

Key

Exam 2 Spring 2007 FINC 4532 Your Name _____
YOU HAVE 90 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. The project's NPV is -\$13M (M = million) and the net advantage of leasing (NAL) is +\$31M. Should the project be undertaken?

- A
- a. Yes, and lease the project as the NPV+NAL is positive.
 - b. No. When the NAL is negative, it does not matter if the NPV is positive.
 - c. No, because the NPV + NAL is negative.
 - d. Yes, and buy the item because NPV is positive, while NAL is negative.
 - e. We do not enough information to make a correct judgment on undertaking the project.
- 4

B

2. A general expectation is that the lessee has a higher tax rate percentage than the lessor's tax rate percentage.

- a. True
 - b. False
- 3

3. 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. These guidelines include which of the following?

- D
- a. The lessor can grant the lessee a purchase option. ✓
 - b. The term of the lease cannot exceed 80% of the useful life of the asset. ✓
 - c. The lessor must hold title to the property, and it must demonstrate that it expects to earn a pretax profit from the lease transaction horizontal that is, profit apart from any tax deductions and tax credits it will realize. ✓
 - d. all of the above.
 - e. none of the above.
- 4

4. As discussed in the text, list two disadvantages of leasing an asset rather than buying it?

1. Forfeit tax deductions associated with ownership
 2. Loss of residual value
- 5

5. Describe the basic difference between a bond with a sinking fund bond and a callable bond?

CO must redeem ←
lower rd

CO may redeem
higher rd

6. When the value of United States dollar appreciates against versus another country's currency, we can purchase more of the foreign currency per dollar.

- A
- a. True
 - b. False
- 3

7. If according to the law of one price (also known as Purchasing Power Parity) the current exchange rate of dollars per British pound is \$1.75/£, then at an exchange rate of \$1.85/£, the dollar is _____.

- a. ~~overvalued~~
- b. undervalued
- c. correctly valued
- d. unknown relative valuation

B

pound costs too much
4

8. A _____ covers the purchase and sale of an item, such as a currency, for future delivery based on a price (the exchange rate) that is agreed to today.

- A) LIBOR contract
- B) forward contract
- C) a currency swap
- D) Fisher effect
- E) International Fisher effect.

B

4

9. LIBOR is an overnight lending rate that is generally considered the international equivalent to the Federal Funds rate.

- a. True
- b. False

A

3

10. Based on the attached Exchange Rate Table, list all countries that have higher inflation rates than the United States.

U.K.

5

11. Based on the attached Exchange Rate Table, list all countries that are expected to appreciate versus the United States dollar.

Canada
Japan
Switzerland

5

2/45

Key

1 pt crw

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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. BlueRock 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 \$9,800, which is 100% of the purchase price, at 9.8 percent on an amortized loan to buy the tools, or it can make four equal beginning-of-year lease payments of \$3,400. The firm's tax rate is 34 percent. The \$3,350 lease payment includes the costs of annual maintenance, which BlueRock estimated to be \$325. The salvage value of the machine at the end of 4 years is \$1,680. The firm's pre-tax cost of all types of debt is 9.8%, weighted average cost of capital 11.9%, and the levered cost of equity is 14.5%. Should the firm lease or buy the piece of equipment (1 point)? Numerical evidence that your answer is correct (16 points)

17

	0	1	2	3	4
Equip $\text{\textcircled{1}}$ 9800					
Lease $\text{\textcircled{2}}$	-3400	-3400	-3400	-3400	
Deprec		$\text{\textcircled{2}}$ 1960	3136	1881.6	1128.96
Maintenance		$\text{\textcircled{2}}$ 325	325	325	325
EBIT	-3400	-1115	61	-1193.4	1453.96
Taxes	1156	379.1	-20.74	405.76	-494.35
NOPAT	-2244	-735.9	40.26	-787.64	959.61
Depr	0	-1960	-3136	-1881.6	-1128.96
NCF	-2244	-2695.90	-3095.74	-2669.24	-169.35
	7856				
				$\text{\textcircled{3}}$	(buy)

NPV +18
 NAL +11.56 \Rightarrow Accept & Lease ①

2. (4 points) For a conventional project, the NPV is +\$18. Leasing generates the following after-tax cash flows: cost of the new equipment at time 0 is \$92. The after-tax cash flows associated with the lease are \$9 and the after-tax residual value (RV) of the equipment at $t = 10$ is \$32. The before tax cost of secured debt is 7.8%. The WACC is 12.5% and the cost of levered equity is 14%. The firm's tax rate is 40%. Should we accept this project? If accepted, should we buy or lease the equipment? Why is your answer correct?

4.68
 $NAL = NPV(7.8(1-40\%)) + 21.41 + 92, \{9\} \{10\} - NPV(12.5\%)(32) = +11.56 - 9.85 = 1.71$

3. (3 points) A \$1,000 par value bond, matures in 11 years, has a coupon rate of 9.5% and the coupon is paid semi-annually. Currently the bond is trading at \$957.27. What is the yield to maturity?

3
 $FV = 1000$
 $N = 11 \times 2 = 22$
 $PV = -957.27$
 $PMT = 95/2 = 47.50$
 $I = 5.077 \times 2 = 10.15\%$

4. (4 points) Modata corp is planning to raise \$10,000,000 in funds by issuing deep-discount 4% coupon, paid semi-annually \$1,000 par value bonds with a 20-year maturity. Assuming that Modata is able to issue these bonds at cost of debt of 11%, how many bonds must they issue?

$FV = 1000$
 $N = 20 \times 2 = 40$
 $PMT = 40/2 = 20$
 $I = 11/2 = 5.5$
 $PV = 438.3856$
 $\frac{10000000}{438.3856} = 22811$

5. (2 points) In London, an investor can buy a British pound for \$0.6356. In New York the £/\$ exchange rate is the same as found in London. Given this information, what is the \$/£ exchange rate in New York?

GD
 a. \$1.5733/£
 b. £0.6356/\$
 c. £1.5733/\$
~~£0.6356/£~~
 $\frac{\$0.6356}{1} = 1 \Rightarrow$ also C

6. (3 points) The UAE Dirham has appreciated by 250% against the Poland Zloty over the past year. By how much has the Zloty depreciated against the Dirham?

$250\% = \frac{x-1}{1} \Rightarrow x = 3.5$
 $\frac{1-3.5}{3.5} = -71.43\%$

7. (6 points) Assuming no transaction costs, suppose 1 Swiss Franc = .85 U.S. Dollars in Zurich, 1 U.S. Dollar = 1.2 Euros in New York, and 1 Swiss Franc = .92 Euros in Paris. If you started with \$100,000, how much profit (in U.S. Dollars) would you have after one round trip through the currencies? Show your work for partial credit.

$\frac{1SF}{\$1.85} \times \frac{\$1}{1.2E} \times \frac{.92E}{1SF} = .9019$

or
 $\frac{\$1.85}{1SF} \times \frac{1SF}{.92E} \times \frac{1.2E}{\$1} = 1.1086$

$\$110869.56$
 -100000

 10869.56

8. Using the Currency Trading Table answer the following (2 points each).

63437.50

a. (2 points) How many UK Pounds would be needed to buy \$125,000 U.S. Dollars in 6 months?

~~63337.50~~ $25000 \times .5078$ $125000 / 1.9706 = 63432.46$

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

$\frac{.8127}{.7632} \$4.979 = 1 \text{ NK}$ $\approx .2008 \text{ NK} = \1 AD

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

$\$401,624.22$

d. (3 points) Based on the spot and 3-month forward rates in the currency table, the following currencies are depreciating versus the dollar.

UK Pound

8

Use the below information to answer the below questions. 2 points for each blank (14 points).

Spot rate is \$1=119.0 yen.

The one-year forward price is \$.08604 = 1 yen $\Rightarrow 116.22 \text{ Y} = \1

The 1-year U.S. Treasury rate is 4.5%

Inflation in the United States is expected to be 2.5%.

9. A U.S. person investing \$100,000 in Japan expects to invest $\textcircled{1} 11,900,000$ Yen today

in Japanese Treasury Bonds. They would earn 2.06% on their Japanese Treasury Bonds. At

the end of one year, they would redeem their bond for ~~12,145,513.72~~ $12,145,513.72$ Yen and convert their Yen back into

$\textcircled{2} \$104,500$. During this period, the yen ~~appreciated~~ ~~depreciated~~ (2 points)

2.39% % against the \$. The 1 year forward exchange rate is \$1 = $\frac{.008604}{.0405} \text{ yen}$

≈ 116.22

$2.06 + 2.39 \approx 4.5$

22/