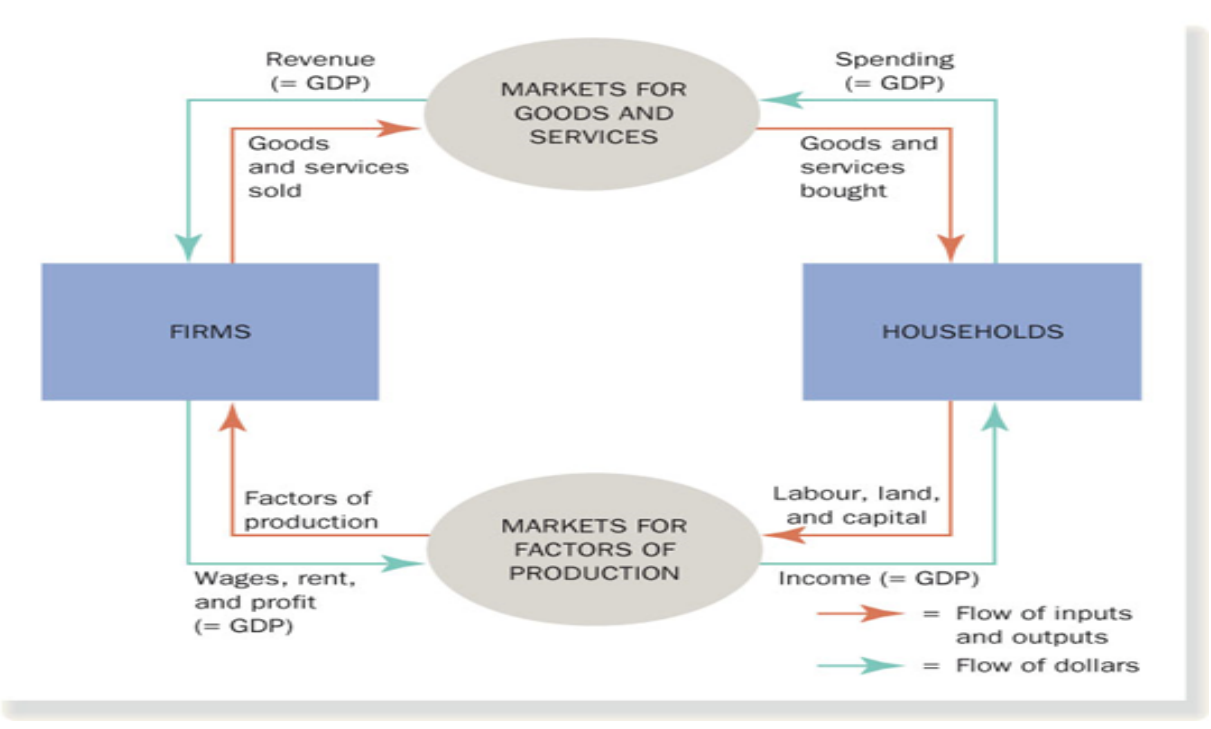
Reading Notes

2014-09-12 4:25 PM

Chapter 5

- Microeconomics is the study of how individual households and firms make decisions and how they interact with one another in markets.
- Macroeconomics is the study of the economy as a whole.
- A question is macroeconomic in nature if it concerns the workings of the entire economy.
- GDP measures two things at once: the total income of everyone in the economy and the total expenditure on the economy's output of goods and services.
- For an economy as a whole, income must equal expenditure.
- The circular-flow diagram describes all transactions between households and firms in a simple economy. In this economy, households buy goods and services from firms; these expenditures flow through the markets for goods and services. The firms in turn use the money they receive from sales to pay workers' wages, landowners' rent, and firm owners' profit; this income flows through the markets for the factors of production. In this economy, money flows from households to firms and then back to households.
- 
Revenue (= GDP)
MARKETS FOR GOODS AND SERVICES
Spending (= GDP)
Goods and services sold
Goods and services bought
FIRMS
HOUSEHOLDS
Factors of production
Labour, land, and capital
MARKETS FOR FACTORS OF PRODUCTION
Wages, rent, and profit (= GDP)
Income (= GDP)
= Flow of inputs and outputs
= Flow of dollars
- GDP can be computed in one of two ways, by adding up the total expenditure by households, or by adding up the total income (wages, rent, and profit) paid by firms. Because all expenditure in the economy ends up as someone's income, GDP is the same regardless of how we compute it.
- GDP is the market value of all final goods and services produced within a country in a given period of time. By using the market prices (the amount people are willing to pay for different goods), GDP adds together many different kinds of products into a single measure of the value of economic activity. GDP includes all items produced in the economy and sold legally in markets. GDP includes only the value of final goods. The reason is that the value of intermediate goods is already included in the prices of the final goods. When an intermediate good is produced and, rather than being used, is added to a firm's inventory of goods to be used or sold at a later date. GDP includes both tangible goods and intangible services. GDP includes goods and services currently produced. GDP measures the value of a production within the geographic confines of a country.
- GDP is a good measure of economic well-being because people prefer higher to lower incomes. But it is not a perfect measure of well-being. For example, GDP excludes the value of leisure and the value of a clean environment.
- Consumption includes spending on goods and services by households, with the exception of purchases of new households.
- Investment is the purchase of goods that will be used in the future to produce more goods and services. Includes households' purchases of new housing.
- Government purchases include spending on goods and services by local, territorial, provincial, and federal governments. It includes the salaries of government workers and spending on public works. Transfer payments are government spending that is not made in exchange for a currently produced good or service. Transfer payments alter household income, but they do not reflect the economy's production.
- Net exports equal the purchases of domestically produced goods by foreigners (exports) minus the domestic purchases of foreign goods (imports). When a domestic household, firm, or government buys a good or service from abroad, the purchase reduces net exports--but because it also raises consumption, investment, or government purchases, it does not affect GDP
- Nominal GDP is the production of goods and services valued at current prices. Real GDP is the production of goods and services valued at constant prices. Real GDP uses constant base-year prices to place a value on the economy's production of goods and services.
- GDP deflator measures the level of prices in the economy(Nominal GDP/Real GDP) x100. GDP deflator reflects the prices of goods and services but not the quantities produced.
- Inflation is a situation in which the economy's overall price level is rising. The inflation rate is the percentage change in some measure of the price level from one period to the next. Using the GDP deflator the inflation rate between two consecutive years is computed as follows:
    - Inflation rate in year 2= [(GDP deflator in year 2 - GDP deflator in year 1)/GDP deflator in year 1] x100
- A recession is a period (usually two consecutive quarters of falling) in which the real GDP declines.

