CHARTERED INSTITUTE FOR SECURITIES & INVESTMENT

CISI DIPLOMA - SUMMER 2010

CHIEF EXAMINER'S REPORT

INVESTMENT ANALYSIS

GENERAL COMMENTS:

In general, the performance of the candidates sitting the Investment Analysis paper was somewhat disappointing, with a minority of candidates appearing entirely unprepared for the paper. The majority of the candidates attempted all of the questions, though the poorly performing minority omitted a number of questions from sections A and B, rendering it less likely that they would achieve a pass. Useful financial market applied and theoretical knowledge was demonstrated by candidates, particularly in the essay questions. Areas in which candidates should direct greater attention include: the accounting and investment concept of working capital; an objective analysis of the suitability of the board of directors of a company; the provision of credible assumptions when forecasting an income statement; structured and credible investment advice for the case study company; the computation of multiple growth rate dividend valuations models; the meaning of the Tobin tax; and the computation of different types of share index.

SPECIFIC COMMENTS:

SECTION A:

Performance in section A varied significantly across the questions and candidates, though the majority of candidates showed evidence of advanced preparation in their approach to the analysis of a case study company. However, a minority of candidates appeared entirely unprepared for a detailed solution to the case study problems. Most candidates were able to describe the main activities of the case study company well in part (a). The vast majority of candidates analysed well the operating profit margin of the company by its business segments in part (b). In part (c), performance was very poor as not all candidates could demonstrate a clear understanding of the concept of working capital. Performance in part (d) was reasonable, though not all candidates could recall the definition of capital employed in the ratio in part (i). Part (e), concerning an explanation of the company's business model, was reasonably well attempted, though many candidates failed to identify the threats and opportunities facing the company. Part (f) was in general poorly attempted as many candidates were unable to provide an objective and structured analysis of the suitability of the board of directors. The forecast income statement and related assumptions were reasonably well attempted in part (g), though only a minority of candidates provided robust investment advice on the company in part (h).

SECTION B:

Whilst candidate performance in section B varied across the questions, the section was in general not well attempted. Question 2 concerning reverse stock splits was very well attempted, as was the CAPM discussion and calculation in Question 3. The equity valuation in Question 4 was poorly attempted as many candidates failed properly to represent the timing of the cash flows in their calculations. Question 5 on the link between tax revenues and tax rates was well attempted. The call options computation in Question 6 was very well attempted in general, as was the discussion of unanticipated inflation in Question 7. Very few candidates were able to discuss the term Tobin tax in Question 8, confusing it with Tobin's Q. In Question 9, the computation of the three index types was disappointing.

SECTION C:

Performance in section C was in general good, though candidates did not always demonstrate arguments grounded in core finance concepts or illustrate with real-world examples. Question 10 on private equity was reasonably well attempted, though the need for it in developed markets was not always clearly explained. Question 11 which compared and contrasted fundamental and technical analyses was in general well attempted. The discussion of the top-down versus the bottom-up approach in Question 12 was also well attempted by most candidates, though higher marks would have been awarded for less descriptive and more analytical answers. Candidates tackled the topic of short-selling well in Question 13. Question 14 on the European sovereign debt crisis was very well attempted, with most candidates who selected it demonstrating a detailed understanding of current events surrounding this phenomenon.

SECTION A **TOTAL 40 marks**

Q1.

(a) Briefly describe the main activities of Dechra Pharmaceuticals plc in the year ending 30 June 2010.

(2 marks)

Dechra Pharmaceuticals plc is an international pharmaceuticals business which focuses on the veterinary market, and in particular on pets (companion animals). It has two divisions/business segments: Pharmaceuticals and Services. Its Pharmaceuticals division includes Dechra Veterinary Products (DVP), which markets and develops branded pharmaceuticals and specialist pet foods to the veterinary profession across in the US and ten European countries, and Dales Pharmaceuticals (Dales), which is a manufacturer of both veterinary and human pharmaceuticals for DVP and other customers. Its Services division includes National Veterinary Services (NVS) which is the UK market leader in veterinary pharmaceuticals and services, Nationwide Laboratories (NWL), an independent commercial veterinary laboratory, and Cambridge Specialist Laboratory Services (CSLS), which operates a referral specialist veterinary immunoassay laboratory.

(b) Calculate and comment upon the operating profit margin of Dechra Pharmaceuticals plc for the years ending 30 June 2008 and 30 June 2009 by each of its major business activities.

