

# **The Power of Macroeconomics**

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## **Lecture Four:**

### **The Federal Reserve & Monetary Policy**



**Presented By:**

**Professor Peter Navarro**

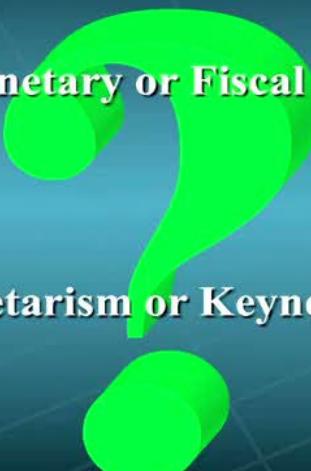
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## **The Purpose Of This Lesson**

1. Describe how our money and banking system works.
2. Show how monetary policy may be used to fight recessions and inflation.

## **Two Questions**

**Monetary or Fiscal Policy?**



**Monetarism or Keynesianism?**

We will explain  
how Monetarism  
emerged in the  
1970s to challenge  
Keynesianism.

## **A Definition**



## Fiscal Policy Plays First Fiddle

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- Monetary policy largely played second fiddle to fiscal policy because of fiscal policy's successes.
- Fiscal policy helped lift us out of the Great Depression in the 1930s.
- Fiscal policy also worked well to end a more mild recession in 1949-1950.

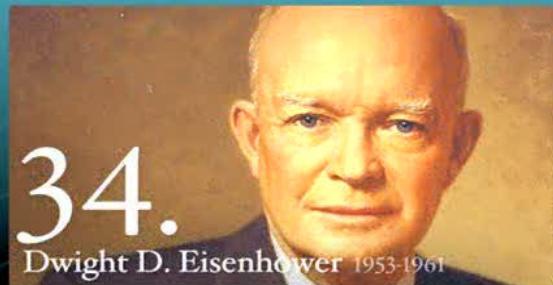
## Fiscal Policy & “Fine Tuning”

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- The Kennedy tax cut of 1964 seemed to provide incontrovertible proof that Keynesian economics could be used to “fine tune” the economy and keep it at, or close to, full employment with minimum inflation.

## Monetary Policy Played An Important Supporting Role

- During four decades of Keynesian triumphs, monetary policy played an important supporting role.
- Example: President Eisenhower relied on a tight monetary policy to keep inflation in check.



## Monetary Policy Loses the 1960 Presidential Election for Nixon



- President Eisenhower's conservative monetary policy led to a stagnant economy.
- Eisenhower's Vice President Richard Nixon likely lost the 1960 presidential race to John F. Kennedy because of these events.
- The Democrat Kennedy vowed to "get the country moving again," and won the very close race.

## The Economy Starts Moving Too Fast



By the late 1960s,  
demand-pull inflation  
began to rear its ugly  
head.



## Inflation Rears Its Head

- By 1969, inflation had crept to over 5%.
- By the early 1970s, it had jumped to almost double digits.
- As stagflation began to emerge, Monetarism began to challenge the Keynesian orthodoxy.

## **LECTURE FOUR – PART TWO**

### **What is Money?**

- Money has a much broader definition than the cash in our pockets.
- Money is anything that can be widely used and accepted in exchange for other goods and services.

## The Three Kinds of Money

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- Commodity money:

- Gold nuggets, silver, beads, grains, and the like.

- Bank money:

- Checkbooks and bank drafts.

- Fiat or Paper money:

- Currencies like the U.S. dollar and Japanese yen

## The Three Functions Of Money

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- Money is the most “liquid” of assets, meaning it is the most readily spendable.

- Money has three major functions

- A medium of exchange.
  - A standard of volume.
  - A store of value.

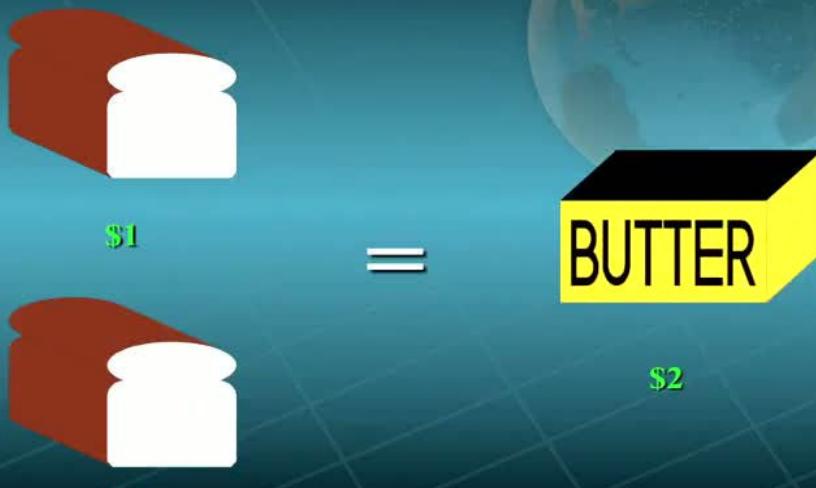
## **A Medium of Exchange**

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- Without money, we would have to use the barter system.
- Barter is the direct exchange of one good for another.

