

# **Actuarial Society of South Africa**

## **MARKING SCHEDULE**

May 2021

**Subject F205 - Investment**

**Fellowship Applications**

*Please note that this examiner report presents one possible model solution to the questions. Alternative solutions provided are considered and marks awarded where correct points are well motivated.*

Marks : half a mark per bullet unless indicated otherwise

## QUESTION 1

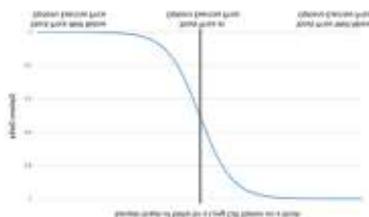
*Candidates generally struggled with parts i and ii; displaying a surprisingly low level of knowledge and feel for delta, gamma and the transmission mechanism between the options market and the market for the underlying.*

*Many candidates failed to identify the need to delta hedge option exposure with share price movement (the hint was in part i). For part iv, many candidates failed to recognise that medical scheme liabilities are actually short term in duration*

(i)

- Delta: expected change in the price of an option based on the change in the price of the underlying share.
  - It is the first derivative of the value of the option with respect to the underlying security's price
- Gamma: rate of change in the delta compared with a change in the underlying share price.
- Long positions in call options have positive deltas (between 0 and 1). If a call has a delta of 0.5 and the share goes up by 100%, in theory, the price of the call will go up by 50% (if gamma is zero in the range).
- At-the-money (ATM) options will tend to have a delta of around 0.50, and delta approaches 1 as the option moves deeper in-the-money.
- As expiration nears, the delta for in-the-money calls will approach 1, reflecting a one-to-one reaction to price changes in the stock.
- Delta for out-of-the-money calls will approach 0 and won't react to price changes (depending on size of price change) in the share.
- Gamma is highest for at-the-money options.
- Range for gamma is infinity – it is not bound
- For near-the-money options, gamma increases as time passes, whilst for options far enough out-of-the-money, gamma decreases as time passes.
- As a general rule, will move more than out-of-the-money options, and short-term options will react more than longer-term options to the same price change in the stock.

*Not for the solution but nice graphic for the markers: The chart below shows a long call's delta.*



*Looking to the chart, option delta is a nearly flat line around zero when a stock's price is well below the option's exercise price. It is also a nearly flat line around 1 when that stock's price is well above the option's exercise price. In the middle, though, that delta chart curves upward, reaching a value of 0.5 and reaching its steepest slope at exactly the option's strike price. It's the slope of the option's delta chart that represents the option's gamma, and that slope -- and thus the gamma -- is at its steepest at exactly that option's exercise price.*

*For put options (not asked):*

- *Long positions in put options have negative deltas, between 0 and -1. If a put has a delta of -0.5 and the share goes up 100%, the price of the put will go down by 50%*
- *As expiration approaches, the delta for in-the-money puts will approach -1 and delta for out-of-the-money puts will approach 0. That's because if puts are held until expiration, the owner will either exercise the options and sell stock or the put will expire worthless.*

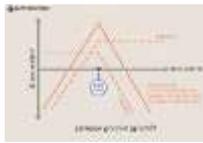
(ii)

- When investors buy call options it is typically from a bank (or market maker). These banks typically do not want to assume any market risk/exposure so they actively try to hedge the option positions by trading in the underlying shares.
- The banks calculate how many shares they need to buy based on the delta of the option that they have sold. The higher the delta, the more shares that the market maker will need to buy to hedge their positions.
- For example, if an investor buys a 100 share out-of-the-money call option contract from a bank, that bank is now short 1 contract and has a position of, say, negative 0.25 delta. To hedge that risk, the bank will typically go and purchase 25 shares of the underlying share.
- If the share then rises, the bank's delta position becomes increasingly negative, requiring the bank to buy more of the underlying share to remain hedged.
- If, as in this particular case of ABC Co, the share is illiquid, the increased demand for the shares might cause a spike in share price (more demand for the share than supply).
- Because the share in question is already highly shorted, the spike in share price is likely to cause those investors who have shorted ABC Co to incur mark-to-market losses on their positions.
- If these investors are unable (or unwilling) to increase their variation margin (collateral) they would need to close or reduce their short position ie buy the share (ABC) in the market. However due to the illiquid nature of ABC this increased demand for the share would likely cause further upward moves in the share price.
- If the share then continues to rise, the bank's delta position becomes increasingly negative at a faster rate (due to gamma), requiring even more buying of the underlying share.
- When the stock begins to approach the strike price, that is when the delta acceleration (measured by gamma) is the strongest.
- This feedback loop is sometimes referred to as a gamma squeeze and the feedback loop resembles a regular short squeeze.

