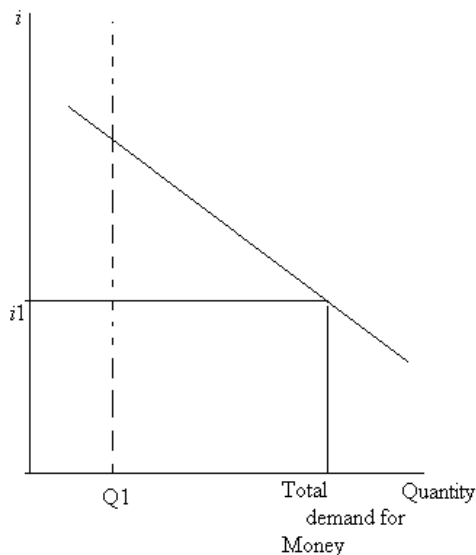


13 & 14

Day 53

- M1 – The most common definition of money supply, things that can be used immediately
 - All currency and checkable deposits
- M2 – M1 + all things that are ALMOST a medium of exchange
 - Savings deposits, money market deposits
 - Near money
- Value of money is what you buy with it
- Purpose of money is to facilitate trade
- Demand for money – Liquidity preference
 - How much wealth does one wish to hold in M1
- Advantage of liquidity – if prices are same money can't be lost due to market fluctuations
- One reason people demand liquidity
 - Transactionary demand for money / Precautionary Demand for money (In case of transactions... might spend it)
 - Expect to make normal and usual transactions
- Marginal benefit versus Marginal cost
- Transactionary demand for money goes up with GDP

Day 54

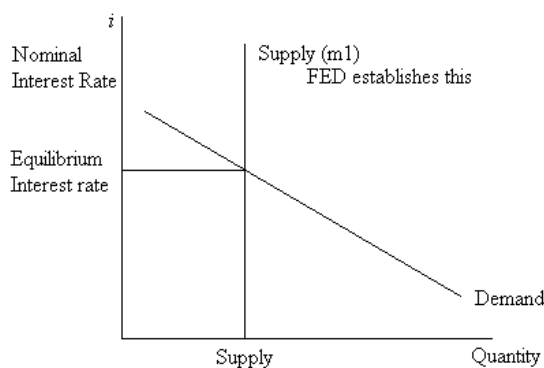


- Q1 – The quantity of money people want to hold for normal transactions (If GDP is fixed)
- M1; currency in circulation and checkable deposits
 - Demand for money = Preference for liquidity
 - Transactionary demand

- Normal and usual transactions
- Function of income
 - Liquidity – You give up the return (interest)
 - Higher the return; more likely to store
 - Opportunity cost of liquidity is interest rate
- If interest rates go down, transactionary demand stays the same if GDP is the same because it is a function of GDP
- Opportunity cost for liquidity goes down as interest rates decline
- Assets demand shrinks when interest rates go up because opportunity cost for liquidity goes up
- High interest rate – Less likely to be liquid
- Inverse relationship between nominal interest rate and the demand for money

Day 55

- There is a market for money (m1)