Chapter 6

- The consumer price index is used to monitor changes in the cost of living over time. It is a measure of the overall cost of the goods and services bought by a typical consumer.
- Inflation is a term used to describe a situation in which the economy's overall price level is rising. The inflation rate is the percentage change in the price level from the previous period. Core inflation is a measure of the underlying trend of inflation.
- There are 3 problems with the CPI that are widely acknowledged but difficult to solve.
    - Commodity substitution bias, this is when change in prices from one year to the next don't change proportionately (some prices rise more than others). Consumers respond by substituting toward goods that have become relatively less expensive. If a price index is computed assuming a fixed basket of goods, it ignores the possibility of consumer substitution and, therefore, overstates the increase in the cost of living from one year to the next.
    - The introduction of new goods also presents a problem when computing CPI. When a new good is introduced, consumers have more variety to choose from. Greater variety, in turn, makes each dollar more valuable, so consumers need fewer dollars to maintain any given standard of living.
    - Unmeasured quality change is another problem that arises when computing CPI. If the quality of a good deteriorates from one year to the next, the value of a dollar falls, even if the price of the good stays the same. Similarly, if the quality rises from one year to the next, the value of a dollar rises.
- Although the GDP deflator measures the overall level of prices in the economy, it differs from the consumer price index because it includes goods and services produced rather than goods and services consumed. As a result, imported goods affect the consumer price index but not the GDP deflator. In addition, while the consumer price index uses a fixed basket of goods, the GDP deflator automatically changes the group of goods and services over time as the composition of GDP changes.
- Indexation is the automatic correction of a dollar amount for the effects of inflation by law or contract.
- Nominal interest rate is the interest rate as usually reported without a correction for the effects of inflation. Real interest rate is the interest rate corrected for the effects of inflation. The real interest is the difference between these two measures and it tells you how fast the purchasing power of your bank account rises over time.

Chapter 7

- Productivity is the amount of goods and services produced for each hour of a worker's time. A nation's standard of living is determined by the productivity of its workers.
- The reason why GDP can measure the total income earned by everyone in the economy and the total expenditure on the economy's output of goods and services is that, for the economy as a whole, they must be equal (income=output)
- Inputs used to produce goods and services (labour, capital, and so on) are called factors of production
- 4 determinants in productivity are
    - Physical capital: the stock of equipment and structures that are used to produce goods and services.
    - Human Capital: the knowledge and skills that workers acquire through education, training, and experience
    - Natural resources: the inputs into the production of goods and services that are provided by nature, such as land, rivers, and mineral deposits
    - Technological knowledge: society's understanding of the best ways to produce goods and services.
- One way to raise future productivity is to invest more current resources in the production of capital. A well-functioning and carefully regulated financial market, one that quickly and efficiently brings savings and investment together with minimal risk and in a transparent way, is a critical ingredient in the recipe for economic growth.
- A nation can increase their capital stock by saving more, this results in fewer resources needed to make consumption goods, and more resources are available to make capital goods. An increase in capital stock leads to rising productivity and more rapid growth in GDP.
- Diminishing returns is the property whereby the benefit from an extra unit of an input declines as the quantity of the input decreases. In other words, when workers already have a large quantity of capital to use in producing goods and services, giving them an additional unit of capital increases their productivity only slightly.
- The catch-up effect is the property whereby countries that start off poor tend to grow more rapidly than countries that start off rich.
- A capital investment that is owned and operated by a foreign entity is called foreign direct investment. For example, Bombardier might build a plant to assemble planes in Ireland. An investment that is financed with foreign money but operated by domestic residents is called foreign portfolio investment. For example, a Canadian might buy stock in an Irish corporation; the Irish corporation can use the proceeds from the stock sale to build a new factory. In both cases, Canadians provide the resources necessary to increase the stock of capital in Ireland. That is, Canadian saving is being used to finance Irish investment.
- Investment from abroad is one way for a country to grow. Even though some of the benefits from this investment flow back to the foreign owners, this investment does increase the economy's stock of capital, leading to higher productivity and higher wages.
- One way in which government policy can enhance the standard of living is to provide good schools and to encourage the population to take advantage of them. Some economists have argued that human capital is particularly important for economic growth because human capital conveys positive externalities. An externality is the effect of one person's actions on the well-being of a bystander.
- One problem facing some poor countries is the *brain drain*--the emigration of many of the most highly educated workers to rich countries, where these workers can enjoy a higher standard of living.
- Other things equal, healthier workers are more productive. Making the right investments in the health of the population is one way for a nation to increase productivity and raise living standards.
- The casual link between health and wealth runs in both directions. Poor countries are poor in part because their populations are not healthy, and their populations are not healthy in part because they are poor and cannot afford adequate health care and nutrition. Policies that lead to more rapid economic growth would naturally improve health outcomes, which in turn would further promote economic growth.
- Another way in which policymakers can foster economic growth is by protecting property rights and promoting political stability.
- The division of production among many firms allows the economy's factors of production to be used as effectively as possible. To achieve this outcome, the economy has to coordinate transactions among these firms, as well as between firms and consumers. Market economies achieve this coordination through market prices. That is, market prices are the instrument with which the invisible hand of the marketplace brings supply and demand into balance in each of the many thousands of markets that make up the economy.
- An important prerequisite for the price system to work is an economy-wide respect for *property rights*: the ability of people to exercise authority over the resources they own. There must be an economy-wide respect for property rights for the price system or the free market to work. Lack of respect for property rights or for the enforcement of property rights causes political instability and discourages savings and investment. Property rights are necessary for economic growth.
- Some of the world's poorest countries have tried to achieve more rapid economic growth by pursuing *inward-oriented policies*. These policies are aimed at raising productivity and living standards within the country by avoiding interaction with the rest of the world. Most economists today believe that poor countries are better off pursuing *outward-oriented policies* that integrate these countries into the world economy. A country that eliminates trade restrictions will, therefore, experience the same kind of economic growth that would occur after a major technological advance.
- Economists and other social scientists have long debated how population affects a society. The most direst effect is on the size of the labour force: A large population means more workers to produce goods and services. At the same time, however, a large population means more people to consume those goods and services. So while a large population means a larger total output of goods and services, it need not mean a higher standard of living for a typical citizen.
- The World Bank is an international organization that, among other things, encourages the flow of capital to poor countries. It obtains funds from the world's advanced countries and loans them to less-developed countries so they can invest in capital infrastructure. The World Bank offers advice to developing countries on how the funds might be best used.

