Pension Section News

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SOA Asset Valuation Method Survey Results

by Jim Paterson & Larry Pinzur

In 1998, the Society's Committee of Retirement Systems Research conducted a survey of asset valuation methods used in valuations of defined benefit plans. For this purpose, asset valuation methods were classified into four groups and nine specific methods, as follows:

- Fair market value (1 method)
- Discounted cash flow (1 method)
- Book value (3 methods: cost, amortized, contract)
- Smoothed value (4 methods: blend of cost and market, write-up, deferred recognition, average market).

Pension actuaries who are members of the Society were surveyed and asked to provide details on the asset valuation methods used on each pension plan they valued, and some details about the plan, its investment mix and other related information. Approximately 6,000 questionnaires were mailed out and responses for a total of 9,983 plans were returned. Out of those responses, 9,670 were determined to be complete and consistent enough to be included in the study. This total included 9,026 U.S. plans (about 13% of all U.S. plans), 612 Canadian plans (about 9% of all Canadian plans), and 32 other plans.

The following table summarizes the relative frequency of asset valuation methods for the four categories listed above, shown separately by country and size of plan. 'Small" plans are defined to be those with less than 100 participants. The percentages shown indicate relative frequency for all plans in the respective columns. For example, 65.3% of all small plans in the United States use fair market value.

The survey found that fair market value is the most frequently used method, especially for smaller plans (smaller by both participant count and assets). Discounted cash flow is very rarely used in either country.

Book value methods are used considerably more frequently in the United States than in Canada. In the United States, this category is dominated by contract value, a method that is not used at all in Canada. In both countries, cost value is used more frequently with government plans than with other plans.

Smoothed value methods account for 17% of plans in the U.S. and 25% of plans in Canada. Among the smoothed methods, write-up is the most frequently

Asset Valuation Method Relative Frequency

	U.S.		**Canada**	
	Small Plans	**Large Plans**	**Small Plans**	**Large Plans**
Number of Responses[1]	5,799	3,168	274	311
Asset Valuation Group				
Fair Market Value	65.3%	48.6%	90.5%	47.3%
Discounted Cash Flow	0.0%	0.1%	0.0%	0.3%
Book Value	27.8%	13.9%	1.1%	4.5%
Smoothed Value	6.9%	36.4%	8.0%	42.1%
Other (including combination of methods)	0.1%	1.0%	0.4%	5.8%

¹ Excludes 59 U.S. plan responses and 27 Canadian plan responses that failed to indicate the number of participants covered.

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used in the United States, and deferred recognition is the most frequently used in Canada. Some other findings related to smoothed value methods include:

- Five years is the most common smoothing period in both countries.
- Most U.S. plans use a corridor of 80% to 120% of fair market value; most Canadian plans use no corridor.
- Most U.S. plans using the write-up method use a write-up rate equal to the rate used to discount the liabilities, and make an adjustment to the preliminary value equal to a fixed percentage of the difference between fair market value and the preliminary value.
- In both countries, a majority of plans using the deferred recognition and average market value methods base the smoothing on either all investment experience in excess of an assumed rate or all realized and unrealized capital gains.
- The deferred recognition method is used more by pay-related plans than non-pay-related plans in the United States and less by pay-related plans than nonpay-related plans in Canada.
- In both the United States and Canada, collectively bargained plans use smoothed methods more frequently (and fair market value less frequently) than non-bargained plans.
- In the United States, most new asset methods are adopted on a prospective basis, whereas in Canada, prior asset experience (usually including up to five years' worth) is typically reflected.
- During the period from 1988 through 1996, plan assets were "marked to market" sparingly in the United States (a low of 0.3% of all plans in 1989 to a high of 2.6% of all plans in 1996) and very rarely in Canada.

This survey represents the first phase of a two-phase research project. The objectives of the second phase are to fine-tune the classification system presented in this study, compare and contrast key characteristics of the various asset valuation methods, and assess each asset valuation method's effectiveness in achieving particular financial objectives.

The report is available on *www.soa.org*, the Society of Actuaries website. It is also available from the Society of Actuaries Book Department for $10. Contact Beverly Haynes; (847) 706-3590; *bhaynes @soa.org.*

The phase two call for papers is also available, online at *www.soa.org.* Jim Paterson is at Paterson Pension Management Inc. in North Vancouver, B.C. Larry Pinzur is a principal at Hewitt Associates LLC at Bridgewater, N.J., and Chair of the Committee on Retirement Systems Research. You can also contact Cathy Cimo at the Society office: (847) 706-3587; *ccimo@soa.org.*

A Paper to Note

by Marilyn Oliver

Anyone interested in methods of projecting mortality improvement will find the book *Mortality on the Move* by B. Benjamin and A.S. Soliman interesting and useful. It starts with a brief analysis of historic patterns and causes of mortality improvement in the UK and the outlook for the future. The remainder of the book explores various methods of deriving rates of mortality improvement from past experience—including the logarithmic, logic, and cause of death methods and methods involving the projection of the parameters of curves fitted to historical mortality data. Each method is explained clearly, then used to derive a 1981 mortality table based on historic experience. The book finishes with a comparison of the results of the projections with observed 1981 mortality rates and by deriving 2001 mortality tables using each of the projection methods.

Mortality on the Move, ISBN Number: 0 952 0098 0 3, may be ordered directly from the Actuarial Education Service, Napier House, 4 Worcester Street, Oxford, OX1 2AW.

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