CHARTERED INSTITUTE FOR SECURITIES & INVESTMENT

DIPLOMA WINTER 2010 EXAMINATION

BONDS AND FIXED INTEREST MARKETS

DATE OF EXAM	Wednesday 8 December 2010
3 HOURS	10.00 am – 1.00 pm
RUBRIC	SECTION A - ***ALL*** questions in this section are to be answered
	SECTION B – ***ALL*** questions in this section are to be answered
	SECTION C – ***TWO*** 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 Answer Book cover. *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 Chartered Institute for Securities & Investment.
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. Once submitted, the examination scripts become the property of the Chartered Institute for Securities & Investment and will not be returned to candidates.

PLEASE TURN OVER WHEN INSTRUCTED

SECTION A TOTAL 45 MARKS

Answer ALL questions in this section

1 A fund manager purchased £10m nominal of the 2 ¼% 7 March 2014 gilt at a clean price of 102.65 for settlement on 8 September 2010. He sold the same position for settlement on 29 September 2010 at a clean price of 102.93. There are 181 days in the coupon period. What total money return has the fund manager made on this transaction? Execute your calculations to six decimal places. *(3 marks)*

2 You expect the 2 year versus 10 year UK Gilt Curve to steepen by 25 basis points in the next three months. You want a DV01 exposure of £10,000 to each of these gilts so that you are broadly neutral to a parallel upwards or downwards change in the curve. The gilts have the following properties:

Maturity	Dirty Price	Modified Duration
2 years	106.28	1.42
10 years	113.26	7.72

a) What trades do you execute to be broadly neutral to a parallel change in the Gilt Curve? Include the nominal amount for each trade. *(2 marks)*

b) What is the net amount of cash that is either borrowed from or lent to the repo market as a result of your trade? *(2 marks)*

3 Most debt that is issued by companies that borrow frequently in the bond and loan markets contain cross default clauses.

a) Describe how a cross default clause works. *(2 marks)*

b) A company has three types of debt outstanding:

Senior unsecured 5-year maturity bonds
A 3-year maturity syndicated bank loan which is secured by a fixed charge
An evergreen bank overdraft facility which is secured by a floating charge.

Each of the three debts has a cross default clause.

The company is unable to pay a coupon and a scheduled partial repayment which is due on the syndicated loan and its bank declines to advance further money to the company. Explain the sequence of events that will now take place. *(4 marks)*

4 What do the following US leading economic indicators measure?

a) Nonfarm payroll
b) Jobless claims
c) PMI
d) Capacity utilisation *(2 marks)*

5 Unilever has issued a five year maturity AUD 500m 5.50% fixed coupon bond. The proceeds have been swapped into floating rate Euros at 3-month Euribor – 4bp by using a matched coupon cross currency swap with exchange of principal. Unilever has a domestic market target cost of funds of 3-month Euribor.

State whether the following statements are true and briefly justify your answers:

a) By issuing this bond Unilever has created a five year AUD/EUR foreign exchange risk
b) By issuing this bond Unilever has raised Euros more cheaply than they could in their domestic market but have FX risk on the coupon payments
c) By issuing this bond Unilever have AUD available to fund the expansion of their Australian operations
d) By issuing this bond Unilever have issued a synthetic Euro FRN at a cheaper cost of funds than they could have achieved in their domestic market *(4 marks)*

6 Calculate the fair price of the December Gilt Futures contract from the following information:

Settlement Date for Gilt Purchase:	24 September 2010
Futures Delivery Dates:	Between 1 and 31 December 2010 (98 days)
Cheapest to Deliver:	4 ¾% 7 March 2020 priced at 114.99 (dirty price)
Conversion Factor of CTD	.9120496
Gilt Repo Rate:	0.81% ACT/365

(5 marks)

7 You are a corporate bond fund manager and your fund owns USD25m nominal of the BAE Systems plc 5.20% coupon 15 August 2015 bond priced at 110.95 giving a yield to maturity of 2.79%. Explain how you might use each of the following derivatives to change the risk profile of the bond in your portfolio and indicate its financial effect:

a) An interest rate swap with the same maturity as the bond which is quoted at 1.62% fixed versus 3-month US Dollar LIBOR. *(2 marks)*

b) A five year maturity credit default swap referencing BAE Systems plc which is quoted at 1.32% per annum. *(2 marks)*

c) A three month maturity 110.95 put option which is quoted at a cost of 1.70% flat. *(2 marks)*

8 You are a Gilt Edged Market Maker. A pension fund manager calls you and ask for the price at which she can purchase the coupon strip from the 4 ¾% 7 March 2020. The gilt is trading at 115.50 to 115.55 giving a yield to maturity of 2.6910% to 2.6850% semi-annual ACT/ACT.

