

ECO209

MACROECONOMIC THEORY

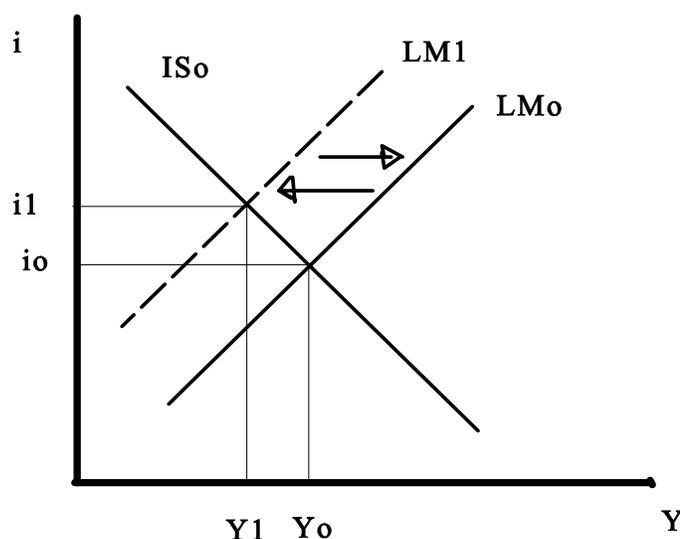
Chapter 18

THE MONEY SUPPLY AND MONETARY POLICY

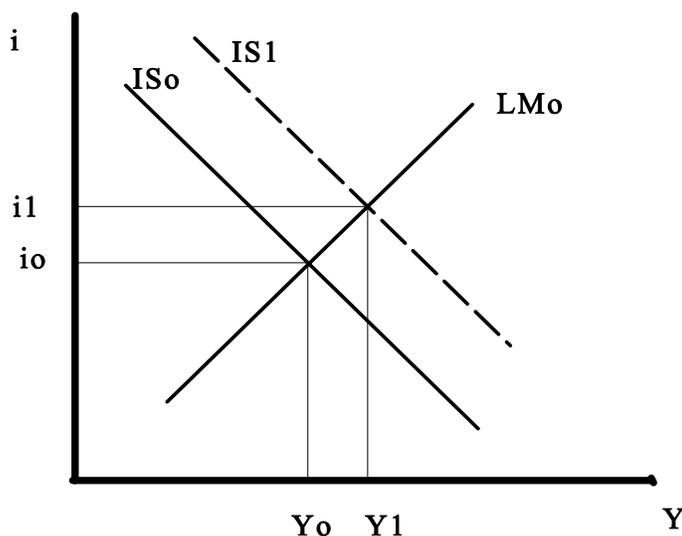
Discussion Questions:

1. Open market operations are the main tool used by the Bank of Canada to change the size of the monetary base with the objective of changing the money supply. If the Bank wants to increase the money supply, the Bank can buy government bonds from the public (mostly banks), thereby creating new monetary base and bank reserves. These increased reserves will induce banks in their pursuit of profit to extend their loans and their deposits thereby creating more money and a larger money supply. If the Bank wanted to reduce the money supply, an open market sale of some of its holdings of government bonds, paid for by the public drawing down their bank deposit balances, would result in the destruction of some of the existing monetary base. Banks would find they are short of reserves and would reduce their lending and deposits accordingly. The money supply would contract.
2. The clearing system is the set of institutional arrangements established to effect settlement of cheques drawn on one bank in the system but deposited in another bank. For example, a person who banks with the Bank of Nova Scotia might make a rent payment by cheque to a landlord who banks with the Royal Bank. The Royal Bank, having credited the landlord's account on deposit of the rent cheque, requires payment for the cheque from the Bank of Nova Scotia, which will debit the tenant's bank account accordingly. Each day thousands of such transactions take place and, rather than settle each one, the clearing system establishes a daily net balance of transactions between each pair of banks and deposit institutions in the system. That net balance is then settled by a transfer of settlement balances in the Bank of Canada between the accounts of members of the payments association.

