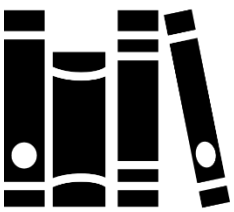
WEEK 7- TARGETS AND INDICATORS OF MONETARY POLICY

CONTENTS

1.0. INTRODUCTION

The method through which money affects growth, employment, and prices influences the choice of a target for monetary policy. The policy makers rely on intermediate targets because none of the tools available to the monetary authority directly affects these policy variables. These intermediate targets are also closely linked to the ultimate targets of production, employment, and price level through a transmission mechanism.

2.0. OBJECTIVES



At the end of this unit, you should be able to:

i. Define and understand the term Targets of Monetary Policy
ii. Understand the meaning of Market yield on Equity
iii. Know the basic indicators of Monetary Policy

3.0 MAIN CONTENT

3.1 TARGETS OF MONETARY POLICY

The monetary policy has three target variables. These three factors are the money supply, availability of credit, and interest rates.

Money Supply: So far monetary policy is concerned, the central bank cannot directly control output and prices. So it selects the growth rate of money supply as an intermediate target. In fact, it select an operating target 'which it considers to be closely linked to its intermediate target'. Friedman suggests that the money supply should be allowed to grow steadily at the rate of 3 to 4 per cent per year for a smooth growth of the economy and to avoid inflationary and recessionary tendencies.

Availability of Credit and Interest Rates: availability of credit and interest rate are the other two target variables of monetary policy. Economists call them as money market conditions 'which refers to short-term interest rates and the banking system's ―free reserves‖ (that is excess reserves minus borrowed reserves). The monetary authority can influence the short-term interest rates. It can change credit conditions and affect economic activity by rationing of credit or other means. The monetary authority influences economic activity by following an easy or expansionary monetary policy through low and/or falling short-term interest rates and a tight or contractionary monetary policy through high and/or rising short-term interest rates.

Its Limitations: the use of interest rates and credit availability as target variables are beset with a number of difficulties.

a) No doubt interest rates and the supply of credit influence spending, but it cannot be predicted with definiteness about the size and timing of the effects of any change in them.
b) So far as interest rates are concerned, it is the real interest rate that matters and not the nominal interest rate. It is possible to control and observe the movements in the nominal interest rate and not in the real interest rate because

it is difficult to measure the expected rate of price inflation. When the monetary authority raises the nominal interest rate, the real interest rate will also rise other things being equal. But this does not happen always because when money interest rates are raised, the expectations of price inflation are growing. Under such circumstances, a rise in the nominal interest rate may be associated with a fall in the expected real rate. Thus the nominal interest rate is not good target of monetary policy.

c) The use of credit availability as a monetary target is not helpful in monetary policy. Suppose there is reduction in the availability of credit, it may be offset by credit flows Non-bank of financial institutions (NBFIs).
Moreover, it is difficult to predict the amount of reduction/increase in the availability of credit.

3.1.1 Intermediate Targets:

The economic and financial variables known as intermediate goals are those that central bankers attempt to affect through the use of monetary policy tools, but which are not in and of themselves the end purpose or target of a policy. In other words, they stand between the monetary policy's immediate effects and the desired economic results for the policymaker.

In general, intermediate targets perform predictably in relation to a central bank's stated economic goals, such as full employment or stable prices, and alter fast to meet new policy actions. These goals frequently have to do with rising interest rates or the money supply.

Purpose

- As a step between the immediate tools of monetary policy and its long-term objectives, intermediate targets aid in directing central bank action.
- The monetary policy of a central bank affects these targets, which in turn affect broader objectives for economic performance, such controlling inflation.
- Modifications to the money supply, interest rates, and employment rates are a few examples of intermediate targets.

Intermediate Targets/background

For the benefit of society, monetary policymakers are often given legal mandates to oversee the banking sector and financial system in order to accomplish macroeconomic performance goals. These objectives may include preserving high employment rates, encouraging economic expansion, or preserving a national currency's value and, consequently, the level of domestic pricing.

