

FINAL EXAM

Finance 70610 – Equity Valuation

Mendoza College of Business
Professor Shane A. Corwin
Fall Semester 2009 – Module 2

NAME _____

If you have not previously given me an ID# and wish to have your scores posted, please provide a 4-digit ID number and initial here: _____

INSTRUCTIONS:

1. You have 2 hours to complete the exam.
2. You may use a calculator and a formula sheet. You must hand in the formula sheet with your exam (put your name on it).
3. The exam is worth a total of 150 points.
4. Allocate your time wisely. Use the number of points assigned to each problem as your guide.
5. In order to get full credit on the problems, you must show ALL your work!

Multiple Choice (40 points)

Choose the best answer for each of the following questions. The questions are worth 5 points each.

1. The current stock price of Home Depot is \$30 per share. Using a DCF model, you estimate that the total equity value for Home Depot is \$51 billion. The firm has 1.69 billion shares outstanding. However, the firm also has 52 million outstanding employee stock options with an average exercise price of \$40 per share. What is the estimated equity price per share if you use the Treasury Stock method to incorporate employee stock options?
 - a) \$30.47
 - b) \$30.17
 - c) \$29.28
 - d) \$28.08

2. You are valuing an Italian firm based on Euro-denominated cash flows. As a first step in your analysis, you are trying to determine the appropriate risk-free rate to use in your cost of capital calculations. Which of the government-issued bonds described below would be most appropriate to use for your risk-free rate?
 - a) a 10-yr U.S. Government Treasury Bond with a yield of 4.05%
 - b) a 10-yr Euro-denominated German Government Bond with a yield of 4.13%
 - c) a 10-yr Euro-denominated Italian Government Bond with a yield of 4.27%
 - d) a 1-yr Euro-denominated Italian Government Bond with a yield of 2.34%

3. For the most recent fiscal year, Best Buy had earnings per share (EPS) of \$3.20 and dividends per share of \$0.46. The return on equity (ROE) for the firm is 23%, but is expected to decrease during the coming year to 20%. Based on this information, calculate the fundamental growth in EPS for Best Buy in the coming year.
 - a) 17.2%
 - b) -13.0%
 - c) 19.7%
 - d) 4.1%

4. You are valuing a firm that generates 32% of its revenues from the food products industry and the remaining 68% from the tobacco industry. The unlevered Betas for these industries are 1.35 and 0.85, respectively. Calculate the levered fundamental Beta for this firm based on the fraction of revenues derived from each industry. Assume a debt/equity ratio of 0.8 and a tax rate of 40%.
 - a) 0.68
 - b) 0.94
 - c) 1.76
 - d) 1.49

5. Using a FCF model, you estimate that the present value of operating cash flows for Conglomerate Inc. is \$3.5 billion. The firm reports an 80% majority stake in a subsidiary called ABC, which has a market value of \$1.75 billion. Conglomerate Inc. has no debt, but reports a liability of \$250 million related to the minority interest in ABC. Conglomerate also has cash and short-term investments worth \$200 million. If Conglomerate Inc. has 100 million shares outstanding, what is your estimate of the equity price per share?
- a) \$30.50
 - b) \$31.50
 - c) \$32.50
 - d) \$33.50
6. You are valuing a firm using free cash flow to the firm (FCFF). Operating income in the most recent year was \$100 million. You expect operating income to grow at a constant rate of 4% in perpetuity. The firm has a tax rate of 38% and a WACC of 9%. What is the value of this firm, if the return on capital (ROC) is 10% and required reinvestment is a function of fundamentals?
- a) \$1248.00
 - b) \$836.24
 - c) \$773.76
 - d) \$744.00
7. The average P/E ratio for firms in the S&P 500 is 19.8. You forecast long-term growth in earnings for S&P firms of 4.8% and a long-term ROE for S&P firms of 14.0%. Calculate the implied market risk premium assuming a risk-free rate of 3.4%.
- a) 5.05%
 - b) 4.72%
 - c) 4.27%
 - d) 3.31%
8. Consider a firm that has after-tax operating income of \$1300, net income of \$950, capital expenditures of \$1235, depreciation of \$900, acquisition costs of \$90, a change in non-cash working capital of 125, and a debt-to-capital ratio of 40%. If the return on capital (ROC) for this firm is constant at 13%, what is the fundamental growth in operating income.
- a) 5.50%
 - b) 3.30%
 - c) 4.51%
 - d) 7.53%

Kraft Foods Valuation (110 points)

Please note that questions 9 through 13 are all related to the valuation of *Kraft Foods*. The consolidated income statement and balance sheet for this firm are provided at the end of the exam and will be necessary to answer some of the questions. While some of the questions are linked, an error made on one question will not be compounded on subsequent problems. In other words, I will count a number wrong only once. If you are unable to answer any one of these questions, just clearly state any assumptions necessary to complete the remaining questions. You must show ALL your work to get full credit. Please write all answers in the boxes provided.