3. The currency-deposit ratio is the ratio of currency outstanding to bank deposits. The Bank of Canada cannot directly influence this ratio, since it is determined by the behaviour of the public and influenced by the convenience of obtaining cash or seasonal patterns (increased Christmas shopping, for example). However, by changing bank regulations or interest rates, the Bank of Canada may indirectly affect how much currency the public is willing to hold.
4. Credit cards and ATMs should reduce the desired currency-deposit ratio, thereby increasing the money multiplier.
5. A bank run results in a rise in the currency-deposit ratio and thereby reduces the deposit multiplier and the money supply.
6. First, deposit insurance reduces fears of bank failures, which would result in deposit losses. This enables banks to hold lower reserves and lowers the desired currency-deposit ratio of the public. Both actions increase the multiplier. Furthermore, if deposit insurance prevents panic shifts to currency it makes the deposit multiplier more stable.
7. a. If most disturbances come from the money sector (a shift in money demand), then interest rate targets work better than money targets. In the IS-LM diagram below we can see that if money demand increased, the LM-curve would shift to the left and the interest rate would increase. By targeting the interest rate at i^* , and increasing money supply in response to the increase in demand, the LM-curve stays in its initial position, and the Bank has held the economy in the original equilibrium.
7. b. If most of the disturbances come from the expenditure sector, then the Bank of Canada is better off targeting money supply. If spending increases, the IS-curve shifts to the right and the interest rate increases. The Bank will make the disturbance worse if it gets the interest rate back to its original level by increasing money supply. Instead, the Bank should keep money supply (and thus the LM-curve) stable, to keep the disturbance at a minimum.



8. The Bank of Canada has much more control over intermediate targets (money supply or interest rates) than it does over the ultimate targets (GDP, unemployment or inflation). In addition, changes in these intermediate targets do not have an immediate effect on the ultimate targets. Therefore, the Bank gets earlier feedback on the effects of changing its policy instruments. However, concentrating solely on intermediate targets rather than ultimate targets does not guarantee that the ultimate targets will be reached.



9. The concept of arbitrage implies that, in equilibrium, prices will make financial investors equally willing to buy or sell an asset. If investors are not equally willing to buy and sell an asset, then there is no opportunity for arbitrage. People buy or sell assets to take advantage of the resulting profit opportunity. But in doing so, they cause prices to adjust up to the point where no further arbitrage opportunity exists. Therefore, if people always take advantage of such profit opportunities, financial markets will always adjust to an equilibrium.
10. If stock prices follow a random walk, they cannot be predicted from existing information. In other words, stock price changes only occur if (by surprise) new information becomes available. This implies that even the best informed financial investors cannot make a killing in the stock market. In other words, either no riskless profit opportunities exist, or all such opportunities have already been taken advantage of. If stock prices did not follow a random walk, financial investors could find ways to reap great benefits by taking advantage of existing profit opportunities that have not been realized by others.

Application Questions:

1.	<u>Nonbank Public</u>	<u>Bank A</u>	<u>Bank B</u>	<u>Bank of Canada</u>
a)	Deposits Loans \$1000 \$1000	Deposits Loans \$1000 \$1000		
b)		Reserves Deposits -1000 -1000	Reserves Deposits 1000 1000	Deposits Bank A: -1000 Bank B: +1000
c)	T-bills 1000 Deposits -1000	T-bills -1000 Reserves 1000	Reserves Deposits -1000 -1000	Deposits Bank A: 1000 Bank B: -1000
d)	T-bills Loans 1000 1000	Loans 1000 T-bills -1000		

2. The open market purchase has raised bank cash reserves and deposit liabilities by 0.95. With a reserve ratio of 0.10 the banks have:

$$(1-0.10)(0.95) = 0.855$$

in excess reserves. Bank lending would increase by 0.855 in the next round. The total expansion of the money supply arising from the money multiplier would be

$$\Delta M = (0.0526 + 1)/(0.526 + 0.10)\Delta B \\ = 6.89$$

3. a) Some variation in the money multiplier comes from variation in the reserve-deposit ratio. Under 100 percent banking, this would be eliminated.
 b) The balance sheets for the bank would differ on the asset side. All assets would be held as reserves.
 c) Banks would have to use service charges to generate revenue to cover their operating costs.
4. A redeposit of government balances :

	Assets	Liabilities
Direct clearers	Settlement balances +1	Government Deposits +1
Bank of Canada		Government Deposits -1 Settlement balances +1

5. The zero reserve requirement means banks are required to maintain a zero or positive balance each day in their accounts at the Bank of Canada. In addition, they have a monthly requirement that the sum of all positive daily settlement balances less the sum of all daily overdraft loans taken to avoid negative daily positions, must not be less than zero. If a bank has a negative cumulative monthly settlement balance it must take an advance at the Bank Rate equal to its deficiency, or pay a fee equal to the Bank Rate (expressed as a daily rate) times its deficiency.
- 6.a) According to the expectations theory of the term structure, the interest of a ten-year bond is simply the average of all one-year bonds covering these ten years. In other words

$$i = (1/10) \sum_{t=1}^n i_t$$

- b) If there were no uncertainty, then the interest rate of the ten-year bond should be exactly the average of all the one-year bonds covering these ten years, in this case, 10 percent. The fact that the rate is 12 percent, reflects that there is uncertainty and that the ten-year bond offers a risk premium of 2 percent.