E&G, Chapter 2

First, consider what determines the Risk of a security:

1. Maturity of investment – longer maturity, more risky.
2. Creditworthiness & risk characteristics of borrower.
3. Nature and Priority of claims on income & assets of borrower.
4. Liquidity of investment & type of market in which it is traded.

I. **Types of Financial Securities**.

A. **Money Market Securities** - maturity ≤ one year.

1. **T. Bill** - short term U.S. government security (debt).
   a. Sold at discount.
   b. Minimum denominations of $10,000.
   c. New issues weekly in 91-day & 181-day Bills; monthly in 252-day Bills.
   d. Most liquid & marketable short term security; "riskfree."

2. **Repurchase Agreement** (Repos) - agreement between SSU & DSU to sell & later repurchase a Gov't security @ specified price.
   a. Difference between selling & buying price gives return.
   b. Maturity - overnight; Term Repos - maturity > 30 days.
   c. The party buying & later reselling has a Reverse Repo.
   d. These play an important role in pricing derivatives, since they allow short positions to be taken in bonds. (This is critical in constructing arbitrage portfolios.)

3. Others, also low risk, differ in return by selling institution.
   a. Negotiable CDs - by banks; FDIC-insured up to $100,000.
   b. Banker's Acceptances - pay specific sum on given date.
   c. Eurodollars or Eurodollar CDs - $ denominated deposits backed by foreign bank or foreign branch of U.S. bank.
   d. Commercial Paper - short term debt instrument issued by large well-known corporations.

B. **Capital Market Securities** - maturity > one year.

1. **Fixed-income security** - debt with specific paymt schedule;
failure to meet a promised payment means default;
differ by maturity, borrower's creditworthiness, & tax status.

   a. T. Notes (1-10 years) and Bonds (> 10 years) -
   pay interest twice yearly, principal at maturity;
   bonds issued < 1985 may be callable (in their last 5 yrs);
   differences in yields must be attributable to:
      i. tax implications of different coupon rates,
      ii. differences in maturity,
      iii. differences in liquidity,
      iv. different call features.

   b. Federal Agency Securities -
   eg Farm Credit Bank issues securities to fund
   research and short term loans to farm cooperatives;
   debt has implicit guarantee of government (not explicit!);
   close subst for Treasuries, sell at slightly higher yields.

c. Municipal Securities -
debt sold by political non-Federal entities such as states, counties, cities, airport authorities, school districts;
can default;
two types:
i. general obligation bonds - backed by full faith & credit of issuing authority,
ii. revenue bonds - backed by revenues of project or of revenue-generating ability of municipality;
- interest exempt from Federal (& usually state) taxes;
- sell at lower yields than comparable taxable issues: tax equiv yield ≈ (tax-exempt muni yield)/(1-tax rate).

d. Corporate Bonds - like Treasuries, except:
i. have default risk;
ii. may have different claims on earnings & assets:
- secured -- backed by specific collateral,
- unsecured -- (debentures) not backed in this way,
- subordinated debentures -- further down in line, [last 2 often place covenants on dividends, debt, ...];
iii. often callable and/or convertible.

NOTE: Possibility of default and the callability option mean that fixed income securities don't always pay promised payments. This leads to *variability in cash flows* received by investor.

2. Not-so-fixed Income Securities -
   investors expect even greater *variability in cash flows*.

   a. **Preferred Stock**
   promises to pay periodic 'coupon' like debt,
   but called dividend rather than interest,
   and failure to pay dividend does not result in default
   (therefore not really fixed income security);
   indefinite maturity, like stock;
   may be callable at firm's discretion,
   or convertible into common stock at holder's discretion;
   something between debt and equity.

   b. **Mortgaged Backed Securities**
   ownership participates in cash flows from pool of mortgages;
   often issued by:
   quasi-gov't agencies (GNMA, FNMA, FHLMC, SLMA, ...)
   and thus backed by explicit or implicit guarantee,
   or by financial institutions.
   "pass-through" securities -
   holder will receive uncertain stream of future income
   depending on how fast mortgage holders prepay;
   this depends on the level of interest rates...
   pay higher yield to compensate substantial interest risk.

3. **Common Stock** - residual ownership claim against earnings & assets.
   After debt-holders are paid, management can either
   reinvest or pay out remaining earnings to stockholders.
   More risky, can lose part or all of investment.

C. **Derivatives** - securities whose values are derived from (contingent on) the value of an underlying security or price.

1. Include forwards, futures, options, SWAPs, ...

2. Can be attached to other securities:
   eg callability option on debt.

D. **Indirect Investing** through mutual funds.

1. Can either purchase these financial assets directly, or indirectly by purchasing shares of mutual funds that buy portfolios of different classes of these assets directly.

2. Come in two types:

   a. Open-end funds
   may be purchased or sold at the value of assets
   standing behind each share, net of fees;
   new purchases used to buy more assets for portfolio;
   may be front-end load (fees charged when shares bought)
   or back-end load (fees charged when shares sold)
   or both.

   b. Closed-end funds
   initially sell predetermined number of shares in the fund;
   then take proceeds (less costs) and buy assets.
   shares in fund are then traded & take a life of their own.
   unlike open-end funds, can trade at premium or discount
   to net asset value.
   most closed-end funds sell at a discount,
   due to taxes and other reasons.

II. **Stock Market Indexes**.

A. Dow Jones Industrial Avg.

1. price-weighted avg of 30 blue chip stocks;
   price of each stock is multiplied by
   (share price of stock i)/(Σ share prices of all stocks).

2. this price-weighting scheme is weird;
   places more weight on stocks with higher share prices!

B. S&P 500 Index.

1. Market-weighted avg of 500 large firms;
   price of each stock is multiplied by
   (Market Cap of stock)/(Market Value of all 500 stocks).

   Makes more sense.

C. NYSE Index - all NYSE listed stocks.

D. AMEX Index - all AMEX listed stocks.

E. Wilshire 5,000 Index - NYSE, AMEX, and active OTC stocks.

NOTE: Most stock indexes exclude dividends; not the total return.

F. Traded Securities that Mimic Benchmark Portfolios.

1. Exchanges offer various stock index funds.

2. AMEX Index Shares – track > 40 benchmark pf's.

   a. Represent ownership in trust that holds a pf that closely tracks performance and div. yield of the benchmark index in question.

3. Most popular:

   a. SPDRs, or spiders – S&P Depository Receipts Track S&P 500.

   b. Select Sector spiders – track 9 S&P sub-indexes.

   c. DIAMONDS – based on Dow.

   d. Nasdaq 100 Index Tracking Stock (ticker, QQQ).

   e. WEBS – World Equity Benchmark Shares; based on Morgan Stanley country indexes.

   f. Internet HOLDRs (ticker HHH) – 20 Internet stocks.

4. Example – SPDRs.

   a. Trust holds pf of stocks that closely track index.

   b. SPDR entitles holder to quarterly cash dividend corresponding to div. of stocks in trust, less exp.

   c. SPDR expenses ≈ 0.185% (.000185 of investment).

III. **Bond Market Indexes**.

A. Best known: Merrill, Salomon Bro's, Lehman Bro's., Ibbotsen.

1. Ibbotsen Indexes more narrow, cover longer pd (since 1926).

2. Market-weighted total return indexes,
including all issues above a certain size.

3. Also publish sub-indexes for different sectors of market:
   a. by maturity,
   b. by issuer.

B. Total return indexes include interest + capital gains.

1. Assume any interest paid is reinvested at end of period;
All prices used are (quoted price + accrued interest);
This is what an investor would have to pay for bond.