

## Session 19: Post Class tests

1. In asset-based valuation, you try to value a company by valuing its individual assets and adding up these asset values to arrive at the value of the company. In which of the following scenarios is asset-based valuation likely to work best?
  - a. Mature companies with separable, stand alone assets
  - b. Growth companies with separable, stand alone assets
  - c. Mature companies with interrelated, connected assets
  - d. Growth companies with interrelated, connected assets
2. In liquidation valuation, you are trying to value a company in liquidation, where you plan to sell its assets to the highest bidders. Which of the following is best valuation approach in making this estimate?
  - a. An intrinsic value of assets in place and growth potential
  - b. An intrinsic value of assets in place
  - c. An intrinsic value of growth assets
  - d. A relative valuation of assets in place and growth potential
  - e. A relative valuation of assets in place
  - f. A relative valuation of growth assets
3. Given your understanding of fair value accounting, which of the following best describes the mission?
  - a. To estimate the intrinsic value of assets in place
  - b. To estimate the intrinsic value of growth assets
  - c. To estimate the intrinsic value of asset in place and growth potential
  - d. To estimate the relative value of assets in place
  - e. To estimate the relative value of growth assets
  - f. To estimate the relative value of assets in place and growth assets
4. You are trying to value Wyckham Inc., a conglomerate operating in three businesses, with projected after-tax operating income (in millions) in the next period.

| <i>Business</i> | <i>Expected EBIT (1-t)</i> | <i>ROIC</i> | <i>Cost of capital</i> |
|-----------------|----------------------------|-------------|------------------------|
| Steel           | \$150                      | 9%          | 8%                     |
| Chemicals       | \$100                      | 12%         | 9%                     |
| Technology      | \$ 50                      | 15%         | 13%                    |

The companies are in stable growth, growing 3% a year in perpetuity. What is the sum of the parts value for Wyckham Inc.?

  - a. \$3,000 million
  - b. \$3,500 million
  - c. \$3,650 million
  - d. \$4,250 million
  - e. \$5,167 million

5. Now assume that you are doing a relative valuation of Wyckham Inc. and have been provided with the EBITDA (in millions) and the median EV/EBITDA of in each business:

| Business   | EBITDA | EV/EBITDA multiple for sector |
|------------|--------|-------------------------------|
| Steel      | 300    | 8                             |
| Chemicals  | 200    | 5                             |
| Technology | 100    | 6                             |

If the company has \$1 billion in debt outstanding and \$500 million in cash, what is the value of equity in the company?

- a. \$2,500 million
- b. \$3,000 million
- c. \$3,500 million
- d. \$4,000 million
- e. \$4,500 million

**Session 19a: Post class test solutions**

1. **a. Mature companies with separable, stand alone assets.** Growth assets and interrelated assets are difficult to value in asset based valuation.
2. **e. A relative valuation of assets in place.** Relative valuation works better than intrinsic valuation at estimating what you can get for the assets in the market place today. You cannot liquidate growth assets.
3. **d. To estimate the relative value of assets in place,** Since fair value accounting requires you to estimate what a market participant will pay for an asset in an arms-length transaction rather than the value of the asset, it is really a relative valuation assessment. And since growth is entirely in the future, it is difficult to see how you can fair value that number and put it on an accounting balance sheet.
4. **c. \$3,650 million.** To estimate the value of each business, you first have to estimate the reinvestment rate:

Reinvestment rate = Expected growth rate/ ROIC

The value can then be estimated as follows:

Value = Expected EBIT (1-t) (1- Reinvestment rate)/ (Cost of capital -g)

| Business   | EBIT (1-t) | ROIC | Reinvestment rate | Cost of capital | Value |
|------------|------------|------|-------------------|-----------------|-------|
| Steel      | 150        | 9%   | 33.33%            | 8%              | 2000  |
| Chemicals  | 100        | 12%  | 25.00%            | 9%              | 1250  |
| Technology | 50         | 15%  | 20.00%            | 13%             | 400   |
| Company    |            |      |                   |                 | 3650  |

5. **c. \$3,500 million.** Value the company first by estimating the value of the businesses:

| Business   | EBITDA | EV/EBITDA multiple |      |
|------------|--------|--------------------|------|
| Steel      | 300    | 8                  | 2400 |
| Chemicals  | 200    | 5                  | 1000 |
| Technology | 100    | 6                  | 600  |
|            |        |                    | 4000 |

Value of equity = 4000 + 1000 - 500 = \$3,500 million