## **A Unit of Account or Standard of Value**

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## A Store of Value

- People can hold on to money and spend it later.
- Most methods of holding money do not yield the same monetary returns that you get by storing wealth in the form of less liquid assets like stocks and bonds.
- In the presence of inflation, money can rapidly lose its value!

Measure	Components
M1	Currency in circulation outside of bank vaults Demand deposits at commercial banks NOW and ATS accounts Credit union share drafts Demand deposits at mutual savings banks Traveler's checks (nonbank)
M2	M1 plus: Savings accounts Time deposits of less than \$100,000 Money-market mutual funds
M3	M2 plus: Time deposits larger than \$100,000 Repurchase agreements Overnight Eurodollars
L	M3 plus other liquid assets, for example: Treasury bills U.S. savings bonds Bankers' acceptances Term Eurodollars Commercial paper.

## **How is Money Defined?**

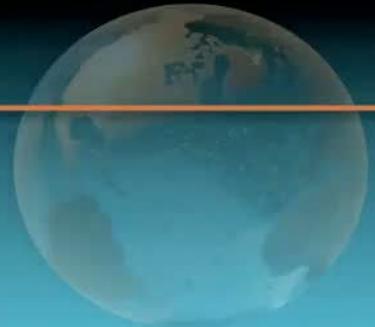
$$M1 = \text{Cash} + \text{Checking Accounts} + \text{Traveler's Checks}$$

$$M2 = M1 + \text{Savings Accounts} + \text{Time Deposits} + \text{Money Market Mutual Funds}$$

$$M3 = M1 + M2 + \text{Short Term Fiscal Assets}$$

## **Why These Definitions Matter**

- Monetary policy uses changes in the money supply to contract or expand the economy.
- To conduct monetary policy effectively, we must have a very good idea of what we are changing when we change the money supply.



## LECTURE FOUR - PART THREE

### Interest Rates Are Critical

- When we examine how money affects economic activity, we will focus on the impact of the interest rate.
- The interest rate is the amount of interest paid per unit of time expressed as a percentage of the amount borrowed.
- Interest is the payment made for the use of money.
- The interest rate is often called the “*price of money*.”

## An Example



**Deposit \$2000**



- The interest rate is 4% or .04
- Therefore, the bank pays you \$80 in interest for the year.
- The math?  $.04 \times \$2000 = \$80$ .
- So your deposit will be worth \$2080.

## Many Different Interest Rates

- There is a vast array of interest rates.
- There are three major reasons why interest rates differ.

## **Term or Maturity of the Loan**

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- The length of time to pay off a loan.
- Term ranges from overnight loans to 30 year home mortgages.
- In general, the longer the term of the loan, the higher the interest rate borrowers have to pay.
- Lenders must be compensated for the risk of providing a longer term loan.

## **The “Riskless Rate”**

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- Some loans, such as the securities of the U.S. government, are virtually riskless.
- The interest rate on U.S. government securities is often called the “riskless” rate.

## **Higher Risk Investments Have Higher Interest Rates**

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- Bonds that face a higher risk of non-payment have higher interest rates:
  - The “junk bonds” of businesses close to bankruptcy,
  - The municipal bonds of cities with shrinking tax bases,
  - Countries with large overseas debt and unstable political systems.
- These riskier investments might pay 1, 2, or even 5 percent or more per year above the “riskless” rate.

## **The More Liquid the Loan, The Lower the Interest Rate**

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- A “liquid asset” can be converted into cash quickly with little loss of value.
- Illiquid assets or loans which cannot be readily converted to cash usually command higher interest rates.

## Nominal Versus Real Interest Rates

- The nominal interest rate measures the yield in dollars per year per dollar of investment.
- Inflation can make the dollar a distorted yardstick.
  - e.g. when inflation rises, the value of the dollar falls.

## Real Interest Rate

- The real interest rate corrects for inflation.
- $R_{\text{nominal}} - \text{Inflation} = R_{\text{real}}$

### QUESTION

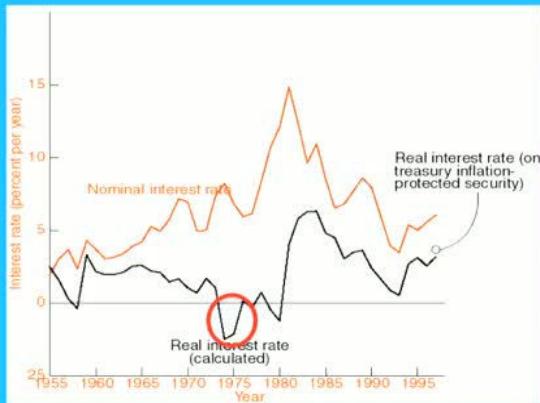
- Nominal interest rate = 8%
- Inflation rate is 3%
- So what's the real interest rate?

