DISCUSSION POINTS FROM THE FOCUS GROUP MEETING ON ASSET LIABILITY MANAGEMENT PRACTICES OF CANADIAN LIFE INSURANCE COMPANIES

DRAFT – FOR DISCUSSION PURPOSES

COMMITTEE ON INVESTMENT PRACTICE
WORKING GROUP ON ASSET LIABILITY MANAGEMENT

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MEMORANDUM

TO: Attendees, ALM practitioners and other interested parties

FROM: Charles L. Gilbert, Chairperson
Working Group on Asset Liability Management

DATE: November 4, 2002

SUBJECT: **Discussion Points from the Focus Group Meeting on Asset Liability Management Practices of Canadian Life Insurance Companies**

The Working Group on Asset Liability Management ("ALM") has been conducting a survey of industry practice to collect information on the ALM practices of life insurance companies operating in Canada. This survey involves three stages. The first stage consisted of the ALM Questionnaire that was completed last spring and early this year. A series of follow up telephone interviews was then conducted with a number of the respondents. In May 2002, the Working Group on Asset Liability Management published the Results of the Survey on Asset Liability Management Practices of Canadian Life Insurance Companies. In the third stage interested parties were invited to participate in focus group discussions conducted with other ALM practitioners from life insurance companies held on October 21, 2002 in Toronto. Twenty-one ALM practitioners representing most of the major Canadian life insurance companies participated in this full day focus group meeting. The objectives of the focus group meeting were as follows:

- Share knowledge of ALM practices among practitioners
- Identify areas where wide range of practice exist
- Identify practices that may be theoretically unsound
- Promote ALM best practices

Attached is a copy of the key discussion points from this meeting. **The reader is cautioned that the discussion points do not necessarily represent the views of the Canadian Institute of Actuaries ("CIA") or the Working Group on ALM. Furthermore, every attempt was made to capture all of the views of the participants without prejudice. As a result, discussion points may or may not always reflect practices or conclusions that are theoretically correct.**

Discussion points are numbered for ease of reference and further discussion.

The working group hopes that further discussion of these points will continue on the ALM working group list server. The working group will monitor and contribute to the discussion and will attempt to capture any consensus or best practice approaches that emerge.

The members of the working group are:

Craig Fowler, FSA, FCIA, MAAA, CFA
Charles L. Gilbert, FSA, FCIA, CFA (Chairperson)
David Gilliland, FSA, FCIA, CFA
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1.0 MODELING OF CASH FLOWS

1.1 Margin for Adverse Deviation ("MfAD")

Description of the Issue

The survey results revealed that 52% of all Canadian life insurance companies include MfADs for purposes of modeling the asset cash flows while 65% of all Canadian life insurance companies include MfADs for purposes of modeling the liability cash flows.

After conducting follow up interviews with respondents regarding their approach, two main reasons for including MfADs emerged: 1) this was consistent with valuation (matching expected cash flows would lead to higher provision under CALM), and 2) it was pragmatic (otherwise would have to do the work twice).

Some respondents indicated that they thought that projecting cash flows based on expected assumptions was the theoretically correct approach but that including MfADs was conservative.

Some companies are internally inconsistent. For some products, liability cash flows are projected with MfADs while for other products the liability cash flows are projected without MfADs. In other cases, the asset cash flows are modeled without MfADs but liability cash flows are modeled with MfADs. The companies using this approach felt that this is not material for either the assets or liabilities.

Discussion Points

1.1.1 MfADs are included since the liability cash flows are obtained from the valuation system and the MfADs are already included (i.e. pragmatic).

1.1.2 By including MfADs companies are effectively matching/immunizing the profit margin too. This practice may be questionable.

1.1.3 Including MfADs can be thought of as including a notional cash flow for release of Provision for Adverse Deviations ("PfADs").

1.1.4 The Standards of Practice for the Valuation of Policy Liabilities of Life Insurers ("LSOP") potentially encourages bad ALM as the provision for interest rate risk is determined using cash flows that include MfADs. Companies that perform ALM using expected cash flows will effectively be penalized by being forced to hold a higher provision that is calculated using MfADs.

1.1.5 If the present values of the assets and liabilities are matched without including MfADs, then this will produce income volatility under the Canadian Asset Liability Method ("CALM"). This has become a bigger issue since demutualization, since financial analysts and Boards of directors do not like to see volatile financial statements. MfADs somewhat stabilize the income statement.

