

Accepted Manuscript

Intensity-based framework for surrender modeling in life insurance

Vincenzo Russo, Rosella Giacometti, Frank J. Fabozzi

PII: S0167-6687(16)30313-4

DOI: <http://dx.doi.org/10.1016/j.insmatheco.2016.11.001>

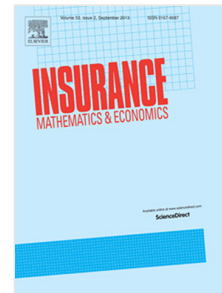
Reference: INSUMA 2296

To appear in: *Insurance: Mathematics and Economics*

Received date: July 2016

Revised date: November 2016

Accepted date: 3 November 2016



Please cite this article as: Russo, V., Giacometti, R., Fabozzi, F.J., Intensity-based framework for surrender modeling in life insurance. *Insurance: Mathematics and Economics* (2016), <http://dx.doi.org/10.1016/j.insmatheco.2016.11.001>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Intensity-Based Framework for Surrender Modeling In Life Insurance

Vincenzo Russo¹
Rosella Giacometti²
Frank J. Fabozzi³

Abstract

In this paper, we propose an intensity-based framework for surrender modeling. We model the surrender decision under the assumption of stochastic intensity and use, for comparative purposes, the affine models of Vasicek and Cox-Ingersoll-Ross for deriving closed-form solutions of the policyholder's probability of surrendering the policy. The introduction of a closed form solution is an innovative aspect of the model we propose. We evaluate the impact of dynamic policyholders' behavior modeling the dependence between interest rates and surrendering (affine dependence) with the assumption that mortality rates are independent of interest rates and surrendering. Finally, using experience-based decrement tables for both surrendering and mortality, we explain the calibration procedure for deriving our model's parameters and report numerical results in terms of best estimate of liabilities for life insurance under Solvency II.

Keyword: Life insurance, Surrender option, Intensity-based models, Vasicek, CIR, best estimate of liabilities (BEL).

JEL classification: C02, C60, G22, G32.

¹ Head of Unit - Group Risk Management at Generali, Milan, Italy. russovincent@gmail.com

² Department of Management, Economics and Quantitative Methods, University of Bergamo, Bergamo, Italy. rosella.giacometti@unibg.it

³ EDHEC Business School in Nice, France. frank.fabozzi@edhec.edu

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات