**2015 S1**

**Q1** a) i. BEL = $(254,822,557)

PVFM = PL – BEL = $(185,695,000) - $(254,822,557) = $69,127,557

ii. The carrier has to be claims as this is the service being provided. Premium is not an appropriate carrier as the level premium will not follow the same pattern as claims, which is why premium can be used for stepped premium business. Using premium would release profit too early. If a true earned premium could be calculated then this might be possible to use but it is too complicated to calculate a true earned premium.

The Profit margin is 5.45%.

iii. As this is level premium business (and there is no new business), there are no increases to premium for age or indexation increases. Hence, premium is declining each year, by just more than 5%, due to lapses and claims.

I expect this trend to continue after 10 years, with premium declining at an even greater rate once policies start to expire/mature.

However, as I expected, planned profit is relatively smooth with an expected increase each year. A smooth pattern is a feature of the MoS reporting framework. As claims is the profit carrier, and expected claims is expected to increase each year (as the lapse rate is less than the increasing claim rate each year from the ageing of the portfolio plus the indexation of the sum insured), the expected profit should increase.

However, this trend will not be maintained after 10 years. After 10 years policies will commence to expire/mature such that the total discontinuance rate is greater than the 10% increase in claim costs and 3% indexation. This will result in expected claims declining and consequently, planned profits will start to decline each year.

|  |  |  |
| --- | --- | --- |
| VIF @ Valuation date | | 105,177,044 |
| VIF @ Valuation date (no capital) | | 377,380,326 |
| *Capital impact* |  | *(272,203,282)* |

b) ii.

VIF does include a return on the Target Capital held for the business. The value of the inforce business represents the present value of distributable profits (after funding target capital requirements). Hence, it represents the value of the profit within the business and the return of the shareholder capital supporting the product.

If there were no capital required to support this business the VIF would be $377.4m. This is an unusual result because normally the value of the VIF is higher when capital is included. For this portfolio this is not the case because the current capital requirement is so low but is expected to increase significantly over the next few years as the premiums no longer cover the cost of claims. The lower value represents the increased capital the shareholder has to inject to support this portfolio over the next few years.

iii. The values stay fairly constant over the next 10 years as the unwinding of the cashflows is offset by the increase in the capital required.

iv. Given this is a closed book, a reasonable trend for VIF is that VIF should decrease over time. Current the target capital is too low such that further capital injection is required for next couple of years.

* It appears that a shortcoming of the existing target surplus policy is that it does not recognise and accumulate the unearned premium from the early years of the level premium business. In these years, an excess of the premium over the claims should be held back and not distributed to the shareholder, to help fund the cashflow deficit in later years when claims exceed premium.
* The above point would be particularly relevant if this was the only product in this statutory fund. However, other products may exist which in total may ensure the capital position is appropriate but a different factor would be used for the purpose of calculating the VIF.
* One further shortcoming that is easy to identify within the existing policy is that it ignores the impact of adverse deviations in the lapse experience.

c) The impact on profit is a decrease of $2.1m.

* At this time PL is positive. Having less actual lapses means there will be more policies with a positive liability thereby increasing the overall policy liability. The increase in liability is approximately $3.7m which is the largest driver of the $2.1m decrease in profit.
* Or, in other words, there will be more policies inforce and as the PV of outflows is greater than the PV inflows, the policy liability will increase.

**Q2** a) To: Claims Manager

From: Appointed Actuary

Subject – Increase in Disabled Lives Reserves in last quarter

While the number of claimants has reduced, the liability of each claimant is impacted by the interest rate used to discount the future expected claims outgo. Given the average long duration of the cashflows, the interest rate used is at the longer end of the yield curve. This has declined sharply in the last quarter, leading to an increase in policy liabilities. This impact has outweighed the decrease due to the reduced number of claimants.

I hope this helps, but please let me know if you have any questions.

Kind regards,

Appointed Actuary

b) More claimants termination is expected, which can reduce the policy liability.

