Valuing Acquisition Candidates

Valuation multiples are a convenient starting point in evaluating acquisition candidates. They are often used to determine a fair price for a company or to decide whether a company is cheap or expensive. This use of multiples presumes that paying an average multiple leads to an average return, an above average multiple leads to a below average return and a below average multiple leads to an above average return. But these presumptions don't provide a reliable basis for major acquisition decisions. To estimate the expected return from an acquisition, we need to develop a forecast of future cash flows and calculate the economic, or internal, rate of return. To estimate the expected shareholder wealth gain from an acquisition, we need to develop a discounted cash flow (or DCF) valuation.

A DCF valuation requires a forecast of investor cash flows for all future periods. In practice, the infinite stream of future cash flows is divided into two pieces: the cash flows during a finite forecast horizon and the present value of all future cash flows beyond the finite forecast horizon (the "terminal value"). The DCF value is equal to the present value of the cash flows over the forecast horizon plus the present value of the terminal value.

It is easy to use simple mathematical assumptions to generate a future cash flow forecast. For example, we could calculate the average historical growth rate of investor cash flows and then extrapolate that growth rate to all future years. But that approach is not very useful for decision making because it doesn't tell us the operating performance needed to generate the projected investor cash flows and hence, doesn't give us the chance to test the reasonableness of the future operating performance assumptions. To link investor cash flows to operating performance, we need to move from the financing to the operating definition of free cash flow (FCF):

Financing free cash flow = after-tax investor cash flows =

dividends + stock repurchases – new stock issues

+ after-tax interest payments + debt repayments – new debt issued

= NOPAT – ΔCapital = Operating free cash flow

where NOPAT is Net Operating Profit After Tax and Capital is book capital.

If we multiply the expression for operating free cash flow by [sales/sales]:

$$FCF = sales * [NOPAT/sales - \Delta capital/sales]$$

we can see that the three basic drivers of free cash flow are sales growth, after-tax profit margin and incremental capital per revenue dollar. Our DCF valuations are based on forecast assumptions or models for each of three drivers.

We develop sales growth models, based on regression analysis of peer company data, for internal and acquisition sales growth. We develop a separate forecast for acquisition sales because acquisition sales growth typically has much greater capital requirements than internal sales growth. The internal sales growth model generally shows a declining sales growth rate as the company gets bigger. In some industries, however, we find that all companies above a certain size have similar growth rates – in other words, there is no negative size effect within the big company group. If the sales forecast is derived from assumptions about industry growth and company market share, the forecast can be evaluated for the reasonableness of the projected market share as well as the reasonableness of the absolute sales volume.

Tel: 914-833-5891 • Fax: 914-833-5892 • e-mail: info@valueadvisors.com

Our projected NOPAT margin is usually built up from models of major expense categories such as cost of goods sold, selling, general and administrative (SG&A) expenses, R&D, depreciation, and stock option expense. Our NOPAT models use peer company data to predict how expense ratios will change as a company gets bigger or as capital intensity changes. These models generally show that some expenses – for instance, R&D and stock option expense, decline with company size, while other expenses – for instance, cost of goods sold and SG&A – decline with capital intensity. Our projected capital intensity is generally built up from models of major capital components such as working capital, PP&E, goodwill and capitalized R&D. We use peer company data to test whether capital intensity declines with size.

An alternative approach to forecasting future cash flows is to project future capital and return on capital. This is the approach used by CFROI (Cash Flow Return on Investment) advocates such as HOLT Value Associates and Boston Consulting Group. The major advantages of a sales driven forecast are that (1) it makes it easier to determine if the product market assumptions underlying the valuation are reasonable and (2) it gives more insight into the sources of value and how management decision making could impact value. If we use the NOPAT and capital projections to calculate EVA and EVA improvement, we get additional insight into the timing of value creation.

Our projections of NOPAT and capital tell us projected Current Operations Value (COV) at the end of the forecast horizon:

$$COV = NOPAT_N/c + \Delta capital_N = capital_N + EVA_N/c$$

To estimate the terminal value at the end of the forecast horizon, we need to estimate the company's Future Growth Value (FGV) at the end of the forecast horizon. To do this, we normally use peer company data to develop a market value model based on capital, EVA and sales growth rate:

$$\text{Market value} = \text{capital} + EVA/c + FGV$$

$$\text{Market value} = a_1 * \text{capital} + a_2 * EVA^+/c + a_3 * EVA^-/c$$

or

$$\text{Market value} = a_1 * \text{capital} + (a_2 + a_3 * \text{sales growth rate}) * EVA^+/c + a_4 * EVA^-/c$$

In this model, EVA^+ is equal to EVA if EVA is positive and equal to zero if EVA is negative. Similarly, EVA^- is equal to EVA if EVA is negative and equal to zero if EVA is positive. We need to distinguish positive and negative EVA because the market typically puts a much higher multiple on positive EVA than it does on negative EVA. We try to capture the interaction of sales growth rate and EVA^+ because the ability to earn more than the cost of capital is more valuable the more rapidly the company grows.