

EXAMINATIONS

September 2003

Subject 301 — Investment and Asset Management

EXAMINERS' REPORT

Introduction

The attached subject report has been written by the Principal Examiner with the aim of helping candidates. The examiners are mindful that a number of interpretations may be drawn from the syllabus and Core Reading. The questions and comments are based around Core Reading as the interpretation of the syllabus to which the examiners are working. They have however given credit for any alternative approach or interpretation which they consider to be reasonable.

The report does not attempt to offer a specimen solution for each question — that is, a solution that a well prepared candidate might have produced in the time allowed. For most questions substantially more detail is given than would normally be necessary to obtain a clear pass. There can also be valid alternatives which would gain equal marks.

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Chairman of the Board of Examiners

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Candidates appeared better prepared than has been the case previously and as a consequence we had a higher pass rate. Bookwork was done reasonably well but poorer candidates are still unable to apply the theory to problems and even fewer appear able to draw implications and conclusions out of results. We continue to be concerned that candidates do not answer the question set. A good example of this was Q3 where candidates were asked for “advantages” but many gave us a mind dump of all they knew about property investment. Whilst they invariably pick up a number of points, the amount that candidates write and the time taken to answer such a question could be put to better use.

1 Any three of the instruments given below are acceptable.

Deposits — The simplest of all money market instruments. In the deposits market banks simply take and lay off deposits from each other.

The market is liquid over a wide range of maturities, although primarily less than one year.

Treasury Bills — A treasury bill is a promise to repay a set sum of money by the treasury at a specified date in the future, normally not longer than 91 days.

T bills are issued by way of auction and trade at a discount to their face value.

They are not part of the Government's funding programme per se but are much more an instrument of monetary policy.

Bills of Exchange — A bill of exchange is an instrument which is drawn and issued by the seller of goods to the buyer, specifying the amount to be paid, either immediately or at some point in the future.

Once the bill has been accepted by the buyer the bearer of the bill is entitled to the proceeds at maturity.

The accepted bill may then be discounted provided the purchaser is willing to take on the credit risk of the bills acceptor, which is the promise of repayment.

Commercial Paper — is a promissory note issued by a company at a discount to the face value with maturities normally up to twelve months.

It may be issued via the auspices of a bank guaranteed programme or directly into the market.

Certificates of Deposit — it is, in effect, a securitised bank deposit.

They carry a fixed coupon rate and have a maturity of up to five years.

Like any other security, the certificate can be traded enabling the deposit holder to realise the deposit through the sales proceeds and not by withdrawal.

Short Term Gov Bonds — With their status as a relatively risk free investment the money markets also trade in short term (usually less than five years) Government bonds.

The Government is the issuer and the bonds usually pay a twice yearly coupon, they are highly liquid.

Floating rate notes — which are linked to the short-term money markets and are widely traded.

They are issued highly rated corporates, usually banks since they carry very limited credit risk.

This was bookwork and candidates scored reasonably well.

- 2
- (i) The equity risk premium is the extra return that the overall stock market or a particular stock must provide over the rate of a risk free asset, normally treasury bills, to compensate for the additional risk being taken.
 - (ii) The equity risk premium is used in the calculation of the weighted average cost of capital (WACC) for a stock.

The WACC is given by $k_e * E/V + k_d * D/V$

The cost of equity is given as $k_e = k_f + \beta * (k_m - k_f)$

Therefore when the equity risk premium, $k_m - k_f$, rises so does the WACC.

The WACC is used in discounted cash flow valuations, the higher the WACC the lower the valuation, therefore increasing the equity risk premium increases the WACC and thus decreases valuations. The converse is true for a fall in the equity risk premium.

- (iii) Any two reasonable events that would change the risks associated with holding equities in general or a particular sector are acceptable including terrorism, major accounting scandals, oil crises, war etc.

In hindsight this question might have been better phrased to point candidates to the sort of answer shown in the solution. However marks were given for more general answers. It was, however, a concern that candidates generally went for low-key events rather than shocks in answering (iii).

- 3
- They can be purchased in large units.
Rental income tends to be secure as rents normally represent a small part of the tenants' outgoings.

There is a wide range of prospective tenants, with no concentration on any particular industry.

Many large offices are multi-let. This spreads the risk of tenant default...

...and helps provide comparable evidence in the rent review process.

For offices in large towns there are usually comparable properties for the purpose of reviewing rents.

A typical 25 year institutional lease has 5 yearly "upward only" rent reviews.

When let to a single tenant on a full repairing and insuring lease, management costs are relatively low (must have both first and second parts of sentence to score marks — no marks for only part of the answer)

There is a wide range of different properties available.

Precise location not critical...

...so long as easily accessible by car and public transport.

Bookwork, but see comment in introduction.

4 Choice of benchmark.

Need to decide whether benchmark should be a market cap index benchmark...

...such as FTSE All World or MSCI World...

or a regional composite benchmark...

...which takes for example equal weightings in the regional markets of North America, Europe, and the Far East

The proportion of domestic equity in the Global mandate must be decided...

This could be 0% if a separate domestic equity mandate is to be managed...

...or set at a larger percentage of the total mandate if a higher proportion of domestic equity than implied by the choice of benchmark is required

Need to decide whether to include Emerging Market Equity within the Global Equity mandate...

...because often a Global Equity mandate is taken to mean Developed World only

Purpose of allocation (match liabilities or investing excess over liabs.)

And the extent to which the fund manager will be permitted to diverge from the benchmark in terms of region, or country, or sector, or stock.

Need to consider style (value, growth, large/small cap, passive/active etc.)

Regional/sector approach

This was a more poorly answered question. Some candidates failed to accept that the decision had been made and the question was about issues of pre-implementation.

- 5** (i) Company accounts
Company trading statement
Visits to company
Management meetings
Financial press
Trade papers
Competitor intelligence

Stock broker papers
Stock exchange information
Government sources of statutory information

- (ii) Your role will involve stock analysis within your sector. Additionally, you will be involved in assessing the prospects for your sector within the overall economy.

You will attempt to establish whether a stock is, according to your analysis, under or over valued by the market.

Part of the assessment will involve construction of a model to help estimate future cashflows in earnings. Your success will depend upon the quality of your model and the quality of the data that goes into the model.

The modelling process will deliver data on a variety of financial features of the company and its market place. This will help identify the key drivers to profitability.

Further analysis can then be targeted at the most important areas.

Cashflow analysis can be used with economic projections to assess the robustness of the profit stream.

The output will be an indication of the fundamental value of a share given your assumptions and input data.

- (iii) Potential for Differences

Model — No model can expect to be perfect. A subtle but important feature might be missing or not working properly.

Input Data — The model can be only as good as the information on which it is based. Again, something might be missing or incorrect.

Assumptions — Even the perfect model would give a share value different to that of the market if assumptions about future inflation, required rate of return or perceived level of risk are different to market expectation.

The risk for your company of continuing to increase exposure to the underperforming stock is essentially the risk of you being wrong and the issues associated with the underperformance that would arise.

- (iv) Ask another analyst in the firm to review the stock and make a recommendation.

Cut your losses, sell the position and put it down to experience.

Seek a meeting with the company's management to discuss the share price weakness and what plans they may have to address it.

Examine if any derivative options are available to add value.

A number of candidates were unable to set out the day-to-day work of an investment analyst. Whilst (i) was bookwork and reasonably done, (ii), (iii) and especially (iv) were poorly answered overall. One or two candidates did, however, give very full answers.

6 Direct costs arise in administering the regulation and in compliance for the regulated firms.

Other economic costs can arise:

- an alteration in the behaviour of consumers, who may be given a false sense of security and a reduced sense of responsibility for their own actions
- an undermining of the sense of professional responsibility amongst intermediaries and advisors
- a reduction in consumer protection mechanisms developed by the market itself
- reduced product innovation
- reduced competition
- education
- development of additional administration systems
- cost of government regulation

Thankfully most candidates appear to have studied the regulation units well and gave reasonable answers to this question.

- 7** (i)
- When two traders deal, a contract is created.
 - The floor traders acting for the parties involved fill out clearing slips.
 - The clearing slips are matched by the exchange.
 - Details of the trade are registered with the exchange's clearing house.
 - In turn the clearing house guarantees each side of the original bargain.

- (ii) Award 1 mark for getting the correct amount of initial margin \$4,000.

Table 1

<i>Date</i>	<i>Closing Futures Price US\$</i>	<i>Daily Gain (Loss) US\$</i>	<i>Cumulative Gain (Loss) US\$</i>	<i>Margin Account Balance US\$</i>
Futures price at which contract is entered into on: May 3rd	400			4000
May 3rd	396.5	700	700	4700

May 4th	399.4	–580	120	4120
May 5th	400.4	–200	–80	3920
May 6th	399.7	140	60	4060
May 7th	405.9	–1240	–1180	2820
May 8th	397.9	1600	420	4420

- (iii) In the forward foreign exchange markets, contracts can be tailored by the investment bank to suit the needs of the client in terms of maturity date, contract size, choice of currencies, etc.

