

Key

YOU HAVE 80 MINUTES TO COMPLETE BOTH PARTS OF THIS EXAM

Instructions:

- 1) The part of the exam is closed book and closed notes. No scrap paper is allowed; use the back of the exam if necessary.
- 2) Partial points are based on readily observable evidence that you know at least part of the solution concept. The more evidence presented (and the clearer the evidence), the better the chance for partial points. In other words, SHOW ALL WORK!
- 3) True/False questions are worth 3 points. Multiple-choice questions are worth 4 points. Short answer questions usually take less than three sentences and are worth 5 points.

1. For a lease, what do we use as the discount rate? Why do we use this rate?

After tax cost of secured debt.
 After tax because we do a after tax analysis
 Cost of Debt because this is a borrow vs lease decision, ^{same} with

2. If certain guidelines are met, the lessee can deduct for tax purposes the full amount of each lease payment, and the lessor is entitled to the tax deductions and tax credits of asset ownership. List any two guidelines that would allow for full deduction of the lease payment.

- 1. not exceed 80% of life
- 2. lessor min 20% investment
- 3. Purchase option must equal fair market price
- 4. lessor does not buy or finance item
- 5. lessor holds title & expects profit

3. The project's NPV is \$2 and the NAL is \$7M. Should the project be undertaken? How should the project be financed?

Yes, Lease

4. The difference between a bond's coupon rate of interest and its yield to maturity is greater than 0 for a discount bond.

A a. True b. False Skip

5. A French company issues a Eurobond in New York. This bond would be denominated/issued in United States Dollars.

A a. True b. False Skip

6. (6 points) A company issues three identical 7% coupon, 10-year bonds, except that; Bond 1 has a sinking fund feature, Bond 2 is callable, and Bond 3 is a vanilla bond with neither a sinking fund nor a call feature. Circle the correct answers, **greater than, less than, or equal to**

- a. The yield to maturity on the Sinking Fund Bond (Bond 1) is **greater than**, ~~less than,~~
or equal to the yield to maturity on the Callable Bond (Bond 2).
- b. The yield to maturity on the Sinking Fund Bond (Bond 1) is **greater than**, ~~less than,~~
or equal to the yield to maturity on the Vanilla Bond (Bond 3).
- c. The yield to maturity on the Callable Bond (Bond 2) is **greater than**, ~~less than, or~~
equal to the yield to maturity on the Vanilla Bond (Bond 3).

7. An American depository receipt, or ADR, is a receipt that represents ownership of shares of a foreign corporation's _____.

- a. convertible debt b. preferred stock c. common stock
d. bonds. e. CDOs f. None of the above.

8. The foreign exchange market is _____.

- a. a market that trades greater dollar amounts than the stock market. ✓
b. an over-the-counter market ✓
c. a market where central banks are principal market participants ✓
d. a market that helps importers who need foreign currency to pay for the goods they import ✓
e. all of these ✓

9. The objective of the managers of a multinational corporation is to maximize the wealth of shareholders.

- a. True b. False

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Exam 2 Spring 2009 FINC 4532 Your Name

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Instructions:

- 1) The part of the exam is open book and open notes.
- 2) Point values are listed with the question.
- 3) Look over the entire exam before starting. The best strategy is generally to "cherry pick". In other words, solve the easiest (and/or most familiar) problems first. This will save time (and energy) that can be expended on the more difficult problems.
- 4) Partial points are based on readily observable evidence that you know at least part of the solution concept. The more evidence presented (and the clearer the evidence), the better the chance for partial points. In other words, SHOW ALL WORK!
- 5) If you have additional time remaining, give your work one last check.

1. YellowRock Corporation is considering a leasing arrangement to finance some special manufacturing tools that it needs for production during the next four years. A planned change in the firm's production technology will make the tools obsolete after 4 years. The firm will depreciate the cost of the tools using the MACRS 5 year schedule. The firm can borrow \$9,500, which is 100% of the purchase price, with annual payments of \$2932 per year, or it can make four equal beginning-of-year lease payments of \$2,994. The firm's tax rate is 40 percent. If the firm buys the equipment, the annual maintenance costs associated estimated at \$450. If the item is leased, the lessor will pay the annual maintenance costs. The salvage value of the machine at the end of 4 years is \$1000. The firm's weighted average cost of capital 11.4%, and the levered cost of equity is 14%. All debt has the same pre-tax interest rate as the current offered loan. Should the firm lease or buy the piece of equipment (1 point)? Numerical evidence that your answer is correct (18 points)

Spring 2009 Yellowrock problem

tax rate = 40%

cost basis	9500
depreciation	20.00%
	32.00%
	19.20%
	11.52%
	11.52%
	5.76%

	year 0	1	2	3	4
equipment	9500				
lease	-2994	-2994	-2994	-2994	-2994
deprec		1900	3040	1824	1094.4
maint		450	450	450	450
ebit	-2994	-644	496	-720	1544.4
taxes	1197.6	257.6	-198.4	288	-617.76
NOPAT	-1796.4	-386.4	297.6	-432	926.64
deprec	0	-1900	-3040	-1824	-1094.4
net cash flow	-1796.4	-2286.4	-2742.4	-2256	-167.76
equip	9500				
cash flow for nal	7703.6	-2286.4	-2742.4	-2256	-167.76

cost of capital pretax 9% therefore aftertax 5.40%

NPV of operating cash flows at 5.4% = 1003.10

NPV of salvage cash flows at 11.4% = -815.96

NPV of salvage cash flows at 11.4% = 187.14 lease the equipment

NAL = 1

use amortized loan to find 9%

Salvage Tax impact -1000

Salvage Tax impact -256.64

Salvage Tax impact -1256.64

npv(11.4, 0, (0, -1256.64), (3, 1))