-For instance, the U.S. Federal Reserve is required by law to effectively advance the objectives of maximum employment, price stability, and reasonable long-term interest rates.

-The Fed cannot, however, merely impose long-term interest rates and market prices, nor can it compel companies to hire more employees in order to boost employment. -In contrast, it makes use of four important monetary policy tools—namely, open market operations (OMO), discount lending, bank reserve requirements, and forward guidance—to affect intermediate targets that decision-makers believe are connected to their specified aims.

The Fed employs intermediate objectives, which are made up of many distinct factors, to indirectly influence the economy. The amount of money in circulation plus deposits, the interest rate on Treasury notes, and various money supply indexes weighted in different ways have all historically been examples of strategies to control the money supply. The federal funds rate is presently the Fed's most well-known intermediate target.

Intermediate targets can be divided into two types in general. They are either easily observable stand-ins for (or are connected to) important economic outcomes that are challenging or expensive to detect or quantify, or they represent intermediary steps in a causal chain between the policymaker's actions and eventual aims.

How Intermediate Targets Translate into Long-Term Monetary Policy Goals

The intermediate goals that the central bank can affect are, in turn, connected to the policy's ultimate objectives either because they can be seen to be closely correlated with them or because they are connected through a chain of cause and effect that is explained by economic theory (or both). The majority of the tools we use to gauge actual economic success, such as the Gross Domestic Product (GDP), total

employment, and consumer pricing levels, can be expensive, complex, or even impossible to measure quickly.

It may not be possible to directly target them with monetary policy, or it may involve lengthy and unpredictable lags between policy implementation and result that make monetary policy more challenging or even harmful. In order to impact intermediate aims that it believes are logically or statistically relevant to its ultimate goals, the Monetary Authority instead employs its policy tools.

Example of Intermediate Targets

Imagine, for instance, that the Fed has observed a decline in consumer prices and wants to stop it. However, it is unable to simply command the decline to stop. In this situation, it can choose to purchase Treasury securities through open market transactions in order to replenish the financial sector's supply of bank reserves. It does this with the awareness that doing so will prompt banks to extend more credit to individuals and businesses, which will encourage them to spend more and raise prices.

The Fed uses the federal funds rate to determine the immediate effects of its monetary injections; when there are more bank reserves in the system, banks are typically more inclined to lend to one another at lower rates, therefore the Fed funds rate tends to decline. The Federal Reserve selects a target rate that it thinks will be consistent with halting the price drop and purchases assets up until this rate is reached.

How central banks conduct monetary policy

As a result, each central bank pursues a unique approach to implementing monetary policy by focusing on factors that stand between the policy's instruments and the accomplishment of its objectives. This is the plan of action: The central bank selects a set of variables to aim for, known as intermediate targets, after deciding on its goals for employment and the price level. These variables include monetary aggregates (M1, M2, or M3) or interest rates (short- or long-term), which directly affect employment and the price level. The policy instruments used by the central bank do not, however, directly affect even these intermediate aims. Because these variables are more responsive to its policy tools, it chooses a different set of variables to aim for, known as operating targets, or alternatively instrument targets, such as reserve aggregates

(reserves, nonborrowed reserves, monetary base, or nonborrowed base), or interest rates (central bank rate or Treasury bill rate).

- *Note*-The central bank rate is the interest rate on money lent overnight between banks.
- The non-borrowed reserves are total reserves less borrowed reserves, which represent the amount of discount loans.
- The non-borrowed base is the monetary base less borrowed reserves.

The reason the central bank employs this method is that hitting a target rather than the intended target directly is easier. Instead of waiting to see how its policies on employment and the price level turn out in the end, it may more swiftly assess whether they are on the right track by utilizing intermediate and operating targets.

Scenario example

Suppose that the central bank's employment and price-level goals are consistent with a nominal GDP growth rate of 5%. If the central bank feels that the 5% nominal GDP growth rate will be achieved by a 4% growth rate for M2 (its intermediate target), which will in turn be achieved by a growth rate of 3.5% for the monetary base (its operating target), it will carry out open market operations (its tool) to achieve the 3.5% growth in the monetary base. After implementing this policy, the central bank may find that the monetary base is growing too slowly, say at a 2% rate; then it can correct this too slow growth by increasing the amount of its open market purchases. Somewhat later, the central bank will begin to see how its policy is affecting the growth rate of the money supply. If M2 is growing too fast, say at a 7% rate, the central bank may decide to reduce its open market purchases or make open market sales to reduce the M2 growth rate.

