SIMON FRASER UNIVERSITY
Faculty of Business Administration

BUS 492 10-3
SAMPLE MIDTERM EXAM

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 within the one page restriction. Violations will be subject to deductions. Assignment is due in class on Thurs., Oct. 27, 2010.

Do any 3 of 4 Questions; be sure to answer all parts of the question. (Total length 3 pages)

1. a) Derive an expression for the cost of risk. What is the relationship between the cost of risk and the measures of absolute risk aversion and relative risk aversion? What are the risk aversion properties of: i) the quadratic utility function; ii) the logarithmic utility function; and, iii) power utility function?

b) Briefly describe the method for determining value at risk. Using an example, explain why the value at risk measure fails the sub-additive property and identify an alternative measure that is sub-additive.

2. a) "Whether the bond market moves up or down, high-convexity portfolios will always outperform low-convexity portfolios of equal duration and yield." Explain the argument supporting this statement. What factors would tend to undermine this position? What are the implications of this result for the asset/liability managers seeking to control interest rate risk for a the fixed income portfolio of a life insurance company?

b) What are the Basel rules and what role does value at risk play in these rules? Describe the recent changes to these rules that have been formalized in Basel III? Why were the Basel rules ineffective in preventing the global financial system 'meltdown' in 2008-2009?

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 agent 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? How is your answer affected if the quantity of the commodity being hedged is undetermined at the time the hedge is "put on", e.g., a wheat farmer hedging the output for a crop which has just been planted?

4. a) Outline appropriate questions to be addressed by a oil and gas producer undertaking a risk management program. In your answer be sure to identify the appropriate questions to address in formulating a risk management philosophy for firms in this 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 $10 million issue of 9-month commercial paper due to take place in three months.
ii) A US 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.
iii) In June, a metals refinery wants to "lock-in" today's price on a purchase of 100,000 lbs. of copper scrap due to take place in September.