SECURITIES & INVESTMENT INSTITUTE DIPLOMA

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CHIEF EXAMINER'S REPORT- BONDS AND FIXED INTEREST MARKETS

General

A special mention should be made of the candidate who gained a distinction and the three candidates who gained Merits. These were well argued and answered papers.

The four candidates that scored between 40 and 50-marks should, with some work be more successful should they decide to retake the examination.

Sadly the three candidates who scored between 10 and 30-marks were not at all prepared for the examination and will need to start their studies again to be successful should they decide to try again.

A common theme running through the answers to calculation questions was the absence of common sense. For example one candidate thought that the weighted average yield-to-maturity on the gilt portfolio that had been constructed was greater than the yield-to-maturity of the highest yielding gilt available. Too often I found that some candidates had a notion of what they were supposed to be doing but did not make the link between theory and practice and rarely understand what they were doing. A further observation that I would make is that candidates should really familiarise themselves with basic day/year conventions and yield calculations and conversions. This comment may seem a little pedantic but, candidates do remember that if you quote a price or make an investment decision based on a wrong calculation or convention you will not get a second chance or the ability to go back and revise your price! Quite simply, it will cost you money which will come out of your profit and loss account or your fund return. In the world of fixed income a little common sense and looking at results before you commit will save much embarrassment after the event.

Well done to the 16 successful candidates. Commiserations to the four candidates who were close but not quite close enough. Specific comments are contained in the following pages.

Section A

Question 1 On the face of it a very simple question requiring delegates to calculate the clean price consideration, accrued coupon and the settlement amount on a benchmark 5-year maturity T. Note. The average answer was only 43% which was disappointingly low for such a simple question. Delegates lost marks for 2-reasons:

1. A surprising number of delegates did not know that the US Treasury Market prices are quoted in 1/32nds not decimals and assumed that a price of 99-11 was 99.11 and not 99-11/32nds or 99.34375.
2. This was a new issue benchmark and was issued on 31st March 2009 and will in future pay coupon on 30th March and 30th September. Many delegates calculated the accrued coupon from the 30th March 09 instead of (the issue date of) 31st March 2009 resulting in 15-days of accrued coupon instead of the correct number of 14-days. There was also some confusion about how ACT/ACT is calculated. Delegates got into a muddle by either not dividing the coupon rate by two when using the days in the coupon period as the denominator in the calculation or not doubling the days in the coupon period when using the full coupon in the calculation.

Question	answers	marks	max	min	ave	std dev'n	ave as %	std dev as %
1	23	3	3.00	0.00	1.28	0.84	43%	28%

Question 2 This question required delegates to be able to calculate DV01 from modified duration, the gilt price and nominal. Most were able to do this but a few gave the answer as change in the gilt price rather than DV01 in money terms. The second part of the question required delegates to be able to calculate profit from purchase and sale price. A few delegates did not realise that a price of 99.21 is actually the price per £100 nominal and therefore had an answer that was 100-times too large. The question average was 73%

Question	answers	marks	max	min	ave	std dev'n	ave as %	std dev as %
2	22	4	4.00	1.50	2.91	0.77	73%	19%

Question 3 Required the delegates to understand the significant price drivers of a convertible bond, which are the issuer stock price, credit spread and interest rates.

The question implied an environment in which the economy would recover in which case one would expect that credit spreads would narrow, equity markets would rise along with interest rates. If, however, recovery stalls equity markets are unlikely to rise and neither will interest rates.

The percentage average for this question was 56% with 3-delegates scoring 7/8 whilst 8 delegates scored 3/8 or less. From the lower scoring delegates most understood that if equity prices rise they may want to convert the bond at maturity. However, few had any comprehension that rising equity prices would increase the price of the bond (on a delta adjusted basis) prior to maturity. Even fewer delegates were aware that narrowing credit spreads would increase the price of the bond whilst rising interest rates would decrease the price of the bond.