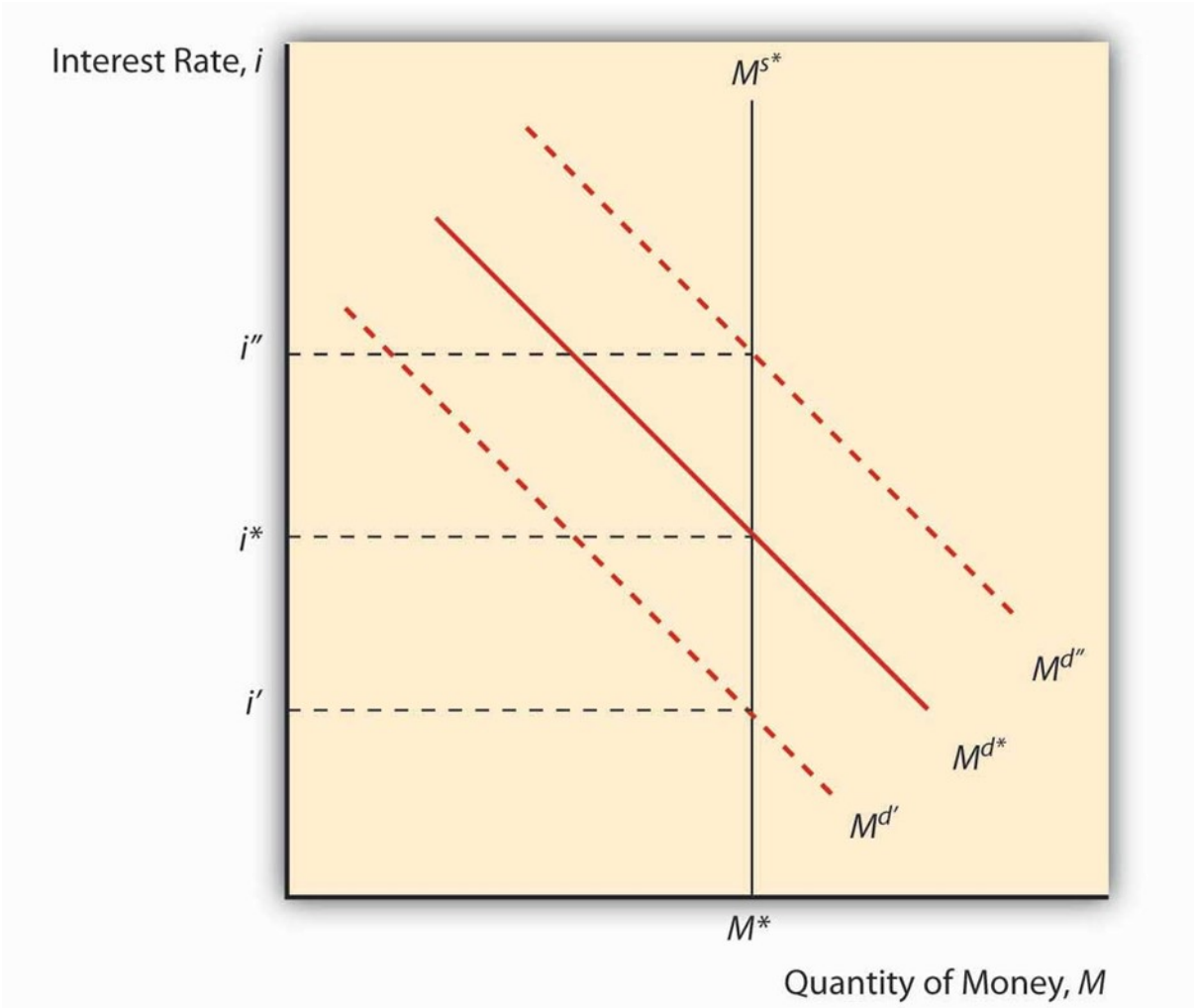
3.1.2 Choice of Targets

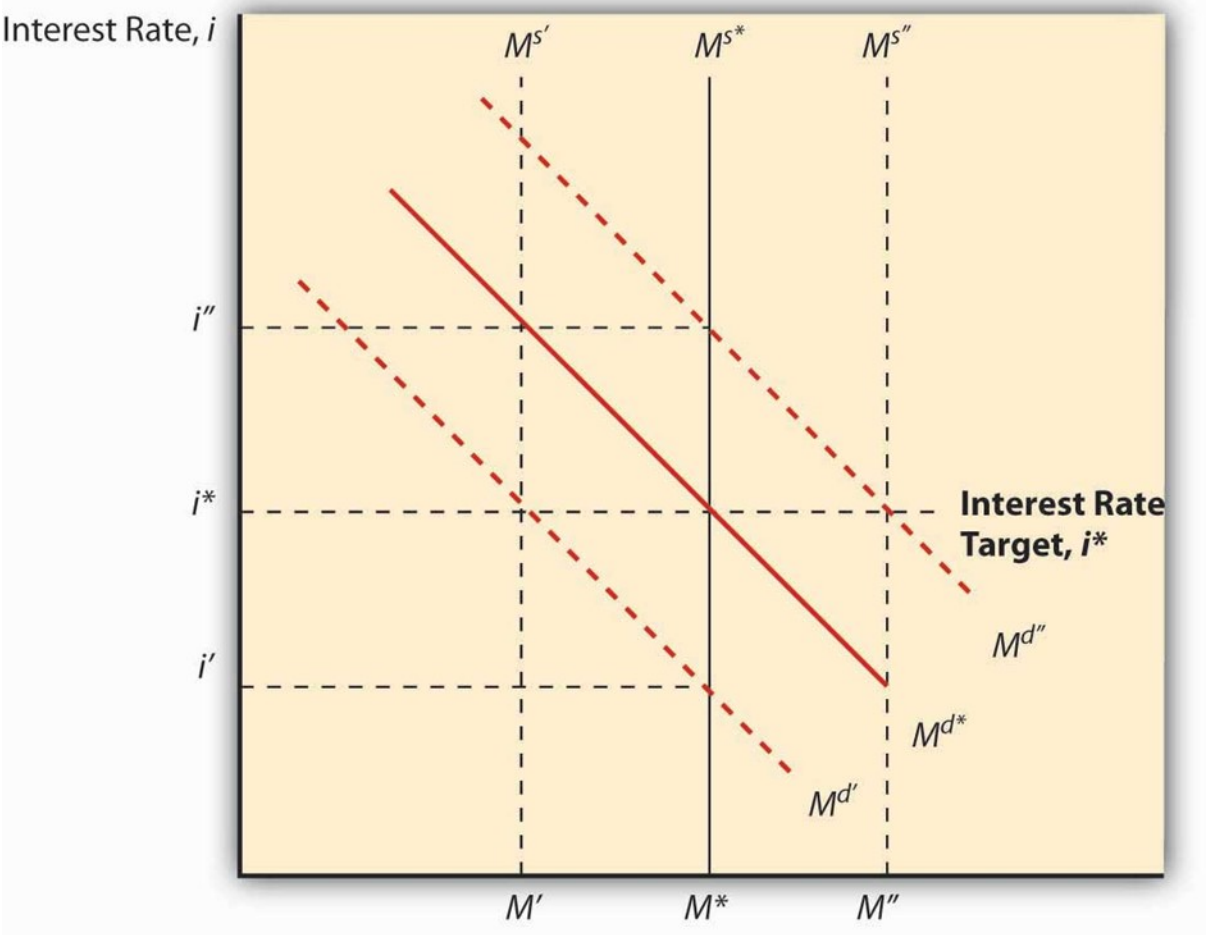
Choosing targets-Competing targets

There are two different types of target variables: interest rates and monetary aggregates.

