MEASURES OF FIRM SIZE, RISK, AND PERFORMANCE

Measures of Firm Size:

Market Cap = Market Value of Equity = (# shares)*(share price).

Total Enterprise Value = T.E.V. = (Market Cap) + (Debt).
[The common convention is to use "Book Value of LT Debt" to measure "Debt."
You may wish to also include ST Debt, a primary financing source for some firms.
It would be preferable to use *Market* Value of Debt, but this is rarely available.]

Stockholder's Equity = Book Value of Equity = Total Assets - Total Liabilities.

Total Assets = Book Value of Assets.

Sales Revenue.

Measures of Risk:

Leverage [You may use Market Values in the denominator of the first two measures]:

Debt Ratio = (Debt)/(Debt + Book Value of Equity).

Debt-Equity Ratio = (Debt)/(Book Value of Equity).

Interest Coverage = Times Interest Earned = (EBITDA)/(Interest Expense).
where EBITDA = Earnings Before Interest, Taxes, Deprec., & Amortiz.

Liquidity:

Net Working Capital = Current Assets - Current Liabilities;
where Current Assets = Cash + ST Securities + Receivables + Inventories;
and Current Liabilities = Debt Due + Payables.
[Represents potential reservoir of cash; Often expressed as ratio to T. Assets.
Note: ST Securities may be called Marketable Securities.]

Current Ratio = (Current Assets)/(Current Liabilities).

Quick Ratio = (Cash + ST Securities + Receivables)/(Current Liabilities).
[This excludes Inventories, since they are less liquid.]

Cash Ratio = (Cash + ST Securities)/(Current Liabilities)
[This excludes Inventories and Receivables.]

Market Beta = $Cov(R_i,R_m)/Var(R_m)$.

Accounting Measures of Performance:

Note: Some of these take the ratio of an *income statement* flow to a *balance sheet* stock;
A common convention is to take the ratio of a flow during the year
to the average stock at the beginning & end of the year.

Net Earnings = Net Income = Measure of Income or Profits, net of Taxes.
[Reported in the income statement.]

EPS = Earnings per Share = Net Earnings / (# shares outstanding).

ROE = Return on Equity = Net Earnings / (Stockholder's Equity).

ROA = Return on Assets = Net Earnings / (Total Assets).

Margin = Gross Margin = Sales - COGS; [Gross Margin % = Gross Margin/Sales].

Profit Margin = Return on Sales = ROS = Net Earnings / Sales.

Asset Turnover = Sales/(Total Assets).

Market Measures of Performance (Valuation Ratios):

P/E = (Market Cap)/(Net Earnings) = (share price)/(EPS).

P/S = (Market Cap)/(Sales); Also, consider P/S = (T.E.V.)/(Sales).

Market-to-Book = (Market Cap)/(Book Value of Equity).

Dividend Yield = (annualized dividend)/(share price).
[May use year-end share price or average share price over the sample period.]

Cash Flow Analysis

EBITDA, EBIT, and Free Cash Flow provide different information about earnings.
In the Free Cash Flow approach, the analyst first estimates the value of the entire firm as the NPV of expected future free cash flows, assuming all-equity financing, then adds the value of tax shields arising from debt financing, and finally subtracts the value of all claims other than equity.

The following sources offer more information regarding the use of these measures in valuation:
Elton & Gruber, *Modern Portfolio Theory and Investment Analysis*, 2007, Chs. 18 & 19.
Jones, *Investments: Analysis and Management*, 2008, Ch. 18.

Free Cash Flow Analysis - Finding Free Cash Flow:

	Earnings before interest and taxes (EBIT or Earnings from Operations)
–	Taxes
=	Net operating profit (net of taxes but not interest expense)
+	Depreciation
=	Cash Flow from operations

+/-	Change in working capital
+	Capital expenditures
+/-	Change in other net assets or other net liabilities
=	Gross investment

	Cash Flow from operations
–	Gross investment
=	**Free cash flow from operations**
+	Non-operating cash flow
=	**Cash flow before dividend disbursement and financing**

EBIT - pretax income that a company would have without debt.
It is usually equal to operating income on an income statement.

Taxes - actual cash taxes paid are reported in a footnote to the financial statements. If operating income is substantially different from net pretax income, it may be more appropriate to do the following calculation to find taxes for EBIT:

	Total taxes (from income statement)
+	Tax shield on interest expense = (tax rate, τ)(interest expense)
–	Tax on interest income = (τ)(interest received)
–	Tax on nonoperating income = (τ)(other income)
+	Change in deferred taxes (from balance sheet)
=	Taxes on EBIT

Depreciation - depreciation should include all non-cash charges deducted from EBIT. *Tax depreciation* is found in the footnotes to the income statement. *Accounting depreciation* is reported on the income statement as an expense, & is not usually the same.

Capital Expenditures - found in the statement of cash flow.

Gross Investment - sum of all expenditures for new capital including working capital, capital expenditures, goodwill, and other assets. Can be found in statement of cash flow.

Free Cash Flow - what the firm's cash flow would be under all-equity financing; it ignores interest expense on debt, and any tax savings resulting from deductibility of interest expense.

Alternate Cash Flow Analysis

	Net Income
+	After-tax net interest expense(income)
+/-	Non-operating gains or losses
+	Long-term operating accruals
+/-	Change in working capital
	Operating cash flow before investment in long-term assets
–	capital expenditures (or liquidations)
	Free cash flow available to debt and equity
+	After-tax net interest expense(income)
+/-	Net debt re-payment or issuance
	Free Cash Flow available to equity
–	Dividend Payments
+/-	Net stock repurchase or issue
	Free Cash Flow