Suva Sangam College

Year 13 Economics

Week 1 5th July – 9th July 2021

Strand 3: Macroeconomics

Sub Strand: Changes in Money Supply

Achievement Indicators:

- ✓ Identify and explain the factors that cause primary expansion in money supply.

PRIMARY FACTORS AFFECTING MONEY SUPPLY

Money, as we know it today, is the result of a long process and has evolved over time.

In this modern era money plays vital role with the prime function of being the medium of exchange. The latest type of money is plastic money in the form of Credit cards and Debit cards. The aim is at removing the need for carrying cash to make transactions.

The money supply consists of notes and coins in the hands of the public plus demand deposits with all banks. Money supply is categorized as M1, M2 and M3.

M0 is the sum of total currency in circulation.

1. M1 = coins and notes, travellers cheques + transaction accounts operable by cheques. Narrow money, include most immediate forms of money available to the general public.

2. M2 = M1 + other savings account. This includes EFTPOS, investments accounts and bonds. M2 is called Near Money. Near Money – assets that can be converted into cash easily.

3. M3 =M2 + term deposit held at banks or other financial institutions this is called broad money which consists of large denominators, certificates of deposits

Money supply changes due to:

(a) Primary expansion of money supply.
(b) Secondary expansion of money supply.

Primary expansion of money supply

In primary expansion changes in money supply is the result of new deposits being deposited into the banking system. Such new deposit has effect on increasing the reserves of banks which means the reserves will be greater than those required to support the existing level of customers deposit therefore banks could lend out more money.

Activities

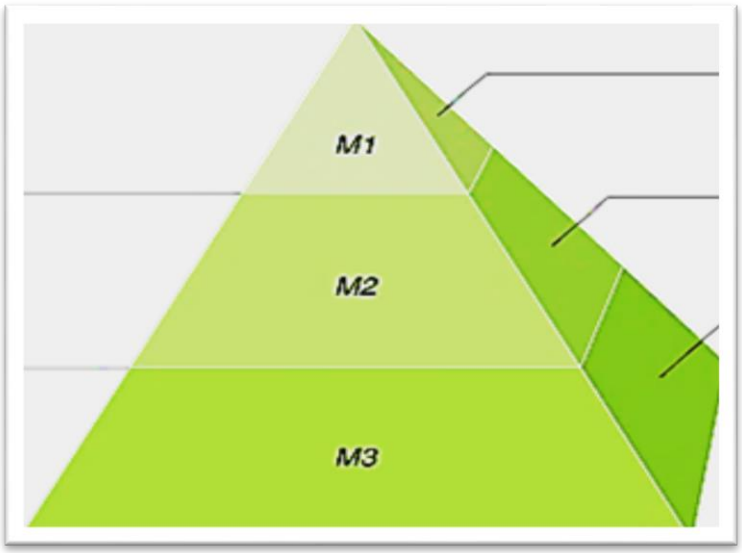
1. The components of the narrow definition of money include

A. Notes and coins in circulation and all savings accounts.
B. Notes and coins in circulation, cheque accounts and reserves.
C. Notes and coins in circulation, cheque accounts and savings accounts.
D. Notes and coins in circulation, cheque accounts and demand deposits.

2. The most liquid form of money is

A. Cash.
B. Loans.
C. Savings.
D. Term deposits.

3. The diagram below shows how the definitions of money supply, **M1, M2 and M3**, relate to each other. Study the diagram and answer the questions that follow.



i. Which definition is also known as the **narrow money supply** and comprises notes and coins held by the public plus transaction account deposits kept in financial institutions?

ii. Which definition is also known as the **broad money supply** where the majority of other of funding is in the form of term deposits?

iii. What happens to the **liquidity of money** as one moves upwards from the bottom of the diagram.

Week 2 12th July – 16th July 2021

Strand 3: Macroeconomics

Sub Strand: Changes in Money Supply

Achievement Indicators:

- ✓ Identify and explain the factors that cause primary expansion in money supply.

There are several factors which causes primary expansion of money supply:

Public debt policy(Government borrowing)
Foreign aid
Remittances
Export earnings and import payments
Open market operations
Interest rate
Moral suasion

Effects of primary factors on money supply:
Each primary factor has effect on volume of money supply. These effects are:

(a) Government budgetary transaction –whereby the government national budget standing has effect on money supply. This happen through :

(i) Budget deficit–to cover for deficit budget borrowing takes place in 3 ways

- Borrowing from reserve bank. This simply means printing more money. Thus ***money supply increases***.
- Borrowing from overseas under floating exchange rate will alter the money supply depending on the movement in the exchange rate.
- Borrowing form the private sector (public) by selling bond or securities will lead to transfer of funds from private sector to public sector. It will lead to crowding out of investment however ***money supply will remain unchanged***.