*The likely impacts on the Valuation results over the next year are as follows:*

* The Valuation results will be more volatile as Claims Team tries to close/decline more claims.
* Reserves for new claims may be too low as some claims may be declined but should be accepted.
* Reserves for disabled lives may be too low as some claims are closed, but they’re not genuine claim closures as more will re-open later. Therefore, **the reserves for re-opened claims will need to be increased.**
* Reserves for litigated claims need to be increased as the tough claims management may bring on more disputed claims.
* Claim management **expenses** will be higher due to increased time spent in managing claims.
* Termination rates may have spikes in them **as Claims Team is under pressure** to meet the closure quota.
* The improvement in claims experience due to the strategy may not be sustainable. For example, after some initial quick wins, further efforts to get people off claim may become increasingly difficult.
* Changing the valuation claim assumptions may not be necessary, but the movements need to be accounted for.
* Impact on **RBNA** reserves - will reduce the reserve as more reported claims are getting declined
* Impact on **IBNR** reserves - will reduce the reserves as more incurred claims will go on to be declined once reported
* Increased decline rate will lead to lower Disabled Lives Reserves
* If decline targets are on a counts basis, this could lead assessors to focus on declining smaller sum insured claims. This will lead to higher average sum insured on claim and hence increased DLR.
* If termination targets are on a counts basis, the claims assessors may focus on shorter duration claims hence leading to an increase in the average duration and greater DLR.

c) i. *The likely reasons for the reduction in excess assets are as follows:*

* [State the obvious] Disability income claim payments have reduced the capital base, including claim payments made for those claims that came in and terminated during the year.
* [Reduced profitability] An increase in the number of active claimants and hence the disabled lives reserve has reduced the capital base.
* [Assumption change, PL*↑*] The poor claims experience has led to a strengthening of the termination rate assumptions leading to an increase in the disabled lives reserves and reduced the capital base.
* [Increased PL results in increased required capital] Impact of the insurance risk margins on the larger disabled lives reserve has also increased the PCR.
* [Required stress changes] In addition, the increasing claims trends from recent years means that the future risk margin may have increased and increased the PCR further.
* There may have been poor investment returns on shareholder retained profits – particularly as it is invested largely in shorter term fixed interest securities or cash where the drop in yields will have reduced returns.
* [ALM mismatch] There may be a mismatch between the disabled lives reserves and the asset backing the reserves. The fall in the yield curve may have led to the increase in liabilities greater than the offsetting increase in the assets.
* Aggressive new business levels lead to capital strains from upfront commission and expenses
* [Australia specific] Rapid sales growth also leads to increased operational risk charge

