CHAPTER 13

Multiple Deposit Creation and the Money Supply Process

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Money Supply (MS) Process

- **Money supply (MS) process** refers to the mechanism that determines the money supply.
- It refers to the implementation of **monetary policy**.
- It is important to understand the MS Process to understand exactly how **open market operations (OMOs)** change the money supply, and thereby affect the economy (interest rates, inflation, output, employment, money, etc.)
• The majority of money (M1) is in the form of deposits.
• Therefore, we want to understand how the banking system creates deposits, and in the process, creates money.
• The central bank is a key player in the money supply process but not the only player.
Four Players in the Money Supply Process:

1. **Central Bank (CB):** Most important player since it ultimately controls the supply of money in the economy.

2. **Commercial banks:** Depository institutions that accept deposits and make loans.

3. **Depositors:** Bank customers (individuals, companies and institutions holding bank deposits - checking and savings accounts.

4. **Borrowers from banks:** Individuals and companies who borrow money from banks.
• The Central Bank's Balance Sheet (BS) and the Monetary Base (MB):
• In this simplified version of the Central bank’s BS, we will focus on only 4 items to see how they affect the economy’s money supply.

Central Bank’s Simplified BS

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Assets

1. **Government securities:** The CB holds government securities (Treasury bills, bonds, notes) for two reasons: (i) buying and selling of government securities is one of the CB’s major tool (known as OMO) in controlling the economy’s money supply, and (ii) holding government securities provides a return.

2. **Discount loans:** The CB makes loans to banks through its discount window operation. The CB does not encourage banks from borrowing through its discount window on a regular basis since the CB is acting as a lender of last resort for the banks.
Liabilities

1. **Currency in circulation (C):** Cash in the hands of the public, outside the banking system. They are basically IOUs from the government issued by the CB like a govt. bonds, but pays zero interest. Currency is a liability of the CB, because a BD20 bill could be redeemed for 2 tens, or 4 fives, etc; or if it is worn out, banks can redeem it for a new BD20 bill.

2. **Reserves (R):** All banks have to keep a certain percentage of the deposits as the reserve requirements established by the CB. The banks do so in two ways:
• (a) All member banks are required to open an account with the CB and they can maintain their reserves by making a deposit into that account.
• (b) The banks can keep cash in the banks’ vaults.
• Reserves are a liability of the CB, an asset for commercial banks.
We can further break that reserve into two components:

(i) **Required reserve (RR):** This is the amount of money a bank needs to keep by law. This is determined by the reserve requirement ratio (expressed as a percentage of a bank’s total deposit) set by the CB.

(ii) **Excess reserve (ER):** This is the additional amount of money a bank chooses to hold for liquidity reason.
These two liabilities of the CB are called the **Monetary Base (MB)**.  

**MB = currency in hands of public + reserves of banking system**  

MB = C + R  

MB is also called **High-powered Money, or M0.**  

It is called high-powered because an increase in the MB leads to a multiple increase in the MS (M1 or M2).
• CB directly controls the monetary base by increasing or decreasing government securities and thereby increasing or decreasing bank reserves and/or currency.
• If they purchase a Treasury bill for BD100, it increases assets by BD100 and liabilities by BD100.
• By increasing bank reserves by $100, the MS is increased.
• Monetary policy works by affecting the CB's balance sheet.
Control of the Monetary Base (MB)

- **OMOs always affect MB**, one to one.
  \[
  (\text{OMO} = \Delta MB) \text{ and } (\Delta MB = \Delta R + \Delta C)
  \]
- A BD100 OMO always increases MB by BD100
- However, whether the OMO increases R or C depends on the public's willingness to hold cash, which depends on MD.
- This mean that although OMOs always affect MB it is not always affecting reserves.
• Also, when the CB increases the monetary base (MB) by supplying the banking system with BD1 of additional reserves, deposits (D) and M1 increase by a multiple greater than 1, a process called **multiple deposit creation**.

• When the CB wants to increase the MS, it engages in an **open market purchase** of government securities from the public and adds them to its portfolio.

• For contractionary (restrictive) policy, it engages in an **open market sale** of government securities from its portfolio to the public.