DCF VS. MULTIPLES

by Kurt Havnaer, CFA, Business Analyst

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"If good investors buy businesses, rather than stocks (the Warren Buffet adage), discounted cash flow valuation is the right way to think about what you are getting when you buy an asset."[1]

-Aswath Damodaran

Introduction

Valuing a stock is arguably one of the investment manager's most difficult tasks. A variety of tools and methodologies exist to value equities, and the assumptions used in those are estimates of future unknowns. According to Aswath Damodaran, a valuation expert and finance professor at New York University, multiples are the most common method used by investors to value stocks.[2] Examples of multiples include the ubiquitous price-to-earnings (P/E) ratio as well as the price-to-sales ratio, price-to-book value ratio and the enterprise value-to-EBITDA ratio. Identifying a multiple to value an individual stock typically involves comparing a company's fundamentals to a peer group and then adjusting the peer group average multiple to reflect differences between the individual company and its peers.

As many of our clients know, Jensen focuses primarily on the discounted cash flow (DCF) method to value equities. Our long held belief is that the intrinsic value of a business is the present value of the cash flows the company is expected to pay its shareholders in the future. The remainder of this paper explores some of the advantages and disadvantages of using either DCF or multiples and outlines why we believe DCF is the more fundamentally sound way to value equities.

Advantages of the Discounted Cash Flow Method

Most importantly, DCF requires us to explicitly consider and analyze the fundamental drivers of business value creation. These drivers include:

• **The cost of equity capital, also known as the discount rate.** The discount rate is the return a company must provide investors to entice them to purchase or hold the company's stock. It reflects the risk inherent in the company's business and in the cash flows it generates. When valuing companies using company-specific discount rates, companies with volatile earnings and erratic cash flows have higher discount rates than more stable companies because investors demand higher returns to compensate for the greater chance the volatile company's results will deteriorate going forward. Importantly, successful steps taken by companies to lower business risk result in lower discount rates and higher valuations.

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[1] Damodaran, Aswath. Spring 2005. *"An Introduction to Valuation."* Presentation, p. 8.
[2] Damodaran, Aswath. November 2006. *"Valuation Approaches and Metrics: A Survey of the Theory and Evidence."* Research Paper, p. 59.
In a 2002 study, Damodaran found that almost 90% of equity research valuations and 50% of acquisition valuations use some combination of multiples and comparable companies and are thus relative valuations.

• **Return on capital.** If the returns on capital deployed by a business exceed the costs of obtaining that capital, the company creates value.

• **Competitive advantages and barriers to entry.** Companies with strong brand names, patented products or significant economies of scale are able to keep competitors at bay far longer than businesses producing undifferentiated products facing intense competition. Avoiding a relentless onslaught of new competitors enables companies to generate returns on capital that exceed their costs of capital for extended periods of time. This, in turn, can drive higher business values well into the future.

• **Reinvestment rates.** As long as a company's return on capital exceeds its cost of capital, reinvesting more of the company's earnings back into the business creates additional business value.

• **Growth rates.** A company's earnings growth rate is a function of its return on equity and the amount of earnings reinvested in the business.

In addition to explicitly considering the drivers of business value creation, DCF allows investors to incorporate business strategy changes into the valuation. For instance, a company might implement a new productivity improvement program designed to drive margins higher over time. If the investor believes the new program will succeed, he or she can build margin increases into future cash flow estimates. Because analysts using P/E multiples or enterprise-value-to-EBITDA multiples usually don't look beyond the next year or two for earnings or EBITDA, it would be difficult to incorporate the expected long term margin benefits of the company's new program into a multiples-based valuation.

> *At Jensen, our DCF models reflect the long term durability of our companies' competitive advantages.*

Disadvantages of the Discounted Cash Flow Method

A common criticism of DCF models is that they are more complex than multiples, but building a DCF model does not require a PhD! In fact, investors armed with Excel and some basic math skills are fully capable of constructing a DCF model. The difficulty lies in estimating the fundamental drivers of business value outlined above. Errors in estimating these drivers lead to incorrect intrinsic values.

Having to forecast uncertain future business results is another criticism of DCF models. While estimates of future results must be made in DCF models, many investors using multiples estimate a stock's value by applying those multiples to projected revenues, EPS or EBITDA. As such, using multiples to estimate value suffers from the same problem of having to forecast future business results.

One final criticism of DCF is that the terminal value comprises far too much of a company's value. DCF models typically include discrete cash flow projections for a period of five to ten years. The value of the business at the end of the discrete period is then estimated using a multiple or by assuming that the company grows at a constant rate into perpetuity. The value of the business at the end of the discrete period is commonly referred to as the terminal value. According to Michael Mauboussin, the Head of Global Financial Strategies at Credit Suisse, it is not uncommon to see DCF models where the terminal value represents 60-70% of a company's total intrinsic value.[3] At Jensen, our DCF models reflect the long term durability of our companies' competitive advantages. This long term view results in terminal values that make up a relatively small portion of our intrinsic value estimates.