(iii)

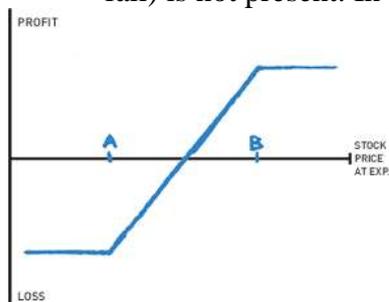
a. Long straddle:

- A long straddle is constructed by simultaneously purchasing a call and a put option on the same underlying asset with the same strike price (typically at-the-money or the nearest strike price) and expiration date. [1 mark]
- An investor will often use this strategy when they believe the price of the underlying asset will move significantly out of a specific range, but they are unsure of which direction the move will take.
- Theoretically, this strategy allows the investor to have the opportunity for unlimited gains. At the same time, the maximum loss this investor can experience is limited to the cost of both options contracts combined.



Collar:

- A collar is created by:
  1. buying or holding the underlying share (XYZ);
  2. buying an out of the money put option; and
  3. selling an out of the money call option with the same expiration date.[2 mark]
- Collars are typically used when investors want to hedge a long position in the underlying asset from short-term downside risk.
- The cost of this strategy can be low (or even zero) as the cost of the put option is offset by the receipt of the call option premium.
- However the downside risk protection comes at the cost of reduced upside.
- This strategy does not suit your friend as the upside is capped and the opportunity to profit from a fall in the share price (should the drug trial fail) is not present. In addition you would have to buy XYZ shares



- b. A long straddle is the best of the proposed option strategies as, XYZ's share price is expected to either rise sharply (if the drug trial is a success) or fall (if the drug trial is a failure). The chances of the share price remaining flat is low (by your estimation) so the chances of the maximum loss (the combined option premia) is likewise low. This zero cost collar strategy does not suit you as the upside is capped and the opportunity to profit from a fall in the share price (should the drug trial fail) is not present. In addition you would have to buy XYZ shares.



(iv)

(a)

Medical aid scheme liabilities:

- a. Purpose of a medical scheme is to provide for benefit payments and expenses as they fall due within the financial year of the scheme.
  - So short term in nature
  - And high level of liquidity needed
  - Risk tolerance is low, can't afford loss in capital.
- b. Medical inflation is usually higher than ordinary CPI
  - Statutory reserves (at least 25% of annual contributions) of the scheme should ideally grow in line with medical inflation
  - However schemes are re-priced every year so liabilities are largely predictable and fixed in nominal terms over the coming year. (which historically has been higher than ordinary CPI)
- c. Benefits are ZAR denominated although some elements will be linked to forex (medicine, certain equipment).
- d. Medical schemes are exempt from tax.
- e. Annexure B of Regulation 30 restricts investment in equities to 40%. In addition, individual equities are limited to 2.5%-7.5% depending on the market cap of the company.
- f. Majority of scheme's portfolio would be invested in money market instruments, cash and bonds which would provide the liquidity and capital protection
- g. XYZ might be appropriate as part of the portfolio's allocation to equity if it can generate a real return to aid the portfolio's aim of growing in line with medical inflation. However one would want to avoid concentration risk given portfolio's low risk tolerance.
- h. So one would need to take into account XYZ market cap and how liquid the share is.
- i. If the drugs increase in price, it doesn't necessarily mean XYZ Co's share price will also go up (e.g. if as a result of increases in input costs).
- j. A share like this, as well as shares of other medical-focused companies might offer reasonable (although not exact) match for liabilities of a medical scheme, so a portion of assets allocated to such shares might be worth considering.
- k. Consider the scheme excess reserves above the 25% requirement

(b)

Valuing XYZ:

- a. DCF: project revenue/costs/capex to work out cash flows from the company and resulting (gross) dividend stream.
- b. Determine appropriate discount rate and discount cashflows to determine NPV.
- c. Scenario analysis with probabilities of scenarios, as well as sensitivity to important factors.
- d. Compare valuation metrics to similar listed companies (EV/sales; EV/EBITDA, PE, P/B) and apply appropriate multiple to XYZ metrics.
- e. Gearing on balance sheet

Key issues

- f. Portfolio of drugs
  - What % of drug portfolio still under patent protection?
  - And for how long will this protection last for each drug?
  - What % of the drug portfolio consists of generic drugs?
  - Pricing of different drugs across various markets? Does XYZ have pricing power or is pricing regulated?
  - How big is price drop when drug loses patent protection?
- g. Size of drug development pipeline and timeline for bringing to market.
- h. Probability of new drugs receiving certification from regulator and expected pricing/margins.
- i. What drives input costs and expenses?
- j. Price point and affordability of the new drug and hence potential market.
- k. Prevalence and severity of illness to be treated by the new drug.
- l. Regulatory risks in various markets.
- m. What % of revenue is spent on R&D (ie source of competitive advantage) and how this has changed over the years ie sustainability of profits.
- n. Competition – progress or status of other drug companies targeting the same market/drug/illness.
- o. What is their market share in relation to competitors
- p. ESG issues:
  - drug testing ethics and standards appropriate
  - ethics of charging too much for life saving drugs
  - governance - track record of management and board

## QUESTION 2

i. *Candidates need to differentiate between information required, which is the raw source data like financial statements, and the analysis thereof; e.g. assessing the financial strength of the company; bearing in mind that small enterprises may have limited ability to provide the likes of financial ratios, on request.*

ii. *Most candidates were not fluent with the terminology used in covenants, and some avoided providing any metrics. A large number of candidates assumed that there would be a credit rating available for small enterprises.*

iii. *This question was surprisingly poorly answered, given that there is a similar one in the course notes.*

v. *Some candidates gave more than 3 alternatives, in which case only their top 3 were scored.*

(i)

- Purpose of loan.
  - Background info about the borrowing entity.
  - Nature of business of the borrowing entity, sector it operates in.
  - Profile/demographics of clientele.
  - How long it's been in operation.
  - Geographic exposure of its sales.
  - Geographic exposure of its operations.
  - List of directors & key employees.
  - List of shareholders and shareholding structure.
- Projections of financials and future plans required
- Consent to carry out credit checks on the borrowing entity & anybody providing personal surety.
- BEE credentials of borrowing entity & key individuals.
- Credit references from trading and business partners; and testimonials from professionals. Credit bureau reports including any defaults, judgements, arrears or credit enquiries.
- Details of all existing debt or liabilities.
- Audited income statement, cash flow statement, balance sheet, bank accounts going back several years, and latest unaudited results; as well as management accounts to date. Personal financial income and balance sheet for those providing personal suretyship.
- Details of property and any other collateral which can be used as security for the loan; and independent valuation. Photos of property to see that it is in a good state. Check that insurance is up to date, as well as rates, taxes, water sewerage and electricity bills.
- Tax clearance certificate of the borrowing entity and key people involved, including those signing suretyship.
- Insurance policies and proof that premiums are up to date.
- Evidence that the business exists – e.g. photos and site visits.

- What other applications for loans have they made – outcome of these
- What is their competitive market position

(ii)

- Net debt to EBITDA is most common (usually  $< 2.5x$ )
- Interest cover ratio;  $> e.g. 1.5$  times
  - EBITDA : Interest
  - EBIT : Interest
  - (EBITDA – Capital expenditure) : Interest
- Debt:equity
- Debt:assets
- Restriction/limitation of paying of dividends to shareholders
- Restriction on selling assets
- Restriction on issuing debt senior to the current debt
- Limitations on mergers/acquisition
- Debt service coverage ratio; the above, but replacing “interest” with “total debt service”;  $e.g. >1.1$  times
- Cash cover ratio (total cash : interest expense)  $> e.g. 1.2$  times
- LTV ratio;  $e.g.$  must be less than 75% of the loan portfolio’s net value (more useful as a REIT metric)

Also consider

- Dividend covenants
- Are all necessary insurances in place
- Asset cover ratio
- Financial leverage

For each loan made:

- LTV  $< 70\%$
- Minimum interest rate  $\geq$  Prime + 5%

Max 2 marks out of 6 for metrics numbers

(iii)

- It's not clear how much of Big RF's investment consists of equity and how much of debt in the SPV. To the extent that there is more equity than debt, the risks listed below are substantially magnified.
- The relative safety of a debt investment versus an equity investment will depend on:
  - The monetary magnitude of the equity layer of protection as a percentage of the total assets.
  - There may be several layers of debt; if there is mezzanine debt then the magnitude of that layer of debt also serves as protection for senior debt.
  - The order in which the investments into the SPV happen; for example if all the mezzanine funding must be advanced before any senior funding is advanced, this would temporarily provide the senior debt with a larger percentage layer of protection.
  - The strictness of the covenants mentioned in the earlier part of this question.

The biggest risk faced by BigRF is the credit risk of the loan book; the risk of bad debts being higher than expected.

- Does SELender have sufficient suitably qualified credit experts in-house to successfully manage an expanding lending operation?
- Is the credit committee independent (no members of SELender's management)?
  - Can BigRF place its own expert onto the committee?
- How does the credit committee make lending decisions? Unanimous consent required is likely to result in higher quality credit, than majority consent required.
- How extensive are the credit checks?
- Personal guarantees can be sought.
- Term of loans.
- Unknown impact and duration of COVID recession and lockdowns.
- What provisioning for bad debts is in place?
- The debt is collateralised. What is the quality of the collateral?
  - A requirement for a sufficiently low LTV (e.g.  $LTV < 65\%$ ) and other covenants (in answer above) will help reduce risk.
- SELender is going to be putting some of the loans through this SPV, and some directly onto its own balance sheet; with the risk that they cherry pick the best loans for themselves. How will it be ensured that there is no cherry picking?
  - Possibly use a random or sequential process to decide which entity gets which loan.
- What is SELender's stake in the SPV? Are they an equal equity partner? Are they also providing debt funding? Or are they just earning management and administration fees?
  - In other words do they have incentive to manage the risk of default or is the party doing the vetting (SELender) not carrying the downside risk of defaults?
  - This would exacerbate the risk.

## Management of non-performing loans

- BigRF will need to be comfortable that SELender is well-placed to manage the non-performing loans in a manner that maximises value for the investor.
- Banks have significant teams that work with borrowers to maximise recoveries and so returns in situations where the borrower is distressed, and banks will have an information advantage compared to SELender; as they will have a better understanding of the borrower's financial position. In theory, this should mean that banks have higher recovery rates from a loan portfolio for a given level of credit quality, and this should be allowed for in the investor's views on prospective returns from the fund.

## Origination risk.

- Origination risk is the risk that the SPV does not manage to originate debt as swiftly as the timelines assumed in its projections. This is related to the risk that if there is high demand from investors, it is possible that the credit rating standard may be compromised. Relationships with loan originators may make it difficult to treat each loan as an individual investment decision (i.e. need to invest in all issues, not on a piecemeal basis).
- On the other hand SELender is established, which presumably means that it has a proven track record. For extra protection, BigRF may insist on a commitment fee of 1% p.a. being charged if, e.g., R100m is not originated within 12 months (with respect to debt investments in the SPV).

## Yield risk

- Interest charges are differentiated amongst borrowers to cover differences in their likely default rates and recoveries; and yield risk, which is related to credit risk, is the risk that the differences in interest charges do not properly reflect differences in default and recovery risk.
- Related to this, if the interest rates charged are too high then
  - The only businesses likely to seek loans from this venture are the highest risk cases who have been refused loans everywhere else.
  - High rates make the chances of default higher as the business may struggle to sustain the high interest payments and remain competitive

Pitching the rate at the right level to attract reasonable quality businesses is a key decision.

- The current low interest rate environment is not expected to last and if rates start rising what will the impact on these loans be?

## Prepayment risk

- Risk of loans being settled earlier as proceeds needing to be re-invested at lower rates

### Diversification issues

- Ideally, the loan book will be diversified by vintage of loan. However, it will take some time for the SPV to achieve this.
- Has SELender got any geographic or industry concentrations in its existing loan book? This may, e.g., be as a result of it having contact with more mortgage brokers in a certain region; or as a result of a conscious decision to avoid certain sectors.

### Contagion risk

- Risk that overall economic weakness may weigh on a large number of businesses and this could lead to worsening of credit risk across the portfolio at the same time – ie diversification benefits disappear.

### Liquidity issues

- All the equity and debt funding will not be required upfront, and BigRF will need to have sufficient liquid assets to invest as drawdowns are required.
- Loans are an illiquid asset, and for capital to be returned broadly requires receiving principal payments from borrowers, selling holdings in the SPV to other investors or selling loans from the SPV to other investors (which would depend on the other participants agreeing, and may result in gains or losses). [1]
- Refinance risk:
  - There are numerous SME Funds through which the debt could be refinanced.
  - Credit features and protections can create a quality attractive book of business.
- Also, loans are not straightforward to value. Typically they are recognised at book value and provisions are held against non-performing loans, which are periodically reviewed and adjusted.

### Operational risk:

- SELender is established and has hopefully demonstrated that they are competent at origination, credit vetting and collections.
- There is always the possibility of fraud.
- Check whether the accounting system is reliable, with backups.
- Check that there are sufficient staff with spare capacity. If originations occur as projected, how much bigger will SELender need to be to manage them, and can it expand that rapidly without issues? What is the competency of management?
- Ensure that there is an independent auditor with a reputable firm, and experience with auditing this type of entity.

### Reputational risk:

- Having to force sales of people's properties is an ugly business, with potential for bad publicity.

Other considerations:

- Is the SPV set up to be bankruptcy remote?
- BigRF may not have the necessary expertise – resulting in information asymmetry
- Regulatory risk for BigRF

(iv)

Consider:

- Whether a floating rate or fixed rate is payable on the loans to small enterprises; to inform whether a floating or fixed rate will be used to calculate the interest payable to debt investors.
- The minimum interest rate charged to small enterprises, and likely average ranges.
- Projection of net amounts available to pay interest and capital back.
  - What rate of interest payable to debt investors would ensure sufficient shareholder return?
- Difference between interest rates paid and interest rates charged relative to total lending book (allowing for defaults) needs to cover running costs of SPV plus profit margin for shareholders plus fees to SELender
- Is there more than 1 “layer” of debt? For example, there may be mezzanine as well as senior debt?
- The relative magnitude of junior debt/equity/mezzanine debt which would suffer losses first.
- Quality of collateral in the underlying loans to small enterprises, and loan to value of collateral.
- Exposure to various industries and resultant Industry risk; factoring in any short/medium/long term COVID impact.
- Management competency.
- Business specific risks.
- The credit rating, if one is being obtained or internally considered.
- Spreads of similar listed securitisations; and differences with this securitisation.
- Interest rates of any private securitisations there is an awareness of; and differences with this securitisation.
- Rates banks are charging.
- Industry surveys of ratings and interest charged.
- What is the term of the loan – is it amortising or interest-only?
- How geared is the SPV and if so how well capitalised?
- What covenants are in place?

(v)

There are three main ways in which these exposures can be obtained without investing in this SPV:

1. Direct investment in a portfolio of loans by building an internal capability to invest in/originate loans.

Pros –

- avoids the costs payable to SELender and possibly the mortgage brokers (but means incurring its own costs in replicating this capability),
- greater control, less dependence on external agents.

Cons –

- only viable for, say, a R5 billion or larger investment in this asset type;
- it is hard to build up, recruit and retain internal expertise (compared to a bank or asset manager);
- it will take time to create adequate diversification as loans are acquired.
- Liquidity issues

2. Investing in a pooled fund that invests in loans (typically larger issues that have been syndicated by banks)

Pros –

- already exists and can gain immediate exposure;
- should be able to find a highly rated manager with a track record to demonstrate competency in this asset;
  - but more costs as the manager needs to be paid.

Cons –

- not investing specifically in the identified niche, so the economic exposure will be different (and potentially narrower or wider spreads);
- it is likely to be biased towards large, syndicated loans where risk profile is different (larger concentration risk, but perhaps lower individual default risks);
- bank syndications have been shown to lead to skewed relationship between the bank granting the credit vs the party carrying the risk of default.

3. Investing in a correlated asset class such as equities issued by banks.

Pros –

- simple and inexpensive; there is no need to build internal capability;
- easy to obtain diversification (as banks already have a diversified exposure internally);
- banks will arguably have a competitive advantage through their customer knowledge and contact.

