

EXAMINERS' REPORT

June 2024 examinations

Subject F105 — Finance and Investment Fellowship Principles

INTRODUCTION

The attached report has been prepared by the subject's Principal Examiner. General comments are provided on the performance of candidates on each question. The solutions provided are an indication of the points sought by the examiners, and should not be taken as model solutions.

QUESTION 1

- i. Alternative modelling approaches include:
- Capital Asset Pricing Model (CAPM)
 - Arbitrage Pricing Theory
 - Multifactor models
 - Option pricing models
 - Term structure models
- ii. A 'contrarian' investment style implies doing the opposite to what most other investors are doing in the market – especially at market 'extremes' – in the belief that investors tend to overreact to news:
- The belief is that if a share has performed well recently, the chances are increased that it is over-priced and will perform poorly in the coming months.
 - The approach aims to take advantage of excessive volatility in investment markets.
- iii. A 'contrarian' investment style aims to benefit from herding bias – i.e. investors making decisions to buy and sell based on what they observe other investors are doing. Herding bias tends to be more pronounced in times of financial distress.
- iv. Typical 'contrarian' portfolio characteristics:
- Portfolio holdings differ from competitor portfolios and the benchmark, especially at market 'extremes'.
 - Relative performance risk and tracking error may be higher than normal.
 - In extended bull markets these may include increased portfolio hedging and cash.
 - Holding periods may be longer than for other portfolios as contrarians typically purchase shares that have been ignored by other investors and it can take a long time for this view to change.
- v. a. Number of futures contracts to short:
- $$= [\text{portfolio value hedged} \times \text{beta}] / [\text{current index value} \times \text{payoff per index value}]$$
- $$= [10\% \text{ of R500 million} \times 0.8] / [2\,500 \times \text{R10}]$$
- $$= 1\,600 \text{ contracts}$$
- b. Payoff:
- $$= - \text{no. of contracts} \times \text{payoff per index value} \times [\text{settlement price} - \text{futures price}]$$
- $$= -1\,600 \times \text{R10} \times [2\,250 - 2\,550]$$
- $$= \text{R4.8 million}$$

Examiner comments:

Overall this question was not well attempted by most candidates of which many did not know their bookwork well enough to score well in parts (i) and (ii). Most candidates did well in part (iii), however many struggled with part (iv). Very few scored well in the calculation part (v).

QUESTION 2

i.

- Buyers of options are not obliged to trade, unlike the sellers of such contracts.
- Buyers do not face any loss, beyond that of the initial costs (such as commission).
- Therefore, they do not pose any default risk to the clearing house.
- As there is no credit risk, no margin is required.

ii. Key risks:

- Basis risk inherent in the Top 40 futures not being a perfect hedge,
- and due to the portfolio holdings perhaps differing substantially from those of the Top 40.
- Due to potential sizeable specific risk the portfolio value might fall while the Top 40 does not, resulting in no protection.
- The systematic risk of the portfolio might differ from that of the index, i.e. the overall beta might differ from 1, and this might change as the manager trades.
- The magnitude of the protection might therefore differ from that what was intended.
- Incorrect number of options purchased due to incorrect assumptions or calculation errors (i.e. operational risks).
- The portfolio may receive inflows or experience outflows,
- in which case the number of contracts might need to be adjusted.
- Changes in the implied values of the parameters affecting the option price, leading to changes in value not related to changes in the index, although these effects should be relatively small.
- Short-term strategy, only 3 months – risk of not being able to extend downside protection after this.
- Any offshore holdings will not be hedged by the strategy, leaving the portfolio exposed to currency risk.

iii. Alternative derivative strategies:

- Strategy – put options on each of the individual shares.
- Risk – impractical and expensive, as each individual stock would tend to have a higher volatility than the market as a whole.
- This does not accurately target the total movement of the portfolio.
- Strategy – a total return swap.
- Risk – OTC swaps are tailor-made and carry increased risks, such as operational risk.
- Strategy – enter into a short forward position on the portfolio.
- Risk – not finding a counterparty willing to take the long position on this specific portfolio.
- This strategy cancels all upside – could be a valid alternative in terms of considering protecting against capital losses.

