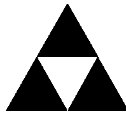

AMERICAN ACADEMY *of* ACTUARIES

March 6, 2000

Deputy Director Arnold Dutcher
Illinois Insurance Department
320 West Washington Street, 4th Floor
Springfield, IL 62767

Dear Deputy Director Dutcher:

Re: Aggregation of Results from Index-Based Insurance Derivative Hedging Transactions

This letter has been prepared to comment on the treatment of aggregate results from index-based derivative contracts used by insurance companies to hedge insurance underwriting risk. The paper previously presented by the American Academy of Actuaries[1] Index Securitization Task Force dealt primarily with the effectiveness of the individual index-based derivative transaction. This letter should be considered as an addendum to that report.

The white paper prepared by the interested parties to the NAIC working group, *Introduction to Index Based Insurance Derivatives* (the "White Paper"), recommends that amounts paid for and received under index-based insurance derivatives should be treated as underwriting income under statutory accounting principles provided that the derivative is expected to be an effective hedge to a specific underwriting exposure. Amounts paid for such derivatives would be reported as a reduction of the insurer/purchaser's written premiums, and changes in fair value would be reported as a reduction of gross losses and loss expenses incurred. The paper does not specify whether an increase in fair value of a derivative above the expected hedged underwriting loss would be treated as investment income.

The White Paper further recommends that "if the instrument is no longer an effective hedge, current and future changes in fair value of the underlying instrument shall be reported in current miscellaneous income." The White Paper states that it may be appropriate to account for any over-recovery (i.e. amounts received from the derivative that exceed the losses incurred from the hedged underwriting exposure) as investment income, but the White Paper does not specify an accounting treatment for under-recovery. This letter will provide some additional comments on these issues, will present some further items for consideration, and reaches a different conclusion

1 The American Academy of Actuaries is the public policy organization for actuaries practicing in all specialties within the United States. A major purpose of the Academy is to act as the public information organization for the profession. The Academy is non-partisan and assists the public policy process through the presentation of clear and objective actuarial analysis. The Academy regularly prepares testimony for Congress, provides information to federal elected officials, comments on proposed federal regulations, and works closely with state officials on issues related to insurance. The Academy also develops and upholds actuarial standards of conduct, qualification and practice and the Code of Professional Conduct for all actuaries practicing in the United States.

about the aggregation of results from hedging transactions.

This letter will discuss several possible treatments of results from hedging transactions, including the question of whether under-recoveries and over-recoveries should be treated in a symmetrical fashion. For the purpose of this letter, a hedging transaction is defined as one or more specific financial transaction(s) entered into for the purpose of hedging a specific underwriting exposure faced by an insurance enterprise. A hedging transaction should also be understood to include subsequent transactions required to adjust, adapt or rebalance the hedge as market conditions change, provided that the strategy for performing such adjustments during the life of the hedge is described in the hedge documentation. The White Paper discusses the documentation requirements that should be met by a hedging transaction in greater detail.

After considering several possible approaches to aggregating results from hedging transactions, we recommend that the results from all index-based insurance derivative transactions should be aggregated and reported as part of underwriting income provided that (i) the transactions are part of a single, specific hedging strategy, (ii) the hedging strategy has met the documentation requirements in the White Paper, and (iii) the hedge meets the requisite criteria for effectiveness.

Aggregation

It is likely that an insurer choosing to employ insurance derivatives as a tool to manage underwriting risk will build up a portfolio of derivative contracts; in fact, an individual hedge could be comprised of multiple derivative contracts. It is likely that the actual recoveries under each derivative contract will be higher or lower than the loss incurred from the hedged underwriting risk. The issue of whether and how to combine or aggregate over-recoveries and under-recoveries between hedges is therefore an important one.

Symmetry of Treatments of Over-recoveries and Under-recoveries

A related issue is the question of whether the treatment of over-recoveries and under-recoveries should be symmetrical. For example, if both over-recoveries and under-recoveries are accounted for as investment income then the treatment would be considered symmetrical. However, if an under-recovery is accounted for through underwriting results while an over-recovery is treated as investment income, then the treatment is asymmetrical. This distinction is of more than theoretical importance as it may affect the results of an a priori hedge effectiveness test.

For example, if an asymmetrical treatment is applied to over-recoveries and under-recoveries and if an effectiveness test considers only the expected underwriting income benefit from a hedge (and ignores the portion of over-recoveries that would not be treated as underwriting income), then the effectiveness test will require the calculation of a limited expected value of the hedge payoff. This limited expected value will be less than the total expected hedge payoff. It will therefore be more difficult for the hedge to meet any given effectiveness test. Another possible result would be that an insurer would be forced to purchase more options in order to meet the threshold for hedge effectiveness, but in so doing would increase the likelihood of over-recovery.

