

Educational Note

Sources of Earnings Calculations — Group Life and Health

**Committee on the Appointed/
Valuation Actuary**

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Memorandum

To: All Life Insurance Practitioners

From: Tyrone G. Faulds, Chairperson
Practice Council

Arshil Jamal, Chairperson
Committee on the Appointed/Valuation Actuary

Date: October 7, 2010

Subject: **Educational Note on Sources of Earnings Calculations—Group Life and Health**

This educational note is meant to provide a framework for disclosure of sources of earnings for group life and health benefits that would result in reasonable consistency of approach and disclosure across the industry. The note is directed to life insurance company actuaries whose work in Canada is involved with the determination and disclosure of sources of earnings analysis.

It is meant to supplement the existing draft educational note, [Sources of Earnings: Determination and Disclosure](#) (August 2004), with more detail concerning issues specific to group life and health benefits. It is also intended to give some guidance for additional review and understanding of group earnings that management may find useful, even if they choose not to disclose the full analysis publicly.

It will recommend a sources of earnings methodology for situations where the company is using a simplifying approximation so that the incidence of claims is not projected as part of the valuation. It also includes an appendix comparing income statement presentation to sources of earnings presentation.

In accordance with the Canadian Institute of Actuaries' (CIA) Policy on Due Process for the Approval of Guidance Material Other than Standards of Practice, this educational note has been prepared by the Committee on the Appointed/Valuation Actuary and has received final approval for distribution by the Practice Council on September 16, 2010.

As outlined in subsection 1220 of the Standards of Practice, "*The actuary should be familiar with relevant Educational Notes and other designated educational material.*" That subsection explains further that a "practice which the Educational Notes describe for a situation is not necessarily the only accepted practice for that situation and is not necessarily accepted actuarial practice for a different situation." As well, "Educational Notes are intended to illustrate the application (but not necessarily the only application) of the Standards, so there should be no conflict between them."

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1. INTRODUCTION

1.1 Scope of Paper

The purpose of this educational note is to provide a framework for disclosure of sources of earnings for group life and health benefits that would result in reasonable consistency of approach and disclosure across the industry. It is meant to supplement the existing draft educational note, [Sources of Earnings: Determination and Disclosure](#) (August 2004), with more detail concerning issues specific to group life and health benefits. This note is also intended to give some guidance for additional review and understanding of group earnings that management may find useful, even if they choose not to disclose the full analysis publicly.

This educational note is directed to life insurance company actuaries whose work in Canada is involved with the determination and disclosure of sources of earnings analysis.

1.2 Relationship to CALM Valuation Approach

The Canadian Asset Liability Method (CALM), as described in subsection 2320 of the Standards of Practice, is the appropriate method of valuation for group life and health policy liabilities. A CALM valuation approach would normally project full estimated premium cash flows and offset that with full claim, expense, commission, etc., cash flows as soon as the first premium is received on the business. The cash flows generally extend at least to the first date at which premiums can be changed. However, for many group benefits (particularly short-term benefits such as medical or dental), most insurers conclude that the effect of including these short-term cash flows is not material and they are ignored. This simplifies the valuation substantially. Asset/liability cash flow testing is then only done for long-term benefits/claims such as under long-term disability and life waiver of premium benefits, and single premium (paid-up) life benefits.

If CALM valuation is used without any simplifying approximation, the existing draft educational note, [Sources of Earnings: Determination and Disclosure](#) (August 2004), can be applied to group business with little modification, because, as with individual business, earnings after the issue date derive primarily from variances between the valuation assumptions and actual results. However, when an approximation is used so that asset/liability testing is only applied to certain long-term benefits/claims, the incidence of future claims (i.e., full future cash flows) is not projected as part of the valuation; liabilities are set up only when claims are incurred. Variance in the incidence of claims and the related claims loss ratio is the primary source of volatility in group earnings. Since the liability calculation mechanism does not directly project expected claims incidence, there is a need for guidance that helps to identify these sources of earnings variances more clearly for management.