(ii) Budget surplus- If the ***government budgets for a surplus, the domestic money supply will fall.*** This is because the volume of money withdrawn from the economy exceeds the volume of money injected in form of government spending. Thus budget surplus contracts the economy.

(b) Foreign aid- is the **international** transfer of capital, goods, or services from a country or **international** organization for the benefit of the recipient country. Increase in foreign aid to a recipient country will ***increase money supply*** and vice versa.

(c) Remittances- are transfer of money from a migrant worker to their families or other individuals in their home countries. In many countries, **remittance** constitutes a significant portion of the GDP. Increase in remittances will increase money supply and vice versa.

(d) Export earnings and import payments-increase in export earnings will increase money supply on the other hand increase in import payment will decrease money supply and vice versa.

(e) Open market operations-when the reserve bank sells the government stock and bonds, the public account balance reduces as they pay for stock and bonds, decrease in account balance decreases reserves hence money supply decreases. Whereas when reserve bank buys bonds and securities, the public account balance increases hence increase in money supply.

(f) Interest rate-increase in interest rate leads to decrease investment thus aggregate money demand decreases hence money supply decrease. Whereas decrease in interest rate leads to increase investment thus aggregate money demand increases hence increase in money supply

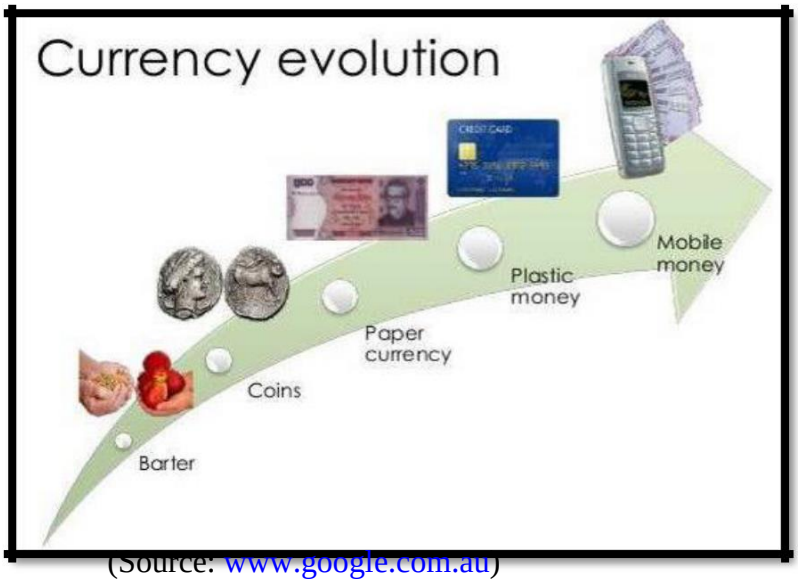
(g) Moral suasion- Non-official' tool of monetary policy which governments employ to persuade financial institutions in following suggested guidelines on the availability and cost of credit. Moral suasion is used typically by making policy announcements to induce the desired response, before resorting to mandatory compliance through statutory regulations. Therefore through moral suasion money supply is increased.

Activities

1. Which of the following is not a factor of causing primary expansion of money supply?
A. Foreign aid
B. Remittance
C. Interest rate
D. Credit creation

2. Purchase of bonds and securities by RBF will _____ money supply.
A. increase
B. decrease
C. not change
D. fluctuate

3. With reference to the picture discus the evolution of currency.



(Source: www.google.com.au)

1. Define **Remittances**

2. State 3 factors causing primary expansion of money.

3. State 3 effects of primary expansion of money.

4. What does 'crowding out of investment' mean?

5. Explain the term '**Moral Suasion'**.

Week 3 **19th July – 23rd July 2021**

Strand 3: Macroeconomics

Sub Strand: Changes in Money Supply

Achievement Indicators:

- ✓ Identify and explain the factors that cause secondary expansion in the money supply.
- ✓ Discuss the effects of secondary factors on money supply

Secondary expansion of money supply results from credit creation process. Individual banks do not create money but when they lend their excess reserves the banking system as a whole is able to create the credit.

Credit creation model illustrates how commercial banks expand deposits through loans, advances and investments. The banking system as a whole can create **credit** which is several times more than the original increase in the deposits of a bank.