Cons –

- correlated investment only (very imprecise);
- no flexibility;
- exposure to many other factors including previous years' loans, retail and transaction banking, securities markets, etc.

marks awarded for other reasonable options.

### QUESTION 3

*Part i was reasonable well answered.*

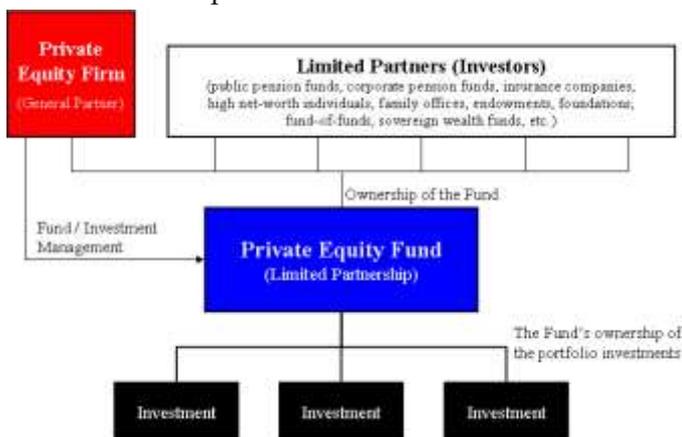
*Part iv. Some candidates incorrectly interpreted the question as asking about the suitability of PE funds for pension funds (rather than realising it was a manager selection question). Also some candidate's answers were too generic and not tailored to the specifics of the question ie private equity manager selection*

*Part v. Some candidates' answers were too generic and not tailored to the specifics of the question, ie private equity manager selection. Some candidates incorrectly interpreted the question as asking about the suitability of PE funds for pension funds (rather than realising it was a manager selection question).*

(i)

Investment in private equity happens at two levels:

- a. Investment in a private equity fund by general (GP) and limited partners (LPs):
  - Limited partners in private equity firms are generally institutional investors – pension funds, development finance institutions, sovereign funds, insurance companies, funds of funds and asset managers. They do not manage the fund or the underlying investments but may form an advisory committee (LPAC) for the general partner to consult.
  - The LP's provide the capital which is deployed by the PE firm (acting as the general partner) in projects on their behalf. The general partner's liability is unlimited.
  - General partner's commitment



b. Investment by a private equity fund in an operating company:

- PE firms are formed by managing partners, and are staffed with dealmakers who are responsible for originating, managing and exiting investments on behalf of the fund/s.
- In South Africa, third party PE funds are generally structured as “en commandite” partnerships. These are special classes of partnerships that are frictionless (the investor’s share of the partnership’s assets and all its expenses and other income statement items are deemed to be held directly by the investor and taxed in the investor’s hands from a tax perspective), while allowing the LPs to enjoy liability that is limited to their commitments to the fund.
- The most senior dealmakers are also responsible for attracting funds to invest in portfolio companies.
- GPs also have support staff that are responsible for finance, administration, investor relations and research functions.
- The private equity funds invest in the operating companies through acquiring shares, preference shares, or shareholder loans or other quasi-equity instruments.

Other stakeholders are as follows :

- Regulators of investors and unlisted investments more generally
- Regulators of both the limited partnerships (who will regulate types and amount of exposure to PE) and the underlying companies.
- Regulators of the GP
- Underlying companies acquired by the PE firm.
- The PE firm will often become involved in the management and strategy of the acquired company

(ii)

- The success of the expansion plans is uncertain both in terms of new business volumes and profitability.
- Particularly if venturing into new (emerging) markets where unforeseen difficulties could arise
  - or developed markets where competition is high.
- The de-listing and strategic changes proposed may harm the reputation/brand recognition of CoverU as a strong local business, turning existing policyholders to alternative providers (it's a very competitive industry)
- New business strain will arise and this will impact the length of time needed until the already uncertain level of profits can be realised and the business can be relisted. Three years is quite a short period in this regard.
- New lines of business may increase operational risk. In order to address this, associated costs will increase.
- Increase in size should increase profits from investment returns and may allow for a more diversified investment strategy.
- The increase in size could help the sale to future owners, making it more attractive as a growing business.
- Does management have capacity and skills necessary to operate in multiple countries?
- Profitability may already be limited by large market share
- Overseas profits may be volatile due to exchange rates

