Ecn 304: Intermediate Macroeconomic Theory II Lecture Note 2 units

- ✓ Supply of and Demand for money,
- ✓ Financial Institutions and Monetary Policy and classical theories of interest rate,
- ✓ General equilibrium analysis of the product and money market and complementarities of monetary and fiscal policies;
- ✓ The government budget, inflation; employment and unemployment;
- ✓ Growth models and macro-economic policies;
- ✓ **IS – LM** analytical apparatus in discussion of the relative effectiveness of monetary and fiscal policy

Supply of Money

The supply of money in any economy at any particular period is the total sum of all money held by all members of the society. Generally, money supply is taken as the total amount of money in circulation at any given time e.g. notes and coins and demand deposits in commercial banks.

It is normally assumed that the nominal money supply is exogenously determined i.e. it is supplied by the monetary authority or Central Bank. But the real money supply is endogenously determined since the price level variation cannot be fixed.

The following three economic factors have been found to determine the supply of money or the quantity of money in the economy.

(a) The behaviour of banks concerning the amount of reserves that they want to hold. This decision on reserves is a function of the profit maximising behaviour of banks and the expectation of the managers with respect to economic environment

(b) The behaviour of the non-bank public with respect to the way they divide their wealth or money holdings between cash and demand deposits (i.e. the proportion of total wealth that people want to hold in cash).

(c) The behaviour of the monetary authorities with regards to the decisions about the size of the monetary base, Legal reserve ratio, and the discount rate. (The monetary base is the currency in circulation plus all the assets that banks are allowed to count while computing their legal reserve ratio).

In determining the level of money through the exogenous factors, the government increases or reduces the supply in accordance with the desired economic target they want to achieve.

Factors that affect Money Supply

The general belief is that the Central Bank issues notes and coins on behalf of the Federal Government. Other five factors that could affect money supply are as follows:

(i) Monetary base or High Powered Money: The money supply will naturally increase if the Central Bank expands the monetary base. The monetary base or high powered money is the total of bank reserves plus currency in the hand of the public.

(ii) Credit Creation: When banks create credit, the credit will in turn lead to demand deposit and so on. The extent to which commercial banks are allowed to create credit will therefore affect the extent of money supply.

(iii) Portfolio behaviour of the Public: If most people keep their money in the bank, the banking system will have Liquid reserves to lend out and create derivative deposit which is the deposit created through lending. If the marginal propensity to hold currency increases, the Liquidity of commercial bank will go down and money supply will similarly fall.

(iv) Reaction policies of the Central Bank: Monetary policies of the CBN applied in reaction to the dictates of the economy will have effects on money supply.

(v) Foreign Exchange Transactions: Domestication of Foreign Exchange will have the tendency to increase domestic money supply.

Specifically, money supply is also influenced by other following factors such as:

(a) Total reserves supplied by the Central Bank: If the total reserve supplied by the Central Bank is high, money supply will be high.

(b) Reserve Requirements: If the reserve requirement which is the percentage of commercial banks deposits legally required to be kept with the Central Bank is high money supply will be low and vice versa.

(c) If the non-bank public increases its demand for time deposits, money supply will increase.

(d) Demand for Currency: If the non-bank public increases its demand for currency, money supply will increase.

(e) Demand for excess reserves: If commercial banks demand for the excess reserves, money supply increases.

(f) Interest Rates: There is a positive relationship between money and interest rate. That is, the higher the interest rate the higher the money supply.

(g) The Bank Rate: If the rate at which commercial banks borrow from the Central Bank or discount bill rises, money supply falls.

Demand for Money

Demand for money, therefore, refers to the total amount of money balances that people want to hold for certain purposes. People hold their wealth in two broad forms:

i. idle cash balances which yield no income,
ii. Non-cash assets such as securities, houses, bags of rice, vehicles and other commodities.

When wealth is held through other commodities, it yield some income, appreciate or depreciate in value over time. Wealth held as idle cash balances guarantees no income, instead it reduces in value

during inflation. The decision to hold money as cash balances instead of spending it immediately in buying other assets is called the demand for money.

The Liquidity Preference Theory

Liquidity Preference is the extent to which a person prefers to hold cash balances instead of parting with it or keeping his wealth in other assets. Liquidity Preference theory states that "the stock of money held by the public will vary inversely with the rate of interest (price of money)." The higher the return on income-yielding assets, the less likely it is that cash will be held. There is a level to which interest rate will reach and people will no longer be willing to invest at all. This level is called the Liquidity trap level. If an individual decides to hold all his wealth in the form of other wealth-creating or financial assets, he faces the danger of illiquidity (that is, having no cash to settle his immediate illiquidity obligations). Apart from the level of income and rate of interest generated by other assets, there are other determinants of how much a person will be willing to hold as cash. These other factors include interval between pay days, general price level, level of expenditure, and availability of credit. These factors are, however, influenced by the level of income.

Motives for Holding Money (DD for money)

Generally, whoever is holding money is holding it to enable him get something else. Each person has his own reasons for holding money, and not because he wants to chew the paper called money. The demand for money is, therefore, said to be a derived demand. Lord John Maynard Keynes who propounded the Keynesian theory identified three reasons that prompt people to hold money. These reasons are transactions, precautionary and speculative.

i Transactions Motive

People hold money as a medium of exchange, to enable them pay for their normal day- to-day transactions. Money is generally accepted by individuals and firms in payment for goods and services. The transactions motive for demanding money arises from the fact that **most transactions** involve an exchange of money. Because it is necessary to have money available for transactions, money will be demanded. The total number of transactions made in an economy tends to increase over time as income rises. Keynes confirmed that "the demand for money for transactionary purposes was proportional to the level of income". This means that the higher the income level, the larger the amount held for transaction purpose. The Monetarists led by Milton Friedman also agreed that "the demand for money will be proportional to the level of income for each individual and hence for the aggregate economy.

Transactionary demand for money is therefore expressed as:

$$Lt = kY \quad (1)$$

where Lt is the transactions demand for money,

k is the proportion of income which is kept for transactions purposes, and Y is the income.

ii Precautionary Motive

The term "Precautionary Motives" refers to the desire to hold cash balances in order to meet expenditures which may arise due to unforeseen circumstances such as sickness and accidents. Uncertainties are a reality of life. As the case of transactions motive, the amount of money an individual holds for precautionary purposes is also dependent on the level of Income. The higher the level of income, the more the amount held for precautionary purposes. Both Keynesians and monetarists agree on this point. Precautionary demand, like transactions demand is a function of income but with interest rates.

