Risk aversion: A dislike of uncertainty

Example: would you bet $10000 on a coin flip?

Most people would not.

You start with $W0. How much would you be expected to have if you made this bet?

W1 is the amount you have after making the bet.

E(W1) = 0.5(W0 + 10000) + 0.5(W0 -10000) = W0

Most people would pay to avoid have to make this bet.

Money is typically assumed to yield diminishing marginal utility.

Utility: A personal measure of satisfaction

Risk Premium: The most that you would be willing to pay to avoid a potential loss.

Expected loss: Probability of loss occurring \* the amount of money you lose if loss occurs

Expected loss < insurance premium < expected loss + risk premium

You are better off if you can buy insurance for less than your expected loss + risk premium

Adverse selection: The people who are at the most risk of incurring a loss are the people who want insurance the most.

Moral hazard: People who are insured against loss, will be have in a more risky way.

Diversification: Don’t put all your eggs in one basket. Diversification avoids firm specific risk. Does not avoid market risk.

Firm specific risk: Is a risk that threatens only one firm.

Market risk: Threatens all firms in the stock market.

Risk VS. Return

In general, riskier assets offer higher potential returns.

EX: stocks VS. Bonds

Labor Markets: People who are 16 years of age or older. People of working age can be classified in the labor market three different ways.

1. Employed: Those who work as paid employees, work in their own business, or they do unpaid work for a family member’s business.
2. Unemployed: You do not classify as employed, and you have looked for work in the past 4 weeks.
3. Out of the labor force: you don’t qualify as employed or unemployed.

Labor force: # of employed + # of unemployed

Adult population = labor fore + # out of the labor force.

Unemployment rate: # unemployed / (# unemployed + # employed) \* 100

Labor force participation rate: labor force / adult population \* 100

|  |  |  |
| --- | --- | --- |
|  | Unemployment | LFPR |
| Employed -> unemployed | Goes up | Stays the same |
| Employed -> out of the labor force | Goes up | Goes down |
| Unemployed -> employed | Goes down | Stays the same |
| Unemployed -> out of the labor force | Goes down | Goes down |
| out of the labor force -> employed | Goes down | Goes up |
| out of the labor force -> unemployed | Goes up | Goes up |

Unemployment can be very misleading.

During a recession, jobs are typically difficult to find. People quit looking for jobs, retire early, go back to school.

This causes unemployment to fall.

During a recovery, jobs are more plentiful, and more people look for work. But finding a job takes time. Many people will initially be unemployed.

Three types of unemployment:

1. Frictional unemployment: unemployment resulting from the time it takes to match an employer with a potential employee.

“In between jobs”

Changes in consumer preferences

Jobs are lost when consumers stop buying certain goods.

Jobs are created when consumers start buying new goods.

1. Structural unemployment: Occurs when the number of jobs in a field is smaller than the number of people wanting to work in that field. Occurs when the wage offered is higher than the equilibrium wage.

EX: Minimum wage, unions

1. Cyclical unemployment: unemployment that’s not frictional or structural.

Typically the result of changes in the overall level of demand for goods and services

Natural rate of unemployment: Frictional + Structural

The monetary system

Money: Has three properties of interest

1. Medium of exchange

An item that buyers give to sellers when they want to purchase goods and services.

Money avoids the need for barter.

Barter: the exchange of one good or service for another.

Barter has a problem known as the double coincidence of wants:

An occurrence when 2 people each offer a good or service that the other wants to trade for.

Money is used to avoid this double coincidence of wants problem.

Trade occurs more frequently when money is used.

1. Unit of account

Item used to post prices and record debts.

Using money as a common unit of account allows relative prices to be easily observed.

Consumers can easily see which other goods they must give up in order to buy something.

Consumers can easily see the opportunity cost of buying something.

1. Store of value

An item that people can use to transfer purchasing power from the present to the future.

Liquidity: The ease with which an asset can be converted to the economy’s medium of exchange.

Money is an imperfect store of value.

When prices increase, each dollar buys less. Money is also the most liquidity asset.

Consumers face a tradeoff between liquidity and the quality of a store of value when choosing which asset to hold.

Two types of money:

1. Commodity Money:

Money that takes the form of a commodity with intrinsic value beyond its use as a medium of exchange. Ex: gold, silver, etc.

1. Fiat Money:

Money without intrinsic value only has value as a medium of exchange.

Fiat money retains its value only as long as people are willing to trade goods and services for intrinsically worthless money.