In our previous example, the central bank chose a 4% growth rate for M2 to achieve a 5% rate of growth for nominal GDP. It could have chosen to lower the interest rate on the three-month Treasury bills to, say, 3% to achieve the same goal. *Can the central*

bank choose to pursue both of these targets at the same time? The answer is no. Let's first see why a monetary aggregate target involves losing control of the interest rate. Figure 1 contains a supply and demand diagram for the money market.


Interest Rate, i
M^{s*}
i''
i^*
i'
$M^{d''}$
M^{d*}
$M^{d'}$
M^*
Quantity of Money, M


Interest Rate, i
$M^{s'}$
M^{s*}
$M^{s''}$
i''
i^*
i'
Interest Rate Target, i*
$M^{d''}$
M^{d*}
$M^{d'}$
M'
M^*
M''

Although the central bank expects the demand curve for money to be at Md*, it fluctuates between Md' and Md'' because of unexpected increases or decreases in output or changes in the price level. The money demand curve might also shift unexpectedly because the public's preferences about holding bonds versus money could change. If the central bank's monetary aggregate target of a 4% growth rate in M2 results in a money supply of Ms*, it expects that the interest rate will be i*. However, as the figure indicates, the fluctuations in the money demand curve between Md' and Md'' will result in an interest rate fluctuating between I' and I''. Pursuing a monetary aggregate target implies that interest rates will fluctuate.

The supply and demand diagram in Figure 2 shows the consequences of an interest rate target set at i*. Again, the central bank expects the money demand curve to be at Md*, but it fluctuates between Md' and Md'' due to unexpected changes in output, the price level, or the public's preferences toward holding money. If the demand curve falls to Md', the interest rate will begin to fall below i*, and the price of bonds will rise. With an interest-rate target, the central bank will prevent the interest rate from falling by selling bonds to drive their price back down and the interest rate back up to its former level. The central bank will make open market sales until the money supply declines to Ms* , at which point the equilibrium interest rate is again i*. Conversely, if the demand curve rises to Md'' and drives up the interest rate, the central bank would keep interest rates from rising by buying bonds to keep their prices from falling. The central bank will make open market purchases until the money supply rises to Ms* and the equilibrium interest rate is i*. The central bank's adherence to the interest-rate target thus leads to a fluctuating money supply as well as fluctuations in reserve aggregates such as the monetary base.

The conclusion from the supply and demand analysis is that interest-rate and monetary aggregate targets are incompatible: A central bank can hit one or the other but not both. Because a choice between them has to be made, we need to examine what criteria should be used to decide on the target variable.

What is the criteria for choosing targets?

The rationale behind a central bank's strategy of using targets suggests three criteria for choosing an intermediate target: It must be measurable, it must be controllable by the central bank, and it must have a predictable effect on the goal.

Measurability. Quick and accurate measurement of an intermediate-target variable is necessary, because the intermediate target will be useful only if it signals rapidly when policy is off track. What good does it do for the central bank to plan to hit a 4% growth rate for M2 if it has no way of quickly and accurately measuring M2? Data on the monetary aggregates are obtained after a two-week delay, and interest-rate data are available almost immediately. Data on a variable like GDP that serves as a goal, by contrast, are compiled quarterly and are made available with a month's delay. In addition, the GDP data are less accurate than data on the monetary aggregates or interest rates. On these grounds alone, focusing on interest rates and monetary aggregates as intermediate targets rather than on a goal like GDP can provide clearer signals about the status of the central bank's policy.
At first glance, interest rates seem to be more measurable than monetary aggregates and hence more useful as intermediate targets. Not only are the data on interest rates available more quickly than on monetary aggregates, but they are also measured more precisely and are rarely revised, in contrast to the monetary aggregates, which are subject to a fair amount of revision . However, the interest rate that is quickly and accurately measured, the nominal interest rate, is typically a poor measure of the real cost of borrowing, which indicates with more certainty what will happen to GDP. This real cost of borrowing is more accurately measured by the real interest rate—the interest rate adjusted for expected inflation ($Ir = i - \pi e$). Unfortunately, the real interest rate is extremely hard to measure, because we have no direct way to measure expected inflation. Since both interest rate and monetary aggregates have measurability problems, it is not clear whether one should be preferred to the other as an intermediate target.