[Credit awarded for any suitable strategy and associated risk. but not for counterparty risk, as that is generic to all over-the-counter derivatives and not specific to the stated strategy.]

Examiner comments:

Part (i) was well-attempted and despite the incorrect phrasing of the question in the original paper, no candidate was prejudiced. In part (ii), most candidates struggled to point out the range of risk, perhaps not using all the information given, and also because some risks develop over time. Candidates are generally confused about basis risk and cross-hedging risk, although this was not penalised. (ii) Not well answered. Some candidates gave derivatives based on the Top 40. Candidates generally struggled to point out risks other than counterparty risk.

QUESTION 3

i. The investment bank could:

- Advise the company on the price they can charge – they will have good knowledge of the market and will suggest appropriate issue prices and interest rates.
- Handle the marketing of the security issue to the public – which includes advertising the issue to potential investors, maintaining records of applications and determining allocations, handling investors' money and actually issuing the securities.
- Check and certify the quality of the information offered – they have a strong incentive to ensure the quality of information offered, as otherwise their reputation might suffer.
- Innovate security design and packaging to stimulate demand – using their expertise and knowledge of investors to develop securities that are attractive to investors, while bearing cost to the issuer and their capital needs in mind.

ii. Financial covenants:

- Private debt investors tend to be very focused on covenant protection – since illiquid markets mean they may be unable to sell their private debt investments in the event of a credit downturn.
- Covenants would typically impose requirements and restrict the activities of the borrower in order to safeguard the security of the loan.
- The security afforded by covenants to the lender would help to reduce the cost of the debt to the issuer.

Possible examples of financial covenants include:

- a minimum ratio of current assets to current liabilities.
- a minimum required level of interest cover on this issue of private debt and/or on all outstanding debt.
- a limit on the total level of higher or equal ranking borrowing.
- a limit on the total level of total outstanding debt as any problems with lower ranking debt may also lead to problems with the higher-ranking debt.
- limits on the payment of dividends to retain sufficient funds to service future debt obligations.
- Provide an asset to use security for the debt.
- Prescribe the type of assets the company can invest in.

[No credit awarded for non-financial covenants.]

iii.

a. Credit default swap (CDS):

- The investor might buy a credit default swap, which gives them the right to sell their private debt holding in the company to a counterparty:
 - at face value,
 - in the event that the company defaults on its debt obligations.
- Credit events would include bankruptcy, a ratings downgrade, or cross-default (other debt of the company defaults).

b. Credit-linked note (CLN):

- The investor could set up an SPV, which then sells a credit-linked-note to other investors and uses the proceeds to buy government bonds (assumed to be risk-free).
- At the same time, the SPV sells a CDS (as in part a), based on the company private debt to the investor.
- In the case of a default, the private debt investor would receive the government bonds and the other investors would receive the company private debt.

iv. Credit spread:

- Credit spread refers to a measure of the difference between the yield on a risky and a risk-free security. It is a measure of the risk premium a credit-risky corporate or sovereign entity must pay to attract capital.
- In this instance it would refer to the excess yield on corporate bonds over government bonds of similar term.

The excess yield is typically decomposed into the following components:

- Compensation for expected defaults should take into consideration the 5-year term and the 50% recovery, therefore the compensation for defaults based on the historic data $\approx 3.4\% \times 50\% / 5 = 0.34\%$ p.a.
- In addition, expected defaults might differ from historic defaults, as investors may expect future defaults to exceed historic levels due to differing economic conditions (e.g. inflation) might be very different from the recent past.
- Compensation for the risk of higher defaults, i.e. a credit risk premium.
- A residual that includes the compensation for any changes in liquidity, i.e. an illiquidity premium.
- Supply and demand factors.
- The criteria of BBB ratings may have changed over the 5 years.
- 5 years is too short a time for the analysis / sample size of 117 bonds is too small.
- Check origin of the 4 defaults: more than one from the same company or industry.