You have no inventory position in this gilt and will need to execute your trades at the market prices. Assume that the trade date is 7 March 2010 and that the yield curve is flat.

a) At what price do you offer the coupon strip to the fund manager assuming that you want to take a 1 basis point spread on the price at which you can hedge yourself? *(2 marks)*

b) The fund manager buys £50m of coupon strip. What trades do you execute in the market to hedge the trade? *(2 marks)*

9 You are advising two companies on debt issues they are both about to undertake. The details of the companies and their proposed issues are as follows:

AA+ Rated Company		**BBB- Rated Company**	
Can issue a 5-year maturity fixed coupon bond at a yield to maturity of 2.05% p.a.	Wants floating rate funds linked to 3-month LIBOR which it could raise in the market at 3-month LIBOR + 5 bp	Can negotiate a 5-year maturity bank loan at 3-month LIBOR + 1.25%	Wants fixed rate funds which it could raise in the market at 3.65% p.a.

The five year maturity interest rate swap is trading at 2.22% to 2.25% versus 3-month LIBOR.

a) What package of transactions (borrowing plus swap) do you recommend that each company undertakes? *(2 marks)*

b) What funding rate is achieved by:
i) AA+ Rated Company?
ii) BBB- Rated Company? *(3 marks)*

10 You are the fund manager of the fixed interest portfolio of a pension fund who expects Gilt Market yields to rise over the next three months. You want to reduce the duration of the portfolio using derivatives.

a) Describe three methods involving derivatives that you might use to reduce the duration of the portfolio. Explain the trades that you would execute. *(3 marks)*

b) For each of your answers list one possible advantage and one possible disadvantage when comparing the adjusted portfolio to the original unadjusted portfolio. *(3 marks)*

PLEASE MOVE ON TO SECTION B OVERLEAF

SECTION B TOTAL 25 MARKS

Answer ALL questions in this section

11 A life insurance company has completed the purchase of a “zombie life company” and is integrating its future liabilities into its own portfolio. The life company needs to ensure that the liabilities of the company that it has acquired are matched with gilt assets and comply with its own portfolio criteria and policies, which include reducing reinvestment risk by as much as possible.

The liabilities of the acquired portfolio are shown in Table 1 together with the gilts that are acceptable to hedge the portfolio. The gilts can be purchased in their straight, zero coupon or coupon strip forms.

a) What is the weighted Modified Duration of the liabilities? *(3 marks)*

b) Describe the strategy that you would use to match the liabilities as closely as possible. *(4 marks)*

c) How much money do you need to set aside today to meet the future liabilities? *(3 marks)*

d) Give nominal amounts of the assets that you purchase and their maturity values and label them A to E as shown on the table. *(3 marks)*

e) What impact on the hedged portfolio would an increase in longevity assumptions have? *(2 marks)*

Table 1.

Gilts					Today is:	30/09/2010		Liabilities		
Gilt Coupon	**Maturity**	**D Mod**	**YTM**	**Zero Coupon Discount Factor**	**Dirty Price of Gilt**	**Nominal Amount of Gilt Purchased**	**Liability Maturity Date**	**Amount of Liability**	**D Mod**	**DV01**
2.75%	22/01/2015	4.0476	1.61%	0.933441	104.75	**A**				
							30/09/2015	£50,000,000.00	4.78596	£23,929.79
4.00%	07/09/2016	5.31206	2.06%	0.885422	110.79	**B**				
							30/09/2016	£50,000,000.00	6.44295	£32,214.76
8.75%	25/08/2017	5.51256	2.25%	0.857116	141.45	**C**				
							30/09/2017	£15,000,000.00	7.25464	£10,881.96
5.00%	07/03/2018	6.30711	2.50%	0.831929	116.93	**D**				
							30/09/2019	£23,000,000.00	13.2819	£30,548.40
4.75%	07/03/2020	7.71682	2.94%	0.759939	114.87	**E**				
							Total Liabilities	£138,000,000.00		

12 A UCITs III compliant Euro denominated Corporate Bond Fund has investments in US Dollar denominated Eurobonds. The fund manager wants to retain the bonds but is concerned that over the next three months the US Dollar will weaken against the Euro resulting in mark to market losses and subsequent reduction in the net asset value (NAV) of the fund. The fund assets under management are €200m of which 25% is invested in US Dollar denominated assets. Spot EUR/USD is trading at 1.34.

