3.3 The Federal Reserve: The Banks Bank

Part II

Regulation and Management of the Nation's Money Supply

- **<u>Money supply</u>**- total amount of coins, paper currency, and demand deposits (checking – account money) in circulation.
- **<u>Inflation</u>**- there is too much money and the purchasing power of money declines
  - If money supply is low it can lead to a recession and increased unemployment.

Regulation and Management of the Nation’s Money Supply

- Consumer Price Index (CPI)
  - Calculated monthly by the Bureau of Labor Statistics
  - CPI reflects the price of groups of foods and services used by the average household.
  - “Market Basket” = 400 goods and services:
    - Food, housing, transportation, clothing, entertainment, and medical/personal care

The Creation of Deposits

- Required Deposit : by law the bank must deposit a percent of their customers' deposits with the FRS

- Multiplier effect : money is loaned or invested over and over, by different institutions, each keeping the required portion in reserve but passing the larger portion for additional investing/loan making.

The Creation of Deposits

- Excess reserves : money remaining from a deposit after the required reserves have been subtracted
  - It is available for investments and loans by the bank.

Example:

- If you deposit $1000 and there is a reserve requirement of 10%. This leaves 90% in excess reserves.
- The bank creates and extra $900 of money or credit by lending the $900 rather than holding it in the vault.

Deposit		Demand Deposit	Required Reserve (10%)	Loans and Investments (90%)
Initial		1000	100	900
Second		900	90	810
Third		810	81	729

The 900 after the initial deposit could be borrowed and then deposited by someone else.

This continues until not even a penny is left to deposit.

$1000(.9)^n = .01$

$(.9)^n = .00001$

$\ln(.9)^n = \ln(.00001)$

$n \ln(.9) = \ln(.00001)$

$n=\ln(.0001)/\ln(.9)$

$n=109$

Managing the Money Supply

- TIGHT- MONEY POLICY - If reserve requirement is increased then the multiplier effect is reduced. (less money is made)

- EASY-MONEY POLICY – the reserve requirement is reduced → multiplier effect is increased.

Managing the Money Supply

- Economic conditions can prevent the multiplier effect from reaching its full force.

- $900 + 900(.9) + 900(.9)^2 + \ldots..$
  - The common ratio is .9
- Any series with a **common ratio** is a **geometric series**
- If the series has an infinite number of terms and it has a sum then the sum is called sum of an infinite geometric series.

$$900 + 900(.9) + 900(.9)^2 + \ldots\ldots$$

$$s = \frac{a}{1-r}$$

a is the first term 900 and r is the ratio .9

- The original deposit of $1000 can create as much as $9000 in new money.

$$s = \frac{900}{1-.9}$$

$$s = \frac{900}{.1}$$

S = 9000

To find the multiplier add the amount created to the original amount and divide by the original amount.

$$\frac{9000+1000}{1000}$$

The multiplier is 10

Assignment

- Exit Ticket
- TYS
- P.123 #2, 4

- Homework
- P.124
- EYS #1-25

- Extra Credit
- MR
- #2-16
- (1 pt each)