

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

BUS 419  
MIDTERM EXAM

13-1

**Rules for Submitting Final Exam:** Answers to Part I 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. There is no page constraint for Part II. Violations will be subject to deductions. Assignment is due in class on Wed., Mar. 6, 2013.

**Do all 3 Questions in Part I; be sure to answer all parts of the question.**  
**Total length for Part I is 3 pages; 10 pts. each for a) and b) parts.**

**PART I.**

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 Feb. 25, 2011, calculate all possible interest rates implied by the covered interest parity condition.

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) Derive the profit profile for a currency tandem. How does the profitability of a currency tandem differ from a one-to-one spread. Be sure to explain the process used to determine the number of contracts in each currency selected.

3. What factors determine the profitability of: a tailed gold spread; a butterfly in natural gas; a tandem in gasoline and heating oil; and, a metal stereo with copper and silver. (Hint: Use the profit profile for the trades to identify the factors and discuss the method used to determine positions sizes.)

**PART II. This part requires each individual in Group 1 to pick two airlines to compare, each member of Group 2 to pick two companies in oil and gas exploration, etc. It is OK for different people in a given group to pick the same or different companies in that sector. It is not OK for someone in Group 1 to pick companies other than two global airlines, or for Group 5 to pick companies other than shippers, etc.**

Using information available in public filings and other sources, contrast the risk management program for firms in the following industries: Group 1, global airlines; Group 2, oil and gas exploration; Group 3, agriculture; Group 4, refineries; Group 5, shippers; Group 6, mining. In your answer be sure to identify the appropriate questions to address in formulating a risk management

philosophy for firms in that sector.

Hints: The presentations on the 419 class presentations page, the text p.151-6 and examples in Part III of Commodity Risk Management plus Part II, esp. p. 87-90 provide useful illustrations of the type of material required. Key questions to address are:

- 1) Does the firm provide a statement of a risk management philosophy? If so, then provide the statement. If not, provide statements that describe the overall approach to risk management.
- 2) What are the key risks faced by the firm? Provide a ranked summary of these risks.
- 3) How is exposure to risk measured? If sensitivity analysis is used, provide the relevant statement.
- 4) What methods are used to manage risk? If the firm employs derivative contracts, provide the relevant statements. If forward contracts are embedded in sales or purchase contracts, then provide statements describing these contracts.
- 5) Are there any relevant tax and accounting implications of the risk management strategy? Provide relevant information about where the risk management items appear in the financial statements, including the notes.

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From the Financial Post, Feb. 25, 2011

|                           | US\$/unit | CA\$/unit |
|---------------------------|-----------|-----------|
| <b>Britain Spot Pound</b> | 1.6140    | 1.5860    |
| 1 month forward           | 1.6134    | 1.5866    |
| 3 months forward          | 1.6121    | 1.5879    |
| 6 months forward          | 1.6095    | 1.5894    |
| <b>Europe Spot Euro</b>   | 1.3803    | 1.3564    |
| 1 month forward           | 1.3796    | 1.3567    |
| 3 months forward          | 1.3784    | 1.3574    |
| 6 months forward          | 1.3757    | 1.3582    |
|                           |           |           |
|                           | C\$/US\$  | US\$/C\$  |
| <b>U.S. dollar</b>        | 0.9832    | 1.0171    |
| 1 month forward           | 0.9834    | 1.0169    |
| 3 months forward          | 0.9847    | 1.0155    |
| 6 months forward          | 0.9871    | 1.0131    |

#### **International Interest Rates on 2011.02.25**

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

|      |         |      |
|------|---------|------|
| US\$ | 1-month | 0.26 |
|      | 3-month | 0.31 |
|      | 6-month | 0.46 |