$Lp = (Y, r).$ (2)

The demand for money for these two purposes-Transactionary and Precautionary is expressed in the single equation (3):

$M1 = L1 (Y, r)$ (3)

where the amount held under these two motives

(M1) as a function (L1) of the level of income (Y), and (r) is the interest rate.

iii Speculative Motive

The third reasons why people hold money is to enable them speculate on the possible outcome of business events. Speculative demand for money is the desire to have money for transactions other than those necessary for living, namely for investment and profitable purposes. If people expect prices to fall in the near future, for instance, they can suspend further purchase now, and hold more money waiting to buy when prices will fall. In the same way, if people think that prices are relatively low now and expect prices to rise in the near future they will use their money to buy financial assets which they will sell later when prices will rise. The amount of money for speculative purpose is not based on the level of income. It is determined by what people expect to gain or to lose by holding other assets. This expected gain or loss depends on the interest rate.

The post Keynesian Theory of Demand for Money

The post Keynesian theories like the portfolio theories lay emphasis on the store of value function of money. The transactions theories lay more emphasis on the medium of exchange function of money.

The portfolio theory stress that people hold money as part of their portfolio of assets and predict that the demand for money depends on the return and risk offered by money and by other assets that people can hold instead of money. Professor Tobins explained this through the investors' interest in determining what proportion of his portfolio of financial assets he should keep in the form of money (which earns no interest) and interest- bearing bonds. This is explained through the modern portfolio theory.

The Modern Portfolio Theory (MPT) refers to an investment theory that allows investors to assemble an asset portfolio that maximises expected return for a given level of risk. The theory assumes that investors are risk-averse; for a given level of expected return, investors will always prefer the less risky portfolio.

According to portfolio theory, the four factors determining money demand are:

i. interest rates (lower interest rates increase money demand);
ii. wealth (higher wealth leads to higher money demand);
iii. risk of alternative assets (a greater risk of alternative assets tends to increase money demand); and
iv. liquidity of those other assets in the case of conversion to liquid asset.

Determinants of Money Demand

Notable factors were later identified by Professor Milton Friedman in his modern quantity theory of money. These include:

(a) Income: Demand for money varies directly with the level of income, that is, the higher the level of income, the higher the level of income, the higher the level of money demand.

(b) Interest Rate: Demand for money varies inversely with the interest rate.

(c) Price level: There is direct positive relationship between money demand and the price level.

(d) The Rate of Price Changes: Inflation rate varies inversely with money demand. This is a weak determinant of money.

(e) Real Permanent Income: Real permanent income or wealth varies directly with money demand.

(f) Return on Bonds and Equities: The higher the return on bonds and equities the lower the demand for money.

Quantity Theory of Money

The classical quantity theory took the view that money was used only as a medium of exchange to settle transactions involving the demand and supply for goods and services. This theory of money was developed by Irvin Fisher in 1911 and was generally accepted until the 1930's. It is about the relationship between the amount of money in economy or circulation and the level of prices. It is a theory about how much money supply is needed to enable the economy to function.

The theory is based on the simple identity between total money spend and the price level in the economy. This is illustrated with an equation.

$MV = PT$

Where M - is the money supply

V - is the velocity of circulation i.e. the rate at which money changed hands in the society. P - is the Price level

T - rate of Transaction

Given the assumption that ‘V’ and ‘T’ are constant, the price level ‘P’ varies directly with the amount of change in money supply i.e. P = MVT

Criticisms of Quantity Theory of Money

The three key assumptions necessary to convert the equation of exchange into a theory of the determination of prices has validity flaws. These three key assumptions were:

1. That the velocity of circulation of money is constant.
2. That the stock of money is an instrument which can be controlled.
3. Say s Law (supply creates its own demand) will operate.

The validity of these three assumptions is critically on the grounds that:

(a) Prices cannot respond quickly to changes in money supply.

(b) An increase in the distribution of wealth might result from an increase in the money supply and price levels.

(c) If people expect price to rise, they might decide to hold more of their wealth in physical asset and less in money and so the velocity of circulation will fall.

(d) People will be optimistic about inflation at inception.

Financial Institutions

Financial institutions (FI) are company or business engaging in financial and monetary transactions such as deposits, loans, investments, and currency exchange. Financial institutions are vital to a functioning economy in bringing into contact people seeking funds and those who can lend or invest it. We have bank and non-bank financial institutions. Examples of bank FI are Commercial Banks while non-banks are Credit unions, Community development financial institutions, Utilities Government lenders and specialized lenders. Other types of financial institutions are savings and loan associations, investment banks and companies, brokerage firms, insurance companies, and mortgage companies. The difference between bank and other non-banking financial institutions is that the non-banking financial institution which comes under the category of financial institutions cannot accept deposits into savings and demand deposit accounts but a bank is a financial institution which can accept deposits into various savings and demand deposit accounts, and give out loans.

Financial institution originates from the Roman Empire. Wealthy people do keep their money in the temple for security reasons. As time passes, the priests began to loan out the money in the temple's care with interest on any amount loan out. As the interest-loan practice gained more ground, it created the need for a formal financial institution.

Functions of Financial Institutions

Financial Institutions performs the following function in an economy

1. Accepting of deposits and payment of money on demand.
2. Assisting the Central Bank to implement monetary policy regulations.
3. They help to implement other government economic policies.
4. They assist in Capital formation.
5. They engage in insurance policy by providing individuals the required protection against the loss of their lives or the loss of their properties.
6. They grant credit facilities inform of loans and advances.
7. They provide technical and professional financial advice to business owners.
8. They engage in pension fund administration.
9. They help in improving investment within the economy

Theory of Interest Rate

Interest is the price paid for inducing those with money to save it rather than spend it, and to invest in long-term assets rather than hold cash. Rates reflect the interaction between the supply of savings and the demand for capital; or between the demand for and the supply of money. The expectations theory of the term structure holds that **the long-term** interest rate is a weighted average of present and expected future short-term interest rates. If future short rates are expected to remain constant, then the long rate will equal the short rate (plus a constant risk premium). Keynes argues that the demand for money to satisfy the transaction and precautionary motives changes in response to changes in income, while the demand due to the speculative motive is sensitive to changes in interest rate. Classical economists believe that interest rates are determined by the supply and demand for loanable funds.

