AFIR-ERM Florence Colloquium Paper Submissions

AFIR Colloquium presentations:

Sunk Costs and Screening: Two-Part Tariffs in Life Insurance

2019. James M. Carson (Univ. of Georgia), Cameron M. Ellis (Temple Univ.), Robert E. Hoyt (Univ. of Georgia), Krzysztof Ostaszewski (Illinois State Univ.)

We develop a model of insurance pricing under heterogeneous lapse rates with asymmetric information about lapse likelihood within the context of an optional two-part tariff as a screening device for future policyholder behavior. We then test for consumer self-selection using policy-level data on life insurance backdating. We exploit randomness in the initial tariff size to separately identify the selection and sunk cost effects of backdating on lapse proclivity. We find that….

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Three-layer problems and the GPD

April 2019. Michael Fackler (Independent actuary)

The classical way to get an analytical model for the (supposedly heavy) tail of a loss severity distribution is via parameter inference from observed large losses. However, in insurance practice it occurs that one has much less information, but nevertheless needs such a model, say for solvency issues or reinsurance pricing. We use the Generalized Pareto distribution to build consistent underlying models from scarce data like: the frequencies at three thresholds, the risk premiums of three layers, or a mixture of both. It turns out that for typical real-world data constellations…

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Sustainability as a Strategic risk approach: Sustainability Option into Non-Life Insurance Pricing

2019. Miriam Pedol (Alternative Risk Transfer and Insurance Linked Securities Specialist)

Sustainability is a strategy that impacts project value estimation. We present a model based on a Real Option approach which introduces Sustainability in project evaluation using the "Real Option for Sustainability" (or Pedol Model), offering its applicability in insurance pricing. From the purpose of this paper, Sustainability means to invest in mitigating environmental, social and governance (or 'ESG') risks. We find that under our model, sustainable projects/companies present also an actual value resulting in the mitigation of their ESG risks. This evaluation is useful for helping….

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On Inconsistencies of Risk Adjusted Returns with Expected Utility Models in Optimization

March 2019. Naoki Matsuyama

Risk adjusted returns (RARs) as represented by return-on-risk-capital (RORC) and economic incomecreated (EIC, i.e., excess return over the cost of risk capital) are mean-risk utility models which are vital in some influential ERM frameworks. In particular, optimizing RARs often receive high marks in some rating criteria for insurers. However, we express skepticism about optimizing RARs through the newly proposed economic validation analysis. We adopt the classic von Neumann-Morgenstern expected utility (EU) model as the validation benchmark even though it has received descriptive criticism, since the optimization must be based on a normative model measured by….

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AFIR-ERM Florence Colloquium Paper Submissions

Modelling Dynamic Prepayment and Default with Survival Analysis and Machine Learning in Credit Protection Insurance

2019. Alessia Eletti, Dr. Marco Aleandri, Prof. Favio Grasso (Dept. of Statistical Sciences)

The objective of this paper is to describe and predict policyholder behavior dynamically to evaluate its impact on the profit of a credit protection insurance product (CPI) in the US market. In particular, we will assess how macroeco5 nomic factors and contractual characteristics influence the duration and out6 come of the loan taken out by the individual, i.e. whether it ends by default or prepayment. The estimations will be performed by traditional regression-based survival analysis as well as …
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Flood risk insurance: the Blockchain approach to a Bayesian adaptive design of the contract.

2019. Augusto Bellieri dei Belliera, Marcello Galeotti, Andrea Jonathan Pagano, Giovanni Rabitti, Francesco Romagnoli, Emmanuele Vannucci

Informatics tools underlying cryptocurrencies markets, the so-called Blockchain, is raising up a lot of interest for applications in a wide range of fields. The key function of its use is to collect reliable information that could be used for a dynamic updating of contracts, that is one of the main opportunity given by smart contracting, with an adequate support of law's context in which such contracts are merged, that is one of the main issue to be developed for the full functioning of this kind of innovative business model. Blockchain and the connected smart contracting, seem very …
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Comparative Risk Analysis between Sponsors and Participants for the New Risk-sharing Pension Plan in Japan

March 2019. Taiga Yokoyama (Mizuho Trust & Banking Co., Ltd.)

A new type of pension plan, referred to as a risk-sharing pension plan, became available in Japan from January 2017. The key feature of this plan is that pre-defined benefits may be exposed to adjustment depending on the plan's financial status; and employers additionally contribute more than the normal contributions as a risk margin. It helps companies reduce or eliminate their pension risks while offering their employees a collectively managed funded pension plan. The paper provides the quantitative difference related to generational benefits among traditional defined benefit ….
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Fair Valuation of Insurance Liability Cash-flow Streams in Continuous Time: Theory

2019. Lukasz Delong (SGH Warsaw School of Economics), Jan Dhaene & Karim Barigou (KU Leuven)

Imagine this: a workplace devoid of the internet, email, iPhones or texting. For some actuaries, it doesn't take much imagining, because we lived it! For others, it is difficult to picture, because it is either a faint memory or a workplace we've never experienced.

Why does this matter? The digital transformation of the past 30 years is symbolic of a shift in workplace culture across generations. Think about it this way—how are you most likely to talk to your coworker? By phone, email or text? How you answer this question may reveal your generation.
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May 2019

Article of the month:

Market Conduct

May 2019. KPMG

Conduct risk is changing the global regulatory landscape. The aim is to drive financial services firms to revisit their approach to enterprise risk management; to move from a profit driven business model to a strategy that places customer centricity at its heart to rebuild trust in the market. Conduct risk, and placing the customer's best interest at the heart of everything you do, requires a shift in mind-set. Our clients often ask where do we start, how do we embed conduct risk, what sort of framework should be established? This document seeks to respond to common issues our clients are facing.

