Executive MBA Program

Management 2004

Valuation

Professor Aswath Damodaran

Equity Valuation Project

Charles J. Montalbano **Due Date: March 26, 2004**

C. J. Montalbano
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Company Overview:

Granite Construction Incorporated has its corporate headquarters in Watsonville, CA and operates two divisions, the Heavy Construction Division and the Branch Division. They are one of the largest heavy civil construction contractors in the US. They have 19 branch offices throughout the United States, 7 in the Heavy Construction Division and 12 in the Branch Division. Granite serves both the private and public sector and derives all of its revenue from within the United States. The most recent information available was the 10-K for the year ending December 31, 2003. Granite generated $1.844 billion in 2003. The Heavy Construction Division generated 37.5% ($692M) and the Branch Division 62.5% ($1,153M) of the revenue this period. Granite generated $60.5 million in net income in 2003. The Heavy Construction Division mainly builds large public infrastructure projects of long duration throughout the nation (e.g. highways, bridges, tunnels, airports, mass transit, etc.). The Branch Division serves local markets in the West and builds smaller, shorter duration projects (e.g. paving, site development and utilities). The Branch Division also mines aggregates (e.g. sand, gravel, concrete and asphalt) and operates plants that process aggregates into construction materials for internal use and for sale. Construction materials were 12.76% of revenues for this period. Owning its own aggregate business gives Granite a competitive advantage by providing materials to their projects at lower prices and by ensuring material availability.

1. Discounted Cash Flow Valuation

Risk Free Rate, 10 year US Treasury Bond, as of February 27, 2003 = 4.03%[1]

Expected Growth rate of the S&P for the next 5 years = 7.9%[2]

Expected Long Term Growth Rate = 4.03%

Implied risk premium = 3.372% [3] (this is a market neutral position)

Market Cap as of March 19, 2003 = 41,533,435 shares x 23.83/share = $989,741,756

Tax Rate = 38% (this is a mature company; effective tax rate = marginal tax rate)

Unlevered Beta

There are very few public companies that have the same business model as Granite – US based revenue, heavy civil construction contractor and material supplier. Therefore, it is better to use the unlevered beta for the Building Material industry (.67) and the beta for the Cement and Aggregate industry (.59) as calculated in your spreadsheet for 2002 (note that Granite is listed in your spreadsheet under Building Materials). The Building Material beta was used for Construction revenue and the Cement and Aggregate beta for Materials revenue. The unlevered Beta used in this valuation was calculated as follows:

Business	Revenues (billions) December 31, 2003	Value/Sales Segment*	Unlevered Beta	Estimated Value (billions)	Segment Weight	Weight*b
Construction	1.69	0.6	0.67	1.014	79%	0.53
Materials	0.235	1.17	0.59	0.275	21%	0.13
					Unlvered Beta =	**0.65**
*http://pages.stern.nyu.edu/~adamodar/New_Home_Page/data.html;						
Multiples, Price and Value to Shares Ratio and Marginsby Industry; US 2002						

Cost of Debt:

Interest Coverage = EBIT/Interest Expense =

$74,571,000 / $8,577,000 = 8.7

Granite is a smaller company, Market Cap < $5b estimated Bond Rating[4] = A+

Default Spread[5] = 0.85

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[1] Wall Street Journal February 27, 2004
[2] http://www.zacks.com/research/earnings/
[3] http://pages.stern.nyu.edu/~adamodar/New_Home_Page/spreadsh.htm; Valuation input spreadsheets; implprem.xls
[4] Investment Valuation second edition; Aswath Damodaran; page 209; Table 8.1

Cost of Debt (COD)= risk free rate + default spread = 0.85 + 4.03 = **4.88%**

Market Value of Debt

As of December 31, 2003 Granite had the following lease noncancellable lease commitments:

Ending December 31,		Commitment (thousands)	PV
2004		$ 5,784	$ 1,348
2004		$ 4,580	$ 4,367
2005		$ 4,007	$ 3,643
2006		$ 2,858	$ 2,477
2007		$ 1,702	$ 1,407
Through 2046		$ 255	$ 3,444
			$ 16,685
As of December 31,2003			
Long term Debt			$ 126,708
Short Term Debt			$ 8,182
Lease Commitments			$ 16,685
Interest Expense		$ 8,577.00	
Cost of Debt		4.88%	
Balance Sheet Debt		$ 134,890	
Weighted Avg Maturity		7	years
Market Value of Book Debt		$ 146,481	
****Market Value of Total Debt =**		**$ 163,166**	
** Total debt = PV of lease commitments+Market Value of book Debt			

Levered Beta

$B_L = B_u \times (1+ (1-t) \times D/E)$	
B_u =	0.65
Tax Rate (t)	38%
Market Cap =	$ 989,741,756
Total Market Debt =	$ 163,166,000
B_L =	**0.72**

[5] http://www.bondsonline.com/asp/corp/spreadbank.html; March 21, 2003 Default Spread for Industrials

Cost of Equity and Cost of Capital

Cost of Equity (COE) = $R_f + B_L * (R_P)$			
Market Equity	$ 989,741,756	**Cost of Debt**	4.88%
Market Debt	$ 163,166,000	**Risk Free Rate**	4.03%
B_L =	0.72	**Risk Premium**	3.37%
		Tax Rate (t)	38.00%
COE =	**6.46%**		
Cost of Capital = COE x (E/(D+E)) + [(COD *(1-t)) x (D/(D+E))]			
COC =	**5.97%**		

Normalize Cap Ex and ROC:

	1998	1999	2000	2001	2002	2003	Normalized
Cp Ex	52462	82035	52454	65265	57415	62805	372436
Acquis.	0	0	0	11400	36034	0	47434
Deprec.	38124	42363	44624	50017	58668	65693	299489
Adj Cap Ex	14338	39672	7830	26648	34781	-2888	120381
EBIT	69258	84262	85575	64334	78117	74571	
EBIT(1-t)	42940	52242	53057	39887	48433	46234	239853
Net Cp Ex as % EBIT(1-t)	33.39%	75.94%	14.76%	66.81%	71.81%	-6.25%	**50.19%**
Revenues	1226100	1328744	1348325	1547994	1764742	1844491	9060396
% Change		8.37%	1.47%	14.81%	14.00%	4.52%	
Non-Cash Current Asets	249384	294244	310897	393683	398963	457863	
Non-Cash Current liabilities	217573	252679	230447	330389	318859	340522	
Non-Cash WC	31811	41565	80450	63294	80104	117341	414565
As % of Revevues	2.59%	3.13%	5.97%	4.09%	4.54%	6.36%	**4.58%**
Book D + E + *L	392306	410595	454982	572009	627181	667989	
EBIT + *Leases	69797	84847	86168	65015	78893	75383	
EBIT(1-T)	43274	52605	53424	40309	48914	46737	
ROC	11.03%	12.81%	11.74%	7.05%	7.80%	7.00%	**9.57%**
*leases are a percent of revenue based on 2003							

Actual FCFF for 2003:

FCFF (thousands)		
EBIT	$	74,571
Adj for Leases	$	814
Adj EBIT	$	75,385
Tax Rate		38%
EBIT(1-t)	$	46,739
-(Cap EX + Acqu. - Depr)	$	2,888
- Change in WC	$	(37,237)
FCFF	**$**	**12,390**
Reinvetment Rate		**73.49%**

Expected Growth in EBIT

G_{EBIT} = (Net Cap Ex. + Change in WC) / EBIT(1-t) x ROC = Reinvestment Rate x ROC

December 31 2003 (thousands)		
Tax Rate		38%
Book Value Debt (December 31, 2003) + Adj for Leases	$	151,575.00
Book Value Equity (December 31, 2003)	$	516,414.00
Normalize Change in WC	$	3,652.50
Normalize Net Cap. Ex.	$	23,458.15
Normalized Reinvestment Rate		58.00%
***ROC**		9.57%
Expected Growth Rate		5.55%