The main theories of interest rates are: Theory of Austrian School; Theory of liquidity, Neo-Classical Theory; and Theory of loan.

a. Austrian School's theory: The Austrian school holds that interest rates are determined by the subjective decision of individuals to spend money now or in the future. In other words, interest rates are determined by the time preference of borrowers and lenders. The theory explains interest rates in terms of people's preference to spend in the present over the future. Their emphasis is on:

- ✓ Time-preference: When should spending or otherwise take place?
- ✓ Borrowing/lending: Should money be borrowed or lent out?
- ✓ Savings/investment/consumption: Should wealth be saved, invested or consumed?

b. Liquidity Preference Theory: Liquidity preference theory says that interest rates adjust to balance the desire to hold cash against less liquid assets. The more people prefer liquidity, the higher interest rates must rise to make them willing to hold bonds. Thus, the theory views interest rates as a payment for parting with liquidity. Liquidity preference is influenced by various factors, including income level, risk tolerance, time horizon, and future expectations. Understanding these factors is crucial when making financial decisions, as they can help individuals and businesses determine the most suitable allocation of their funds. The roles of the followings are considered under liquidity preference theory.

i. supply/demand for money
ii. report bonds/money
iii. bonds (demand, price, profit)
iv. fear lending/investment risk/reliability
v. transactions/ attention to the future/ speculative purposes
vi. Public agents (government) and private (individuals, banks, businesses)

c. Neo-Classical or Loanable Funds Theory: This theory argues that the interest rates on loans are determined by the supply of and demand for loans in the market for loanable funds. The main assumptions of neoclassical economics are that consumers make rational decisions to maximize utility, that businesses aim to maximize profits, that people act independently based on having all the relevant information related to a choice or action, and that money markets will self-regulate in response to supply and demand for money. This theory of interest owes its origin to the Swedish economist Knut Wicksell. The proposition of the theory is premised around the Tobin's Q formula. It is an economic ratio used to compare a company or index's market value to its book or replacement value. The ratio was developed by James Tobin, a Nobel laureate in economics.

One way that the formula is expressed is as **Q = Market Value / Total Assets**. It can be used to measure the relative value of a company's stock or the overall market. The market value of installed capital is set by the stock market valuation of the company. If $q > 1$, it means the firm can raise its stock market value by acquiring more capital, so it will invest beyond what is needed to cover depreciation. If $q < 1$, capital is more expensive to buy than its valuation by the market, the firm will allow the capital stock depreciate without fully replacing it. In a steady-state equilibrium, $q = 1$, this process is attained through diminishing returns to capital (q is brought down by firms investing more and more or up by firms shrinking their capital stock).

The ideal scenario is when the Q Ratio equals 1. It suggests that the market fairly values the company’s assets.

Their theory was anchored on:

- ✓ Saving/investment/consumption: Decision on these and profitability.
- ✓ Profit rate of investment/investment risk: A consideration of these.
- ✓ Revenues: Expected income
- ✓ productivity/efficiency of capital: Returns on capital on which decision is made

Formula of the Q Ratio

The original formula for the Q Ratio is:

$$q = \frac{\text{Market value of installed capacity}}{\text{Replacement cost of installed capacity}}$$

However, in real life, it is very difficult to estimate the replacement costs of total assets. Thus, there is a modification of the original formula, in which the replacement costs of the assets are replaced with their book values.

$$\text{Q Ratio} = \frac{\text{Equity Market Value + Liabilities' Market Value}}{\text{Equity Book Value + Liabilities' Market Value}}$$

The Q Ratio can be calculated for the overall market as

$$\text{Q Ratio} = \frac{\text{Value of stock market}}{\text{Corporate net worth}}$$

when necessary adjustments like depreciation have been effected on the account.

d. Loan Theory: According to this approach, the interest rate is determined by the demand for and supply of loanable funds. The term loanable funds include all forms of credit, such as loans, bonds, or savings deposits. In other words, the market interest rate is seen as the price of loans and it is thought to be determined just the way the price of any other good or service is determined in the market. So, a rise in the supply of loanable funds from savers such as households is believed to cause the market interest rate to drop while a drop in the supply of loanable funds is seen as causing a rise in market interest rates. On the other hand, a rise in the demand for funds from borrowers such as businesses and governments is supposed to cause a rise in interest rates while a drop in their demand for funds is expected to cause a fall in interest rates. In short, the supply of funds from lenders and the demand for funds from borrowers are seen as influencing the market interest rate.

Monetary Policy

Monetary policy is a measure being adopted by the central bank of any country to manage the supply of money so as to stabilise the prices and bring about overall development in the economy. Though the primary objective of monetary policy is the attainment of low and stable inflation that can bring about development and growth of the economy, this however is being pursued by ensuring the stability of price within the economy. When prices are stable, it enhances predictability of domestic prices.

During a period of high inflation, contractionary monetary policy is used to reduce the amount of money in circulation while expansionary monetary policy is used when economic conditions are weak. Depending on the level of financial development of a country, monetary policy is usually implemented through the banking system and financial markets. Implementing monetary policy involves interactions between the monetary authorities and financial intermediaries, using tools of monetary policy such as reserve requirements, open market operations, and the interest policy rate. Other policies that can also be adopted are selective credit control and moral suasion. Various frameworks of monetary policy that have been used includes monetary targeting, exchange rate targeting and inflation targeting,

What is monetary targeting? This is refers to as the intermediate objective of monetary policy. It is a process used by the central bank to manipulate the interest rates to control aggregate money supply in the economy. The rate of money supply is considered the main determinants of inflation in the long run. The basic features of the monetary targeting framework include the attainment of the ultimate objective of low inflation and stable exchange rate.

What is exchange rate targeting? This is a monetary policy tool where the central bank of any country engages in maintaining the values of their currency within a specific value range or at a level relative to a currency or few currencies of other countries. Under the exchange rate targeting regime, the central bank tries to ensure that the nominal exchange rate of her country currency and that of another country is relatively low and stable. This policy is found to be beneficial as it is public-oriented and its interpretation can be easily understood. Since most inflation is imported, this strategy can be advocated for keeping the inflation rate and its components under control. However, the success or otherwise of this policy depends on the exchange rate policy being operated in the economy.

What is inflation targeting? Inflation targeting is a monetary policy strategy in which a central bank forecasts and makes public a target inflation rate. The central bank thereby attempts to steer actual inflation towards the target rate through the use of key monetary policy instruments. Inflation targeting is aimed directly at the ultimate objective of monetary policy, the strategy of monetary targeting is directed towards controlling the money growth rate, maintaining price stability, economic growth and

Broad objectives of Monetary Policy

Price stability

Full Employment

Balance of payment equilibrium

Exchange rate stability

Optimal money supply

Instruments of Monetary Policy

a. Open market operations (OMO): This refers to the sale and purchase of securities (treasury bills which is a bond or other type of debt obligation that is issued by a government with a promise to repay such debt obligation upon the maturity date of the instrument.) in the money *market* by the central bank of the country. This instrument is facilitated by highly developed financial markets. Financial markets are veritable agents to a successful use of open market operations in any economy. The sales or purchase of the securities may be adopted in line with the focus of objective to be pursued. Other forms of securities are Nigerian Treasury Certificates, Federal Government Development Stocks and Government Bonds.

b. The cash *reserve* ratio (CRR): This is the proportion of money in the form of demand and time deposits (net demand and time liabilities) that the commercial bank has to keep with the central bank of the country on a scheduled basis. This ratio may be adjusted or reviewed to a particular direction depending on the objective of the central bank.

c. Statutory *Liquidity* Ratio (SLR): This is a requirement that commercial banks have to keep a certain proportion of their demand and time deposits as liquid assets. A monetary policy which is expansionary in nature is implemented by decreasing the interest rates, thus increasing the market *liquidity*. And a monetary policy which is contractionary in nature is implemented by increasing the interest rates, thus decreasing the market *liquidity*.

d. The Repo Rate: This is also called repurchase agreement or repurchasing option. It is the interest rate at which commercial banks borrow money from the central bank, pledging government securities as collateral. The central bank borrows money from commercial banks when there is excess liquidity in the market and vice versa. However, reverse *repo rate* is the *rate* at which the bank can park their collateral of government securities with the central bank.

e. Bank or Discount Rate: This is the interest rate a nation's central bank charges to its domestic banks to borrow money in order to stabilize the economy. There is difference between Bank rate and interest rate. Bank rate is a quantitative tool of credit control in the economy to control the situation of inflation

and deflation while interest rate is not a tool of credit control as it is not determined by the central bank but business tool for the financial institutions.

Prospects of Monetary Policy

Every economy aims at

1. Promoting maximum employment
2. Stable prices
3. Moderate long- term interest rates
4. Stable exchange rate
5. Improved currency value
6. Overall development and growth of the economy

All the above benefits are found in the successful implementation of monetary policy in any economy.

Problems of Monetary Policy

The primary problem for using monetary policy to stabilize the economy is the risk of inflation. For instance, when the central bank issues more money to encourage investment during recession periods, it increases the chances of inflation in an economy. Similarly, when central bank withdraws money from circulation to reduce inflation, it may reduce credit facilities to investors and entrepreneur which hinders their productive capacity and lowers output in the economy.

The downward sloping form of money demand curve may not be attainable. When this situation arises, it leads to liquidity trap-an adverse economic situation that arise consumers and investors decides to hoard cash rather than spending or investing it even when interest rates are getting low.

Monetary Policy in Nigeria

Monetary policy in Nigeria has been conducted primarily since 2008 to influence the growth of money supply observed to be consistent with the required aggregate Gross Domestic Product (GDP) growth rate, ensuring financial stability, maintaining a stable and competitive exchange rate of the naira, and achieve overall economic development and growth.

Fiscal Policy

Fiscal policy is the use of government spending and taxation to influence the economy. Governments typically use fiscal policy to promote strong and sustainable growth and reduce poverty. The overall objective of fiscal policy is **to** maintain the condition of full employment, economic stability and to stabilize the rate of growth. For a developing economy like Nigeria, the main purpose of fiscal policy is to accelerate the rate of capital formation and investment. A contractionary policy is a measure to reduce government spending or the rate of monetary expansion by a central bank. An expansionary policy is a measure to increase government spending or the rate of monetary expansion by a central bank

Objectives of Fiscal Policy

1. Income redistribution
2. Maintaining favourable balance of payments
3. economic growth,
4. maintain price stability
5. Control inflation
6. Boosting Employment
7. Promotion of savings

The Government Budget

In a simple language, government budget is a financial statement of estimated revenue and expenditure prepared by the government for a given period of time usually a year. In Nigeria, there has been an increase in the yearly budget on yearly basis due to the increase in the number of services the government is providing for the people.

(a) Public revenue: The study of various sources of government's income, the principles guiding the raising of income (e.g. canons of taxation), their relative merits and demerits and their effects on the economy (e.g. impact and incidence of taxation).

(b) Public expenditure: The study of the manner in which public expenditure is classified, the principles guiding public expenditure (canons of public expenditure), causes of growth and effects of public expenditure.

(c) Public debts: The study of public debt forms a very important part of public finance in modern times as governments are increasingly resorting to debt to meet the growing needs of the people. Public finance studies the sources, burden and impact of public debt.

(d) Financial administration: This includes the study of the preparation, passing and implementation of the budget, budgetary policies and their socio-economic impact, inter-governmental financial relations, fiscal management and fiscal responsibility.

Expenditures of government are classified into two broad categories: Capital and recurrent. Capital expenditure are expenditures for the provision of physical structures aimed at bringing about further development and making life easy and comfortable for the people and for further production in the economy. Expenses on capital projects are not necessarily needed to be completed within the budget year. It could be extended for two or three years or more depending on the type and nature of the capital project. Those expenditures that fall under capital budget are provision of infrastructures like

electricity, water, health facilities, roads, and also construction of iron and steel industry, cement factory, fertilizer industry, oil refinery, or any other heavy projects.

On the other hand, recurrent expenditures are those expenses of government that are spent within the fiscal year mostly to run the administration of government. These are payment for salaries and wages, general administration like purchase of fuel and stationeries, government entertainments, local transport and travels, training and workshops, telephone and communication, grants and aids, debt servicing.

Types of Budget: there are three main types of budget executable by any government.

a. **Surplus Budget**: This is a budget type where the proposed revenue receivable by the government is more than the estimated expenditure for the fiscal year.
b. **Deficit Budget**: This is a budget type where the proposed revenue receivable by the government is less than the estimated expenditure for the fiscal year.
c. **Balanced Budget**: This is a budget type where the proposed revenue receivable by the government is the same with or equal to the estimated expenditure for the fiscal year.

Various reasons may be responsible for adopting any of the budgetary type depending on the policy or policies the government wishes to pursue in the economy over the time period.