ii. *Actions could the company take to improve the capital position:*

|  |  |  |
| --- | --- | --- |
| **Action** | **Advantages** | **Disadvantages** |
| Reduce levels of new business (e.g. through premium rate increases) – so that inforce capital release exceeds new business strain. | This would reduce operational risk charge as lower sales will reduce the increase in the size of the Disability Income book. | Reduction in market share  Likely to lead to higher lapses unless new premium series was introduced. |
| Move out of equities and into fixed interest to reduce the asset risk charge. | Will reduce asset risk charge. May also improve the level of matching to the liabilities (although they may have provided some inflation protection which might now be lost) | Trading costs involved.  Lower expected returns |
| Invest in more equities to increase returns. | Higher returns will improve asset position | Transaction costs  Increase in asset risk charge |
| Move out of corporate bonds into government bonds or higher credit rates corporate bonds to reduce asset risk charge | Will reduce asset risk charge | Investment returns may be lower going forward (which may offset over time the reduction in PCR from the lower asset risk charge) |
| Reduce holdings in single company – reduce asset concentrate risk charge | Will reduce the asset concentration risk charge | Trading costs.  Lower investment returns if holding was tactical investment decision. |
| Improve matching – inflation protection vs market value trade off (derivatives) | Impact on asset risk charge could be up or down depending on different impacts of real return stress vs inflation stress | Trading costs. |
| Take out reinsurance with a local reinsurer | Will improve capital position in the short term (but only up to the asset concentration risk limit).  Reduced volatility of claims experience. | Reduction in profit as some of the profit is given to the reinsurer.  Possible asset concentration risk charge |
| Take out reinsurance with the parent. | Will improve capital position in the short term (but only up to the asset concentration risk limit).  Reduced volatility of claims experience.  Maintains profit within the Group. | Reduction in profit as some of the profit is given to the parent.  Possible asset concentration risk charge. |
| Obtain Capital injection from parent | Will immediately improve the Capital Base (although for sub debt limits will apply) | **Parent may not have the appetite to invest in the Australian business if better returns can be achieved elsewhere** |
| Obtain Capital injection by other means - e.g. issue sub-ordinated debt | Will immediately improve the Capital Base (although for sub debt limits will apply) | May not get the amount of funding intended or a higher price than expected |
| Reduce management expenses | a reduction in the Capital Base | Hard to manage.  If reduction in management expenses is achieved by redundancies then these will be costly in the short term (due to redundancy packages), which will reduce excess assets. |
| Reduce commissions – move to level commission model – but risk of churning. | Reduces new business strain and hence less of a reduction in the Capital Base from selling new business | Reduction in sales (although that will help Capital position) |
| Reduce claims by working with the claims management team via claims initiatives such as focusing on getting people back to work | Will reduce claims costs and reduce DLR hence increased capital base, and also lower PCR due to lower impact of stresses | Should be doing this anyway due to profitability concerns.  May increase claims expenses as this will involve working with rehabilitation consultants or hiring more claims staff. |
| Diversify into different product lines such as lump sum business. | Diversification should improve capital position over time.  Additional product lines will help to absorb overheads | Increased sales on new product will lead to short term capital strains. |

**Q3** a) [Australia specific]

Policy Liability rolled forward = 283,664k + 983k = $284,647k (1)

Net cash flows = 12,499k – 8,744k – 30,779k - 3,037k + 6,336k = -$23,725k (2)

Non-Investment Experience Profit/Loss = -1,534k + 642k – 391k = -$1,283k (3)

VSA = (1) + (2) - (3) = $262,205k (4)

BEL = 361,602k + 30,248k – 137,491k = $254,359k (5)

Cost of Current Year & Future Year Bonuses + Current Year & Future Year Shareholder Profit

= (4) – (5) = $7,846k (6)

*Approximate the split of current year and future year bonus/profit*

Current year bonus/profit = 869 / (869 + 6,952) \* 7,846 = $872k

Future year bonus/profit = 6,952 / (869 + 6,952) \* 7,846 = $6,974k

Current Year Bonus = 80% x 872k = $697k (7)

Current Year Shareholder Profit Release = 20% x 872k = $174k (8)

Policy Liability at 31/12/2014 = (4) – (7) – (8) = $261,333k

b) Issues:

* lower NB as bad reputation
* lower dividend to shareholders
* lower bonus to policyholders (redistribute with allowance for interest income)
* higher lapse rate / potential loss ~~as bonus is reversionary and cannot be reversed.~~ Loss only for non-Par
* Litigated issue for previous lower bonus
* Revaluation of Policy Liabilities, both Par and non-Par
* Restatements in Financial Statements and other Statutory Reports
* Risk Management and Controls
* Capital
* Reinsurance

**Parloss’ Claims Data Error – Implications and Recommendations**

From: Appointed Actuary, Parloss

**Background**

Parloss have recently identified an error in its claims data, where claims arising from a particular non-participating product have been misclassified as belonging to the participating product group. This has resulted in some of the claims costs arising from the non-participating portfolio since the year 2011 being allocated to the participating portfolio instead in the administration system and the general ledger.

This error has multiple ramifications, particularly due to its relatively high degree of materiality.

