Money

the functions of money
money -- the commodity ordinarily used in transactions that transfer ownership of goods and services, (commodity generally accepted in exchange for goods and services)

the more nearly a commodity performs the following functions the more close that commodity is to pure money

medium of exchange
A medium of exchange is a commodity that is generally accepted as a means of payment.

barter - direct exchange of goods for services
There has never existed an efficient barter economy.

double coincidence of wants -- in order to trade must find someone who has the commodities I need and who wants the commodity I have

A commodity that functions as a medium of exchange eliminates the need for double coincidence of wants.

an accounting unit
an accounting unit is a commodity that serves as a common denominator in which the values of all goods and services are expressed. This will enables us to easily determine the relative prices of goods and services.

Recall from your study of microeconomics that a relative price is a ratio of money prices -- it gives the price of the commodity in terms of quantity of other commodities.

wheat --- $1 per acre
corn ----- $3.50 per acre
milo ------ $.50 per acre
cotton -- $5.00 per acre

Because the dollar serves as a common denominator we can readily tell that cotton is worth 5 times the value of wheat while milo is only one half as valuable as wheat, etc.
store of value

A store of value is a commodity that may be held and exchanged for goods and services later.

Because money is a medium of exchange it can also be a means of storing wealth.

If the economy is experiencing inflation? -- money worth less and less as a store of value
If the economy is experiencing deflation? -- money worth more and more as a store of value

standard of deferred payment

A standard of deferred payment is a commodity that serves as an agreed measure that enables contracts to be written for future receipts and payments.

The commodity which serves as money will also be that in which payments deferred to the future will be made.

e.g. mortgages, car loans, credit

the forms of money

commodity money

commodity money -- a physical commodity valued in its own right and used as a medium of exchange. Its value as a commodity is as great as its value as money. Traditionally commodity money is gold, silver, and copper.

The money supply could be increased by taking mined gold to the mint.

Advantage: commodity money can be used in ways other than money. This guarantees the value of the commodity and we know the value of money.

Problems: commodity money can be clipped -- reduce coins by an imperceptible amount by shaving or filing off a small percentage of the coin. Commodity money is also susceptible to debasement. Debasement occurs when someone (frequently the government or issuer of the coinage) lowers silver or gold content.
Gresham’s Law (credited to Sir Thomas Gresham) -- bad/debased money drives out good, non mutilated coin will be hoarded. People will hold “good” coin. Coinage that is new that has not been shaved or debased in some way.

**convertible paper money**

convertible paper money -- paper claim to a commodity

This form of money was used during the Ming dynasty (1368 - 1399 A.D.) and during the middle ages in Europe.

Goldsmiths developed the concept of convertible paper money. When people would deposit gold with goldsmiths, the goldsmiths would issue a paper receipt. People soon learned that it was much easier to trade the receipts for goods and services than to exchange the paper receipt with the goldsmith for gold and then use the gold to trade. The paper receipts were good as gold.

This form of money is backed and convertible

Later the goldsmiths realized than the gold they were holding for their business was not being reclaimed, but rather the receipts were being used as a medium of exchange. They developed a type of fractional reserve banking. Goldsmiths lent gold receipts and charged interest. They knew it was very unlikely for all gold to be withdrawn at the same time.

The gold receipts were no longer fully backed as the goldsmiths had lent out more receipts (promises to pay that were used as a medium of exchange). The receipts were fractionally backed but still convertible to gold or some other precious metal with which the goldsmiths dealt.

**fiat ("let it be done") money**

fiat ("let it be done") money -- value or cost as a commodity is less than its value as money, little intrinsic value, neither backed by or convertible to a commodity, worth what it is because the government says that it is.
**Examples of fiat money:**

- Federal Reserve Notes - currency
- Continental currency during American Revolution
- "Greenbacks" issued during the Civil War.

**private debt money**

private debt money -- loan that the borrower promises to repay in currency on demand, a checking account

This form of money is sometimes known as a "demand deposit" because it can be withdrawn or "demanded" at any point in time. This language is sometime employed by academics and we will refer to checking accounts as demand deposits during our discussion on banking.

