

## Self-Study Quiz 5

### Equity Valuation - Finance 70610

1. You are valuing the stock of Parent Corp. based on the firm's consolidated financial statements. The firm reports the following holdings in other firms:

- (i) a 15% holding in company A, classified as a minority passive investment
- (ii) a 30% holding in company B, classified as a minority active investment
- (iii) an 80% holding in company C, classified as a majority active investment

- a) How would the holdings in company C be reflected in Parent Corp's financial statements?

The complete balance sheet (total assets and total liabilities) and the complete income statement (total revenues and expenses) will be consolidated into the financial statements of Parent Corp. The 20% minority interest will be shown as a liability on Parent Corp's balance sheet.

- b) Using a free cash flow to the firm (FCFF) model estimated from the consolidated financial statements, you find that the present value of FCFF for Parent Corp. is \$3.6 billion. In addition, you estimate the market value of company A to be \$900 million, the market value of company B to be \$1.3 billion, and the market value of company C to be \$2.5 billion. Finally, you estimate that the firm's cash and market securities have a market value of \$400 million. What is the total value of Parent Corp. after accounting for holdings in other firms and investments in cash and marketable securities?

Firm Value = Value from FCFF Analysis	3,600
+ Value of Holding in Company A	+ 900(.15)
+ Value of Holding in Company B	+ 1,300(.30)
- Minority Interest in Company C	- 2,500(.20)
+ Cash and Marketable Securities	+ 400
	<u>                    </u>
	<u><u>= \$4,025 million</u></u>

2. You are valuing the stock of GE. Using a free cash flow to equity (FCFE) model, you estimate that GE's equity has a total value of \$380 billion and the company has 10.57 billion shares outstanding. The company also reports 1.6 billion employee options outstanding, of which 1.0 billion are currently vested. The average exercise price of the options is \$25.

a) Estimate the per share equity value for GE using the Fully-Diluted method to account for employee stock options.

$$\text{Per Share Value} = \frac{380}{10.57 + 1.6} = \frac{380}{12.17} = \$31.22$$

b) Estimate the per share equity value for GE using the Treasury Stock method to account for employee stock options.

$$\text{Per Share Value} = \frac{380 + 1.6(25)}{10.57 + 1.6} = \frac{420}{12.17} = \$34.51$$

Note : This method typically incorporates only "*in-the-money*" options. I did not provide you with information on the number of "*in-the-money*" options, so you should assume all options are *in-the-money*. If you made the explicit additional assumption that only the vested options are *in-the-money*, you would solve the problem as follows :

$$\text{Per Share Value} = \frac{380 + 1.0(25)}{10.57 + 1.0} = \frac{405}{11.57} = \$35.00$$

c) Using the Black-Scholes model, you estimate that the value of each employee option is \$10.35. You also note that the company has traded warrants with a total market value of \$450 million. Use this information to estimate the per share equity value for GE, assuming a tax rate of 40%.

Equity Value = Equity Value from FCFE Analysis	3,600
– Aftertax Value of Options	– 1,600(10.35)(1 - .4)
– Market Value of Warrants	– 450
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	= \$369,614 mil
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$$\text{Per Share Value} = \frac{369.614}{10.57} = \$34.97$$