Importance of Budget: Since any programmes the government may embark upon for the benefit of the citizens require money, budget cannot be done away with. Other essential roles, functions or importance of budget are:

1. It shows the direction of the economy
2. It reveals the position of the economy
3. It is a strong means to ensure development
4. It is a guiding principle for national planning
5. It serves as a check against abnormal spending in the economy
6. It shows the relationship a country will maintain with other countries within the budget year
7. It is a means of checking economic problems like inflation, stagnation and depression
8. It contains the intentions or plans of the government for the population
9. It direct the social and political structure of the economy
10. It prevent undue conflicts between and among economic sectors and government levels

Problems of Budgetary Implementation in an Economy: As good as the budget is to any economy's growth and development, some problems poses a threat to its success at achieving the desired goals. These problems are:

1. Corruption. This may come from the various arms of government involved in the implementation of budget. It may come inform of embezzlement of fund, diversion of money and falsification of documents.

2. Political interference. In most cases, political interests are always placed above general interests and some estimates contained in the budget are directed to political connections rather than real needs
3. Inadequate data. Relevant and adequate statistical data are essential ingredients in the formulation, preparation and implementation of annual budget. In most developing and less developed nation, these relevant data like demographic, financial and economic are not always available.
4. Incompetence of budget officers. Budget preparation requires technical knowledge with sound analytical ideas. In most instances, officers that are involved in the preparation of budget lack these ideas and hence do prepare shoddy budget that is bereft of necessary ingredients to ensure the realization of national goals.
5. Misplace of priorities. Due to political interference arising from non compliance to the rule of law and conflicts of political interest arising from disagreement on party loyalty, some projects are sited in a wrong location like the home town of the senator, governor, president or any political leader which in most cases may not meet the needs of the larger percentage of the population and may result into waste of colossal amount of money

Inflation; Employment and Unemployment

Phillips Curve: The Phillips curve is an economic theory that inflation and unemployment have a stable and inverse relationship while inflation and employment have a stable and direct relationship. The theory was developed by William Phillips; it claims that with economic growth comes inflation, which in turn should lead to more jobs and less unemployment.

Macro-economic Policies Growth Models

Macroeconomic policy is concerned with the operation of the economy as a whole. In broad terms, the goal of macroeconomic policy is to provide a stable economic environment that is conducive

to fostering strong and sustainable economic growth, on which the creation of jobs, wealth and improved living standards depend.

Macroeconomic policies are instruments that help policymakers regulate an economy. The policies are being managed through the instruments of **monetary policy and fiscal policy**. The policies being pursued are:

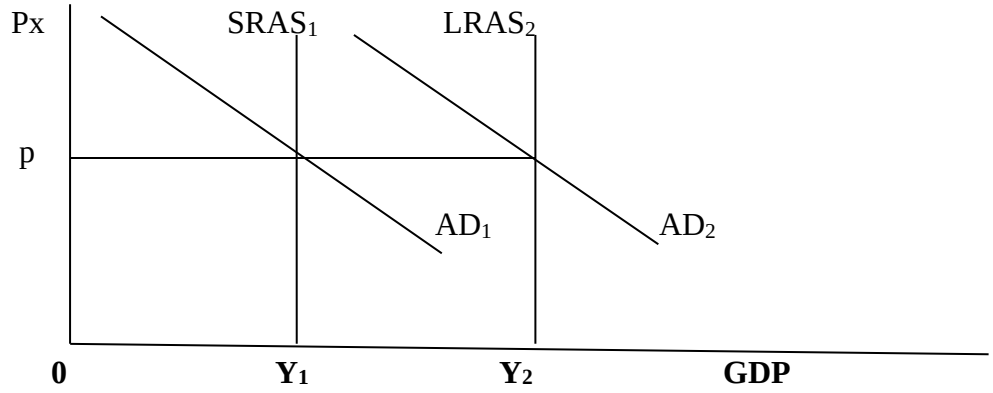
1. **Economic growth**

Economic growth is important as it contributes to a better living standard, a lower rate of unemployment, and higher tax revenues for the government.

To stimulate economic growth, a government can enact policy to increase aggregate demand (national expenditure) or aggregate supply (national output).

Aggregate demand is the sum of consumption, investment, government spending, and exports minus imports in an economy. A rise in any of these elements will lead to an increase in aggregate demand and thus national expenditure.

Aggregate supply is the total supply of goods and services within a country. An increase of aggregate supply due to increased capital, labour or technology progress can lead to higher national output.



Growth in GDP as Aggregate demand increases leading to increase in aggregate supply.

As can be seen in the figure, there is an increase in aggregate demand (AD) and long-run aggregate supply (LRAS), which causes the GDP to rise from (Y1 to Y2) without increasing the price levels (P1).

2. **Full Employment**

Full employment occurs when anyone looking for work at the going wage rate can get a job. However, in practice, the economy never experiences zero unemployment. This is due to frictional unemployment - the situation where people delay getting a job in search of the best possible employment. The typical rate of frictional unemployment in an economy is around 2-3%. Another way to define full employment is based on the full capacity of the economy. Unemployment only takes into account people who are actively seeking jobs but aren't able to find one.

Full employment and full capacity

In aggregate supply and aggregate demand figure above, full employment will happen at output Y2, which is the maximum output of the economy. At this point, the economy cannot produce more goods and services since it has utilised all the resources available. Any increase in aggregate demand (AD) will only cause the price levels to rise without increasing real output.

To curb short-run unemployment, the government can increase aggregate demand by enacting fiscal policy (lowering tax and increasing public spending) or providing subsidies in certain industries to encourage firms to hire more people. To increase employment, a government can pursue long-term supply-side policies to increase the productive potential of the economy.

3. Price stability

Price stability occurs when the price levels in an economy don't change drastically. Since price levels determine inflation (the general increase in price levels), a government's price stability methods often involve keeping inflation at a lower rate. Price levels are regulated by the supply and demand of goods and services within the economy. A significant surge or fall in the supply/demand can cause the price levels to fluctuate wildly and put the economy at risk. Thus, one of the government's main objectives is to maintain price stability.

4. Balance of payments

The Balance of Payments (BOP) is a statement recording all the financial transactions made between the residents of a country and the rest of the world over a certain period, such as over a quarter of a year or a year. A key aspect of the balance of payments is the current account. It consists of the value of exports and the value of imports. If the value of exports exceeds the value of imports there is a balance of payments surplus. Conversely, if the value of imports exceeds the value of exports, there is a balance of payments deficit.

.A balance of payments deficit means that the government must borrow money from another source to pay for its imports.

Government macroeconomic policy instruments

Government macroeconomic policies are pursued through fiscal and monetary policy.

Fiscal Policy

Fiscal policy is the government's use of taxes and public spending to achieve economic objectives.

There are two main types of fiscal policy: expansionary and contractionary.