1.1.6 If the present values of the assets and liabilities are matched using expected cash flows, this immunizes economic exposure.

1.1.7 If the present values of the assets and liabilities are matched using cash flows that include MfADs, this immunizes the income statement.
1.1.8 Reinvestment risk is introduced by including MfADs.
1.1.9 It may not be optimal to include MfADs, but stable earnings are important.
1.1.10 Matching without MfADs feels like more of the correct way to match investment cash flows and therefore the correct economic methodology.
1.1.11 MfADs represent dividend payments and retained earnings for shareholders and so should be included in projecting cash flows (i.e. maybe MfAD cash flow pattern should reflect the expected timing and amount of the company's dividend payment schedule).
1.1.12 Are MfADs then really expected cash flows?
1.1.13 To the extent that companies have long liability cash flows, MfADs serve to shorten the length of the liabilities and makes finding matching assets easier.
1.1.14 Having 2 sets of cash flows – one with MfADs and one without – could lead to confusion with respect to investment policy. This would require 2 different investment policies: one for assets backing the expected liability cash flows and one for assets backing the liability cash flows with MfADs.
1.1.15 Manage day to day without MfADs and then look at CALM reserves quarterly with MfADs.
1.1.16 Companies look at both economic surplus and CALM reserves.
1.1.17 Economic surplus is defined as the present value of the projected asset cash flows less the present value of the projected liability cash flows and arises as a result of including MfADs in the liability cash flow and holding the provision for interest rate risk.
1.1.18 Economic capital is the risk capital required at a given percentile (e.g. 99.5).
1.1.19 Required capital is the regulatory capital required (i.e. MCCSR).
1.1.20 Matching the dollar duration of assets and liabilities is equivalent to immunizing economic surplus and is sometimes viewed as equivalent to investing excess assets in cash (e.g. 25 year modified duration of assets backing liabilities plus zero year modified duration of excess assets combining to give a dollar duration of 22.4 years).
1.1.21 A counterview is that investing in a 22.4 year duration bond is not the same as investing in a 25 year bond plus cash and may provide a higher yield given the current term structure.
1.1.22 Investing the cash flows that come from profits as they are realized is a surplus investment decision at the time of the recognition of the profit.
1.1.23 The decision to include MfADs may be more of an attribution issue rather than a risk management issue.
1.1.24 Inclusion of MfADs is more of an individual company's risk/return decision expressed through the company's risk appetite.
1.1.25 The bank approach would be to explicitly model MfADs (i.e. find their cash flow pattern).
1.1.26 MCCSR may encourage the use of more conservative assumptions for valuation purposes since companies do not get full credit for negative reserves. This would adversely impact ALM to the extent that the underlying liability cash flows diverge from best estimate.

1.1.27 Separate "expected" flows from MfADs and assess both for Value at Risk ("VaR") and Earnings at Risk ("EaR").
1.1.28 Since MfADs are a CALM requirement, they will exist as long as the liability exists – how else should they be invested, if not as per cash flows including MfADs?
1.1.29 For the purposes of ALM, no one felt that it was not acceptable practice to include or exclude MfADs when projecting asset and liability cash flows.
1.1.30 For ALM purposes, MfADs could be included in the cash flows or matched separately.
1.1.31 To the extent that the future release of MfADs represents dividend or profit cash flows and the company wants to immunize these, it is not good practice to ignore MfADs.
1.1.32 Companies have different approaches for addressing MfADs, but the majority of companies include them in their work.
1.1.33 An exception to including MfADs is in respect to a hedging strategy. If the hedging strategy is based on an economic result, then the MfADs should not be included as it would alter the economic cost of the hedge program.

1.2 Excess Assets

Description of the Issue

For reporting purposes, the book value of assets must be equal to the book value of liabilities. ALM on the other hand focuses on cash flows and the present value of the assets and liabilities.

Excess assets arise as a result of including MfADs and the provision for interest rate risk in the liabilities. Because these are non-cash flow items, the present value of expected asset cash flows will be greater than present value of expected liability cash flows.

Matching the modified duration of the liabilities with excess assets in the line will result in interest rate risk exposure for the economic surplus (which may or may not be desired).

Matching the dollar duration of the assets and liabilities will protect the economic surplus in the segment. This will help ensure the stability of earnings as MfADs get released into income.

