Schweser Printable Answers - Session Analysis of Equity Investments: Valuation Models and Issues

Test ID#: 1360689

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Question 1 - #45963

Loretta Lunn is an equity portfolio manager for Hardacre Softland Investments. She is considering acquiring a position in a chain of internet cafés for her high-growth portfolio. Lunn considers the internet café industry extremely attractive in the long term because of its potential for continuing global expansion. She believes the growing importance of the internet will cause public access to computers to become ever more important to the economic development of emerging market nations. Lunn wants to be positioned for the eventual emergence of internet cafés as necessary global infrastructure, along with railroads, telephones, and electricity.

Table 1: Fartravel vs. Alwaysnear Financial Data

(Dollars per share)

	Fartravel	**Alwaysnear**
Book value	$22	$18
ROE	23%	20%
Dividend payout ratio	10%	25%
Required rate of return on equity	19%	17%

Lunn has asked the firm's equity research analyst in the software space, Maura Mahoney, to provide some perspective on the two firms. Lunn plans to perform a residual income valuation on the two firms, and wants Mahoney's perspective on the issues involved.

Step #2: Calculate residual income each year during the interim high-growth period and discount them back to their present value using the weighted average cost of capital (WACC).

Step #3: Calculate continuing residual income at the end of the high-growth period using one of 4 approaches and then calculate its present value."

Part 1)

Regarding her statements about adjusting for Fartravel's operating leases and bad debt allowance, is Mahoney correct or incorrect?

	Operating leases	Bad debt allowance
A)	Incorrect	Incorrect
B)	Incorrect	Correct
C)	Correct	Incorrect
D)	Correct	Correct

Your answer: A was incorrect. The correct answer was B)

Incorrect Correct

Mahoney is incorrect that operating leases do not need to be adjusted in the residual value method. Operating leases should be capitalized by the present value of the expected future operating lease obligations. Mahoney is correct that the bad debt allowance should be adjusted to reflect expected loss experience.

Part 2)

The per share figures for intrinsic value and present value of expected economic profit for Alwaysnear are *closest* to:

	Intrinsic value	Economic profit
A)	$18.00	$10.80
B)	$28.80	$18.00
C)	$28.80	$10.80
D)	$10.80	$18.00

Your answer: A was incorrect. The correct answer was C)
$28.80 $10.80

First we calculate g = ROE * retention ratio = 20% * (1 – 0.25) = 15%. Then we can calculate intrinsic value and economic profit: V0 = book value + (((ROE – r) * book value) / (r–g)) V0 = $18 + (((0.20 – 0.17) * $18) / (0.20 – 0.15)) V0 = $18 + ((0.03 * $ 18) / 0.05) V0 = $18 + (0.54 / 0.05) V0 = $18 + $10.80 V0 = $28.80 The intrinsic value of the firm is $28.80, of which $10.80 is the present value of the expected economic profit.

Part 3)

Regarding the statements about adjusting for Fartravel's deferred tax liabilities and SPEs, who is correct?

	Mahoney	Lunn
A)	Incorrect	Incorrect
B)	Correct	Incorrect
C)	Incorrect	Correct
D)	Correct	Correct

Your answer: A was incorrect. The correct answer was C)
Incorrect Correct

Mahoney is incorrect. Deferred tax liabilities should be eliminated and reported as equity if they are likely, not unlikely, to reverse. Lunn is correct that SPEs should be eliminated and reported as equity.

Part 4)
Regarding Mahoney's description of the three steps involved in performing a multi-stage residual income valuation, Mahoney is:

A) correct about all three steps.
B) correct about the first and second steps but incorrect about the third.
C) correct about the second and third steps but incorrect about the fourth.
D) correct about the first and last steps but incorrect about the second.

Your answer: A was incorrect. The correct answer was D) correct about the first and last steps but incorrect about the second.

Mahoney is incorrect about the second step because the discount rate used should be the required rate of return on equity, not the WACC. She is correct about the first and third steps.

Part 5)

Regarding the statements about adjusting for Fartravel's deferred tax liabilities and SPEs, who is incorrect?

	Mahoney	Lunn
A)	Incorrect	Correct
B)	Correct	Incorrect
C)	Incorrect	Incorrect
D)	Correct	Correct

Your answer: A was incorrect. The correct answer was C)
Incorrect Incorrect

Mahoney and Lunn are both incorrect. In performing a residual income valuation, goodwill should not be excluded from the calculation of book value, and inventories for companies that use LIFO should be put on a FIFO basis.