- Expansionary fiscal policy aims to increase aggregate demand and shift the AD curve outwards by reducing taxes and increase government spending. With lower taxes, individuals and households have more income at their disposal to spend on goods and services. This increases production and creates new job opportunities. The increased government spending will also

boost economic activities which require workers to be hired, contributing to lower employment levels.

- Contractionary fiscal policy tries to reduce aggregate demand and shift the AD curve inwards by increasing taxes and decreasing public spending. By increasing taxes the government can reduce the budget deficit, fight inflation, and resolve other balance of payment issues.

The main goals of fiscal policy include:

- Providing public services.
- Redistributing wealth and income.
- Achieving environmental objectives.
- Promoting economic growth.
- Regulating the economic business cycle.

Monetary Policy

Monetary policy is the central bank's use of interest rates to influence macroeconomic factors such as inflation, consumption levels, economic growth, and liquidity. Similar to fiscal policy, there are two types of monetary policy: expansionary and contractionary.

- Expansionary monetary policy aims to boost economic activities by lowering interest rates or increasing the money supply. When the interest rates decrease, the cost of borrowing money is lower. More individuals and firms will be inclined to borrow more money and spend it. This improves the overall production and economic growth.
- Contractionary monetary policy tries to reduce inflation and reduce the size of the budget deficit by increasing interest rates. With higher interest rates, the cost of borrowing money will increase. This discourages individuals and firms from borrowing from the central bank and spending it on goods and services.

Growth Models

The three most important economic growth theories are:

The classical theory, neo-classical theory and modern growth theory of economic study.

The most influential economic growth theorists are Adam Smith (classical growth), Robert Solow and Trevor Swan (neo-classical growth), and Roy Harrod and Evsey Domar (modern growth).

1. Classical growth theory

This school led by Rostow**,** explains economic growth as a result of capital accumulation and the reinvestment of profits derived from specialization, the division of labour, and the pursuit of comparative advantage. The key instrument is that price adjustment brings about equilibrium where

aggregate demand equals aggregate supply, and the economy is at full employment. In the study of classical theories of economic development, four approaches have been differentiated. These are: Linear stages of growth model, Theories and Patterns of structural change, International-dependence revolution and Neo-classical free market counterrevolution.

a. **Linear stages of growth model:** This model assumes that economic growth can only be achieved by industrialization. It is the oldest and most traditional of all development plans. Rostow argued that the economies of all countries in terms of modernisation occur in five basic stages, of varying length. The stages include traditional society, preconditions to takeoff, takeoff, drive to maturity, and age of high mass consumption. Linear growth can be seen as a steady, constant increase in a quantity over time, where the rate of increase remains the same.

b. **Structural change theories** primarily focused on the mechanism by which underdeveloped economies transform their domestic economic structures from a heavy emphasis on traditional subsistence agriculture to a more modern, more urbanized and more industrially diverse manufacturing and service economy, It could be viewed as the transition of an economy from low productivity and labour-intensive economic activities to higher productivity and skill intensive activities through technological innovation.

c. **International-dependence revolution:** The dependence theorists argued that underdevelopment exists because of the dominance of developed countries and multinational corporations over developing countries. The international dependence theory was very popular in the 1970s and early 1980s.

d. **Neoclassical, free market counter-revolution**: The theory *focuses on supply and demand as the* driving forces behind the production, pricing, and consumption of goods. The theory supported freer markets, private ownership, statist planning, and government regulation of economic activities. The neoclassical free market counter-revolution growth theory is an economic concept where equilibrium is found by varying the amount of labor and capital in the production function.

2. Neo-Classical Growth Model

Neoclassical growth theory is an economic theory that outlines how a steady economic growth rate results from a combination of three driving forces—labor, capital, and technology. The neoclassical growth model implies that, if the same technology is available to all countries, every country will converge to a growth rate. It has close relationship with the classical theory. Just like the classical school, neoclassical economics is a broad theory that focuses on supply and demand as the driving forces behind the production, pricing, and consumption of goods and services. They showed that, without technological changes, in a state of long-term stable equilibrium, there is no long-term growth

in production per capita. Per capita income levels vary among countries, depending on the preferences of their residents

The neoclassical growth theory provides positive predictions for convergence, at least as long as economies are similar. Endogenous growth theory, on the contrary, does not predict convergence. Catching up can occur or not. The idea of convergence in economics (also sometimes known as the catch-up effect) is the hypothesis that poorer economies' per capita incomes will tend to grow at faster rates than richer economies. Solow model predicts that growth rate of income per capita would be larger when (K/L) is more behind the steady-state level of capital–labor ratio and that growth rate of income per capita would become smaller when (K/L) is much closer to the steady-state level of capital–labor ratio.

The neoclassical growth model assumes the existence of an aggregate production function $Y = F(K, N)$, where Y is aggregate output, K is the capital stock, and N is the number of workers. The production function has constant returns to scale (if K and N change in the same proportion, Y will also change in that proportion), with positive but diminishing marginal products of capital and labor. Dividing by the number of workers N, output per capita $y = Y/N$ is a function of the capital/labor ratio $k = K/N$:

$y = f(k)$

and $y = c + i$, where $c = C/N$ is consumption per capita and $i = I/N$ is investment per capita. The per capita consumption function is assumed to be $c = (1–s)y$, where s is the marginal propensity to save and (1–s) is the marginal propensity to consume. In equilibrium, (desired) investment is equal to saving, $i = sy = sf(k)$.

In the steady-state equilibrium, per capita output (y) and the capital/labor ratio (k) do not change, and total output Y grows at the rate n, the exogenous growth rate of the population and labor force (N). Required gross investment in the steady state will be just enough to cover depreciation (replacement investment) and to equip each new worker with the same amount of capital that existing workers have. Required investment per capita in the steady state is thus $(n + d)k$, where n is the rate of population growth and d is the depreciation rate. The steady state equilibrium capital/labor ratio k^* will be given by $sf(k^*) = (n + d)k^*$ and steady state output per capita will be $y^* = f(k^*)$. Because f, the rate of change of output per capita with respect to a change in the capital/labor ratio, is positive but decreasing (an increase in the capital/labor ratio raises output per worker, but not by as much as the previous increase of the same size), if k is initially less than k^*, investment and saving will exceed the investment needed to keep k constant, and the capital/labor ratio k will increase until it reaches k^*. If k is initially greater than k^*, investment and saving will be less than the investment needed to keep k constant, and k will decrease until it is equal to k^*.

