

# AF4

## Advanced Diploma in Financial Planning

### Unit AF4 – Investment planning

April 2011 examination

#### SPECIAL NOTICES

All questions in this paper are based on English law and practice applicable in the tax year 2010/2011, unless stated otherwise in the question, and should be answered accordingly.

Assume all individuals are domiciled, resident and ordinarily resident in the UK unless stated otherwise.

Candidates should answer based on the legislative position immediately BEFORE the 2011 budget.

### Instructions

- Three hours are allowed for this paper.
- **Do not begin writing until the invigilator instructs you to.**
- Read the instructions on page 3 carefully before answering any questions.
- Provide the information requested on the answer book and form B.
- You are allowed to write on the inside pages of this question paper, but you must **NOT** write your name, candidate number, PIN or any other identification anywhere on this question paper.
- The answer book and this question paper must **both be handed in personally by you** to the invigilator before you leave the examination room. **Failure to comply with this regulation will result in your paper not being marked and you may be prevented from entering this examination in the future.**



# Unit AF4 – Investment planning

## Instructions to candidates

### Read the instructions below before answering any questions

- **Three hours** are allowed for this paper which carries a total of 160 marks as follows:
  - Section A: 80 marks
  - Section B: 80 marks
- You are advised to spend approximately 90 minutes on Section A and 90 minutes on Section B.
- You are strongly advised to attempt **all** questions to gain maximum possible marks. The number of marks allocated to each question is given next to the question and you should spend your time in accordance with that allocation.
- Read carefully all questions and information provided before starting to answer. Your answer will be marked strictly in accordance with the question set.
- You may find it helpful in some places to make rough notes in the answer booklet. If you do this, you should cross through these notes before you hand in the booklet.
- It is important to show all steps in a calculation, even if you have used a calculator.
- If you bring a calculator into the examination room, it must be a silent battery or solar-powered non-programmable calculator. The use of electronic equipment capable of being programmed to hold alphabetic or numerical data and/or formulae is prohibited. You may use a financial or scientific calculator, provided it meets these requirements.
- Tax tables are provided at the back of this question paper.
- Answer each question on a new page and leave six lines blank after each question part.

**Subject to providing sufficient detail you are advised to be as brief and concise as possible, using note format and short sentences on separate lines wherever possible.**

## SECTION A

**This question is compulsory and carries 80 marks.**

### Question 1

Professor Graham Lawley is married with two adult children and is a higher-rate taxpayer. He has recently returned to the UK from Australia after 15 years in medical consultancy. He is seeking your advice on a number of investment areas.

Graham has an existing portfolio of UK authorised collective investments as shown in Table 1 below.

**Table 1 – Existing Portfolio (over past 12 months)**

Asset class	Portfolio Weighting %	Portfolio Performance %	APCIMS Income Benchmark %	Benchmark Performance %
UK Equities	40	9.40	42.5	10.05
International Equities	15	11.15	12.5	9.10
Bonds	25	6.85	35	11.50
Cash	7.5	2.20	5	2.35
Commercial Property	5	-4.90	2.5	-3.20
Hedge Funds	7.5	5.45	2.5	6.80
Total	100	-	100	-
1 Year Performance	-	7.47	-	9.65

Graham also has two Absolute Return Funds in his portfolio which are listed in the Investment Management Association Absolute Return sector. Graham is unsure which fund he should retain and would like to know how these funds have performed against their sector average, allowing for risk.

The current rate on 91 day UK Treasury Bills is 1% per annum.

The two funds are shown in Table 2 below.

**Table 2 – Absolute Return Funds (over past 12 months)**

Fund	Information Ratio	Volatility	Beta	Fund Return %	Sector Average Return %
Bluestone	0.16	3.20	0.63	5.65	5.00
Old City	0.37	2.35	0.12	4.85	5.00

Graham is looking to purchase shares in a company from the energy sector and has narrowed down the choice to two, PB Oils plc and Neder Oils plc, and has asked for your opinion on which company's shares to purchase.