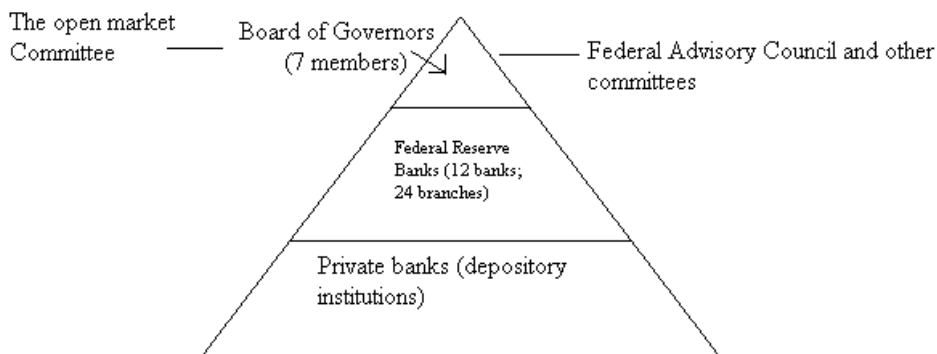


- Higher interest rate, higher the opportunity cost for liquidity
- Society demands exactly the amount of money put into circulation by the FED = Equilibrium
- What if the FED increases the money supply?
- If the interest rate is the price of money, the more you put out, the lower the price is
- What if FED decreases the money supply
- Higher interest rate
- Rate of interest is what it costs you to rent money
- Renting money is enormously important to the economy
- What happens when money supply changes?
- Bond – Agreement for a loan
 - When you borrow m1, you are borrowing someone's savings
 - In a bond, there is a face value
- If bond prices go up, interest goes down
- If there's too much liquidity, people buy bonds which bids bond prices up and moves to a new equilibrium

- Sell bonds: Bond prices go down; i goes up; demand goes down, new equilibrium

Day 56

- Controlling interest rate through manipulation of money supply
 - FED
 - 3rd bank of the United States
 - System of central banking



- Public has no say in the monetary policy
 - Too much power in too few hands?
 - Federal Reserve system not in constitution
 - Board is independent
 - Members usually don't stay all 14 years because of the opportunity cost
- Federal Reserve bank is a bank for bankers
- Open Market committee of the federal reserve
 - Seven members of board and 5 presidents
 - Determine the size of money supply
- FED doesn't directly control interest rates
- When FED is "lowering interest rates", it is expanding money supply
- New York bank president is always a voting member, the other 11 alternate

Day 57

- Open-Market Committee of the FED does monetary policy
- Other things FED does
 - Functions of the FED
 - Monetary Policy
 - Provide for paper money
 - Fiscal agent for US government
 - Lender of last resort

- Supervise and regulate its member banks
- Clear checks
 - Takes about 3 days from the time someone cashes a check from a foreign bank ie (Citizens vs PNC)

Day 58

- Monetary Policy
 - FED controls money supply by influencing the banking system
- Up until 1934, American money was all backed by gold or silver
- Banks today create more money than they have on deposit
- Entire banking system is based on fraction of reserve
- Net Worth -> Assets – Liabilities
- People with big net worth are rich
- What if liabilities exceed assets?
 - If continuous flow of income can keep up, works
 - Bankrupt
 - Legal way of redoing a person's balance sheet
 - All of other debt is gone
 - Clean slate outside things like taxes and child support
- In any given day, requirement of bank in terms of cash are only a fraction of the total cash
 - On a daily basis, deposits tend to equal withdrawals

Day 59

- What the bank holds is a fraction of its reserves
- If everyone went to the bank to get money, it's not all there
 - Banks create check money
- Banks make money by loaning out their reserves
- Reserve requirement
 - Percentage of total deposits that the bank must hold on reserve
 - Bank meets reserve how?
 - Every day must meet requirements
 - Can hold cash in
 - Vault cash (Generally 2% of total deposits)
 - Checking account at the FED

Day 60

- When the money supply is deposited in checking, m1 does not change
 - Green money ↓ Check money ↑
- Deposits in bank are both asset and a liability
 - Asset – Bank has cash

- Liability – People have a claim on the cash and can take it out or pay it to someone at any time
- Banks create money when they make loans
 - No green money to support it
 - Works as long as it's accepted
- When loans are paid back, money supply decreases
 - Money that was in circulation no longer is
- Reserve requirement ratio
 - Percent of deposits banks must legally hold
- Excess reserves
 - Amount bank is allowed to legally lend
 - Total reserves – Required reserve = Excess
 - Banks make profits by loaning excess reserves
 - Key to excess reserves is demand deposits
 - Must attract depositors and loan out to those who will pay back
- Sub prime borrowers
 - Couldn't afford to pay

