Assessing Enterprise Risk Via Free Cash Flows

When looking at a company, from the smallest sole proprietorship to the largest multinational corporation, how does one assess risk? Risk is simply the uncertainty (fluctuations) of the free cash flows being generated by the company. This means that a company is only as good as its assets that are in place (including human assets), since these assets are what produces the firms revenue and expense, and ultimately the company's free cash flows. CapEx investment is thus critical because it sets your assets in place, and ultimately determines the risk of the enterprise via the NOPAT that the assets generate, and by the level of CapEx that is required to sustain and to grow the enterprise.

Disruptions can occur due to macroeconomic and/or industry risk (systemic risk), but even here a firm that is being managed properly should foresee such events, and either hedge themselves or have adequate plans in place for dealing with such events. Likewise, Porter Five Force events such as supply disruptions, new entrants, existing competition, new substitute products, and/or sales-side price or volume shifts should all be monitored and foreseen, thus minimizing their impact on the company. Basically, a well-run company should be minimizing their risks, and thus minimizing their fluctuations in their free cash flows. And if the wrong assets are in place, including human assets, then the firm can expect higher fluctuations in their cash flows then their peers.

The are two types of free cash flows used in finance: One is the Free Cash Flow available for distribution to the Shareholder (FCFE - equity holders), and the other is the Free Cash Flow available for distribution to the Investors (FCFF - both equity and debt holders). It should be noted though that FCFF and FCFE are both impacted by operating leverage, but only FCFE is impacted by financial leverage. Both operating leverage and financial leverage will be discussed in a future blog post.

Calculating FCFE and FCFF over a 15 year period for Apple, Inc. (AAPL), Dell, Inc. (DELL), and Hewlett-Packard Company (HPQ), and comparing their average cash flows, standard deviations of their cash flows, and coefficients of variation (i.e., the standard deviations of their cash flows divided by their average cash flows), the following table was obtained:

FCFS	Average	St.Dev	CV
Apple Inc. (AAPL)	$1,362,214	$1,987,683	1.46
Dell Inc. (DELL)	$799,643	$2,182,411	2.73
Hewlett-Packard Company (HPQ)	$5,020,357	$7,306,549	1.46

FCFI	Average	St.Dev	CV
Apple Inc. (AAPL)	$4,038,191	$5,325,005	1.32
Dell Inc. (DELL)	$521,214	$2,130,494	4.09
Hewlett-Packard Company (HPQ)	$3,950,756	$6,063,171	1.53

Based on CVs, this table shows us that Dell is about twice as risky as either Apple or Hewlett-Packard, for both free cash flows being generated for the shareholders specifically, and also for the shareholders and debt holders combined. This risk (fluctuations in cash flows) should ultimately add volatility to the stock price, which will be reflected in the company's Beta and Cost of Equity. Looking at Beta's reported today on Yahoo Finance for these three companies, AAPL had a Beta of 1.08, DELL a beta of 1.43, and HPQ a beta of 1.03. Assuming a market risk premium of 5.72% as per Damodaran on July 1st, and a current 30-Year US Treasury T-Bond yield of 4.198% on

July 15th; these Betas equates to Cost of Equity values of 10.04%, 11.72%, and 10.25%, respectively for AAPL, DELL, and HPQ . Clearly increased volatility of FCFE has directly impacted the cost of equity. If these companies have debt, then their bond ratings and Cost of Debt should also vary based on the volatility in their FCFF.

A company could use these same techniques to select a diversification strategy by applying Markowitz Portfolio Theory equations to the standard deviation of divisional/business unit/product free cash flows, and optimizing the mix of their divisional/business unit/product free cash flows to minimize their company's overall standard deviation of free cash flows. This would directly impact (lower) their cost of capital, and boost their stock price. A large multinational corporation is just a bunch of smaller companies combined, and like any investment portfolio, should be optimized using portfolio techniques.

You may ask how many years of analysis are required to calculate a good CV (or Beta). The standard for Beta is 5 years of monthly returns, and the same would be reasonable to apply to CVs of cash flows. For calculating CVs though, if you are an external party analyzing the company you will need to settle on quarterly data supplied by the company's 10-Q. Why would such a long period of time be used, and why not a more recent sampling of company financials (or stock prices in the case of Beta) to get the latest trajectory of the company? Ask yourself, of all companies that you know, how quickly can they restructure their staff, or change their corporate culture, or change out their asset base, and you have answered your own question. Most companies are like huge barges moving along a river, they must make steering adjustments miles in advance, which in the case of the company equates to years of effort to materially impact their bottom line, and subsequently their cash flow. Good management, good physical assets, good human assets, and a long-term strategy that is being constantly refined and implemented is the only way for a company to outperform the market.

Attached is a spreadsheet outlining the analysis conducted to assess the CVs of AAPL, DELL, and HPQ.