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Efficient Frontier of New Business

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ABSTRACT

The importance of linking enterprise risk management (ERM) with the strategic planning process has been well recognized in recent years. The current practice to achieve the linkage between ERM and strategy is to validate that the new business sales target is within each business's risk tolerance derived from the firm's overall risk appetite. The risk tolerance is effective in setting the boundary conditions; however, it doesn't go further to articulate a strategy that would best balance value creation and capital efficiency. More specifically, the risk appetite framework alone cannot identify a set of ideal combinations of growth rates of the firm's businesses given its unique risk profile. To identify the ideal combinations, this paper attempts to create a new tool: an efficient frontier of new business.

The author constructed a hypothetical life insurance company with three lines of business: individual life, individual annuity and group life. The firm's overall embedded value and economic capital are modeled against a universe of possible growth rates of the three lines of business in a typical three-year planning horizon. The modeling considered not only the impact of growth on capital, expense, margin, persistency and underwriting, it also reflected the natural hedging between businesses such as the mortality/longevity hedging of the life and annuity business, and the long and short guarantees between the individual and group business. The modeling was subject to a number of constraints, including minimum capital ratio, target profitability and the firm's risk appetite. The author will show that an efficient frontier emerged where, given a level of economic capital, a certain combination of growth rates of the three businesses resulted in the best value creation.

New business sales are typically set by the businesses leaders in the strategic planning process. They normally have a view of the target business mix and use tools such as capital allocation to steer the company to this target. However, this view is often derived by simple extrapolation of the pricing results and/or understanding of risk diversification of the current businesses. The ERM function can use the efficient frontier of new business to provide a more rigorous analysis of the impact of growth rates on the firm's overall capital efficiency and value creation, hence forming a feedback loop with the businesses in the planning process to optimize the growth strategy.

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