

MIDTERM EXAM

Finance 70610 – Equity Valuation

Mendoza College of Business
Professor Shane A. Corwin
Fall Semester 2005 – Module 2

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NAME _____

INSTRUCTIONS:

1. You have 75 minutes to complete the exam.
2. The exam is worth a total of 100 points.
3. You may use a calculator and a formula sheet. You must hand in the formula sheet with your exam (put your name on it).
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!

1. **Cost of Capital and Country Risk (22 points):**

You are valuing a Venezuelan mining firm and have converted all cash flows to \$U.S. You wish to estimate the cost of equity for the firm including a country risk component.

- a) (5 points) Analysts at your firm have provided you with the following historical data for the U.S. equity market during the period from 1928-2004. Based on this information, what market risk premium (excluding country risk) will you use in your cost of equity calculations? Briefly explain your reasoning.

Average Risk Premium	Arithmetic Average	Geometric Average
Relative to 30-day T-Bills	7.92%	6.02%
Relative to 10-year T-Bonds	6.53%	4.84%

- b) (5 points) Yields on several U.S. and Venezuelan government-issued bonds are listed below. Based on this information, what risk-free rate will you use in your cost of equity calculations? Briefly explain your reasoning.

Government Bond	Yield
1-year U.S. Government T-Bill	4.1%
10-year U.S. Government T-Bond	4.4%
10-year U.S. Government Inflation-Indexed T-Bond	1.9%
10-year \$U.S.-denominated Venezuelan Gov't Bond	8.4%
10-year Bolivar-denominated Venezuelan Gov't Bond	14.7%

- c) (5 points) Long-term Bolivar-denominated bonds issued by the Venezuelan government are currently rated B+ by Standard and Poor's and have a default risk premium of 4.0%. In addition, you estimate the monthly standard deviation of the U.S. and Venezuelan equity markets are 4.5% and 10.0%, respectively. Based on this information, what country risk premium will you use in your cost of equity calculations? Briefly explain your reasoning.
- d) (7 points) You estimate that the equity Beta of the firm is 1.3. Using this Beta and your answers to parts (a) through (c), estimate the cost of equity for this firm (including country risk). Explain any assumptions you make to obtain your answer.

2. **Working Capital (6 points):**

Assets and Liabilities (in thousands) from Coca Cola's 2004 Balance Sheet are listed below. Use this information to calculate non-cash working capital for Coca Cola as of 12/31/2004.

Assets:		Liabilities:	
Cash	6,707,000	Trade accounts payable	2,238,000
Marketable securities	61,000	Accrued expenses	2,045,000
Trade accounts receivable, net	2,171,000	Accrued income taxes	667,000
Inventories	1,420,000	Short-term loans & notes payable	4,531,000
Prepaid expenses & other assets	1,735,000	Current maturities of long-term debt	1,490,000
Total current assets	12,094,000	Total current liabilities	10,971,000
Investments in other firms and other assets	9,306,000	Total debt before current portion	2,647,000
Property, plant & equipment, net of depr	6,091,000	Less current portion	1,490,000
Trademarks & other intangible assets	3,836,000	Long-term debt	1,157,000
Total assets	31,327,000	Other liabilities	2,814,000
		Deferred income taxes	450,000
		Total liabilities	15,392,000

3. **Levered Beta (10 points):**

One of the firms that you follow is a small biotech company that has announced plans to issue \$500 million in new debt with an after-tax cost of debt equal to 3%. Prior to the issue, the company has no debt, its equity has a market value of \$690 million, and its Beta is 1.4. In addition, the firm's marginal tax rate is 35%.

- a) (5 points) Calculate the levered (equity) Beta for this firm after the capital structure change (assuming the market value of equity does not change).
- b) (5 points) Based on your answer to (a), calculate the weighted average cost of capital (WACC) for this firm after the capital structure change. Assume a market risk premium of 4.5% and a risk-free rate of 4%.

4. **Present Value and Discounted Cash Flows (20 points):**

You are performing a valuation of a mid-cap technology firm. Free cash flows to the firm (FCFF) during the most recent year totaled \$213 million (this is the time 0 cash flow). You expect these cash flows to grow at an annual rate of 15% for the next five years as the firm gains market share. You then expect growth to stabilize at a long run rate of 5% (in perpetuity). The firm's weighted average cost of capital is 9% and its cost of equity is 13.5%.

- a) (14 points) What is the present value of the firm's future cash flows (FCFF)?
- b) (6 points) In addition to the cash flows described above, the firm also has cash and marketable securities worth \$650 million and total debt of \$2,600 million. Based on this information and your answer to part (1), what is the value of the firm's equity? (Hint: you do not need to do another discounted cash flow analysis.)

5. **R&D Adjustments (22 points)**

You are valuing IBM and have decided to capitalize the firm's R&D expenses. The firm's R&D expenses for the past four years are listed below.

Year	R&D Expense (\$ millions)
2001	5,290
2002	4,750
2003	5,077
2004	5,673

- a) (8 points) Calculate the unamortized value of IBM's R&D asset as of 12/31/2004 assuming a three-year life for R&D.
- b) (6 points) IBM had operating income (EBIT) in 2004 equal to \$10,975 million and a tax rate of 29.8%. Calculate adjusted after-tax operating income for IBM after accounting for the capitalization of R&D.
- c) (8 points) During 2004, IBM also reported capital expenditures of \$4,770 million, depreciation of \$3,959, and an increase in working capital of \$1,337 million. Estimate free cash flow to the firm (FCFF) for IBM in 2004.

6. **Operating Lease Adjustments (20 points)**

Future operating lease commitments for Southwest Airlines are shown below. In 2004, the firm reported operating income of \$554 million, operating lease expenses of \$403 million, and total debt of \$1,846 million. The firm's cost of debt was 7% and its tax rate was 36%.

Year	Operating Lease Commitments (\$ millions)
2005	343
2006	279
2007	256
2008	226
2009	204
>2009	1,369

- a) (14 points) Calculate the present value of future operating lease commitments for Southwest Airlines. Based on this calculation, what is the adjusted book value of debt for the firm after accounting for operating lease commitments?
- b) (6 points) What is the adjusted after-tax operating income for Southwest Airlines in 2004 after accounting for operating lease commitments?