

NEW YORK UNIVERSITY

Money and Banking
Keyed to Hubbard

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Packet No. 4: Exercise on the Money Multiplier

For simplification, I substitute the following symbols for Hubbard's: $r = R/D$; $c = C/D$; $e = ER/D$; $n = N/D + MM/D$

1. The answers to this problem are based upon the data found in the incomplete balance sheet below and the relationships implicit in it. (The capital account has been omitted to facilitate computation.)

XYZ BANK			
Assets		Liabilities	
Reserves		D	\$50,000
Earning Assets		$(N) (+MMF)$	25,000
Total Assets		Total Liabilities	\$75,000

$r = 7\%$, $e = 1\%$; public cash holdings = \$1,000

- a. Compute m , c , B , total earning assets, and money supply.
 - b. Compute the deposit multiplier and the money multiplier for $M1$ and $M2$.
 - c. Bank reserves (B) are increased by \$1,000; the bank is the only bank in the system.
 1. Quantify the balance sheet changes after the reserves have been fully absorbed.
 2. What is the total money supply?
 - d. How would your answer differ if the bank was only a component of a banking system that comprised many banks?
2. a. Compute the deposit multiplier for the following relationships: $r = .25$, $n = 2.0$, and $c = .0833$
 - b. What is the new value of the multiplier should the public decide to increase its cash ratio from $c = .0833$ to $c = .15$?
 - c. 1. In which instance can money supply increase the most? Ditto for earning assets.
 2. Which situation is better from the point of view of contractionary monetary policy? Why?
3. Given: required reserve ratio against transactions deposits = .20 and those against nontransactions deposits = 0, and the balance sheet of XYZ Bank sketched out as follows

XYZ BANK			
Assets		Liabilities	
Reserves	\$ 70,000	D	\$400,000
Earning Assets	830,000	N (+MMF)	500,000
Total Assets	\$900,00	Total Liabilities	\$900,000

- a. What can be said about the bank's reserve position?
- b. What could have brought this position about?
- c. What can the bank do to improve its position?
- d. What happens to money supply as a result of the actions taken in response to (c.)?