Question	answers	marks	max	min	ave	std dev'n	ave as %	std dev as %
3	22	8	7.00	1.50	4.45	1.60	56%	20%

Question 4 **This** question required candidates to define and explain RPI, CPI, Quantitative Easing and real interest rates. A well answered question with an average score of 81%. Albeit, this question could have been answered by either an economics student or a regular reader of the financial press!

Question	answers	marks	max	min	ave	std dev'n	ave as %	std dev as %
4	23	8	8.00	2.00	6.50	1.45	81%	18%

Question 5 This question related to a listed company which will probably breach its loan covenant of interest being covered 1 ½ by profitability. The question sought responses to three separate events:

1. A cross default clause between a loan and a bond and the implications in the event of a breach of covenants – generally well answered
2. What action the Finance Director should take in preparation for a breach of covenants – where answers about contacting the lender to discuss an easing of the covenant were reasonable. However, no mention was made of contact with the LSE to avoid a false market in the company's share price.
3. Less well answered was question 5b requiring the consequences of a breach. Very few delegates discussed in any depth debt for equity swaps, bankruptcy and "pre-packs" or administration.

The average of 60% would have been higher but for the weak answers on 5b.

Question	answers	marks	max	min	ave	std dev'n	ave as %	std dev as %
5	21	4	3.50	0.00	2.38	0.84	60%	21%

Question 6 Question 6 was one of the lowest scoring questions with an average of 43% with only two of the candidates scoring 9/10. This can be attributed to the fact that the highest scores in this question could be earned by applying theory to practice. Part of the question asked "What advice would you give to the treasurer? for 4 of the 8 available marks. Whilst a number of candidates answered correctly "Convert from floating to fixed rate" few gave compelling arguments why this was such a sensible course of action to follow because:

1. The treasurer would have had to pay a higher credit spread on any replacement loan.
2. The interest cost, including credit spread on the existing converted borrowing would be less than the interest cost budgeted by the company.
3. The possibility of 3-months Euribor falling significantly below the current 1.30% is small when compared to a rise in rates in the next 18-months. Especially given that a sharp recovery in the economy would see rates increase quite quickly.

Question	answers	marks	max	min	ave	std dev'n	ave as %	std dev as %
6	22	10	9.50	1.00	4.27	2.48	43%	25%

Question 7 Question 7 was a series of six everyday calculations that are used in fixed interest and for which I would have expected a higher average than the 49% achieved. Candidates that propose to follow a career in fixed interest should know market conventions such as ACT/360, ACT/365 and ACT/ACT and yield conversion formulae without having to "think about it"!

Question	answers	marks	max	min	ave	std dev'n	ave as %	std dev as %
7	22	8	7.25	0.75	3.89	1.64	49%	21%

Section B

Question 8 **this** was the compulsory question and accounted for 25% of the available marks.

Part a) of the question required candidates to suggest a 1-year time horizon asset allocation for a Gilt Portfolio assuming that the economy starts to recover within 6-months . The portfolio was required to optimise the return over a one year time horizon in the face of expected rising interest rates. Most candidates chose investments at the short end of the curve and explained why.

Part b) of the question required candidates to calculate the weighted average return of their portfolios which most did well.

Part c) asked for ways in which the portfolio could be protected against rising interest rates. Most candidates referred to futures, swaps and options and a few suggested shortening the duration of the portfolio.

Part d) required candidates to provide reasons why an investor should choose their portfolio in preference to a tracker fund with a 5-year modified duration. Those that understood the difference between a tracker and an actively managed fund answered well. However, there was quite a bit of waffle from some of the candidates. If you are attempting to sell your fund management skills to an investor you need to be concise and assured!

With two exceptions, (candidates who scored 4 and 5/25) Question 8 was answered well as evidenced by the average score of 70%.

Question	answers	marks	max	min	Ave	std dev'n	ave as %	std dev as %
8	22	25	24.00	4.00	17.50	6.08	70%	24%

Section C

Question 9 Question 9 was a series of four questions about Bank Tier 1 Capital and was answered by 11 candidates for an average score of 75%. This question had the highest average score of 75% with the lowest standard deviation of 17% and was the second most popular choice of questions.