You have analysed the accounts of each company as shown in Table 3 below.

**Table 3 – Energy Sector Shares**

Company	Profits Available To Ordinary Shareholders 2009-2010 £	Projected Earnings Per Share 2010-2011 pence	Number of Shares Issued	Current Share Price pence	Debt £
PB Oils plc	86,400,000	8.36	1,059,382,170	376	240,000,000
Neder Oils plc	31,600,000	6.96	485,000,000	36	42,000,000

Graham has recently sold his home in Australia and has A\$750,000 (Australian Dollars) on instant access deposit in a Sydney bank earning interest at a rate of 5% per annum. The best deposit rate in the UK is 4%. Graham has read in the financial press that inflation in Australia over the next year is expected to be 5% compared to 3% in the UK. The current exchange rate is A\$1.75 to £1 (Pound Sterling).

## Questions

- (a) (i) Calculate, **showing all your workings**, the percentage performance of Graham's portfolio based upon the asset allocation of the portfolio as if it had performed in line with the benchmark. (7)
- (ii) Calculate, **showing all your workings**, the effect of stock selection on Graham's portfolio relative to The Association of Private Client Investment Managers and Stockbrokers (APCIMS) Income Index benchmark portfolio, using the benchmark's asset allocation. (7)
- (iii) Identify whether Graham's portfolio outperformed or underperformed APCIMS Income Index benchmark portfolio, and state the factors which contributed most to the performance of the portfolio against the benchmark. (5)
- (b) Graham has requested risk/return analysis of the Absolute Return Funds that he holds.
- (i) Calculate, **showing all your workings**, the Sharpe ratio for Bluestone and Old City Absolute Return Funds. (6)
- (ii) Calculate, **showing all your workings**, the alpha for Bluestone Absolute Return Fund. (8)
- (iii) Recommend, giving your reasons, which of Graham's Absolute Return Funds he should retain based on your results in parts (b)(i) and (b)(ii) above and information from Table 2 on page 4. *Assume Old City has an alpha of 3.37.* (8)
- (c) (i) Calculate, **showing all your workings**, the historic earnings per share for the tax year 2009/2010 for both PB Oils plc and Neder Oils plc. (6)
- (ii) Calculate, **showing all your workings**, the projected earnings growth of PB Oils plc based on your calculations in (c)(i) above and information from Table 3 on page 4. (3)
- (iii) Calculate, **showing all your workings**, the historic price earnings ratio of PB Oils plc and Neder Oils plc. (4)
- (iv) Identify, giving your reasons, which of PB Oils plc and Neder Oils plc is more likely to be selected by a value investor, based on your calculations in (c)(iii) above. (2)
- (d) (i) Calculate, **showing all your workings**, the price earnings to growth (PEG) ratio for PB Oils plc. (3)
- (ii) If Neder Oils plc PEG ratio is 0.82, state, giving your reasons, which of the stocks you would recommend purchasing using the PEG ratio. (5)
- (iii) Identify **two** benefits of PEG ratio as a stock selection tool. (2)

Questions continue over the page

- (e) (i) Explain briefly what is meant by the term real exchange rate. (2)
- (ii) Calculate, **showing all your workings**, the projected exchange rate in one year's time, allowing only for inflation, between the Australian Dollar and Pound Sterling. (4)
- (iii) Calculate, **showing all your workings**, the gross value of the deposit before taxation and costs, assuming the projected exchange rate calculated in (e)(ii) above. (3)
- (iv) Calculate, **showing all your workings**, the gross value of the deposit before taxation and costs, assuming the deposit is converted into Pounds Sterling now and then held for one year. (3)
- (v) Based on your calculations above, recommend whether Graham should transfer his deposit to the UK or retain it in Australia. (2)

**Total marks available for this question: 80**

**Section B questions can be found on pages 8 - 11**

## SECTION B

**Both questions in this section are compulsory and carry an overall total of 80 marks.**

### Question 2

Desmond, aged 62, is a cautious investor and retired three years ago following the sale of his electronics company. Desmond did not make any pension provision and receives an income from the investments made from the proceeds of the sale of the business.