The banks also prepare a balance sheet showing the financial position of bank, hence what the banks owns and owes. A deposit by customer is assets for the customer but for the bank it is considered as liabilities since bank owes the customer. Detailed balance sheet of registered bank and reserves appears like this:

Balance sheet of combined registered banks

Assets	***$***	***Liabilities***	***$***
Cash(notes and coins)	10	Transaction accounts(public):	
Deposits at reserve bank(settlement cash)	1000	Demand deposits	2810
Reserve banks bills	100	Time deposits	2000
Government securities	500		
Other investments	400		
Loans(advances)	2800		
	$ 4810		**$ 4810**

Balance sheet of combined Reserve bank

Assets	***$***	***Liabilities***	***$***
Overseas assets	500	Bank notes on issue	400
Investments	700	Deposits:	
Loan to government	400	Registered banks	1000
		Government	100
		Reserve bank bills	100
	$ 1600		**$ 1600**

Activities

1. The supply curve for money is perfectly inelastic because money supply

A. is controlled by the central bank and that of primary liquidity.

B. has an inverse relationship with interest rate.

C. is affected by the interest rate.

D. is too big to be determined.

2. An example of a secondary expansion of money would include

A. the process of credit creation.

B. customers depositing more money than withdrawing.

C. government spending more money than what they raise from tax.

D. the Reserve Bank buying government stock from the general public.

3. Differentiate between **primary** and **secondary money expansion**
4. Classify the following into assets and liabilities**.**
    i. Deposits at Reserve Bank
    ii. Government securities
    iii. Demand deposit
    iv. Loan

Week 4 **26th July – 30th July 2021**

Strand 3: Macroeconomics

Sub Strand: Changes in Money Supply

Achievement Indicators:

- ✓ Discuss the effects of secondary factors on money supply
- ✓ Draw simple and combined registered bank balance sheet

A simple balance of trading bank which appears like this.

Trading bank balance sheet(simplified version)			
Assets	**$**	**Liabilities**	$
Notes and coins	x	Demand deposit	x
Demand deposits (RBF)	x	Time deposit	x
Time deposits(RBF)	x		
Government securities	x		
Overseas assets	x		
Advances	x		

Balance sheet interpretation:

Liabilities: side of balance sheet shows where the banks got the financing from. It consists of customer's deposit which has to be repaid to depositors.

Assets: this side shows what the bank did with its sources of funds.

i. Notes and coins (tilt/vault money)-notes and coins kept by the bank.
ii. Demand deposits (with RBF)-cheques account of commercial banks kept with RBF
iii. Time deposits (with RBF)-act as fixed term deposit and left undistributed for fixed term to earn interest.
iv. Government securities-loan to government. Long term government loans/securities known as government stock and short term as treasury bills.
v. Overseas assets-foreign currency held by banks which gain to those who import goods and services.
vi. Advance-overdraft or customer loan.

Reserve banks balance sheet(simplified version)

Assets	$	**Liabilities**	**$**
Overseas assets	x	Bank notes on issue	x
Investment (overseas)	x	Deposit of commercial bank	x
Loan to government	x	Reserve bank bill	x

Credit creation process- banks do not create notes and coin but they create credit or deposits and this requires reserve ratio. The credit creation model shows how banks can increase money supply through lending process. The amount of credit created depends on the size of the credit multiplier. The cycle of credit creation is called a **credit multiplier**. It is the level of withdrawal from the cycle that determines the extent of the credit multiplier. The multiplier causes an increase in money supply.

Reserve ratio is used to find credit multiplier. ***Reserve ratio*** is percentage of deposits retained by commercial banks as requirement of RBF. Reserve ratio is also known as required reserve ratio, prudent asset ratio or required asset ratio.

Formula for reserve ratio (RR) = Reserve / Total Deposit × 100

Credit multiplier-is an indicator of final changes in the bank deposit which originated from initial change.

Formula for credit multiplier (CM) = $\frac{1}{RR}$

Assumptions of Credit Creation Process

Loans borrowed from one bank are deposited in another bank. The second keeps its required reserves and lends the rest. The cycle continues until no more loans can be made.

If money creation continues in geometric progression, then the total MS created would be:

Formula to calculate the secondary expansion $\frac{\text{Initial deposit (1 - RR)}}{RR}$

- Banks must keep as minimum required reserve.
- All people deposit money and get loans.
- There is no leakage.
- People should willingly take loans.

Activities

1. Secondary causes of changes in the money supply is when

A. people increase the volume of the money supply.
B. both the banking system and exports increase the money supply.
C. factors outside of the banking system increases the money supply.
D. the banking system contributes to the expansion of the money supply.

2. Use the following information that describes the conditions in the Banking System of Economy C and your own knowledge to answer questions (i) to (iii).

Banking System of Economy C	
	$(million)
Total Reserves	4 000
Transaction Account Balances	10 000
Notes and Coins held by the Public	2 000

i. Calculate the Money Supply, M1.
ii. Construct a Balance Sheet showing the assets and equities of the combined registered banks..
iii. Calculate the reserve ratio.