This document will recommend a sources of earnings methodology for situations where the company is using a simplifying approximation so that the incidence of claims is not projected as part of the valuation.

1.3 Differences Between Group and Individual Business

Assuming the simplifying approximation to CALM methodology noted above is used, the methodology for sources of earnings for group business would be different than for individual business for several reasons:

1. *Liability calculations projecting full future cash flows would not be available to support the analysis.*
2. *Group earnings are more naturally analyzed as a function of the pricing assumptions (rather than the valuation assumptions), particularly where a full future cash flow valuation is not being used.* Group pricing starts from actuarial rating factors that normally utilize best estimate assumptions. In group insurance there is much more flexibility applied by underwriters and/or field personnel in determining the final rate basis for a given case than is normal for other lines of business. The renewal underwriting process adjusts prices at regular intervals. Rate guarantees are generally limited to 15–27 months from issue, and 12 months for renewals. As a result of this pricing flexibility, the initial quotation and subsequent annual renewal underwriting process are the most critical determinants of future profitability for most group business, not releases of PfADs on existing liabilities.
3. *Understanding of changes in group earnings is greatly enhanced by an analysis of earnings in the first policy period (which are driven by pricing decisions made at the initial quotation) separately from second and/or later policy periods (driven by renewal pricing decisions).* Identifying the source of an earnings downturn (new cases, renewal cases, or both) can help in quickly identifying the root cause of the problem. If the simplifying approximation to CALM valuation noted above is used, then the effect of new business for Appointed Actuary reporting purposes would typically be approximated as zero, and all gains would be considered gains on inforce business. However, there is still a key breakpoint between initial and renewal underwriting at the end of the first policy period. Analysis of gains from inforce operations separately by policy period, or at least between first policy period and subsequent policy periods, may be beneficial.

All of these unique features of group business under the simplifying approximation require a different approach to sources of earnings analysis, which is defined in this educational note.

1.4 Types of Group Business

There are three basic types of group business:

1. Fully insured (pooled) business which may be prospectively experience-rated, but which would not allow for recovery of past losses. The insurer bears the full claims risk.
2. Administrative Services Only (ASO) and Fee for Service businesses which are fee-income type businesses where the insurance company administers the business or provides a service but bears no claims risk. There may be amounts on deposit for ASO benefits, with or without interest credits on those deposits accruing to the policyholder. An “ASO” benefit may have some insured elements included with the ASO (for example, high amount pooling of health claims).
3. Refund or (retrospectively) experience-rated business, which would allow for recovery of past losses or eventual refund of past gains. Depending on the

exact terms of the contract and the historical experience, in a given time period the insurer may have full claims risk, or little or no claims risk.

1.5 Use of Plan vs. Actual Premiums

The sources of earnings analysis described below starts with actual premiums received during the year (by policy period), and analyzes expected gains or losses based on those premiums. It assumes implicitly that the actual mix of premium by policy period is as expected. If the actual mix by policy period is dramatically different from the assumptions underlying the company's business plan (because of unusual new business sales or unusual lapses), that difference may explain a material portion of the difference between plan earnings and actual earnings.

1.6 Appointed Actuary Format vs. Internal Business Format

The Appointed Actuary reporting format shows one column of actual results, with expected profits on inforce operations as one item or items and actual experience gains or losses as another item or items. For internal business analysis, it may be more helpful to show a full column of expected profits by type (from expenses, claims, interest, etc.) compared to actual profits, with the variance calculated as a third column. This educational note follows the "three column" format, by calculating full expected profits and experience gains separately. The third column, actual earnings, is of course the sum of expected profits and experience gains. The expected profits are based on the actual premiums received during the calendar period. Some companies may wish to add a fourth column, showing expected profits based on business plan premiums, to understand better the variances from the original business plan.