Two measures of the money stock:

1. M1: Currency hold by the public + demand deposits.

Demand deposit: Balances in bank account that depositors can access on demand by writing a check.

Ex. Checking accounts.

1. M2: M1 + time deposits

Time deposits, saving accounts, certificates of deposit(CD).

M2 does not include time deposits greater than $100,000(large time deposits)

Central bank: An institution designed to oversee the banking system and regulate the quantity of money in the economy.

Reserves: Deposits a bank has received but not lent out.

Fractional reserve banking:

A banking system in which banks hold only a fraction of deposits as reserves.

Reserve Ratio: The fraction of deposits that a bank keeps as reserves.

Ex. You deposit $100 in a bank. The bank lends out $90, and keeps the remaining $10 as reserves, the reserve ratio = 10/100 = 0.1

Money multiplier

The $90 is spent, the recipient puts the $90 in the bank. This bank also has a reserve ratio of 0.1. 10% of the $90 is kept as reserves, the bank lends out the remaining $81. This process continuous indefinitely. $72.9 … #65.61

Fractional reserve banking adds to the money supply.

This process does not make people richer.

The people who borrow are incurring debt at the same time.

Money multiplier: The amount that the money supply increases for every dollar deposited.

= 1/reserve ratio

How do central banks control the money supply?

1. Reserve requirements:

Most central banks have regulates requiring banks to keep a minimum portion of deposits as reserves.

In our example, the central bank could mandate that 20% of deposits be kept as reserves.

The money multiplier falls to 5, so deposits increase the money supply by less.

1. Interest on reserve:

Some central banks pay banks interests on reserves held.

Encourage banks to hold more reserves, causes money multiplier to fall.

1. Lend to banks:

Banks can hold fewer reserves, and borrow from the central bank if they needed.

Discount rate: The interest rate on loans from the central bank to banks.

1. Open market operation:

The purchase or sale of government bonds by a central bank.

If a central bank buys bonds, they are introducing new money into the economy.

If the central bank sells bonds, they are essentially taking money out of the economy.

Bank reserves goes down, money supply decreases.

Problems:

1. Central banks do not control how much people deposit.
2. Central banks do not control how much bank lend.
3. Bank runs:

Bank only keep a small portion of deposits available as reserves. If many bank customers withdraw at the same time, banks cannot make all of their payments.

Lenders of last resort:

The central bank can make loans to banks, so they can make all of their payments.

Deposit insurance:

Even if the bank cannot pay, depositors can still get their money from an insurance agency.

Ex. FDIC

Increase in the supply of money cause inflation.

The demand for money is driven by the price level, interests rates and payment technologies.

There’s a short-term tradeoff between inflation and unemployment.

Equation of exchange:

M\*V = P\*Y

M: money supply

V: velocity of money

The number of times that the average dollar is used to purchase goods and services within a year.

M\*V: Total dollar expenditure of goods and services produced.

P: price level

Y: real output

P\*Y: Total dollar value of goods and services produced.

Quantity theory of money:

V is constant. Data has shown V is very stable.

Y is completely determined by labor, capital, natural resources and technology.

Since V and Y are essentially fixed, an increase in M only results in a change in P.

Classical dichotomy: The theoretical separation between real and nominal variables in an economy.

Real economy: output depends on labor, capital, natural resources and technology.

Relative price are determined by taste.

Real wages depend on productivity.

Monetary economy: Nominal prices determined by the money supply.

Monetary neutrality: The propositions that change in the money supply do not affect real variables.

An x% increase in the money supply will cause an x% increase in prices. No real variables change.

In the short run, some prices might adjust to changes in the money supply more quickly than others.

Some people might not adjust to inflation immediately.

This could alter how much they save or spend.

Costs of inflation:

Inflation tax: For a fiat currency, increasing the money supply devalues money that the public currently holds.

Shoe leather costs: Resources that are wasted when inflation encourages to reduce their money holdings quickly.

Menu costs: Costs associated with sellers having to frequently change prices.

Tax distortions: Inflation can cause people to pay a higher tax rate even when their purchasing power hasn’t changed.

Wealth redistribution: Inflation enriches borrowers. Borrowers repay their debt with dollars that are less valuable than the ones they borrowed when inflation occurs.

Unpredictable inflation imposes a risk that borrowers and lenders incur.

The cost of inflation is highest when inflation is high, and unpredictable.

All other things equal, central banks want to control money supply so that inflation is low and predictable, can affect employment and production.