## The Answer

$$R_{\text{real}} = R_{\text{nominal}} - \text{Inflation}$$

$$R_{\text{real}} = 8\% - 3\% = 5\%$$

## Negative Real Interest Rates Are Possible!



- ♦ Investors earned a negative rate of real interest from 1973 to 1975 -- even though nominal rates were high!!!!

## LECTURE FOUR - PART FOUR

### Determinants of Money Demand

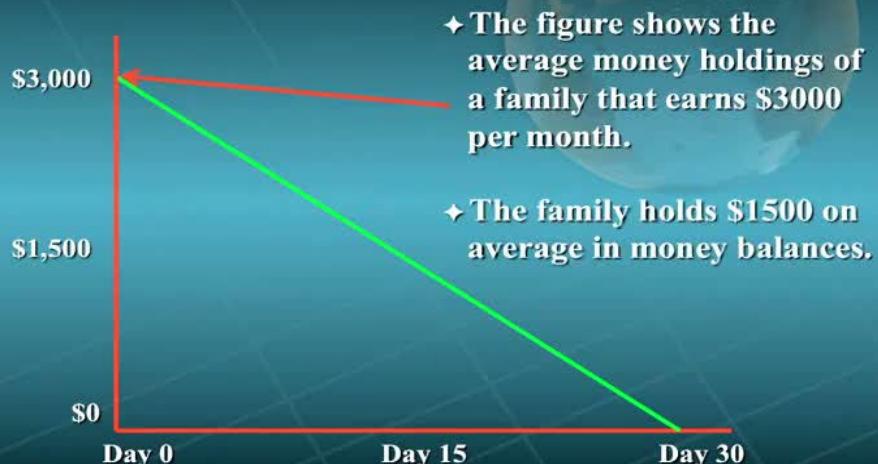
- We have talked about:
  - The functions of money
  - The price of money
- The two major determinants of money demand:
  - Transactions Demand
  - Asset Demand

## Transactions Demand for Money

- Both consumers and businesses need money as a medium of exchange.
- Households use it to buy products like groceries.
- Firms need it to pay their workers and buy materials.



## Mechanics of Transactions Demand



## Nominal GDP Determines Transactions Demand

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- The basic determinant of the amount of money demanded for transactions is the level of nominal GDP.
- The larger the total money value of all goods and services that are exchanged in the economy, the larger the amount of money needed to negotiate these transactions.

### A Question:

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**What do you think will happen to the transactions demand for money if prices and nominal GDP double?**

## The Answer:

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- ♦ If prices and nominal GDP double, the transactions demand for money will also double!!

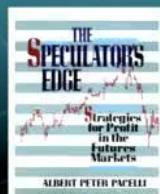
## The Asset Demand for Money

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- The asset demand for money is also called the “speculative motive”
- People hold money because they use it as a store of value.

## Understanding the Speculative Nature of Asset Demand

- Suppose you want to buy some stocks or bonds but you think that the prices are too high.
- So you hold on to your money until the prices fall.
- Essentially, you are speculating that a better investment opportunity will appear.



## Inflation Erodes the Value of Money

- Money provides no rate of return like other assets like stocks, bonds, and savings accounts.
- If inflation occurs, your money will lose value!

## The “Opportunity Cost” of Holding Money

- The “opportunity cost” of holding money includes:
  1. The interest that could have been earned by lending the money.
  2. The rate of return that could have been earned by investing the money in stocks.
  3. The loss in value from holding money during inflation.

### Question

What do you think will happen to the asset demand for money if interest rates rise or the expectation of inflation increases?

## How Inflation and Interest Rates Affect the Asset Demand for Money

### Answer

If the interest rate or inflationary expectations rise, the opportunity cost of holding money increases.

Therefore, the asset demand for money must decrease.

## **LECTURE FOUR - PART FIVE**

### **The Goldsmiths Create The First Form of Paper Money**

- Let's get in a time machine and go back several hundred years to England.
- Gold is the prevailing medium of exchange.
- The stuff's heavy and can be stolen so people start storing their gold with the goldsmiths.
- The goldsmiths issued paper receipts.
- People would use the receipts to redeem their gold when they needed to make a purchase.
- Over time, three things happened!!!!

## The First Paper Money

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- Depositors started trading their gold receipts for goods rather than going back to the goldsmith to redeem the paper every time they needed to make a transaction.
- These receipts functioned as the first paper money!!!!

