



Valuation of Engineering Firm — Current Issues

The recent and ongoing recession has hurt demand in many industries, including engineering services. This economic downturn severely affected corporate balance sheets, government budgets, and household spending. Instability in the financial markets, a decline in economic confidence, and bank capital issues have severely limited the availability of investment funds. Local governments have found it difficult to raise funds through the issue of municipal bonds, leaving a hole in funding for capital works projects. This article discusses certain current and ongoing issues impacting the valuation of an engineering firm.

Value Drivers for Engineering Firms

Besides the typical factors in determining a company's value (e.g., revenue growth, earnings growth, balance sheet strength or risk, and risks associated with the cash flow stream), engineering firms exist in an industry segment with unique value drivers that influence their value. They include:

- Consistency of financial performance from year-to-year (Lower volatility lowers risk)
- Diversification of revenue sources
 - Government vs. private clients (Many engineering companies are scrambling to get government work)
 - Customer concentration (Concentration increases risk)
- Backlog
 - Significant backlog relative to annual revenue levels (Is it highly correlated to revenues for next 12 months?)
- Length of projects (Large projects could create additional volatility between years)
- Access to funding to support working capital requirements
- Key employees (How much goodwill walks out the door each day?)
- Quality of accounts receivable (Do developers create long-dated receivables?)

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Income Methods – You Didn’t Sit Still in Downturn

For most private companies, values derived from the capitalized cash flow and/or discounted cash flow methods will receive the greatest weight in finding the conclusion on value. This is because of the unique nature of most companies and information problems when utilizing the market approach. A thorough understanding of historical financial performance is needed to assess the reasonableness of future projections, including answers to these questions:

- What adjustments were made to improve profitability during the downturn?
- Are these adjustments permanent?
- Were certain valuable employees who were extremely underutilized during the downturn kept on the payroll?
- As it relates to professional service companies like engineering firms, did the variable portion of compensation change? What are expectations going forward?
- Do interim financial statements reflect an accrual for bonuses?
- Did certain direct competitors go out of business? Have new competitors entered the market?

Free Cash Flow to Invested Capital (Debt + Equity), which is the primary method used in valuing a company in this approach, is calculated as:

Earnings Before Interest and Taxes (EBIT)		
Less: Taxes on EBIT		
Plus: Depreciation and Amortization		
Less: Capital Expenditures		
Less: Investment in Working Capital		
Free Cash Flow to Invested Capital		

As it relates specifically to the engineering industry, the required additional investment in working capital each year can be dramatically different between companies in the industry. All else held constant, a lower additional investment in working capital each year equals a higher value. In the case of engineering companies, accounts receivable is generally the primary driver of working capital investment. A company that relies on developers and is on the front-end of a project could have very high receivable days outstanding. A company that relies on ongoing government work, or provides maintenance services to clients, will likely have much lower receivable days outstanding. Money tied up in receivables can't be used to pay down debt, pay distributions, invest in new projects, or make acquisitions.

Guideline Company Method – Excess Cash, Historical Acquisitions Skew Multiples

In this method, the primary source of information is the pricing multiples of publicly traded companies that are comparable to the subject company. While simple in theory, in practice this analysis is complex and subject to high variability because of significant differences between guideline companies and the subject company, as well as problems utilizing reported financial information. Making it even more difficult today are two factors: excess cash and historical acquisitions.

As discussed in the popular press, nonfinancial companies are sitting on large cash stashes, making up 7.4 percent of corporate assets, the highest figure in five decades. Unfortunately, given record low short-term interest rates, this cash is earning very little interest income. The chart below compares EBITDA multiples for certain engineering companies (based on February 11, 2011, closing prices), before and after adjustments for cash. Interest income, where available, was deducted from historical results in finding the cash adjusted multiples.

Guideline Company Analysis						
EBITDA Analysis						
Guideline Company	Before Cash Adjustment			After Cash Adjustment		
	Valuation Multiples					
	Invested Capital to EBITDA					
	TTM	3 Year	5 Year	TTM	3 Year	5 Year
EBITDA	Average	Average	EBITDA	Average	Average	
EBITDA	EBITDA	EBITDA	EBITDA	EBITDA	EBITDA	
AECOM Technology Corporation	10.23	12.49	16.01	9.31	11.52	14.81
Tetra Tech Inc.	9.76	11.05	13.05	9.32	10.58	12.59
Ecology & Environment, Inc.	5.33	6.62	7.59	4.32	5.46	6.31
Versar Inc.	NM	7.94	8.83	NM	7.78	8.57
Willdan Group, Inc.	15.29	NM	12.65	11.96	NM	10.79
Hill International, Inc.	10.92	10.53	12.77	9.60	9.26	11.23
ENGlobal Corp.	NM	14.87	12.31	NM	14.83	12.29
URS Corporation	7.15	7.42	9.55	6.31	6.56	8.43
Michael Baker Corporation	6.85	6.87	7.76	4.82	4.83	5.46
Stantec Inc.	9.24	9.29	10.67	9.03	9.08	10.42
Average	9.3	9.7	11.1	8.1	8.9	10.1
1st Quartile	7.1	7.4	9.0	5.9	6.6	8.5
Median	9.5	9.3	11.5	9.2	9.1	10.6
3rd Quartile	10.4	11.0	12.7	9.4	10.6	12.0