The survey did not ask specifically how companies deal with excess assets. 79% of companies indicated they used modified duration. 40% of companies indicated that they use dollar duration measures.

Discussion Points

Many of the discussion points were raised in the previous discussion topic.

1.2.1 Most companies match the book value of assets and liabilities.
1.2.2 Excess assets arise as a result of including MfADs in the cash flows and holding the provision for interest rate risk.

1.2.3 The issue then is what to do with cash flows or MfADs on C3 risk given MCCSR requirements and economic capital.
1.2.4 Manage the assets backing the provision for interest rate risk assets differently to minimize the provision for interest rate risk and maximize transfer to surplus.
1.2.5 Sub-segment MfADs based on size of segment (may not be permitted under LSOP).

1.3 Renewals

Description of the Issue

Renewals can exist for both assets and liabilities. Projecting renewals can be tantamount to projecting new business and capturing future spread income. Some companies only assume renewals if rates are guaranteed.

In absence of rate guarantees, if the interest rate resets and there is no interest rate guarantee, then there is no exposure to changes interest rates. Including renewals when projecting cash flows can distort the true interest rate risk exposure.

Some companies assume renewals on one side of the balance sheet but not the other.

Discussion Points

1.3.1 Question: Does the decision of including or excluding renewals boil down to whether interest rates are guaranteed on the underlying liability or asset?
1.3.2 For spread business, companies do not include renewal cash flows. (One company currently does but intends to stop).
1.3.3 For Universal Life ("UL") products, companies are investigating whether to include renewals or not.
1.3.4 For 'demand money', some companies are assuming some stickiness to the liabilities to therefore invest in longer term assets than cash.
1.3.5 Companies will include commitments on asset renewals as new longer term cash flows.
1.3.6 Valuation requires some assumption of renewals on renewable term.
1.3.7 Companies may be exposed to the risk that persistency rates change on renewable term depending on the path of interest rates. (If rates increase and competitors price their products lower, this may affect your company's persistency).
1.3.8 The risk of changing mortality rates is a bigger risk than changes in interest rates on term insurance.
1.3.9 For UL and annuities that have minimum rate guarantees companies include renewals for ALM and valuation purposes in order to extend the term of the liability and value the cost of the embedded option.
1.3.10 Need to include policyholders' efficiency of exercise (assume 100% for conservatism or may want to take historical averages of exercise).
1.3.11 For spread based business including UL, cash flows are projected to the reset point unless there are minimum rate guarantees. For products that have minimum rate guarantees cash flows are projected past the reset date in order to cover instances when the guarantees are in the money.

1.4 Taxes

Description of the Issue

Only 24% of companies include taxes when projecting cash flows for ALM purposes. Most companies felt that projecting tax at the level at which they do ALM was too complex. A number of companies argued that due to their specific tax situation, taxes were not material.

Discussion Points

1.4.1 Depends on the type of tax.
1.4.2 Investment Income Taxes ("IIT") are included in the cash flows but deferred taxes are not.
1.4.3 Most companies include IIT and treat as an expected cost.
1.4.4 Deferred taxes are included in cash flows but current taxes are not included.
1.4.5 Some companies take all deferred taxes and combine them into one pool to be placed into surplus and managed on a macro basis.
1.4.6 Deferred tax is part of the actuarial reserve under CALM.
1.4.7 Most companies include deferred tax assets and deferred tax liability in calculating reserves as prescribed under CALM.
1.4.8 Some companies adjust tax preferred asset cash flows and use pre-tax cash flows grossed up to reflect tax effectiveness of assets.

1.5 Asset Default

Description of the Issue

Approaches to modeling asset defaults are fundamentally different. 49% of companies use a monthly or annual basis point charge. 39% of companies reduce cash flows from coupons and maturity payments. The resulting asset default provision will be much larger for a company using the first approach for a given asset default assumption. This makes comparison difficult.

Discussion Points

1.5.1 There are 3 approaches:
   1) basis point charge based on cash flows (4 companies)
   2) basis point charge based on book value (9 companies)
   3) probabilistic approach based on timing and expectation of when assets may default as well as any recovery of the asset if default occurs (3 companies)

1.5.2 The added precision offered by approach (3) may not be sufficient to justify the time involved.
1.5.3 A question was raised on how an economic cycle adjustment might be used (or not) for ALM. Some companies appear to be including an economic cycle adjustment but have no corresponding cash flows for ALM.
1.5.4 This item is not viewed as important as some of the other items discussed.
1.5.5 The issue is essentially one of disclosure so that users of financial statements can understand what companies are doing and make more meaningful comparisons.

1.5.6 Whatever method is used should be validated by company experience.
1.5.7 Need to make sure that the method used for modeling is consistent with the expected costs (i.e. as long as the amount of margin taken is based on the approach used and ultimately produces loss provision expected).
1.5.8 Some companies use cyclical reserves while others do not or are moving away from them.

1.6 Creating Value

Description of the Issue

The issue of artificially creating value was not included on the original survey. This situation potentially arises when there is a discrepancy between the present value and market value of an asset causing economic surplus to be over or understated.

This topic deals with the issue of how should actuaries deal with the situation where the present value of the asset cash flows is greater than the actual price of the security and whether there are situations where this is appropriate.

Discussion Points

1.6.1 Question: Are actuaries artificially creating economic value when the present value of the asset cash flows is greater than the market value of the asset?
1.6.2 The key is to ensure that a consistent approach is taken in calculating the present value of the asset and liability cash flows.
1.6.3 The market value of an asset includes a liquidity premium in some instances. Because insurance companies are holding these assets to match against long term liabilities, there is an argument that they should be able to recognize the liquidity premium as earned up front.
1.6.4 Underwriting can add value since it is possible that the present value can exceed the market value in the current environment.
1.6.5 Companies need to be cautious in recognizing too much income up front when there may be a material change in the markets expectation of credit losses.
1.6.6 Under CALM valuation, recognition of gains (liquidity premium, net risk premium) on assets occurs immediately.
1.6.7 It was suggested that this is an accounting issue.

1.7 Modeling Non-fixed Income Assets

Description of the Issue

This topic deals with how to model non-fixed income assets such as equities and real estate and was not directly asked on the survey.

Discussion Points

1.7.1 Some companies match very long liability cash flows with non-fixed income assets such as equities.

1.7.2 Use stochastic model. Model the equity cash flows as a stream of increasing dividends (assuming earnings growth) expected to be received in future plus a stochastically modeled unrealized capital gain over longer term (i.e. 50-60 years).

1.7.3 Non-fixed income assets are suggested as part of an optimal (more diversified) portfolio for longer term matching of liabilities (higher return/lower risk) using an efficient frontier type of analysis.

1.7.4 Model returns of asset classes in a stochastic framework.

1.7.5 There are challenges in implementing this concept for CALM.

1.7.6 Possibly split liability cash flows into 2 streams to handle CALM:

1) immunize first 30 years with fixed income investments
2) use equities (for example) to 'match' cash flows longer than 30 years (possibly by building up asset cash flows to time 30 with equity returns and then assume sell all equities and buy fixed income instruments)

1.7.7 Another approach was to assume some return for the long term equity assets and include them in the cash flows for ALM.

1.7.8 Does not sound like many companies are trying to model the duration of non fixed income assets (which can be arbitrary and misleading).

1.8 Stochastic Modeling and Other Issues

Description of the Issue

Companies face a challenge modeling cash flows that vary with changes in interest rates (e.g. callable bonds, UL products).

More guidance is needed with respect to modeling dynamic asset cash flow changes (i.e. mortgage prepayments and bond calls that are dependent on the projected economic scenario) and dynamic liability cash flow changes (UL risk charges linked to the net amount at risk which varies with the projected fund values).

Discussion Points

1.8.1 Some companies vary cash flows dynamically based on a deterministic interest rate scenario as an alternative to modeling a full blown stochastic scenario. This allows companies to better ascertain the impact on cash flows of changes in underlying variables.

1.8.2 One does deterministic scenarios with stochastic interpolation.

1.8.3 Computer run-time is still potentially an issue if doing full blown stochastic results.

1.8.4 Sufficient historical data does not exist to fit the distribution to items on the liability side like lapses and be able to generate credible stochastic scenarios.

1.8.5 Prepayment options on residential mortgages are sometimes modeled based on incentive to prepay. The same holds for call bonds and commercial mortgages without "keep-whole" provisions.