## The First Bank Interest

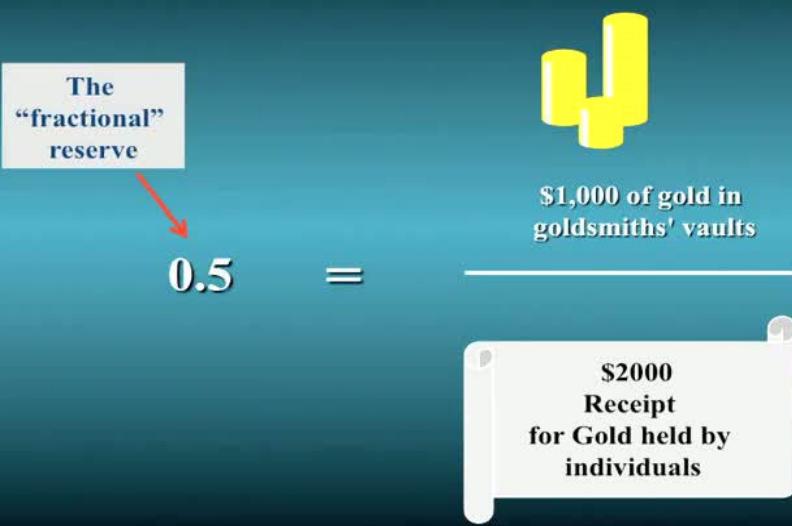
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- Depositors also figured out they didn't have to leave their gold with the goldsmith for free.
- After a time, the goldsmiths started competing for gold accounts.
- While the goldsmiths didn't offer free toasters or rebates like some banks today, they did offer interest on their gold deposits!

## The First “Fractional Reserves”



## Origins of Bank Reserves



## The Modern Banking System

- Today's modern banks function much like the goldsmiths of old.
- Let's see how such banks can create money.

## How Banks Create Money

Bank 1.

Assets		Liabilities	
Reserves	<u>+\$1000</u>	Deposits	<u>+\$1000</u>
Total	+\$1000	Total	+\$1000

## How Banks Create Money

Bank 1.

Assets		Liabilities	
Reserves	+\$ 100	Deposits	+\$1000
Loans and investments	+ <u>900</u>		_____
Total	+\$1000	Total	+\$1000

Bank managers are assuming no more than 10% of their customers will come in for their cash.

They believe they can safely loan the other 90% out!

## How Banks Create Money

Bank 1.

Assets		Liabilities	
Reserves	+\$ 100	Deposits	+\$1000
Loans and investments	+ <u>900</u>		_____
Total	+\$1000	Total	+\$1000

Bank 2.

Assets		Liabilities	
Reserves	+\$ 900	Deposits	+\$ <u>900</u>
Total	+\$ 900	Total	+\$ 900

## How Banks Create Money

Bank 1.

Assets		Liabilities	
Reserves	+\$ 100	Deposits	+\$1000
Loans and investments	+ 900		
Total	+\$1000	Total	+\$1000

Bank 2.

Assets		Liabilities	
Reserves	+\$ 90	Deposits	+\$ 900
Loans and investments	+ 810		
Total	+\$ 900	Total	+\$ 900

Position of Bank	New deposits (\$)	New loans and investments (\$)	New reserves (\$)
Original banks	1,000.00	900.00	100.00
2d-generation banks	900.00	810.00	90.00
3d-generation banks	810.00	729.00	81.00
4th-generation banks	729.00	656.10	72.90
5th-generation banks	656.10	590.49	65.61
6th-generation banks	590.49	531.44	59.05
7th-generation banks	531.44	478.30	53.14
8th-generation banks	478.30	430.47	47.83
9th-generation banks	430.47	387.42	43.05
10th-generation banks	387.42	348.68	38.74
Sum of first 10 generation of banks	6,513.22	5,861.90	651.32
Sum of remaining generations of banks	3,486.78	3,138.10	348.68
Total of banking system as a whole	10,000.00	9,000.00	1,000.00

## The Money-Supply Multiplier

- From this example, we see a new kind of multiplier operating on bank reserves.
- This is the “money supply multiplier” or “money multiplier.”

**The money multiplier is very different from the Keynesian expenditure multiplier!**

## The Money Multiplier Formula

$$MM = 1/RR$$

Where:

**MM = the Money Multiplier**

**RR = the Reserve Requirement**

If RR is .10, then MM is ten.

So a deposit of \$1000 will increase the money supply by \$10,000 in this case.

## **A Money Multiplier Question**

### **QUESTION**

**If RR = 50%, what is MM?**

## **The Money Multiplier in Action**

### **ANSWER**

$$MM = 1/RR = 1/.50 = 2$$

- If Bank 1 receives a new demand deposit of \$1,000, it lends out \$500.
- Bank 2 then lends out \$250, and so on until a total of \$2,000 of new money is in circulation.

## The Money Multiplier Point

- MM and RR are inversely related.
- The bigger the RR, the smaller the MM and the less money created by a new dollar of demand deposits!

## A Lingering Question

- Where did the original \$1,000 deposited in Bank 1 come from?
- The Federal Reserve or “Fed” is the nation’s central bank.
- By controlling bank reserves, the Fed sets the level of interest rates.
- By conducting monetary policy, the Fed has a major impact on output and employment.



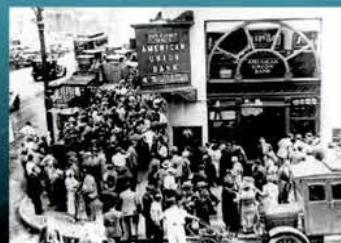
## The Federal Reserve

- The “Fed” was created in 1913 following the Financial Panic of 1907.
- During this panic, numerous banks collapsed because of so-called “runs on the banks.”