Part 6)
Which of the following statements about violations of the clean surplus relationship is the *least* accurate?

A) The minimum liability adjustment in pension accounting may result in a violation of the clean surplus relationship.
B) The ROE forecast will not be accurate if the clean surplus violations are not expected to offset in future years.
C) Net income is correct but book value is not correct.
D) Changes in market value of securities classified as available for sale may result in a violation of the clean surplus relationship.

Your answer: A was incorrect. The correct answer was C) Net income is correct but book value is not correct.

Net income is not correct but book value is still correct.

Question 2 - #45917

Geremiah Analytics provides litigation consulting services to the intellectual property industry. They specialize in patent infringement liability and software valuation. Mariah Hofstedt, CFO of Geremiah, projects that the firm will earn $3 million pre-tax income this year. Additional selected financial data on Geremiah are presented below.

Table 1: Selected Financial Data

Geremiah Analytics

Total assets	$40 million
Debt/assets	60%
Average coupon on debt	8%
Cost of equity	12%
Tax rate	40%

Hofstedt has not been happy with the firm's financial performance. She would like to raise return on equity (ROE) and improve revenue growth, and is considering various ways to deploy Geremiah's cash flow in order to meet these two goals. One possibility is using some of Geremiah's cash flow to make a strategic acquisition.

Hofstedt has been looking at a smaller boutique firm, Logiciels LaMarre, which provides consulting services to the software industry. Hofstedt and a Geremiah Analytics valuation team have performed a preliminary valuation on Logiciels LaMarre using a free cash flow to equity model. However, Theodore LaMarre, CEO of Logiciels LaMarre, is not pleased with the resultant valuation that Geremiah has placed on his firm.

Rather than argue about the inputs of the free cash flow model, LaMarre takes the position that free cash flow to equity is an inappropriate model for valuing Logiciels LaMarre. He cites the firm's rapid growth and resultant need for capital investment as reasons that valuing the firm on projections of free cash flow to equity is not reliable.

LaMarre wants Geremiah to value Logiciels LaMarre using the residual income approach. LaMarre tells Hofstedt, "Valuation with residual income models is less sensitive to forecast error than valuation with free cash flow to equity models because residual income valuations rely on current book value."

Hofstedt feels substantial disagreement with LaMarre's approach on a variety of grounds. She views his arguments as negotiating ploys to raise the acquisition price of his firm, and does not agree with his assessment of the free cash flow valuation her team has developed. On a theoretical basis, Hofstedt considers the residual income approach an inappropriate tool for valuing a firm like Logiciels LaMarre. Hofstedt tells LaMarre, "It's not appropriate to use a residual income model to value Logiciels LaMarre because the impact of your currency translation gains and losses in shareholder equity causes the clean surplus accounting relation to be violated."

LaMarre ignores her concern and persists in his argument. He asserts, "The fact that our terminal value can be calculated with a high degree of certainty makes the use of a residual value model more appropriate than use of a free cash flow to equity model." Hofstedt counters that the residual income approach is not in LaMarre's interest. She points out, "Value tends to be recognized later in a residual income approach than in a free cash flow to equity approach."

There is, however, one point on which LaMarre and Hofstedt agree. They both recognize that competitive forces in the industry will drive the current high ROE of Logiciels LaMarre down to the cost of equity capital over time. Hofstedt concludes, "Given the assumption of a decline in ROE, we should use a persistence factor between zero and one." LaMarre disagrees, saying, "The assumption about ROE means that the present value of the continuing residual income at Logiciels LaMarre is the current residual income divided by the cost of equity capital."

Part 1)

Regarding their statements about the impact of the clean surplus accounting relation and residual value on when it is appropriate to use a residual income model, who is correct?

	LaMarre	Hofstedt
A)	Correct	Correct
B)	Correct	Incorrect
C)	Incorrect	Correct
D)	Incorrect	Incorrect

Your answer: A was incorrect. The correct answer was C)
Incorrect Correct

LaMarre is incorrect because residual income models are appropriate when terminal value is highly uncertain. Hofstedt is correct that a residual income approach is not appropriate if the clean surplus accounting relation is violated, for example by currency translation gains and losses going straight into equity.