3. Use the information given in the table below about the banking system in an economy to answer questions (i) to (iii).

Simplified Balance Sheet of Combined Registered Banks

Grace Bank -Initial Balance Sheet			
Assets	**$m**	**Liabilities**	**$m**
Total reserves	6,000	Transaction account balances	4,000
		Savings	2,000
		Term deposits	24,000

*$2,000 notes and coins in circulation

Calculate

(i) money supply, M1
(ii) reserve ratio
(iii) credit multiplier

Week 5 **2nd – 6th August 2021**

Strand 3: Macroeconomics

Sub Strand: Credit Creation Process

Achievement Indicators:

- ✓ Use flow diagram to illustrate the credit creation process.
- ✓ Show the effect of credit creation process in combined bank balance sheet.

Credit Creation Process

Assume RBF requires 20% as reserve ratio. The initial deposit is $ 1000. Therefore the initial balance sheet of bank looks like this:

Bank 1 -Initial Balance Sheet			
Liabilities	**$**	**Assets**	**$**
Deposit	1000	Reserve	200
		Advance	800
	1000		1000

Bank 1 holds 20% of initial deposit as reserve which is $200 (20% ×1000=200) and rest is loan out (80% ×1000=800). This $800 is known as withdrawal, advance or short term loans. People who take out loan or withdraw will spend $800 on goods and services and this will go as deposit in another bank.

Bank 2 -Balance Sheet			
Liabilities	**$**	**Assets**	**$**
Deposit	800	Reserve	160
		Advance	640
	800		800

Bank 2 hold s 20% of deposit as reserve which is $ 160(20% ×800=160) and rest is loan out (80% ×800=640). People who again take out loan or withdraw will spend $640 on goods and services and this will again go as deposit in another bank.

Bank 3 -Balance Sheet

Liabilities	**$**	**Assets**	**$**
Deposit	640	Reserve	128
		Advance	512
	640		640

To find out total deposit created:

Step 1: Find out credit multiplier?

Credit multiplier (CM) = $\frac{1}{RR}$

$\frac{1}{}$

0.2 ⟶ (20%)

= 5 times

Step 2: How to find total increase in demand deposit? (same as total increase in MS)

Total increase in demand deposit= initial deposit × CM

1 000×5 =**$5 000**

Step 3: How to find total increase in credit created?

Total increase in credit created= increase in demand deposit- initial deposit

5000-1000

=$4 000

Note: 1. Primary expansion is the amount of new deposits (in this case $1 000)

2.Secondary expansion is the amount of increase in credit created by the banks. (In this case $4 000)

Formula to calculate the secondary expansion

$$= \frac{\text{Initial deposit (1-RR)}}{\text{RR}}$$

$$= \frac{\text{1 000 (1-0.2)}}{\text{0.2}}$$

= $**4 000**

The formula used to calculate the total increase or expansion in money supply:

Increase in money supply = primary expansion x credit creation multiplier.

= 1 000 × 5

= $5 000

At the end of total credited created by all the trading banks the combined balance sheet would look like this:

Combined Balance Sheet of all trading banks			
Liabilities	**$**	**Assets**	**$**
Deposit	5000	Reserve	1000
		Advance	4000
	5000		5000

Limitations to the credit creation theory:

i. In reality the total amount of credit created will be less than what the credit predicts. This is because of the withdrawals e.g. not all money borrowed will be deposited.

ii. Some is paid as tax e.g. GST

iii. The banks may not lend out all the money that is deposited.

Activities

1. Study the table below and with your own knowledge, answer questions (i) and (ii).

The central bank is required to keep **Reserves**. The initial deposit is $15,000. Therefore the initial balance sheet of a particular bank is as below.

Bank 1 -Initial Balance Sheet			
Liabilities	**$**	**Assets**	**$**
Deposit	15,000	Reserve	3,000
		Advance	12,000
	$15,000		**$15,000**

Calculate the following :

i. credit multiplier

ii. total increase in credit created

2. Use the information in the table below to answer the questions (i) to (iv).

Combined Registered Banks Balance Sheet

Assets	**$m**	**Liabilities**	**$m**
Reserve (or balances with the reserve Bank)	20	Demand Deposits Term Deposits	350 50
Loans (or advances)	?		
Total	**400**	Total	**400**

(i) Identify the component of **narrow money** supply as shown in the balance sheet above**.**

(ii) Suppose that the notes and coins currently in public circulation is **$60m**, calculate the value of **M1**.

(iii) Calculate the value of the **Reserve Ratio.**

(iv) Explain the significance of the **Reserve Ratio** as determined by the Central Bank of a country.

(For any queries and clarification you can sent me a message through messenger with Facebook name – Ravnita Kumar or sent an email to – ravnitakumar10@gmail.com)

THE END