The fund manager has three hedging choices:

1. Execute an outright forward sale of US Dollars, purchase of Euros. The three month maturity EUR/USD swap is quoted -4 to -3 (-.0004 to- .0003 in exchange rate terms) in the market.

2. Buy a three month maturity Euro call/US Dollar put with an exercise price of 1.34 at a cost of 2.50% of the Euro amount (.0335 in exchange rate terms)

3. Collar the FX risk by buying a three month maturity Euro call/US Dollar put with an exercise price of 1.40 and selling a three month maturity Euro put/US Dollar call with an exercise price of 1.2775 for a zero premium.

a) The fund manager is evaluating the three strategies. Describe each of the strategy profiles for up-front cost, potential profit and potential loss. *(8 marks)*

b) Which strategy will provide the best return if EUR/USD is at a rate of 1.40 in three months' time? *(1 mark)*

c) Which strategy will provide the best return if EUR/USD is at a rate of 1.20 in three months' time? *(1 mark)*

SECTION C — TOTAL 30 MARKS

Answer TWO of the FOUR questions in this section.

Each question carries 15 marks.

13 You are a Private Wealth Manager at a UK Private Bank. Your largest customer, a high net worth individual, has asked for a meeting to discuss the asset allocation of his portfolio which is currently:

40% Equities 15% Gilts 10% Sterling Corporate Bonds 15% Commodities
10% Alternative Investments 10% Cash

Specifically, your customer wants your advice on whether he should switch from equities into a Sterling denominated bond fund which has the following properties:

Distribution Yield	4.06%
Fund Currency	GBP
Fund size as of 31/08/2010	£514.72 million
Fund Launch Date	18/04/2005
Category	Sterling Corporate Bond
IMA Sector	£ Strategic Bond
Charges	Initial 3.5% Annual Management 1.00%
Fund Benchmark	ML Sterling Large Cap GBP (100)

The fund is invested in Government Bonds (18%), Corporate Bonds (72%) and cash (10%), has a Modified Duration of 4.5 years and a weighted average credit rating of BBB.
The customer is considering selling half of the equity allocation to make the investment in the bond fund. The customer profile shows that he is forty five years of age, does not require income from his investments, has a two year time horizon and has a moderate risk appetite.

a) Discuss the advantages and disadvantages of investing in this fund paying particular attention to the impact that either a double dip recession or an economic recovery would have on the fund price.

b) What advice do you give to your customer?

14 Tesco plc, the international retailer, has issued £196m of 1.982% coupon March 2036 maturity bonds whose coupon and redemption amount are linked to the UK Retail Price Index.

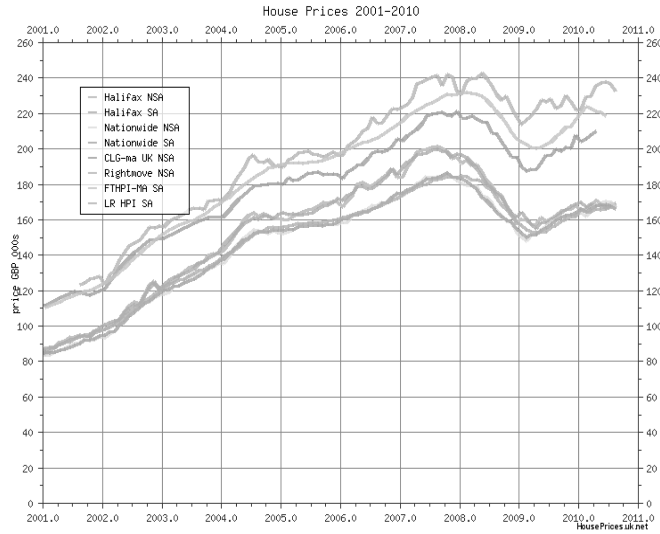
a) Discuss, with your reasons, whether the trend of non-government entities issuing index-linked securities is a genuinely useful development to the fixed income market or just another case of “financial engineering” for the sake of it.

b) Issuers of such index-linked securities are exposed to the future rises in the rate of the UK Retail Price Index.
   i) Describe the factors that might motivate companies to issue these securities.

