



SOCIETY OF ACTUARIES

Article from:

# Product Matters!

June 2011 – Issue 80

# Reflecting Risk in Pricing Survey

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In September 2010, the SOA published an update to the 2005 Reflecting Risk In Pricing survey. This Survey is focused on how companies are trying to price for and understand the risks inherent in the products they sell. The survey focused on various product lines—life and annuity, health, and property and casualty insurance and showed results for various countries of location and business focus. The survey report can be found at <http://www.soa.org/research/research-projects/risk-management/research-reflecting-risk-pricing.aspx>. The focus of this article is to highlight some of the life and annuity results from the report. In general, direct writers and reinsurance companies will be lumped together except

where noted. The full report breaks out reinsurers, life and annuity writers separately.

## Profit Measure Ranking

The most common profit measure used by companies issuing life and annuity products was IRR, but was closely followed by premium margin. Life products fairly consistently ranked IRR, premium margin and break-even year as their top three choices. Annuity writers and group insurance writers had more variability as shown in the charts below:



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Profit Measure Ranking – Life	Whole Life	Endowment	Term Life	Universal Life	Variable life	Variable Universal Life	Life Total
Return on Investment	7	9	6	6	10	7	6
Return on Equity	5	8	5	5	10	5	5
Return on Liabilities	16	14	15	16	13	15	15
Risk-adjusted Return on Capital	9	7	9	10	7	9	9
Premium Margin	<b>1</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>2</b>
Embedded Value/Economic Value Added	4	4	4	4	4	4	4
Expected Loss Ratio	14	15	13	14	15	14	14
Combined Ratio	15	16	16	15	15	16	16
Break Even Year	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>
Internal Rate of Return	<b>2</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>1</b>
Return on Assets	13	13	14	11	8	11	12
Return on Capital	10	11	10	9	9	12	10
Contribution to Surplus	6	6	8	7	6	8	8
Revenue Margin	12	10	12	13	14	13	13
Market Consistent Embedded Value	8	5	7	8	5	6	7
Other	11	12	11	12	12	10	11

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Profit Measure Ranking - Annuities	Fixed Deferred Annuity	Variable Deferred Annuity	Fixed Immediate Annuity	Variable Immediate Annuity	Annuity Total
Return on Investment	7	10	7	9	7
Return on Equity	6	6	6	11	6
Return on Liabilities	12	12	12	14	12
Risk Adjusted Return on Capital	9	7	10	7	10
Premium Margin	<b>2</b>	<b>3</b>	<b>2</b>	4	<b>2</b>
Embedded Value/ Economic Value Added	5	5	5	5	5
Expected Loss Ratio	15	15	15	14	15
Combined Loss Ratio	15	16	15	14	15
Break Even Year	<b>3</b>	4	4	<b>2</b>	<b>3</b>
Internal Rate of Return	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
Return on Assets	4	<b>2</b>	<b>3</b>	6	4
Return on Capital	10	9	9	<b>3</b>	8
Contribution to Surplus	8	11	8	8	9
Revenue Margin	13	13	14	13	13
Market Consistent Embedded Value	11	8	11	10	11
Other	14	14	13	12	14

Profit Measure Ranking – Group/Other	Group Life	Group Annuity	Other
Return on Investment	7	9	13
Return on Equity	5	2	7
Return on Liabilities	14	11	15
Risk-adjusted Return on Capital	12	6	6
Premium Margin	1	7	2
Embedded Value/Economic Value Added	4	5	4
Expected Loss Ratio	3	11	5
Combined Ratio	8	11	9
Break Even Year	6	3	3
Internal Rate of Return	2	1	1
Return on Assets	15	4	15
Return on Capital	11	15	12
Contribution to Surplus	9	10	11
Revenue Margin	13	14	14
Market Consistent Embedded Value	10	8	8
Other	15	16	10

Those reporting use of capital allocation for reflecting risk generally determine allocations through a regulatory formula but an increasing number of companies reported using economic capital relative to the previous study. Companies that reported using assumption PADs generally use recent experience to determine those PADs. Companies using risk-adjusted profit targets and assumption stress testing reported using judgment to determine the parameters.

Direct life and annuity writers that reported using stochastic scenario analysis are split between CTE and percentiles when analyzing results of the scenarios. Re-insurers primarily use CTE to analyze results.

*Comfort with Incumbent Profit Measure and Risk Assessment Practices*

About half of the companies in the survey indicated they feel their profit measure is not substantially differ-

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ent from their competitors. About 25 percent feel that it is different, and the rest are generally unsure if it is substantially different. Most companies were neutral in their assessment of their profit measure relative to other companies. Of the companies that believed there was a difference, more assumed to be at a disadvantage than an advantage.

The survey asked if companies had changed their profit measure in recent years. More than 70 percent of respondents indicated they had changed their primary profit measure in the last three years. Companies that reported a change indicated they moved away from predominantly IRR and premium margin in favor of Market Consistent Embedded Value (MCEV) and Embedded Value/Economic Value Added (EV/EVA).

Responses were fairly evenly split between those reporting a change and reporting no change with regard to risk assessment practice given the recent economic environment. Larger insurers reported more changes relative to smaller insurers. More than 65 percent of responses indicated they do employ an ERM actuary or have enterprise risk management areas in their company, more so in larger companies than smaller companies.

### Other Areas of Interest in the Survey

The survey also asks how companies capture risk associated with:

- Asset default in pricing,
- Interest rate changes,
- Volatility of equity returns,
- Adverse claims deviation/severity,
- Short-term fluctuation/frequency,
- Modeled customer and agent/broker behavior,
- Expenses,
- Operational risk,
- Mix of business/distribution of policyholders, and
- Reinsurance.

It is important to note that the results provided herein come from a variety of insurance companies with unique areas of practice, product structures, target markets, distribution methods and regulatory environments. As such, these results should not be deemed directly applicable to any particular company or representative of the insurance industry as a whole. Results shown based on the demographic data include only those respondents who filled out that portion of the survey. These results may vary from aggregate results shown in the various lines of business—life and annuity, health, and property/casualty. □