(4 marks)

	2008			2009		
	Revenue £'000	Profit £'000	Margin (%)	Revenue £'000	Profit £'000	Margin (%)
Pharmaceuticals	54,302	5,730	*10.6%*	85,190	8,073	*9.5%*
Services	259,363	10,657	*4.1%*	276,141	12,298	*4.5%*
Unallocated	(9,294)	(2,316)	*24.9%*	(11,367)	(2,703)	*23.8%*
Total	*304,371*	*14,071*	*4.6%*	*349,964*	*17,668*	*5.0%*

The sales of the Pharmaceuticals division have increased markedly in the year ending 2009, due to the acquisition of the VetXX business, the launch of two major new products, increased penetration of own-branded pharmaceuticals, increased specific diet sales, new manufacturing partnerships, and a focus on growth opportunities. However, the operating profit margin has fallen somewhat, despite the introduction of lean manufacturing techniques, improvements in working practices and efficiency drives, due to an increase in product development expenditure. The sales of the Services division have increased marginally in the year ending 2009, due to a larger total market, increased volumes and prices, and high growth in agricultural products. The operating profit margin for this division has increased due increased online ordering and improved operating efficiencies.

(c) Analyse and comment upon the working capital position of Dechra Pharmaceuticals plc over the years ending 30 June 2008 and 30 June 2009.

(5 marks)

The working capital (current assets less current liabilities) of Dechra Pharmaceuticals plc has increased from £15.461m to £20.346m from 2008 to 2009. The main reason for this in terms of current assets is the significant increase in cash and cash equivalents over the period, though this is partly offset by a decrease in inventories. The increase in cash and near cash resulted from strong cash generation (improved cash conversion) during the period, and perhaps some precautionary or even opportunistic holdings for the purposes of future acquisitions. The decrease in inventories was the result of a conscious decision to improve inventory days by means of more centralised processes, resulting in a reduction in both raw materials and finished goods. In terms of current liabilities, Dechra has reduced its current borrowings and its trade and other payables whilst it has seen its current tax liabilities increase. The company seeks to reduce its net borrowings and this is evident both in terms of long and short-term debt, but in terms of short-term debt bank loans and overdrafts have been reduced. Trade and other payables have been reduced marginally, though this has partly been offset by an increase in the derivative financial instruments balance. Current tax liabilities increased due to the larger scale of operation and the commensurate significant increase in pre-tax profits. In sum, this represents a significant investment by the company in working capital, which is probably broadly consistent with the marked increase in scale and revenues.

Investment analysts will often focus on inventories plus trade receivables minus trade payables as a more insightful measure of net working capital (2009: £17.548m; 2008: £17.284m), and in so doing will analyse such measures as inventory days (which have fallen from 47 to 42 days), receivables days (which have fallen from 57 to 50 days), payables days (which have fallen from 91 to 82 days), and net working capital as a percentage of sales (2009: 5.01% ; 2008: 5.67%).

(d) Calculate and comment upon the following ratios for Dechra Pharmaceuticals plc for the years 2008 and 2009 and briefly comment upon them:

(i) Sales to capital employed;

(2 marks)

Sales to capital employed (SCE) is expressed as follows:

$$SCE = \frac{\text{Sales}}{\text{Share capital + Reserves + Long-Term Loans}}$$

2008: SCE = 304,371 / (71,799 + 27,998) = 3.050
2009: SCE = 349,964 / (80,686 + 23,081) = 3.373

Figures shown in £'000; denominator excludes deferred tax liabilities. The denominator could also be computed to include short-term loans and provisions (not shown here).

This ratio measures how effectively managers employ the long-term capital of the firm to produce sales. The higher it is, the more effectively such capital is being employed, though a very high ratio might signify that the firm does not have enough capital to support its current level of sales. In the case of Dechra Pharmaceuticals plc, it has managed to improve its efficiency significantly by producing increased sales from its capital base. The capital base here can be viewed in terms of its physical asset base or the claims against the firm. The improvement has come about largely as a result of the increased scale of activity i.e. revenue expansion rather than an adjustment to the capital base.

(ii) Operating cash flow to current liabilities.

(2 marks)

Operating cash flow to maturing obligations (OCFMO) is expressed as follows:

$$\text{OCFMO} = \frac{\text{Operating cash flows}}{\text{Current liabilities}}$$

2008: OCFMO = 8,562 / 86,638 = 0.0988
2009: OCFMO = 20,334 / 85,722 = 0.2372

Figures shown in £'000.

This ratio measures the ability of the business to meet its maturing obligations i.e. the extent to which the firm can pay commitments falling due within the next financial period from its operating cash flows. Ultimately this is a good measure as it considers cash flows in the numerator rather than some balance sheet measure of liquid resources. The higher this ratio, the healthier the liquidity position of the firm. In the case of Dechra Pharmaceuticals plc, it has managed to dramatically improve its 'coverage' of maturing obligations, that is, it demonstrates greater ability in paying its obligations or liabilities as they fall due. This improved ability has come about through both the marginal reduction in such liabilities, but more importantly through a strong improvement in operating cash flows. However, it still cannot cover its maturing obligations from operating cash flows alone.

(e) Briefly explain within the context of the business model, the key strengths and weaknesses of Dechra Pharmaceuticals plc and the opportunities and threats which it faces.

(4 marks)

The key strengths of the company include: it has an expert workforce; it has enjoyed strong growth in its pet products markets in the last decade, with owners increasingly wanting to extend the life of their pets; the company has a strong new product pipeline and a clear strategy for new product development; it acts as a full–range stockist of veterinary pharmaceuticals products which provides it with a distinctive competence; and it now has a very efficient distribution network, particular within the UK.

The key weaknesses of the company include: the expiry of key product patents as time progresses; and reduced overall market growth due to recession and economic slowdown in its key markets.

The key opportunities which the company may take advantage of include: increased selling through production and marketing partners internationally; increased sales of specialist pet diets to tackle specific pet ailments and diseases; product development of human treatments for the pet market; and a further reduction in working capital investment.

The key threats which the company faces include: a future strengthening of Sterling against the Euro in certain key markets, which could lead to reduced sales; relatively high labour turnover could lead to a reduction in operational efficiency; and the risks as identified in the Business Review which are outside the locus of control of the firm e.g. the failure of a key customer or supplier.

(f) Discuss the suitability of the board of directors, and how this might be improved to the benefit of shareholders.

(3 marks)

Discussion here will focus on the skills, experience, and contribution of the company's directors individually, and as a team. As answers are likely to vary significantly, no answer guideline is presented here.

(g) Prepare forecasts of profit before and after tax and earnings per share for Dechra Pharmaceuticals plc for the year ended 30 June 2010. Explain the basis of your computation and of any assumptions that you have made.

(10 marks)

	2008 £'000	2009 £'000	Forecast 2010 £'000
Revenue by activity			
Pharmaceuticals	54,302	85,190	***109,419***
Services	259,363	276,141	***294,004***
Unallocated	(9,294)	(11,367)	***(13,902)***
Total	*304,371*	*349,964*	***389,521***
Operating profit			
Pharmaceuticals	5,730	8,073	***9,848***
Services	10,657	12,298	***13,818***
Unallocated	(2,316)	(2,703)	***(3,156)***
Total	*14,071*	*17,668*	***20,510***
Margins (%) by activity			
Pharmaceuticals	*10.6%*	*9.5%*	***9.0%***
Services	*4.1%*	*4.5%*	***4.7%***
Unallocated	*24.9%*	*23.8%*	***22.7%***
Total	*4.6%*	*5.0%*	***5.3%***

Justification of forecasts for turnover and profit margins should be carefully presented by candidates and based upon recent trends in these variables and future potential drivers. The figures presented here are for the purposes of illustration only and do not constitute a 'model answer'.

Estimates of charges on operating profits for the year ending 2010 are based on the following:

Finance income:

2009: Finance income increased due mainly to foreign exchange gains: excluding foreign exchange gains = £2,183,000

2010: Non-exchange-gain finance income = £2,183,000 x growth trend of cash and equivalents of 20.7% = £3,395,000

Finance expense:

2009: Finance expense of £4,776,000 on total debt of (£23,081,000+£19,263,000) = 11.3%

2010: Total debt decreases further to, say, (£19,028,000+£17,488,000), the finance expense is: 11.3% x £36,516,000 = £4,126,000

Taxation:

2009: Taxation of £4,800,000 on PBT of £16,103,000 = 29.8%

2010: £19,779,000 x 29.8% = £5,894,000

	2009 £'000	2010 £'000
Operating profit	17,668	20,510
Finance income	3,211	3,395
Finance expense	(4,776)	(4,126)
Profit before taxation	16,103	19,779
Income tax expense	(4,800)	(5,894)
Profit for the year	11,303	13,885

Basic earnings per ordinary share = £13,885,000 / 65,431,902 = 21.2p

This compares favourably with a basic earnings per ordinary share of 17.27p for 2009. The weighted number of shares is computed on the 2009 undiluted weighted average shares.

(h) Advise on the desirability of investment in the shares of Dechra Pharmaceuticals plc at the price shown on page 1 of the Information Pack. Explain the reasons behind the advice given.

(8 marks)

Discussion here may vary, though should provide: a summary of sales and profit forecasts linked to a discussion of current and potential future performance in key markets; a brief summary analysis of key fundamentals, including free cash flow generation; and finally, a recommendation based upon consideration of selected company and industry current and forecast financial variables such as EPS and P/E.

SECTION B **Total 30 marks**

2. Explain what is meant by a *reverse stock split* and in what circumstances a company might be tempted to engage in one.

(2 marks)

A reverse stock split is the reduction in a company's outstanding shares. Whilst the market value of the entire firm remains the same, the value of an individual share increases, as does the firm's EPS. For example, a 1-for-2 reverse stock split would lead to half as many shares but with each priced at double their pre-split price. There is no economic impact on the company which engages in a reverse stock split, and it is sometimes associated with companies that wish their shares to look more valuable than they really are, or even to avoid being delisted.

3. (a) Give the formula for the Capital Asset Pricing Model (CAPM) and explain its meaning.

(1 mark)

The Capital Asset Pricing Model, developed by Sharpe (1964) and Lintner (1965), states that in a competitive market the expected risk premium varies in direct proportion to beta. To put this another way, all investments will be found on the security market line. The expression for the CAPM states that the expected risk premium on a share is equal to its beta multiplied by the risk premium on the market:

i.e. $r - r_f = \beta (r_m - r_f)$

Where:
r = return on share
r_f = risk-free rate of return
β = the share's beta
r_m = the market return

This expression is often rearranged as follows:

$r = r_f + \beta (r_m - r_f)$

(b) Using the Capital Asset Pricing Model (CAPM) formula, calculate the missing values *(r_f, β and r_m)* in the table below:

	Expected return on share	Risk-free rate	Equity beta	Expected return on the market portfolio
Share A	8.8%	r_f	1.2	8.0%
Share B	13.5%	7.0%	1.3	r_m
Share C	6.0%	4.0%	β	8.0%

(2 marks)

Share A
$r = r_f + \beta (r_m - r_f)$
$8.8 = r_f + 1.2 (8 - r_f)$
$8.8 = r_f + 9.6 - 1.2 r_f$
$r_f = 4\%$

Share B
$r = r_f + \beta (r_m - r_f)$
$13.5 = 7 + 1.3 (r_m - 7)$
$r_m = 15.6/1.3$
$r_m = 12\%$

Share C
$r = r_f + \beta (r_m - r_f)$
$6 = 4 + \beta (8 - 4)$
$6 - 4 = 4\beta$
$\beta = 0.5$

4. Supergrow plc is experiencing rapid growth. Indeed, analysts expect both its earnings and dividends to grow at the following rates: 15 per cent over the next two years; 12 per cent in the third year; and 4 per cent thereafter. The last dividend paid by Supergrow plc was £1.50 and the required rate of return on the share is 8.5 per cent.

(a) Calculate the present value of the share, assuming it has just gone ex-dividend.
(3 marks)

During the high growth period:
$D_1 = 1.50 (1.15) = 1.7250$
$D_2 = 1.7250 (1.15) = 1.98375$
$D_3 = 1.98375 (1.12) = 2.2218$

Present value of dividends $= 1.7250/(1.085) + 1.98375/(1.085^2) + 2.2218/(1.085^3)$
$= 1.5899 + 1.6851 + 1.7395$
$= £5.0145$

Present value of share at end of year 3 $= \dfrac{D_4}{r - g} + \dfrac{D_3(1+g)}{r - g}$

$= \dfrac{2.2218(1.04)}{(0.085 - 0.04)} = £51.3483$

$51.3483 / (1.085^3) = £40.2010$

Share price = £40.2010 + £5.0145 = £45.2155 = £45.22

(b) Calculate the value of the share in one year's time, all other things being equal.