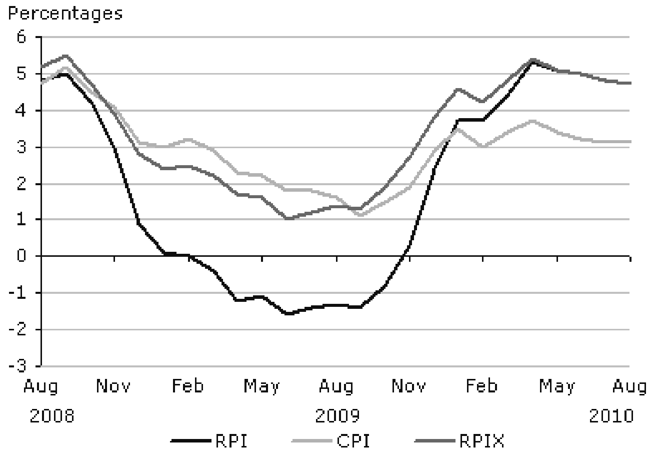
   ii) How might these companies mitigate the risk of a rise in the UK Retail Price Index?

15 You are a member of the Bank of England Monetary Policy Committee and you are attending the monthly rate setting meeting. The background notes to the meeting show the following trends:

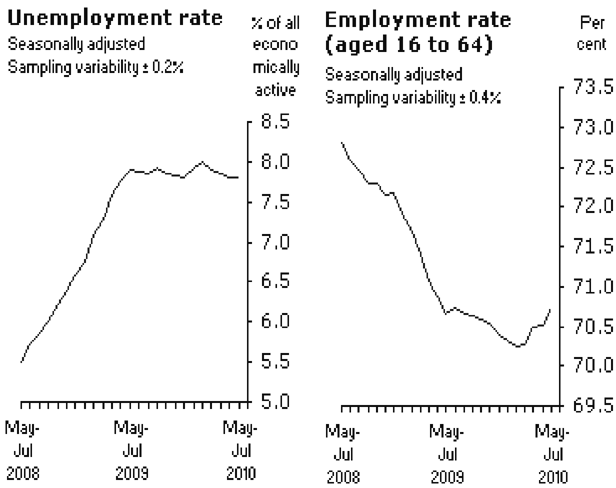
House Prices



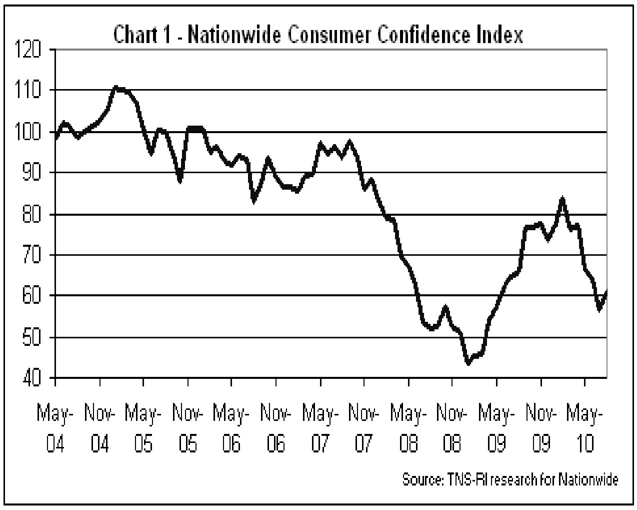
Inflation



Employment



Consumer Confidence



Additional Information:

1. UK Government Public Sector budget cuts of between 15% and 25% have now been agreed with spending ministries and have started to be implemented. The impact has yet to appear in the official statistics.
2. VAT increases from 17.50% to 20% take effect from 1st January 2011.
3. In July 2010 the Chinese Central Bank increased reserve requirements for domestic banks in an attempt to slow growth in the Domestic Economy. Growth has slowed from 10.2% to 8.50%. The authorities have set a lower YOY growth target of 7.50% for the next five years.

Discuss, with your reasons, whether you are more likely to vote to reduce, maintain or increase official interest rates and/or embark on a second round of Quantitative Easing. What other factors, both domestic and international, would you take into consideration?

16 Discuss the implications for the US and Global Economies and the International Capital Markets if the credit rating agencies were to consider downgrading US Treasury Debt from its current AAA rating.