[No credit awarded for points that should be captured by the rating.]

Examiner comments:

Part (i) was not well-attempted despite being a straightforward bookwork question. In part (ii) candidates struggled to summarise the reasons for covenants, but did well in listing examples of financial covenants. Many candidates listed non-financial covenants, which were not awarded any credit. In part (iii) most candidates could explain a CDS, but very few showed that they understood a credit-linked note. Part (iv) was well-attempted and candidates understood the question and could point out errors and omissions in the analysis.

QUESTION 4

i. Relative merits:

- X represents a vertical merger whereas Y represents a conglomerate merger.
- Profits are projected to develop differently under the two options:
 - Under X, supplies could be sourced at a lower cost if Glo owns the supplier (dependent on how the supplier is integrated into the group).
 - A cost saving could translate into higher profit margins, or if the cost saving is transferred to customers, larger sales volumes.
 - Under Y, Glo would now earn the profits generated by the acquired profitable company.
- Y would diversify Glo's operations, possibly leading to lower finance costs while under X, there would be increased exposure to the performance of its current industry.
- X might be easier to justify to Glo's shareholders, as Glo might be satisfactorily diversified.
- However, since Glo is a conglomerate, Y is better aligned with its current business model.
- Under both acquisitions economies of scale could be realised.
- The threat of a takeover would be reduced under both through increasing Glo's size.
- X might be less risky since it is in a line of business Glo is familiar with, while Y explores unfamiliar territory.

ii.

- Socially responsible investment incorporates environmental, social and ethical objectives into the decision-making process.
- Sustainable investing implies taking account of environmental, social and governance factors that are consistent with the long-term sustainability of society and the environment.
- Glo will therefore not make their decision by only giving consideration to the financial aspect.
- When deciding on acquisition X or Y, Glo will therefore need to give consideration to factors such as,
 - The type of industry X/Y operates in and the impact of its operations on the environment, the depletion of resources, waste, pollution, etc.
 - What employee conditions are like at the company.
 - How ethical the company is in its business practices.
- If either company scores stronger in these respects, there will be a greater chance that they will be acquired (or they may even be excluded as a viable option).
- Factors that can be changed upon acquisition are likely to be given less consideration.

iii. Considerations:

- Glo would consider its optimal capital structure.
- Glo might reference their long-term and short-term financial plans and consider the impact of both funding options and some economic scenarios on these plans.
- Glo's working capital requirements must be balanced against fully financing the acquisition with cash.
- A sufficient cash reserve should be retained to meet short-term financial needs.
- Cash might also be required for emergency funding as a result of unexpected eventualities, or access to an overdraft arranged.
- Consider the opportunity costs of investing the cash in this acquisition, could a higher return be earned by investing the cash elsewhere.
- The acquisition can likely be concluded quicker if the cash holding is used.
- Issuing a listed bond is likely to incur additional costs. e.g. if a rating is required, the costs of the rating agency.
- Costs of complying with listing requirements.
- The appetite for a listed corporate debt should be considered. The greater the appetite, the lower the level of interest to be paid.
- The term and structure of the bond needs to be considered and the requirement to compensate investors for possible default and liquidity risk. All of this will impact the interest investors require.
- Consider how the issue of the debt will impact on the financial position of the company.
- Or whether the covenants on debt will place any restrictions on the company. Gearing and liquidity ratio will worsen. Impact of this on cost of other capital.
- Consider how interest payments will be financed.
- The tax treatment of the financing option should be optimal for the company.
- A combination of the two sources of finance might be best, also exploring alternative sources of finance.
- Consider other capital projects in the pipeline and how these will be funded.