2. METHODOLOGY

2.1 New Business vs. Policy Period Analysis

For most insurance business, a key distinction is made between new business (i.e., business sold in that calendar year) and inforce business. A somewhat analogous distinction can be made between group business in its first policy period and the second and later policy periods.

The earnings in the first policy period are the result of the initial underwriting process, where information about the group may be less reliable or unavailable, and competitive discounting may reduce normal profit margins. The earnings in the second and later policy periods are the result of the renewal underwriting process, when information about the group is known and more reliable.

The first policy period normally extends to the first renewal, which is typically 15 months after issue. In some cases (particularly low-credibility benefits such as life and long-term disability) rate guarantees are extended for two years or longer.

If extended rate guarantees exist on a substantial percentage of cases for specific benefits, the company may wish to consider a longer timeframe for the "first policy period" for that benefit, or, if the data is available, defining the end of the first period as the end of the first rate guarantee for each group.

In any calendar year analysis, "first policy period" premium would include premium paid in that calendar year from business issued before the start of the calendar year which has

not yet reached the end of the first policy period. For example, a case issued on November 1, 2007 with a 15-month first renewal would be considered “first policy period” for November and December of 2007, all of 2008 and January of 2009.

The remainder of this educational note assumes that analysis of results by policy period (at least first period vs. renewal) is being done.

Policy period analysis may be extended to all sources of earnings; however, for most companies the level of gains from investment income, fee income, commissions, and premium taxes will not vary materially by policy period. Companies may wish to vary expenses by policy period, though the excess expenses at issue are much smaller than for individual business, and for many companies the difference by policy period will not be material. This educational note assumes only claims gains are analyzed by policy period. Analyzing claims gains by policy period does require identification of all pricing loads by policy period; however, for this purpose the company may decide to use the same pricing margins for all policy periods for some of the items to simplify the calculations.

2.2 Preliminary Steps

2.2.1 Identify the average expected pricing margin as a percent of premium for commissions, premium taxes, expenses and standard risk and profit margins.

Average standard risk and profit margins may be produced by policy period. Two possible ways to do this are maintaining an explicit group-by-group file, or applying the company’s standard pricing philosophy to group-by-group statistics at or shortly before the beginning of the year.

Commissions or commission scale information may not be easily available at the group level. If not, the company’s standard commission scales may be assumed initially for all groups, and then all commissions may be adjusted pro rata so that the expected commissions in total equal the actual commissions paid on the business over a recent time period. In doing this, the company is assuming that actual commissions paid (if different from standard) are accurately priced by adjusting from standard pricing at quote/renewal.

It may be appropriate to audit the underwriting processes periodically to confirm that this assumption is valid, and to ensure that any other underwriting adjustments do not materially alter the expected pricing results. Any errors or omissions in these premium adjustments would normally not be material, and (in the absence of a seriatim commission file) are not explicitly analyzed. To the extent that errors occur, they will be shown as claims gains or losses in the sources of earnings analysis.

Third party administration (TPA) fees, if applicable, would normally be shown as part of the commissions, because, like commissions, when they occur the premium is usually explicitly adjusted for the extra cost.

2.2.2 Identify the general pricing philosophy by policy period.

The pricing margins above would include profit margins sufficient to produce the appropriate expected earnings over the entire block. Due to competitive pressures, companies may apply marketing discounts from their standard pricing on

individual cases. In order to achieve the planned profits in practice, any marketing discounts must be offset either by implicit margins in other pricing assumptions (e.g., claims trend), by an explicit increase in risk and profit margins, or by gains in later policy periods. The level of marketing discounts (and therefore the net expected profit after discounts) may vary significantly by policy period.

The actuary may wish to review whatever mechanism is in place to track discounting. It can be very difficult to separate changes due to real underwriting or actuarial risk factors that are not part of the base pricing module (which are not marketing discounts, and would be expected to have no effect on profits) from true marketing discounts, which will reduce profits. It is important for the underwriters to have clear guidance, if the reported discount levels are to be interpreted correctly.

2.2.3 Identify the expected percentage gains for the various sources of earnings.

These would most commonly be developed from prior pricing analysis, analysis related to the business plan, or review of the previous year's sources of earnings results. The general definitions of the items required are:

1. Net risk and profit margin as a percentage of premium (shown under the claims section in the example). Net risk and profit margins typically vary by policy period. For most lines of business, the net profit margin is the standard explicit pricing profit margin less the expected marketing discounts from standard rates for that policy period plus any implicit margins in other pricing assumptions (e.g., claims trend assumptions for health and dental benefits). For some lines of business, changes in PfADs on liabilities have a material effect on expected profits by policy period. (See the "Short-Term vs. Long-Term Liabilities—Treatment of PfADs" section below.)

For benefits such as health or dental that have material claims seasonality, expected quarterly profits may be adjusted by the expected seasonality.

2. Expected percentage gain on interest (insured business) = expected percentage investment return on assets backing the insured liabilities *minus* percentage required interest on liabilities. For this purpose, "liabilities" include any liabilities backed by assets generating income, whether or not the liability has a required interest element. Liabilities would also include amounts on deposit for the policyholder on insured business, which would have "required interest" of interest credits to the policyholder on those deposits.
3. Expected percentage gain on fee income = (expected fee income *minus* expected expenses allocated to fee income groups *plus* expected interest on amounts on deposit for fee income groups *minus* expected interest credits to policyholders on those deposits) / fee income.
4. Expected percentage gain on commissions = (pricing commission loads *minus* actual commissions) / pricing commission loads. Because non-standard commissions are usually explicitly priced into each group, this would normally be zero, and therefore the expected profits from commissions would be zero. For some companies, expenses that are not explicitly priced (e.g.,

advisor bonuses) are included in commissions. If so, the unpriced expenses would create an expected loss on commissions. If commissions (or general expenses) are treated as deferred acquisition costs, then the actuary may wish to include the change in deferred acquisition costs in the commission/expense amounts.

5. Expected percentage gain on expenses = (pricing expense loads *minus* actual expenses, including change in expense liabilities) / pricing expense loads. This calculation excludes expenses allocated to fee income groups, since they are included in fee income above. If there is material seasonality in the company's budgeted expenses, expected quarterly profits may be adjusted by the expected seasonality.
6. Expected percentage gain on premium tax = (premium tax loads *minus* actual premium taxes) / premium tax loads. Because premium taxes are usually explicitly priced into each group, this would normally be zero, and therefore the expected profits from premium taxes would be zero.

2.2.3.1 Short-Term vs. Long-Term Liabilities—Treatment of PfADS

1. Most group liabilities are short term in nature, with the notable exceptions being liabilities for disabled lives of a group long-term disability (LTD) plan and to a lesser extent life waiver liabilities for disabled members of a group life plan, and paid-up life liabilities, if any. These long-term liabilities normally have substantial PfADs when they are initially established; however, the PfADs may be released fairly quickly as the claim matures. As a result of this pattern, a stable LTD block with substantial inforce liabilities will likely be profitable but a rapidly growing block may not be profitable, due primarily to the strain on the rapidly growing liabilities.
2. Conversely, other group benefits generally have short-term liabilities that are significantly smaller than the associated paid claims. PfAD changes on short-term liabilities have a minimal effect on earnings since they tend to be very small relative to paid claims. For these benefits, companies may wish simply to show the claims gain including PfADs in the claims number, without explicitly identifying changes in PfADs.
3. The remainder of this section discusses the treatment of PfADs on benefits with long-term liabilities, and the resulting net risk and profit margin. For illustration, we will assume we are analyzing an LTD case.
4. A typical first-year LTD case would have minimal paid claims relative to premium, but significant increases in liabilities relative to premium. The PfADS set up on those liabilities may be a material "strain" item for this business, especially as the premium in the first year is probably lower than expected as a result of marketing discounts. In the second policy period, the new premiums in that period would generate the same profit load and PfADs as above. However, a substantial portion of the PfADs in the liabilities set up from the first policy period will be released into earnings, if expected experience emerges. Also, the level of marketing discounts may change in the

second policy period. In the third policy period, the net profit above would be offset by PfAD releases from the first two policy period liabilities, etc.

5. The net risk and profit expected on an LTD case in a given policy period would then be the following:
 - i. explicit pricing risk and profit load, *minus*
 - ii. value of any marketing discounts applied, *minus*
 - iii. PfADs expected to be established on new long-term liabilities, *plus*
 - iv. release of PfADs on existing long-term liabilities.
6. The fourth element typically would be very small or zero on a first-year case, since existing claims normally are not taken over from a previous carrier. The first three elements would be zero on all terminated cases where claims continue to be paid. For convenience, the block of long-term liabilities from all terminated cases could be treated as a single group, with the last element being the sole source of expected profit.

2.2.4 Apply the pricing margins (from 2.2.1 and 2.2.2 above) to the actual calendar year premiums by policy period to produce actual loads for the calendar year (CY) for commissions, expenses, premium taxes and net risk and profit.

2.3 Sources of Earnings Definitions

2.3.1 Expected Profit on Inforce Operations—Renewal Periods

Expected profit for the period is the sum of:

1. *Expected risk and profit loads on renewal business*: Sum over all policy periods, except the first, of the actual premium *times* the net risk and profit margin from 2.2.3 above.
2. *Expected gain from net investment income—insured business*: Mean liabilities for the period *times* expected percentage gain on interest from 2.2.3 above.
3. *Expected gain from commissions*: Actual premium *times* pricing commission margin from 2.2.1 above *times* expected percentage gain on commissions from 2.2.3 above. This item may be very small or zero and, if so, it may be ignored.
4. *Expected gain from expenses*: Actual premium *times* pricing expense margin from 2.2.1 above *times* expected percentage gain on expenses from 2.2.3 above. This step would exclude fee income business.
5. *Expected gain from fee income*: Actual fee income *times* expected percentage gain on fee income from 2.2.3 above.
6. *Expected gain from premium taxes*: Actual premium *times* pricing premium tax margin from 2.2.1 above *times* expected percentage gain on premium tax from 2.2.3 above. This item may be very small or zero and, if so, it may be ignored.

2.3.2 Experience Gains on Inforce Operations—Renewal Periods

In the discussion below, “actual expense (/commission/premium tax/net profit) loads CY” means the expected expense margin percentage *times* the actual premium paid in the current year. Also, “claims” includes paid claims *plus* change in claim liabilities, and “expenses” includes paid expenses *plus* change in expense liabilities, if any.

1. *Experience gain on claims* (calculated by policy period) equals
 - Actual premium, *minus*
 - Actual incurred claims (including conversion charges), *plus*
 - Actual required interest on liabilities, *minus*
 - Actual commission loads CY, *minus*
 - Actual premium tax loads CY, *minus*
 - Actual expense loads CY, *minus*
 - Actual net profit loads CY, for renewal policy periods.
2. *Experience gain on net investment income—insured business* equals
 - Actual net investment income on insured groups CY, *minus*
 - Actual required interest on liabilities CY, *minus*
 - Expected gain from net investment income on insured business.
3. *Experience gain on commissions* equals
 - Actual commission loads CY, *minus*
 - Actual commissions, *minus*
 - Expected gain from commissions.
4. *Experience gain on expenses* equals
 - Actual expense loads CY, *minus*
 - Actual expenses, *minus*
 - Expected gain from expenses, excluding fee income groups, *plus*
 - Actual required interest on expense liabilities.
5. *Experience gain on fee income* equals
 - Actual fee income CY, *minus*
 - Expenses allocated to fee income groups, *plus*
 - Interest on amounts on deposit for fee income groups, *minus*
 - Interest credits to policyholders for fee income groups, *minus*
 - Expected gain from fee income.

6. *Experience gain on premium taxes equals*

Actual premium tax loads CY, *minus*

Actual premium taxes, *minus*

Expected gain from premium taxes.

Item 1 is typically the most important source of experience gains or losses for group business. While full policy period analysis would produce additional useful information, the most critical distinction is between the first policy period (which is the result of the initial underwriting/pricing process) and the renewal periods (which are the result of the renewal underwriting/pricing process).

2.3.3 Expected Profits on Inforce Operations—First Policy Period

This is just the actual first policy period premium *times* the net risk and profit margin for the first policy period. Due to marketing discount procedures and additional risk due to incomplete knowledge of the group at quote, net risk and profit margins in the first period are typically significantly lower than renewal periods. It is useful to understand these profit margins separately from profit margins on renewal business.

For simplicity all (including first policy period) expense and expense liability, commission, and premium tax items may be shown within the renewal business section. This educational note assumes these items are shown within the renewal business section.

2.3.4 Experience Gains on Inforce Operations—First Policy Period

This is simply the experience gain on claims for first policy period business. The experience gain on claims equals

Actual premium, *minus*

Actual incurred claims (including conversion charges), *plus*

Actual required interest on liabilities CY, *minus*

Actual commission loads CY, *minus*

Actual premium tax loads CY, *minus*

Actual expense loads CY, *minus*

Actual net profit loads CY, for the first policy period.

2.4 Treatment of Investment Income

Under CALM there would typically be an adjustment to claims or other liabilities to correspond to the change in asset values under fair value accounting. Even if the simplifying assumption is utilized, this issue would still apply to the liabilities that are part of asset/liability cash flow analysis—for example, the LTD disabled life liabilities. From an underlying operational earnings perspective, usually the liability change and asset change largely offset each other. However, the liability adjustment may differ from the asset change and result in a gain or loss (e.g., changes in yield curves may have a different effect on assets compared to the effect on liabilities). The net of CALM liability

adjustments and fair value asset changes may be shown in the “Experience gain on net investment income” section. Some companies may wish to show various elements of the CALM and fair value adjustments separately, to give more clarity to the causes of the net gain on investment income.

2.5 Refund Business

The methodology described above would apply fully to pooled (fully insured) business and fee income/fee for service business. It would also apply fully to refund business in a deficit position without a hold harmless agreement. Refund business in surplus, or in deficit with a hold harmless agreement, may have most or all of the earnings in a given time period offset by changes in the experience rating refund liability for the group. The resulting net earnings will vary depending on the exact policy refund mechanism for the group. As a minimum, the net profit load should emerge as a net earnings item after experience rating refund liability adjustments. However, examples of other potential sources of earnings for groups in surplus are:

1. Gains/losses on pooled elements within the group/benefit (e.g., high amount pooling),
2. Gains/losses from use of a liability basis in the policy refund calculation which is different from the valuation basis—e.g., policyholder liabilities are on a valuation best estimate basis, whereas the company’s valuation liabilities include PfADs,
3. Gains/losses from charges for expenses in the policy refund calculation that are different from the actual allocated expenses, and
4. Gains/losses from interest credits on policy liabilities and deposits that are different from the actual interest the company earns on the assets backing those liabilities.

There are many possible nuances in refund business contracts that will affect whether or not earnings will remain with the company or be passed back to the policyholder. The actuary may wish to review the company’s contracts on specific cases, in order to ensure appropriate reflection of only net earnings retained by the company in sources of earnings analysis.

