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PROPOSAL

Market Consistent Embedded Value in Non-Life Insurance: How to measure it and why

submitted by

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ABSTRACT

In the light of the rapidly changing environment in the insurance industry, modern management techniques such as *sharholder value* and *value-based management* have become more and more important in recent years (see Liebenberg and Hoyt, 2003). The aim of this paper is to provide a valuable addition to this emerging field of research: We develop and empirically test a concept for the determination of a market consistent embedded value in non-life insurance. Our hope is to provide a useful management technique and performance metrics for managers as well as for regulators. Moreover, we believe that the concept can be helpful to overcome the traditional differences in performance measurement between life and non-life insurance business, which might make our concept a powerful management tool on an insurance group level.

Roughly speaking, *life* and *non-life* are the two main business models in the insurance industry, both with their own unique structure of cash flows and with large differences in the duration of assets and liabilities. Traditionally, life and non-life are managed as separate entities; in some countries a separation is even required by law (e.g., in Germany and Switzerland). Nevertheless, most large insurers are operating as affiliated groups, i.e., different life and non-life entities are pooled in an insurance group and the group managers need to decide in which direction resources to allocate in order to improve shareholder value. These management tasks can only be achieved with constant monitoring and transparent measurements of performance.

The traditional separation of life and non-life business has, however, also resulted in different management techniques for these two types of companies. While the *Economic Value Added* (*EVA*; see Malmi and Ikäheimo, 2003) and the *Return on Risk Adjusted Capital* (*RORAC*; see Nakada et al., 1999) are very popular performance metrics in non-life insurance, the life insurance industry has focused on the so called embedded value methodology in recent years and developed the concept of *Market Consistent Embedded Value* (*MCEV*; see European Insurance CFO Forum, 2008). Especially given the theoretical concern that a separate optimization of different business units does not necessarily lead to a global optimum on a group level, the use of different performance metrics is very problematic from a group manager's point of view. For example, the different measures are not directly comparable and it is not possible to combine the different concepts in one management tool on a group level.

To provide a solution for this unfavourable situation, we argue that the *MCEV* can serve as a consistent valuation concept not only for life, but also for non-life insurance. Following this line of reasoning, three important questions arise: How can we consistently measure the embedded value of a non-life insurance company? Given all the differences in life and non-life insurance, how can we combine the concepts for life and non-life and set up a *group MCEV*? Finally, how can the development of the *group MCEV* from one calendar year to the next *(Value Added)* be used to quantify performance and risk on a group level?

The aim of this paper is to provide answers to these three questions. We develop a framework for an *MCEV* in non-life insurance that can be used for management of the separate entity as well as on group level. We empirically test our model using data of a German non-life insurance company to illustrate the feasibility of the concept. Finally, we will present a framework for measurement of a *group MCEV* in order to quantify performance and risk on a group level.

The contribution of this paper is to develop a new performance metrics for non-life insurance that is easy to use, simple to interpret and directly comparable to life insurance. The paper is not only grounded in recent academic literature, but also of high importance for practitioners and policymakers. Especially in Europe, with the Solvency II regime becoming effective, European insurers face significant changes in almost all aspects of their business including risk management practices, disclosure requirements, and many more. Among these are also management techniques on a group level. To date embedded value methodologies are thus important performance metrics for value creation in the life insurance industry and our hope is to provide a perspective for their use in non-life insurance.

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