Possible Treatments of Over-recoveries and Under-recoveries

Described below are several possible approaches that could be taken to accounting for over-recoveries and under-recoveries. These include:

1. **Assign the sum of all recoveries to the underwriting income account with symmetrical treatment of over-recoveries and under-recoveries.** All derivative contracts that meet the effectiveness criteria would be combined and the aggregate results would apply to the underwriting account. No portion of the hedge result or the cost of the hedge would be applied to investment income account. Once a hedge is determined to be effective, the cost of such a hedge will be treated as a reduction to premiums written by the hedger, and all recoveries from such a hedge will be treated as a reduction to losses incurred.

2. **Assign the net difference between incurred losses and hedge recoveries to the investment income account with symmetrical treatment of over-recoveries and under-recoveries.** Sum the total recoveries from all hedges and the total losses incurred from all hedged underwriting risks. Subtract total losses incurred from total hedge recoveries. Any aggregate net difference (positive or negative) is then accounted for as investment income. A consequence of this approach is that, once a hedge is determined to be effective, the impact of the hedge on underwriting results is "locked in" in the sense that the hedge recovery that is subtracted from gross losses incurred will always be equal to losses incurred from the hedged underwriting exposure. Any difference between actual and expected hedge results is treated as investment income.

3. **Assign only excess recoveries on an aggregate basis to the investment income account**. Sum the total recoveries from all hedges and the total losses incurred from all hedged underwriting risks. Subtract total losses incurred from total hedge recoveries. Account for any net positive result as investment income. Any net negative result is reflected in underwriting income and will result in larger net losses incurred than expected. This approach allows aggregation of results between hedges, but treats net over-recoveries and net under-recoveries in an asymmetrical fashion.

4. **Assign excess recoveries on an alternative basis to the investment income account.** The aggregation of results could be permitted at an interim level. For example, the results from all hedges relating to the same line of business (e.g. all property lines) might be aggregated, but not results from hedges for different lines of business.

5. **Assign excess recoveries on an individual hedge basis to the investment income account**. Calculate the under-recovery or over-recovery separately for each individual hedge. If an individual hedge results in an over-recovery, this amount will be treated as investment income. Note that this approach will always result in an investment income amount that is greater than or equal to the amount produced under Methods 3 or 4, because no offset of over-recoveries on one hedge against under-recoveries on another hedge is allowed. It also follows that the amounts subtracted from gross underwriting losses under this approach will always be less than or equal to the amounts under Methods 3 or 4. This approach applies an asymmetrical treatment to over-recoveries and under-recoveries at an individual hedge level.

Note that even if hedge results are aggregated across lines of business, the resulting underwriting and/or investment income amounts will have to be assigned to Annual Statement lines of business for financial reporting purposes.

Conclusion and Recommendation

The aggregation of hedging results is an important and complex issue, and it impacts a variety of areas of concern for insurers and regulators. To the extent that the offsetting of results between hedges is allowed or disallowed, it could affect the implementation of tests for hedge effectiveness and it could enter into the decision processes of insurers considering insurance derivatives as hedges for underwriting exposures. In determining how to aggregate hedge results, consideration should be given to many issues including:

- Number and complexity of calculations required, both at hedge inception and during the life of the hedge.
- Relative impacts on different types of companies, e.g., small vs. large insurers, regional vs. national.
- Impact on hedge effectiveness calculations.

The development of insurance-linked derivatives and other capital markets products has expanded the scope of risk management alternatives available to insurance and reinsurance companies by accessing new sources of capital. Such products may create opportunities for insurers to reduce their underwriting risks in ways that previously were not possible.

A primary purpose of insurance regulation is to monitor and protect the solvency of insurance and reinsurance companies. Statutory accounting principles have been developed to provide a conservative financial reporting basis for monitoring company solvency. It is therefore important that the accounting rules used for this type of measurement apply a consistent treatment to the various types of risk management transactions that are available in the markets.

We therefore believe that hedges created from index-based insurance derivative transactions should be treated similarly to other more traditional risk management transactions (primarily reinsurance). This leads us to recommend that the results from all index-based insurance derivative transactions should be aggregated and reported as part of underwriting income provided that (i) the transactions are part of a single, specific hedging strategy, (ii) the hedging strategy has met the documentation requirements in the White Paper, and (iii) the hedge meets the requisite criteria for effectiveness. This treatment, described more fully in paragraph 1 under Possible Treatments of Hedge Recoveries above, will allow insurance companies to consider a broad range of risk management tools without undue concern regarding the accounting treatment of such tools, provided that the transactions meet the hedge effectiveness criteria.

This recommendation is not consistent with the White Paper's recommendation, which would apply an asymmetric treatment to over-recoveries and under-recoveries.

We agree with the interested parties that the costs and recoveries from any transaction not meeting the hedge effectiveness criteria should be assigned to the investment income account.

Sincerely,

Frederick O. Kist, FCAS, MAAA
AAA Index Securitization Task Force