THE MONEY MULTIPLIER

Suppose banks wish to hold cash reserves R equal to some fraction c_b of deposits D, and that the private sector wishes to hold in circulation C equal to some fraction c_p of their deposits D. Thus :

$$\boldsymbol{R = c_b D \quad and \quad C = c_p D} \qquad (A1)$$

Since the monetary base or stock of high - powered money H equals currency in circulation plus cash with the banks, we have :

$$\boldsymbol{H = C + R = (c_b + c_p) D} \qquad (A2)$$

The money supply $M1$ equals currency in circulation C plus banks' sight deposits D. Hence :

$$\boldsymbol{M1 = C + D = (c_p + 1) D} \qquad (A3)$$

Comparing equations $(A3)$ and $(A2)$, we see that :

$$\boldsymbol{M1 = \frac{c_p + 1}{c_p + c_b} H} \qquad (A4)$$

Thus the value of money multiplier is $(c_p + 1)/(c_p + c_b)$. Since c_b and c_p are positive fractions, the money multiplier exceeds unity. Also, an increase in c_b , the banks' desired cash reserve ratio, or in c_p, the private sector's desired ratio of cash to sight deposits, will reduce the value of the money multiplier. Using the following data in the table below, and assuming that banks and the private sector were at their desired positions, for the UK in February 1983 c_p was about 0.4 and c_b about 0.04. From equation $(A1)$ the value of the money multiplier is thus $\boldsymbol{1.4/0.44 = 3.2}$.

Money and Near Money in the UK, February 1983

	£ b
Cash in circulation	11.0
Private sector sterling sight deposits	26.7
Money supply, M1	**37.7**
Private sector sterling time deposits	52.0
Public sector sterling deposits	2.3
Money supply, £$M3$	92.0
Residents' deposits in foreign currency	13.7
Money supply, M3	**105.7**

Source : Bank of England Quarterly Bulletin, 1983.

(***Update this data. Do the same things for Algeria***)