Chapter 8

- The financial system consists of those institutions in the economy that help to match one person's saving with another person's investment. At the broadest level, the financial system moves the economy's scarce resources from savers (people who spend less than they earn) to borrowers (people who spend more than they earn).
- Savers supply their money to the financial system with the expectation that they will get it back with interest at a later date. Borrowers demand money from the financial system with the knowledge that they will be required to pay it back with interest at a later date.
- Financial markets are financial institutions through which savers can directly provide funds to borrowers. Bond and stock market are the two most important financial markets
    - A bond is a certificate of indebtedness. It identifies the time at which the loan will be repaid, called the date of maturity, and the rate of interest that will be paid periodically until the loan matures. The term is the length of time until the bond matures. A perpetuity is a type of bond that never matures. A bond holds a credit risk--the probability that the borrower will fail to pay some of the interest. Such a failure to pay is called a default.
    - Stock represents ownership in a firm and is, therefore, a claim to the profits that the firm makes. The sale of a stock to raise money is called equity finance, whereas the sale of bonds is called debt finance. Compared to bonds, stocks offer the holder both higher risk and potentially higher return. A stock index is computed as an average of a group of stock prices.
- Financial intermediaries are financial institutions through which savers can indirectly provide funds to borrowers. The term intermediary reflects the role of institutions in standing between savers and borrowers. Two of the most important financial intermediaries are banks and mutual funds.
    - Banks are the financial intermediaries with which people are most familiar. A primary job of banks is to take in deposits from people who want to save and use these deposits to make loans to people who want to borrow. Besides being financial intermediaries, banks play a second important role in the economy: they facilitate purchases of goods and services by allowing people to write cheques against their deposits. In other words, banks help create a special asset that people can use as a medium of exchange (an item that people can easily use to engage in transactions).
    - A mutual fund is an institution that sells shares to the public and uses the proceeds to buy a selection, or portfolio, of various types of stocks or bonds, or both stocks and bonds. The primary advantage of mutual funds is that they allow people with small amounts of money to diversify. Mutual funds make diversification easy. With only a few hundred dollars, a person can buy shares in a mutual fund and, indirectly, become the part owner or creditor of hundreds of major companies. A second advantage claimed by mutual fund companies is that mutual funds give ordinary people access to the skills of professional money managers. However, with thousands of money managers paying close attention to each company's prospects, the price of a company's stock is usually a god reflection of the company's true value. As a result, it is hard to "beat the market" by buying good stocks and selling bad ones. In fact, mutual funds called index funds, which buy all the stocks in a given index, perform somewhat better on average than mutual funds that take advantage of active management by professional money managers.
- Accounting refers to how various numbers are defined and added up.
- A closed economy is one that does not interact with other economies. In particular, a closed economy does not engage in international trade in goods and services, nor does it engage in international borrowing and lending. Because of this, imports and exports are exactly zero, therefore net exports are also zero. Each unit of output sold in a closed economy is consumed by a household, invested by a firm or a household, or bought by the government, represented by the equation Y - C - G = I. The left hand side of the equation (Y - C - G) is the total income in the economy that remains after paying for consumption and government purchases: this amount is called national saving or just saving and thus S = I.
- National saving is the amount of a nation's income that is not spent on consumption or government purchases.
- Private saving (Y - T - C) is the amount of income that households have left after paying their taxes and paying for their consumption. Public saving (T - G) is the amount of tax revenue that the government has left after paying for its spending. S = (Y - T - C) + (T - G)
- If T exceed G, the government runs a budget surplus because it receives more money than it spends. If the government spends more than it receives in tax revenue, then G is larger than T. In this case, the government runs a budget deficit, and public saving T - G is a negative number.
- In the language of macroeconomics, investment refers to the purchase of new capital, such as equipment or buildings. Although the accounting identity S = I shows that saving and investment are equal for the economy as a whole, this does not have to be true for every individual household or firm.
- A market for loanable funds is the market in which those who want to save supply funds and those who want to borrow to invest demand funds. All savers go to this market to deposit their saving, and all borrowers go to this market to get their loans. Thus, the term loanable funds refers to all income that people have chosen to save and lend out, rather than use their own consumption.
- The economy's market for loanable funds, like other markets in the economy, is governed by supply and demand. Saving is the source of the supply of loanable funds and investment is the source of the demand for loanable funds. The interest rate represents the amount that borrowers pay for loans and the amount that lenders receive on their saving. If interest rates are lower than the equilibrium level, the quantity of loanable funds supplied would be less than the quantity of loanable funds demanded. The resulting shortage of loanable funds would encourage lenders to raise the interest rate they charge. A higher interest rate would encourage saving and discourage borrowing for investment. Conversely, if the interest rate were higher than the equilibrium level, the quantity of loanable funds supplied would exceed the quantity of loanable funds demanded.
- If a reform of the tax laws encouraged greater saving, the result would be lower interest rates and greater investment. If a reform of the tax laws encouraged greater investment, the result would be higher interest rates and greater saving. The sum of all past budget deficits minus the sum of all past budget surpluses is called the government debt.
- A change in the government budget balance represents a change in public saving and, thereby, in the supply of loanable funds. Because the budget deficit does not influence the amount that households and firms want to borrow to finance investment at any given interest rate, it does not alter the demand for loanable funds.
- When a government runs a budget deficit, public saving is negative, and this reduces national saving. In other words, when the government borrows to finance its budget deficit, it reduces the supply of loanable funds available to finance investment by households and firms (shifts the supply curve for loanable funds to the left)
- When the budget deficit reduces the supply of loanable funds, the interest rate rises. The higher interest rate then alters the behavior of the households and firms that participate in the loan market. In particular, many demanders of loanable funds are discouraged by the higher interest rate.
- The fall in investment because of government borrowing is called crowding out. When the government reduces national saving by running a budget deficit, the interest rate rises, and investment falls.
- A vicious circle is a cycle that results when deficits reduce the supply of loanable funds, increase interest rates, discourage investment, and result in slower economic growth; slower economic growth leads to lower tax revenue and higher spending on income support programs, and the results can be even higher budget deficits. The only way to break out of this vicious circle is to raise tax rates and cut spending on government programs to eliminate the deficit and halt the circle of deficits, but this leads to slower economic growth and even higher deficits.
- A budget surplus increases the supply of loanable funds, reduce the interest rate, and stimulates investment. A virtuous circle is a cycle that results when surpluses increase the supply of loanable funds, reduce interest rates, stimulate 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.
- Government net debt is the difference between the value of government financial liabilities and financial assets.

Chapter 9

- The economy's natural rate of unemployment refers to the amount of unemployment that the economy normally experiences.
- Cyclical unemployment refers to the year-to-year fluctuations in unemployment around its natural rate, and it is closely associated with the short-run ups and downs of economic activity.
- Frictional unemployment is unemployment that results because it takes time for workers to search for the jobs that best suit their tastes and skills. Frictional unemployment is inevitable simply because the economy is always changing.
- Structural unemployment is unemployment that results because the number of jobs available in some labour markets is insufficient to provide a job for everyone who wants one.
- A person is considered employed if he or she spent some of the previous week working at a paid job. A person is unemployed if he or she is on temporary layoff or is looking for a job. A person who fits neither of the first two categories, such as a full-time student, homemaker, or retiree, is not in the labour force.
- The labour force is the total number of workers, including both the employed and the unemployed. The unemployment rate is the percentage of the labour force that is unemployed (number of unemployed/labour force) x100). The labour-force participation rate is the percentage of the adult population that is in the labour force (labour force/adult population) x100).
- Women tend to have lower rates of labour-force participation than men in the same age group. Young people aged 15 to 24 have much higher rates of unemployment than older people. Similarly aged men and women tend to have similar rates of unemployment.
- Discouraged searchers are individuals who would like to work but have given up looking for a job.
- One reason why economies always experience some unemployment is job search. Job search is the process of matching workers with appropriate jobs.
- An employment insurance is a government program that partially protects workers' incomes when they become unemployed.
- When a minimum wage law forces the wage to remain above the level that balances supply and demand, it raises the quantity of labour supplied and reduces the quantity of labour demanded compared to the equilibrium level. It is important to note that minimum-wage laws are not a predominant reason for unemployment in the economy because most workers in the economy earn wages well above the legal minimum.
- A union is a worker association that bargains with employers over wages and working conditions. The process by which unions and firms agree on the terms of employment is called collective bargaining. If the union and the firm do not reach an agreement, the union can organize a withdrawal of labour from the firm, called a strike. When a union raises the wage above the equilibrium level, it raises the quantity of labour supplied and reduces the quantity of labour demanded, resulting in unemployment.
- A fourth reason why economies always experience some unemployment--in addition to job search, minimum-wage laws, and unions--is suggested by the theory of efficiency wages. According to this theory, firms operate more efficiently if wages are above the equilibrium level. Therefore, it may be profitable for firms to keep wages high even in the presence of a surplus of labour.