One of the gilts in his portfolio has recently matured. Desmond is keen to use the proceeds to purchase another gilt edged stock and has sought your advice. You have narrowed down the possibilities to two gilts, Treasury 3% 2016 and Treasury 4.5% 2021. They have exactly 5 and 10 years to maturity respectively. Desmond intends to hold the stock purchased until it matures. Details of the gilts are shown in Table 1 below.

**Table 1 – Gilts Information**

<b>Gilt Edged Stock</b>	<b>Clean Price £</b>	<b>Macaulay Duration Years</b>
<b>Treasury 3% 2016</b>	102	4.6
<b>Treasury 4.5% 2021</b>	125	8.4

Desmond has recently been widowed and a lump sum payment of £500,000 is due from a life assurance policy on his late wife's life. Desmond wishes to temporarily invest this amount pending a decision on a longer term strategy for the money. He has been offered a short term deposit with Southern Bank with a one year fixed rate bond of 2.35% gross per annum and wants to know whether this would be a better option than 91 day Treasury Bills.

## Questions

- (a) (i) Calculate, **showing all your workings**, the running yield for each of the Treasury 3% 2016 and Treasury 4.5% 2021 gilts. (4)
- (ii) Calculate, **showing all your workings**, the redemption yield for the Treasury 3% 2016. (6)
- (iii) The Treasury 4.5% 2021 has a redemption yield of 1.6%.  
State, giving your reasons, which of the gilts you would recommend to Desmond using your answer in (a)(ii) above for the Treasury 3% 2016 and information from Table 1. (5)
- (b) (i) State what is measured by the Macaulay Duration of a gilt and what this allows you to establish. (4)
- (ii) List the factors that are required to compute the Macaulay Duration of a gilt. (5)
- (c) Explain to Desmond why a gilt with a longer maturity date is likely to have a higher yield than a short term gilt, assuming a normal yield curve currently exists. (6)
- (d) (i) If Desmond purchases £500,000 of 91 day Treasury Bill stock at a price of £99.40, calculate, **showing all your workings**, the annual equivalent rate he would receive. (4)
- (ii) State, giving your reasons, which of the Southern Bank or the Treasury Bills is likely to be most appropriate for Desmond. (6)

**Total marks available for this question: 40**

**Questions continue over the page**

### Question 3

Petra, a higher-rate taxpayer, is a new client of your firm. She inherited a commercial property portfolio from her father five years ago and she also has a UK equity portfolio, recently valued at £780,000, which is managed by a private bank on an advisory basis. Additionally, she has cash holdings of £400,000.

Petra is concerned about the volatility she has seen in equity markets and is keen to protect her UK equity portfolio against falls in the market. Her private bank has suggested utilising Hedge Funds, Absolute Return Funds and derivatives. Petra is keen to discuss the costs and benefits of each.

The FTSE 100 index is currently at 5,300 and she is considering purchasing a FTSE 100 June 5,200 Put Option.

Details of the two funds that have been suggested to Petra by her private bank are shown in Table 1 below.

**Table 1 – Fund Information**

<b>Fund</b>	<b>Initial Charge</b>	<b>Annual Management Charge (Applied at the End of Each Year)</b>	<b>Performance Fee (Applied at the End of Each Year)</b>	<b>Performance Fee Threshold</b>
	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>
<b>Delta Hedge</b>	0	2.25	25	5
<b>Gamma Absolute</b>	5	1.25	0	0

Petra's existing property portfolio is detailed in Table 2 below.