This paper sets out the issues that would arise from this error, options for handling the issues and my recommendations.

**Revaluation of Policy Liabilities**

* The claims data error would affect policy liability results since 2011 for both the participating and non-participating portfolios. The participating policy liability would be directly impacted by the assumptions (in line with more favourable mortality experience) but will also be impacted indirectly by the changes to historical cashflows (due to second order impact on investment returns and also potentially due to different number of policies inforce). The non-participating liability would be impacted by the changes to mortality assumptions (in line with the less favourable mortality experience).
* If the non-participating portfolio did not fall into loss recognition as a result of the strengthened mortality assumption, then while policy liability would not change, its best estimate liability and present value of profit margins would.
* The extent of the revaluation would depend on the varying degree of the impact to the policy liabilities across the years. For example, the error would more materially impact the participating policy liability position in 2014 than in 2011. It is acknowledged that the undertaking of historical revaluation of policy liabilities for both the participating and non-participating portfolios would require a significant amount of time and resources.

*Recommendation:*

* Parloss should dedicate resources to revalue the policy liabilities for the participating and non-participating book, taking into account the degree of materiality of the impacts. As such, Parloss should conduct a high level analysis in the earlier years of the error to determine whether a detailed revaluation of policy liabilities in those years is warranted.
* Parloss should also engage its auditor throughout this process so as to mitigate the risk of changing the approach of the revaluation either mid-way through or at the end of the process.

**Restatements in Financial Statements and other Statutory Reports**

* As a result of the revision to historical policy liability/projection results for both the participating and non-participating portfolios, the policy liability figures in the Financial Statements would need to be restated, depending on the extent of the revision. For similar reasons, the P&L of both portfolios may also need to be restated.
* Apart from the Financial Statements, other statutory reports would also be impacted, such as regulatory reporting forms, the Valuation Report, and the Financial Condition Report.
* It is acknowledged here also that such restatements would require significant time and resources.

*Recommendation:*

* Parloss should look to restate its historical financial positions and performances with respect to its policy liabilities and their components (best estimate liability, value of future profits, etc.) in the Financial Statements and other statutory reports, to the extent that they are materially different after correcting the error.
* Other departments, such as Accounting, Tax and Corporate Governance, should be engaged throughout this process to account for any other financial, reporting and compliance implications.

**Bonus Distribution for Existing Participating Policyholders**

* As the error has effectively understated the profit emerging from the participating portfolio, it would also understate the bonus that have been allocated and declared to existing policyholders in the period from 2011 to 2014. Parloss must redistribute this additional bonus to existing policyholders to be consistent with the equitable principles.

*Recommendation:*

* Parloss should calculate the additional bonuses that would have been declared to date without the error and redistribute them to existing policyholders, with allowance for interest income on those.
* The method of distributing the additional bonuses could take the form of a one-off cash dividend or additional reversionary bonus to the sum insured.
* Consideration should be given to the different cohorts of policyholders. For example, those who have only commenced their policies with Parloss in 2014 should not be subject to a significant additional bonus as the additional profit was attributable to claims experience before 2014.
* Due to the complexity of this aspect of the allocation (particularly since Parloss has historically only used a single bonus rate), a reasonably broad approach of distributing to the different cohorts should be applied.

**Bonus distribution for Policyholders No Longer In Force**

* To uphold the principles of equity, policyholders who are no longer in force (either through surrender or death) would also need to be compensated for the additional bonuses.
* This would likely be a difficult and costly exercise, due to practical reasons such as engaging with the administrators of the estate of deceased policyholders, and former policyholders who have changed their address.

*Recommendation:*

* Parloss should look to compensate former policyholders in an equitable manner, with allowance for interest income.
* Due to the complexity of this exercise, it is recommended that a dedicated working group is set up to coordinate and execute it.
* Again, consideration should be given to the different cohorts of policyholders, where policyholders who either claimed or surrendered in the earlier years should not be awarded profit that arose after their came out of force.

