



SECURITIES & INVESTMENT INSTITUTE MASTERS IN WEALTH MANAGEMENT

SUMMER 2008

CHIEF EXAMINER'S REPORT - Financial Markets

Introduction

The purpose of this examination was to assess candidates' up-to-date knowledge in Financial Markets and their ability to use it for decision making by applying it to real life cases. The examination had three parts. The first part assessed the knowledge of basic definitions of commonly used concepts. The second part assessed the understanding of asset pricing models and drawing sensible conclusions from their solutions. The third part assessed the ability to use knowledge in making decisions in complex situations.

Overall the standard was good. There were some excellent scripts. Four candidates gained a distinction by responding fully to all questions and getting the full mark or very close to it. There were many good scripts. There were a handful of scripts that showed those few candidates were ill-prepared for the exam. The distribution of marks was very balanced.

The first part of the paper was short definitions and comparisons. Overall, most students responded satisfactorily to these questions. Candidates had to choose 4 out of 6 questions in this part and there was a good balance. Each question was attempted by at least one candidate, and the average marks are very close in all questions with an average of almost 80%. There are some areas of weakness in this section and that is very disappointing. Some candidates did not know the difference between money markets and capital markets and the concept of commercial property was not generally well understood.

The second part had two numerical questions and required interpretation of results. The average mark was about 70%. Asset pricing topics were generally well understood. The topic that was not well understood generally was the calculation of mean and standard deviation. This is very elementary and we should make sure that the students know how to calculate mean and standard deviations. Since the problem is general and a large number of candidates did not understand well these very basic concepts well, we should make sure that trainers are aware of this problem and address it satisfactorily next time.

The third part of the exam was a case study. The average mark in this section is about 75%. Option pricing as a topic is well understood. Students in general responded well to the case study approach. Some of them had given their responses in a format where they addressed their bosses, some had included anecdotes about their work own work experiences. A majority of candidates failed to prepare a report though, but just gave their answers to the questions. The format was not marked on this occasion. Most responses included all formal definitions that needed to be made and relevant applications to the case at hand.

In general I would like to advise the candidates to answer the specific questions asked and not to answer more than was required for each question. There were some scripts with unnecessarily long answers that were not relevant to the question. The candidates should be aware that the length of the answer is not marked but the relevant response is. The students should also be aware that in case they answer more than required from each question they risk the answer to include contradictory discussions and the candidate might even lose marks.

Section A

This section includes the following six questions among which the candidates chose only 4 to answer. The candidates are expected to identify the very basics of each concept.

1. Define Capital and Money Markets and list any two financial instruments in those two markets.

Suggested solution:

Capital markets are financial markets for raising long term capital. Money Markets are financial markets for raising short term capital. LSE, banks, gilts market, banks BoE, wholesale borrowing and lending, deposits, inter-bank, LIBOR commercial paper...

2. Define duration. If the coupon rate on a bond decrease what will be the effect on its duration?

Suggested solution:

Duration is the weighted average length of time to the receipt of a bond's coupon and redemption value. Coupon increases, duration decreases. Low coupon bonds are more sensitive to interest rates and have higher durations.

3. What is the motivation for a long straddle and what are the attributes of the position?

Suggested solution:

A straddle is a volatility trade and a speculator would take a long position if he believed that volatility would increase. The position has limited loss of the full combined premium paid which arises at the common strike price. There is no limit to profits achievable.

4. Why are long term currency swaps NOT generally used for speculative purposes?

Suggested solution: Because of the credit risks involved in exchanging principles.

5. Define the four types of commercial property. What is the pattern of commercial property prices relative to equities in general?

Suggested Solution: The four types of commercial property are retail (shops, stores and leisure facilities); office buildings; industrial factories and warehouses; and agricultural property (farmland and woodland). Over the past 30 years return on commercial property was slightly lower than that on equities.

6. Define C and S shares and discuss how you can distinguish them.

Suggested Solution: C shares (Conversion Shares) are shares floated after the original issue of ordinary shares, usually to raise additional capital. C shares are quoted separately from the ordinary shares until the capital raised through their issue is fully or substantially invested in investment trust. S shares are used to issue new shares on the market without incurring the expense of launching a new investment trust company. They form a separate investment to the original share issue and unlike C shares, the price of S shares will always be quoted separately.

Section B

This section includes two questions and the candidates need to answer one. For each question, candidates should first come up with a numerical solution and then interpret their results sensibly.

Question 7

Kjell Martin has just started working as a financial analyst at an investment bank. Her job is to value stocks. She is asked to use a risk free rate of 5% and an expected market return of 12% for the UK. Using these measures Kjell has valued a newly launched company NEWY PLC, whose beta is 1.5 and whose market price is £40 per share and calculated an intrinsic value of £53 per share for the company. Now, she has to value a more mature company OLDY PLC, a company that has a beta of 1 and a current market price of £35 She came to see you to ask you the following questions:

- a) What is the required rate of return she should use for OLDY PLC?
(5 marks)
- b) She has estimated the growth rates in dividends for OLDY PLC of 5% per year in the years thereafter. OLDY PLC has paid a dividend of £1 last year. Estimate the intrinsic value of OLDY PLC.
(10 marks)
- c) Based on these results and the data given above, should she recommend OLDY PLC or NEWY PLC for purchase? Why?
(5 marks)

Suggested Solution:

- a. $k = 5\% + 1(12\% - 5\%) = 12\%$
- b. Intrinsic value = $\frac{£1}{12\% - 5\%} = £14.3$
- c. NEWY is selling below intrinsic value. OLDY is selling above intrinsic value. NEWY offers potential for abnormal returns. OLDY offers below market risk adjusted returns. So, recommend newy for purchase.