**Table 2 – Commercial Property Information (as at 1 April 2011)**

<b>Value</b>	<b>Borrowings</b>	<b>Gross Rental Income (per annum)</b>	<b>Borrowing Costs (per annum)</b>
<b>£</b>	<b>£</b>	<b>£</b>	<b>£</b>
1,200,000	500,000	98,000	35,000

Petra is considering investing the £400,000 she has available in further commercial property. She is happy to consider Real Estate Investment Trusts (REITS) as an alternative to direct property purchase.

## Questions

- (a) (i) State the conditions that the REIT must satisfy in order to remain exempt from Corporation Tax. (5)
- (ii) Explain briefly why the net asset value of a REIT may not be reflected in its share price. (3)
- (b) If both the Delta Fund and Gamma Fund achieve a 10% gross per annum rate of return, calculate, **showing all your workings**, the monetary return after charges, in one year's time, assuming an investment of £100,000. (10)
- (c) (i) Explain briefly the effect that purchasing a Put Option on the FTSE 100 index will have on Petra's portfolio if the FTSE 100 index falls to 4,700 at the exercise date. (5)
- (ii) As an alternative to the Put Option, Petra could write Call Options.  
Explain briefly how Call Options may potentially benefit her portfolio. (4)
- (d) (i) Calculate, **showing all your workings**, the yield, net of interest, on Petra's equity in her commercial property portfolio. (4)
- (ii) State **three** advantages and **three** disadvantages of holding direct commercial property compared to a REIT. (6)
- (iii) If Petra decides to invest in a REIT, describe briefly the tax treatment of the property income that she receives. (3)

**Total marks available for this question: 40**

**The tax tables can be found on pages 13 - 17**

# INCOME TAX

RATES OF TAX	2009/2010	2010/2011
Starting rate for savings*	10%	10%
Basic rate	20%	20%
Higher rate	40%	40%
Additional rate	N/A	50%
Starting-rate limit	£2,440*	£2,440*
Threshold of taxable income above which higher rate applies	£37,400	£37,400
Threshold of taxable income above which additional rate applies	N/A	£150,000

\*restricted to savings income only and not available if taxable non-savings income exceeds starting rate band.

## MAIN PERSONAL RELIEFS

Income limit for Personal Allowance §	N/A	£100,000
Personal Allowance (basic) §	£6,475	£6,475
Personal Allowance (age 65-74) §	£9,490	£9,490
Personal Allowance (aged 75 and over) §	£9,640	£9,640
Married/civil partners (minimum) at 10% †	£2,670	£2,670
Married/civil partners (age 75 and over) at 10%	£6,965	£6,965
Income limit for age-related allowances	£22,900	£22,900
Blind person's allowance	£1,890	£1,890
Enterprise Investment Scheme relief limit at 20%	£500,000	£500,000
Venture Capital Trust relief limit at 30%	£200,000	£200,000

§ the Personal Allowance reduces by £1 for every £2 of income above the income limit irrespective of age from 2010/2011.

† where at least one spouse/civil partner was born before 6 April 1935.

Child Tax Credit (CTC)		
- family element	£545	£545
- family element baby addition	£545	£545
CTC usually reduced by 6.67% of joint income over	£50,000	£50,000

## NATIONAL INSURANCE CONTRIBUTIONS

Class 1 Employee	Weekly	Monthly	Yearly
Lower Earnings Limit (LEL)	£97	£421	£5,044
Primary threshold	£110	£477	£5,715
Upper Earnings Limit (UEL)	£844	£3,656	£43,875
Upper Accruals Point	£770	£3,337	£40,040

Total earnings £ per week	CLASS 1 EMPLOYEE CONTRIBUTIONS	
	Contracted-in rate	Contracted-out rate
Up to 110.00*	Nil	Nil
110.01 – 770.00	11%	9.4%
770.01 – 844.00	11%	11%
Above 844.00	1%	1%