Chapter 10

- Money is the set of assets in an economy that people regularly use to buy goods and services from other people. Money has three functions in the economy it is a medium of exchange, a unit of account, and a store of value.
- A medium of exchange is an item that buyers give to sellers when they purchase goods and services. A unit of account is the yardstick people use to post prices and record debts. A store of value is an item that people can use to transfer purchasing power from the present to the future; when a seller accepts money today in exchange for a good or service, that seller can hold the money and become a buyer of another good or service at another time.
- Liquidity is the ease with which an asset can be converted into the economy's medium of exchange. Because money is the economy's medium of exchange, it is the most liquid asset available. Most stocks and bonds can be sold easily with a small cost, so they are relatively liquid assets. By contrast, selling a house, a Rembrandt painting requires more time and effort, so these assets are less liquid.
- When money takes the form of a commodity with intrinsic value, it is called commodity money. The term intrinsic value means that the item would have value even if it were not used as money. For example gold has an intrinsic value.
- Money without intrinsic value is called fiat money. A fiat is simply an order of decree, and fiat money is established as money by government decree. For example, compare the paper dollars in your wallet.
- The quantity of money circulating in the economy, called the money stock, has a powerful influence on many economic variables. Currency is the paper bills and coins in the hands of the public. Currency is clearly the most widely accepted medium of exchange in our economy. Demand deposits are balances in bank accounts that depositors can access on demand simply by writing a cheque or using a debit card.
- Whenever an economy relies on a system of fiat money, as the Canadian economy does, some organization must be responsible for controlling the stock of money. In Canada, that organization is the Bank of Canada (BoC). The BoC is an example of a central bank--an institution designed to control the quantity of money in the economy.
- Ultimately the BoC is controlled by the Canadian government however it is largely independent of the Canadian government. The BoC has four related jobs.
    - To issue currency
    - To act as banker to commercial banks
    - To act as banker to the Canadian government
    - To control the quantity of the money that is available to the economy, called the money supply.
- Decisions by policymakers concerning the money supply constitute monetary policy.
- Deposits that banks have received but have not loaned out are called reserves. If banks hold all deposits in reserve, banks do not influence the supply of money.
- Fractional-reserve banking is a banking system in which banks hold only a fraction of deposits as reserves. The fraction of total deposits that a bank holds as reserves is called the reserve ratio. This ratio is determined by a combination of government regulation and bank policy. A reserve requirement is the minimum amount of reserves that banks hold. In addition banks may hold reserves above the legal minimum, called excess minimum. When banks only hold a fraction of deposits in reserve, banks create money.
- The amount of money the banking system generates with each dollar of reserves is called the money multiplier. The money multiplier is the reciprocal of the reserve ratio (1/R). The higher the reserve ratio, the less of each deposit banks loan out, and the smaller the money multiplier.
- The resources that a bank obtains from issuing equity to its owners are called bank capital. A bank uses these financial resources in various ways to generate profit for its owners.
- Many businesses in the economy rely on leverage, the use of borrowed money to supplement existing funds for investment purposes. Whenever anyone uses debt to finance an investment project, he is applying leverage. The leverage ratio is the ratio of the bank's total assets to bank capital.
- Bank regulators require banks to hold a certain amount of capital. The goal of such a capital requirement is to ensure that banks will be able to pay off their depositors (without having to resort to government-provided deposit insurance funds).
- When the shortage of capital causes a bank to reduce their lending, it is referred to as a credit crunch.
- Central banks like the BoC act as bankers to the commercial banks. These banks hold deposits at the BoC, which are part of their reserves. The rate of interest that central banks charge commercial banks for these loans is called the Bank rate in Canada. Commercial banks never need to pay more than the bank rate for short term loans, because they can always borrow from the Bank of Canada instead. Conversely, commercial banks never need to accept less than the bank rate, minus half a percent, when they make short-term loans, because they can always lend to the BoC instead.
- The overnight rate is the rate of interest on very short-term loans between commercial banks, and it stays very close to the middle of the operating band, so the overnight rate will always be about 1/4 % below the bank rate. The BoC can alter the money supply by changing the bank rate, which in turn causes an equal change in the overnight rate. A higher overnight rate discourages banks from borrowing reserves from the BoC. Thus, an increase in the overnight rate reduces the quantity of reserves in the banking system, which in turn reduces the money supply. Conversely, a lower overnight rate encourages banks to borrow from the BoC, increases the quantity of reserves, and increases the money supply.
- Central banks can increase the supply of money in circulation by buying something. They can decrease the supply of money by selling something.
- The purchase or sale of Government of Canada bonds by the Bank of Canada is referred to as open-market operations. To increase the money supply, the BoC periodically buys Treasury Bills (short-term government bond). To reduce the money supply they sell Treasury Bills.
- Open-market operations that involve nongovernment securities or government securities with long terms to maturity have become known as quantitative easing.
- Another important market in which the BoC buys and sells things is the foreign exchange market, where its purchases and sales of foreign moneys are called foreign exchange market operations.
- Sterilization is the process of offsetting foreign exchange market operations with open-market operations, so that the effect on the money supply is cancelled out.
- Reserve requirements are regulations on the minimum amount of reserves that banks must hold against deposits.

