EXAMINATIONS

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Subject 401 — UK Fellowship Investment

Paper One

EXAMINERS' REPORT

Overall, answers were disappointing. Few candidates were able to demonstrate higher level skills in answering practical day to day investment problems.

1 (i) The amount of the bulk transfer is linked solely to the level of the market for UK equities.

The fund is invested across a range of asset classes in accordance with a set benchmark distribution.

Unless the proportion of the benchmark allocated to UK equities explicitly allows for this bulk transfer, part of the bulk transfer liability is effectively mismatched by asset class.

If for example, the portfolio is 50% invested in UK equities and 50% in overseas equities, bonds, properties etc., then circa £100m of the bulk transfer is matched by asset class. However, there is still a circa £100m liability linked to UK equities which will be settled by transferring securities to the requisite value from the overseas equities, bonds, properties etc. classes i.e. this £100m is mismatched by asset class.

(ii) You may be able to reduce your exposure to these other asset classes and increase your exposure to UK equities by using financial futures.

In total, you need to change your exposure for approx. £100m i.e. sell £100m worth of futures on these other asset classes and buy £100m worth of UK equity futures.

A variety of futures would be sold related to the markets in the other asset classes and in proportion to the distribution of the assets amongst these markets.

At the time of payment the futures position would be unwound. The principal problem is that there may not be appropriate derivative contacts for some of these other asset classes e.g. property, venture capital etc. Other main problems are:

- The basis risk associated with futures contacts,
- the need to take account of foreign exchange hedging in relation to overseas asset classes

(iii) In theory the custodian can be instructed to transfer x% of each holding to the receiving scheme where x = (value of the bulk transfer) / (value of fund).

The problems associated with this are as follows:

(a) The value of x will not be known until the fund is valued and the bulk transfer amount is calculated at the transfer date. Essentially, the transfer will take place after the event.

(b) The fund is very large and is likely to have direct exposure to property. Direct property holdings would not be divisible in this way. Similarly, venture capital investments may not be divisible.

(c) Each transferred holding would have to be rounded to a complete number of shares (or units of investment).

(d) The volume of administration associated with this approach will be substantial and drawn out e.g. re registering some emerging markets securities may take a very long time.

(e) We would also have to deliver a slice of any associated foreign exchange and derivative positions.

Departures from a slice of the fund will distort the remaining asset distribution which if corrected will incur transaction expenses for the fund.

Therefore, departures from a straight slice should if possible be co-ordinated with any routine rebalancing that may be required, both rebalancing by asset class and between managers. Assets from overweight positions that need correcting should be called on.

If the stock in these positions is not particularly representative of the portfolio and/or unattractive to the receiving scheme then they should be sold and the cash proceeds transferred (subject to the receiving scheme's agreement).

Having exhausted that source, the next step might be to try and identify a sample of holdings from a sample of managers and a sample of asset classes which are acceptable to the receiving scheme and which if transferred will not automatically trigger rebalancing for the fund.

This should complete the process with possibly a further small balance being paid in cash.

Candidates showed a very poor grasp of the risk to the Scheme which the bulk transfer caused. They also demonstrated little understanding of the practical applications of the uses of derivatives in such a situation, or the practical problems entailed.

2 (a) **Defined Benefit Schemes:**

- Company bears the investment risk
- Employees' risk is that the company cannot fund the scheme, or that if investment returns are poor, benefits will be reduced (or not increased if rises are discretionary)

- Funding level of scheme can influence investment policy

- Deviation from matched position depends upon (trustees' and company's) attitude to risk, the size of the scheme relative to the company's payroll, and the funding level

Defined Contribution Schemes:

- The individual member bears the risk

- Their attitudes to risk will vary considerably from member to member

- In general, each member's fund is funded earlier, since the contribution on behalf of each member is held to that member's account. This provides more scope for the fund to grow, but also means that if the member leaves, the amount taken from the fund is likely to be higher.

- If turnover is high, then the scheme's average maturity will be correspondingly reduced, although the assets may be left in deferment.

- In early years, the total size of the member's fund is the most important consideration - the fund should be invested for maximum growth, i.e. a pro equity stance

- Because the member's fund is used to provide for a purchased annuity at retirement, the member may feel exposed to investment volatility as retirement nears leading to moves to transfer from pro equity investment mixes to pro "bond" investment mixes to immunise against changes in annuity rates, unless a drawdown of pension from the fund is used. Cash may also be required in the latter stages to cover the payment of tax free lump sum

- Thus, some form of lifestyle strategy may be appropriate

(b)

- Ultimately, if the defined benefit scheme is closed to new members, the maturity profile will change faster (i.e. will mature more quickly) than if the scheme remained open to new members.

- An asset / liability study will be needed to get an idea of how quickly the profile will change.

- This will ultimately lead to a review of investment strategy which is likely to reduce the equity mix and increase the mix of matching assets, both from MFR requirements, and also to reduce general investment mismatching risk.