1.8.6 One approach is to limit the amount of business that can be done with embedded options and to limit the amount of assets with prepayment risk.
1.8.7 Too onerous to model all stochastic variables. Examine how important different variables are to the overall value of the asset or liability.
1.8.8 For UL products companies tend to fully match equity indexed accounts. This is theoretically over hedging due to impact on MER fee income offsetting insurance costs.
1.8.9 New OSFI capital rules for index option pass-through products will encourage 100% matching to minimize MCCSR requirements.
1.8.10 Companies are exposed to equity market decreases and reduced fee income on lower fund balances.
1.8.11 Variable insurance cash flows on UL products will change if interest rates change (e.g. spread income, IIT, expenses). Examine deterministic scenarios and derive causal relationships.
1.8.12 There also exists the behavioural aspect of whether clients will move money between fixed income and equities.

2.0 MEASUREMENT OF EXPOSURE

2.1 Measurement of Exposure at a Point in Time and Over a Time

Description of the Issue

Almost all companies indicated they use deterministic scenario testing (94%) in measuring risk exposure. The majority of companies use modified duration and convexity. 28% of companies use key rate sensitivity analysis. 25% of companies use stochastic scenario testing.

Most of the risk metrics used in ALM are used to measure exposure to an immediate (i.e. point in time) change in interest rates. This point is often not well understood. Presenting ALM results to senior management that focus purely on point in time measures can oftentimes provide a misleading presentation of the true exposure.

Analysis should also be performed to measure the exposure to future changes in interest rates (i.e. over time).

Discussion Points

2.1.1 Modified duration, key rate duration, convexity, VaR are used by companies to measure the exposure at a point in time.
2.1.2 Some companies also look at cash flow mismatches out in time. Some companies have limits for the maximum cash flow mismatch allowed in any given year.
2.1.3 Determine if there is interest rate risk exposure based on CALM and/or other deterministic scenarios. Use point in time metrics to identify where to act.

2.1.4 Banks and insurance companies measure the impact of moving interest rates +/ – 100 basis points. This is a lot more stress for the long rates. Some companies look at 95% confidence intervals instead.
2.1.5 May look at an immediate, permanent, parallel shift in interest rates of +/ – 100 basis points. This is not very practical to see happening over the full term structure (i.e. there is far less chance of 30 year rates moving 100 bps versus 3 month rates moving by that amount).
2.1.6 Approximately 85% of yield curve movement can be explained by parallel shift.
2.1.7 Approximately 10% of yield curve movement can be explained by twist.
2.1.8 Approximately 5% of yield curve movement can be explained by a change in curvature.
2.1.9 Whether or not the use of a point in time works depends on how frequently a company measures and manages its risk

2.2 Measurement of Exposure to Non-Parallel Shifts in Interest Rates

Description of the Issue

Metrics such as modified duration, dollar duration, and convexity only measure the exposure to parallel shifts in interest rates. In reality, changes in interest rates rarely move in parallel fashion.

25% of companies indicated that they use partial durations/key rate sensitivity analysis to measure the exposure to non-parallel changes in interest rates. Scenario testing also captures this exposure.

Discussion Responses

2.2.1 It is not sufficient to only consider parallel changes in interest rates in measuring the interest rate risk exposure.

2.3 Interest Rate Sensitivity of Non-Fixed Income Assets

Description of the Issue

More and more insurance companies are considering using non-fixed income assets to back long term liabilities. Several issues arise with respect to how to treat these for ALM purposes. In particular, there is an issue of whether traditional risk metrics can be used to measure the price sensitivity of fixed income instruments to changes in interest rates such as duration are meaningful for non-fixed income assets. Is duration matching using these assets appropriate?

Discussion Points

2.3.1 There is some literature on calculating duration for non fixed income assets that suggests that equities might have a duration of 2-8 years and sometimes even much longer.

2.3.2 Companies tend to model equity returns stochastically using projected correlations with interest rates.

2.3.3 Use efficient frontier concept and select best risk-adjusted returns.

2.3.4 Builds upon the goal of achieving the best total return for the company for a given amount of risk.

2.3.5 Non-fixed income asset classes such as equities can be used as part of a well defined ALM strategy to support longer term liabilities.

2.3.6 Non-fixed income assets cannot be used to "duration match".

2.3.7 You really cannot calculate duration on non-fixed income assets like equities.

2.3.8 Using duration for equities may not be meaningful. Duration is a measurement of interest rate sensitivity. Equities have had both positive and negative durations.

