# 2017-03-20

## Why Do We Use Currency?

- Currency is a **medium of exchange**
  - This means that currency is the intermediate commodity between transactions
  - Instead of **bartering**, we can use currency for exchange
    - Problems with bartering
      1. **Double Coincidence of Wants** = both parties must actively want each others goods
         - Currency fixes this, as one person can desire a good, and the seller can desire the purchasing power associated with some amount of money
      2. Some goods cannot be split into smaller denominations
         - Currency fixes this by being offered in everything from pennies to hundred dollar bills
- **Wealth** = the totality of someone's assets
  - Assets include
    - Land
    - Capital
    - Labor power
      - *You damn commie*
- **Income** = the rate at which someone's wealth changes with time

### Commodity Currency vs Fiat Currency

- **Commodity currency** = a system of currency where the item of exchange has **intrinsic utility** to people
  - **Intrinsic utility** = a use or benefit that exists *within* the item of exchange
  - *e.g.*
    - Slips of paper that can be turned in at any time for food or water
    - Gold standard
      - The intrinsic utility of gold is doubtful, but I guess some people are stupid and like shiny things
- **Fiat currency** = a system of currency where the item of exchange has only **extrinsic utility** to people
  - **Extrinsic utility** = a use or benefit that exists *externally* to the item of exchange

        * This means that money is not useful in and of itself–aside from maybe warmth if you burn it
    - *e.g.*
        * Basically every modern economy(USD, Euro, British pound, etc)
        * I.O.U.'s

**Three Functions of Currency**

1. **Medium of exchange** = the currency can be easily used to purchase goods and services
    -
2. **Unit of account** = producers use the currency to broadcast the prices of their goods or services
    - If all the shops are charging for sheckles, you're going to be justifiably confused
3. **Store of value** = the currency can be saved
    - Explains why spoilable goods do not make for good currency

**What Makes for a Good Currency?**

1. **Widely accepted** = similar to the "unit of account" idea
    - Fiat currency is valuable if we all think it is
2. **Scarcity** = cannot be easily reproduced
3. Dividable into smaller denominations

- **Purchasing power** = the amount of goods and services a unit amount of currency can purchase
- **Inflation/Deflation** = the process of changing purchasing power with time
    - Can be caused by all kinds of things

**Liquidity**

- **Liquidity** = the difficulty by which an asset can be used as a medium of exchange
- Three levels
    1. **M1(Highest liquidity)**
        - *e.g.*

        * Circulating currency
        * Checking accounts
    2. **M2(Near-Moneys)**
        - *e.g.*
            * All of M1
            * Invested currency
    3. **M3(Unliquid)**
        - *e.g.*
            * Assets that cannot be easily transfered

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# 2017-03-21

### The Financial Sector

- **Financial sector** = a web of entitites that link people who want to borrow with people who want to lend
    - *e.g.*
        * Banks
        * Mutual funds
        * Pension funds
    - **Assets** = anything tangible or intangible that is owned
    - **Liability** = outstanding debts or obligations
    - **Loan** = an agreement between a lender and a borrower to give some assets from the lender to the borrower
        * Typically is associated with an **interest rate**

### Personal Finance vs Investment

- This class is focused on Macroeconomics, so **personal finance** isn't really covered
    - **Personal finance** = the method by which individuals and small economic units allocate assets to be spent and saved
- The business equivalent of spending is **investment**
    - This grows capital stock and increases real GDP

**Bonds vs Stock**

- **Bond** = an agreement where individuals or small economic units lend assets to a larger institution(*e.g.* the government)
  - Owning a bond is like owning a promise that the money will be paid back in the future, with interest
  - These investments hold little risk, so their interest rate is smaller
    - If interest rate of bond market *decreases*, then demand for current bonds will decrease, and older bonds will raise in demand
  - Bonds do **not** transfer a stake in the organization
    - Rather, it's just debt
- **Stock** = an agreement where economic entities purchase a proportion of ownership of a private enterprise
  - This kind of investment is more risky
    - Because the company you are investing in could be successful or unsuccessful
  - Different from **bonds** because return on investment is not guaranteed
- **KEY POINT**: bond price and interest rates are inverseley related

**Time Value of Money**

- Essential idea is that money *now* has a different value from money in the future
- This can be thought of in a few ways
  - **Interest rates**: there's an opportunity cost associated with using the money now rather than saving
  - **Human psychology**: I want it all and I want it now
    - *plz.*
- Present value of money

$$Present\ Value = \frac{P}{(1+R)^N}$$

- where $P$ is prinicple, $R$ is rate per compound iteration, and $T$ is the number of times that the principle compounds over the time period
- Future value of money

$$Future\ Value = P(1+R)^N$$

- where $P$ is prinicple, $R$ is rate per compound iteration, and $T$ is the number of times that the principle compounds over the time period

## Demand For Money

- **Transaction demand for money** = there is some level of current demand for everyday transactions
  - People need a medium of exchange for daily necessities
- **Asset demand for money** = there is some level of current demand for less liquid assets
  - This is because non-liquid assets are less risky
    - There is an inverse relationship between liquidity and risk

### Interest Rates and Demand For Money

- As interest rates increase, the opportunity cost of immediate consumption is higher
  - So, people invest in lower-liquidity assets
- As interest rates decrease, the opportunity cost of immediate consumption is lower
  - This is because putting away money to accrue interest won't give you much return
- In general, there is an inverse relationship between interest rates and quantity of money demanded
- Shifters of money demand curve
  1. Inflation/Deflation
     - If prices suddenly change, your saving habits change, and demand for money changes
  2. Changes in income
     - If income changes, your saving habits change, and demand for money changes
  3. Changes in technology

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# 2017-03-22

## Money Supply

- The **federal reserve** tries to change interest rates by manipulating **money supply**

- **Money supply** = the total amount of currency in an economy
- On the interest rates vs quantity graph, it is vertical
  - Similar to LRAS
- The equilibrium point is where money demand(MD) and money supply(MS) intersect
- This tool is called **monetary policy**
  - A right shift is an *increase* in the money supply
  - A left shift is a *decrease* in the money supply

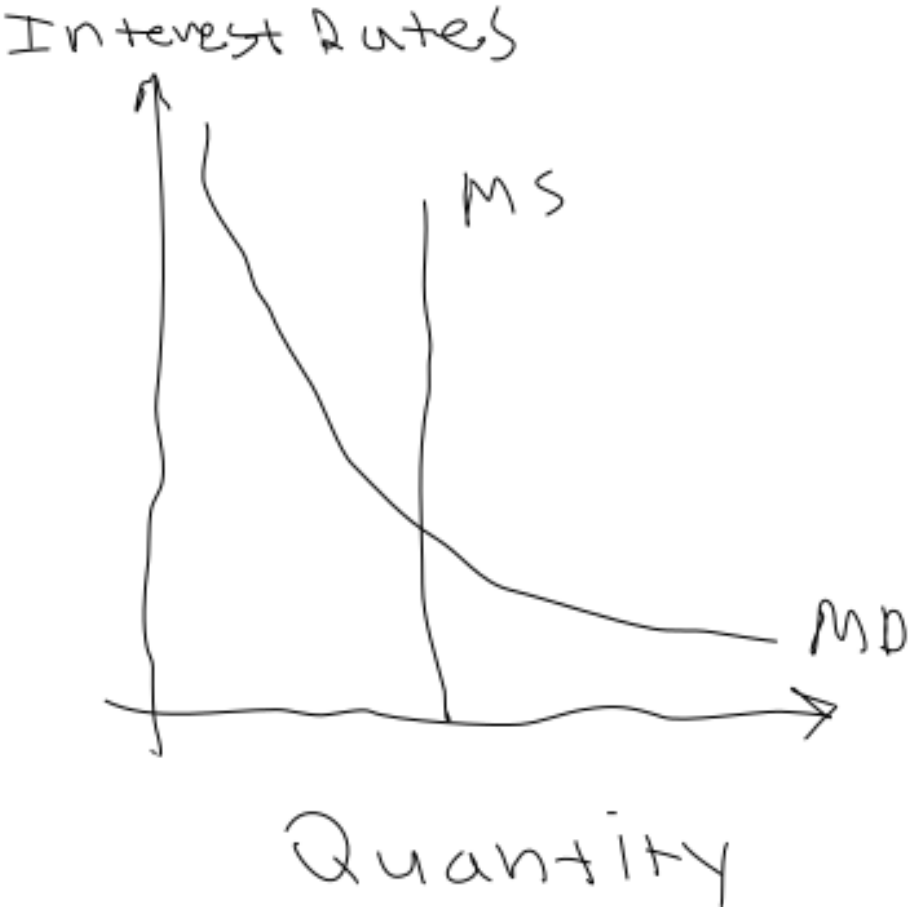


Figure 1: Money Supply/Demand Graph

**Money Supply and Aggregate Demand**

- Because the demand for money(MD) is downward sloping, a change in money supply creates a new equilibrium point
  - The new interest rate will change the rate at which businesses invest
    - This shifts aggregate demand
- An increase in MS causes
  1. A lower equilibrium interest rate
  2. More investment
  3. Higher AD
  4. Lower unemployment
  5. Higher price level
- A decrease in MS causes
  1. A higher equilibrium interest rate
  2. Less investment
  3. Lower AD
  4. Higher unemployment
  5. Lower price level

**Fractional Reserve Banking**

- **Fractional reserve banking** = the practice of banks using its customers deposits as the source for loans
  - Usually isn't a problem, because people only occasionally come to withdraw
    - But, if a massive recession hits, and everyone goes and demands their deposits, that would be a problem
      - This situation is called a **bank run**
  - Banks are required by law to hold at least some percentage of deposits available
    - This amount is called the **required reserves**
    - The remaining assets that can be loaned are called the **excess reserves**
- **Demand deposits** = an event where some economic entity deposits currency into a private checking account
  - Bank thinks to itself: *ooooooooohh, I won't lend this to idiots. Probably*
    - Really the bank planned on loaning it to idiots the whole time
- **Balance sheet** = a metric of the net wealth of a bank
  - Considers

    - Assets
    - Liabilities
    - Net worth

**Money Multiplier**

- There's a money multiplier just like there is a spending multiplier

$$Money\ Multiplier = \frac{1}{Reserve\ requirement}$$