## What's a Bank Run?

- If too many of a bank's depositors demand their money at the same time, the bank doesn't have enough cash on hand to pay!
- What would have happened to our goldsmith if everybody had showed up demanding their \$2,000 in gold and the goldsmith had only a \$1,000 of gold in the vault.



## When Fear Leads to Bank Failures

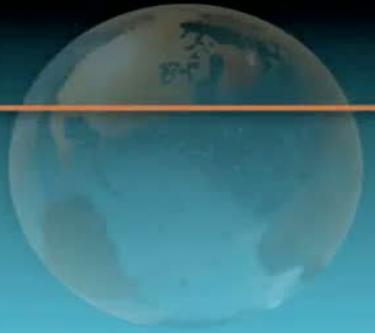
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- Bank runs usually happen when people suddenly believe they may not be able to get their money out of their bank.
- The irony: When everybody tries to get their money at once, the bank fails!!!!
- In such cases, fear becomes reality and a self-fulfilling prophecy.

## A Banker's Bank

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- A nation's central bank serves as the "*lender of last resort*" for all the other banks.
- If a bank needs money to pay off its depositors, it can always borrow it from the Federal Reserve.
- The Fed is, in essence, a "banker's bank."



## LECTURE FOUR - PART SIX

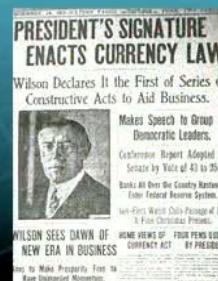
### **The U.S. Fed's Peculiar Structure**

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- The U.S. Fed is NOT one big bank directly controlled by the Federal government like in Germany or Japan.
  - Instead, the Fed is both decentralized and privately owned.
- The Fed consists of 12 regional banks spread throughout the country, and they are owned by the commercial banks.
- In reality, the Fed behaves as a government agency.

## The Fed's Structure

- This regional structure of the Fed was originally designed in an age of populism.
- The populist goal was to avoid too great a concentration of central-banking powers in the hands of eastern establishment bankers or Washington bureaucrats.



## Structure of the Federal Reserve

### The Federal Reserve Chairman

The "second most powerful individual in American government behind the President"

Exerts enormous control over monetary policy

### Regional Reserve Banks and Branches

- 12 regional Federal Reserve banks.
- 25 branches of Federal Reserve banks.

### Board of Governors of the Federal Reserve System

- 7 members nominated by the President and confirmed by the Senate to serve overlapping terms of 14 years.
- Chairman and vice chairman designated by the president and confirmed by the Senate.

### Federal Open Market Committee (FOMC)

- 7 members of the Fed's Board of Governors.
- The President of the New York Federal Reserve District Bank.
- Four rotating members from the other eleven Federal Reserve District Banks.

## **Major Functions of the U.S. Federal Reserve**

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1. Issue currency
2. Lender of last resort
3. Regulate financial institutions
4. Provide banking services to the Federal government
5. Provide financial services to the nation's banks
6. **Conduct monetary policy!!!!!!!!!**

## **The Objectives of Monetary Policy**

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- Promote economic growth in line with the economy's potential to expand.
- Provide a high level of employment.
- Insure stable prices.
- Provide moderate long-term interest rates.

## The Fed's Open Market Committee

- The Federal Reserve conducts monetary policy through its Federal Open Market Committee.
- The FOMC meets periodically to conduct monetary policy using three major policy instruments.



A meeting of the FOMC

## Setting The Reserve Requirement

- Setting the reserve requirement RR is the least used of the Fed's monetary policy tools.
- The Fed can increase M by lowering the RR or decrease M by raising the RR.
- The Fed rarely uses changes in the reserve requirement to conduct monetary policy.
- The Fed's primary function is to insure that banks don't fall below a safe level of reserves and thereby undermine the stability of the system.

