CIE Economics A-level

Topic 4: The Macroeconomy

f) Money supply (theory)

Notes

Quantity theory of money (MV = PT)

- The Quantity Theory of Money states that there is inflation if the money supply increases at a faster rate than national income.
- Fisher's equation of exchange is MV = PQ. T can be used instead of Q, although using Q means that PQ is nominal national income and overcomes the difficulties associated with the inclusion of intermediate transactions.
- M refers to the supply of money, V is the velocity of circulation, P is the price level and Q is the quantity of real goods sold (real GDP). T represents transactions. However, it is difficult to measure T.
- Therefore, the value of expenditure on goods equals the value of total output (MV=PQ).
- The equation assumes that velocity is constant, and that Q is independent of the supply of money. Only supply-side factors affect Q. it is assumed V is constant because the frequency that workers are paid does not change often.
- The equation argues that increasing the money supply causes inflation.
- When the money supply increases, consumers have more money to spend. This causes AD to shift to the right. Firms then increase supply in the short run. A positive output gap occurs, which is inflationary.
- As a result, more workers are employed, so wages increase. This means costs increase for firms, so they put up prices.
- This inflationary pressure means the real value of money falls. Since money can buy less, there is a contraction in demand.
- Workers demand higher wages to make up for the increase in inflation. This leads to a left shift in the SRAS curve.
- The output in the economy returns to equilibrium, but the price level is higher.

Broad and narrow supply of money

- The money supply is the stock of currency and liquid assets in an economy. It includes cash and money held in savings accounts.

- Narrow money is physical currency (notes and coins), as well as deposits and liquid assets in the central bank.

- Broad money includes the entire money supply. Cash could be in restricted accounts, which makes it hard to calculate the money supply. It includes liquid and less liquid assets.

- **Sources of money supply in an open economy (commercial banks and credit creation, role of central bank, deficit financing, quantitative easing, total currency flow)**

- **The difference between a commercial bank and an investment bank**

- A commercial bank manages deposits, cheques and savings accounts for individuals and firms. They can make loans using the money saved with them.
- Investment banks facilitate the trade of stocks, bonds and other forms of investment. Government regulation is weaker in the investment bank industry, and this combined with their business model gives them a higher risk tolerance.

- **The main functions of a commercial bank**

- **Accept deposits**

Commercial banks accept deposits from the public, usually in the form of savings. Those on low incomes might save a part of their income for security, whilst firms see saving as convenient. Banks can meet the different needs of their depositors by providing different accounts. Depositors could use Demand Deposits, which allow deposits to be made or withdrawn immediately. This is useful for firms who need to make immediate payments. Alternatively, Fixed Deposits store money for a long time. They have higher rates of interest, since banks can use these deposits knowing they will not be withdrawn. Saving Deposits are done by those who withdrawn money often, but not necessarily immediately, and who are generally receiving an income. They have lower rates of interest than Fixed Deposits.

- **Provide loans**

The main source of income for commercial banks is interest, which banks earn through providing loans. Banks **create credit** by using deposited funds as loans.

Some loans are secured against an asset, such as a house. This is to protect the bank's funds if the loan is not repaid.

Loans could be in the form of cash credit, on demand or only for the short term. Cash credit loans are based on bonds and approved securities. Banks enter agreements with customers so money can be withdrawn several times a year. Banks deposit money periodically into the accounts of the customer. Loans on demand are when the entire loan is paid into the account of the borrower. Therefore, the loan is charged with interest immediately. Short-term loans tend to be personal or for working capital and are usually against a security.

- **Overdraft**

When a current account has no deposits, consumers can still borrow money from the bank in the form of an overdraft. These are at a high interest rate and the amount that can be borrowed is limited.

- **Investment of Funds**

Surplus funds could be invested into securities such as Government bonds and treasury bills. These could earn a return for the bank.

- **Agency Functions**

Banks represent their consumers. For example, they collect cheques and dividends, they pay and accept bills, such as through a direct debit, they deposit interest and income tax, buy and sell securities and arrange the transfer of money between places for consumers.

- **The structure of a commercial bank's balance sheet**

Balance sheets show the value of a company's assets, liabilities and owner's equity during a period of time. It is usually at the end of a quarter or an annum.

A liability is something which must be paid. It is a claim on assets.

An asset is something that can be sold for value. The owner's equity is also called bank capital and it is what is left over when assets have been sold and liabilities have been paid.

Liabilities are used to buy assets, and income can be earned from these assets.

Liabilities are made up of share capital, deposits, borrowing and reserve funds. Assets are cash, securities and bills, loans and investments.

The objectives of a commercial bank and potential conflicts between these objectives

- **Liquidity**

The liquidity of assets is how easy it is to turn the assets into cash. Liabilities are payable on demand, so in order to be profitable banks must have cash and liquid assets. If liquidity is prioritised, profits will be low, so banks need a balance between the two objectives.

Assets in commercial banks are liquid to different extents. Cash is the most liquid asset, whilst deposits are the next most liquid. Loans and long term bonds are the least liquid assets in a commercial bank.

If banks can borrow easily and cheaply, they are likely to keep fewer liquid assets. The more expensive and difficult it is to get a loan, the more liquid assets are likely to be kept.

- **Profitability**

Banks need to earn profits to pay their depositors interest, wages and general expenses. Holding a lot of funds in cash means profitability is limited. However, liquidity and safety are generally prioritised over profitability, which is considered to be a supplementary for the bank's survival.

- **Security**

Banks face risks and uncertainties about how much cash they can get, and whether loans will be repaid or not. Banks therefore have to try and maintain the safety of their assets. A bank has to keep high proportions of their liabilities with itself and the central bank. However, following these principles means banks only hold their safest assets, so more credit cannot be created.