Chapter 11

- Inflation is an economy-wide phenomenon that concerns, first and foremost, the value of the economy's medium of exchange.
- The economy's overall price level can be viewed in two ways. So far, we have viewed the price level as the price of a basket of goods and services. When the price level rises, people have to pay more for the goods and services they buy. Alternatively, we can view the price level as a measure of the value of money. A rise in the price level means a lower value of money because each dollar in your wallet now buys a smaller quantity of goods and services.
- Although many variables affect the demand for money, one variable stands out in importance: the average level of prices in the economy. People hold money because it is a medium of exchange.
- In the long run, the overall level of prices adjusts to the level at which the demand for money equals the supply. If the price level is above the equilibrium level, people will want to hold more money than the BoC has created, so the price level must fall to balance supply and demand. And vice versa for when the price level is below the equilibrium prices.
- The demand curve for money is downward sloping, indicating that when the value of money is low (and the price level is high), people demand a larger quantity of it to buy goods and services.
- When an increase in the money supply makes dollars more plentiful, the result is an increase in the price level that makes each dollar less valuable.
- The explanation of how the price level is determined and why it might change over time is called the quantity theory of money. According to the quantity theory, the quantity of money available in the economy determines the value of money, and growth in the quantity of money is the primary cause of inflation.
- The injection of money increases the demand for goods and services, however, the economy's ability to supply goods and services remains the same. This is because the economy's output of goods and services is determined by the available labour, physical capital, human capital, natural resources, and technological knowledge. None of which are altered by the injection of money.
- Nominal variables are variables measured in monetary units. Real variables are variables measured in physical units. Classical dichotomy is the theoretical separation of nominal and real variables (a dichotomy is a division in two groups, and classical refers to earlier economic thinkers). The classical dichotomy is useful in analyzing the economy because different forces influence real and nominal variables.
- Changes in the supply of money, according to classical analysis, affect nominal variables but not real variables. The irrelevance of monetary changes for real variables in the long run is called monetary neutrality.
- The velocity of money is the rate at which money changes hand. To calculate the velocity of money, we divide the nominal value of output (nominal GDP) by the quantity of money. If P is the price level (the GDP deflator), Y the quantity of output (Real GDP), and M the quantity of money, then velocity is V= (P x Y)/M
- M x V= P x Y is the quantity equation and it relates the quantity of money, the velocity of money, and the dollar value of the economy's output of goods and services.
- The velocity of money is relatively stable over time. Because velocity is stable, when the central bank changes the quantity of money (M), it causes the proportionate changes in the nominal value of output (P x Y). The economy's output of goods and services (Y) is primarily determined by factor supplies (labour, physical capital, human capital, and natural resources) and the available production technology. In particular, because money is neutral, money does not affect output. With output (Y) determined by factor supplies and technology, when the central bank alters the money supply (M) and induces proportional changes in the nominal value of output (P x Y), these changes are reflected in changes in the price level (P). Therefore, when the central bank increases the money supply rapidly, the result is a high rate of inflation.
- When the government raises revenue by printing money, it is said to levy an inflation tax. The inflation tax is more subtle. When the government prints money, the prices level rises, and the dollars in your pocket are less valuable. Thus, the inflation tax is like a tax on everyone who holds money.
- For real interest rate not to be affected, the nominal interest rate must adjust one-for-one to changes in the inflation rate. Thus, when the BoC increases the rate of money growth, the result is both a higher inflation rate and a higher nominal interest rate. This adjustment of the nominal interest rate to the inflation rate is called the Fisher effect. It is a long-run perspective.
- Inflation does not in itself reduce people's real purchasing power. A person can avoid inflation tax by holding less money. The cost of reducing your money holdings is called the shoeleather cost of inflation because you must sacrifice time and convenience to keep less money on hand than you would if there were no inflation.
- Firms change prices infrequently because there are costs of changing prices. Costs of price adjustment are called menu costs. This includes the cost of deciding on new prices, the cost of printing new price lists and catalogues, the cost of sending these new price lists and catalogues to dealers and customers, the cost of advertising the new prices, and even the cost of dealing with customer annoyance and changes.
- Capital gains is the profits made by selling an asset for more than its purchase price.

Chapter 12

- Macroeconomists often assume a closed economy--an economy that does not interact with other economies.
- An open economy is an economy that interacts freely with other economies around the world.
- Exports are domestically produced goods and services that are sold abroad, and imports are foreign-produced goods and services that are sold domestically. The net exports of any country are the value of its exports minus the value of its imports: Net exports = value of country's exports - value of country's imports
- Net exports are also called trade balance--the value of a nation's exports minus the value of its imports. If net exports are positive, exports are greater than imports, indicating that the country sells more goods and services abroad than it buys from other countries, also referred to as trade surplus. If net exports are negative, exports are less than imports, indicating that the country sells fewer goods and services abroad than it buys from other countries, the country is said to run a trade deficit. If net exports are zero, its exports and imports are exactly equal, and the country is said to have a balance trade.
- There are many factors that influence a country's exports, imports, and net exports. Those factors include the following:
    - Tastes of consumers for domestic and foreign goods