(2 marks)

Present value of dividends in one year's time
$= 1.98375/(1.085) + 2.2218/(1.085^2)$
$= 1.8283 + 1.8873$
$= £3.7156$

Present value of share at end of year 3 = £51.3483 as before

But it is discounted back only two years:

$51.3483 / (1.085^2) = £43.6181$

Share price = £43.6181 + £3.7156 = £47.3337 = £47.33

5. Discuss how government tax revenues change as personal income tax rates are varied.

(4 marks)

The economic relationship between personal income tax rates and government tax revenue is explained formally by the Laffer curve. The curve is based on the belief that there exists an optimal tax rate which will maximise government revenue, as there is a significant relationship between tax rates and the willingness to work. At a tax rate of zero, the government will raise no taxes, whereas at a tax rate of 100% the incentives to work, save, invest or engage in any economic activity is removed and thus no tax revenue will be raised. Between these two extreme rates of tax there must exist an optimal tax rate. As we raise the tax rate towards this optimal rate, tax revenue will increase but at a decreasing rate, whereas as we raise the tax rate above this optimal rate, tax revenues will fall at an increasing rate. There are variants of this concept which also explain the impact of tax rates on economic growth.

6. An investor thinks that she has spotted a likely candidate company for a takeover, Lucky plc. Lucky plc's current share price is £1.75. In January she purchased through her broker a contract for 1,000 July call options at a cost of 12p each. The exercise price of the option is £1.65. Calculate her profit or loss in July if:
   a) Lucky plc is not taken over, and the share price falls to £1.50;
   b) Lucky plc is not taken over, but its share price rises to £1.76;
   c) Lucky plc is indeed taken over, and the share price rises to £2.37.

(3 marks)

	Scenario a	Scenario b	Scenario c
Share price in July	£1.50	£1.76	£2.37
Exercise price	£1.65	£1.65	£1.65
Profit on exercise	Not exercised	£0.11	£0.72
Option premium paid	(£0.12)	(£0.12)	(£0.12)
Profit (loss) before transaction costs	(£0.12)	(£0.01)	£0.60
Profit (loss) on contract of 1,000 shares	(£120)	(£10)	£600

7. Briefly explain how each of the following is likely to gain or lose from *unanticipated* inflation: lenders, borrowers, taxpayers, the government.

(3 marks)

Unanticipated inflation may lead to the nominal rate of interest becoming less than the inflation rate i.e. a negative real interest rate. Further, the real value of debt falls with inflation. Therefore borrowers will gain and lenders will lose in this case.

Wage response to higher inflation causes nominal incomes to rise into higher tax bands and therefore the tax burden will increase, unless thresholds rise commensurately. Taxpayers tend to lose and the government tends to gain as a result.

8. Explain the meaning of the term *Tobin tax*.

(4 marks)

A Tobin tax is essentially a currency transaction tax, that is, a tax on spot conversions of one currency into another, preferably at an agreed international rate and proportional to the volume of a transaction. This charge on foreign exchange transactions is designed, in theory, to lead to greater international currency stability by dissuading speculators who only wish to invest in a particular currency in the very short-term as a component of an international arbitrage strategy. This should lead to less flight away from currencies suffering losses in value and should reduce the need of affected countries to employ sharp interest rate rises to maintain currency value (which in turn have serious negative effects on their real economies). The Tobin tax, then, should reduce exchange rate volatility. The concept of this tax can be applied to other financial assets too – to reduce stock market volatility, for example. In recent years, and in response to the financial crisis, a financial transactions tax has been supported by prominent figures such as Adair Turner of the UK Financial Services Authority and the economist Joseph Stiglitz, though many in the City oppose such a tax arguing that it might lead to a reduction in market efficiency and would penalise the whole economy as a result.

9. You are given the following base date prices and current share prices for four shares. The base index value is 100.

Share	Base date price P_0	Base date quantity Q_0	Current price P_n	Current quantity Q_n
D	3.00	12	3.70	15
E	3.50	18	3.90	8
F	2.75	11	3.20	18
G	1.20	5	1.95	10

(a) Compute the unweighted arithmetic index for the four shares.

Unweighted arithmetic index = $\frac{\sum Pi_n}{\sum Pi_0} \times$ Base index value

$$= \frac{3.70 + 3.90 + 3.20 + 1.95}{3.00 + 3.50 + 2.75 + 1.20} \times 100 \qquad = (12.75 / 10.45) \times 100 = 122.01$$

(2 marks)

(b) Compute the unweighted geometric index for the shares.

Unweighted geometric index = $\sqrt[4]{\frac{P1_n \times P2_n \times P3_n \times P4_n}{P1_0 \times P2_0 \times P3_0 \times P4_0}} \times$ Base index value

$$= 4\sqrt{\ } \frac{3.75 \times 3.90 \times 3.20 \times 1.95}{3.00 \times 3.50 \times 2.75 \times 1.20} \times 100 \qquad = 4\sqrt{\ } (90.0432/34.65) \times 100 = 126.97$$

(2 marks)

(c) Compute the weighted arithmetic index (Laspeyre Index) for the shares.