Part 2)

A higher dividend payout ratio and higher return on equity (ROE) would *most likely* have what impact on Logiciels LaMarre's persistence factor?

	ROE	Dividend payout ratio
A)	Lower	Higher
B)	Higher	Lower
C)	Lower	Lower
D)	Higher	Higher

Your answer: A was incorrect. The correct answer was C)
Lower Lower

A higher persistence factor is associated with a low dividend payout ratio, and vice versa. A high return on equity is associated with a lower persistence factor.

Part 3)

Regarding their statements about the forecast error in residual income models and when they recognize value, who is correct?

	LaMarre	Hofstedt
A)	Correct	Correct
B)	Correct	Incorrect
C)	Incorrect	Correct
D)	Incorrect	Incorrect

Your answer: A was incorrect. The correct answer was B)
Correct Incorrect

LaMarre is correct that residual income models are less subject to forecast error than free cash flow to equity models because a large portion of intrinsic value in a residual income model is current book value. Hofstedt is incorrect because residual income models tend to recognize value earlier, not later, than other present value based approaches.

Part 4)
Which of the following is *least likely* to characterize the difference between a residual income model and a free cash flow to equity model?

A) A residual income model is applicable to a firm that does not have free cash flow.

B) Residual income models rely on accounting data that is generally easy to find.

C) Terminal value represents a higher proportion of intrinsic value in a residual income model than in a dividend discount model.

D) Inputs to a residual income model are more easily manipulated by management.

Your answer: A was incorrect. The correct answer was C) Terminal value represents a higher proportion of intrinsic value in a residual income model than in a dividend discount model.

Terminal value represents a lower, not higher, proportion of intrinsic value in a residual income model than in other present value based approaches. A residual income model is applicable to a firm that does not have free cash flow and relies on accounting data that is generally easily found. However, the accounting data used in a residual income model are more easily manipulated by management than cash flow data.

Part 5)
The residual income of Geremiah Analytics is closest to:

A) $120,000.

B) $1,080,000.

C) –$1,272,000.

D) –$120,000.

Your answer: A was incorrect. The correct answer was D) –$120,000.

Geremiah's after-tax income is ($3 x (1 – 0.40) =) $1.8 million. They have ($40 x 0.60 =) $24 million in debt and ($40 x (1 – 0.60) =) $16 million in equity. Their equity charge is ($16 x 0.12 =) $1.92 million. Their residual income is ($1.8 – $1.92 =) –$ 0.12 million, or –$120,000.

Part 6)

Regarding their statements about ROE and residual income, who is correct?

	LaMarre	Hofstedt
A)	Correct	Correct
B)	Correct	Incorrect
C)	Incorrect	Incorrect
D)	Incorrect	Correct

Your answer: A was incorrect. The correct answer was D)
Incorrect Correct

LaMarre is incorrect because the present value of the continuing residual income for a firm is equal to the current value divided by the return on equity when residual income continues indefinitely, which is not the case if ROE declines to the return on equity capital. Hofstedt is correct that ROE declining to the cost of equity capital implies a decline in residual income and thus a persistence factor between zero and one.

Question 3 - #38715

The Erica Company has the following financial information:

Balance Sheet
($ thousands)

Assets	*2004*	*2003*
Cash & Cash Equiv.	8,729	8,633
Short-term Investments	5,167	21
Accounts Receivable	791	685
Inventories	6,142	6,832
Other Current Assets	554	425
Total Current Assets	21,383	16,596
Property, Plant, and Equipment	8,485	7,571
Other Assets	494	34
Total Assets	30,362	24,201

Liabilities		
Accounts Payable	5,288	4,895
Deferred Income Tax	538	492
Long-Term Debt	4,821	4,962
Total Liabilities	10,647	10,349
Common Stock	9,464	8,918
Retained Earnings	10,251	4,934
Total Equity	19,715	13,852
Total Liabilities & Equity	30,362	24,201

Income Statement
($ thousands)

	2004	*2003*
Sales	9,889	8,128
Cost of Goods Sold	4,691	4,173
Gross Profit	5,198	3,955
Sales, Gen. & Admin. Exp.	3,960	2,879
EBITDA	1,238	1,076
Depreciation	479	426
Operating Profit	759	650
Interest Exp.	59	55
Pretax Income	700	595
Taxes	210	178
Net Income	490	417

Footnotes:

- The marginal tax rate is 40 percent.
- As of December 31, 2003, Erica Company had 18,650,000 shares outstanding with a share price of $10. The pretax yield on the debt is 7 percent. The debt trades very close to par.
- The risk-free rate is 3 percent and the market risk premium is 8 percent. Erica Company's beta is 1.26.

