

**SIMON FRASER UNIVERSITY**  
**Faculty of Business Administration**

BUS 419  
MIDTERM EXAM

11-3

**Rules for Submitting Final Exam:** Answers to questions are to be typed, single spaced, of length 1 page *each* for all questions, 8"x11" standard paper, with 1" margin and type point not less than 12. (This assignment is typed in 12 point.) For questions with a) and b) parts, answer both parts. Violations will be subject to deductions. Assignment is due in class on Mon., Oct. 31, 2011

**Do All Questions; be sure to answer all parts of the question. (Total length 4 pages)**

1. a) Explain the arbitrage underlying the covered interest parity theorem discussed in Sec. 4.2 of the text. What assumptions are being made about both the execution of the arbitrage and the underlying securities?

b) From the information in the attached table of forward rates and interest rates from Mar. 4, 2010 calculate all possible interest rates implied by the covered interest parity condition.

c) What factors determine the profitability of a currency tandem?

2. a) Derive the profit profile for a spread trade with equal position sizes. What factors determine the profitability of this trade? Derive the profit profile for a tailed spread and explain how this trade is different from one with one-to-one position sizes. Does your answer depend on the commodity under consideration?

b) What factors determine the profitability of: a copper butterfly; a crude oil-gasoline tandem; and, a wheat-corn stereo. (Hint: Use the profit profile for the trades to identify the factors.)

3. a) Are forward prices unbiased predictors of future spot prices? Hint: Assuming mean-variance agents, derive an expression for the optimal speculative position size. What happens to this position as the sensitivity of the speculator to risk diminishes? Based on this, what can you conclude about the equilibrium in a market dominated by risk-neutral speculators?

b) Derive a "closed-form" expression for the risk-minimizing hedge ratio. In what sense is this ratio an optimal hedge ratio? What happens to this position as the sensitivity of the hedger to risk diminishes?

4. a) Outline appropriate questions to be addressed when undertaking a risk management program for ANY TWO of the following types of firms: a) an oil and gas producer; b) a chartered bank; c) an airline; d) a base metal producer; and, e) an investment bank. In your answer be sure to identify the appropriate questions to address in formulating a risk management philosophy for firms in that sector.

b) Explain in detail the appropriate hedging strategies for the following:

i) In April, a bank wants to "lock-in" today's interest rate on a \$20 million issue of 6-month commercial paper due to take place in three months.

ii) A Hong Kong investment dealer expects Canadian interest rates to rise and wants to protect itself against US dollar capital losses on its Canadian inventory of bank preferred stocks.

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From the Financial Post, Mar. 4, 2010

	US\$/unit	CA\$/unit
<b>Britain Spot Pound</b>	1.5101	1.5572
1 month forward	1.5098	1.5568
3 months forward	1.5092	1.5563

#### **International Interest Rates on 2010.03.04**

##### **Euro-Deposit Rates (Bid)**

US\$	1-month	0.14
	3-month	0.23
C\$	3-month	0.33

##### **London Interbank Offer Rate US\$**

US\$	1-month	0.23
	3-month	0.25