## Setting the Discount Rate

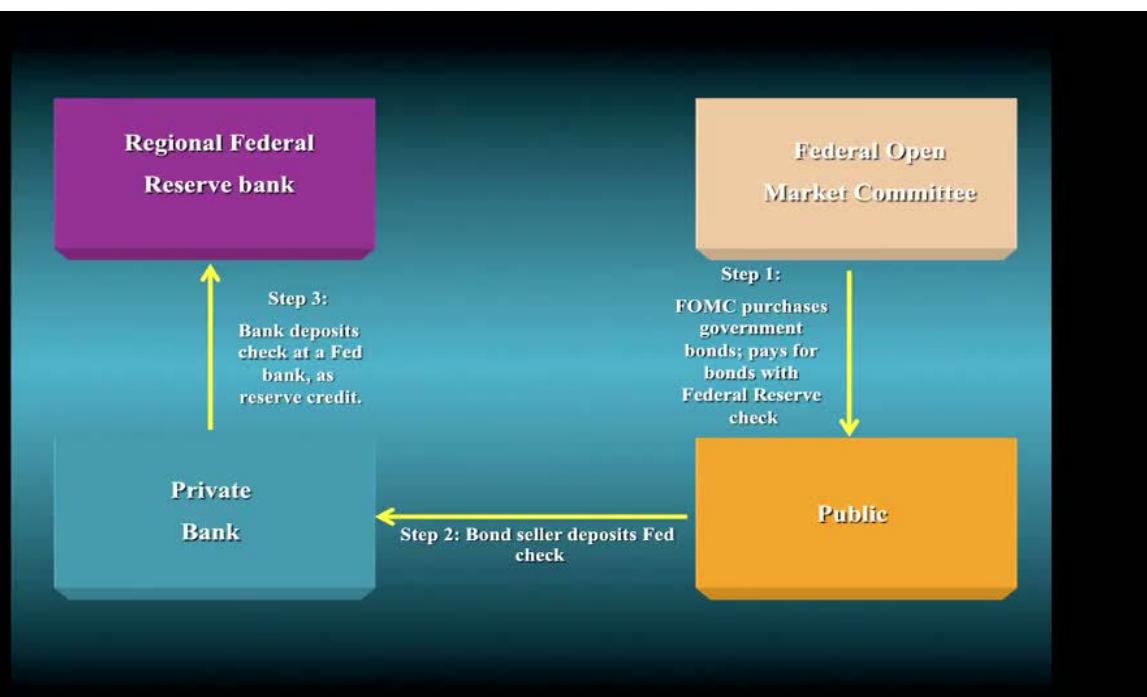
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- The discount rate is the interest rate the Fed charges to banks when they borrow money.
- Lowering the discount rate makes it cheaper for banks to borrow money and expand M.
- Raising the discount rate makes it more expensive for banks to borrow from the Fed and is contractionary.

## Open Market Operations

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- The most important instrument of monetary policy.
- Involves the buying and selling of government securities to expand or contract M.
- The Fed BUYS government securities to expand the money supply.
- The Fed SELLS government securities to contract the money supply.



## Open Market Operations a Potent Tool!

- By buying or selling bonds, the Fed can expand or contract the money supply.
- Such open market operations allow the Fed to determine the total supply of money.
- Open market operations thereby represent the Fed's most potent traditional monetary policy tool!!!

## **Example: The Fed Fights Inflation**

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- Suppose the Fed thinks the economy is overheating and starting to generate demand-pull inflation.
- The Keynesian solution is to contract the economy.
- So the Federal Open Market Committee votes to sell \$1 billion of Treasury bills.
- This reduces the money supply and thereby drives up interest rates and slows the economy.

## **Who Are The Bonds Sold To?**

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- The bonds are sold to the “open market – hence “open market operations.”
- This open market includes dealers in government bonds who resell them to commercial banks, big corporations, other financial institutions, and even individuals.
- The purchasers buy bonds by writing checks to the Fed, drawn from an account in a commercial bank.
- In this way, the Fed reduces the money supply!

## An Example

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- Suppose the Fed sells \$10,000 worth of bonds to Linda Smith.
- Smith will write a check on the Coyote Bank of Santa Fe to pay for the bonds.
- The Fed then presents this check at the Coyote Bank.

## The Important Point

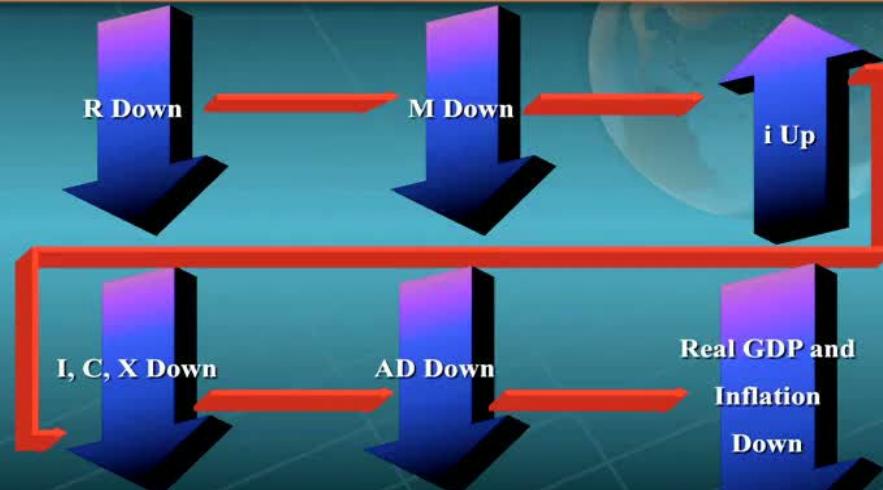
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- When the Coyote Bank pays the check, it will reduce its balance of reserves with the Federal Reserve.
- This, in turn, reduces the reserves in the entire commercial banking system by \$10,000.