Laspeyre Index = $\frac{\sum P_n Q_n}{\sum P_0 Q_0} \times$ Base index value

$$= \frac{(3.70 \times 15) + (3.90 \times 8) + (3.20 \times 18) + (1.95 \times 10)}{(3.00 \times 12) + (3.50 \times 18) + (2.75 \times 11) + (1.20 \times 5)} \times 100 = (163.8/135.25) \times 100$$

$$= 121.11$$

(2 marks)

SECTION C **Total 30 marks**

10. What is meant by *private equity* and what need is there for it in developed financial markets?

In recent decades there has been a dramatic growth in the private equity industry. In the US, arguably the birthplace of modern private equity markets, private equity funds now total in excess of $300 billion. However, the growth of this market has been subject to significant cyclicality associated in particular with the emergence of telecommunications, computers and IT technologies over recent decades. The private equity industry contains both venture capital firms which bring new companies to IPO through to much larger private equity concerns that purchase more established companies.

Private equity firms finance entrepreneurial companies with high-risk but potentially high rewards. Such firms may find it difficult to finance using conventional sources of funding, such as bank loans and other debt, as they are often characterised by a high proportion of intangible assets, a near-term forecast horizon of negative or volatile profits, the need for corporate restructuring, and so on. On the investor side of things, funds are raised largely from conventional funding sources such as institutional investors. The latter might be interested as they require long-run investments as part of their liability matching requirements and also may not have the in-house expertise to invest directly in this market.

Private equity organisations are needed to finance companies which conventional finance providers such as banks will not finance. New firms and firms which are restructuring are generally high-risk entities. There is a classic information asymmetry problem regarding the quality of a firm's projects vis-à-vis potential investors. The agency problem gets in the way of debt and equity investment from outside the firm. Outside equity (risk capital) investment can lead to increased firm-financed perquisites (needless expenditure) which increase the utility of the firm's manager directly whereas the costs of such action are more dispersed. Even in the case of debt financing this agency problem can lead to increased investment risk. Understanding the agency problem, outside providers of finance require a commensurately higher rate of return than internal providers of finance. Other risks might relate to the type of business raising the funds. For example, a high R&D expenditure manager may use his position to build his personal profile yet not actually focus on commercialisation of his ideas. Such risks add to the financing problem faced by certain firms. Another problem facing potential financers of such firms is due to information asymmetry between insiders and outsiders to the firm, managers may only issue new equity when equity is overvalued. Again, understanding this, financing may be more difficult for new firms or those undergoing restructuring.

Private equity organisations, then, have been developed to tackle these information problems. They are successful in overcoming such problems due to their due diligence activities at the outset and then subsequent careful monitoring of the firm to reduce any information asymmetries. Reduced information asymmetry results in increased capital availability. Many authors see the central abilities of private equity specialists as lying in both finance and management skills such as investment screening and structuring, the use of convertibles, the monitoring and coaching of

firms, and so on. Further, private equity organisations can engage with these new/restructuring firms better than other financial organisations such as banks because: private equity firms are able to take equity positions in firms whereas certain countries may prohibit such investment by banks; banks are not often well placed to charge rates commensurate with high risk due to their competitive positioning; banks are not used to dealing with low-asset-tangibility companies; and private equity organisations are able to provide proper monetary incentives to investors to engage in detailed screening and monitoring.

11. "*Fundamental analysis* is a more rigorous and therefore more meaningful approach to equity analysis than *technical analysis*." Discuss.

Fundamental analysis is a technique used to evaluate securities which attempts to measure their intrinsic value. Analysts employing such an approach study very thoroughly a wide range of variables relating to general economic and industry conditions, the quality of management of companies, and of course their financial condition and performance as presented in the financial statements. Fundamental analysis focuses on extracting information from financial statements, though encompasses a far wider range of factors than the statements alone. Analysts here attempt to determine intrinsic share value which can then be compared with market price to determine whether that price is fair. Information regarding the future payoffs of a share is used to determine its intrinsic value. The tools of fundamental analysis include macroeconomic and industry analyses and a wide range of tools for analysing financial statements such as ratio analysis. The financial statements may be projected in whole or part to enable the intrinsic share price of a company to be determined.

