



DIPLOMA SUMMER 2008 EXAMINATION

BONDS & FIXED INTEREST MARKETS

DATE OF EXAM	Thursday 26 June 2008
3 HOURS	10.00 am – 1.00 pm
RUBRIC	SECTION A - <i>ALL</i> questions in this section are to be answered SECTION B – <i>ALL</i> questions in this section are to be answered SECTION C – <i>TWO</i> questions in this section are to be answered

Candidates are reminded that no marks will be awarded for illegible work

NOTES TO CANDIDATES

1. Please insert your Candidate Number on the cover of your Answer Book. *Do not insert your name.*
2. Show *all* workings in your Answer Book.
3. Candidates may attempt the sections in any order. Please indicate clearly in your Answer Book which questions you are answering.
4. Please insert in the box provided on the cover of your Answer Book the numbers of the questions you have attempted in the order in which they appear in the Answer Book.
5. You may use the calculator provided or one approved by the Securities & Investment Institute.
6. You must hand your Answer Book to an invigilator before you leave the Examination Hall. *Failure to do so will result in disqualification.*
7. The decision of the panel is final and no correspondence will be entered into concerning the grade awarded.
8. Once submitted, the examination scripts become the property of the Securities & Investment Institute and will not be returned to candidates.

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PLEASE TURN OVER WHEN INSTRUCTED

SECTION A**TOTAL 45 MARKS****Answer ALL questions in this section**

- 1 Calculate the following:
 - a) The price of an eight year zero coupon bond yielding 5% pa on an annual basis. *(1 mark)*
 - b) The price of an eight year zero coupon bond yielding 5% pa on a semi-annual basis. *(1 mark)*
 - c) The price of an eight year zero coupon bond yielding 5.1% pa on a semi-annual basis. *(1 mark)*
 - d) An approximate value for the modified duration of the bond in (b) using your results from above. *(1 mark)*
 - e) The correct value of modified duration for the bond in (b). *(1 mark)*
 - f) The present value of the income stream from an eight year par bond yielding 5% which pays interest semi-annually. *(1½ marks)*
 - g) The value for the duration of the bond in (f) if the duration of the coupon stream is 3.988 years. *(1½ marks)*
 - h) If the yield on the bond in (f) rises, explain whether its modified duration will increase or decrease. *(1 mark)*
 - i) What does your answer to (h) illustrate? *(1 mark)*

- 2 For a portfolio of corporate bonds:
 - a) Explain how, for a limited period, you can hedge your yield exposure using financial futures. *(2 marks)*
 - b) What risks are involved in such a strategy? *(2 marks)*
 - c) Suggest two other types of derivative you could use and explain why they might provide better hedges. *(2 marks)*

- 3 A bank has a portfolio of higher yielding bonds that it wishes to dispose of through a CBO structure (ie, by issuing collateralised bond obligations).
- Briefly describe what CBOs are and explain the type of securities which will be issued. *(2 marks)*
 - Outline and explain the relative credit quality of the CBO securities which may be issued and how this will affect the terms on which the securities are offered. *(2 marks)*
 - Explain how the distribution of voting powers between bondholders maintains the hierarchy of bonds issued in a CBO structure. *(2 marks)*
 - Identify, giving reasons, the securities which may not provide the returns expected from their initial redemption yields. *(2 marks)*
- 4 Describe the following derivatives and explain how they differ:
- An interest rate swap *(2 marks)*
 - A currency swap *(2 marks)*
 - Explain and illustrate how each of these swaps can be used to lower the cost of funding for a borrower or increase the return to an investor. *(2 marks)*
- 5 A floating rate note denominated in euros with a coupon of Euribor plus 8bps pays interest quarterly and is due to be redeemed in a year's time. Euribor rates are as follows:

3 month	6 month	9 month	1 year
4.125%	4.375%	4.5%	4.75%

Assuming that coupon rates are reset from interest payment dates and a year consists of four equal quarters, calculate the following:

- 3 month Euribor for the second quarter implied by the interbank yield curve.
- 3 month Euribor for the third quarter implied by the interbank yield curve.
- A forecast amount for the final coupon on a €100,000 note.
- The price you would expect the FRN to have at the beginning of its last interest period if its trading basis has moved to LIBOR plus 20bps.