In the futures markets currency futures contracts are standardised as to maturity date, contract size, currency pairs, etc.

In the OTC market participants need to pay much closer attention to credit risk than participants in the currency futures market where at least some¹ participants have the guarantee of the exchange clearing house.

(i) The use of the word “process” in this question appears to have caused some confusion to candidates. Many wrote about margin etc. rather than the mechanics of the market.

(ii) Was done reasonably although common mistakes were to use only one contract and one ounce of gold. Also some subtracted when they should have added. Such mistakes were only penalised once and so only a couple of marks were lost on this section.

(iii) Was reasonably answered although a number of candidates did get the differences back to front.

¹ Only general clearing members of the exchange get the guarantee of the exchange clearing house. All other participants are dependent on their futures broker for performance of the contract.

- 8**
- (i) $r = d^*(1 - t_i) + g^*(1 - t_c)$
 - (ii) d and g are assumed to be dividend yield and capital return as a percentage of initial investment respectively
 d is assumed not to be re-invested if payments have occurred during the period
 - (iii) The overall tax system e.g. tax rates and exemptions.
 Particular rules for individual types of asset
 The investor's own status (individual or particular type of institution).
 The investor's financial position.
 The tax efficiency of the vehicle used to hold the assets.
 To what extent losses or gains can be aggregated between different investments or over different time periods for tax purposes.
 Whether the tax is deducted at source or has to be paid subsequently.
 The extent to which tax deducted at source can be reclaimed by the investor

(i) and (ii) were straightforward with reasonably good answers being given. (iii) was poor with answers not focusing on specifics.

- 9**
- (i) The formula is $S = (R_p - r)/\sigma_p$.
 The Sharpe ratio is $(14 - 4)/5 = 2$.
 - (ii)
 - (a) Except in times of stress in credit markets, one would expect the return on a portfolio of corporate bonds of this credit rating to give higher returns than a similar portfolio of government bonds for credit risk and liquidity reasons alone.
 - (b) In relation to the MMM-rated corporate bond index, the manager seems to have been particularly good at avoiding MMM-rated companies that defaulted and at picking up the higher yield on those that did not default.
 - (iii) None of the bonds held by the company has ever defaulted. If one of the bonds had defaulted and if it had no recovery value, then the fund could lose up to 5% of its value.
 As the company has not experienced any defaults the standard deviation is not really a good measure of the risk of the company's risk.
 The Sharpe ratio is likely to fall substantially if the investment company were to experience a default on one of the bonds in its portfolio.

On average, the manager should have had at least five (at least 1 per year of exposure) defaulting bonds in his portfolio over the five-year period.

Either the manager has been very lucky or he is very skilful at choosing MMM-rated corporate bonds that don't default.

While most candidates could write down the formulae, (ii) and (iii) were good examples of candidates being unable to explain results and comment upon them. Where candidates found themselves under time pressure, we suspect that this was the question left to the end.

- 10** (i) Order to determine the feasibility of the Olympic bid the process should be divided up into a number of steps:

Step 1

Make a high-level preliminary risk analysis to confirm that the bid does not obviously have such a high risk profile that it is not worth analysing further.

A clear risk is that the finance cannot be raised

The government may decide that the capital required is too great to justify politically.

It would be important to determine where the finance was likely to come from and who would be managing the process.

Who would pay for the initial bidding costs in the event that the bid were unsuccessful?

Step 2

Hold a brainstorming session of project experts and senior internal and external people who are used to thinking strategically about the long-term.

The aim will be to identify project risks, both likely and unlikely,

...to discuss these risks...

...and their interdependency,...

...to attempt to place a broad initial evaluation on each risk,...

...both for frequency of occurrence...

...and probable consequences if it does occur,...

...and to generate initial mitigation options and discuss them briefly.

Step 3

Carry out a desktop analysis to supplement the results from the brainstorming session,...

...by identifying further risks and mitigation options,...

...using a general risk matrix,...

...researching previous Olympic bids and the problems that were encountered.

...and obtaining the considered opinions of experts who are familiar with the details of the project and the outline plans for financing it.

