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# On accounting standards and fair valuation of life insurance and pension liabilities

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## Abstract

The actuarial profession is increasingly teaming up with financial economists for a fruitful cooperation on the proper valuation of life insurance and pension (L&P) liabilities. This has been a natural consequence of a recent sharply increased focus on market values in financial reports of L&P companies from regulators, standard setters, the financial press, stakeholders, and others with an interest in the L&P business.

This article provides a financial economist's point of view on recent developments in relation to the fair valuation of L&P liabilities. The role of accounting standards and the background for the international harmonization in this field are first discussed. We then review and explain the concept of fair value and provide a general view on appropriate techniques for estimating fair values of L&P liabilities in accordance with the definition of the concept. The paper also contains a section which briefly reviews recent and quite

innovative regulatory initiatives in relation to market value reporting in the Danish market for life and pension insurance.

Keywords:

Accounting standards fair value financial valuation regulation

## Notes

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PETER LØCHTE JØRGENSEN

Julietta, the Accountant: "Would you like to check my figures?" James Bond: "Oh, I'm sure they are perfectly rounded!"

- James Bond: The World is Not Enough, MGM/United Artists (1999).

Jørgensen PL. On accounting standards and fair valuation of life insurance and pension liabilities. Scand. Actuarial J. 2004; 5:372-394.

As quoted by Malkiel ([1996](#)).

This process is sometimes referred to as a transition from transactions based to value based accounting.

See IAS Committee Foundation ([2002](#)) in particular Part A, Sec. 2(a), and the Annex.

An example: Accountants will have to decide on whether the insurance element or the financial element is more important in a life insurance policy. The answer will determine whether IAS 39 or IFRS 4 guidelines should be followed in reporting for the liability.

See also Vanderhoof and Altman ([1998](#)).

In the June 2002 Exposure Draft for a revised IAS 39, recent transactions prices were allowed as a basis for fair value measurement. This possibility has now been removed.

This hierarchy was first presented in the June 2002 Exposure Draft for a revised IAS 39.

Dicke ([1998](#)) mentions rare cases where secondary markets for insurance policies have existed.

See International Association of Actuaries ([2000](#)) for a deeper discussion of the possibilities for estimating fair values of liabilities when financial markets are complete and incomplete, respectively.

One challenge here is to get good bond price observations covering the far end of the maturity spectrum. Unfortunately, government bonds with maturities above 20–30 years are relatively rare in most countries. In contrast, corporate bonds with maturities up to 100 years are not uncommon. IBM, Walt Disney, ABN-AMRO, and Coca Cola are examples of large international corporations that have issued 100 year bonds (see e.g. Grinblatt & Titman ([2002](#))).

The reader is also referred to Sheldon & Smith ([2004](#)) for a general introduction to market consistent valuation of L&P products.

See e.g. Linnemann ([2003a,b](#), [2004](#)) for actuarial approaches to market based valuation of participating life insurance contracts.

The Danish L&P sector has not (yet) adopted the fair value terminology explained in [Section 3](#). Values of liabilities for which there is no active market and thus have to be estimated (using for example financial modeling techniques) are also referred to as “market values”, and the remainder of this section therefore uses this term.

The figures list the most significant liability side entries, but the lists are not exhaustive.

According to Danish insurance legislation, policy holders can terminate the payment of premiums and still be entitled to receive the proportion of promised benefits that have already been earned by the previous premiums. A policy continuing in this way is termed a paid-up policy.

This interest rate is determined on the basis of an after-tax duration weighted average of the yields of three different government bonds. A swap-spread is then added(!). This spread currently amounts to about 10–20 basis points, but historical values have exceeded 50 basis points. For further details of the calculation principle, the reader is referred to The Danish Financial Supervisory Authority ([2001](#)).

The term structure of zero-coupon interest rates tends to lie above the Danish FSA's reference rate in the long end of the maturity spectrum and below the reference rate in the short end. Casual empiricism suggests that “young” pension funds with relatively long liabilities tend to choose zero-coupon interest rates for discounting their projected cash flows, whereas mature pension funds and life insurance companies with relatively shorter liabilities tend to use the Danish FSA's reference rate. This indicates that L&P companies tend to choose the discounting methodology that minimizes the estimated value of liabilities.

Rules for sharing the investment (and insurance) surplus should follow the contribution principle and guidelines are formulated in a separate executive order issued by the Danish FSA. These guidelines have had to be revised and updated several times in connection with the issuance of the new market value reporting requirements, see The Danish Financial Supervisory Authority ([2004](#)).

Prior to 1997 the maximum allowable portfolio weight in stocks was 40%. It was raised to 50% between 1997 and 2000.

Readers familiar with the Danish language can consult The Danish Financial Supervisory Authority ([2002](#)) for illustrative numerical examples of how the values of the different entries on the balance sheet evolve in different investment scenarios under the new Danish market value regulation.

See e.g. The Danish Financial Supervisory Authority ([2002](#)).

French critics in particular seem to have had some success with their lobbyism recently, see The Economist ([2003](#)).

See e.g. Dimson, Marsh, & Staunton ([2002](#)).

This view was shared by UK based Boots' pension fund which – in a spectacular and highly publicized strategic move – switched its entire 2.3bn GBP investment fund from equities into long-dated Sterling fixed rate bonds in order to obtain a better match

between assets and liabilities. The head of corporate finance at Boots, John Ralfe, subsequently reached fame partly because of what was considered a truly controversial attitude to pension fund management, and partly because of the exceptionally fine timing of the switch, which was completed just prior to “9-11” and the subsequent burst of the stock market “bubble” in 2001, see e.g. The Boots Company ([2001](#)) and Nicholson ([2004](#)).

See Mercer Oliver Wyman ([2004](#)) and The Economist ([2004a](#)).

See The Economist ([2004b](#)) and Watson-Wyatt ([2003](#)).

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