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The Cash Flow Valuation Method: Provisions for Adverse Deviations and Stochastic Models

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ABSTRACT

The Cash Flow Valuation Method has recently been adopted for valuation of annuity products in Canada and has application to all other life insurance products. Under this method, the statement liability for a block of business is the value of the assets required to enable the insurer to run off the block. The method therefore involves both assets and liabilities and reflects the insurer's investment policy. The calculation is based on numerous cash flow projections of the business under a variety of scenarios of possible future experience.

Policy liabilities in Canada contain a "reasonable" provision for adverse deviations (PAD) but are not, in themselves, the only solvency safeguard; surplus has a definition role and surplus standards as well as dynamic solvency testing are in effect. The PAD is intended to protect against a mis-estimation of the mean or a change in expected experience over time. Scenarios of possible future experience are to be chosen to provide for "plausible" changes in future experience. For certain factors, such as mortality, for which the nature of adverse experience is generally understood, it is possible to apply loadings directly to "best guess" estimates of future experience rates. For others, including interest and lapse rates, it is usually necessary to choose scenarios by sampling from distributions.