Technical analysis, on the other hand, is a technique used to evaluate securities by following price and volume changes. Fundamental analysts do not focus on intrinsic value in the same way as fundamental analysts, but focus instead on charting tools in the hope of identifying patterns and trends to attempt to gauge the future of a security price. The basis for the approach is that "the future can be found in the past", that is, a security's future price may be determined from its past price. Another way of looking at technical analysis is that "history repeats itself", or more precisely, prices are determined by investor expectations and if we can understand expectations then we can gauge what might happen next to prices. The tools of technical analysis are many and varied, but all tend to focus on charting prices and volumes, either of individual share or of indices, and at times computing simple statistical measures such as moving averages.

We might consider the relative merits of each approach:
Fundamental analysis:

a) Rigorous technique, examining a wide range of information governing equity value drivers;
b) Requires expert understanding of the detail of financial statements, industry drivers, and so on;
c) Focuses on earnings and free cash flows, which are the key determinants of intrinsic value;
d) Some argue that fundamental analysis is only a marketing exercise for investment banks to help them to evidence 'hard work' to their clients;

e) It could be argued that prudent fundamental analysis, though rigorous, is time-expensive to execute and requires significant investment in acquiring and training analysts.

Technical analysis:

a) If markets are efficient then surely all information is already subsumed within prices so why bother with other variables?
b) The technique places great emphasis on investor expectations/psychology and is therefore particularly useful in markets dominated by private rather than institutional investors;
c) It could be argued that technical analysis produces a very rapid outcome in fast-moving markets and does not require any particular expertise to apply;
d) History does appear to repeat itself at certain times and for certain assets. However, we cannot rely consistently upon this phenomenon as academic research shows that this approach does not work in the longer term;
e) If markets are efficient then past prices arguably have no predictive value;
f) Technical analysis is considered by some as 'myopic' as it selects only one variable (share price) from the many which relate to a firm's performance.

Candidates should come to a balanced conclusion based upon their discussion of the competing approaches. Better candidates may conclude that the two techniques should be treated as complementary. For example, fundamental analysis might be used to aid a buy/sell recommendation whereas technical analysis might help determine the timing of a subsequent trade.

12. Explain the distinction between a *'top down'* and *'bottom up'* approach to investment analysis. Describe also the main steps that would be taken in each approach and the assumptions on which each is based.

These are the two alternatives employed by most portfolio managers. The *top-down approach*, as implied by the term, commences with the portfolio manager determining what the objectives and constraints of the fund are and allocating assets accordingly. Securities are then picked to satisfy the allocation made in the first step. The markets and currencies (or more broadly the general economic trends) constitute the key decision in this approach, and once these have been chosen then the best assets available are selected. The steps involved are: understand economic trends, select industries, select stocks.

The *bottom-up approach* takes a very different approach as it focuses primarily on stock selection first on the basis of rigorous fundamental (and sometimes technical) analysis. A portfolio is then built from the stocks which satisfy best the fund's objectives and constraints. The portfolio may look very different from the first approach as the market and currency allocation tend to be driven by the assets selected rather than the converse. The steps involved are select good (mispriced) stocks on the basis of rigorous analysis and then build portfolio.

The first approach emphasises dealing with currency or market risk exposure whereas the second approach emphasises dealing with risk exposure in various industrial sectors. The top-down approach tends to suit investment banks with research departments with a specialism in country and currency analysis. The

bottom-up approach tends to suit investment banks with strong international sectoral knowledge. Generally, a top-down approach is considered preferable as portfolio returns tend to be driven by wider market and currency factors rather than getting the firm-level fundamental analysis right.

13. Explain what is meant by *short-selling* and discuss both the rationale for, and the risks associated with, its use.

Short-selling involves the selling of shares (or other financial assets) which the investor does not own, with a promise to deliver them at a later date. At the simple level of the individual investor, he or she approaches a broker who lends the shares to the investor. The shares come from the broker's own holdings, from its clients, or from another broker. Once the shares are sold, the funds are credited to the short-selling investor's account. However, the investor must eventually close the short by buying the shares back and returning them to the broker. If the share price falls, the short-seller is able to buy back the shares at a lower price, thereby making a gain equal to the difference. Conversely, if the price rises, the short-seller makes a loss. The cost to the investor is nothing for cash accounts, but for margin accounts there is a cost in terms of interest. Short-selling is not available on all shares, particularly those of low price, and there are restrictions regarding minimum volumes on short-selling trades. Short-sellers can be financial institutions such as pension funds or hedge funds, or private investors such as high-net wealth individuals or even day traders.

