



## **SECURITIES & INVESTMENT INSTITUTE DIPLOMA**

**WINTER 2008**

### **CHIEF EXAMINER'S REPORT – BONDS AND FIXED INTEREST MARKETS**

#### **General:**

I was disappointed to see a marked deterioration in the overall quality of candidates' submissions compare to last summer's exam. This resulted in a significant decline in the pass rate and reflected insufficient preparation by many candidates.

Easy marks were lost in section A: candidates must have a basic understanding of modified duration and PVBP (present value of a basis point), should understand the use of swaps and futures to increase the exposure of a fund and be able to explain the intrinsic value of convertible bonds and options. Candidates should answer the question asked: too many answers given for part (b) of question 1 were not what was sought. **READ THE QUESTION.** Question 4 was a disaster zone for almost all candidates even though it was a re-run of a question asked previously in section A; candidates should be able to determine a basic return or performance from a security over time.

The quality of answers submitted for section B was the other main cause for the lower pass rate: too many candidates ignored information given in the table which was relevant to answering the questions and no candidate was able to correctly estimate the redemption yield of a portfolio of bonds with a target modified duration (see my detailed comments on question 9).

Only a few answers to section C inspired but, in general, the quality of answers to question 12 on the credit crunch and the response of governments and authorities was reasonably good. Those candidates who chose question 13 should have read it carefully before answering.

Congratulations to all candidates who passed, your hard work and preparation has been rewarded. To those who did not succeed this time, many of you displayed a basic knowledge and understanding which, with more work and preparation will take you through if you take this exam again. Only a few candidates whose preparation was totally inadequate decided to present themselves – they know who they are and it was manifest in their poor marks. This exam is not easy and those who pass show competence and expertise for investing in Bond and Fixed Interest Markets.

My specific comments follow overleaf:

## **Section A**

**Question 1.** This first part of this economics question on recession, depression and stagflation was easy meat for most candidates and accounted for a possible three marks. The second part, which accounted for six marks, asked candidates to describe and explain how government bond yield curves may predict (my underlining) each of the above scenarios. Unfortunately too many candidates described curves which might occur in the middle of each of these scenarios. **READ THE QUESTION.**

**Question 2.** A text book question on modified duration and PVBP. Dirty prices (i.e. clean market prices plus accrued interest) should be used when calculating with these metrics. Marks were needlessly thrown away by using clean prices and incorrect accrual conventions.

**Question 3.** This question on repos was proportionately the highest scoring question in the exam. It was the best set of answers I have seen in ten years as examiner of this paper – well done.

**Question 4.** This question was a disaster area, not one candidate produced a totally correct answer and the average score was only three quarters out of six. A similar question has been run before and the calculation of performance or time weighted (rate of) return is in the syllabus. Dirty prices must be used and coupon payments are assumed to be reinvested at the market price on receipt.

**Question 5.** A text book question on using derivatives, financial futures and borrowing money using repos to increase the exposure of a fund in advance of receiving known new money. The target modified duration of the fund is relevant and the derivative position must be closed or exercised on receipt of the new cash. Note that STIR futures contracts are too short for the pension fund to obtain sufficient exposure.

**Question 6.** Answers to this text book question were a bit disappointing: the intrinsic values of options and warrants are the difference between the market price and exercise or strike price of the underlying security times the number of securities defined in the instrument. The intrinsic value of a convertible bond is the share price times the number of shares into which the bond may be converted.

**Question 7.** A standard question on the use of forward exchange contracts for a bond fund invested in overseas markets. Answers were often spoilt by being so vague that the examiner could not be convinced that candidates had a real understanding. Only a few candidates were able to complete the very simple calculation required for the forward exchange rate.

**Question 8.** A simple question on cumulative and non-cumulative preference shares and preferential creditors. Note that preference shares pay dividends and not interest.

## **Section B**

**Question 9.** The table of securities provided information that was useful for answering this question. Unfortunately few candidates used much of this data in their answers. Although historic trading bases are not always indicators of future performance, the yield spreads over risk free gilts do show how the market has viewed different securities and issuers over the preceding six months. In the real world, as well as in this question, bonds issued by different issuers do not trade on the basis of gilt yields and credit rating alone: for example utilities traditionally trade tighter than other corporate issuers with the same credit rating because they are considered to be more stable and less cyclical businesses whilst subordinated unsecured bonds carry a higher risk than (senior) unsecured issues due to their lower status and, in the event of default, lower expected recovery rate.

If a bond is trading on a wider (i.e. larger) yield spread than its historic average, it is likely to be cheaper (and vice versa) than a similar bond trading on a narrower yield spread in the absence of changes to the economic fortunes of the issuers or structural changes in how the market views these issuers. A reduction in yield is reflected in an increase in price which can be determined using the modified duration value and dirty price. Performance funds look for absolute return, sometimes relative to a benchmark. Income funds seek to pay income and, over time, maintain or increase capital; the conversion of capital into income by investing in ultra high coupon issues standing appreciably above par have no long term place in an income fund unless counterbalanced by some low coupon securities.