2.3.9 For interest rate risk reporting some companies have ignored the tail of very long term liabilities and also the equities used to match the long tail of liabilities.

2.3.10 This implicitly assumes that the long term liabilities and the supporting assets are 'matched'.

2.3.11 Question: Do you assume that the equities needed to match the long term liabilities are arrived at by using a 5% long term interest rate assumption after 30 years with the use of a long term (conservative) assumption for the first 30 years for the equity returns (assumes that the amount of equities needed is static regardless of interest rates)?

2.3.12 Amount of equities should probably be continuously rebalanced to avoid being 100% invested in equities.

2.3.13 Need to make rebalancing and the term of the liabilities being matched by equities dynamic based on where the investment department perceives more value being derived per asset class (within bounds, since interest rates have been perceived to be very low for many years).

2.3.14 Policies and limits must be put in place to ensure that the decision to rebalance is not postponed for a too long period.

2.3.15 Have benchmarks for asset allocation but then ensure lock-in long term interest rates when there exists less risk in just locking in interest rates versus still being invested somewhat in equities.

2.4 Stochastic Interest Rate Models

Description of the Issue

Of the 14 companies that indicated they use stochastic models, 9 use arbitrage free models based on Q-measures, 6 use arbitrage free models based on P-measures, 4 use equilibrium models based on Q-measures, and 11 indicated the used equilibrium models based on P-measures.

Discussion Points

2.4.1 Implied forward rates have not been good predictors of future interest rates.

2.4.2 Products are priced using arbitrage free model. Risk exposure measured using equilibrium model. Potential asset trades to modify risk exposure assessed using arbitrage free model.

2.4.3 Capital market price (i.e. cost to hedge) is more expensive and therefore this method is conservative since client or lines of business will be charged more for the hedging.

2.4.4 Equilibrium models are in essence the expression of a view on where interest rates might go.

2.4.5 Equilibrium models will give you a wider distribution of results and hence a higher value-at-risk measure.

3.0 CO-ORDINATION OF ASSET AND LIABILITY SIDES

3.1 Organizational Structure

Description of the Issue

For companies that indicated they had an independent ALM function, 48% reported to Corporate Actuarial, 20% reported to Investments, 12% reported to Finance, 8% reported to the Board, and 12% reported to other.

Regardless of the structure chosen, companies should establish the independence of the risk management function from the day-to-day management of the risks.

Clear accountability roles and responsibilities are not always well defined. Conflicts can sometimes arise between areas working on the asset side and the liability side.

Discussion Points

3.1.1 Company A

- ALM reports to CIO, but the ALM group is independent of other asset classes reporting to CIO (i.e. bonds, mortgages, etc)
- very distinct limits and controls over interest rate risk, foreign exchange, liquidity, etc.
- reporting unit separate from ALM managers
- ALM represents the needs and goals of the liability side/business unit of the balance sheet
- meet with asset specialists each week

3.1.2 Company B

- ALM reports to ALCO (based more on bank ALM model)
- ALCO is a group of senior management (Vice Chair of insurance, etc)
- focus on interest rate and liquidity risk
- calculate economic capital for interest rate risk too
- separate risk management group that deals with operational risk, business risk (i.e. Non standard ALM measures); this group develops risk management policy

3.1.3 Company C
- ALM reports to CIO
- ALM group is part of portfolio management
- Board has approved broad guidelines for ALM
- another document that gives more detail on risk management
- each segment has its own investment policy, approved by each segments ALCO
- there is an independent group that does the reporting
- CIO reports the total results of ALM to the Board
- there is another group doing risk management

3.1.4 Company D
- ALM reports to the head of one of the business units
- model will evolve to report to CIO over time
- segmented investment objectives => in the past each business acted independently but felt that that was sub optimal
- ALM represents the business units' need and then allow the investment department to find the best relative value in the capital markets
- there is a risk management group that does overall risk reporting and does a peer review of ALM groups work

3.1.5 Company E
- ALM reports to CRO and the CRO reports to the CFO
- moved from CIO reporting model due to perceived conflicts by the business units with what investments wanted
- there are a total of 10 ALCO's; one for each business unit
- each segment has its own investment policy

3.1.6 Company F
- ALM reports to corporate actuarial
- most common model based on survey results
- have similar investment policies to what other companies have at segment level
- ALM group works with business and also with investments

3.1.7 Company G
- ALM and asset managers are closely related
- ALM group can recommend trades

3.1.8 Most companies have incentives aligned with ALM group to be based on items like : staying within ALM tolerances, completing projects, overall corporate earnings, etc – value added by asset managers is not normally part of bonus of ALM group

3.2 Performance Benchmarks

Description of the Issue

Potential problems can arise regarding the execution of ALM strategies if the performance measurement for the investment manager is not aligned with the financial objectives of company. Performance measurement is usually based on total return or book yield versus a liability benchmark. In general, liability benchmarks have no component for economic surplus or C3 provision.