(iii)

(a) Additional risks are :

- Foreign exchange risk –the majority of existing claims are likely to be in ZAR, and at this stage it is unsure how much or where new business will be attracted abroad.
- Liquidity and interest rate risk – the duration of the proposed FI portfolio is likely a longer duration than the current portfolio and than the liabilities. Liabilities are valued at face value.
  - A duration/ mismatch is therefore introduced.
  - However this can be addressed through the use of derivatives
  - Also CoverU is a large, mature business and claims outgo should be quite predictable.
- Furthermore, the proposed securities are likely to have far poorer marketability
- The longer term and profile of the proposed assets introduces re-investment risk.
- The obvious risk being introduced is that of credit risk given the credit profile of the proposed assets. We are not informed which tranches of the MBS/ABS will be invested in.
- Introducing these assets will require expertise which may be beyond the scope of CoverU’s investment team.
- Regulatory risk – regulation may prohibit the degree of exposure to these assets which means this needs to be monitored and corrected if necessary
- Timing might be poor to lengthen duration of assets and reduce liquidity at a time when investing in business with associated new business strain and costs of multiple jurisdictions
- Concentration with household risks

(b) Consequences

- There will be additional operational requirements such as compliance monitoring and adapting models to cater for the new assets and uncertainty.
- Additional capital requirements are likely to be necessary given additional market and credit risks introduced.
- Will the extra return expected from the assets be enough to cover capital costs?
- The ratings agencies may revise their rating of CoverU given the additional risks introduced.
- The management and board may not understand or appreciate the risk associated with the revised policy, and this introduces governance risks.
- The market values of the proposed assets are far more volatile and this may significantly impact profit variability on a year-to-year basis.
- Up-to-date markets value of the assets may be difficult to obtain.
- Given the uncertain claim outgo and the use of market value of assets to assess solvency, general insurers need to be careful about the volatility of the market values of their assets to ensure that minimum solvency requirements are not breached .

(iv) A consultant advising on private equity manager selection will pay attention to:

- The investing professionals' personal track records (not simply the performance of the house)
  - Especially compared to sectors where the fund will be operating.
- The length of time the key members of the team have spent working together.
- The consistency of their returns within and across funds, and the extent to which those returns are realised or unrealised.
  - IRR gross and net, how many times capital was returned and over what durations.
- The strengths and weaknesses of their investing processes. Here they should focus on:
  - Origination
  - Execution
  - Management and exit
  - The balance of skills across the team in each of these departments.
- Whether there has been any style or mandate drift over time.
- The extent to which the professionals' personal fortunes, personal capital commitments to the fund, and carry participation combine to create alignment between the limited and the general partners.
- The degree to which the market segment that the manager focuses on is subject to competition from other private equity houses at the time.
- The quality of the individuals that are pivotal on the funds' advisory board and investment committee.
- The terms and conditions of the partnership agreement, in particular to whether these have changed over time.
- Where there have been failed investments – pay attention to what went wrong.
- Different vintages, and preferable aim to get exposure to different vintages – although this may not be possible.
- Size of Fund
- BEE status

Further points :

- The funds which the GP has open to investment, their objectives, pipeline, especially pipeline already under DD, the degree of predictability of sectors to which exposure is going to be gained; and how well that exposure complements the remainder of the retirement fund's assets.

Difficulties

- The small number of assets in a fund create difficulties when comparing and assessing PE managers.
- Single investments can distort fund performance. Individual dealmakers, even experienced ones, may only be able to point to a small number of deals that they have led from inception to exit.
- The effects of vintage, style drift, changes in fund size across vintages of a firm.
- Changes in the particular dealmakers employed by a GP and their respective energy levels and time.
- Time horizons can all complicate or invalidate statistical comparison.
- This ultimately means that good fund choice depends upon commercial judgement and experience more than on the ability to assess past performance or to calculate risk-return measures.
- Because statistical performance analysis is of such limited usefulness, the consultant will wish to spend much time engaging with service providers, managers of past investee companies, doyens of the industry, past partners of the firm and so on, in order to form a view of the quality of the opportunity.
- The task is further complicated for first-time funds. The founding individuals' track records may be proprietary information of a past employer, or the individuals may not have a history of working together.
- Fees and other costs – calculation of carried interest and performance fees.