The questions were as follows:

a) Define Core Tier 1 Capital that a bank has and explain what it is used for. *(4 marks)*

Most candidates could explain what categories of capital represented Tier1 although a few though that debt capital could be included in this category. Few candidates explained that Tier 1 capital is used as a buffer against potential losses by the bank and is kept in highly liquid market insensitive assets in case of need.

b) What must a bank do (under the Basel I or II Capital Accord) if its Tier 1 capital falls below 4% of weighted risk assets? *(4 marks)*

The two immediate actions that I was looking for were:

a. Reduce assets to bring regulatory capital back into compliance – a few candidates suggested this
b. Increase capital via a rights issue or some other type of equity capital issue – most candidates suggested this route

c) A bank wants to improve its Tier 1 Capital. (Which type of instrument would best achieve this objective? (3 marks)

i) A 5-year maturity convertible bond *(1 mark)*
ii) A 3-year maturity mandatory convertible bond *(1 mark)*
iii) A 3-year maturity straight bond *(1 mark)*

The correct answer was ii) which I marked as 3 for a correct answer

d) What alternative methods can be used by the bank to enhance its Tier 1 Capital? *(4 marks)*

The two immediate actions that I was looking for were:

a. Issue a mandatory convertible bond – very few candidates suggested this
b. Dispose of assets – almost no candidates suggested this which was surprising because of the press given to Barclays disposal of iShares

Question	answers	marks	max	min	ave	std dev'n	ave as %	std dev as %
9	11	15	14.00	7.00	11.18	2.48	75%	17%

Question 10 Question 10 was a series of three questions about Quantitative Easing, its purposes and dangers. The question was answered by 19 candidates for an average score of 62% and a standard deviation of 21% and was the most popular choice of questions.

The questions were as follows:

The Bank of England has embarked on a policy of Quantitative Easing.

a) Describe how Quantitative Easing works. *(6 marks)*

Most candidates were aware that QE is the term given to operations by the Bank of England to expand the money supply in the face of a stagnating economy. Most also mentioned that QE was introduced once the MPC had reduced the official rate to 0.50%. Most candidates were aware that the Bank of England had a programme to purchase gilts and corporate bonds with electronically generated money but none mentioned the process used by the Bank of England. Generally a fairly well answered question

b) Describe what the Bank hopes to achieve through Quantitative Easing. *(6 marks)*

Again most candidates were conversant with the objectives of the Bank of England and the Treasury which were

a. Unfreezing the money markets
b. Making cash readily available to the banking system
c. Reducing interest rates
d. Stabilising and supporting economic activity

c) What are the dangers of Quantitative Easing? *(3 marks)*

Most candidates were able to discuss the inflationary implications of QE but few had given much thought to what happens to economic prospects and activity when the Bank of England concludes its programme of QE and starts to withdraw its liquidity support from the markets.

Given that four of the 19 candidates who attempted this question scored less than 5-marks the remaining 15-candidates had a passably good understanding of the concept of QE.

Question	answers	marks	max	min	ave	std dev'n	ave as %	std dev as %
10	19	15	14.00	2.50	9.29	3.08	62%	21%

Question 11 Question 11 was a series of three questions about counterparty credit risk and a central counterparty for the OTC derivatives market. This question is particularly topical given the Federal Reserve's insistence of the instigation of a central counterparty for the credit default swaps market and general moves in the US to reduce risk in the derivatives market following the collapse of Bear Sterns and Lehman Brothers. The question was answered by 10 candidates for an average score of 58% and a standard deviation of 21% and was the most popular choice of questions.