Part 1)
Which of the following ratios posted the biggest percentage change from year end 2003 to year end 2004?

A) Return on equity.
B) Return on assets.
C) Debt/capital ratio.
D) Financial leverage.

Your answer: A was incorrect. The correct answer was C) Debt/capital ratio.

The debt/capital ratio changed from 26.4% (4,962/(13,852+4,962)) to 19.6% (4,821/(19,715+4,821)), down 26%.

ROE changed from 3.0% (417/13,852) to 2.5% (490/19,715), down 17%.
ROA changed from 1.7% (417/24201) to 1.6% (490/30,362), down 6%.
Financial leverage changed from 1.747 (24,201/13,852) to 1.540 (30,362/19,715), down 12%.

Part 2)
If gross profits rise, operating profits are flat, and capital spending declines in 2005, which of the following ratios is *most likely* to rise?

A) Financial leverage.

B) Return on equity.

C) Return on assets.

D) Inventory turnover.

Your answer: A was incorrect. The correct answer was D) Inventory turnover.

If gross profits rise and operating profits are flat, the likely reasons are either higher sales or lower COGS with the most likely being an increase in sales greater than an increase in COGS. Higher sales would most likely lead to an increase in inventory turnover due to a related increase in COGS or lower average inventory on hand. Flat profits and minimal investment in new assets are likely to limit the growth of ROE and ROA. Without increases in the asset base or decreases in equity, financial leverage is not likely to rise.

Part 3)
2004 NOPAT is *closest* to:

A) 455.

B) 1,238.

C) 750.

D) 700.

Your answer: A was incorrect. The correct answer was A) 455.

NOPAT = (sales - COGS - SGA - dep) x (1 - t)
= (9,889 - 4,691 - 3,960 - 479) x (1 - 0.40)
= 455

Part 4)
Erica Company's 2004 weighted average cost of capital is *closest* to:

A) 11.34%.

B) 11.51%.

C) 11.89%.

D) 10.24%.

Your answer: A was incorrect. The correct answer was A) 11.34%.

Capital = debt + equity = 4,821 + 19,715 = 24,536
Equity weight = 19.715 / 24,536 = 80.4%
Debt weight = 1 – equity weight = 19.6%
$k_{equity} = r_f + (r_m - r_f)\ \beta = 0.03 + 0.08 \times 1.26 = 13.08\%$
The pretax required return on debt is 7%
Tax rate = 40%

WACC = (80.4% * 13.08%) + (19.6% * 7% * [1 - 40%])
= 10.51% + 0.83% = 11.34%

Part 5)

- EBIT = $615 million.
- Net debt = $600 million.
- Equity = $750 million.
- Marginal tax rate = 35%.
- Operating profit margin = 15%.
- Weighted average cost of capital = 10%.
- Required rate of return on equity = 12%.

Assuming the above facts, EVA is *closest* to:

A) $265 million.

B) $275 million.

C) $250 million.

D) $238 million.

Your answer: A was incorrect. The correct answer was A) $265 million.

NOPAT (Net operating profit after taxes) = $615 million x 0.65 = $400 million
EVA = NOPAT – (WACC * capital)
= $400 million – (10% * [$750 million + $600 million]) = $265 million

A key to success here is determining the proper figure for capital. Net debt of $600 million combined with $750 million in equity represents total capital of $1,350 million.

Part 6)
Which of the following statements about the EVA calculated in the previous question is **FALSE**?

A) A firm will generate a positive EVA if its operating revenues exceed its operating expenses and capital costs.

B) Even though the EVA figure is positive this does not necessarily mean that management has added value during the last year.

C) Economic measures of profitability such as EVA are more appropriate for the analyst to use in assessing the firm’s profitability than accounting measures like ROE.

D) Firms that invest in negative NPV projects destroy value and generate negative EVA.

Your answer: A was incorrect. The correct answer was B) Even though the EVA figure is positive this does not necessarily mean that management has added value during the last year.

A positive EVA does mean the firm was successful at creating economic profits and did add value by investing in positive NPV projects thereby developing a sustainable competitive advantage.

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