1

1

AN

2. For a conventional project, the NPV is +\$7. Leasing generates the following after-tax cash flows: cost of the new equipment at time 0 is \$91. The after-tax cash flows associated with the lease are \$13, and the after-tax residual value (RV) of the equipment at $t = 10$ is \$10. The pre-tax cost of secured debt is 10.0%, and the tax rate is 35%. The WACC is 10%.

a. (3 points) What is the NAL?

$$NPV(10(1-35\%), 91, 13, 10) + NPV(10, 0, 10, -10, 91)$$

$$-6.31 \quad -2.45 \quad -3.86$$

$$1.5 \quad 1.5$$

b. (2 points) Should we accept this project? Why?

2 Yes NPV is positive we should borrow & buy

3. (3 points) A \$1,000 par value bond, matures in 16 years, has a coupon rate of 8.5% and the coupon is paid semi-annually. Currently the bond is trading at \$957.42. What is the yield to maturity?

AON

$$FV=1000 \quad PMT=8.5/2=42.50$$

$$PV=-957.42 \quad I=4.5 \times 2 = 9\%$$

$$N=16 \times 2=32$$

4. (4 points) Modata corp is planning to raise \$10,000,000 in funds by issuing 6% \$1,000 par value bonds with a 20-year maturity. Assuming that Modata is able to issue these bonds at yield to maturity of 9%, how many bonds must they issue?

$$N=20 \quad FV=1000$$

$$I=9 \quad PMT=60$$

$$PV=726.14 \text{ (3)}$$

$$10,000,000 / 726.14 = 13,771.95$$

$$\text{semi } 723.98 \quad \text{① } 13,812.54$$

5. (3 points) The Japanese yen-Swiss franc exchange rate is 165.90 per SFr1. The euro-Swiss franc exchange rate is Euro1.20 = SFr1. How many yen will one euro buy?

AON

$$\frac{165.90}{1.2} = 1 \text{ SF} = \frac{1.2 \text{ €}}{1.2}$$

$$1 \text{ €} = 138.25 \text{ ¥}$$

6. Using the Currency Trading Table in the textbook, answer the following (2 points each).

a. (2 points) How many Canadian Dollars would be needed to buy \$345,000 U.S. Dollars in 6 months?

AON

$$\$1 = C\$1.5405$$

$$\$345,000 = 531,472.5$$

b. (3 points) What is the cross rate between Australian Dollar and Brazil Real?

AON

$$1.5085 \text{ Real} = 1 \text{ Australian Dollar}$$

$$\frac{1.74 \text{ Aus} = \$1}{1.74} = \frac{2.638 \text{ Real}}{1.74}$$

c. (3 points) How many Real could you buy with 2,000,000 Australian Dollars?

AON

$$2,000,000 \text{ AUS} = 3,017,501.51 \text{ Real}$$

d. (3 points) Based on the spot and 1-month forward rates in the currency table, which currencies are appreciating versus the United States dollar.

AON

Japan Switzerland

Use the below information to answer the next six questions. 2 points for each blank and appreciate/depreciate (12 points).

Spot rate is \$.010204=1 yen.

The one-year futures price is \$1.00=95 yen

The 1-year Japanese Treasury rate is 1.1%

Inflation in the United States is expected to be 1.8%.

98 yen 1010526

100000 x 0.010204 7. A Japanese person investing 100,000 yen in the United States expects to invest

1020.4 Dollars today in United States Treasury Bonds. They would earn

4.29% on their United States Treasury Bonds. At the end of one year, they would

redeem their bond for 1069.21 dollars and convert their \$ back into 101100

yen. During this period, the yen appreciated / depreciated (2 points)

3.15% % against the \$.

$\frac{98-95}{95}$

8. (6 points) Assuming no transaction costs, suppose 1 Euro = .7444 U.S. Dollars in New York, \$.69 U.S. Dollar = 1 British Pound in London, and 1 Euro = .9456 British Pounds in Paris. If you started with \$100,000, and exploited the possible arbitrage, how much profit (in U.S. Dollars) would you have after one round trip through the currencies? Show your work for partial credit.

$$100,000 \times \frac{1 \text{€}}{\$0.7444} \times \frac{.9456 \text{P}}{1 \text{€}} \times \frac{\$0.69}{1 \text{P}} = \$7699.65$$

$$\$100,000 \times \frac{1 \text{P}}{\$.69} \times \frac{1 \text{€}}{.9456 \text{P}} \times \frac{\$.7444}{1 \text{€}} = 114090.58$$

\$ 14090.58 profit