- The level of escalation which is included in the benefit design will have a bearing on the type of bond asset which is appropriate.
- The investment manager may be asked to work to a benchmark tailored to the scheme and set by the trustees and their advisors. Control ranges on assets may be set to limit the degree of divergence of the manager from benchmark.

Bookwork which was poorly answered.

3

- Market risk - the risk relating to changes in the value of the portfolio due to movements in the market value of the assets held
- Credit Risk - the risk that a counterparty to an agreement will be unwilling or unable to fulfil its obligations
- Operational Risk - the risk of loss due to fraud or mismanagement within the fund management organisation itself
- Relative performance risk - the risk of underperforming comparable institutional investors

Market risk

- Review definition of risk - variance of return or value at risk measure
- Check timescales being used or the limits of deviation from benchmarks
- Check that the procedures to monitor and control this risk are adequate and are being followed - are regular reports being produced and are the correct people seeing them
- are the factors contributing to the risk understood by all of those involved

Credit Risk

- is the creditworthiness of the counterparties involved monitored effectively
- review the limits set for the total exposure to each counterparty and review how this is monitored

Operational Risk

- review whether management understand all of the deals and trades undertaken by their traders and whether the chains of reporting and responsibility are effective
- review the independence of the front and back office functions

Relative Performance Risk

- review the mechanisms for controlling the difference between portfolios and their peer group benchmarks (this is similar to controlling market risk except that performance is measured relative to the institution's competitors rather than the index)

Bookwork which was quite well answered although marks were lost through incomplete answers to part (ii).

4 Broad Options

- Review the level of active and passive investment decision making in each asset class and region

- Outsource all the investment management or replace the key internal personnel with better qualified people at a higher salary

- There are options which involve a combination of the above, e.g. keep domestic equity and all bond (assuming it is satisfactory) investment in-house and outsource only the overseas portions

Considerations

- The primary considerations will be whether the small team can deliver out performance, and whether passive management is acceptable in whole or in part for the company's product and image.

- Review the whole domestic equity investment process. Determine whether the correct reason for the problem is the smaller company bias. Identify whether this is resolvable with a change of approach by determining whether there are other problems, e.g. lack of talent, absence of process, or analytical or portfolio building skill, or proper systems of risk control

- For the overseas equity component, similar identification of the true cause of the problem is required. Assuming this is so, the issue will be whether the company can afford to resource the overseas equity team adequately to bring about an improvement, or whether some form of outsourcing or passive management would be a more cost effective solution.

Candidates were unsure of the options for external management (other than collective schemes).

5 (i) Uses of indices include:

- A measure of short term market movements.
- Providing a history of market levels and movements.
- As a tool for estimating future market movements, based on past trends.
- As a benchmark against which to assess portfolio performance.
- Valuing a notional portfolio.
- Analysing sub-sectors of the market.
- As a basis for index funds which track a particular market.
- To provide the basis for the creation of derivative instruments relating to the market or its sub-sections.

(ii) DJIA is made up of 30 shares in the industrial sector.

It is an unweighted arithmetic average.

It provides a quick guide to shares in the industrial sector, but is not representative of the US equity market as a whole.

S&P Composite is a weighted arithmetic index.

Its constituents are the 500 leading companies in the US.

It represents a cross sector of all sectors of the market.

Russell 2000 is an index of 2000 US small capitalisation companies.

Reasons for divergence would be:

That industrials in the DJIA had outperformed the wider market including financials, utilities, etc. and that this also applied to larger capitalisation stocks outperforming the smaller stocks in the market represented by the Russell index.

(iii) Using GDP as weights will result in the under- and over-representation of sectors, e.g. there are many mutual life companies which are not quoted but contribute to GDP.

Similarly, there may be areas where it is impossible to get representation, e.g. accountancy firms.

The weight attached to the life assurance industry will be higher than is represented by the market capitalisation of quoted stocks. As tracker funds try to gain full exposure to the life industry, the demand for quoted stocks may cause life assurance stocks to be overvalued. Similarly, some industries will be under-represented.

Changes to the weights are unlikely to occur smoothly, and data on the relative weights is likely to become available after some time delay.

(iv) Broad classes of commodities:

Energy, base metals and precious metals.

Factors:

- Frequency of pricing.
- Method of weighting each class and sub-class of commodity.
- How to determine actual weights to use.
- Frequency of re-balancing weightings.
- Consistency and choice of "future" delivery dates used in the index.

Parts (i) to (iii) were straightforward bookwork. Part (iv) demanded some application and was poorly answered. The examiners did not expect agricultural commodities to form part of a barometer index of industrial supply and demand.

6 (i) (a) Gross EPS = 50p $(2 \times 0.25\text{p})$

$$\text{PER} = \frac{10}{0.50} = 20\text{x}$$

(b) Market Cap of Co. = £500m

Share price £10 $\Rightarrow$ 50m shares in issue.

WACC = 7%

Net Asset / share = £4 $\Rightarrow$ Net Assets £200m

Operating Profit = £25m $(50\text{m} \times 2 \times 0.25)$

EVA = £25m – $(200\text{m} \times 7\%)$

= £11m

(c) £500m – £200m = £300m

(ii) If the economy is moderately buoyant and profits are fairly stable, both pharmaceutical and chemical companies might be similarly rated.