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Conduct Risk framework: Industry trends and challenges

May 2019. Alberto Rilo, Juan G. Cascales, Raúl García de Blas, Rafael Poza

Financial institutions have become quite advanced in dealing with classical risks, controlling losses and protecting their balance sheet. But contrary to any of the classical risks, Conduct Risk forces a complete change in paradigm, since it requires financial institutions to put themselves in the shoes of their customers or stakeholders, and protect their customers ? balance sheets (in some cases against the financial institution's own short term interests).

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The Financial Economics of Hedge Accounting of Interest Rate Risk according to IAS 39

May 2019. Dr. Dirk Schubert

Hedge accounting of interest rate risk according to IAS 39 is applied to avoid P&L volatility resulting from accounting mismatch, and it is a common practice. This analysis will show that hedge accounting of interest rate risk relies upon modern approaches of financial economics which are related to the pricing of interest rate derivatives. Derivative markets play a fundamental role for hedge accounting and are used to derive the valuation model used under IAS 39. This paper provides a setup for interest rate hedging and demonstrates the connection of hedge accounting under IAS 39, valuation practices and risk management.

The Generational Mashup

March 2019. The Actuary Magazine

Imagine this: a workplace devoid of the internet, email, iPhones or texting. For some actuaries, it doesn't take much imagining, because we lived it! For others, it is difficult to picture, because it is either a faint memory or a workplace we've never experienced.

Why does this matter? The digital transformation of the past 30 years is symbolic of a shift in workplace culture

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May 2019

Financial Enterprise Risk Management

June 2018. Paul Sweeting

The first few chapters introduce ERM and provide context for the rest of the book. After an easy-to-read introduction to ERM, the types of financial institution, stakeholders, and the internal and external environment are discussed. The book focusses on banks, insurance companies and pension schemes as well as offering some information on foundations and endowments. However, there is an awkward tendency to hop between institutions within sections. Historical information is presented and while interesting, can be a distraction from the current situation…

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Fed preps draft white paper on cyber risk

April 2019. Steve Mariln (writer on the risk management desk for Risk.net)

The US Federal Reserve has launched a project to find a common way of classifying and modelling cyber risk, amid continued fears over banks' collective readiness to meet the existential threat it poses to the financial system.

The initiative, which was showcased by representatives from the Fed board at a workshop hosted by the Federal Reserve Bank of Richmond on March 28, seeks to synthesise ideas from risk managers, academics and policy-makers, before disseminating them to the broader market.

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Common validation techniques for risk proxies found wanting

March 2019. Alexander Campbell (divisional content editor for Risk.net)

New research suggests common model validation techniques may paint a misleading picture of how well risk proxies track the assets they are supposed to follow under extreme circumstances. Using index prices as proxies for individual assets is common practice in modelling price risk – for example, in determining collateral haircuts, as it makes calculations much less computationally demanding…

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Climate change and the threat to companies

February 2019. The Economist

Chief executives who care about climate change—and these days most profess to—often highlight headquarters bedecked with solar panels and other efforts to lower their carbon footprint. Last week Volkswagen, a carmaker, told its 40,000 suppliers to cut emissions or risk losing its custom. Plenty of investors, meanwhile, say they are worried about being saddled with worthless stakes in coal-fired power plants if carbon taxes eventually bite. Yet the reality is that meaningful global environmental regulations are nowhere on the horizon. The risk of severe climate change is thus rising, posing physical threats to many firms. Most remain blind to these, often wilfully so. They should start worrying about them.

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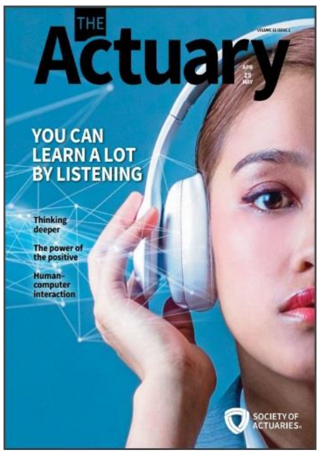

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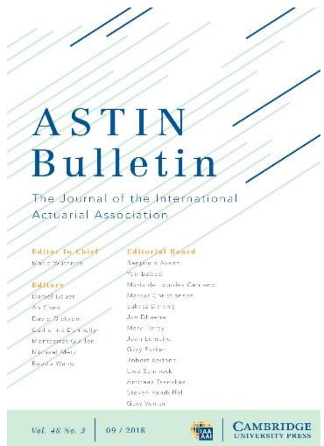

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UPCOMING EVENTS

Webinar Series with Dave Ingram (CERA, FRM, PRM, FSA, MAAA, and member of AFIR-ERM)

11th September, 2019. Risk Culture

11th December, 2019. Risk Appetite/Tolerance

Before, during and after the Financial Crisis, financial institutions can be seen to have been acting rationally, but only if you can admit that in the absence of a perfect view of the future, there are a number of different rational ways to imagine how the future will unfold. An idea is at the core of the anthropology theory of Plural Rationality. This webinar will explain how this theory provides vast explanatory power to understand the variety of approaches that have been and that are taken by financial institutions in response to risk.

Find out more

Coming Soon: In-person seminars in Poland and Tokyo!