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[3]*Mauboussin, Michael. 2006. "Common Errors in DCF Models." Research Paper, p. 4. Legg Mason Capital Management.*

Advantages of Multiples

Simplicity is arguably the greatest virtue of this valuation technique as multiples are easy to apply and require very basic math skills. In addition, distant revenues, EPS or EBITDA do not have to be forecasted because multiples are typically applied to projections of current year or the next year's revenues, EPS or EBITDA.

Disadvantages Of Multiples

One of the disadvantages of valuing stocks using multiples is that determining the appropriate multiple to use for a given company can be highly subjective because truly comparable companies rarely exist.

As previously discussed, the multiple used in valuing a company's stock is typically determined by calculating the average multiple for a group of comparable companies and then adjusting the average to reflect fundamental differences between the company and those peers. All else equal, if a company's growth rate is higher than its peers, a multiple that's greater than the peer group average would most likely be used to estimate the value of the company's stock.

While this makes logical sense, determining the degree of the required adjustment from the average multiple is a subjective exercise. For example, suppose a company's EPS growth rate is 15% and the average EPS growth rate for its peer group is 10%. If the peer group average P/E multiple is 14x, should the multiple for the individual company be 15x or 16x or even higher? As it relates to this subjective adjustment for differences between an individual company and its peers, we agree with Damodaran when he wrote "many analysts adjust for these differences qualitatively, making every relative valuation a story telling experience…"[4]

Another disadvantage of this valuation method is that it assumes the market is correctly valuing the peer group. This assumption can lead to valuation errors if the entire peer group is overvalued or undervalued. For instance, a company's stock may not be undervalued even though its P/E is lower than its peers if the market is overvaluing the entire peer group.

In our opinion, the biggest drawback to using multiples is that this method does not explicitly consider whether the fundamental drivers of business value embedded in the multiple are reasonable. For example, the formula below tells us that a company's forward P/E ratio is a function of its cost of equity, return on equity (ROE), reinvestment ratio and payout ratio:

$$FPE = \frac{Payout\ Ratio^5}{k - g}$$

$$FPE = \frac{Payout\ Ratio}{k - (ROE * Retention\ Ratio)}$$

Where,

FPE = forward P/E ratio = $Price_0 / EPS_1$

$Price_0$ = today's stock price

EPS_1 = earnings per share one year forward

Payout Ratio = proportion of earnings paid out as dividends

k = cost of equity = discount rate

g = earnings growth rate = ROE * Retention Ratio

ROE = return on equity

Retention Ratio = proportion of earnings reinvested in the business

It's possible for the ROE embedded in the forward P/E ratio to be unreasonable for a given payout ratio, cost of equity and retention ratio. Similarly, the retention ratio implied by the forward P/E might be unrealistically high or low for a given payout ratio, cost of equity and ROE.

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[4] Damodaran, Aswath. November 2006. "Valuation Approaches and Metrics: A Survey of the Theory and Evidence." Research Paper, p. 58.

[5] Formula derived as follows:

$$P_0 = \frac{Dividend_1}{k - g}$$

$$P_0 = \frac{EPS_1 * Payout\ Ratio}{k - g}$$

$$\frac{P_0}{EPS_1} = \frac{Payout\ Ratio}{k - g}$$

P_0 = Today's price
$Dividend_1$ = One year forward dividend to be paid = EPS_1 * payout ratio$_1$
k = Cost of equity = Discount rate
g = Earnings growth rate
EPS_1 = One year forward earnings
Payout ratio = Proportion of earnings to be paid out as a dividend
P_0 / EPS_1 = Forward P/E ratio

In contrast to using multiples for valuation, DCF makes explicit estimates of all of the fundamental drivers of business value. While it's not always easy to make these estimates, we believe it is far more important to make reasonable forecasts of these fundamentals than to rely blindly upon a multiple in which the drivers of business value are simply implied.

Conclusion

Pros and cons exist for both of the valuation techniques discussed above. This also holds true for other valuation methods. The irony in comparing and contrasting multiples and DCF is that multiples are merely a simplified version of DCF. All of the fundamental drivers of business value are incorporated in both techniques, but those drivers are implied when using multiples whereas they are explicitly estimated with DCF. As indicated above, we believe it is more important to estimate and analyze those valuation drivers than it is to let the multiple do that important work for us.

In summary, we agree with Mauboussin when he wrote "Some investors swear off the DCF model because of its myriad assumptions. Yet they readily embrace an approach that packs all of those same assumptions, without any transparency, into a single number: the multiple. Multiples are not valuation; they represent shorthand for the valuation process. Like most forms of shorthand, multiples come with blind spots and biases that few investors take the time and care to understand."