Solow allowed for neutral technical change by writing the production function as Y = A(t)F(K, N), where A(t) is an index of total factor productivity at time t. By calculating how much growth was due to growth of capital and labor inputs, and subtracting these estimates from the observed growth rate, Solow (1957) obtained a measure of the rate of change of A (the Solow residual), an implicit measure of technical change. Later studies adjusted for improvements in the quality of capital and labor inputs (such as better educated and trained workers), and thus reduced Solow's high original estimates of how much economic growth was due to technical change.

In the neoclassical growth model, the growth rate is independent of the savings rate, and depends only on population growth and technical change, both taken as determined exogenously outside the model. A higher propensity to save leads to a higher level of output per capita in the steady state, but not a higher steady state growth rate. Faster population growth reduces per capita output and consumption in the steady state.

3. Modern Economic Growth Models

This is attributed to Roy Harrod and Evsey Domar in the 1930s and 1940s. They are being refers to as Keynesian and Neo-Keynesian Growth Theory. The model is based on the idea that the rate of economic growth depends on two key factors: the amount of capital investment in the economy and the level of productivity of that capital. Domar assigns a key role to investment in the process of growth while Harrod regards the level of income as the most important factor in the growth process. Domar forges a link between demand and supply of investment while Harrod equates demand and supply of saving. The basic idea of the Harrod-Domar model is that economic growth depends on the amount of capital that is available for investment, and that the rate of capital accumulation is proportional to the rate of savings. This theory states that economic growth is pushed by demand. If aggregate demand is what controls all other factors in the market, then an increase in government spending during recessions will boost economic activity. Modern economic growth as the increase in an economy's production capability along with the diversification of the type of goods and services it produces over the long term relies on the economy's technological advancements, changes in human behavior, and the evolution of social ideologies.

In the past, economists stated that land, labor, capital, and entrepreneurship were the key to achieving both economic growth and development. Soon, those four resources were becoming easy to acquire. All of a sudden, many countries met these requirements, but some were seeing much more economic growth and development than others. This difference in success was then chalked up to the technology available to the economy. Those that had more advanced technologies were able to pull ahead of the others in the race to economic success. The implication of the model postulation is that growth

depends on the quantity of labour and capital; more investment leads to capital accumulation, which generates economic growth.

The relationship between the actual growth rate and its determinants was expressed as: GC = s

where G is the actual rate of growth, C represents the capital-output ratio ΔK/ΔY and s refers to the saving-income ratio ΔS/ΔY. The hypothesis of the Harrod-Domar model states that all savings S goes into productive investment I_S and all productive investment goes into capital K:S. = I_S = K. Thus the key assumption is that Savings (S) in an economy needs to be invested into Production (P).

The shortcoming of the model is that it only uses capital and savings as determinants. It ignores other factors such as labour productivity and technological advances as factors spurring economic growth. Secondly, the model assumes the economy is operating at full employment.

They introduced the concepts of warranted growth, natural growth, and actual growth.

The warranted growth rate is defined as the rate of growth that induces just enough investment to match planned saving so that there is neither under- or over- capacity utilization. It is the rate at which growth must occur in a Harrod–Domar model if it is to be sustainable. If national income is *Y*, saving is *S*, and investment is *I*, saving is assumed to be a constant proportion of income so that $S = sY$. Investment is assumed to be given by an accelerator model, where investment is given by

$I = v(dY/dt)$,

where *t* is time. For saving and investment to be equal requires that

$sY = v(dY/dt)$.

This implies that the growth rate of *Y* must be determined simultaneously and proportionally by savings and investment. This is the only rate at which equilibrium growth is possible, so long as the saving ratio *s* and the capital–output ratio *v* are taken as fixed.

Natural growth is the growth an economy requires to maintain full employment. Actual growth is the real rate increase in a country's GDP per year.

IS-LM Framework

ISLM Model: The IS-LM model is a tool for looking at how the market for economic goods intersects with the loanable funds market. It depicts the short-term equilibrium point between interest rates and output, with its three variables being liquidity, investment, and consumption. The IS-LM model, which stands for “investment-saving” (IS) and “liquidity preference-money supply” (LM) is a Keynesian macroeconomic model that shows how the market for economic goods (IS) interacts with the loanable funds market (LM) or money market. When one turns to questions of policy, looking towards the future instead of the past, the use of equilibrium method is still more suspect.

An equilibrium condition is reached when the desired volume of cash balance equals the quantity of money, when the marginal efficiency of capital is equal to the rate of interest and finally, when the

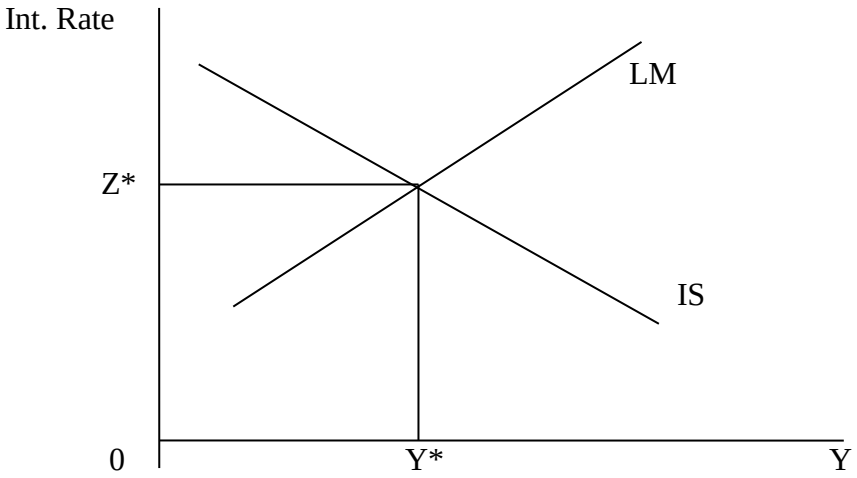
volume of investment is equal to the normal or desired volume of saving. And these factors are interrelated. Thus in the modern theory of interest, savings, investment, liquidity preference and the quality of money are integrated at various levels of income for a synthesis of the loanable funds with the liquidity preference theory.

The four variable of the formulation have been combined, to construct two new curves, the IS curve representing flow variable of the loanable funds formulation (or the real factors of the classical theory) and the LM curve representing the stock variable of liquidity preference formulation. The equilibrium between IS and LM curves provides a determinate solution. A shift in one of the IS or LM curves will cause a change in expectations, which shifts the other curve. Most modern macroeconomists see the IS/LM model as being - at best - a starting approximation for understanding the real world.