    - Prices of goods at home and abroad
    - Exchange rates at which people can use domestic currency to buy foreign currencies
    - Incomes of consumers at home and abroad
    - Cost of transporting goods from country to country
    - Government policies toward international trade.
- The term net capital outflow refers to the purchase of foreign assets by domestic residents minus the purchase of domestic assets by foreigners. Net capital outflow= purchase of foreign assets by domestic residents - purchase of domestic assets by foreigners
- The net capital outflow can be either positive or negative. When it is positive, domestic residents are buying more foreign assets than foreigners are buying domestic assets. When it is negative, domestic residents are buying less foreign assets than foreigners are buying domestic assets.
- Some important variables that influence net capital outflow are:
    - Real interest rates being paid on foreign assets
    - Real interest rates being paid on domestic assets.
    - Perceived economic and political risks of holding assets abroad
    - Government policies that affect foreign ownership of domestic assets
- Net exports measure an imbalance between a country's exports and its imports. Net capital outflow measures an imbalance between the amount of foreign assets bough by domestic residents and the amount of domestic assets bought by foreigners. An important but subtle fact of accounting states that, for an economy as a whole, these two imbalances must offset each other. That is, net capital outflow always equals net exports.
- This equation is an identity--an equation that must hold because of the way the variables in the equation are defined and measured.
- When a nation is running a trade surplus (NX>0), it is selling more goods and services to foreigners than it is buying from them. What is it doing with the foreign currency it receives from the net sale of goods and services abroad? It must be using it to buy foreign assets. Capital is flowing out of the country (NCO>0)
- When a nation is running a trade deficit (NX<0), it is buying more goods and services from foreigners than it is selling to them. How is it financing the net purchase of these goods and services in world markets? It must be selling assets abroad. Capital is flowing into the country (NCO<0)
- S= I + NX but because NX and NCO are equal we can rewrite the equation as S= I + NCO
- The nominal exchange rate is the rate at which a person can trade the currency of one country for the currency of another.
- An appreciation is an increase in the value of a currency as measured by the amount of foreign currency it can buy. For example, if the exchange rate changes so that a dollar buys more foreign currency, that change is called an appreciation of the dollar. A depreciation is a decrease in the value of currency as measured by the amount of foreign currency it can buy. For example, if the exchange rate changes so that a dollar buys less foreign currency, that change is called a depreciation of the dollar.
- The Canadian dollar effective exchange-rate index (CERI) is a weighted average of the exchange rates
- The real exchange rate is the rate at which a person can trade the goods and services of one country for the goods and services of another. Real exchange rate= (Nominal exchange rate x Domestic price)/ Foreign Price
- The real exchange rate depends on the nominal exchange rate and on the prices of goods in the two countries measured in local currencies. The real exchange rate is a key determinant of how much a country exports and imports.
- By using a price index for a Canadian basket (P), a price index for a foreign basket (P^*), and the nominal exchange rate between the Canadian dollar and foreign currencies (e), we can compute the overall real exchange rate between Canada and other countries as follows: Real exchange rate = (e x P)/P^*. The real exchange rate measures the price of a basket of goods and services available domestically relative to a basket of goods and services available abroad.
- A depreciation in Canada's real exchange rate means that Canadian goods have become cheaper relative to foreign goods. This change encourages consumers both at home and abroad to buy more Canadian goods and fewer goods from other countries. As a result, Canada's exports rise and Canada's imports fall, and both of these changes raise Canada's net exports. Conversely, an appreciation in Canada's real exchange rate means that Canadian goods have become more expensive compared to foreign goods, so Canada's net exports fall.
- Purchasing-power parity is a theory of exchange rates whereby a unit of any given currency should be able to buy the same quantity of goods in all countries. This theory is based on a principle called the law of one price which asserts that a good must sell for the same price in all locations, otherwise opportunities for profit would be left unexploited. Parity means equality, and purchasing power refers to the value of money. Purchasing-power parity states that a unit of all currencies must have the same real value in every country
- The process of taking advantage of differences in prices in different markets is called arbitrage.
- Suppose that P is the price of a basket of goods in Canada, P^* is the price of a basket of goods in Japan, and e is the nominal exchange rate. Since the price level is P at home the purchasing power is $1 at home is 1/P. Abroad, a dollar can be exchanged into e units of foreign currency, which in turn have purchasing power e/P^*. For the purchasing power of a dollar to be the same in the two countries, it must be the case that 1/P = e/P^*.
- If the purchasing power of the dollar is always the same at home and abroad, then the real exchange rate-- the relative price of domestic and foreign foods--cannot change.
- The theory of purchasing-power parity is not completely accurate. That is, exchange rates do not always move to ensure that a dollar has the same real value in all countries all the time. There are two reasons why the theory of purchasing-power parity does not always hold in practice. The first reason is that many goods are not easily traded, the second that purchasing-power parity does not always hold is that even tradable goods are not always perfect substitutes when they are produced in different countries.
- A small open economy is an economy that trades goods and services with other economies and, by itself, has a negligible effect on world prices and interest rates.
- Perfect capital mobility means that Canadians have full access to world financial markets and that people in the rest of the world have full access to the Canadian financial market. If r is the Canadian real interest rate and r^w is the real interest rate, then, $r=r^w$.
- Interest rate parity is a theory of interest rate determination whereby the real interest rate on comparable financial assets should be the same in all economies with full access to world financial markets.

