

(A)

What is money?

-Money is the means of payment.

Functions of money?

1. **Medium of exchange**: an object that is accepted in exchange for goods and services. (Without money, people need to exchange goods and service directly which is called **barter**)
2. **Unit of Account**: measure prices of goods and services. Comparison.
3. **Store of Value**: money can be held for a time.

Money in Canada Today consists of?

1. Currency: Notes and coins held by individuals and business.
2. Deposits at banks and other depository institutions.

Official Measures of Money?

1. **M1**: Currency held by individuals and business+Chequable deposits.
2. **M2**: All M1+Non chequable deposits and fixed term deposits.
-Some savings in M2 are not means of payments they are called **liquid assets**

Money or not Money?

1. **Liquidity** is the property convertible into money with loss of values.
2. **Deposits** are money, but cheques are not.
3. **Credit cards** are not money.

(B)

What are Depository Institutions?

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

What are some types of depository institutions?

1. **Chartered banks**: Receive deposits and make loans.
2. **Credit unions and Caisses Populaires**: Receives deposits and makes loans to its members.
3. **Trust and mortgage loan companies**

What do depository institutions do?

The goal of any bank is to **maximize the wealth of its owners**. In order to achieve this goal, the interest rate at **lends exceeds** the interest rate on **deposits**.

But banks must balance profits and prudence.

1. Loans generate profits.
2. Depositors must be able to obtain their funds when they want to withdraw.

Types of funds?

1. **Reserves**: Notes and coins at banks
2. **Liquid assets**: Canadian government Treasury bills and commercial bills
3. **Securities**: Long term Canadian government bonds and other bonds.
4. **Loans**: Commitments of fixed amounts of money (depositors agreed not to take them upon periods of time usually have greater interest rate on deposits.)

Economics benefits provided by depository institutions?

1. Create liquidity
2. Pool risk
3. Lower the cost of borrowing
4. Lower the cost of monitoring borrowers

How depository institutions are regulated?

- To make the risk of failure small, depository institutions are required to hold **levels of reserves** more or equal to the ratios laid down by regulation.
- if a Canadian bank fails, depositors can get at least 100,000.
- Provincial government agencies regulate credit unions and caisses populaires.

(Financial innovation: development of new financial products: lower the cost of deposits or to increase the return from lendings.)

Two influences on financial innovation?

1. Economics environment
2. Technology

(C)

The Bank of Canada

- is the central bank of Canada.
- Regulates a nation's depository institutions and controls the quantity of money.

What are the roles of the Bank of Canada?

1. **Banker to the banks and governments**: accepts deposits from depository institutions and government, then makes up the payments system.
2. **Lender of last resort**: it is always ready to make loans when the banking system is short of reserves.
3. **Sole issuer of bank notes**. (債券)

Balance sheet of the Bank of Canada

- Assets: Government securities (largest) and last resort loans to banks.
- liabilities: Notes(largest) and deposits of banks and the governments.

Monetary Base

- Monetary Bases=notes from bank of canada+banks deposits at the bank of canada+coins held by households, firms and banks.
- In order to change the monetary base, the bank of canada conducts an **open market operation, purchase or sale of government of canada securities by the bank of canada in the open market**

Policy tools of the bank of canada

1. **Open market operations**: purchase increase banks reserve, sale decrease the banks reserve.
2. **Bank rate**: Banks of Canada makes loans to depository institutions when the banking system is short of reserves. The interest rate on these loans is called bank rate.

How banks create money?

- They create deposits by making loans.

The quantity of deposits that banks can create is limited by?

- The monetary base** (notes from central bank+banks deposits at central bank+coin held by individuals.

-**Desire reserves** (a bank's actual reserves=notes and coins held+deposits at bank of Canada) the desired reserve ratio=bank's reserves/total deposits the bank plans to hold.
-**Desired currency holding** (currency increases when deposits increase, the ratio of currency to deposits is the currency drain ratio)

Money creation process?

Begin with increase monetary base----The bank of Canada conducts open market operation (it buys securities from banks)-----new amount of reserves created in different banks-----Banks now have more reserves but same amount of deposits-----**excess reserves=actual reserves-desired reserves**

The Money Multiplier?

Is the ratio of the change in the quantity of money to the change in monetary base.

How much money do people want to hold?

1. The price level
2. The nominal interest rate
3. Real GDP
4. Financial innovation lowers the cost to buy assets and decreases the quantity of real money that people want to hold.

The Demand for money

The relationship between quantity of real money demanded and nominal interest rate.
(shifting left or right depends on the factors above.)

Short run eq' depends on the supply of money from the bank.

Long run eq', the loanable funds market determines the real interest rate.

In long run REAL GDP=POTENTIAL GDP, so the only variable is the **price level**-----**Nominal interest rate=equilibrium real interest rate plus the expected inflation(price level)**

The Quantity theory of Money

-in long run, an increase in the quantity of money brings an equal percentage increase in the price level.

-This theory is based on **velocity of circulation and the equation of exchange.**

Equations

$V=PY/M$ $MV=PY$ Money Growth rate+Rate of velocity=inflation rate+real GDP growth

In the long run, velocity does not change, so inflation rate=Money growth rate-Real GDP growth