The IS–LM model is also a macroeconomic tool that demonstrates the relationship between interest rates and real output, in the goods and services market and the money market. The intersection of the IS and LM curves is the "general equilibrium" where there is simultaneous equilibrium in both markets. Two equivalent interpretations are possible: first, the IS-LM model explains changes in national income when the price level is fixed in the short-run; second, the IS-LM model shows why the aggregate demand curve shifts. Hence, this tool is sometimes used not only to analyse the fluctuations of the economy but also to find appropriate stabilisation policies.

FORMATION

The model is presented as a graph of two intersecting lines in the first quadrant. The horizontal axis represents national income or real gross domestic product and is labeled Y. The vertical axis represents the real interest rate, i. Since this is a non-dynamic model, there is a fixed relationship between the nominal interest rate and the real interest rate (the former equals the latter plus the expected inflation rate which is exogenous in the short run); therefore variables such as money demand which actually depend on the nominal interest rate can equivalently be expressed as depending on the real interest rate. The point where these schedules intersect represents a short-run equilibrium in the real and monetary sectors (though not necessarily in other sectors, such as labor markets): both the product market and the money market are in equilibrium. This equilibrium yields a unique combination of the interest rate and real GDP.



The IS-LM Framework

The Explanation of IS-LM Curve and Function

The IS Curve

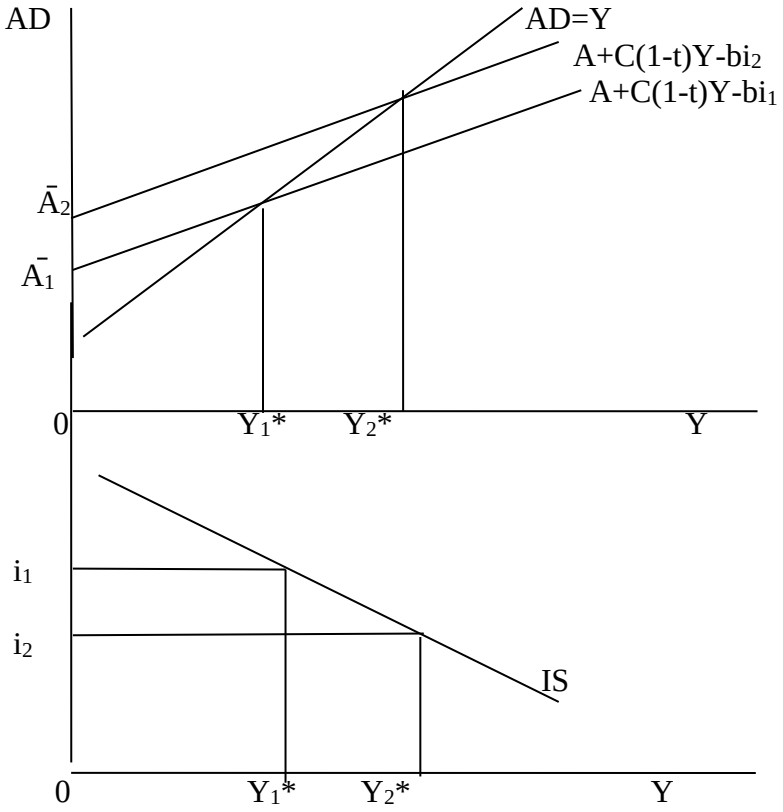
The IS curve depicts the set of all levels of interest rates and output (GDP) at which total investment (I) equals total saving (S). At lower interest rates, investment is higher, which translates into more total output (GDP), so the IS curve slopes downward and to the right.

The LM Curve

The LM curve depicts the set of all levels of income (GDP) and interest rates at which money supply equals money (liquidity) demand. The LM curve slopes upward because higher levels of income (GDP) induce increased demand to hold money balances for transactions, which requires a higher interest rate to keep money supply and liquidity demand in equilibrium.

The Intersection of the IS and LM Curves

The intersection of the IS and LM curves shows the equilibrium point of interest rates and output when money markets and the real economy are in balance. Multiple scenarios or points in time may be represented by adding additional IS and LM curves.



The Formation of IS curve

The increase in money supply form A_1 to A_2 leads to increase in output from Y_1 to Y_2 as interest rate fell from i_1 to i_2 leading to boost in investment which also leads to increase in national income fromY_1 to Y_2. This process continues.

Basic Information about IS-LM Framework

- The IS-LM model describes how aggregate markets for real goods and financial markets interact to balance the rate of interest and total output in the macro economy.
- IS-LM stands for "investment-saving" (IS) and "liquidity preference-money supply" (LM).
- IS-LM can be used to describe how changes in market preferences alter the equilibrium levels of gross domestic product (GDP) and market interest rates.

Because it is a highly simplistic device, it is only useful when snap decisions must be made, as it lacks the sophistication necessary for setting tax and spending policies.

Workings of IS-LM framework

Illustration: The commodity market for a simple two-sector economy is in equilibrium when Y=C+I. The money market is in equilibrium when the supply of money M3 equals the demand for money Md, which in turn is composed of the transaction-precautionary demand for money M1 and the speculative demand for money M2. Assume a two-sector economy where C=48+0.8Y, I = 98-75i, Ms=250, M1=0.3Y, and M2=52-150i

Commodity equilibrium (IS) exists when Y=C+I. Substituting into the equations,

Y=48+0.8Y+98-75i 1

Y-0.8Y=146-75i

0.2Y+75i-146=0

Monetary equilibrium (LM) exists when Ms= M1+M2. Substituting into the equation, 250=0.3Y+52-150i

0.3Y-150i-198=0

A condition of simultaneous equilibrium in both markets can be found, then by solving through the IS and LM equations above:

0.2Y+75i-146=0 2

0.3Y-150i-198=0……3

Multiply (2) by 2, add the result (4) to (3) to eliminate I, and solve for Y

0.4Y+150i-292=0……4

0.3Y-150i-198=0

0.7Y -490 =0 Y = 490/0.7

Y = 700

Substitute Y = 700 in (2) or (3) to find i.

0.2Y+75i-146=0

0.2(700) + 75i – 146 = 0 140 +75i – 146 = 0

75i = 6 i = 6/75 = 0.08

The commodity and money market will be in simultaneous equilibrium when Y = 700 and i = 0.08. At that point, C=48+0.8(700) = 608, I =98-75(0.08) = 92, M1=0.3(700) = 210, and M2=52-150(0.08) = 40.

C+I=608+92=700, and M1+ M2=210+40=250=Ms

The approach goes for a three-sector economy.

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