Examiner comments:

Part (i) was answered fairly well. Many candidates did not in their answers explain what sustainable and socially responsible investing means. In part (iii), too few points were raised for the available marks. Many candidates mentioned the business needing to consider if they have sufficient cash and if this was available for investment, but the question assume there would be sufficient cash.

QUESTION 5

i. Custodial services:

- Safekeeping of crypto assets
- Income collection
- Tax recovery
- Cash management
- Security settlement
- Foreign exchange
- Crypto asset lending

ii. The aims of regulation are to:

- Correct market inefficiencies, promoting efficient and orderly markets for crypto assets increasing the ease of trading, accessibility to these assets and deepening the market.
- Protect individual investors who invest in crypto assets by reducing risks associated with trading (e.g. operational risks).
- Maintain confidence of individual investors in the financial system.
- Reduce financial crime, which reduces the risk of individual investors losing funds.
- Regulation comes at a cost which is likely to be passed on to investors, discouraging them.
- It could create a false sense of confidence and would not prevent unscrupulous CASPS from operating and misleading investors.
- The number of CASPs might drop, reducing competition.
- Individuals would likely have to provide more personal information and complete forms, i.e. increased administration and processing time.
- Unintended consequences such as the need to disclose information, with a potentially greater chance of being subject to taxes may affect the amount of assets invested into the crypto assets (changes to asset composition may also take place depending on the prescriptive rules).
- Some investors may choose to invest into offshore crypto assets.

iii. Reporting obligations may include:

- reporting suspicious and unusual transactions.
- reporting cash transactions above the applicable threshold.
- reporting in respect of control of property that might be linked to terrorism.
- reporting any information that may be of use to other international regulators in combating financial crime.
- reporting multiple buy and sell transactions made by the same investor over a short period of time

Examiner comments:

Part (i) was well answered, as was expected of a bookwork question. Many candidates focused only on the positive aspect of regulation in part (ii), ignoring its cost. In part (iii), answers related to reducing crime as it relates to a CASP were also awarded credit.

QUESTION 6

i. FTSE/JSE Top 40 index:

- Weighted arithmetic index.
- Constituents are the 40 largest stocks by market capitalisation.
- Free-float (since 2002) – reflecting available supply of investable shares in the market.
- Total return index, published daily, based on ex-dividend adjustments.
- Represents 84% of the ALSI.
- Represents a broad cross-section of key sectors of the market.
- Designed for use in the creation of index tracking funds, derivatives and as a performance benchmark.

ii. Energy sector company key characteristics:

- Large multi-national companies – not applicable.
- Commodity price dependent – not applicable.
- Risky – applicable as the new technology relating to renewable energy sources is still emerging.
- Global – not applicable as domestic sales makes up total sales, also due to lack of diversity in earnings streams compared to other energy companies.

Therefore probably not suitable, possibly premature, to classify in the energy sector. Could be more appropriate to classify under a niche sub-sector industry.

iii. Differences in P/E ratio values arose to differences in assessment methodologies and assumptions:

- Analysts probably calculated a forward-looking P/E ratio for the solar company.
- Forecasting is uncertain and imprecise, subjective if provided by the company.
- Different assessment of the company risk profile
- and growth prospects, taking account of the state of the economy, macroeconomic environment, and competitive landscape.
- Focus on continuing operations and exclude extraordinary one-off items.
- Energy sector P/E ratio likely to be historic.
- Energy sector P/E ratio not appropriate comparison.
- Company still growing, short track-record and profits might not have stabilised, while a large portion of energy companies are well established.
- Differences in the models and assumptions of the analysts to model future earnings e.g. growth prospects, profit margins.
- Extent to which R&D costs might impact on capital and therefore on earnings.
- Uncertainty around dividend policy.
- The current position in the economic cycle – some subjectivity in future development of the cycle State of the economy – consider government bond yields as proxy.
- Oil and gas companies, which might form a large portion of the sector, might have lower growth prospects, considering the ESG trend, than a renewable energy company.