Controllability. A central bank must be able to exercise effective control over a variable if it is to function as a useful target. If the central bank cannot control an

intermediate target, knowing that it is off track does little good, because the central bank has no way of getting the target back on track. Some economists have suggested that nominal GDP should be used as an intermediate target, but since the central bank has little direct control over nominal GDP, it will not provide much guidance on how the Fed should set its policy tools. A central bank does, however, have a good deal of control over the monetary aggregates and interest rates.

Our discussion of the money supply process and the central bank's policy tools indicates that a central bank does have the ability to exercise a powerful effect on the money supply, although its control is not perfect. We have also seen that open market operations can be used to set interest rates by directly affecting the price of bonds. Because a central bank can set interest rates directly, whereas it cannot completely control the money supply, it might appear that interest rates dominate the monetary aggregates on the controllability criterion. However, a central bank cannot set real interest rates, because it does not have control over expectations of inflation. So again, a clear-cut case cannot be made that interest rates are preferable to monetary aggregates as an intermediate target or vice versa.

Predictable Effect on Goals. The most important characteristic a variable must have to be useful as an intermediate target is that it must have a predictable impact on a goal. If a central bank can accurately and quickly measure the price of tea in China and can completely control its price, what good will it do? The central bank cannot use the price of tea in China to affect unemployment or the price level in its country. Because the ability to affect goals is so critical to the usefulness of an intermediate-target variable, the linkage of the money supply and interest rates with the goals—output, employment, and the price level—is a matter of much debate.

3.2. Market Yield on Equity

Tobin suggests that the market yield on equity as a target variable for monetary policy. According to him, the monetary authority should try to equate this yield with the real return expected from investment in physical capital. When the real rate of return on equity rises, the value of existing capital equipment falls which discourages the purchase of new capital equipment. Moreover, investment is encouraged when the cost of production of new capital is less than its market value. Thus the valuation of

investment goods relative to their cost is the proper target of monetary policy. This target is superior to other targets because the market value can be compared with a price index of investment goods.

Despite this, it is difficult to compare the value of existing assets with those of newly produced assets. Moreover, it is not possible to link investments with changes in stock market prices. So it is not advisable to adopt market yield on equity as the sole target of monetary policy.

In conclusion, of the various targets of monetary policy, it is advisable for the monetary authority not to rely on any single target. It should select the targets according to the prevailing economic and financial conditions. The interest rate is more suitable during the short run. But in the long run, the credit availability and the money supply should be relied upon by the monetary authority. The target of market yield on equity is unacceptable by economists.

4.0 INDICATORS OF MONETARY POLICY

Money supply, bank credit and interest rate which serve as targets are also employed as indicators of monetary.

3.3.1. Money Supply

If the central bank is solely responsible for changes in the money supply, it is a good indicator of monetary policy management. But if the money supply changes regardless of the central bank policy, it is hardly an indicator. According to the monetarists, it is open market operations (OMO) and changes in reserves requirements that are the main cause of movements in the money supply. It is the money supply which is the most important determinant of both the level of output and the price level in the short run and of the price level and the nominal aggregate demand in the long run.

The changes in money supply affect aggregate demand through effects on a wide range of assets. The Keynesians involve a narrow transmission mechanism between money supply and changes in aggregate demand. When the money supply increases it will be

spent on bond, thereby lowering interest rates and ultimately leading to an increase in investment.

But according to the monetarists, an increase in money supply will lead to spending on a much broader range of assets than on bonds only. The excess money supply balances will be used to bring not only financial assets but also real assets. Even if the demand for financial assets expands, interest rates will fall but only temporarily. If GNP rises, interest rates will also because rise there is a greater need for day-to-day cash transactions to carry out the expanding business activity. Firms will, therefore, borrow to raise more cash and interest rates will rise. Interest rates will also when an expansionary monetary policy generates inflationary expectations. Thus interest rates may be either lower or higher after an expansionary monetary policy, depending on the speed and strength of the change in GNP and on the expectations regarding prices. Similarly, interest rates may either be higher or lower after a contractionary monetary policy begins, depending on the same factors.

