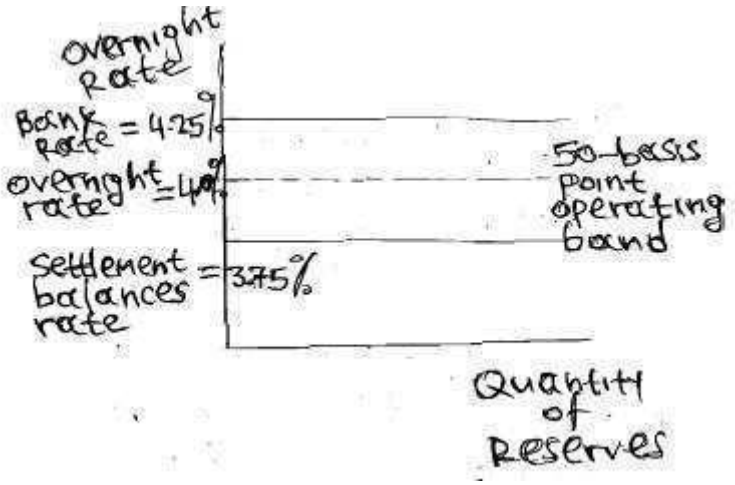
- To make its interest rate decision, the Bank of Canada gathers a large amount of data about the economy, the way it responds to shocks, and the way it responds to policy
- The Bank must then process all this data and come to a judgement about the best level

for the policy instrument
- After announcing an interest rate decision, the Bank engages in a public communication to explain the reasons for its decision

Hitting the Overnight Loans Rate Target
- Once an interest rate decision is made, the Bank of Canada achieves its target by using two tools:
1. Operating band
2. Open market operations

Operating Band
- It is the target overnight loans rate plus or minus 0.25 percentage points. So the operating band is 0.5 percentage points wide

The Bank creates the operating band by setting:
1) **Bank rate**, the interest rate that the Bank charges big banks on loans, is set at the target overnight loans rate plus 0.25 percentage points
2) **Settlement balances rate**, the interest rate the Bank pays on reserves, is set at the target overnight loans rate minus 0.25 percentage point



Exchange Rate Fluctuations
- The exchange rate responds to changes in the interest rate in Canada relative to the interest rates in other countries - **the Canadian interest rate differential**
- But other factors are also at work, which make the exchange rate hard to predict

Money and Bank Loans
- When the Bank lowers the overnight loans rate, the quantity of money and the quantity of bank loans increase
- Consumption and investment plans change

Long-Term Real Interest Rate
- Equilibrium in the market for loanable funds determines the long-term real interest rate, which equals the nominal interest rate minus the expected inflation rate
- The long-term real interest rate influences expenditure plans

Expenditure Plans

- The ripple effects that follow a change in the overnight rate change three components of aggregate expenditure:
  1) **Consumption expenditure**
  2) **Investment**
  3) **Net exports**
- A change in the overnight loans rate changes in aggregate expenditure plans, which in turn changes aggregate demand, real GDP, and the price level
- So the Bank influences the inflation rate and output gap

Loose Links and Long and Variable Lags

- Long-term interest rates that influence spending plans are linked loosely to the overnight loans rate
- The response of the **real** long-term interest rate to a change in the nominal rate depends on how inflation expectations change
- The response of expenditure plans to changes in the real interest rate depends on many factors that make the response hard to predict
- The monetary policy transmission process is long and drawn out and doesn't always respond in the same way

Extraordinary Monetary Stimulus

- During the financial crisis and recession of 2008 – 2009, the Bank of Canada, U.S Federal Reserve and other central banks lowered their overnight rates to the floor

Though Question: What can a central bank do to stimulate the economy when it cannot lower the overnight loans rate?

The Key Elements of the Crisis [these three put banks under stress**]**

1) Widespread fall in asset prices
2) A significant currency drain
3) A run on the bank

- When asset prices fall, bank suffer a capital loss and if prices fall enough, banks' liabilities exceed their assets
- A large currency drain leaves the banks short of reserves
- A run on a bank occurs when depositors lose confidence and withdraw fund – the bank loses reserves, calls in loans, sells securities at low prices and its equity shrinks

The Policy Actions

Policy actions dribbled out for more than a year and they are …

1) Massive open market operations
2) Extension of deposit insurance
3) Central banks and governments swapped government securities for toxic assets
4) Government bought bank shares
5) Fair value accounting

These action provided banks with more reserves, more secure depositors and safe liquid assets

Policy Strategies and Clarity

Two other approaches to monetary policy that other countries have used are…

1) Inflation rate targeting
2) Policy interest rate [for the Bank of Canada, the overnight loans rate] by using a rule or formula

Inflation Rate Targeting

- It is a monetary policy strategy in which the central bank makes a public commitment
- It is to achieve an explicit inflation target
- It is to explain how its policy actions will achieve that target
- Several central banks practice inflation targeting and have done so since the mid-1990s
- Inflation targeting is a strategy that avoids serious inflation and persistent deflation

Policy Interest Rate Rule

- The most famous and most studied interest rate rule is the **Taylor rule**
- Supporters of the **Taylor rule** argue that by using a rule to set the interest rate, monetary policy contributes towards lessening uncertainty
- With less uncertainty, financial markets, labour markets, and goods market work better as traders are more willing to make long-term commitments