iv. Inclusion of shares impact on fundamental analysis:

- Expected inclusion in the index by the company signals to the market strong expected earnings growth over the next two years, which if realistic should be reflected in the fundamental valuation by analysts.
 - The company may have provided a projection of volumes and earnings to analysts, which the analysts use as a base for their own assessments.
 - However such projections must be critically tested by analysts before inclusion in a fundamental valuation.
- The actual inclusion of a share in an index should not impact future earnings or dividends and hence these components of fundamental value remain unchanged.
- However inclusion in an index can increase the liquidity of the share as more investors may now need to be invested in it (e.g. passive investors).
 - Better liquidity may translate into a lower ERP and a lower valuation discount rate used in the fundamental valuation of the company.

- Overall therefore there may be an actual increase in the discounted valuation of the company on actual index inclusion.

Examiner comments:

Part (i) was a bookwork question which was generally well attempted.

For part (ii), a number of candidates did not adequately compare the characteristics of the company to a typical company in the energy sector and/or did not provide a justified recommendation for the sector in which the company should be classified. Where the energy sector was recommended, many candidates did not comment on the degree to which the characteristics of the company were a suitable fit for the sector.

For part (iii), only a few candidates identified that the analysts may be using forward earnings for their P/E ratios. As the company is already listed, the share price used by the analysts would be the published market price and not their own assessment/calculation of the price. In general, well justified reasons for the difference between the analysts' ratios and that of the sector were provided.

A number of candidates attempted part (iv) as if the company was listing for the first time. As the company is already listed, the reporting requirements of the exchange should not change following inclusion in the index. Many candidates incorrectly stated that increased demand for the share, leading to an increased share price, would by itself change the fundamentals of the company.

QUESTION 7

i. Increased asset management fees:

- The asset management fees impact the net return earned, and the fee increase should be evaluated in the context of the current fee structure and a peer benchmark.
- Performance relative to benchmark – including the additional fee requested, the manager would have only slightly underperformed the benchmark in 2022 and would have good outperformance in 2023.
- However, there was a worsening of the performance relative to the risk taken as measured by the Sharpe ratio in 2023.
- Load differences were bigger in 2023 than in 2022, indicating more risk was taken and this should be compared to the fund's risk appetite.
- While a Sharpe ratio > 1 indicates acceptable performance (2022) even though marginally so, the reduction in the ratio to < 1 indicates a worsening risk-adjusted performance.
- The performance by itself may not therefore justify an increase in the fee.
- Although performance may have been impacted by flows into or out of the fund and other constraints on the fund and this should be accounted for.
- Level of assets – there is a high and growing cash component – which usually attracts a much lower management fee – this may add to the difficulty to justify the fee increase.
- Consider the fee structure in terms of the mandate and whether any increase proposals are contained in it.
- E.g. a change in size of funds, which may have reduced over the period (no information provided on inflows or outflows over the periods in question).

- Need to better understand the justification for the request of management fee – does the lack of fee impede the managers ability in any way.
- A performance fee (both positive and negative) based on risk-adjusted performance compared to the benchmark may be a more acceptable alternative to a flat fee increase.
- The offshore component is already a little higher than benchmark – this, and the investment into alternative assets may have larger fees associated.
- Two years of return is not sufficient to make a judgement on the performance of the manager.
- Increased regulatory or reporting requirements may justify a fee increase.

ii. Specialist mandates and passive index tracking:

