

## Financial Markets

1. **Bond** – a contract in which the lender agrees to provide funds today in exchange for a promise that the borrower will pay back the funds with interest at a future date
2. **Principle** – the original amount of the bond or loan
3. **Interest** – the interest paid on the principle
4. **Securities** – stocks, bonds, US Treasury bills
5. **Corporate/Government bonds** – bonds issued by large corporations and the government
6. **Stock** – share of ownership in a firm. Value of stock depends on the profits of the firm
7. **Dividend** – the amount the firm pays out to the owners of the stock each year
8. **Return** – the income received from the ownership of an asset: for a stock, the return is the dividend plus the capital gain
9. **Capital gain** – the increase in the value of an asset through an increase in its price ( think stocks )
10. **Capital loss** – the decrease in the value of an asset through a decrease in its price
11. **Rate of return** – the return on an asset stated as a percentage of the price of the asset

### 12. Stocks

- a. **Annual Return** – dividend plus the capital gain during the year
- b. **Dividend yield** – the dividend stated as a percentage of the price of the stock
- c. **Rate of return** – percentage capital gain + dividend yield
- d. **Growth Stocks** – stocks in which the rate of return is dominated by the percentage capital gain
- e. **Earnings** – accounting profits of a firm
- f. **Price-earnings ratio** – the price of a stock divided by its annual earnings per share. The inverse of the price to earnings ratio as a percent is also closely watched
- g. **Price and the expected rate of return are inversely related** – a stock's rate of return is the return divided by the price. If the price goes down, but the dividend doesn't change, then the rate of return goes up.
- h. **If the expected rate of return of a stock is equal to the bank's savings account or CD rate, then everyone would go put their money in the bank.** Demand for the stock will fall, and the price of the stock will fall. As the price falls, the rate of return starts to rise, until it's high enough to attract people who are willing to take a risk on this falling stock that no one wants for a higher rate of return, when the price will begin to rise again.
- i. **Equilibrium Risk Return Relationship** – the positive relationship between the risk and the expected rate of return on an asset derived from the fact that, on average, risk averse investors who take on more risk must be compensated with a higher return. IN order to get a higher rate of return ON AVERAGE OVER THE LONG run, you have to accept a higher risk. You could, of course, get lucky and make \$20,000 in one day when a stock's price just happens to jump.
- j. **Portfolio Diversification** – spreading the collection of assets owned in order to limit exposure to risk. AKA don't put all your eggs in one basket. Diversifying internationally further reduces risk
- k. **Mutual Funds** – diversify by holding 5000 stocks along w/ other investors
- l. **Index Funds** – mutual fund w/ every stock in the S&P 500 Index
- m. **Systematic Risk** – the level of risk in asset markets that investors cannot reduce by diversification
- n. Information about profits and the state of the economy affects stocks FAST, on the order of minutes after the information is released. The government sets a precise time to release new info.
- o. **Efficient market hypothesis** – markets adjust rapidly enough to eliminate profit opportunities immediately

### 13. Bonds

- a. **Coupon** – fixed amount that the borrower agrees to pay the bondholder each year. Is measured as a percentage of the face value
- b. **Maturity date** – the date when the principle on a loan/bond is to be paid back
- c. **Face value** – amount of principal that will be paid back when the bond matures
- d. **Yield** – the annual rate of return on the bond if the bond were held to maturity. When people refer to the current interest rate on bonds, they are referring to this yield
- e. Prices of bonds are inversely proportional to the yield. If you bought a bond for \$100 that had a yield of 5%, you'd have 105 at the end of the year. Now if banks suddenly raised their rates to 10%, you'll want to sell that bond and go put the money in the bank where you'll get \$110. However, people know that, and they won't pay you \$100 for the bond. They'll only pay you 95.45, and since they'll get 105 back at the end of the year, the yield on the bond has just gone up to 10%.
- f. **Asking Price** – the price that bond traders want to SELL the bond
- g. **Bid Price** – the price at which bond traders want to BUY the bond. Asking is always > bidding
- h. **Change** – the change in price from the previous day listed in 1/32 of a cent

**Table 15.1** Bond Price Formula

One-year maturity: 
$$P = \frac{R}{1+i} + \frac{F}{1+i}$$

Two-year maturity: 
$$P = \frac{R}{1+i} + \frac{R}{(1+i)^2} + \frac{F}{(1+i)^2}$$

Three-year maturity: 
$$P = \frac{R}{1+i} + \frac{R}{(1+i)^2} + \frac{R}{(1+i)^3} + \frac{F}{(1+i)^3}$$

For very long term: 
$$P = \frac{R}{i}$$

$P$ = price of bond
$R$ = coupon
$F$ = face value
$i$ = yield

- i. For a 1 year bond,  $P$  is the price you're willing to pay now, the present discounted value of the coupon payments + the face value at the end of the year
14. **Risk Averse** – the tendency for people to avoid uncertainty
15. **Expected return** – the return on an uncertain investment calculated by weighting the gains or losses by the probability that they will occur. An expected return of \$500 doesn't mean you'll get 500 at the end of the year. It could mean that you'll either gain 10,000 or lose 90,000, with each scenario having a 50/50 chance of happening. Think of it as the average return per year for many years (ie, 1000 years )
16. People tend to take more risks if the return is SIGNIFICANTLY higher. Also, people tend to take more risks if the amount involved is only a small % of their wealth/income. For example, you'd pay \$5 in the lottery for a chance at 20 million if you made \$5,000/month, but wouldn't if you only made \$50/month
17. **Foreign Exchange Market** – a market in which one currency can be exchanged for another currency
- Exchange Rate** – the price of one currency in terms of another in the foreign exchange market
  - The exchange rate is greatly affected by people's expectations of rates of return from holding one currency compared with another
  - Interest rates in a country, the expected rate of return (expected to appreciate or depreciate), and the price of goods and services in one country compared to another can greatly affect the exchange rate. If Japan experiences deflation, Japanese goods and services become cheaper, US wants to buy Japanese goods and services, so the demand for Yen goes up, which sends the exchange rate for yen up
  - Just like the stock market, the exchange rates adjust immediately to news developments
  - Purchasing Power Parity** – the theory that exchange rates are determined in such a way that the prices of goods in different countries are the same when measured in the same currency. The same VCR should cost the same amount in the US or in Japan, after the exchange rate is factored in
  - If goods aren't easily transported, transportation costs need to be factored into the purchasing power parity
  - Notation** – let  $P$  = price in the US,  $P'$  = price in Japan, and  $E$  = the exchange rate
    - If the price in the US is \$10, and price in Japan is \$100, then  $E * P = P'$ , so  $E = 10 \text{ Yen} / 1 \text{ USD}$
    - If the price in the US goes up to \$20 because of inflation, then  $E$  becomes  $5 \text{ Yen} / 1 \text{ USD}$
    - Inflation depreciates the value of the dollar, which is what we predicted a long time ago
  - The PPP works well in the long run w/ exchange rates, but not so well in the short run
  - Differences in rates of return**
    - People are always looking for the highest return possible. They go wherever has the highest interest rates
    - In the short term, they go wherever interest rates are high, before inflation has a chance to adjust