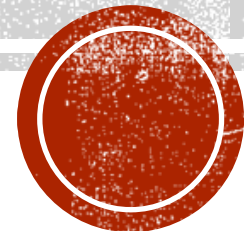


# MAHATMA GANDHI CENTRAL UNIVERSITY

**MONETARY ECONOMICS : ECON4010**

UNIT – 2 (Demand for Money)



By -Mr. Vijay Kumar  
Dept. Of Economics,  
thakurkumar47@gmail.com  
Mob No. - 7549273042

# High- Powered Money and The Money Multiplier

The current practice is to explain the determinant of the money supply in terms of monetary base or high-powered money.

High-powered money is the sum of commercial bank reserves and currency (notes and coins) held by the Public. High-powered money is the base for the expansion of Bank deposits and creation of money supply.

The supply of money varies directly with changes in the monetary base and inversely with the currency and reserve ratios.

The use of high-powered money consists of the demand of commercial banks for the legal limit or required reserves with the central bank and excess reserves, and the demand of public for currency.



Thus, High power money


$$H = C + RR + ER$$

Where, C = represent currency

RR = Required reserves

ER = The Excess reserves

A commercial bank's reserves depend upon its deposits. But a bank usually hold reserves in excess of its required reserves. In fact, Bank do not advance loans up to the legal limits precisely less than that. Hence the need arises for maintaining excess reserves by them. Thus, the money supply is determined by the required reserve ratio and the excess reserve ratio of commercial bank. The required reserves ratio (RRr) is the ratio of required reserves to deposit (RR/D) and the excess reserve ratio (ERr) is the ratio or excess reserves to deposits (ER/D) .



The demand for currency by the public is expressed as a proportion of Bank deposits. Thus the currency ratio  $C_r = C/D$  , Where C is the currency and D deposits. The currency ratio is influenced by such factors as changes in income levels of the people, the use of credit instruments by the public, and uncertainties in economic activity.

The formal relation between the money supply and high-powered money can be stated as in the form of equations:

The money supply(M) consists of deposits of commercial bank(D) and currency(C) held by the public. Thus the supply of money,

$$M = D + C \quad - (1)$$

High-powered money(H) ( or monetary base) consists of currency held by the public (C) plus required reserves (RR) and excess reserves of commercial banks.



Thus, High powered money.

$$H = C + RR + ER \quad - (2)$$

Divide equation 1 by 2

$$\frac{M}{H} = \frac{D + C}{C + RR + ER} \quad - (3)$$

Divide the numerator and denominator of the right hand side of the equation by equation by (3)

$$\frac{M}{H} = \frac{D/D + C/D}{C/D + \frac{RR}{D} + \frac{ER}{D}}$$
$$\frac{M}{H} = \frac{1 + C/D}{C/D + \frac{RR}{D} + \frac{ER}{D}}$$



$$\therefore \frac{M}{H} = \frac{1 + C_y}{C_y + RR_y + ER_y}$$
$$\therefore H = \frac{C_y + RR_y + ER_y}{1 + C_y} \times M$$

- (4)

$$\left\{ \begin{array}{l} C/D = C_y \\ RR/D = RR_y \\ ER/D = ER_y \end{array} \right.$$

**And Money Supply**

$$M = \frac{1 + C_y}{C_y + RR_y + ER_y} \times H$$


- (5)



Now the relation between the money supply and high powered money, i.e.

$$M = mH \quad - (6)$$

Thus, the money supply as a function of  $M$  and  $H$ . In other words, the money supply is determined by the high powered money ( $H$ ) and the money multiplier ( $M$ ). The size of money multiplier is determined by the currency ratio ( $Cr$ ) of the public, the required reserve ratio ( $RRr$ ) of the central bank and the excess reserve ratio ( $ERR$ ) of commercial banks. The lower these ratio, higher the money multiplier. If  $M$  is fairly stable, the central bank can manipulate the money supply ( $M$ ) by manipulating  $H$ . The central bank can do so by open market operations. But the stability of  $M$  depend upon the stability of the currency ratio and reserve ratio  $RRr$  and  $Err$ .



Thus the formula,  $M = mH$ , tells us how much new money will be created by the banking system for a given increase in the high powered money. The monetary policy of the central bank affects access reserves and high powered money identity and it tells us that the monetary authorities can control the money supply through changing the High-powered money or the money multiplier.





**Thank You**