Throughout these problems, you can assume the following:

- Shares outstanding = 1469.1 million and stock price = \$26.85
 - $\text{Debt}_{\text{market value}} = \text{Debt}_{\text{book value}}$ and cost of debt (K_d) = 6%
 - Cost of equity (K_e) = 11.0% and weighted average cost of capital (WACC) = 8.5%
 - Tax rate = 36%
 - Except where specifically noted, all financial items are listed in millions to be consistent with the attached financial statements.
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9. **(20 points) Valuation of Kraft Foods – Part I (Capitalization of R&D):**

The table below shows R&D expenses for Kraft Foods for the past five years. You have decided to capitalize R&D using a four-year life. Calculate both the amortization that should be applied to income in the most recent year and the unamortized value of the R&D asset remaining on the balance sheet at year end.

Year	R&D Expense (mil)
2004	361
2005	389
2006	414
2007	442
2008 (most recent)	499

Amortization of R&D =

Unamortized R&D =

10. **(26 points) Valuation of Kraft Foods – Part II (Adjustments):**

Use your answers from above and any necessary information from the consolidated financial statements to answer the questions below.

After discounting future operating lease commitments at the cost of debt, you determine that the value of operating lease debt is \$685 million. Calculate the adjusted values of After-tax Operating Income, the adjusted value of debt, and the adjusted value of equity in the most recent year after incorporating adjustments related to both R&D capitalization and operating lease debt. You can assume that no income adjustments related to impairment or one-time charges are necessary.

Adjusted After-Tax Operating Income =

Adjusted Debt =

Adjusted Equity =

11. **(20 points) Valuation of Kraft Foods – Part III (FCFF):**

Use your answers from above and any necessary information from the consolidated financial statements to answer the questions below.

- a) Based on the consolidated balance sheet provided, calculate the change in non-cash working capital for Kraft Foods from 2007 to 2008.

Change in working capital =

- b) In the most recent fiscal year, Kraft had capital expenditures totaling \$1,367 million and depreciation of \$986 million. In addition, the firm spent \$220 million on acquisitions and raised \$311 million from the issuance of long-term debt. Calculate the Free Cash Flow to the Firm (FCFF) for Kraft in the most recent fiscal year after accounting for operating leases and capitalization of R&D. (Note: units here are in millions for comparability to the financial statements.)

FCFF =

12. **(24 points) Valuation of Kraft Foods – Part IV (Discounted Cash Flows):**

You decide to value Kraft using a three-stage FCFF model, based on your initial FCFF estimate from question (11b) above. Given poor recent economic conditions, you assume zero growth in FCFF for the first 2 years. After the first 2 years, you assume that the fundamentals of the firm will support 7% growth in FCFF for the next 8 years. Beyond year 10, you expect stable growth at 3% in perpetuity.

Enter your FCFF estimate from question (11b) here (or assume a value): _____

Using this estimate as your year zero cash flow, estimate the present value of FCFF for Kraft under the assumptions described above. Use any information necessary from your answers above and the consolidated financial statements.

Present Value of FCFF =

13. **(20 points) Valuation of Kraft Foods – Part V (Price Per Share):**

Enter the present value of FCFF from question (12) here (or assume a value): _____

- a) Using this estimate as your starting point, along with any relevant information from your previous answers and the consolidated financial statements, estimate the price per share for Kraft stock. Use the Black-Scholes method to account for employee stock options. The firm has 38.5 million employee stock options outstanding, of which 25.4 million are currently exercisable. The options have an average exercise price of \$24.74 and a Black-Scholes option price of \$4.10 each.

Estimated Stock Price =

- b) Based on your analysis, is this firm over- or under-valued at the current stock price of \$26.85?

Group Member Evaluation

On the lines below, please list the members of your group. For each group member (including yourself), assign a percentage grade (out of 100%). These evaluations will be considered when determining final project grades and final semester grades. If you had significant problems with a group member or wish to commend a group member who worked especially hard, describe the situation in the written comments section at the bottom of the page.

Group Members:

Grade (out of 100%)

(You) _____

Comments: