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Task force concludes economic variables should get more attention

by Godfrey Perrott

The Economic Assumptions Guidance Task Force's objective was to investigate what bearing economic assumptions (other than the shape of the yield curve) had on insurance modeling and to advance the profession's thinking about economic scenarios.

The task force used the term "economic scenario" in the manner

of the scenario writing discipline embraced by futurists. That is, the scenario is a set of assumptions selected that are internally consistent. For example, a scenario with a high inflation rate and a high short-term interest rate, and quite possibly an inverted yield curve, is internally consistent. A scenario with a high inflation rate, a low short-term interest rate, and a steep yield curve is not internally consistent. An economic scenario is not a stochastic process; rather, we may think of it as a coherent stress test. We cannot predict what will happen, but we can use economic scenarios to model the plausible future results.

Survey results

The task force sent out a survey in the March 1995 issue of *The Actuary* asking respondents to relate economic assumptions to actuarial assumptions for purposes of modeling insurance company results. We received 160 responses (i.e., each sheet submitted by an individual counted as a separate response, with some individuals submitting responses for more than one line of business).

The full tabulation of the responses is available from the Society Research Department. It is also posted on Actuaries Online. A hard copy set is available by contacting Pam Leonard at 708/706-3567 or by fax,

708/706-3599. This paper gives general, preliminary thoughts about the data summary that the task force believed was relevant.

The overall response contained no real surprises to the task force. It is tempting to attribute this to prescience by the task force members, but is more likely a reflection of general business thinking.

Table 1 on page 3 shows the economic assumption judged most important (looking at all lines of business combined) to selected actuarial assumptions.

The three economic assumptions most often identified as affecting actuarial assumptions were inflation, regulatory climate, and competitive environment. The latter two are extremely difficult to model. A number of economic assumptions were voted as unrelated to setting actuarial assumptions.

No single actuarial assumption received a majority vote of all respondents as being impacted by these economic assumptions. These economic assumptions are federal budget deficit, GDP growth, consumer confidence, population size, population distribution, and public perception of insurance companies. However, a majority of individual life, annuity, disability income, medical, and group

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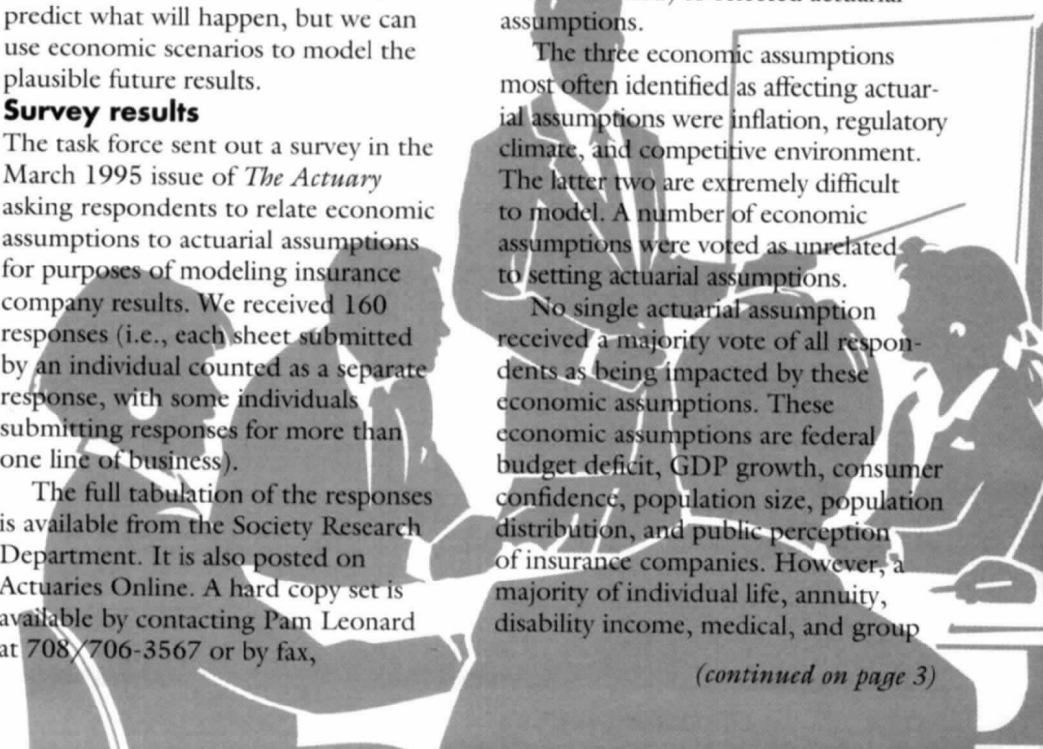
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annuity respondents did think public perception affected new business.

Overall, respondents believed economic assumptions had greater impact on analysis of company behavior than on analysis of policyholder behavior. However, a significant majority believed at least one economic assumption had an impact on two actuarial assumptions (not surprisingly): Premium Persistency (92%) and New Business (98%).

1. 98% of the respondents believed economic assumptions listed in the survey affected new business volume.
2. Approximately 60% of the respondents believed unemployment affected premium persistency.

However, the task force believes few actuarial practitioners reflect these economic variables when they set these assumptions.

Significant variations by line of business may reflect true differences or may indicate the question had little meaning outside the primary line of business. For example, more than 90% of individual life respondents believed one or more of the economic assumptions affected policyholder asset allocation. More than 30% of all other respondents believed none of the listed economic assumptions affected policyholder asset allocation.

Demographics

The breakdown of responses by line was:

Individual Life	56
Individual Annuity	23
Individual Medical	9
Individual DI (including LTC)	10
Group Life	7
Group Annuity	13
Group Medical	22
Group Disability (including LTC)	12
Other	4
Not identified	4

The responses were predominately from the United States and Canada and indicated significant experience in actuarial modeling.

Conclusion

Survey respondents appear to validate the task force's initial viewpoints:

1. Actuaries need to be concerned about economic assumptions when they set major actuarial assumptions used in modeling insurance company business.
2. It is very difficult to connect economic assumptions to actuarial assumptions, and it also is very difficult to predict some of the economic assumptions that we

identified. Maybe the most important achievement will be to start a dialogue about how economic assumptions affect, and should be reflected in, actuarial modeling and the use of consistent economic scenarios.

Future research

The task force identified the following areas of future research:

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Table 1

Economic assumptions judged most important to selected actuarial assumptions
All lines of business combined (160 respondents)

Actuarial assumption* (total responses)***	Economic assumption** (% of respondents)***
New Business (643)	1. Competitive environment (67%)
Premium Persistency (526)	1. Competitive environment (63%) 2. Unemployment (59%)
Profit Margin (498)	1. Competitive environment (89%) 2. Regulatory climate (64%) 3. Inflation (56%)
Expenses (490)	1. Inflation (91%) 2. Regulatory climate (59%) 3. Competitive environment (59%)
Asset Management Strategy (471)	1. Inflation (64%) 2. Regulatory climate (56%)
Interest-related investment (460)	1. Inflation (79%) 2. Action of Federal Reserve/Bank of Canada (63%)
Liability Management Strategy (421)	1. Competitive environment (56%) 2. Regulatory climate (55%)
Capital Management Strategy (393)	1. Regulatory climate (61%)
Claim Amount (290)	1. Inflation (54%)

* Actuarial assumptions for which the majority of respondents believed at least one economic assumption had an impact on the actuarial assumption.

** Only those that a majority of respondents believed had an impact on the indicated actuarial assumption are shown.

*** Respondents could pick multiple economic assumptions. % is of the total number of respondents (160).

Countries that implemented mandatory private retirement savings: Australia and Chile. Anyone interested in the Chilean experiment should read Robert J. Myers article, "Chile's Social Security Reform, After Ten Years," in the Third Quarter 1992 and First Quarter 1993 issues of *Benefits Quarterly*.

