The use of multi-year internal models for management decisions in multi-year risk management

Contact Information

Author:	Dr. rer. nat. Dorothea Diers
Affiliation:	Provinzial NordWest Holding AG (German Insurance Group) in cooperation with Ulm University (Germany)
Position:	Qualified Actuary (Aktuar DAV), Member of the German Actuarial Society (DAV), responsible for Non-Life DFA models (Group-wide) and Lecturer at Ulm University (DFA-research project at Ulm University)
Postal Address:	Group Controlling, Provinzial-Allee 1, Germany-48131 Münster
E-mail:	dorothea.diers@provinzial.de
Phone:	+49 (0)251/219-2994
Fax:	+49 (0)251/219-2437

Abstract

Increasing natural catastrophes, recent dynamics in capital markets, and fundamental changes in regulatory requirements (Solvency II for European Union member countries) have placed increasing challenges on management strategy in insurance companies. As a result many companies are developing modern management techniques such as *value and risk-based management*.

While in the Solvency II framework the time horizon is one year, the strategic risk-return profile of the insurer should be set according to multi-year calculations. In this context multi-year internal models are essential. In the actual literature several questions concerning the use of internal models in a multi-year management context are not answered to date. The aim of this paper is to give a helpful contribution to this emerging and important field of research. So in this paper we present a multi-year model approach to quantify the risk-return situation of one calendar year or several years by assuming a multi-year risk-capital concept that can be used as a general condition in strategic corporate management. This multi-year approach can help management to answer the essential question: How many years of catastrophe risks or extreme developments at the capital markets can the company economically withstand at a certain confidence level without needing external capital sources?

We give an example of strategic risk-adjusted performance management in practice. The aim of this paper is not only grounded in academic research, but also of high importance for insurance practice. The study wants to give a realistic and helpful idea of management processes in order to define a suitable balance between reinsurance cover and asset allocation. We close with the presentation of the iterative strategic management process in order to demonstrate and encourage the use of internal models in strategic corporate management as a basis for decision-making.

Keywords: Multi-year internal models, multi-year risk capital, Solvency II, parameter risk, economic value added, return on risk adjusted capital, value and risk-based management