**ASSIGNMENT COVER SHEET**

# THIS FORM MUST BE AT THE FRONT OF EACH ASSIGNMENT

**CANDIDATES MUST KEEP A COPY OF THEIR ASSIGNMENT**

**Candidate to complete the following section (and update details in header):**

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| **Candidate Number:** 192457 | **Course:** C2B Life Insurance |
| **Date Due:** Monday 19 August 2019 at 9.00am (AEST) | |

* **Please ensure that your candidate number and course name is located on the header and footers of each page of the assignment.**
* **By completing and submitting this cover sheet you are confirming that this assignment is your own work, and all material that is used is correctly referenced and cited.**

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**Assignment Marker to complete and update the following section:**

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| **Comments on Questions** |
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| **Overall Comments** |
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**Assignment**

**(a)** Please see the spreadsheet.

**(b)** First of all, Green Life needs to ensure its financial strength when deciding crediting rate, especially when it wishes to credit more than what it actually earns on its investment.

Consideration also needs to be given to policy owners’ reasonable expectation which is usually based on the product disclosure documents as well as the past practice of the company.

Green Life needs to decide the strategy about the way and timing to recoup the excess of past interest credits over past investment returns. Although the common practice is crediting less than it earns on its investments, its reputation could be at stake and its future crediting rates may become uncompetitive.

The crediting philosophy should also be based on the assets backing its Investment Account business, which shall be chosen with regard to policy owner reasonable expectations.

It should aim at maintaining a consistent, competitive crediting when being compared to the interest rate offered by banks, other financial institutions and other competitors.

Green Life needs to consider how to treat policy owners fairly as policies commence at different points in time. There will be differences in historical experience for different cohorts of policies and there may also be differences in pricing assumptions.

Given the fact that investment account policies are meant to smooth crediting rates (by paying less than the actual investment return in years when investment returns are good and more than the actual investment return in years when investment returns are poor), Green Life should consider setting provisions to mitigate the anti-selection risk by policy owners. Termination charges and/or surrender penalties could be taken into consideration.

**(c)** Please see the spreadsheet.

**(d)** Advantages:

* Having investment fluctuation reserve can smooth the investment return. This can be good for both policy owners and the company.
* For the policy owners, investment fluctuation reserve could reduce the uncertainty in the return.
* For Green Life, the investment fluctuation reserve could act as a buffer to write off any decreased value of investment. Therefore, the company is more likely to be able to meet policy owners’ expectation especially when the investment experience is poor.
* It allows the company to have some degree of discretion. Therefore, the company is able to adjust the crediting rate to serve their market strategy (e.g. credit more than competitors to attract new customers).
* The later release of the investment fluctuation reserve with surrender penalties could help Green Life retain the existing policy owners.
* It increases the liquidity of the company so that Green Life could pursue higher return by investing more money in less liquid assets.

Disadvantages:

* It exposes the company to anti-selection risk when the credit rate is higher than market by taking money from investment fluctuation reserve. Policy owners may tend to surrender their policies after a higher-than-expectation return.
* Investment fluctuation reserve increases policy liability. As a result, Green Life may be required to hold more capital in this regard.
* Extra cost (more staffs, more complex system etc.) may arise from managing the investment fluctuation reserve.
* Equity also needs to be balanced among different generation of policy owners. Otherwise, company will suffer reputation damage.

**(e)** i. Less investment income will flow to the profit and loss statement due to the equity loss.

The change of the total policy liability along with the change of bonus credited to the policy owners will also have an impact on the increase in net policy liabilities in profit and loss statement.

ii. Policy liability is expected to decrease since the loss in equity may have an adverse impact on both new business volume and the retention of existing business.

As money will be transferred out of the investment fluctuation reserve to smooth the investment return under this situation, the policy liability will further reduce.

iii. The account balances for each policyholder will tend to decrease as crediting bonus is very likely to drop as well.

iv. Future crediting rate will reduce to reflect the fall in the actual investment return.

Besides, it might further reduce so that the company will be able to recoup the investment loss if it has paid higher than actual investment return in the past.

**(f)** First of all, I would calculate the individual risk charge separately for the product, following the approach summarized in LPS 110.

* For insurance risk charge and asset risk charge, stress tests on mortality, lapse, inflation, expenses, equity return and property return should be applied for this investment account product to determine the impact on capital from each one of them.
* Sufficient capital needs to be held so that all surrender/terminate values can be paid immediately following a substantial drop in asset values.
* Correlation matrix could be applied to determine the diversification benefit within each individual risk charge.
* Determine if there are any management actions that could be taken to mitigate the stresses. Allowances may be acquired by having the ability to take appropriate actions.
* Asset concentration risk charge needs to be calculated by examining whether there is excessive exposure to single counterparties or asset classes in the current portfolio.
* Operation risk charge will be based on the scale of the investment account business.