The effect of a funded retirement scheme on the savings level in the economy is a complex subject. Old age security should not only be a social safety net but also an instrument of economic growth. Some of this funding would undoubtedly be additional savings in the economy. Mandatory private coverage is a straightforward solution to the chronic lack of pension coverage and is advocated in this book.

I believe that the authors wisely discouraged a single pillar, be it funded or not, defined contribution or defined benefit. Each type of arrangement has its own advantages and disadvantages, and a judicious mix is probably a cautious approach.

Although you may not entirely agree with the analysis or the conclusion, I recommend that you read this important and thought-provoking book.

Jean Sasseville was a consulting actuary in the Research and Legislative Support department of Standard Life Assurance Company in Montreal. He now lives in Paris, France.

Comments from Robert J. Myers

Jean Sasseville asked for my comments.

I found his review of the World Bank Policy Research Report excellent. However, I have some comments, which relate not to his review, but to the World Bank's views.

"Researchers have not found much redistribution from the lifetime rich to lifetime poor."

I strongly disagree with this view. To a limited extent, this was true in the very early days of Social Security, but not in recent years or over the long run. The report neglects to consider the offsetting features of disability-benefit and survivor-benefit protection (besides the heavily weighted benefit formula). Note that this is just "the opposite side of the coin" with regard to vigorous complaints currently made by highly paid younger workers who feel they do not get their money's worth. Frankly, the World Bank authors do not have adequate actuarial knowledge to evaluate the situation. They seem to have a major goal of building up huge invested assets, with social security goals being secondary.

"Evidence suggests that public pillars that combine all these functions are problematic for both efficiency and distributional reasons."

I believe evidence shows the opposite. The U.S. Social Security program has significantly reduced poverty among the population aged 65 and over. It operates very efficiently, with administrative expenses representing only about 0.8 % of tax income currently.

"A dominant pay-as-you-go public pillar also misses an opportunity for

capital market development."

Such market development should be achieved another way. This is not the purpose of Social Security.

"When the first old generations get pensions that exceed their savings, national consumption may rise and savings may decline. The next few cohorts pay their Social Security tax instead of saving for their old age, so they may never make up this loss in savings."

We cannot tell whether this really occurs. This is mere economic supposition.

"Each type of arrangement has its own advantages and disadvantages, and a judicious mix is probably a cautious approach."

Yes, but the public system should be a broad social insurance plan, without a means test (which the report advocates). The authors do not realize, possibly because they have "ivory tower" backgrounds and no practical experience with a Social Security system, how bad a means-tested system as the floor of protection would be. The disadvantages are that it is divisive, costly to administer, encourages fraud and abuse through transfer of assets and, most important, discourages savings by all except individuals with a higher income. Robert J. Myers is professor emeritus at Temple University and lives in Silver Spring, Maryland. He was chief actuary of the Social Security Administration from 1947 to 1970 and was the 1971-72 president of the Society of Actuaries.

Economic assumption (continued from page 3)

1. How does unemployment affect actuarial assumptions? (It seems it would be difficult to project this out more than two or three years.)
Conduct a more focused survey on how actuaries involved in insurance company modeling set the new business assumption. (It may be difficult to generate enthusiasm for this, because cash flow testing does

not use a new business assumption. Most appraisals place little weight on the value of new business.)

In summary, what we have from the survey are "impressions" of the survey respondents about the relationship between various actuarial assumptions and various economic assumptions. The purpose of any future research should be to confirm or refute the

"impressions" with "demonstrations." Godfrey Perrott is a consulting actuary for Milliman and Robertson, Inc. in Wakefield, Maryland, and chair of the Economic Assumptions Guidance Task Force. He can be reached at his e-mail address, godfrey@world.std.com