

Economics 135

Money Supply Process

Professor Kevin D. Salyer

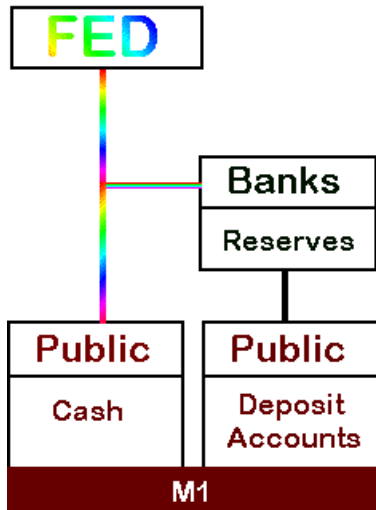
UC Davis

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The Money Supply Process: The Role of the Fed, Banks, and the Private Sector

- It is the Fed who puts the money into the system and the monetary component it supplies is called **high-powered money**. This is what the Fed directly controls, but it is not the money supply.
- The high-powered money ends up in two places - the vaults of the banks as reserves, or the pockets of people and businesses as cash.
- The cash held by the banks is called reserves and these reserves are the base for banks' expansion of checking accounts.
- If you add the currency held by the public with the deposit (checking) accounts created by the banks, you have the money supply.

A schematic of the money supply process



Money supply - the fractional reserve system



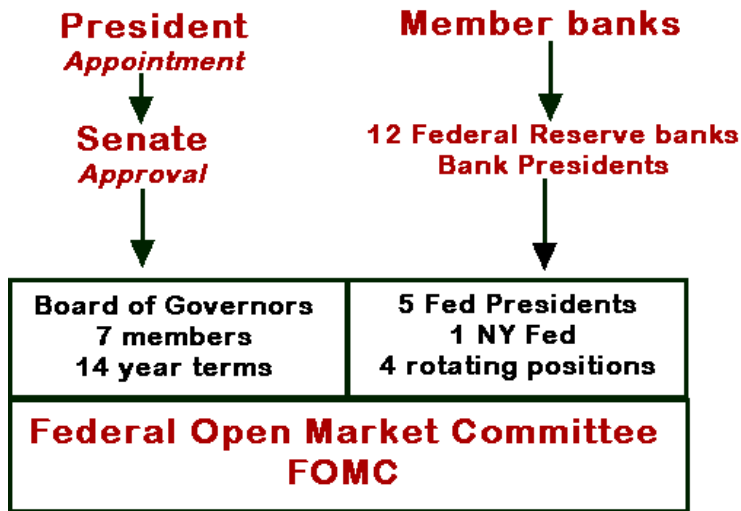
Three important features of the system are:

- Bank profitability: banks are in business for profit.
- Bank discretion over money supply: bankers' decisions affect money supply.
 - If bankers decide to increase the value of demand deposits then the money supply will increase.
 - If they increase their holdings of excess reserves the money supply will decrease.
- Exposure to runs: potential conflict between profits and safety. The banks will be tempted to expand the demand deposits which will mean that if all depositors wanted their cash, the banks could not honor the claims.

The four important aspects of bank regulation are:

- Deposit insurance: deposits are insured which lowers the fears of customers who will not be as likely to run to the bank to withdraw their funds when they hear a "rumor" about the bank.
- Bank examinations: banks' books are periodically reviewed so that we are less likely to have banks that adopting risky strategies that will result in bank closures.
- Limitations on assets: banks cannot hold some assets that are deemed risky. International standards: the Basel Accord I and II. Problem: off-balance sheet activities such as firm loan commitments, standby letters of credit, financial futures, forward contracts, options, interest rate swap contracts, and other derivative products.
- Required reserves: banks required to keep cash on hand. This would limit the amount of money that could be created from a given amount of reserves.

The Federal Reserve System



Today, the Federal Reserve's duties fall into four general areas:

- 1 Conducting the nation's monetary policy by influencing the money and credit conditions in the economy in pursuit of full employment and stable prices.
- 2 Supervising and regulating banking institutions to ensure the safety and soundness of the nation's banking and financial system and to protect the credit rights of consumers (Federal Reserve Regulations).
- 3 Maintaining the stability of the financial system and containing systemic risk that may arise in financial markets.
- 4 Providing certain financial services to the U.S. government, to the public, to financial institutions, and to foreign official institutions, including playing a major role in operating the nation's payments system.

Money Supply Example

Begin with a simple balance sheet for the ACM bank. We will assume the bank's assets consist of cash (reserves), loans, and government securities.