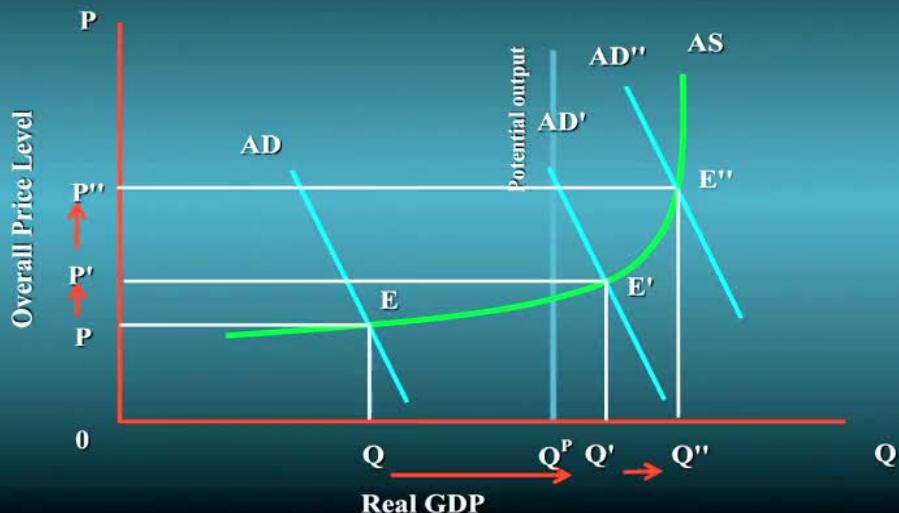
## Closing a Recessionary Gap With Monetary Policy

- You should now see how open market operations can be used to close a recessionary or an inflationary gap.
- This process is illustrated with the help of a five-step monetary policy sequence called the monetary transmission mechanism.

### The Fed Reduces Reserves



## Monetary Policy in the AD-AS Framework



(1) Easy money policy	(2) Tight money policy
Problem: Unemployment and recession	Problem: inflation
Federal Reserve buys bonds, lowers reserve ratio, or lowers the discount rate	Federal Reserve sells bonds, increases reserve ratio, or increases the discount rate
Excess reserves increase	Excess reserves decrease
Money supply rises	Money supply falls
Interest rates fall	Interest rate rises
Investment spending increases	Investment spending decreases
Aggregate demand increases	Aggregate demand decreases
Real GDP rises by a multiple of the increase in investment	Inflation declines

## **LECTURE FOUR – PART SEVEN**

### **Monetary Policy Is Less Precise Than Fiscal Policy!!!**

- From a mechanistic Keynesian point of view, monetary policy is conducted with less precision than fiscal policy.
- With fiscal policy, if we know the size of the recessionary gap and the multiplier...
- We can exactly calculate the increase in G or reduction in taxes needed to close the gap.

## **Fiscal Versus Monetary Policy**

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- Monetary policy is more of a guessing game than fiscal policy.
- Why? Because the link between the money supply and shifts in the AE curve is much more complex.
- While the Fed can raise or lower interest rates, it can't know with precision how investment, consumption, and net exports will respond.

## **A Major Paradox of the Keynesian-Monetarist Debate!**

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- The Keynesians support an activist role for monetary policy.
- The Monetarists actually oppose an activist role!!!!!!

## **When Monetary Policy is Effective**

- Keynesians believe monetary policy is a “fine tuning” tool most effective when the economy is near full employment.
- Investment and aggregate expenditures respond swiftly to changes in the interest rate caused by changes in the money supply.
- With an inflationary gap, contractionary monetary policy is like “pulling on a string.”

## **When Monetary Policy is Ineffective**

- Keynesians believe monetary policy is ineffective in a recession or depression.
- Cutting interest rates in these conditions is like “pushing on a string.”
- Investment does not respond as forcefully to easier money and lower interest rates in a severe downturn.
- In the recessionary and depressionary ranges of the economy, Keynesians believe expansionary fiscal policy is more appropriate.

## The Monetarist View Summarized

- The Monetarist School does not believe in an activist fiscal and monetary policy.
- Inflation happens when the government prints too much money.
- Recession happens when it prints too little.
- Friedman rejected the Keynesian view of the origins of the Great Depression as well as the Keynesian fiscal policy cure.



## Monetarists Blame the Great Depression on Monetary Policy

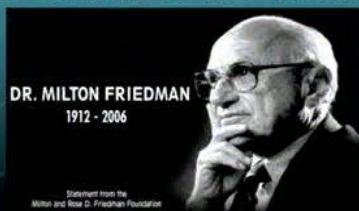
- The Great Depression resulted from bad monetary policy by the Federal Reserve – not Keynes' income adjustment mechanism.
- The Federal Reserve sharply contracted the money supply at the worst possible time.
- This fall in M plunged a private economy that would otherwise have been stable into a depression.

## **Is the Monetarist Explanation of the Great Depression Correct?**

- There is much truth in Friedman's argument.
- In the wake of numerous bank failures, people began hoarding cash rather than leaving it in banks.
- The banks themselves dramatically increased reserves in case nervous depositors triggered a bank run.