(6 marks)

6 Define par, spot and forward yield curves and explain the relationships between them. Illustrate your answer by sketching the relative positions of these three curves. *(4 marks)*

7 Explain the following terms which may be found in the terms and conditions of corporate and structured bond issues:

a) Negative pledge

b) Pari passu

c) Unsubordinated and unsecured

d) Principal subsidiary

e) Trustee

(5 marks)

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PROCEED TO SECTION B OVERLEAF

Answer ALL questions in this section

- 8 Recent economic data and commentary on a developed country indicate that its economy is slowing sharply due to the current global credit crisis causing banks to rein back their lending while consumer confidence continues to fall. There are concerns about the financial strength of certain parts of the banking sector. Inflationary pressure, whilst still subdued according to the indices, is expected to accelerate due to high oil, energy and hard commodity prices together with increasing food costs. Unemployment is low and the corporate sector, which has rebuilt its balance sheet over the last few years, has no significant capacity constraints. Nevertheless, corporate profitability is beginning to suffer and the public sector borrowing requirement is rising rapidly due to a large shortfall in tax revenues from those budgeted. Outline, with reasons, your views of how yields and credit spreads may change over the next year. *(9 marks)*
- 9 You are the domestic bond fund manager for a gross pension fund in a country experiencing a similar economic scenario to that described in question 8 above. For each of the pairs of securities listed below, state which bond you would prefer and justify your answers. (All bonds are denominated in the domestic currency of the pension fund and yields are annual effective redemption yields).
- a) A 5% domestic Government bond due 2018 and priced at 102.02 to yield 4.80% or a 5% domestic Government bond due 2028 and priced at 102.53 to yield 4.86%. Both bonds are rated AAA.
- b) A 4.875% bank unsecured loan note due 2011 rated AA and priced at 96.47 to yield 6.20% or an AA rated bank unsecured floating rate notes due 2015 where interest is paid quarterly at 3 month LIBOR plus 10bps. The coupon has just been reset to 5.95% and the FRN issue is priced at 98.915.
- c) A 4.5% AAA rated Government bond issue due 2013 priced at 99.82 to yield 4.59% or a 5.50% electricity utility bond due 2013 which is rated BBB and priced at 95.36 to yield 6.62%.
- d) A 5% domestic Government bond due 2028 and priced at 102.53 to yield 4.86% or a 4.875% World Bank bond due 2028 and priced at 97.70 to yield 5.06%. Both issues are rated AAA.
- e) A 20 year 6% A rated bond from a domestic and international food retailer and priced at 94.70 to yield 6.48% or a 6% BBB rated bond with a similar maturity from a major domestic high street multiple retailer which is priced at 80.36 to yield 8.00%.
- f) A 7.5% subordinated unsecured bond due 2028 from a major international reinsurance company priced at 103.56 to yield 7.16% or a 5.875% senior

unsecured bond due 2028 from a major international life insurance company priced at 92.90 to yield 6.52%. Both bonds are rated A.

- g) A 10.5% bond due 2014 from an EU sovereign state rated AA and priced at 128.10 to yield 4.97% or a 5.5% bond due 2014 from an A rated EU sovereign state which is priced at 97.78 to yield 5.95%.
- h) A ten year 6.5% unsecured bond rated BBB from a large commercial property company priced at 87.60 to yield 8.38% or a ten year 5% secured bond rated AA from a large commercial property company priced at 90.33 to yield 6.42%.

(Total 16 marks)

SECTION C

TOTAL 30 MARKS

Answer TWO questions in this section. Each question carries 15 marks

- 10 A private client has enquired about investing in convertible bonds. He has significant sums invested in a balanced portfolio which includes both bonds and equities. Outline how you would explain to this client the merits and risks of investing in convertibles and how you would analyse a selection of convertibles for his consideration.
- 11 Describe the investment processes and techniques you would introduce to the management of a fixed income fund which is about to invest in overseas non-government bonds.
- 12 Compare and contrast the performances of the US, UK and Eurozone money and government bond markets over the last twelve months and describe how the differing approaches of the Federal Reserve, the Bank of England, the European Central Bank and financial regulators have contributed to the behaviour of these markets.
- 13 Over the last few years many banks have raised substantial amounts of regulatory capital by issuing long dated securities into domestic and international debt capital markets. They have issued capital instruments such as subordinated and junior subordinated bonds as well as preference shares. These instruments are issued to meet capital adequacy requirements demanded by the regulators and act as a buffer to protect the solvency of the financial sector.
- a) Describe some of the terms and conditions of these issues that are necessary for them to qualify as regulatory capital. *(5 marks)*
- b) Discuss whether these securities are appropriate assets for a range of bond market investors including private clients, closed pension funds, unit trusts, long term insurance funds and bank treasuries. Your answer should consider the advantages and drawbacks of these securities compared to issues from the non-financial corporate sector. *(10 marks)*