- Banks will hold government securities and loans because they earn interest. Also government securities are liquid assets.
- In this example we are assuming the Fed is requiring the bank to hold 20 percent of the amount of its deposit accounts as cash (reserves). To "support" the \$5,000,000 in checking account balances, the bank will be required to hold \$1,000,000 as required reserves

Current Reserve Requirement in U.S.

Type of Liability	Percentage of Liability
Transactions Accounts	
0 - \$8.5 (millions)	0
\$8.5 - \$ 45.8	3
\$45.8 <	10
Nonpersonal Time Deposits	0
Eurocurrency Liabilities	0

ACM's Initial Balance Sheet

Assets		Liabilities	
Securities	\$500,000		
Reserves		Checking Deposit	\$5,000,000
Actual	\$1,000,000	Saving Deposit	\$0
Required	\$1,000,000	Net Worth	\$500,000
Excess	\$0		
Loans	\$4,000,000		
Total	\$5,500,000		\$5,500,000

Mary Deposits \$100,000 (where did this come from?)

Assets		Bank ACM Balance Sheet		Liabilities	
Securities	\$500,000				
Reserves			Checking Deposit	\$5,100,000	
Actual	\$1,100,000		Saving Deposit	\$0	
Required	\$1,020,000		Net Worth	\$500,000	
Excess	\$80,000				
Loans	\$4,000,000				
Total	\$5,600,000				\$5,600,000

Banks want to make profits: lend out excess reserves

- ACM bank lends out \$80,000 of excess reserves in form of cash (reserves fall by \$80,000 and loans rise by \$80,000)
- \$80,000 will work its way back into the banking system as another infusion of cash - this time an infusion of \$80,000 into Bank KAB.

Bank ACM Balance Sheet

Assets		Liabilities	
Securities	\$500,000		
Reserves		Checking Deposit	\$5,100,000
Actual	\$1,100,000	Saving Deposit	\$0
Required	\$1,020,000	Net Worth	\$500,000
Excess	\$0		
Loans	\$4,080,000		
Total	\$5,600,000		\$5,600,000

KAB's books after deposit of \$80,000

Bank KAB's balance sheet

Assets		Liabilities	
Securities	\$0		
Reserves		Checking Deposit	\$80,000
Actual	\$80,000	Saving Deposit	\$0
Required	\$16,000	Net Worth	\$0
Excess	\$64,000		
Loans	\$0		
Total	\$80,000		\$80,000

KAB's books after elimination of excess reserves

Bank KAB's balance sheet

Assets		Liabilities	
Securities	\$0		
Reserves		Checking Deposit	\$80,000
Actual	\$16,000	Saving Deposit	\$0
Required	\$16,000	Net Worth	\$0
Excess	\$0		
Loans	\$64,000		
Total	\$80,000		\$80,000

Money Creation - the effect on individual banks

Bank ACM

Reserves	\$20,000	Checking Account	\$100,000
Loans	\$36,000		

Bank KAB

Reserves	\$16,000	Checking Account	\$80,000
Loans	\$64,000		

Bank MRM

Reserves	\$12,800	Checking Account	\$64,000
Loans	\$51,200		

Bank AJM

Reserves	\$10,240	Checking Account	\$51,200
Loans	\$40,960		

Bank LRG

Reserves	\$8,192	Checking Account	\$40,960
Loans	\$32,768		

Money Creation in the Banking System

	Reserves	Deposits	Loans
Bank ACM	\$20,000	\$100,000	\$80,000
Bank KAB	\$16,000	\$80,000	\$64,000
Bank MRM	\$12,800	\$64,000	\$51,200
Bank AJM	\$10,240	\$51,200	\$40,960
Bank LRG	\$8,192	\$40,960	\$32,768
Bank FTS	\$6,554	\$32,768	\$26,214
...			
Total	\$100,000	\$500,000	\$400,000

Fed's Control of the Money Supply Process

The money supply (M1) can be increased if the coins and currency in circulation increase or the checking account balances (demand deposit) increase. There are four ways that this can happen.

- Required reserve rate is lowered.
- Discount interest rate decreases. (Lowers cost of holding low excess reserves.)
- Publics' holding of cash changes. Less confidence in the banking system = more cash, less reserves => Money supply falls. Example: The injection of reserves into the banking system prior to Y2K.
- Open market purchases: this is the Fed's primary tool of monetary policy. The Fed can buy or sell government securities. THIS is how Mary got her money!!

NOW - A closer examination of the money supply process.