This means that banks profits are lower and the bank might lose customers. The bank needs a balance between the risk level and their profits. Too much risk could be harmful.

Monetary policy is used to control the money flow of the economy. This is done with interest rates and quantitative easing. This is conducted by the Bank of England, which is independent from the government.

The central bank takes action to influence the manipulation of interest rates, the supply of money and credit, and the exchange rate.

- **Functions of a central bank**

- The central bank manages the currency, money supply and interest rates in an economy. For example, the European Central Bank (ECB), the Bank of England and the People's Bank of China are central banks.
- Central banks issue physical cash (notes and coins) securely and using methods to prevent forgery. This is so people trust the money.
- The central bank can regulate bank lending to ensure there is stability in the financial system.

- **Implementation of monetary policy**

The central bank takes action to influence the manipulation of interest rates, the supply of money and credit, and the exchange rate.

In the UK, the Monetary Policy Committee (MPC) alters interest rates to control the supply of money. They are independent from the government, and the nine members meet each month to discuss what the rate of interest should be. Interest rates are used to help meet the government target of price stability, since it alters the cost of borrowing and reward for saving.

The bank controls the **base rate,** which ultimately controls the interest rates across the economy.

- **Banker to the government**

The central bank provides services to the Central Government. It collects payments to the governments and makes payments on behalf of the government. It maintains and operates deposit accounts of the government. The central bank also manages public debt and issues loans.

The Bank can also advise the government on finance, including the timing and terms of new loans.

- **Banker to the banks – lender of last resort**

  The Bank of England is considered to be a lender of last resort. If there is no other method to increase the supply of liquidity when it is low, the Bank of England will lend money to increase the supply.

  If an institution is risky or is close to collapsing, the Bank might lend to them. This is when they have no other way to borrow money.

  It can protect individuals who deposit funds in a bank and might otherwise lose them. It also aims to prevent a 'run on the bank', which is when consumers withdraw their bank deposits in a panic, because they believe the bank will fail.

  Usually, banks will avoid borrowing from the lender of last resort, because it is suggests the bank is experiencing a financial disaster.

- **Monetary policy instruments:**

  - **Interest rates**

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    The objective of monetary policy, to ensure there is price stability is described here:

    http://www.bankofengland.co.uk/monetarypolicy/Pages/framework/framework.aspx

    The bank controls the **base rate,** which ultimately controls the interest rates across the economy.

    When interest rates are high, the reward for saving is high and the cost of borrowing is higher. This encourages consumers to save more and spend less, and is used during periods of high inflation.

When interest rates are low, the reward for saving is low and the cost of borrowing is low. This means consumers and firms can access credit cheaply, which encourages spending and investment in the economy. This is usually used during periods of low inflation. However, during the financial crisis, the UK interest rate fell to a historic low of 0.5%, and has been at this rate since March 2009. Despite high inflation, the interest rate was set at a low rate to stimulate AD and boost economic growth.

- **Asset purchases to increase the money supply: Quantitative Easing (QE)**

This is used by banks to help to stimulate the economy when standard monetary policy is no longer effective. This has inflationary effects since it increases the money supply, and it can reduce the value of the currency.

QE is usually used where inflation is low and it is not possible to lower interest rates further.

QE is a method to pump money directly into the economy. It has been used by the European Central Bank to help stimulate the economy. Since the interest rates are already very low, it is not possible to lower them much more. The bank bought assets in the form of government bonds using the money they have created. This is then used to buy bonds from investors, which increases the amount of cash flowing in the financial system. This encourages more lending to firms and individuals, since it makes the cost of borrowing lower. The theory is that this encourages more investment, more spending, and hopefully higher growth. A possible effect of this is that there could be higher inflation.

If inflation gets high, the Bank of England can reduce the supply of money in the economy by selling their assets. This reduces the amount of spending in the economy.

- **Funding for lending**

Moreover, worsening conditions in the Euro area meant that UK banks faced higher funding costs. In order to support them, the government introduced the Funding for Lending Scheme, which aimed to lower these costs and provide cheap funding to banks and building societies.

- **Forward guidance**

This is used by central banks to detail what the future monetary policy will be. This is with the intention of reducing uncertainty in markets. For example, the MPC might state they will keep the interest rate at a certain level until a specified date.

- **Factors considered by the MPC when setting bank rate:**

    - **Unemployment rate**: if unemployment is high, consumer spending is likely to fall. This suggests the MPC will drop interest rates to encourage more spending.
    - **Savings rate:** if there is a lot of saving, consumers are not spending as much. Interest rates might fall.
    - **Consumer spending:** if there is a high level of spending in the economy, there could be inflationary pressures on the price level. This would cause the MPC to increase interest rates.
    - **High commodity prices:** Since the UK is a net importer of oil, a high price could lead to cost-push inflation. This could push the MPC to increase interest rates to overcome this inflationary pressure.
    - **Exchange rate:** A weak pound would cause the average price level to increase. This makes UK exports relatively cheap, so UK exports increase. Since imports become relatively more expensive, there would be an increase in net exports. The MPC might consider increasing the interest rate.

- **How changes in the exchange rate affect AD and the macroeconomic policy objectives:**

    - A reduction in the exchange rate causes exports to become cheaper, which increases exports. This assumes that demand for exports is price elastic. It also causes imports to become relatively expensive. This means the UK current account deficit would improve.
    - However, this is inflationary due to the increase in the price of imported raw materials. Production costs for firms increase, which causes cost-push inflation.

- An increase in interest rates, relative to other countries, makes it more attractive to invest funds in the country because the rate of return on investment is higher. This increases demand for the currency, causing an appreciation. This is known as **hot money.**