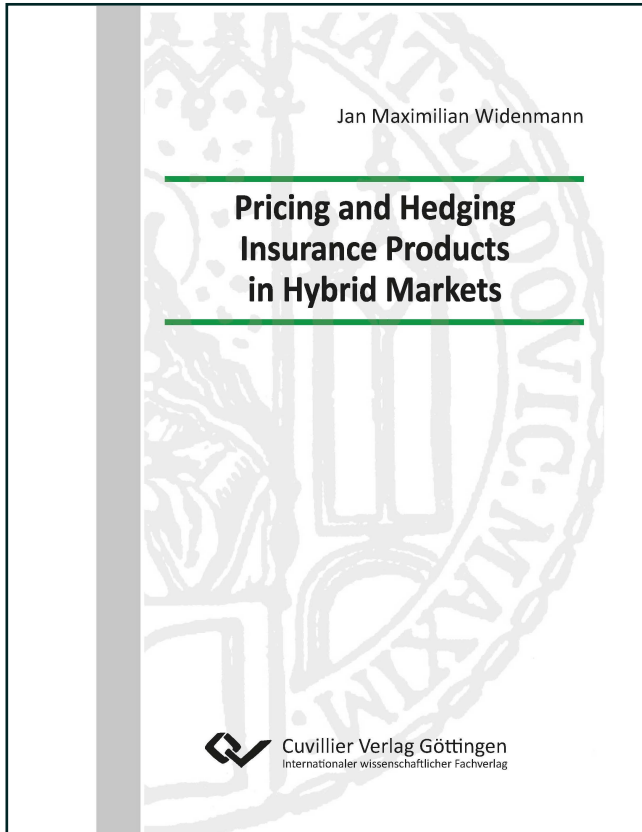




Jan Widenmann (Autor)

Pricing and Hedging Insurance Products in Hybrid Markets



<https://cuvillier.de/de/shop/publications/6546>

Copyright:

Cuvillier Verlag, Inhaberin Annette Jentsch-Cuvillier, Nonnenstieg 8, 37075 Göttingen,
Germany

Telefon: +49 (0)551 54724-0, E-Mail: info@cuvillier.de, Website: <https://cuvillier.de>



Contents

Preface and Acknowledgements	ix
List of Figures	xiii
List of Tables	xv
List of Symbols and Abbreviations	xvii
Introduction	1
1. Preliminaries on Hybrid Financial and Insurance Markets	13
1.1. The Hybrid Market	14
1.1.1. The Benchmark Approach	18
1.1.2. Quadratic Hedging Approaches	22
1.2. Benchmark Approach and Quadratic Hedging for Insurance	27
2. Pricing of Unemployment Insurance Products	31
2.1. Unemployment Insurance Contracts	32
2.2. Premiums in a Time-Homogeneous F -Doubly Stochastic Setting	39
2.2.1. The P -Numéraire Portfolio as a Lévy Process	47
2.2.2. A Classical Markov Chain Setting	49
2.3. Premiums in a General F -Doubly Stochastic Setting	52
2.3.1. Cox's Proportional Hazards Model and F -Doubly Stochastic Markov Chains	54
2.3.2. Estimators in Cox's Proportional Hazards Model	57
2.3.3. Description of the Dataset	58
2.3.4. Estimation Results for the Intensity Processes	61
2.3.5. Goodness-of-Fit Analysis	63
2.3.6. Simulation Results for General F -Doubly Stochastic Markov Chains	68
3. Mean-Variance Hedging for Mortality Claims with Longevity Bonds	73
3.1. The Reduced-Form Setting	74
3.2. Mean-Variance Hedging for a Single Life Status	78
3.3. Mean-Variance Hedging for Life Insurance Portfolios	89
3.4. Affine Specification of the Mortality Intensity	92
3.5. Risk Study for Life Annuities	98



4. Risk-Minimization for General Insurance Contracts	107
4.1. General Insurance Contracts	108
4.2. GKW-Decomposition for General Insurance Contracts	111
4.3. Risk-Minimization for General Insurance Contracts	119
4.4. Risk-Minimization within an Affine Specification for the Intensities	123
5. Conclusion	131
Appendices	135
A. \mathbb{F} -Doubly Stochastic Markov Chains	136
A.1. Reduced-Form Models	142
A.2. Time-Homogeneous \mathbb{F} -Doubly Stochastic Markov Chains	144
B. Galtchouk-Kunita-Watanabe Decompositions	146
References	149