National University of Science and Technology

Think in Other Terms

FACULTY OF COMMERCE
DEPARTMENT OF FINANCE
MSc FISCAL STUDIES
FINAL EXAMINATIONS MAY 2012
PUBLIC SECTOR RISK MANAGEMENT [CFS 5303]
TIME: 3 HOURS

INSTRUCTIONS TO CANDIDATES

1. Answer **ANY FOUR** questions
2. Show **ALL** calculations

INFORMATION TO CANDIDATES

1. This paper contains **SIX (6)** Questions.
2. This paper contains **THREE (3)** printed pages.
3. All questions carry equal marks (25 marks)
4. Candidates may write on the question paper but shall not write in the answer booklet during reading time.

QUESTION 1

(a) 'Efficient risk sharing is what much of the futures and options revolution has been all about', (Merton Miller, 1992).

Using the above statement as a general guide, discuss the impact of risk management on the economy. (13 marks)

(b) An American county purchases 1 million worth of British Pounds (£) spot from Bank A. The current spot rate is $1.5/£, for settlement in two business days. The transaction implies that, at the current rate, the bank will deliver $1.5 million in two business days in exchange for receiving £1 million.

Required

Identify and examine four series of risks that are inherent in this transaction, assuming that the position is unhedged. (12 marks)

QUESTION 2

(a) Alpha Municipality faces uncertainty about future borrowing costs because it pays a rate linked to 3-month LIBOR. It expects to borrow the following amounts during the course of the year:

March 1	$10m
June 1	$45m
September 1	$30m
December 1	$15m

The treasurer decides to hedge the exposure using Eurodollar futures traded on the Chicago Mercantile Exchange.

Required

Design a rolling hedge for Alpha Municipality. (8 marks)

(b) Suppose that on 1 April a fund manager at a local authority pension fund is uncertain about where the market is going over the next 3 months and wishes to hedge £1m of his equity portfolio which has a beta of 1.15. On 1 April, the FTSE100 index is standing at 2204.1 and the value of the June contract on the London International Financial Futures and Options Exchange (LIFFE) is 2300.

1. What action should the manager take to hedge his portfolio? (3 marks)
2. Calculate: (i) The number of contracts required to hedge this portfolio (5 marks)
   (ii) Cost of the hedge (4 marks)
   (iii) Value of portfolio being locked in (5 marks)

QUESTION 3

(a) Contingent liabilities are one of the major sources of risk to many governments. In the context of an emerging economy, discuss the major sources of contingent liabilities to central government. (9 marks)

(b) Critically analyse the techniques that sovereigns can use to value contingent liabilities. (9 marks)

(c) The net worth of the government is basically its ability to raise taxes and therefore risk management practices must be aimed at protecting this net worth. Analyse the potential shocks that can force the government to raise taxes. (7 marks)

QUESTION 4

(a) For a large number of countries, domestic debt is the main component of their total debt, meaning that interest rate risk is the key risk to manage. Examine the techniques that sovereigns can use to manage their interest rate exposure. (12 marks)

(b) A key building block in sovereign risk management is the derivation of a benchmark or target portfolio for the external public debt. Providing justification for your suggestions, design a benchmark portfolio for Zimbabwe's external public debt. (13 marks)

QUESTION 5

(a) Evaluate the use of Value-at-Risk to measure market risk in the public sector. (10 marks)

(b) 'The external debt held or guaranteed by developing countries is several times larger than their foreign currency reserves, thus exposing governments to foreign currency risk'. Analyse how sovereigns can manage their foreign currency risk. (9 marks)

(c) 'The Greek debt crisis and the rating downgrades of countries like the USA and France only serves to remind the risk management fraternity that there is nothing like a risk free investment, government bonds included'. Examine this statement. (6 marks)

QUESTION 6

(a) Discuss mitigation techniques that can be used by sovereigns in the management of credit risk. (9 marks)

(b) Examine the sources of operational risk for local governments. (9 marks)

(c) Suggest and support operational risk mitigation strategies that can be used by central governments. (7 marks)

END OF QUESTION PAPER