The rationale for its use is that investors can make a profit when they correctly predict that its price will decline. In this sense, even if there is a bear market, the investor can employ a profitable strategy. Some investors will wish to employ short-selling in order to speculate. On very large trades e.g. betting that a particular currency will collapse for strong rational fundamental reasons, the rewards can be very substantial, though such trades arguably lead to increased market volatility at economically difficult times. Indeed, some commentators regard short-selling as unfair or even unpatriotic when domestic shares are targeted. Conversely, it is possible that because short-selling increases liquidity in the market and prevents securities becoming over-priced then it has a positive impact on markets. Investors may also employ short-selling as a hedge to protect long positions in a conventional hedging strategy.

The risks associated with short-selling are many. Firstly, failure to close the short for a long time may result in the payment of costly interest on margin accounts. Secondly, the lender may demand the shares back if there is great demand for short-selling. Thirdly, when employing short-selling as a speculative strategy, if the share price increases sharply (due perhaps to some unexpected good news or a takeover attempt) then the short-selling investor can make a substantial loss. Indeed, the short-seller is on average betting against the market which tends to display a positive drift through time and needs to be mindful of this. Fourthly, short-selling to protect a long position in a share can lead to basis risk. Fifthly, at times of economic difficulty unanticipated restrictions might be imposed by market authorities such as the FSA to prevent sharp falls in certain asset classes, which may in turn impact negatively on the short-seller.

14. Explain the causes and implications of the *European sovereign debt crisis*.

The *European sovereign debt crisis* came into sharp focus in early 2010 when certain countries such as Greece, Spain, Portugal and Ireland were beginning to find it difficult to finance their burgeoning budget deficits, some of which exceeded 10% of GDP. In turn markets reacted by requiring much higher bond yield spreads and CDS rates when compared with the larger and more robust economies of France and Germany. Indeed, the rates required were so much higher that the weaker countries may not be able to raise the debt or service it even if successful, thereby running the risk of a broader debt default. Much of the media attention has been focused on the Greek economy and some commentators have gone as far as to argue that Greece is the "next sub-prime". However, the problem is much wider than Greece and points to a wider structural crisis.

Causes of the European sovereign debt crisis:

- All of those factors (economic, regulatory, political, behavioural) which led to the recent financial crisis
- Relatively high public spending (and public sector growth generally) during the recent years of stable growth, financial and economic liberalisation, stable markets, and historically low cost debt financing
- Even higher public spending to bailout the failing banks and to tackle the budget deficits which accompany a recession as tax revenues fall and unemployment benefits increase
- The moral hazard problem for Eurozone countries who believe that the EU will always 'bail them out' to in order to support the euro
- Some commentators argue that certain countries joined the Eurozone far too early, before they were able to get used to stricter fiscal and monetary regimes
- The downgrading of a number of countries' sovereign debt ratings as deficits have grown

Implications of the European sovereign debt crisis:

- A relatively weak euro vis-à-vis sterling, the dollar and the yen, as well as increased speculative currency trading
- Nervous European stock and other asset markets as investors move away from Eurozone investments towards, for example, US investments (flight to quality)
- Difficulties as and when certain tranches of government bonds are due for scheduled rollover
- Wage freezes and cuts in the public sector, and potentially pension system reforms in a number of countries (e.g. extended retirement age)
- Political costs for larger countries such as Germany who do not wish to be seen as bailing out the weaker Eurozone countries (as well as increased political tensions between countries)
- Potentially embarrassing recourse to call upon funds from the IMF
- Increased political turmoil and public unrest as austerity measures hit the general public hard
- Potential future penalties for those countries bailed out (e.g. reduced EU aid and loss of voting rights)

- Reconsideration of the need for a common EU fiscal policy and even the potential development of a 'European Monetary Fund' – certainly a greater move towards a more federalist model is seen as a possibility
- A general reduction in the sovereign power and scope of affected countries
- In an extreme scenario, countries such as Greece could default on their debt obligations and potentially even withdraw from the euro for the purposes of currency devaluation, though this is considered very unlikely
- The EU is less likely to welcome new members in coming years, particularly countries with weaker economies, and could even in extreme circumstances consider reducing its membership to a core of countries with stronger economies which have demonstrated fiscal prudence in recent years
- An enlargement of the EU's balance sheet with it potentially borrowing more in its own right to lend to problematic Eurozone members
- Economies such as the UK are even more likely than before to stay outside the Eurozone
- Low economic growth in affected countries for many years to come as a result of the stringent fiscal and monetary measures imposed