**Participating Portfolio Profitability**

* The error may have had a material impact on both historical and outlook on the profitability of the participating portfolios.
* The poor profitability/low bonus rates on the participating book for a number of years may have been attributed to this overstatement in claims (adversely affecting both the yearly profits and mortality assumptions), which in turn made the product unattractive and uncompetitive. Indeed, the profit margin of the participating portfolio is relatively low as at the December 2014 valuation (around 6% by doing the cost of current year + future year bonuses divided by the present value of premium).
* Revaluing the participating business would be expected to improve the profitability of the participating portfolio, with higher bonus rates. There may also be opportunities to re-price the product to make it more competitive, given the improved morbidity assumptions. This would make the product more competitive in the market and improving the volume of new business in the future.

*Recommendation:*

* Parloss should, in the process of revaluing its participating business, consider the strategic implications of this portfolio. This is given that its future position in the market may improve after the error is corrected, in light of the lower mortality experience and assumptions. The strategic implications would include its competitive position in the market with respect to the revised bonus rates as well as pricing.
* This benefit should be considered when weighing the costs of the remediation.

**Non-Participating Portfolio Profitability**

* Conversely to the above, the profitability of the non-participating portfolio would suffer after the correction of the error, though it would have less administrative complexities and compliance issues to manage compared to the participating portfolio.
* Nevertheless, its profitability and pricing would need to be re-assessed in light of the worse-than-expected claims experience and assumptions. One question is whether this portfolio could go into loss recognition after the revaluation of its policy liability. A loss recognition could potentially result in Parloss incurring significant losses in a single year.

*Recommendation:*

* Parloss should consider the strategic implications of this portfolio, in light of the worse-than-expected claims experience and assumptions. These implications would include the need to re-price this portfolio, if any, given Parloss’ current position in the non-participating market. The possibility of loss recognition should also be investigated further.

**Risk Management and Controls**

* The incident has raised questions about how such a material error could have occurred over a number of years. Clearly controls in a number of areas have not been successful in identifying the error earlier, including:
  + administration system / claims database
  + general ledger reconciliations
  + analysis of profit
  + past audit
* While remediation is critical, it is also equally critical to identify the underlying cause of the error and manage the relevant risk so that it does not repeat.

*Recommendation:*

* Parloss should identify the core cause of the error, and correspondingly review and improve all the relevant controls in place to mitigate such an error.
* It would also be worthwhile, once the core cause has been identified, to conduct an audit on other transactions to ensure an error of this nature is isolated to claims only and not systemic, affecting other lines of the P&L.

**Resourcing**

* As alluded to above, there will be a need for significant resources to both remediate and resolve all relevant and outstanding issues. Poor allocation of resources would not only result in prolonged costs and management distraction, but also give rise to the risk of more errors (as well as other issues such as low staff morale) during the remediation and revaluation processes (which had further ramifications).

*Recommendation:*

* Parloss should allocate and invest in dedicated resources to carry out the recommendations outlined above.
* This may take the form of setting up a special working group or committee, and/or hiring external consultants. Areas that may need to be covered include Actuarial, Accounting, Tax, Corporate Governance, Product Development, and Business Administration/Operations.

**Other issues**

* Reinsurance – The non-participating business may have reinsurance arrangements whereas the participating business may not. Need to check whether recoveries can be claims for these claims from the reinsurer.
* Capital – Need to consider the Capital implications of the correction to this error – in particular the restatement of the policy liabilities and additional bonuses paid will impact the Capital position.
* APRA – May be necessary to advise APRA of the error.

**Conclusion**

The error in claims data has resulted in a number of significant and numerous ramifications, from the statutory to the strategic. As such, it is critical that Parloss remediates the issues as soon as possible and improves the management of risks in these areas. The remediation may also present some strategic opportunities, in particular with respect to the potentially improved competitiveness of the participating portfolio.