Step 4

Carefully set out all the identified risks in a risk register,...
...with cross references to other risks where there is interdependency.

Step 5

Ensure that upside risks as well as downside risks are covered.

A risk matrix could be used for the above purposes...
...with column headings relating to the cause of risk...
...and the rows relating to the risks in successive stages of the project

- (ii) Items that should be included in the risk matrix:

1 Mark for each risk, maximum 8 marks.

Is climate suitable for the games?
Does the City have a pollution problem?
Can the City's infrastructure cope with the massive inflows?
Is the Government keen to see the City win?
Can security issues be addressed?
The attitude of the international community towards the country.
Will the time zone of the country mean that all the major TV networks are less interested?
Are the local population likely to be interested?
Will the facilities be used after the games?
Natural disasters (earthquake, volcanic eruption etc.)

- (iii) To answer this part one needs to consider by whom and how the project might be financed. In terms of who might finance it, the following might do so:

- government
- local authority/city council
- sports bodies
- private finance/venture capital
- public company
- a combination of the above

How it can be financed is by:

- tax revenue/borrowing by government
- local tax/borrowing by council/city
- loans (secured or unsecured) or mortgages

- debentures
- equity capital
- combinations of the above

One needs to look at the income sources, the outgoings and the end usage to which facilities might be put. Not just the stadiums but accommodation (the athletes' village) and new transportation links need to be considered. Different costs might be financed in different ways. i.e. the infrastructure could be built, used and then transferred to a sports body or company with them putting up the finance (PPI).

Government might build transport links because it suited their long-term development plans.

A university might like the accommodation and other facilities after the event and so be interested in being a partner in the project.

This is a routine bookwork questions and candidates scored well on it. However (iii) was not as well answered as we would have hoped with few candidates being able to articulate more than a few ways.

11 (i) Assets

The house is part owned and may well represent a valuable real asset. Value will be heavily dependent on desirability of property and also local/national housing market.

Pension provision is partially funded. This may be a defined benefit or defined amount of money invested on your behalf.

The cash savings represent a further asset with future interest a likelihood.

Future income is an asset. This could be assumed to be a non-decreasing stream up until retirement at which point it will probably drop.

The insured healthcare is an asset which will demonstrate “piece of mind” value at all times and actual value in the event of qualifying ill health.

Liabilities

The outstanding mortgage debt repayment is a liability for the next five years. Payments may be at a fixed rate or variable. Depending on the contract, final payment may clear the debt or trigger a demand for further loan repayment (perhaps to be settled with cash).

All future living expenses (including pension contributions if required) are a liability and will be real in different ways.

The healthcare premium is a liability although the policy would be likely to be renewable with the option to cease payment.

Store card debt could create additional liability if delayed payment led to interest being incurred.

Tax (income, inheritance) should be factored into the liabilities as appropriate and any tax relief added on to the assets.

- (ii) Real income stream can be considered to be some sort of match for real expenditure stream.

Close matching is not possible. Income will move with pay policy of employer or pension terms in retirement whereas variety of inflationary features impact on expenditure (price inflation, interest rate movements, insurance premium inflation).

The mortgage repayments may well deliver final loan settlement. If further repayment were required, other assets held (potentially the cash or cash generated by moving house) would need to be used for payment.

- (iii) The investor would have to consider their attitude to risk. A low risk investor might seek to match out liabilities as far as possible (e.g. paying off mortgage as soon as practical and then investing for retirement income).

A more aggressive investor might weigh up the opportunity cost of any money used now to deflect liabilities and choose to invest instead if the expected return was attractive (e.g. investing in new assets if expected return exceeded mortgage rate).

Regardless of the extent of the liabilities paid off, gearing investment to likely retirement date (normal or early) would probably be desirable in order to reduce impact of drop in income. A phased move from higher risk/higher expected return assets (e.g. equities) to low risk, lower expected return assets (e.g. bonds) over the period to retirement might be suitable.

Other factors to consider include:

- Tax position (the need to potentially pay inheritance tax/income tax)
- The desire to invest in tax efficient investment products
- Tax rate may drop by virtue of reduced earnings on retirement
- The amount of money available to invest (may preclude direct investment)
- The costs associated with investing

This question was well answered and unlike in other questions, solutions were well set out and covered most of the points outlined in the solution. There were additional suggestions to those set out in (ii), some of a more flippant nature, such as blowing it on a world cruise, which received marks provided they were suitably commented upon.