## **Milton Friedman Blames the Fed**

- This fall in demand deposits, coupled with an increase in the bank's own, self-imposed reserve requirements, led to a sharp contraction of M.
- Ultimately, Friedman faulted the Federal Reserve for not stepping into the monetary policy breach to stabilize the situation.



## Friedman's Rejection of Keynesianism

If the Federal Reserve had acted promptly and injected enough currency to stabilize the money supply, an activist fiscal policy, as embodied in Franklin Delano Roosevelt's New Deal, would never have been necessary.

### The Bad Driver Fed

- In their critique of activist monetary policy, Monetarists liken the Fed to a bad driver.
- The Fed is always accelerating too fast or braking too hard on M.
- This analogy actually describes quite well the behavior of the Fed during the 1970s as it tried to cope alternatively with recession and inflation and then both at the same time.

## The Bad Driver Fed Plunges the Economy Into Recession

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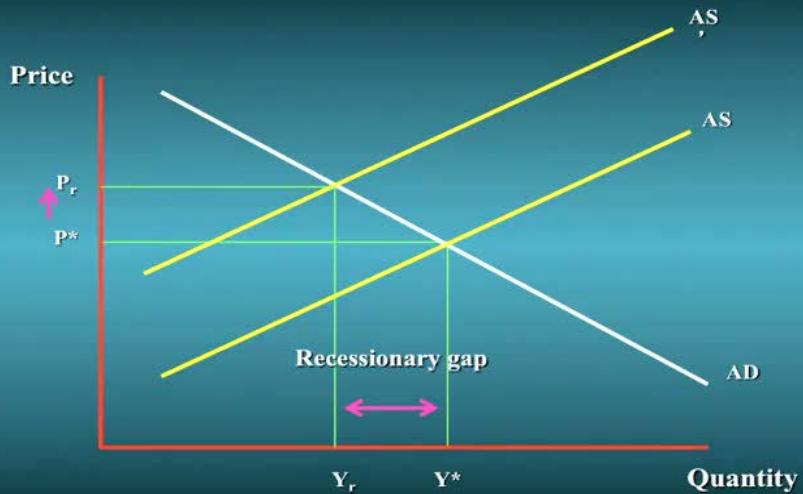
- In response to a soaring inflation in the early 1970s, the Fed stomped on the monetary brakes and interest rates climbed dramatically.
- Investment slowed, and the economy plunged into a recession.
- In 1975, the “Bad Driver” Fed stomped back on the accelerator, using a Keynesian-style tax cut to stimulate the economy.

## The Bad Driver Fed Helps Spawns Stagflation

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- To accommodate this tax cut, the Fed reluctantly increased the money supply.
- This monetary stimulus helped spawn a new and ugly macroeconomic phenomenon called “stagflation.”
- Stagflation is simultaneous high unemployment and high inflation, and it began to tighten its deadly grip on the nation.

## Stagflation Illustrated



## Stagflation a NEW Phenomenon!

- Prior to the 1970s, economists didn't believe stagflation was possible.
- If unemployment went up, inflation had to go down and vice versa.
- The 1970s proved economists wrong on this point and exposed Keynesian economics as being incapable of solving stagflation.

**QUESTION**  
How would you use  
Keynesian fiscal policy to  
fight stagflation?

## The Keynesian Stagflation Dilemma

- Using expansionary policies to reduce unemployment simply created more inflation.
- Using contractionary policies to curb inflation only deepened the recession.
- Traditional tools could solve only half of the problem at any one time--and only by making the other half worse!!!!!!
- This inability of Keynesian economics to cope with stagflation set the stage for the Monetarist challenge to the Keynesian orthodoxy.

## The Monetarist Cure

- To fight stagflation and prevent the roller coaster ride of economic booms and busts, the Monetarist solution is to set monetary growth targets.

### EXAMPLE

For economic growth to proceed at 3%, we should simply increase M by 3%.

## The Fed's Monetarist Cure For An Inflationary Spiral

- After almost a decade of fruitless Keynesian failures, the Federal Reserve embraced the Monetarists' monetary growth targets approach.
- In October of 1979, Fed Chairman Paul Volcker announced that the Fed would no longer focus on holding interest rates stable.
- Instead, the Fed would simply adopt monetary growth targets and stick by them.



## The Fed's Monetarist Bitter Medicine

- Unfortunately, the Fed's Monetarist cure proved to be almost as bad as the stagflation disease.
- Interest rates soared to above 20%!!!
- Inflation remained in the double digits!!!
- And the economy entered into the beginning of a severe three-year recession!!!

## **The Cure Works – At Great Cost!**

- Chairman Paul Volcker stuck to his Monetarist guns.
- Both tight money and a deep recession eventually helped wring inflation out of the economy.
- The cost in human terms was high.



## **Enter Stage Right: Supply Side Economics**

- In the summer of 1982, the Fed relaxed its Monetarist rules.
- By late Fall, the recession had ended.
- This was just in time to try the latest evolution in economic theory – Supply Side economics.



**Supply Side Economist Arthur Laffer &**

**President Ronald Reagan**