3.3.2. Bank Credit and Interest Rate

So far as interest rate as an indicator of monetary policy is concerned, there are vast differences in the views of the Keynesians and the monetarists. The Monetarists downgrade interest rate as indicator of monetary policy because it is not under the firm control of the central bank. The same view is held by the Keynesians. But the differences arise in the transmission mechanisms. According to the Keynesians, the increase in money supply reduces the interest rate provided the demand for money does not become perfectly elastic (the liquidity trap case). Second, the reduction in the interest rate increases investment provided it is not inelastic to the interest rate. Interest rates will stay down so long as the money supply continues to increase.

The monetarists do not agree with this view. To them, the increase in money supply affects interest rate in the following manner. Suppose the money supply increases through open market purchases of securities by the central bank. This will bring down interest rate by increasing the reserves of commercial banks which expand their loans. This is the *liquidity effect* which causes a short-run reduction in interest rate. The low interest rate will encourage investment in new capital formation, inventories,

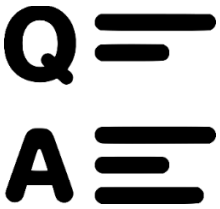
construction activities, etc. As a result, prices of investment goods will rise and the demand for financial and real assets will increase and raise their prices. The rise in production and demand for money will bid up the interest rate. This is the *output effect*. Therefore, there is the *price expectation effect* because lenders expect prices to rise and they buy interest-bearing securities and other goods. Thus after the initial fall, interest rate will rise again and settle at a new rate. The new rate will depend on the rate of inflation generated by the increase in money supply. So interest rate as an indicator of monetary policy shows that when increases in the money supply lead to increases in interest rate, this will be like an expansionary easy money policy. Friedman, therefore, argues that the monetary authority should concentrate on controlling the money supply rather than manipulating the interest rate.

Finally, the economists do not agree over the use of money supply, bank credit and interest rate as indicators of monetary policy. Brunner and Metzler are of the view that both the money supply and interest rate would have identical effects on the economy. It is changes in the real interest rate that affect economic activity. But in reality, it is only changes in nominal interest rate that are measured. The measurement of real interest rate depends on expected price changes. This is both conceptually and empirically a difficult process and subject to errors. Thus to evaluate monetary policy during inflation or deflation by looking at nominal interest rate is misleading. But this problem does not arise in the case of the money supply because it is nominal values of money which influence nominal values of economic activity. Therefore, interest rate is not a reliable and predictable indicator of monetary policy whereas the money supply is.

To select an appropriate indicator of monetary policy requires certain issues which are to be tackled. The first issue concerns the nature of money supply and its control. Friedman includes M_2, which is currency, and demand and time deposits in the money supply. But the problem is to what extent the money supply will respond to change in a predictable manner. The second issue concerns the extent to which the money supply affects economic activity. Third, there is the important issue of —the proposed indicator‘s exogeneity with respect to the economic variables that policy-makers are attempting to influence.

5.0 CONCLUSION

The target of monetary policy is accounted for through the effect of growth, employment and prices and this have a multiplier effect on the performance of the economy. However, because the monetary policy tools are unable to work directly on these policy variables (growth, employment and prices), the policy-makers in the economy rely on the target they can control very well to achieve economic development. More so, the indicators of monetary policy are to be used to regulate the economy, but to pick an appropriate indicator for monetary policy, the policy maker must tackle various issues such as money supply and how to control it, the issue on the effect of money supply on business/economic activity and the influence of policy-maker on an indicator to be used on the economic variables.



6.0 SELF-ASSESSMENT EXERCISE

1. Discuss the various targets of monetary policy.
2. Explain Money supply and interest rate are intermediate targets of monetary policy.
3. Evaluate the conduct of monetary policy
4. Examine the criteria used in choosing intermediate targets.
5. What are the indicators of monetary policy?

7.0 REFERENCES/FURTHER READINGS

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