*Normalized ROC

Valuation

Granite Construction is a mature company competing in a mature industry that is dependent on public spending. The construction industry, as a whole, grows with the economy and can be highly cyclical. Construction makes up approximately 4% to 5% of GDP. The ROC used in perpetuity was 11%. This is less than the Industry average but slightly higher than the ROC during the high growth period. This was chosen because it is in line with Granite's historical ROC. The industry averages for the COC, which were taken from your web site for the industries in which Granite competes, are as follows:

	COC	Weight	COC
Construction (Building Materials)	6.82%	.78	5.34%
Cement and Aggregates	6.31%	.22	1.39%
		Total COC	**6.73%**

This COC was used to estimate the terminal value and to estimate the reinvestment rate during the stable growth period. The length of the high growth period was estimated to be 5 years.

Valuation (thousands)

Year	0	1	2	3	4	5	Terminal
EBIT	$ 75,143	$ 79,314	$ 83,716	$ 88,363	$ 93,268	$ 98,445	$ 102,412
EBIT(1-t)		$ 49,175	$ 51,904	$ 54,785	$ 57,826	$ 61,036	$ 63,495
- Reinvest.		$ (28,521)	$ (30,104)	$ (31,775)	$ (33,539)	$ (35,401)	$ (23,262)
FCFF		$ 20,653	$ 21,800	$ 23,010	$ 24,287	$ 25,635	$ 40,233
Terminal value =							$ 1,490,111
PV		$ 19,490	$ 19,413	$ 19,336	$ 19,259	$ 19,183	$ 1,115,075
Value of Operating Assets =			$ 1,211,755				
+ Cash & Marketable Securities			$ 160,788				
- Debt			$ (163,166)				
-Minor interest			$ (25,006)				
= Equity			$ 1,184,372				
Value per Share (41,533,436 shares)			**$ 28.52**				
		High Growth Period			**Stable Growth Period**		
Tax Rate		38.00%			38%		
Growth Rate		5.55%			4.03%		
Reinvestment Rate		58.00%			36.64%		
COC		5.97%			6.73%		
ROC		9.57%			11.00%		
Minority Interest		$10,872					
P/BV of Industry		2.30					
Value of Minority Holding			$25,005.60				

As of March 19, 2004 Granite was trading at $23.83 per share. It appears that it is **undervalued by approximately 16.4%** as compared to the above valuation, which resulted in a price per share of $28.52.

4. Value Enhancement Strategy

Three factors were considered in devising a strategy to enhance value. They are as follows:

a. *Cost Of Capital:* The COC for Granite as of this valuation was 5.97%, which is less than the average COC for the sectors that Granite participates in – Building Materials 6.82% and Cement and Aggregate 6.31%. This is a positive sign and therefore this is not a target for immediate value enhancement.

b. *Increase Cash Flows:* Granite can increase value by increasing cash flow. This can be done in several ways but the most applicable to Granite is to increase operating margin. This may be achieved by divesting branches that are earning less than the cost of capital. Although obvious, increasing operational efficiency is a place to start. Granite's average operating margin over the last 3 years was 4.2%. If Granite can increase its operating margin by 0.5% then it can increase the above valuation, while holding all else constant, to **$33.00 per share that is an increase of 15.7%.** This is an area to increase value.

c. *Growth Rate:* Granite's expected 5-year growth rate, 5.33%, as calculated in the valuation is well below that expected by Zacks Investment Service; 9.8% for Granite and 12.7% for the Industry sector. In order for Granite to meet these growth rates, holding the investment rate constant, Granite will have to increase its ROC to 16.9% and 21.9% respectively. This is well above Granite's average ROC between 1998 and 2003 of 9.57%. It should be noted that the average ROC for the Building Materials Industry is 18.62% and the average ROC for the Cement and Aggregate Industry is 14.48% (this information was obtained from your website). If Granite can meet the expected growth rate of **9.8%** it can increase valuation to $**34.67** per share and if it meets the **12.7%** growth rate it can increase valuation to **$39.44** per share. This is an increase of **21.6% and a 38.3%** respectively, as compared to the share price calculated in the above valuation. Growth is clearly a viable avenue to add value. Granite can increase its growth rate by increasing its operating efficiency, by investing in higher margin projects or by making acquisitions that generate a higher ROC than the current ROC. Granite can also consider expanding into areas of the country that are less competitive or by venturing outside of the US.