Chapter 14

- A period of declining real incomes and rising unemployment is referred to as a recession. A depression is a severe recession.
- It is important to note that economic fluctuations are irregular and unpredictable. Fluctuations in the economy are often called the business cycle.
- When real GDP grows rapidly, business is good. During such periods of economic expansion, firms find that customers are plentiful and that profits are growing. On the other hand, when real GDP falls during recessions, businesses have trouble. During such periods of economic contraction, most firms experience declining sales and dwindling profits
- In the short run, real and nominal variables are highly intertwines, and changes in money supply can temporarily push real GDP away from its long-run trend.
- The model of short-run economic fluctuations focuses on the behaviour of the economy's output of gods and services, as measured b real GDP, and the overall price level, as measured by the CPI or the GDP deflator.
- We can analyze the fluctuations in the economy as a whole with the model of aggregate demand and aggregate supply. On the vertical axis is the overall price level in the economy, and on the horizontal axis is the overall quantity of goods and services. The aggregate demand curve shows the quantity of goods and services that households, firms, and the government want to buy at each price level. The aggregate supply curve shows the quantity of goods and services that firms produce and sell at each price level. According to this model, the price level and the quantity of output adjust to bring aggregate demand and aggregate supply into balance.
- The aggregate demand curve is downward sloping. This means that, other things equal, a fall in the economy's overall level of prices tends to raise the quantity of goods and services demanded. Conversely, an increase in the price level reduces the quantity of goods and services demanded.
- To better understand the downward slope of the aggregate-demand curve, we must examine how the price level affects the quantity of goods and services demanded for consumption, investment, and net exports.
    - A decrease in the price level makes consumers wealthier, which in turn encourages them to spend more. The increase in consumer spending means a larger quantity of goods and services demanded. Conversely, an increase in the price level reduces the real value of money, in turn reducing wealth, consumer spending, and the quantity of goods and services demanded. This concept is also known as 'The Wealth Effect'.
    - A lower price level reduces the interest rate, encourages greater spending on investment goods, and thereby increases the quantity of goods and services demanded. Conversely, a higher price level raises the interest rate, discourages investment spending, and decreases the quantity of goods and services demanded. This concept is also known as 'The Interest Rate Effect'
    - A fall in the Canadian price level causes the real exchange rate to depreciate, and this depreciation stimulates Canadian net exports and thereby increases the quantity of goods and services demanded. Conversely, an increases in the Canadian price level causes the real exchange rate to appreciate, and this appreciation reduces Canadian net exports and thereby decreases the quantity of goods and services demanded.
- Why the aggregate demand curve might shift
    - Shifts arising from changes in consumption: Any even that makes consumers spend more at a given price level (a tax cut, a stock market boom) shifts the aggregate demand curve to the right. An event that makes consumers spend less at a given price level (a tax hike, a stock market decline) shifts the aggregate demand curve to the left.
    - Shifts arising from changes in investment: An event that makes firms invest more at a given price level (optimism about the future, a fall in interest rates due to an increase in the money supply) shifts the aggregate demand curve to the right. An event that makes firms invest less at a given price level (pessimism about the future, a rise in interest rates due to a decrease in the money supply) shifts the aggregate demand curve to the left.
    - Shifts arising from changes in government purchases: An increase in government purchases of goods and services (greater spending on defence or highway construction) shifts the aggregate demand curve to the right. A decrease in government purchases of goods and services (a cutback in defence or highway spending) shifts the aggregate demand curve to the left
    - Shifts arising from changes in net exports: An event that raises spending on net exports at a given price level (a boom experience by a major trading partner, an exchange rate depreciation) shifts the aggregate demand curve to the right. An even that reduces spending on net exports at a given price level (a recession experienced by a major trading partner, an exchange rat
- The aggregate supply curve tells us the total quantity of goods and services that firms produce and sell at any given price level. This curve is shows a relationship that depends crucially on the time horizon being examined. In the long run, the aggregate supply curve is vertical, whereas in the short run, the aggregate supply curve is upward sloping.
- In the long run, an economy's production of goods and services (its real GDP) depends on its supplies of labour, capital, and natural resources and on the available technology used to turn these factors of production into goods and services. Because the price level does not affect these long-run determinants of real GDP, the long-run aggregate supply curve is vertical.
- The vertical long-run aggregate supply curve is a graphical representation of the classical dichotomy and monetary neutrality. The long-run aggregate supply curve is consistent with this idea because it implies that the quantity of output (a real variable) does not depend on the level of prices (a nominal variable).
- The natural rate of output is the production of goods and services that an economy achieves in the long run when unemployment is at its normal rate.
- Why the long-run aggregate supply curve might shift
    - Shifts arising from changes in labour. If there is a greater number of workers, the quantity of goods and services supplies would increase. As a result, the long-run aggregate supply curve would shift to the right. Conversely, if many workers left the economy to go abroad, the long-run aggregate supply curve would shift to the left. The position of the long-run aggregate supply curve also depends on the natural rate of unemployment, so any change in the natural rate of unemployment shifts the long-run aggregate supply curve. For example, a substantial raise in the minimum rate would cause the natural rate of unemployment to rise, as a result the economy would produces a smaller quantity of goods and services, thus causing the long run aggregate supply curve to shift to the left. Conversely, if a reform of the Employment Insurance system were to encourage unemployed workers to search harder for new jobs, the natural rate of unemployment would fall, and the long-run aggregate supply curve would shift to the right.
    - Shifts arising from changes in capital. An increase in the economy's capital stock increases productivity and, thereby, the quantity of goods and services supplied. As a result, the long-run aggregate supply curve shifts to the right. Conversely, a decrease in the economy's capital stock decreases productivity and the quantity of goods and services supplied, shifting the long-run aggregate supply curve to the left.
    - Shift arising from changes in natural resources. A discovery of a new mineral deposit shifts the long-run aggregate supply curve to the right. A change in weather patterns that makes farming more difficult shifts the long-run aggregate supply curve to the left.
    - Shifts arising from changes in technological knowledge. The invention of the computer, for instance, has allowed us to produce more goods and services from any given amounts of labour, capital, and natural resources. As a result, it has shifted the long-run aggregate supply curve to the right. Conversely, if the government passed new regulations preventing firms from using some production methods, perhaps because they produced too much pollution, the result would be a leftward shift in the long-run aggregate supply curve.
- Although there are many forces that govern the economy in the long run and can in principle cause shifts in both aggregate demand and aggregate supply, the two most important in practice are technology and monetary policy. Technological progress enhances the economy's ability to produce goods and services, and this continually shifts the long-run aggregate supply curve to the right. At the same time, because the Bank of Canada increases the money supply over time, the aggregate supply curve also shifts to the right.
- If the aggregate supply curve shifts farther to the right than the aggregate supply curve the result is trend growth in output and inflation. If the Bank of Canada introduced smaller increases in the money supply, the shifts to the right in the aggregate demand curve would also be summer. The result would be lower inflation but no change in the trend growth in output.
- Short run fluctuations in output and price level should be viewed as deviations from the continuing long-run trends.
- Why the aggregate supply curve slopes upward in the short run
    - The Sticky-Wage Theory: An unexpectedly low price level raises the real wage, which causes firms to hire fewer workers and produce a smaller quantity of goods and services.
    - The Sticky-Price Theory: An unexpectedly low price level leaves some firms with higher-than-desired prices, which depresses their sales and leads them to cut back production
    - The Misperceptions Theory: An unexpectedly low price level leads some suppliers to think their relative prices have fallen, which induces a fall in production.
    - All three theories suggests that output deviates from its natural rate when the price level deviates from the price level that people expected. We can express this mathematically as follows:
      Quantity of output supplied = Natural rate of output + α(actual price level - expected price level)
    - It is reasonable to assume that in the long run, wages and prices are flexible rather than sticky and that people are not confused about relative prices. This means that the expected and actual price levels are equal in the long run. In the long run, then, our mathematical statement becomes Quantity of output supplied = Natural rate of output
- Why the short run aggregate supply curve might shift
    - Shifts arising from changes in labour: An increase in the quantity of labour available (perhaps due to a fall in the natural rate of unemployment) shifts the aggregate supply curve to the right. A decrease in the quantity of labour available (perhaps due to a rise in the natural rate of unemployment) shifts the aggregate supply curve to the left
    - Shifts arising from changes in capital: An increase in physical or human capital shifts the aggregate supply curve to the right. A decrease in physical or human capital shifts the aggregate supply curve to the left
    - Shifts arising from changes in natural resources: An increase in the availability of natural resources shifts the aggregate supply curve to the right. A decrease in the availability of natural resources shifts the aggregate supply curve to the left
    - Shifts arising from changes in technology: An advance in technological knowledge shifts the aggregate supply curve to the right. A decrease in the available technology (perhaps due to government regulation) shifts the aggregate supply curve to the left
    - Shifts arising from changes in the expected price level: A decrease in the expected price level shifts the short-run aggregate supply curve to the right. An increase in the expected price level shifts the short-run aggregate supply curve to the left.
- Shifts in aggregate demand has three important lessons
    - In the short run, shifts in aggregate demand cause fluctuations in the economy's output of goods and services
    - In the long run, shifts in aggregate demand affect the overall price level but do not affect output
    - Policy makers who influence aggregate demand can potentially mitigate the severity of economic fluctuations.
- Stagflation is a period of falling output and rising prices.
- Shifts in aggregate supply has two important lessons
    - Shifts in aggregate supply can cause stagflation--a combination of recession (falling output) and inflation (rising prices).
    - Policymakers who can influence aggregate demand can potentially mitigate the adverse impact on output but only at the cost of exacerbating the problem of inflation.