The questions were as follows:

The regulatory authorities in the UK, Europe and the US have insisted that the Credit Default Swap Market implements steps to have the market cleared and guaranteed by a Central Counterparty or Clearing House using an appropriate margining system.

a) What advantage does a Clearing House offer over bilateral agreements? *(5 marks)*

The significant advantages of a central counterparty are:

a. Removal of bi-lateral counterparty credit which would be replaced with a AAA counterparty
b. A margining system which is equal for all
c. A system of oversight which would allow the central counterparty to know where dangerous pressures were building up in the system and take actions to avoid a problem

b) What risks would the Clearing House run? *(5 marks)*

a. Failure of a counterparty leaving the central counterparty with an uncompleted margin call.
b. Failure, losses or withdrawal of a single player which significantly disrupts the market prices
c. Lack of capital resulting in the loss of the central counterparty's AAA rating
d. Legal challenges, operational risks and system breakdown risks

c) If you were the risk manager of the Clearing House how would you endeavour to minimise the risk to the Clearing House? *(5 marks)*

a. A robust margining system with the ability to call for intraday margins and close out positions if necessary
b. Dialogue with market participants to gauge how much risk they are taking when compared to their ability to cover potential losses
c. Negotiation of net single and market ratios of CDS to debt exposure of a single obligor
d. A robust system of dispute resolution and "circuit breaker" type solutions for non defaulted but market threatening exposure build-ups.
e. A formally agreed procedure to be applied in a situation of default
f. A formal procedure for Tri-optima type netting to reduce gross market exposure

This question was generally quite well answered although four delegates scoured less than 50%. It was also clear that most candidates knew a reasonable amount about the risk but few could suggest preventative measures.

Question	answers	marks	max	min	ave	std dev'n	ave as %	std dev as %
11	10	15	14.00	4.00	8.75	3.10	58%	21%

Question 12 Question 12 was the least favoured with 4-candidates attempting this question. Three candidates scored 10/15 for 66%, whilst the fourth candidate only wrote a couple of lines on the subject in a very half hearted effort at this question. The question required candidates to comment upon the actions that an investment grade bond fund manager should take if a portfolio holding is placed on credit watch negative.
The questions were as follows:
You are a Corporate Bond Fund Manager, managing an investment grade portfolio and you are reviewing your portfolio which contains the following corporate bond:

Issuer: BBB- rated Construction Company
Maturity: 5-year bullet
Coupon: 5% annual ACT/ACT
Yield-to-maturity: 5.81% (3.43% credit spread over 5% coupon 2014 gilt)
Clean Price: 97.80

The construction sector has been under severe pressure for the last 12-months and you suspect that the rating agencies will place the company's debt on credit watch in the near future. The credit spread on this bond has fluctuated between 3.40% and 3.50% over the last two months.

a) Discuss the risks that you run by continuing to hold this bond in your portfolio and comment upon whether you believe that the fund manager is being adequately rewarded for these risks. *(5 marks)*

In many cases construction companies have moved from mid to low-investment grade with the threat of default an increasing possibility. Whilst credit spreads have generally widened since the advent of the credit crunch it can be viewed that the construction sector are likely to be one of the worst performing sectors. It is arguable that a credit spread of 3.50% does not reflect either the potential downgrade or default risks. Three candidates agreed with this synopsis and covered most of the points.

b) If the company is placed on credit watch (negative) what are the implications for your fund which is UCITs 3 compliant? *(5 marks)*

If the fund is investment grade and UCITs 3 compliant it will not be allowed to hold a non-investment grade bond should the downgrade reduce the rating to the next possible rating of BB+ which is non-investment grade. Therefore, the fund manager would be required to sell the bonds in the event of a default. This question was fairly well answered by 3-candidates.

c) What action would you take if you were the fund manager? *(5 marks)*

Consider selling the bond in advance of any downgrade. The market usually moves prices ahead of the rating agencies and therefore the loss on a sale prior to the downgrade might be greater or less than after the downgrade. In this instance the credit spread would not appear to have widened significantly and therefore it would be worth considering taking a loss prior to the downgrade.

Question	answers	marks	max	min	ave	std dev'n	ave as %	std dev as %
12	4	15	10.00	2.00	8.00	4.00	53%	27%