3. Value Relative to Comparables:

Zacks investment Services[6], Yahoo Finance[7] and Morningstar.com[8] were used to obtain the information, which is listed in the table below, to value Granite in comparison to other firms in its sector. The Industry sector is Building- Heavy Construction. There are approximately 33 companies in this sector. All 33 firms were investigated and only the necessary information for 10 of the firms was available.

Company	P/E 3/12/04	P/B 3/12/04	Est. 5 Year Growth	Beta	5 Year Avg.ROE
Emcor Group Inc.	27.7	1.1	15.5%	0.54	15.00%
Insituform Tech	18.50	1.50	15.0%	1.39	16.40%
Dycom Ind.	32.50	2.50	14.3%	1.65	12.40%
Jacobs Eng. Group	18.20	2.70	15.0%	0.35	16.10%
Chicago B & I	18.70	3.00	14.3%	0.60	16.80%
Layne Christensen	46.10	2.00	14.00%	0.39	4.40%
Fluor Corp.	17.2	2.9	13.0%	0.38	18.10%
Perini Corp	12.10	2.70	9.0%	0.24	17.50%
URS	16.90	1.30	10.0%	1.30	16.40%
Granite Construction	21.40	2.00	9.8%	0.25	13.50%
Average	22.93	2.17	12.99%	0.71	14.66%

The average P/E and the average P/B for these firms are 22.93 and 2.17 respectively. Compared to the average P/E Granite is approximately **6.7% undervalued and compared to the average P/B granite is approximately 7.8% undervalued.**

6 http://www.zacks.com/research/earnings/
7 http://finance.yahoo.com/q/ks?s=WGII
8 Http://library.morningstar.com/Stock/Profitability10.asp?Country=USA&Symbol=URS&stocktab=keyratio

Regression

The information from your website, compfirm.xls, was used to obtain the information for the regression. P/E was used as the Response and Regression Betas and the 5-year expected Growth Rate as the predictors. The companies chosen are from the Building Materials, Cement and Aggregate and Industrial Services industries. All three of these sectors were used because the comparable firms are from one of these sectors. The payout ratio was not used as a predictor because most comparable companies paid no dividends. The total number of firms used was 50. Below are the results of the Regression.

Regression analysis: P/E versus Growth and Beta

P/E = 15.6 + 61.1 Growth - 4.73 Beta

Predictor	Coef	SE Coef	T	P
Constant	15.614	2.977	5.25	0.000
Growth	61.07	19.12	3.19	0.002
Beta	-4.728	2.156	-2.19	0.033

S = 5.990 R-Sq = 25.0% R-Sq (adj) = 21.8%

*Company	P/E 3/12/04	Est. 5 Year Growth	Beta	Predicted P/E	(+) Over (-)Under
Emcor Group Inc.	27.7	15.5%	0.54	22.5	18.7%
Insituform Tech	18.50	15.0%	1.39	18.19	1.7%
Dycom Ind.	32.50	14.3%	1.65	16.53	49.1%
Jacobs Eng. Group	18.20	15.0%	0.35	23.11	-27.0%
Chicago B & I	18.70	14.3%	0.60	21.50	-15.0%
Layne Christensen	46.10	14.00%	0.39	22.31	51.6%
Fluor Corp.	17.2	13.0%	0.38	21.75	-26.4%
Perini Corp	12.10	9.0%	0.24	19.96	-65.0%
URS	16.90	10.0%	1.30	15.56	7.9%
Granite Construction	21.40	9.8%	0.25	20.41	4.6%

A regression was also run for the P/B verse Beta and ROE. The information was obtained in the same way as the regression above and the sample contained 76 firms.