The investment manager can add value versus a benchmark but usually only in an incremental amount (i.e. extra book yield or total return). ALM strategies can create (or destroy) substantial value.

The existence of a liability benchmark that is not well defined and/or based on short term measures can promote internal conflicts and/or undermine execution of effective ALM strategies that have a long term focus and seek to maximize economic value.

Discussion Points

3.2.1 Investment departments that take more of an asset shop mentality (i.e. total returns without looking too closely at liabilities) tend to cause issues with respect to benchmarks not necessarily being aligned with what business units need.

3.2.2 Challenge is setting appropriate benchmarks that are properly aligned with needs of liability side.

3.2.3 Push for simplicity on benchmarks can lead to asset purchases being more driven by the investment manager trying to game or arbitrage the (simple) rules.

3.2.4 Companies have tolerances on items like percentage in each asset class, overall rating of portfolio, amount of mismatch, amount of liquidity risk and so drive performance off of keeping within those tolerances.

3.2.5 Some companies give fairly tight guidelines on what the liability duration needs to be.

3.2.6 One company calculates a gain/loss on economic surplus that is charged back to the investment department.

3.2.7 Companies tend to have some benchmarks based on market indices like Scotia McLeod.

3.2.8 A number of companies do not use liability benchmarks.

3.2.9 Two companies use fund transfer pricing to perform attribution analysis.

- attribute change in economic surplus to bond credit decisions and examine where value added
- attribute value added by individual asset managers and value added due to taking interest rate positions

4.0 OTHER ISSUES

4.1 Asset Segmentation

Description of the Issue

Segmentation is commonly used by insurance companies for profitability measurement and to comply with regulatory requirements. However, by definition, segmentation produces sub-optimal results. For ALM purposes, should segmentation be eliminated?

Discussion Points

4.1.1 Some constraints on segmentation are driven by regulatory requirements (e.g. for participating and non participating business, it is easier to split investment income if

assets are segmented), however, there is no formal requirement that participating and non participating business be segmented.

4.1.2 Under US GAAP accounting, SFAS 133 also requires separate asset segments.

4.1.3 Inter segment notes can help to optimize macro portfolio management on an aggregated basis but still allow segmentation of assets and liabilities.
- OSFI has constraints on inter segment notes that present challenges
- some companies believe that the additional reporting to OSFI on inter-segment notes is not onerous and worth the effort

4.1.4 Need to ensure that the company does not have too many segments.

4.1.5 Segmentation helps company to attribute profitability to the respective lines of business.

4.1.6 Segmentation allows companies to more easily allocate reserves including the provision for interest rate risk under CALM.

4.1.7 Should have a good business reason (e.g. different investment policies) to segment assets and liabilities.

4.1.8 Lining up segments for ease of roll up allows for both the business line purpose of micro analyzing and the ALM macro optimization.

4.2 Valuation Assumption Changes

Description of the Issue

Liability cash flows used for ALM are usually based on the best estimate assumptions both with and without MfADs used in the valuation of the policyholder liabilities. When either the best estimate assumptions and/or MfADs change, this will affect the ALM position and potentially require the portfolio to be rebalanced resulting in realized gains or losses.

Discussion Points

4.2.1 Changes in lapse rates and/or changes in mortality rates during the last month or two before year-end can impact ALM cash flows dramatically.

4.2.2 The process for communicating these changes appears to be predominantly informal.

4.2.3 Some companies attempt to communicate potential changes early between the business units and the investment department and try to quantify the impact of the changes ahead of time.

4.2.4 Ideally make the decision to make changes at the beginning of a quarter or as early in the reporting period as possible so ALM impact can be managed.

