AP Macroeconomics

Multiple Deposit Expansion

Reserve Requirement

- The Fed requires banks to always have some money readily available to meet consumers' demand for cash.
- The amount, set by the Fed, is the Required Reserve Ratio.
- The Required Reserve Ratio is the % of demand deposits (checking account balances) that must not be loaned out.
- Typically the Required Reserve Ratio = 10%

The Money Multiplier

- Similar to the spending multiplier, the money multiplier shows us the impact of a change in demand deposits on loans and eventually the money supply.
- To calculate the money multiplier, divide 1 by the required reserve ratio.
  - Money multiplier = $^{1}/_{\text{reserve ratio}}$
  - Ex. If the reserve ratio is 25%, then the multiplier = 4.
  - Why? $^{1}/_{.25} = 4$

The Three Types of Multiple Deposit Expansion Question

- **Type 1: Calculate the initial change in excess reserves**
  - **a.k.a. the amount a single bank can loan from the initial deposit**
- **Type 2: Calculate the change in loans in the banking system**
- **Type 3: Calculate the change in the money supply**
  - **Sometimes type 2 and type 3 will have the same result (i.e. no Fed involvement)**

Example 1

- **Given a required reserve ratio of 20%, assume the Federal Reserve purchases $100 million worth of US Treasury Securities on the open market from a primary security dealer. *Determine the amount that a single bank can lend from this Federal Reserve purchase of bonds*.**

The amount of new demand deposits – required reserve = The initial change in excess reserves

$100 million – (20% * $100 million)

$100 million – $20 million = <u>$80 million in ER</u>

Example 2

- **Given a required reserve ratio of 20%, assume the Federal Reserve purchases $100 million worth of US Treasury Securities on the open market from a primary security dealer. *Determine the maximum total change in loans in the banking system from this Federal Reserve purchase of bonds*.**

The initial change in excess reserves * The money multiplier = max change in loans

$80 million * (1/20%)

$80 million * (5) = $400 million max in new loans

Example 3

- **Given a required reserve ratio of 20%, assume the Federal Reserve purchases $100 million worth of US Treasury Securities on the open market from a primary security dealer. *Determine the maximum total change in the money supply from this Federal Reserve purchase of bonds*.**

The maximum change in loans + $ amount of Federal Reserve action

$400 million + $100 million = <u>$500 million max change in the money supply</u>

A Formula For All Seasons

<{[Deposit – (rr% X Deposit)] X $^{1}/_{rr\%}$ } + $ of OMO >

<Maximum change in money supply>

{max change in loans in banking system}

[Initial change in excess reserves]

(required reserve)