Regression Analysis: P/B versus Beta, ROE

P/B = 0.889 - 0.477 Beta + 12.8 ROE

Predictor	Coef	SE Coef	T	P
Constant	0.8885	0.1473	6.03	0.000
Beta	-0.4770	0.1297	-3.68	0.000
ROE	12.791	1.146	11.16	0.000

S = 0.4942 R-Sq = 63.8% R-Sq (adj) = 62.8%

Company	P/B 3/12/04	Beta	5 Year Avg.ROE	Predicted P/B	(+) Over (-) Under
Emcor Group Inc.	1.1	0.54	15.00%	2.56	-132.86%
Insituform Tech	1.50	1.39	16.40%	2.34	-55.68%
Dycom Ind.	2.50	1.65	12.40%	1.70	32.03%
Jacobs Eng. Group	2.70	0.35	16.10%	2.79	-3.44%
Chicago B & I	3.00	0.60	16.80%	2.76	7.89%
Layne Christensen	2.00	0.39	4.40%	1.28	36.19%
Fluor Corp.	2.9	0.38	18.10%	3.03	-4.64%
Perini Corp	2.70	0.24	17.50%	3.02	-12.02%
URS	1.30	1.30	16.40%	2.38	-82.93%
Granite Construction	2.00	0.25	13.50%	2.51	-25.39%

Based on the P/E regression it appears that Granite Construction is overvalued by approximately 4.6%. However, one should consider the low r-squared value when using this regression in making a determination regarding valuation. Also, the standard error, 5.99, is relatively high. In considering the standard error Granite is approximately in the middle of the range, which indicates that it may be fully valued based on this regression.

Based on the **P/B regression Granite appears to be approximately 25.39%** undervalued. The standard error of this regression is 0.492 and the r-squared is 62.8%, which is relatively high. Granite's P/B is just below the bottom of the range. Since the r-squared of this regression is much higher (2.88x) than that of the P/E regression it is fair to say that ROE and Beta are better predictors of P/B than Growth and Beta are predictors of P/E in this case. Therefore the P/B ratio should be used in this case. Therefore, Granite appears to be **undervalued.**

4. Value Relative to the Market

The intercept regressions from your website for P/E and P/B are as follows:

P/E = 9.475 + .814 x Growth + 0.06 x Payout Ratio + 6.283 x Beta

P/B = .14 x ROE + .599 x Beta + 0.08 x Growth + .002 x Payout Ratio

5-year Growth Rate from Zacks = **9.8%**

Beta calculated for the Discounted Cash flow Valuation = **0.72**

3-year Average Payout Ratio from Bloomberg Financial Analysis = **26.5%**

10-Year Avg. ROE from Bloomberg Financial Analysis **= 13.5%**

The P/E and P/B based on the Regression of the market is **23.57** and **3.16** respectively. As of March 12, 2004 Granite's P/E = 21.4 and P/B = 2. This indicates that Granite Construction is **approximately undervalued by between 9.2% and 36.7% compared to the market.**

5. Final Value Estimate and Recommendation

BUY… BUY…. BUY….

Granite Construction appears to be undervalued based on all of the valuation techniques used. It is undervalued compared to the average P/B and P/E of the 10 comparable firms chosen by between 6.7% and 7.8%. The regression of the Industry, which was expanded to include Building Materials, Cement and Aggregates and Industrial Services, indicated that Granite was 25.39% undervalued based on P/B. However, this result was based on a regression Beta of 0.25, which appears to be low compared to the Beta calculated for the Discounted Cash Flow valuation (DCF). By substituting the Beta calculated in the DCF Valuation, which was 0.72, the under-valuation reduces from 25.39% to 14.2%. This is in line with the DCF valuation, which indicated a 16.4% under-valuation. Granite appears to be between 9.2% and 36.7% undervalued compared to the Market; depending on which multiple you use. Based on the results of the above analysis the DCF valuation and the P/B valuation based on a regression of its Industry, appears to be the most reliable. These two valuations are in line with each other and indicate an **overvaluation of between 14.2% and 16.4%.** Also, the DCF valuation appears to be conservative considering the expected growth rate of Granite and the expected growth rate of the Industry in which it competes. It is foreseeable that Granite can exceed the 5.55% growth rate calculated in the DCF valuation.