Total earnings £ per week	CLASS 1 EMPLOYER CONTRIBUTIONS		
	Contracted-in rate	Contracted-out rate	
		<i>Final salary</i>	<i>Money purchase</i>
Below 110.00**	Nil	Nil	Nil
110.01 – 770.00	12.8%	9.1%	11.4%
770.01 – 844.00	12.8%	12.8%	12.8%
Excess over 844.00	12.8%	12.8%	12.8%

\* This is the primary threshold below which no NI contributions are payable. However, the lower earnings limit is £97 per week. This £97 to £110 band is a zero rate band introduced in order to protect lower earners' rights to contributory State benefits e.g. Basic State Pension.

\*\* Secondary earnings threshold.

<b>Class 2 (self-employed)</b>	Flat rate per week £2.40 where earnings exceed £5,075 per annum.
<b>Class 3 (voluntary)</b>	Flat rate per week £12.05
<b>Class 4 (self-employed)</b>	8% on profits between £5,715 - £43,875 plus 1% on profits above £43,875

## PENSIONS

TAX YEAR	LIFETIME ALLOWANCE	ANNUAL ALLOWANCE
2006/2007	£1,500,000	£215,000
2007/2008	£1,600,000	£225,000
2008/2009	£1,650,000	£235,000
2009/2010	£1,750,000	£245,000
2010/2011	£1,800,000	£255,000

### NOTIONAL EARNINGS CAP

£123,600 – (For schemes that require post-1989 benefits to be still subject to a cap).

### ANNUAL ALLOWANCE CHARGE

40% member's tax charge on the amount of total pension input in excess of the annual allowance.

### LIFETIME ALLOWANCE CHARGE

55% of excess over lifetime allowance if taken as a lump sum.

25% of excess over lifetime allowance if taken in the form of income, which is subsequently taxed under PAYE.

# INHERITANCE TAX

RATES OF TAX ON DEATH	2009/2010	2010/2011
Transfers made after 5 April 2010		
- Up to £325,000	Nil	Nil
- Excess over £325,000	40%	40%
- Lifetime transfers to and from certain trusts	20%	20%

MAIN EXEMPTIONS					
Transfers to					
- UK-domiciled spouse/civil partner	No limit	No limit			
- non-UK-domiciled spouse/civil partner (from UK domiciled spouse)	£55,000	£55,000			
- UK-registered charities	No limit	No limit			
Lifetime transfers					
- annual exemption per donor	£3,000	£3,000			
- small gifts to same person	£250	£250			
Wedding/civil partnership gifts by					
- parent	£5,000	£5,000			
- grandparent/party to marriage/civil partnership	£2,500	£2,500			
- other person	£1,000	£1,000			
100% relief: businesses, unlisted/AIM companies, certain farmland/building					
50% relief: certain other business assets					
Reduced tax charge on gifts within 7 years of death:					
- Years before death	0-3	3-4	4-5	5-6	6-7
- Inheritance Tax payable	100%	80%	60%	40%	20%

## CAR BENEFIT FOR EMPLOYEES

The charge for company car benefits is based on the carbon dioxide (CO<sub>2</sub>) emissions. There is no reduction for high business mileage users.

### For 2010/2011:

The percentage charge is 15% of the car's list price for CO<sub>2</sub> emissions at or below the qualifying level of 130g/km.

The base percentage charge of 15% increases in 1% steps for every additional full 5g/km over the 130g/km threshold, up to a maximum of 35% of the car's list price.

A lower percentage charge of 10% of the car's list price applies for emissions at or below 120g/km and 5% for emissions at or below 75g/km.

If price of car exceeds £80,000 then its price for tax purposes will be fixed at £80,000.

There is an additional 3% supplement for diesel cars not meeting Euro IV emission standards or registered after 31 December 2005. However, the maximum charge remains 35% of the car's list price.