Multiples of historical cash flow measures such as EBITDA fail to account for the results of acquired companies before the acquisition date. To the extent that guideline companies have made significant recent acquisitions, this can inflate historical multiples, since investors are valuing the company based on its current cash flow power, which includes acquisitions. Examining the above public engineering companies, examples of recent acquisitions include:

- AECOM completed five acquisitions during the quarter ended December 31, 2010 (fiscal 2011). Total consideration related to these acquisitions consisted of \$298.7 million in cash, net of cash acquired, and \$58.9 million in company stock.
- AECOM completed three acquisitions during fiscal 2010 for total consideration of \$768.0 million.
- Tetra Tech acquired all of the outstanding capital stock of BPR, Inc. on October 4, 2010, for \$157 million.

- Versar acquired Professional Protection Systems, Ltd. and Advent Environmental, Inc. during fiscal 2010, adding approximately \$17 million to its annual revenue base. This amount represents 15.2 percent of Versar's revenues in fiscal 2009.
- Hill International acquired McLachlan Lister Pty, Ltd. and the Construction Management Division of dck North America, LLC during 2010. Of the total revenue increase in the third quarter of 2010, 9.2 percent is from acquisitions, compared to an organic increase of 3.1 percent.
- Michael Baker acquired 100 percent of the shares of The LPA Group, Inc. on May 3, 2010, for \$59.5 million. For the three months ended September 30, 2010, LPA's revenues were 17.3 percent of Michael Baker's total revenues.

M&A Method – How Much Information is Available? Distressed Transaction?

The merger and acquisition method is applied by examining third-party transactions involving the sale of companies where the terms of the transaction have been disclosed. Like the guideline company method, the logic behind the M&A method is simple, but the analysis is complex and subject to high variability.

In the past three months, M&A activity where the terms have been disclosed and reported by Capital IQ has been muted. In January 2011, Stantec, Inc. signed a letter of intent to acquire QuadraTec, Inc., which is a mechanical and electrical engineering company in Canada. Also in January, Woolpert, Inc. signed a letter of intent to acquire the Texas business unit of Bohannon Huston, Inc. In both cases, the financial terms of the deals have not yet been disclosed. In order to use a transaction as guidance for developing valuation multiples, both the transaction price and the financial performance of the target company must be disclosed.

However, it is expected that the details of certain transactions will soon become available, as PSMJ Resources has tallied 38 transactions in the A/E industry between January 1 and February 16. Anecdotal evidence suggests continued strength in environmental and energy segments and PSMJ expects continued attraction to some of the emerging international markets from global players. ZweigWhite also forecasts an acceleration of M&A activity for architecture, engineering, planning, and environmental consulting firms in 2011.

Some of the M&A activity will likely be driven by the need of certain companies to utilize large cash stashes, as discussed earlier. Care should always be taken in extrapolating multiples from acquired companies, given the inability to obtain detailed financial information for many private companies and the distressed condition of many firms, especially in today's environment.

Asset Methods – Do They Matter?

An adjusted net asset value method requires the collective revaluation of all of the company's assets (including intangibles) and liabilities. This analysis can become extremely complex, and because it requires the use of historical and projected financial performance, can become highly correlated to the income approaches. Although the application of the adjusted net asset value method may result in a value that is similar to values from the income approach, they are in some ways self-reinforcing — good and bad (i.e., a bad income approach becomes a bad asset method).


The use of historical “book value”, while theoretically questionable, is still used in practice, depending on the type of the company being valued and its current outlook. An engineering company with a significant investment in working capital, usually because of very high receivable days, may be earning only a fair return on its book assets. ZweigWhite still uses book value in its formula valuations. In addition, if a company has booked substantial intangible assets from acquisitions, book value may reflect true company value.

In the downturn, the use of book value became more prevalent, given high uncertainty predicting future performance. As performance in the industry improves, and companies begin earning excess return on assets, which may indicate unbooked intangible assets, the use of book value will likely decline.

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Sources consulted in developing this article include: IBIS World Industry Report 54133, "Engineering Services in the US"; Kopin Tan, "Outlook 2011," *Barron's*, December 20, 2010; "M&A Insider," PSMJ Resources, Inc., February 16, 2011; and *ZweigWhite Investment Banking eNewsletter*, January 2011.

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