As the economy starts to move into recession PERs for chemical companies are likely to fall while those of pharmaceutical companies will remain stable or may even rise slightly.

At the bottom of the cycle PERs of chemical companies will probably have risen from their low point as earnings have fallen, but pharmaceutical stocks will still be more highly rated.

As the economy starts to recover, the PER of chemical companies will rise as the price increases in anticipation of future earnings growth. PERs of pharmaceutical companies may be below those of chemicals.

Many chemical companies have pharmaceutical divisions, which can act as a stabiliser for the PERs of chemical companies during an economic cycle. The extent to which this will apply will depend upon the amount and quality of earnings brought to the Chemical company by the pharmaceutical division, and the extent to which the cyclical elements of the chemical company are seen to be distracting from the generally more highly rated pharmaceutical operations.

Part (i) was poorly answered.

7 Not a recommended strategy.

Investment consideration of a small personal portfolio and a long-term pension fund are very different.

Individual portfolios:

- liabilities may be more short-term in nature
- may have a higher need for liquidity
- targets may be more absolute in nature, i.e. fixed liabilities
- attitude to risk is a personal matter

Pension fund:

- liabilities more long-term and real, especially since this is a new and growing scheme
- Actuarially risk would be increased by his "defensive" tactic
- MFR funding position could be very volatile if the position were maintained
- could result in cash injections being needed if equity markets rally strongly
- since assets do not need to be realigned a temporary fall in market values is not too concerning

Variability in asset prices:

Two sorts of variability

- volatility in market values
- change in the overall valuation of a PF due to an asset allocation move
- Consistent method of valuing assets and liabilities is needed
- This is more important than the actual stability of either.
- As long as assets and liabilities move together, the valuation result will not be affected by unstable asset values.
- However stable asset values provide for easier reporting of results to clients.
- Hence a discounted cash flow method to smooth values may be used.
- Notional portfolios can be used to cope with the fact that DCF values differ from one asset class to another.
- This avoids the result of the valuation being affected by the actual asset allocation at the time.

Many candidates offered long discussions of market levels. The question was related to different investor needs.

8 Monthly valuations: designed to ensure that regular and up to date evaluation of performance is conducted. This will also assist in cash flow timing for time weighted returns (see below) and will enable more rigorous checking of performance calculations.

Time Weighted Returns: eliminate the distortions arising from the timing and size of cash flows into portfolios. These flows are not generally within the managers' control, and so would unfairly distort the comparison. Comparative returns are the goal for this standard.

Accrual Accounting: this will ensure proper treatment of (principally) income adjustments, so that discontinuities can be eliminated which may be difficult to attribute irregularly between achieved performance and income sources, leading to distortions in comparisons

Fund Composites: this will oblige managers to refrain from cherry picking which funds they choose to count within their performance measures. The intention would be that funds which follow a given benchmark should all be included. This will allow for the dispersion which will naturally apply across the "house returns".

This was a relatively straightforward question where few students scored well. Answers were generally too short to pick up a satisfactory number of marks.

9 (a) **Japanese Long Bond** - the yield is very low, for domestic economic reasons because of deflationary risk.

- The return in US$ terms is uncompelling due to low yield.
- The other component might be capital return, but these are gross redemption yields.
- Running yield is not given.
- It is hard to see the investment value in this purchase.
- Other considerations which might apply are the fund benchmark and range constraints - this is a global bond portfolio. What is the benchmark?
- Do Japanese bonds form part of the benchmark?
- Is there an obligation to maintain a minimum weighting in Japanese government securities within the portfolio.
- Is there a currency factor within the benchmark which needs to be taken into account in determining the risk relative to benchmark in avoiding this asset class?

There should be no marks awarded for suggesting there is a potential currency gain from investing in yen versus other currencies; this could be achieved more securely without investing in the Japanese bonds.

(b) **Argentinian Govt Eurobond** - this is Euro denominated, a major currency. Currency risk is therefore Euro versus US$.

For benchmark comparison there are two considerations:

- is DM part of the benchmark requirement, or range requirement (as above)?
- how does this Eurobond compare with DM-denominated government debt?

This is a high yielding asset, because of the default risk within the instrument.

- It is a government security but because it is Latin American, there is a considerable risk premium attached to default risk.

- The Republic of Argentina will be required to service this debt and ultimately redeem the security in Euros and not in their domestic currency; this adds to the default risk.

For portfolio considerations, the investment parameters would be the risk versus reward trade-off and the proportion of this security and similar types of lower grade debt instruments held within the portfolio relative to benchmark.

This very real question was not answered well. At its simplest, there would be no case for buying the Yen Bond unless you were obliged to do so. The Argentinian Eurobond had a more interesting risk / reward profile and might be an interesting diversifying asset for a small part of the portfolio. Few candidates managed to analyse the risk into credit (Argentinian) and currency (Euroland) components.