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The IASB Insurance Project for life insurance contracts: Impact on reserving methods and solvency requirements

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Abstract

In this communication, we review the fair value-based accounting framework promoted by the IASB Insurance Project for the case of a life insurance company. In particular, for the case of a simple participating contract with minimum guarantee, we show that the fair valuation process allows for the identification of a suitable safety loading to hedge against default risk; furthermore, we show that, when compared with the "traditional" accounting system based on the construction of mathematical reserves, the fair value approach offers a sounder reporting framework in terms of covering of the liability, implementation costs, volatility of assets and liabilities and solvency capital requirements.

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1. Introduction

In response to an increasingly difficult economic climate, in which the financial stability of the insurance industry has been affected by events such as the crash in the equity markets in 2001 and 2002, a steady fall in bonds yields, as well as increased longevity, the focus of regulators on accounting rules, capital adequacy and solvency requirements for insurance companies has increased.

In particular, the three common themes behind the activity of many regulatory bodies around the world are a comprehensive financial reporting framework for the appropriate assessment of the specific risks that insurance companies are running; the standardization of approaches between countries and industries, where sensible; and

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an improved transparency and comparability of accounting information. To this end, the International Accounting Standards Board (IASB) in Europe and the Financial Accounting Standards Board (FASB) in the US have been working over the last few years towards the proposal of a model for the valuation of assets and liabilities which produces comparable, reliable and market consistent measurements. As such, the focus of this model has to be on the "economic" value of the insurance companies' business. This theme has been followed by IASB and FASB with the proposal of a "fair value" accounting system for all assets and liabilities, where "fair value" means "the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction" (IASB, 2004).

In Europe, phase 1 of the IASB Insurance Project has been completed with the issuance of the new International Financial Reporting Standard (IFRS) 4 in March 2004, which establishes the changes in accounting rules as of January 2005. It is not our aim to describe here the technicalities of the new IFRS 4 (for a comprehensive exposition of its main features, we refer the reader to for example FitchRatings (2004)). However, we note that phase 1 requires significantly increased disclosure of accounting information, but only relatively limited changes to the accounting methodology, as the majority of the liabilities that have to be recorded at fair value are those originated by derivatives embedded in insurance contracts, such as life products offering a guarantee of minimum equity returns on surrender or maturity. The changes to the treatment of the assets side of the balance sheet is, instead, the direct result of the implementation of IAS 39, under which investments have to be classified as "available for sale" or "held for trading", and hence marked to market, unless the insurer is able to demonstrate the intent to forego future profit opportunities generated by these financial instruments (in which case investments can be classified as "held to maturity" and consequently reported at amortized historic cost). Hence, these changes are to be considered as the basis for the transition period leading up to the proper fair value accounting framework, which will be implemented in phase 2 (expected at the time of writing) to be completed by 2009–2010. We note, however, that the regulatory bodies in the UK, the Netherlands and Switzerland have introduced, or are in the process of introducing from January 2006, accounting rules based on the full mark-to-market of assets and liabilities, to be accompanied by the assessment of risk capital on a number of relevant adverse scenarios. In particular, the Swiss Solvency Tests (FOPI, 2004) developed by the Swiss Federal Office of Private Insurance, and the Twin Peaks/Individual Capital Adequacy Standard implemented by the Financial Service Authority in the UK (FSA, 2004) are designed to offer compatibility with regulatory demands on other market players like banks.

In the financial literature, the topic of market consistent valuation of life insurance products is well known and goes back to the work of Brennan and Schwartz (1976) on unit-linked policies. Since then, a wide range of contributions have followed, specifically on the issue of the fair valuation of the different contract typologies available in the insurance markets around the world (for a comprehensive review of these studies, we refer the reader to for example Jørgensen (2004) and the references therein). However, it is recognized that the adoption of the fair value approach in the financial reporting system may have a significant impact on the design of some life insurance products; the premia charged to policyholders; the methodologies for the construction of reserves; and, more generally, the solvency profiles of companies.

In the light of these considerations, the purpose of this paper is to analyze in detail some of these aspects by means of a simple participating contract with a minimum guarantee. In particular, we focus on three important issues. Firstly, we discuss how the fair valuation principle can be used to identify the extra premium that needs to be charged as a solvency loading to cover the insurance company's default option. Secondly, we note that no specific recommendation has yet been made by IASB as to which stochastic model is the most appropriate as the target accounting model. Hence, we adopt the standard Black–Scholes framework as a benchmark and, following the guidelines of IASB, we also propose a methodology for the analysis of the model risk and the parameter risk arising from this approach. Finally, we explore some possible alternative schemes for the construction of the mathematical reserves, and consider the advantages of adopting the fair value approach for solvency assessment purposes. Our focus on this last aspect is because of the ongoing EU Solvency II review of insurance firms' capital requirements, which is expected to come into effect at the same time as phase 2 of the IASB Insurance Project.

The paper is organized as follows. In Section 2 we describe the design of the simple life insurance policy, the approach to fair valuation that we are considering in this paper and how it leads to a fair premium for the contract. In Section 3, we introduce a possible methodology for the analysis of the model error and the parameter error components of the Market Value Margin, as requested by the IASB. In Sections 4 and 5, we provide a comparative, quantitative study of the performance of the fair valuation method. In particular, we propose a range of deterministic reserving