Checking accounts are money simply because they are generally accepted as a medium of exchange -- a means of payment.

**liquidity**

liquidity -- the ease with which an asset can be converted in to a medium of exchange without risk of loss at a known price

Some assets are more liquid than others. Generally the more liquid the asset, the closer it is to pure money.

**perfectly liquid**

- currency
- demand deposit
- time deposit
- stocks and bonds
- real estate

**least liquid**

Money is perfectly liquid -- by definition.

**money supply**

money supply -- sum of all commodity money, fiat money, and private debt money that is held by the nonbanking public as of a given date
The fiat money the bank holds as cash is not counted in the money supply until it is held by someone outside the bank. To do so would be to count the funds twice because demand deposits are already counted in the money supply.

More precise definitions of the money supply:

- **M1** -- the sum of currency (paper and coins), demand deposits at commercial banks held by the nonbonding public, traveler's checks and other checkable deposits like NOW (negotiable orders of withdrawal) accounts and ATS (automatic transfer services) accounts
- **M2** -- M1 plus savings and small time deposits plus money market mutual fund shares plus other highly liquid assets
- **M3** -- M2 plus large time deposits (100,000+) and longer term loans

To get an idea of the relative magnitude of M1, M2, and M3, this is a diagram from page 232 from Gottheil's *Principles of Macroeconomics* 3e.

![U.S. Money Supply: 2000 ($ billions)](image)

money and the price level

neutralit of money

short run -- increase in the money supply drives up output and prices
long run -- only prices rise! Output returns to the full employment
level of output This is known as neutrality of money

If the Federal Reserve acts to expand the money supply (cut fed funds, discount rate; purchase of
securities; etc.) the AD curve will shift to the right. In the short-run (wages will not have enough time to
adjust in the short run) output will rise and unemployment will fall. In the long run (wages will adjust in
the long run) the increase output will not be maintained. As wages rise the AS curve will shift up to the
left until the labor market returns to equilibrium and a new long run full employment equilibrium is
reached.

the quantity theory of money

The basic proposition of the quantity theory of money is an increase
in the quantity of money leads to an equal percentage increase in the
price level. Not only do prices increase when the money supply
increase, the increase in prices is equal to the increase in the money
supply.

The concept of the quantity theory of money is illustrated with the
equation of exchange:

$$M \times V = P \times Q$$

quantity of
money

velocity

price
level

real
GDP

Notes:
The equation of exchange is true by definition. It is simply another formulation of our basic macroeconomic demand equation, \( AD = C + I + G + (X - M) \) or \( GDP = C + I + G + (X - M) \)

velocity of circulation -- average number of time a dollar is used annually to buy goods and services

The velocity of circulation Is what ever it needs to be to make the equation true.

The quantity theory of money postulates that:

1. velocity is constant
2. real GNP is not influenced by the quantity of money -- it is constant

\[ M \times V = P \times Q \]

indicates the variables are constant

The quantity must have a proportionate effect on price

There is not as strong a correlation between inflation and the money supply as the quantity theory suggests -- velocity does change and real GDP does change over time.
**the demand for money**

transactions motive (main motive)

We hold money in order to carry out normal transactions. Payments and receipts are not synchronized therefore we hold part of our wealth in the form of money.

The transactions motive is usually understood in relation to income. A higher income translates into a higher transaction motive.

precautionary motive

People hold money in order to protect themselves against unforeseen emergencies.

speculative motive

Many hold some money (or at least have their assets in a highly liquid form) in order to take advantage of opportunities to profit from market fluctuations.

important with regard to M2.

the speculative motive is usually understood in relation to the interest rate -- the interest rate is the opportunity cost of holding assets as money.

Notes:
The slope reflects the speculative demand for money. The higher the interest rate the smaller the quantity demanded because the opportunity cost is greater.

The demand curve is drawn for a specific level of income and price level -- it either the level of income or price level changes the demand for money will change. The curve will shift.

factors affecting the position of the demand for money curve

If:
1. real GDP increases, or
2. the price level increases, the demand for money curve will shift to the right.
If:
1. real GDP decreases, or
2. the price level decreases,
the demand for money curve will shift to the left.