4.3 Equity Market Risk

Description of the Issue

Companies have equity market risk exposure due to 1) loss of fee income on MERs due to lower equity markets, 2) guarantees offered on segregated funds, and 3) whenever equities are included in the general account assets, whether in surplus or backing policyholder liabilities.

Discussion Points

4.3.1 Companies calculate the potential impact on GAAP income due to a drop in equity returns but do not hedge the risk unless the exposure is outside of risk tolerances.

4.3.2 In practice, different accounting treatment under US and Canadian GAAP can affect risk management decisions.

4.3.3 Risk limits exist for exposure to decrease in MER/fee income, increase in cost of segregated fund guarantees, losses on general account portfolio holdings due to decreases in equity returns.

4.3.4 Risk may be hedged on a total company basis.

4.3.5 No limits on amount of equities that can be used to support risk pass-through products.

4.4 ALM and Pricing

Description of the Issue

In theory, risk management begins at the pricing and product development stage. In practice, the role of ALM in pricing is not always well defined.

Discussion Points

4.4.1 At one company, the pricing actuary is a member of the ALM committee. The ALM committee provides input on pricing before a product is finalized.

4.4.2 One company has a formal process including required sign off by many areas before a new product is launched. ALM and investment functions need to be involved.

4.4.3 ALM should be involved in any new product pricing.

4.4.4 At one company product pricing (and interest rate setting) is re-done each year.

4.4.5 Most companies appear to have, or desire to have, a fairly formal process to include ALM for any new product pricing.

4.5 New Business

Description of the Issue

This issue is similar to the discussion topic on renewals. Is it appropriate to include new premiums and/or sales for ALM purposes?

Discussion Points

4.5.1 New business/premiums tend to not be included in ALM, but are included in DCAT analysis.

4.5.2 Need to be aware of what changes in interest rates might do to pricing on future sales
- will you still have the returns you desire to continue pricing at a certain level?
- some companies buy investments in advance of the future sales to lock-in current level of interest rates if they feel interest rates will drop (but need to recognize that this involves taking a risk on the direction of interest rates)

4.5.3 New business tends to be monitored only. Asset managers are provided with information regarding what purchases may be needed rather than formally hedging future sales ahead of time.

4.5.4 One approach was to include new business sales projections in order to give the investment department a "budget" for the foreseeable future.

4.5.5 One company assumes new sales to implicitly be comfortable with using non fixed income assets to match longer term liabilities.

4.5.6 Several companies project near term expected sales and rebalance to actual periodically.

5.0 NEXT STEPS FOR CIA WORKING GROUP ON ALM

5.0.1 Draft an educational or guidance note on ALM.
- anyone interested in assisting the working group is welcome

5.0.2 Provide a list of ALM references.
- attendees were asked to email any relevant references to Charles Gilbert

5.0.3 Establish an association of ALM practitioners would meet every quarter to discuss issues.

5.0.4 Explore holding a workshop session at the CIA annual and general meetings.

5.0.5 Organize another focus group session with banking representatives.
- similar format to be used
- will approach CALMA regarding their interest

APPENDIX A

ALM PRACTITIONERS PARTICIPATING IN FOCUS GROUP MEETING ON ALM PRACTICES

John Brierley	RBC Life Insurance Company
Paul Chan	The National Life Assurance Company of Canada
Evaronda Chung	The Canada Life Assurance Company
Terry F. Dietrich	AIG Life of Canada
Don Fischer	The Great-West Life Assurance Company
Craig Fowler	CIA Working Group on ALM
Charles L. Gilbert (Chair)	CIA Working Group on ALM
David C. Gilliland	CIA Working Group on ALM
Jonathan Hede	Independent Order of Foresters
Gilbert Lacoste	Sun Life Financial Services of Canada
Robin Li*	Manulife Financial
Joe Marko	Aegon Canada (formerly Transamerica Life Canada)
Catherine Murphy	CIA Working Group on ALM
	Manulife Financial
Christian-Marc Panneton	CIA Working Group on ALM
	Industrielle Alliance
Grant Paulsen*	Empire Life
Tara Proper*	Equitable Life of Canada
Kelly Rendek	Co-operators Life Insurance Company
David Ross	Maritime Life Assurance Company
Daren Smith	Maritime Life Assurance Company
Ted Steven	CIA Working Group on ALM
	The Great-West Life Assurance Company
Kin Tsang	Manulife Financial

* Not a member of the CIA.