The modified duration of a portfolio equals the sum of the modified duration x dirty value products for each security divided by the value including accrued interest (i.e. dirty) of the portfolio. The income yield from the portfolio equals the sum of the income yield x value products divided by the value of the portfolio. Unfortunately all candidates used this income yield formula when determining the redemption yield of the portfolio. The redemption yield of a portfolio is determined by weighting each redemption yield by both value and modified duration. Thus a portfolio redemption yield equals the sum of the redemption yield x dirty value x modified duration products for each security divided by the sum of the dirty value x modified duration products for each security in the portfolio. In algebraic terms this is:

$$\text{Portfolio Redemption Yield} = \frac{\sum(\text{GRY} \times \text{MD} \times \text{Dirty Value})}{\sum(\text{MD} \times \text{Dirty Value})}$$

Cash could be considered as having a modified duration of zero for the purposes of this question.

## **Section C**

**Question 10.** Some answers to this question were good but most were only just acceptable. There are many reasons why investors have ceased to demand acceptable levels of covenant protection for investment corporate grade bonds. These include increased demand for corporate fixed income due to low levels of government bond issuance, the power of and competition between investment banks, hedge funds becoming the initial short term investors rather than natural long term institutions and substitute bank finance available too easily on lax terms. Some investors having a naïve trust in credit ratings whilst others were over-confident in their credit analysis process and skills (i.e. some thought they would sell before problems arise and that markets would remain liquid and deep). Diversification, which in many cases proved to be illusory, and portfolio construction were frequently considered to be more important than proper analyses of the securities purchased. The definitions of credit derivatives (typically senior unsecured with no restrictive covenants) have also played a part. The search for yield led to acceptability for corporate hybrid issues and bank capital instruments. It is worth noting that the high yield or junk bond market still demanded proper covenant protection during this period.

Sufficient covenants for unsecured investment grade bonds from all but the largest and most creditworthy issuers should ideally include: guarantor subsidiaries, consolidated total and priority borrowing limits relevant to type of business, interest covers (total and prior), a proper definition of prior. EBITDA tests are not appropriate for long term new debt for capital intensive businesses. Cross default provisions are essential, rolling disposal of asset limits and change in nature of business (sale or acquisition) clauses should ideally be present. For larger issuers (e.g. creditworthy multinationals): a meaningful negative pledge for all indebtedness and not just capital market indebtedness can be acceptable, guarantor subsidiaries are to be encouraged, cross default clauses are essential, change in nature of business and disposal of asset limits are to be welcomed. In the absence of borrowing limits, returns of capital to shareholders will remain a problem; a “no adverse change in credit rating” test will ameliorate the risks from such actions.

**Question 11.** Candidates should have an overview of how major bond markets have performed over the last year. The corporate bond sector has underperformed domestic government bonds for all major economies over the last year. Underperformance of the portfolio could stem from being over-exposed to underperforming sectors or issuers, i.e. not being in line with the benchmark. Statutory capital instruments and other subordinated issues from the banking sector have been particularly bad performers, exposure to Lehmans or AIG or issuers which have gone into administration or chapter 11 would have been painful.

Some reasons for the failure of the risk management system are: over-dependence on historic correlations between securities and sectors, not carrying sufficiently long histories of how sectors trade against each other and governments, inaccurate assessment of diversification, over-reliance on published credit ratings (especially for securities guaranteed by most of the mono-line credit insurers). Also most risk systems probably do not cope properly with lack of liquidity. These items have to be addressed if the risk management system is to be improved but, most important of all, there must not be a total reliance on computer generated numbers if the risk framework is to be improved, i.e. human intervention and common sense checks are essential.

**Question 12.** Answers to this question on the actions by the Eurozone, the United States and the United Kingdom to address their banking systems and recession were generally good. Candidates should note, however, the allocation of marks in questions; part (a) accounted for five marks whilst part (b) was assigned ten marks. In general, answers to part (a) were much longer than necessary and focussed too much on historic events rather than the consequences of not recapitalising the banking system. Answers to part (b) were good when describing the actions taken but weaker when discussing “how these approaches are likely to affect interest rates, yields, exchange rates and other major economic indicators”. The question was looking for discussion of future movements in these indicators and consequences of these actions as well as a description of where yields were at the time of the exam.

**Question 13.** An estimate of how long each of the life tenants might live was essential for addressing this question. Note that life tenants are not entitled to distributions of capital. When this exam was taken gilt yields were lower than many equity yields so further investment in gilts would not be the best way to restore income, indeed divesting from some of the gilt holdings would be appropriate unless they were deemed necessary for risk reduction purposes. The yields from corporate bonds were at then record highs so careful investment in higher rated corporate bonds with appropriate maturities was appropriate. A minimum credit rating of AA- or Aa3 would probably be too demanding so a threshold of A / A2 or A+ / A1 would be acceptable together with one’s own rigorous credit analyses. Issues from defensive sectors, which yield less than the indices, would be acceptable. Given that the trust had to be managed to ensure there was scope for an increase in its capital value, total divestment from equities was inappropriate. Investment in index linked gilts was also unacceptable as their income yields are so low.