Day 61

- To some extent, it's all about the excess reserves
- Changing or attempting to change nominal interest rates
- Manipulating value of excess reserves
- \$ 100,000 deposited
- Reserve ratio set by FED 20% (usually less)
- Bank must hold \$20,000
- Excess reserves = $100,000 - 20,000 = \$ 80,000$
 - What bank can legally lend
- \$80,000 deposited in another bank, it can loan now 64,000 and so on...
- Reserves are not money
- Money multiplier – Deposit expansion multiplier
 - New deposits result in more deposits and more money
- FED manipulates the size of excess reserves in order to control money supply
- $1/(\text{reserve ratio})$ is the money multiplier
- In our example $1/.2, 5$
- Money supply can increase
- Multiplier is the potential
 - All must stay in banking system for this to occur
- Banking system is dependent upon normal and usual transactions

Day 62

- What the FED can traditionally do to do what they want to do
- Monetary policy is an option that policy makers can choose to fix problems in the economy
- Money... What is money? M1
- Market for money
- Equilibrium interest rate could be influential in effecting level of economic activity
- FED can move equilibrium interest rate
- Open-Market Committee moves supply line
- Banking
 - How banks create money
- FED influences how banks create money
 - Excess reserves
 - FED establishes reserve ratio
 - Certain percentage of demand deposits on reserve
 - $\text{Total reserves} - \text{Required reserves} = \text{Excess reserves}$
- Reserves are not money, loaned reserves = money
 - Can be deposited in other banks
 - Initial increase can have ultimate impact of $1/(\text{reserve requirement})$; money multiplier
 - Maximum amount of new money that can be created
- Collapse of banking system in 1930s
 - 9,000 banks failed between 30 and 33
 - 2 ways banks fail
 - Mismanaging excess reserves
 - People didn't pay back
 - Run on the banks
 - Lack of confidence in banking system
- FDIC Federal Depository Insurance Corporation
 - Federal Insurance Company that ensures deposits
 - Ended runs on the bank
- What can bank do with excess reserves
 - Loan
 - Buy Bonds (Buying a loan)
 - Does not create money
- Biggest way FED controls money supply is by buying and selling bonds

Day 63

- Monetary Policy
 - Fix Economy by manipulating money supply
- 3 tools FED uses to influence money supply
 - Open market operations
 - Reserve Ratio
 - Discount rate

- FED to reduce money supply buys bonds
- Buy Bonds -> m1 ↑ RR ↓ -> m1 ↑ DR ↓ -> m1 ↑
- Sell Bonds -> m1 ↓ RR ↑ -> m1 ↓ DR ↑ -> m1 ↓
- Other tools FED can use are not as common as open market operations
- Miniscule change in reserve requirement has too much impact
- Discount rate is rate of interest FED charges its customers (all banks) – Only rate of interest FED directly controls
 - Always lower than prime rate of interest
- Easy money -> Buy bonds (Open-Market operations)
 - Excess reserves of banks up -> m1 up
 - Interest down (manipulation), investment spending up -> AD up -> GDP up (Desired result)
- All can go astray at excess reserves because if banks don't borrow, it doesn't work
 - Thus monetary policy should work "in theory"
 - Very dependent on how people react to interest rate
- Federal funds rate – rate of interest at which banks make loans to one another, virtually 0

Day 64

- Recession -> Easy money; Buy bonds; reserve ratio down; DR down -> Decrease reserves -> M1 up
- Inflation -> Tight money; Sell bonds; RR up; DR up -> Decrease reserves -> M1 down
- Monetary policy is an alternative
- Everything with worth is not money
 - Money can be used as medium of exchange
 - Closer something is to liquidity, closer it is to being money
 - Buying and selling securities
 - When a bank makes a loan, they "create" money
 - People at equilibrium are happy with liquidity
- Effect on aggregate demand is through the interest rate
- Less Ig with a higher interest rate
- Investment spending raise or lower goal of monetary policy
- Change in interest rates could intermittently affect value of the dollar, which would affect net exports
 - Interest up, net exports down – World wants American dollar, cost foreigners more to buy American products
 - Interest rates down, net exports up – Less people want US dollars because American products are less expensive
 - Net export effect is consistent with what policy makers want to accomplish
- Asymmetry
 - Sometimes monetary policy might not be effective when we need it most
 - Can take a horse to water, but can't make it drink

- Are there lags in monetary policy?
 - 3-6 months
 - Less lags than government fiscal policy
- GDP determines demand for money