OVERVIEW OF BASIC FINANCIAL METRICS FOR COMPANY EVALUATION
CALTECH STUDENT INVESTMENT FUND

1) **Simple Price Ratios**: these are pretty direct and crude metrics of how expensive a stock is relative to its financial performance. The ratios on their own are meaningless, but they can be very informative when compared to the same ratio of similar companies. Since the price is the numerator for all these, the lower the ratio, the less expensive the company is (relative to the metric in the denominator). Note that we generally expect companies with high growth rates and high earnings quality (see DSO, below) to be "more expensive" than companies with low growth rates or low earnings quality.
   a) *PRICE/EQUITY* (a.k.a. *PRICE/BOOK VALUE*)
   b) PRICE/SALES
   c) *PRICE/EBITDA* (Earnings Before Interest, Taxes, Depreciation and Amortization)
   d) *PRICE/EBIT* (Earnings Before Interest and Taxes)
   e) PRICE/EARNINGS
   f) PRICE/CASHFLOW FROM OPERATIONS
   g) *PRICE/FCF* (*Free Cash Flow*)—free cash flow equals cashflow from operations minus capital expenditures. This is the amount of cash generated from operations that is available to pay out to shareholders as dividends, and is generally considered to be a better metric than earnings; however it is important to note that *FCF* can be very lumpy/irregular relative to earnings, so that is why earnings is more frequently used.

2) **Return Ratios**: These metrics can often tell you a lot about a company's efficiency relative to its peers. Note that it is sometimes useful to look at the different segments of a company separately, as one segment may have vastly different margins than another.
   a) *RETURN ON EQUITY*: if you think of a company as a machine that spits out money every year, the machine will be more coveted (1) the cheaper it's to build and (2) the more money it spits out each year. These parameters are represented in *ROE*.
   b) RETURN ON ASSETS
   c) *GROSS MARGIN*: if you compare two companies that make widgets of comparable quality, the company that sells them for more and spends less to make them has an advantage. These parameters are represented in the company's margins.
   d) OPERATING MARGIN
   e) NET MARGIN

3) **Leverage Ratios:** These ratios give an understanding of how much debt a company has and how easy it is for them to make interest payments on that debt. Generally speaking, higher debt equates to more risk but higher returns.
   a) *DEBT/ASSETS*
   b) *DEBT/EQUITY*
   c) *INTEREST PAYOUT/EBITDA*
   d) *INTEREST PAYOUT/EBIT*
   e) *INTEREST PAYOUT/CASHFLOW*

4) **Dividend Yield and Payout Ratio**: *DIVIDEND YIELD* is a ratio of annualized dividend payouts to the price of a stock at a given point in time. The *PAYOUT RATIO* (there a several flavors: *DIVIDEND/EARNINGS*, *DIVIDEND/CASHFLOW*, etc.) indicates whether a company is making enough money to continue paying its dividend. Strictly speaking, a sustainable dividend requires that it be less than the free cash flow in a given year, but *FCF* can often be lumpy, so earnings is often used in its place. It is generally better to look at the *FCF* payout ratio averaged over several years than to look at the earnings payout ratio because lots of capital expenditures can make FCF much lower than earnings.

5) **Accounts Receivable (A/R) and Days Sales Outstanding (DSO):** *DSO* tells you—on average—how long it takes a company to get paid after it has recorded a sale. This is a key measure of earnings *quality*. High *DSO* means that a company may be having difficulty collecting payments from its customers (and raises the concern as to whether they will get paid at all). Also, tying up capital in *A/R* lowers *ROE* and prevents that capital from being invested in growing the company or from being paid out as a dividend. A rise is *DSO* often signals that a company will report lower-than-expected revenues in the future, and many short sellers use a spike in *DSO* as a signal to short a stock. *DSO* can be calculated several ways:
   a) *DSO* = 91 * *ACCOUNTS RECEIVABLE/REVENUE(QUARTER)*
   b) *DSO* = 365 * *ACCOUNTS RECEIVABLE/REVENUE(YEAR)*

6) **Discounted Cash Flow:** a discounted cash-flow analysis is a more detailed analysis than the analyses above, but it theoretically allows one to derive the value of a company in a vacuum (without comparison to its peers). The principle is simple: start with the net cash currently held by the company, and add to that all the anticipated future cash inflows (*FCF*). This becomes a bit more complex in that a cash inflow five years from now is both *worth less* (b/c that money could be sitting in a bank collecting interest) and *less certain* (b/c there is risk that the company will not generate that cash flow) than a cash inflow next year. We deal with this mathematically by *discounting* the future cash flows; this involves dividing the future cash flow by some multiple, typically around 1.1^n where n represents how many years in the future the cash flow is expected. An internet search for *DCF* will provide more information on how to do this sort of calculation. It is worth noting that—while this method will provide and absolute value for a stock—the value that the formula yields is only as good as the assumptions made in the inputs (Garbage-In, Garbage-Out).