- Size of the fund may justify having separate asset managers – it is large enough to likely not suffer too much from a lack of economy of scale.
- Performance is not consistent across all asset classes and 2 years may not be sufficient to determine whether a change is required – could have been the impact of a specific event or circumstance.
- An evaluation over several time periods e.g. 1, 5 or 10 years or longer may be performed.
- Additional information and measures will likely be needed to determine if managers should be sought and should be employed in selecting a manager for each asset class.
- Examples of additional measures, e.g. allowing for downside risk, i.e. the risk of failing to achieve a specified or target rate of return may be used.
- The asset manager did underperform in equities for both years and marginally underperformed in a few other asset classes. Evaluation of a new equity manager at least would be a good starting point, taking account of specific risk measures for this part of the portfolio.
- Having separate asset managers specialised in asset classes may result in better stock performance, although the manager did outperform the benchmark in some asset classes in some years.
- The current manager did manage to perform quite well in asset allocation, especially in 2023, and may considered to be retained for this function.
 - Usually the bulk of out/under-performance is derived from asset allocation.
 - If the manager is not retained and the proposal is implemented, then another manager needs to be employed to do the asset allocation specifically.
 - It might make sense to employ the manager for this purpose (asset allocation decisions) only and use other managers for stock selection and index tracking.
- Benefits of separate managers will need to be weighed against having more than one asset manager to evaluate and:
 - whether that would result in higher fees charged by the current asset manager
 - the willingness and capability (and availability) of managers to comply with reporting and administrative requirements of the investor.
 - the willingness (and availability) of managers to accept any restrictions and constraints in the mandate.
- Passive investment could result in lower fees, but also reduced the chance to outperform the benchmark.
- Will also need to determine if there are sufficient instruments to track and replicate a benchmark effectively.

- The offshore investment component (and possibly other classes with returns very close to the benchmark returns) may already be passively managed. If the asset manager does not have sufficient offshore management capability, a passive index may be a viable alternative for this portion.
- If the belief is that markets are efficient, passive investment may be a viable option.
- The trustees (or their actuarial advisor) can perform a risk budgeting exercise, where the risk taken can be split into asset allocation and stock selection, and the stock selection can be allocated to asset classes based on evidence of stock selection performance.
 - The risk budgeting exercise can be moderated by the fees charges by various specialist managers and the fee for asset allocation.

[Any valid points not included above were awarded credit.]

Examiner comments:

This question was generally poorly attempted. Many candidates did not use the context provided in the question when answering, such as the large size of the fund, and the performance of different asset classes, or the relative performance to benchmark each year, and risk adjusted performance. Most candidates provided far too few distinct points for the many marks on offer.

While the total return for each year was easy to calculate with key information provided in the question, and few if any calculations were required, some candidates attempted to do complex calculations, which took time and sometimes resulted in numerical errors.

In part (i), some provided an incorrect explanation of the Sharpe ratio, most did not understand how to interpret the Sharpe Ratio, and only a minority of candidates commented on the relatively poor return relative to the risk taken on in year 2.

In part (ii), while many commented on the good asset allocation but relatively poor stock selection performance of the manager (in some sectors), only the few candidates who scored well reflected on, and then proceeded to offer a structured consideration, for each of the two alternative approaches suggested.

QUESTION 8

- a. Risk budgeting – refers to the process of establishing of how much investment risk should be taken and where it is most efficient to take the risk in order to maximise return.
 - b. Strategic risk – refers to the risk of the strategic benchmark performing poorly relative to the value of the liabilities or the matched benchmark.
 - c. Active risk – refers to the risk that an active asset manager will underperform compared to their allocated benchmark.

ii. Strategic risk = $\sigma [R_s - R_m]$ where:

σ = standard deviation calculated over the time period

R_s = returns on the strategic benchmark portfolio

R_m = returns on the matching portfolio

$$\begin{aligned}\therefore \text{Strategic risk} &= \sigma [(9\%-8\%), (14\%-12\%), (-4\%-2\%), (4\%-5\%), (2\%-10\%)] \\ &= \sqrt{[(1\% - -1.6\%)^2 + (2\% - -1.6\%)^2 + (-2\% - -1.6\%)^2 + (-1\% - -1.6\%)^2 + (-8\% - -1.6\%)^2]/4} \\ &= 3.9\% \text{ p.a.}\end{aligned}$$

Active risk = $\sigma [R_a - R_s]$ where:

σ = standard deviation calculated over the time period

R_a = returns on the actual portfolio

R_s = returns on the strategic benchmark portfolio

$$\begin{aligned}\therefore \text{Active risk} &= \sigma [(8\%-9\%), (12\%-14\%), (0\% - -4\%), (4\%-4\%), (4\%-2\%)] \\ &= \sqrt{[(-1\% - 0.6\%)^2 + (-2\% - 0.6\%)^2 + (4\% - 0.6\%)^2 + (0\% - 0.6\%)^2 + (2\% - 0.6\%)^2]/4} \\ &= 2.4\% \text{ p.a.}\end{aligned}$$

[No credit was forfeited if candidates used the number of observations ("5") in the denominator.]

Comments:

- Strategic risk contributed the most risk, for a negative return relative to the matching portfolio.
- Active risk contributed less risk and made a positive contribution to the scheme's return.
- These results may suggest that the fund's strategic benchmark may need to be reviewed.
- A calculation based on more frequently measured returns (e.g. monthly) might reveal a different result.
- Results would be of limited use if there were changes during the period (e.g. replacement of active managers).
- The results could be supplemented by alternative risk measures provided data is available for these to be calculated (e.g. based on downside risk).

iii. Restrictions:

- For multi-asset managers, limit asset class deviations from the strategic asset allocation (using load difference/load ratio).
- Within an asset class, limit sector deviations from benchmark weights.
- Impose a limit on active money positions for individual holdings.
- Impose a limit on the tracking error (or other risk measure chosen by the scheme).
- Impose a limit on the duration deviation from the benchmark (bond/money-market portfolio).
- Restriction on fees (to limit net of fees performance differing too much from index).
- Restriction on financial gearing that could increase active risk.
- Restrict credit risk to the extent that this is not present in the benchmark (e.g. in the bond portfolio).

iv. Factors:

- Impact on strategic risk budget and associated strategy: this risk will have to decrease if total risk is to remain unchanged and active risk is allocated a bigger portion of the total.
 - Derivation of a new strategy which is more closely aligned to the matching portfolio may require an updated asset-liability modelling exercise to demonstrate the level of strategic risk associated with different strategies.
 - The experience over 2019-2023 suggests that a review of the strategy is not unwarranted given its underperformance relative to matched position and relative high risk.
- Greater active fund management could lead to the scheme breaching regulatory limits if adequate controls are not in place – manager restrictions may need to be reviewed.
- Scheme costs could increase if more funds are managed actively rather than passively.
- The trustees need to decide how to allocate the increased active risk budget e.g. increased freedom in switching between asset classes, or between sectors within an asset class or between stocks within a sector.
- Changing the implementation of active fund management could increase structural risk (e.g. splitting the equity fund by style) without necessarily obtaining compensating expected return.
- Past performance may not necessarily be repeated - future experience may not be as favourable for active fund managers as over the past 5 years.
 - Active management is likely to underperform benchmarks (net of costs) in the long run providing a poor return vs risk profile compared to asset allocation and strategic risk.
- Decisions on risk budgeting should consider the impact of using different risk measures (e.g. downward semi-standard deviation, shortfall probability and expected shortfall).

Examiner comments

Overall this question was well attempted.

Part (i) was usually well attempted, although for (c) many candidates defined active risk as the risk of the actual returns underperforming the “benchmark” without specifying which benchmark, or underperforming the strategic benchmark (which ignores the possibility of multiple managers being used for different parts of the strategy; actual performance vs strategic benchmark includes both active and structural risk).

The calculations in part (ii) were done poorly by most, despite being straightforward standard deviations of relative returns – most candidates could not even write out the correct formula for standard deviation.

Part (iii) was not done well, with many candidates simply providing a generic list of restrictions with no regard for a manager’s benchmark – restrictions on securities / counterparties / currencies present in a benchmark may increase rather than reduce active risk; it is the deviation from the benchmark that needs to be restricted.

Part (iv) was poorly attempted.