**Car fuel** The benefit is calculated as the CO<sub>2</sub> emissions % relevant to the car and that % applied to a set figure (£18,000 for 2010/2011) e.g. car emission 160g/km = 21% on car benefit scale. 21% of £18,000 = £3,780.

1. **Accessories** are, in most cases, included in the list price on which the benefit is calculated.
2. **List price** is reduced for capital contributions made by the employee up to £5,000.
3. **Car benefit** is reduced by the amount of employee's contributions towards running costs.
4. **Fuel scale** is reduced only if the employee makes good **all** the fuel used for private journeys.
5. **All car and fuel benefits** are subject to employers National Insurance Contributions (Class 1A) of 12.8%.

## PRIVATE VEHICLES USED FOR WORK

2010/2011 Rates

### Cars

On the first 10,000 business miles in tax year 40p per mile  
 Each business mile above 10,000 business miles 25p per mile

### Motor Cycles

24p per mile

### Bicycles

20p per mile

## MAIN CAPITAL AND OTHER ALLOWANCES

2010/2011

Plant & machinery 100% annual investment allowance (first year)	£100,000
Plant & machinery (reducing balance) per annum	20%
Patent rights & know-how (reducing balance) per annum	25%
Certain long-life assets, integral features of buildings (reducing balance) per annum	10%
Industrial & agricultural buildings (straight line)	1%
Energy & water-efficient equipment	100%
Zero emission goods vehicles (new)	100%
Qualifying flat conversions, business premises & renovations	100%

### Motor cars: Expenditure on or after 01/04/09 (Corporation Tax) or 06/04/09 (Income Tax)

CO <sub>2</sub> emissions of g/km:	110 or less *	111-160	161 or more
Capital allowance:	100%	20%	10%
	first year	reducing balance	reducing balance

\* If new

Research & Development: Capital expenditure	100%
Revenue expenditure: Small/medium companies:	175%
Large companies:	130%

## MAIN SOCIAL SECURITY BENEFITS

		2009/2010	2010/2011
		£	£
Child Benefit	first child	20.00	20.30
	subsequent children	13.20	13.40
Incapacity Benefit	short-term lower rate*	67.75	68.95
	short-term higher rate*	80.15	81.60
	long-term rate	89.80	91.40
Attendance Allowance	lower rate	47.10	47.80
	higher rate	70.35	71.40
Retirement Pension	single	95.25	97.65
	married	152.30	156.15
Pension Credit	single person standard minimum guarantee	130.00	132.60
	married couple standard minimum guarantee	198.45	202.40
	maximum savings ignored in calculating income	6,000.00	10,000.00
Bereavement Benefit (lump sum)		2,000.00	2,000.00
Widowed Parent's allowance		95.25	97.65
Jobseekers Allowance		64.30	65.45

\* under State Pension Age

## CAPITAL GAINS TAX

### RATES OF TAX

Chargeable gains, less allowable losses, are charged to tax as follows from 23 June 2010:

- for individuals who are non-taxpayers or basic-rate taxpayers, the rate chargeable is 18%.
- for individuals who are higher-rate taxpayers or additional-rate taxpayers, the rate chargeable is 28%.
- for trustees of trusts and personal representatives the rate chargeable is 28%.
- Entrepreneurs' Relief reduces the rate to 10% on qualifying assets subject to a lifetime limit of £5,000,000.

### ANNUAL EXEMPTION

- The annual exemption is £10,100.
- Most trusts have an annual exemption of £5,050.

### CHATELS EXEMPTION

- Gains on chattels are exempt if proceeds do not exceed £6,000 per item.

## CORPORATION TAX

	2009/2010	2010/2011
Full rate	28%	28%
Small companies rate	21%	21%
Small companies limit	£300,000	£300,000
Effective marginal rate	29.75%	29.75%
Upper marginal limit	£1,500,000	£1,500,000

## VALUE ADDED TAX

Standard rate to 03/01/11	17.5%
Standard rate from 04/01/11	20%
Annual Registration limit	£70,000

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