2.6 Reinsurance

Profits or losses ceded to a reinsurer will affect the company’s final sources of earnings. The simplest approach to reflecting reinsurance is to do the sources of earnings entirely “net of reinsurance”. However, this approach hides the reinsurance effect on the company’s bottom line, which is an important piece of information. This also may not be easy, depending on the company’s data structure. Typically, policy-by-policy earnings analysis tools are developed using gross premiums and claims, before reinsurance. Subject to feasibility and materiality, the preferred approach is to calculate gross sources of earnings, and then to include a separate item or items in the final analysis showing the contribution from reinsurance. Expected profits would have an adjustment to reduce the company’s earnings by the expected profit the reinsurer will take on the ceded business. Experience gains would include the difference between the actual net profits the reinsurer receives and the expected reinsurer profits.

To the extent possible, reinsurance assumed business would be treated in the same way as direct written business. However, the company may know considerably less about this business than its own direct written business, so a very simple approach may be all that is feasible.

2.7 Changes in Assumptions and Other Changes

These items would be handled in the same manner for group business as they are for other lines of business.

2.8 Management Actions

These items would be handled in the same manner for group business as they are for other lines of business.

APPENDIX

Comparison of Income Statement Presentation to Sources of Earnings Presentation

Short Form	Meaning
IS	From the Income Statement (gross, except for the reinsurance row)
P1 + R	Split between first policy period and renewal(s)
Total	Not split by policy period

SOE items that offset to zero are noted in the "Offset Items" column - note the non-offset items are the Income Statement lines

IE Offset item 1 in Expected Profits and Offset item 1 in Experience Gains (expected gain on interest) net to zero in SOE

Actual SOE = Expected Profits plus Experience Gains

This example assumes no earnings from assumption changes or management actions

Income Statement	Earnings By Source				
	Expected Profits on Inforce Operations	Policy Period	Offset Items	Experience Gains	Policy Period / Offset Items
IS investment income	Expected gain on interest = Mean liabilities times (expected investment income % minus required interest %)	Total	1	IS investment income Minus actual required interest on claim and expense liabilities Minus expected gain on interest	Total / Total / 8 / 1
IS fee income	Expected gain on fee income = Actual fee income times expected % gain on fee income	Total	2	IS fee income Minus IS allocated expenses (ASO groups) Plus IS investment income on ASO amounts on deposit Minus IS interest credits on ASO amounts on deposit Minus expected gain on fee income	Total / Total / Total / 2
IS premiums Minus IS claims Minus IS change in claim reserves	Actual net profit loads = Actual premium times net profit margin	P1 + R	3	IS Premium Minus IS claims including change in claim liabilities Plus actual required interest on claim liabilities Minus actual commission loads Minus actual premium tax loads Minus actual expense loads (non-ASO groups) Minus actual net profit loads	P1 + R / P1 + R / P1 + R / P1 + R / P1 + R / P1 + R / 8 / 9 / 10 / 11 / 3
Minus IS reinsurance premiums Plus IS reinsurance claims Plus IS change in ceded reserves	Expected gain on reinsurance = Actual reinsurance premiums times (1 - expected loss ratio) Minus expected reinsurance allowances	Total	4	IS reinsurance claims including change in ceded liabilities Minus required interest on ceded liabilities Minus IS reinsurance premiums Plus IS reinsurance allowances Plus expected gain on reinsurance	Total / Total / Total / Total / 4
Minus IS commissions	Expected gain on commission = Actual premium times commission margin as % premium times expected % gain on commission margin	Total	5	Actual commission loads Minus IS commissions (before IS reinsurance allowances) Minus expected gain on commissions	Total / Total / Total / 5
Minus IS expenses Minus IS change in expense reserves	Expected gain on expenses = Actual premium times expense margin as % premium times expected % gain on expense margin	Total	6	Actual expense loads (non-ASO groups) Minus IS allocated expenses (non-ASO groups) including change in expense liabilities Minus expected gain on expenses Plus actual required interest on expense liabilities	Total / Total / Total / 6 / 8
Minus IS premium tax	Expected gain on premium tax = Actual premium times premium tax margin as % premium times expected % gain on premium tax margin	Total	7	Actual premium tax loads Minus IS premium tax Minus expected gain on premium tax	Total / Total / Total / 7