Question 8

George Smith is an advisor for a private client. His client is planning to invest some money in the stock market by investing in an index fund. His client has the following scenarios in mind with respective probabilities and expected returns for next year:

State of Economy	Scenario	Probability	Expected Return
Boom	1	0.25	44%
Normal Growth	2	0.50	14%
Recession	3	0.25	-16%

- a. His client wants George help him with expected returns and their dispersion

for this index fund so that he can make up his mind about investing in it or not. Calculate the mean expected return and standard deviation of returns on this index fund. (5 marks)

- b. A week later his client comes to George and says “Well I think the probability of Boom has increased now with this newly elected government and is 30% but so did the probability of recession which I think is also 30%. The probability of normal growth is I think 40% now.” How do the mean expected return and standard deviation of returns change? (5 marks)
- c. Has the investment George’s client been considering become more or less risky? Explain why? (5 marks)
- d. If his client is risk averse, would he prefer the index fund before or after the change in government as in (b) above? Explain your reasoning. (5 marks)

Suggested Solution:

a. $E(r) = 0.25 \times 0.44 + 0.50 \times 0.14 - 0.25 \times 0.16 = 14\%$

$$\sigma = ([0.25 \times (44 - 14)^2] + [0.5 \times (14 - 14)^2] + [0.25 \times (-16 - 14)^2])^{1/2} = 21.21\%$$

b. $E(r) = [0.3 \times 44\%] + [0.4 \times 14\%] + [0.3 \times (-16\%)] = 14\%$

$$\sigma^2 = [0.3 \times (44 - 14)^2] + [0.4 \times (14 - 14)^2] + [0.3 \times (-16 - 14)^2] = 540$$

$$\sigma = 23.24\%$$

- c. More risky. Standard deviation is a measure of dispersion and thus a measure of risk. Standard deviation increased. That means that volatility of returns is now higher than before.
- d. The mean is unchanged, but the standard deviation has increased. The client would prefer this fund before the government change as or the same level of return he was facing a smaller risk.

Section C

This section includes a case study. The students are expected to use the knowledge they have to by applying it in a decision making context.

Question 9

You are the manager of a small optical cable firm. Your main line of business is providing internet services. Your company is based in Reading, in the UK. Your boss invites you to a meeting to discuss as she is considering expanding the business.

She thinks that there is great scope for expanding business in various cities in the UK. However, she is also sceptical about the uncertainty with reference to a worldwide recession and slowdown in this line of business.

Her former boss has told her : “You can buy an option to buy connection time from BT in two years time, rather than laying your own cable.” She is considering the idea but she has three main concerns. She shares them with you and ask three questions that need to be answered so that she can make a decision.

“First, the volatility in this business is high. The standard deviation of our revenues is about five times higher than any other business in the UK. So, in this context, is it a good idea to buy an option rather than laying the cables?”

“Second, I am also worried that two years is a long time in this business. Would it not be better to buy an option for about six months only?”

“And thirdly, considering that interest rates are increasing in the UK and I expect them to increase further, is it a good idea to buy an option rather than laying the cables ourselves?”

She wants you to prepare a report that includes a clarification of the concerns she has and answers her questions. She also wants you to make a suggestion about if she should buy the option from BT or lay the cables herself.

Required

Give an answer to each of the three questions that your boss asks above. Justify your answers. (10 marks each, total 30 marks)

Finally, advise your boss whether she should buy the option from BT or lay the cables herself and discuss the reasons for your recommendations in detail.

(10 marks)

Suggested solution:

1. The student is expected to respond by discussing the effect of volatility on option values. The higher the volatility, the higher the value of the option. This assumes everything else being kept constant. Once this argument is given the student can discuss any other assumptions that can be made and their effects

on option values. Whether these have an effect in the same direction or not should then be given explicitly. When marking the question 5 points must be given to observing that the high volatility would make the option more valuable. The remaining 5 points should be given to the rigour of the argument.

2. The student is expected to respond by discussing the effect of time to maturity on option values. Longer the time to maturity higher the value of the option. This is everything else being kept constant. Once this argument is given the student can discuss any other assumptions that can be made and their effects on option values. Whether these have an effect in the same direction or not should then be given explicitly. When marking the question 5 points must be given to observing that the longer time to maturity would make the option more valuable. The remaining 5 points should be given to the rigour of the argument
3. The student is expected to respond by discussing the effect of increases in the interest rates on option values. Higher the interest rates higher the value of the option. Increased interest rates reduce the present value of the exercise price. This is everything else being kept constant. Once this argument is given the student can discuss any other assumptions that can be made and their effects on option values. Whether these have an effect in the same direction or not should then be given explicitly. When marking the question 5 points must be given to observing that the higher interest rates would make the option more valuable. The remaining 5 points should be given to the rigour of the argument
4. Do not mark the decision itself, i.e. buy/not buy option. Whatever the decision is only mark how the student arrived at that decision. Two marks each the effect of volatility, time to maturity and interest rates on option values. 4 marks to how the student combines those three to his decision. Give full 4 marks if a decision is made otherwise do not give any marks for decision being made.