Chapter 15

- Because money holdings are a small part of household wealth, the wealth effect is the least important of the reasons for the downward slope of the aggregate demand curve. In a closed, economy, the real exchange-rate effect is nonexistent, leaving the interest rate effect as the most important reason for the downward slope of the aggregate demand curve.
- The theory of liquidity preference is Keynes's theory that the interest rate adjusts to bring money supply and money demand into balance.
    - The first piece of this theory is the supply of money. We assume that the Bank of Canada controls the money supply directly. In particular, we assume that the supply of money is not affected at all by changes in the interest rate. Once the Bank has made its policy decision, the quantity of money supplied is the same, regardless of the prevailing interest rate. For this reason, the money supply curve is a vertical line.
    - The second piece of this theory is the demand for money. A decrease in the interest rate reduces the cost of holding money and raises the quantity demand. Thus, the money-demand curve slopes downward. For a given interest rate, an increase in the dollar value of transactions causes the demand for money to increase. As a result, the money-demand curve shifts to the right. For a given interest rate, a decrease in the dollar value of transactions causes the demand for money to decrease. As a result, the money-demand curve shifts to the left.
    - There is one interest rate, called the equilibrium interest rate, at which the quantity of money demanded exactly balances the quantity of money supplied. If the interest rate is at any other level, people will try to adjust their portfolios of assets and, as a result, drive the interest rate toward the equilibrium
- The effects that interest rates have on the aggregate demand curve can be summarized in three steps: (1) A higher price level raises money demand. (2) Higher money demand leads to a higher interest rate. (3) A higher interest rate reduces the quantity of goods and services demanded. Of course the same logic works in reverse as well: A lower price level reduces money demand, which leads to a lower interest rate, and this in turn increases the quantity of goods and services demanded.
- When the Bank of Canada increases the money supply, it lowers the interest rate and increases the quantity of goods and services demanded for any given price level, shifting the aggregate demand curve to the right. Conversely, when the Bank of Canada contracts the money supply, it raises the interest rate and reduces the quantity of goods and services demanded for any given price level, shifting the aggregate demand curve to the left.
- A flexible exchange rate is a policy by which the value of the exchange rate is allowed to vary without interference by the central bank.
- In a small open economy with a flexible exchange rate, a monetary injection by the Bank of Canada causes the dollar to depreciate in value. Because this depreciation of the dollar causes net exports to rise, there is an additional increase in demand for Canadian-produced goods and services that is not realized in a closed economy. In the end, a monetary injection in an open economy shifts the aggregate demand curve farther to the right than it does in a closed economy.
- A fixed exchange rate is a policy by which the value of the exchange rate is held fixed by the central bank.
- How does a monetary injection shift the aggregate demand curve in a closed economy?
    - An increase in money supply causes the interest rate to fall
    - The fall in the interest rate stimulates investment and consumption of durable goods. The increase in spending increases the demand for money, causing a partial reversal of the fall in the interest rate
    - The increase in spending shifts the aggregate demand curve to the right
- How does a monetary injection shift the aggregate demand curve in an open economy?
    - Due to perfect capital mobility, and ignoring differences in default risk and taxes, Canada's interest rate must equal the world interest rate. We begin with $r = r^w$
    - An increase in the money supply causes Canada's interest rate to fall below r^w.
    - The fall in the interest rate stimulates investment and consumption of durable goods. The increase in spending increases the demand for money, causing a partial reversal of the fall in the interest rate. Canada's interest rate remains below r^w
    - With $r < r^w$, Canadian assets are sold in favour of buying foreign assets. The switch from Canadian to foreign assets requires that dollars be sold in the market for foreign-currency exchange. The real exchange rate falls
    - The fall in the real exchange rate increases net exports, causing the aggregate demand curve to shift even farther to the right.
    - This additional stimulus to spending increases the demand for money until $r = r^w$
    - It makes sense for the Bank of Canada to cause a monetary injection only if it allows the exchange rate to be flexible
- The government can influence behaviour of the economy not only with monetary policy but also with fiscal policy. Fiscal policy refers to the government's choices regarding the overall level of government purchases or taxes.
- When policymakers change the money supply or the level of taxes, they shift the aggregate-demand curve by influencing decisions of firms or households. By contrast, when the government alters its own purchases of goods and service, it shifts the aggregate demand curve directly.
- Because each dollar spend by the government can raise the aggregate demand for goods and services by more than a dollar, government purchases are said to have a multiplier effect on aggregate demand. The multiplier effect is additional shifts in aggregate demand that result when expansionary fiscal policy increases income and thereby increases consumer spending.
- The marginal propensity to consume (MPC) is the fraction of extra income that a household consumers rather than saves.
  Multiplier = 1/ (1-MPC)
- Marginal propensity to import (MPI) is the fraction of extra income that a Canadian household spends on imported goods. The relevant formula for the government-purchases multiplier in an open economy is
  Multiplier = 1/(1 - MPC + MPI)
- The multiplier is an important concept in macroeconomics because it shows how the economy can amplify the impact of changes in spending. A small initial change in consumption, investment, government purchases, or net exports can end up having a large effect on aggregate demand and therefore, the economy's production of goods and services.
- The crowding out effect on investment is the offset in aggregate demand that results when expansionary fiscal policy raises the interest rate and thereby reduces investment spending. Crowding out effect on net exports is the offset in aggregate demand that results when expansionary fiscal policy in a small open economy with a flexible exchange rate raises the real exchange rate and thereby reduces net exports.
- How does fiscal policy shift the aggregate demand curve in a closed economy?
    - An increase in government spending shifts the aggregate demand curve to the right.
    - Increased spending increases money demand, and this increases the interest rate.
    - The rise in the interest rate crowds out investment and reduces somewhat the size of the shift in the aggregate demand curve.
- How does fiscal policy shift the aggregate demand curve in an open economy with a flexible exchange rate?
    - Due to perfect capital mobility, and ignoring the differences in default risk and taxes, Canada's interest rate must equal the world interest rate. We begin with $r = r^w$
    - An increase in the government spending shifts the aggregate demand curve to the right
    - Increased spending increases money demand, and this increases the interest rate
    - The rise in the interest rate crowds out investment and reduces somewhat the size of the shift in the aggregate demand curve. Now $r > r^w$
    - Canadian assets now pay a higher interest rate than foreign assets. Increased demand for Canadian assets means an increased demand for dollars in the market for foreign currency exchange. The dollar appreciates
    - The appreciate of the dollar reduces net exports
    - The fall in net exports means a fall in spending, a fall in money demand, and a fall in interest rates until $r = r^w$
    - The increase in government spending has no lasting influence on the position of the aggregate demand curve
- How does fiscal policy shift the aggregate demand curve in an open economy with a fixed exchange rate?
    - Due to perfect capital mobility, and ignoring differences in default risk and taxes, Canada's interest rate must equal the world interest rate. We begin with $r = r^w$
    - An increase in government spending shifts the aggregate demand curve to the right.
    - Increased spending increases money demand, and this increases the interest rate
    - The rise in the interest rate crowds out investment and reduces somewhat the size of the shift in the aggregate demand curve. Now $r > r^w$
    - Canadian assets now pay a higher interest rate than foreign assets. Increased demand for Canadian assets means an increased demand for dollars in the market for foreign-currency exchange. To fix the exchange rate, the Bank of Canada increases the supply of dollars traded in the market for foreign-currency exchange by purchasing foreign currency
    - The purchase of foreign currency by the Bank of Canada causes the money supply to increase, and this causes the interest rate to fall until $r = r^w$
    - The increase in the money supply shifts the aggregate-demand curve even further to the right.
- The size of the shift in aggregate demand resulting from a tax change is also affected by the multiplier and crowding-out effects. When the government cuts taxes and stimulates consumer spending, earnings and profits rise, which further stimulates consumer spending. This is the multiplier effect. At the same time, higher income leads to higher money demand, which tends to raise interest rates. Higher interest rates make borrowing more costly, which reduces investment spending. This is the crowding-out effect on investment.
- The case for Active Stabilization Policy
    - Keynes claimed that the government should actively stimulate aggregate demand when aggregate demand appeared insufficient to maintain production at its full employment level
- The Case against active stabilization policy
    - The primary argument against active monetary and fiscal policy is that these policies affect the economy with a long lag.
- Automatic stabilizers are changes in fiscal policy that stimulate aggregate demand when the economy goes into a recession, without policy makers having to take any deliberate action.
- In an open economy, policy makers can choose to make use of another type of automatic stabilizer: a flexible exchange rate.