After having the individual risk charges being calculated, aggregation benefit needs to be allowed for between insurance risk charge and asset risk charge and also to see whether the combined stress scenario adjustment is needed.

The stress scenarios need to be determined in accordance to the specific profile of the company by the appointed actuary.

Policy owners’ reasonable expectation should be considered when determining management actions. For example, the ability of reducing future crediting rate is subject to policy owners’ expectation and also the competitive pressure from the market.

Investment fluctuation reserve should be removed from the capital base calculation.

The cost of capital should be considered to balance between the extra amount capital to hold and the decrease in probability of failing below the required amount capital.

**(g)** To: CFO, Green Life

From: Actuary

Subject: Financial reporting treatment of the guaranteed investment account

The guaranteed investment account is treated differently in Green Life when compared to a non-life Company.

Unlike fund management companies where only “fees less expenses” approach could be used when determining profits, investment income on policy owner assets, policy owner tax and increase in policy liabilities need to be considered in addition to investment income on shareholder assets and shareholder tax. All of these items should be listed explicitly in the income statement of Green Life.

**(h)** To: Green Life Board

From: Actuary

Re: Guaranteed minimum return

The introduction of the guaranteed minimum return in the investment account product will expose Green Life to the following risks:

* There is an asymmetric investment risk where future bonuses or interest credits can be added to policy values, but Green Life cannot subsequently be taken away if investment losses occur.
* Green Life will be required to hold more capital to support the business with guarantee provision. The chance that Green Life’s solvency position will fall below the required amount will increase if no additional capital is injected. Otherwise Green Life needs to consider the cost of providing extra capital.
* The cost of guarantee may be expensive, resulting policy owners withdraw their policies.
* Potentially more complex admin systems and more staffs needs to be involved to manage the guarantee. Operational risk exposure will be higher as errors are perhaps more likely to occur.

To evaluate the cost of guarantee, considerations should be given to:

* The target asset mix and the expected return thereof. The volatility of the target asset mix will also have an impact on the cost of guarantee.
* The expense arising from the management of the guarantee. The expense assumption tends to vary from the current one. Some allowance should be made to account for the extra expense.
* The cost of the extra capital given the Green Life has to hold more capital for the guarantee provision.
* The lapse assumption is likely to be different from the current product due to the new guarantee feature.
* Future experience change. If this new feature will attract more people, there might be a capital strain due to the high acquisition cost like commissions and other initial expenses.
* The cost of hedging should be considered if Green Life plans to take actions on hedging the downside investment risk.
* Profitability. The guarantee feature will make the investment account product a relatively capital intensive product. The Board’s target profitability requirements on capital should also be allowed for.

Kind regards,

Actuary

**(i)** To: CFO

From: Actuary

Re: Changes to current investment mix

If we would like to reduce the overall level of risk by changing the investment mix, below are the factors that need to be taken into consideration.

* Presumably, the target new investment mix will result in a reduction in the capital requirements. The decrease on required capital should be assessed in advance according to the new investment mix so that Green Life could decide whether such a change to the mix is an effective way to substantially reduce the risk.
* The feasibility of the change is another key factor as not all assets, like property, can be sold in a timely manner. Also, the target assets might not be available on the market to buy in. Any rapid change to the investment mix may result in significant losses.
* The new investment mix should be consistent with the policy owners’ reasonable expectation which is set in the policy disclosure statement or marketing material.
* The competitiveness of the product needs to be considered. The reduction in new business volume can be foreseen due to the lower expected return from the new mix if no other management actions are taken by Green Life.
* Equity needs to be ensured between difference generations of the policy owners.
* Tax liability may arise from the traction if there is any realised gain.

To implement this change, the first step is to determine the target asset mix which could achieve the objective of reducing the investment risk.

The second step is to identify appropriate assets in the market which are readily available and analyse the cost of transaction.

The third step is to implement the plan in timely manner.

Both of the expected return and volatility of the fund will reduce after changing the investment mix given Green Life will invest more in cash/bonds and less in equity and property market.

The best estimate of future smoothed returns will become more stable and predictable as the volatility of the portfolio reduces. There is also a pressure for reduction in the future returns.

As intended, less capital will be required to support the investment account business due to the fewer portions of risky assets.

Kind regards,

Actuary

**Declaration**:

*I declare that all work in this assignment is my own work except where there is clear acknowledgement or reference to the work or assistance of others.*